UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

EFFECTS OF SECURITY OF TENURE TO AGRICULTURAL LANDS ON SOIL FERTILITY MANAGEMENT PRACTICES AMONG WOMEN FARMERS IN WA WEST DISTRICT

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DECLARATION

I declare that with exception of the references indicated, this work has been wholly undertaken through my effort under the tutelage of Dr. Raymond Aabeyir. This work has not been submitted for any other degree elsewhere. I; however, take full responsibility for any omission or commission of this piece of work.

Signature ……

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Date ……

Signature …….

Dr Raymond Aabeyir

(Supervisor)

Date ……

DEDICATION

I dedicate this work to my Wife and Children: Judith Dohzie, Jefferson M. Baafira, Jefta S. Baafira, and to all my friends for their support and encouragement.

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I acknowledge the fact that this work would not have been successful without the help of Almighty God.

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ABSTRACT

The study explored women farmers' access to agricultural lands and soil fertility management practices in a mixed patrilineal and matrilineal society in the Wa West District of the Upper West Region of Ghana. Women in Ghana including those in the Wa West District living in either separate or mixed patrilineal and matrilineal societies are faced with male domination with regards to decision making and hence women insecurity of tenure to farm land. So, the study used the Theory of Patriarchy, Empowerment Theory, and Access Theory to explain the issues surrounding women access and security of tenureship to agricultural lands. The study used a concurrent mixed research methodological approach to examine how security of tenure to agricultural lands affect soil fertility management practices among Women Farmers. A total of 140 women farmers were sampled through a multistage sampling process. Four focus group discussions were held (43 discussants) and 13 Key informants were interviewed and the findings corroborated with that of the survey. The survey data was presented in tables and charts, and the relationship of security of tenure to farm land and soil fertility management practices and some variables were also tested using Chi-square. The study found that women farmers cannot initiate the process of acquiring agricultural lands without involving their husbands or a male family member/head. Unfavourable beliefs system was found to be the most challenging constraint that influence women access to agricultural land. Most women farmers are practising minimal tillage and non-burning more than that of the other soil fertility management practices. Again, 99% of respondents perceived women farmers in Wa West District to have insecure tenure to agricultural lands. Finally, there exists a significant relationship between insecure tenure to agricultural land and soil fertility management practices. The study therefore recommends that, the existing or new policies (Ghana National Land policy-1999, Land Administration Programme, etc) to focus on especially community and family level stakeholders to facilitate women farmers to have secured agricultural land tenure.

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ABBREVIATIONS AND ACRONYMS

AAG	Action Aid Ghana
AEA	Agricultural Extension Agent
ATR	African Traditional Religion
CAPECS	Centre for the Alleviation of Poverty, the Environment and Child Support
CARD	Community Aid for Rural Development
CBOs	Community Based Organisations
CIKOD	Centre for Indigenous Knowledge and Organizational Development
CSIR	Council for Scientific and Industrial Research
CSOs	Civil Society Organisations
DFID	Department for International Development
FAO	Food and Agriculture Organisation
GLSS	Ghana Living Standard Survey
GNLP	Ghana National Land Policy
GROW	Greater Rural Opportunity for Women
GSS	Ghana Statistical Service
IFAD	International Fund for Agricultural Development
IFDC	International Centre for Soil Fertility and Agricultural Development

IFPRI	International Centre for Soil Fertility and Agricultural Development
ISSER	Institute of Statistical, Social and Economic Research
KFPs	Key Facilitating Partners
LAP	Land Administration Project
MEDA	Mennonite Economic Development Associates
MGA	Male Gender Activists
MoFA	Ministry of Food and Agriculture
NGOs	Non-Governmental Organisations
SARI	Savannah Agricultural Research Institute
SPSS	Statistical Package for Social Scientist
USAID	United State Agency for International Development
WFBOs	Women Farmer Based Organisations
WFBGs	Women Farmer Based Groups

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background to the Study

Agriculture is an important livelihood source which makes land valuable and a source of security against poverty, especially in farming communities (Rebecca, 2001). Accessing agricultural land in rural economies is a major income generation means to subsistence. This therefore suggests that the security of tenureship to agricultural land is vital for eradicating poverty and propelling rural development (Bebelleh, 2008). Secured holdings to agricultural land influences the investments in soil fertility conservation and economic gains. For example, a limitation to women tenureship to agricultural land affects their long-term soil conservation practices and eventual economic benefits from the land (USAID, 2016). Therefore, improved tenure to agricultural land has many economic implications for the landless poor women.

Worldwide, women hold title to roughly 2% of land and are much of the time affected by land tenureship arrangements (Steinzor, 2003). Also, Landesea (2014) averred that women access to agricultural land for farming is a major issue for debate in International conferences among development actors and researchers. For instance, in China, the cultural traditions such as the form of marriage and inheritance influence local implementation of laws in rural areas which affect women land tenureship (Liaw, 2008). Therefore, women land rights are put at centre-stage in modern development agenda (Namubiru-Mwaura, 2014).

In Africa, women are challenged with security of tenure to farm land (Benschop, 2004); yet they produce about 80% of food for the family (FAO, 2011). This implies that women contribute greatly to ensuring food security in Africa. However, prevailing land tenure rights and policies on land tenureship for agricultural purposes do not guarantee women tenure

security (FAO, 2011). Efforts have been made especially in Africa to adopt land policies and programmes that favour access to land by women with the conviction that security of tenure can be a mechanism through which the goals of gender equity, poverty reduction, efficiency in land use and sustainable soil conservation practices can be achieved (Cotula, Toulmin and Quan, 2006; Toulmin, 2000). The application of these land policies and programmes are often done by the state across cultures to ensure land governance; and this leave out segments of the population from the benefits of such policies because of their peculiar cultural problems (Cotula *et al.*, 2006). For instance, the Constitution of South Africa is considered a non-oppressive one; yet, women are discriminated against in both customary and statutory land tenure arrangements (Cross and Hornby, 2002; Mann, 2000). Also, in Lesotho, agricultural lands are controlled by customary tenure arrangements. Women are not privileged to claim and control land on account of man-controlled society and oppressive administrative laws. Again, women are treated as minors and in this manner cannot be apportioned land, inherit or take decisions about its administration and use (Mutangadura, 2004).

In Ghana, the 1992 constitution, article 18 clause 1 permits equal rights among people to procure or own property, including land. Be that as it may, differences exist between men and women security of tenureship to agricultural land (IFAD, 2011). The role men play in making spiritual sacrifices to appease the land disadvantage women tenureship arrangements to agricultural land especially in Northern part of Ghana. Since women are not allowed to make sacrifices to pacify the land, their position to land tenure arrangements have been short changed (Kuusaana, Kidido, and Halidu-Adam, 2013; Bonye and Kpieta, 2012). Men being backed by customary tenure arrangements, controlled land ownership, land allocation and access (Sarpong, 2006). Thus, women accessing agricultural land has become a socio-cultural issue.

Challenges in accessing agricultural land by women are serious issues considering that Ghanaian women contribute over 70% of the nation's food stock (SEND-Ghana, 2014). It raises a critical question about the sustainability of current contribution of women to the national agricultural production and the national agenda to ensuring food security in Ghana.

With subsistence agriculture, no economic value was put on land (Kasanga and Kottey, 2001). Increased population densities, increased commercialization of agriculture, and changes in the production technology of agriculture have all led to changes in land rights and have worsened the plight of women farmers in terms of access to land (Boserup, 1981). Again, women cannot own agricultural land; they are privileged to access land but tenureship arrangements depend on their relationship with men (e.g. as wives). Land tenure arrangements do not guarantee straightforwardness and social equity for women regardless of the purposes of tenureship existence (Alhassan, 2006).

Traditionally, Women often gained access to land only through their husbands or through their male kin. Several works done have shown that women from patrilineal society have less access to agricultural lands due to traditional political reasons (Duncan *et al.*, 2004; Agana, 2012; Mann, 2000; Cross *et al.*, 2002). Where traditional or customary modes of access are breaking down and are being replaced by market mechanisms, a variety of legal, administrative, and social norms impede increased access to or control over land by women (Kuusaana and Eledi, 2015). Even where women are specifically intended to benefit from land registration and titling programs, their actual control over land resources, in many cases, remains weak (Cotula *et al.*, 2006; Mutangadura, 2004; Steinzor, 2003; Kasanga *et al.*, 2001; Schroeder, 1993; Carney and Watts, 1991; Joekes and Pointing, 1991; Davison, 1988; Agarwal, 1988; Carney, 1988; Okali, 1983).

Walker (2003) also established that women are considered minors and cannot enter into any transaction or initiate official procedures without an adult man in accessing agricultural land. Also, Benneh, Kasanga, and Amoyam (1995) revealed that the existing tenurial and inheritance systems, have contributed some amount of insecurity of tenure amongst some women in the then Wa District now Wa West, Wa East and Wa Municipal.

Investment on soil fertility among women farmers is critical since most degraded lands are normally given to women by their male counterparts within the same family for farming (Perez, 2014; Action Aid, 2013; Bonye *et al.*, 2012; Yakubu, 2012; Muteshi, 1995).

The cultural constraints remained the most prominent challenge with regard to women's access to quality land (Yakubu, 2012). The lands allocated to women are often degraded lands, with limited productive capacities (Action Aid, 2013; Perez, 2014; Muteshi, 1995). The most degraded lands are normally given to women by their male counterparts within the same family for farming. Thus, women farmers would have to rely on a number of soil fertility management practices to improve the productive capacities of such degraded lands. However, Perez, (2014); Action Aid, (2013); Yakubu, (2012) and Muteshi, (1995) did not show the relationship between women's access to agricultural lands and soil fertility management practices.

Furthermore, Kasanga *et al.* (2001) in their publication gave a general overview about land management in Ghana and how it resulted in conflict especially in Northern Ghana including Upper West Region. Kasanga *et al.* (2001) did not specify the customary processes of access to agricultural land in Wa West since some of the people are the Birifors and their mode of inheritance is matrilineal just like the Akan (Dowuona-Harmond, 1998). The same can be said about Dery (2015), which among his research findings indicated that access to land by women the Nadowli-Kaleo district is influenced by the endemic patriarchal values. It is again buttressed

by Aasoglenang, Kanlisi, Naab… and Naa-Obmuo (2013) that many other cultural factors within the patriarchal society affected women farmers tenureship to agricultural land.

However, customary tenureship of land may not be same as it has been generalised for the Dagaaba, Waala, Sisaala, among others who are patrilineal in the Upper West Region. Again, Kasanga *et al.* (2001) also demonstrated how access to land for agricultural productivity has become restricted moving away from traditional family land tenure system to share cropping and rents in southern Ghana, but the situation is not the same in the Upper West Region especially Wa West District. There may be other factors which limit tenure security to agricultural lands especially among women in Wa West district since tenureship is premised on the traditional framework. The Wa West District is mixed with both patrilineal and matrilineal system of inheritance among the major ethnic groups and its implication on the processes of access and security of tenure to agricultural lands by women could vary.

Formal tenureship rights to land are frequently advanced as an essential human right that women are lopsidedly denied of (Ikdahl, 2008). Women access to property rights, specifically the rights to hold farm land would be guaranteed if gender relations are improved when women are empowered (Panda and Agarwal, 2005). Many Non-Governmental Organisations (NGOs) such as Action Aid, USAID, IFAD, FAO, and Community Based Organisations (CBOs) have all facilitated and promoted women access to agricultural lands and security of tenure and how it can influence food security and poverty reduction in the Upper West Region. Following the work done by the NGOs, CBOs, Civil Society Organizations (CSOs) and some Governmental Agencies like MoFA, women access to farm land has improved; security of tenure to farm land needs more attention. Stakeholders should begin to advocate for women to have secure tenure to agricultural land.

The United Nations Children's Fund in 2006, identified 'queen mothership' as an appropriate institution to champion the welfare of Women and Children in Ghana. Areas such as those in the Northern part of Ghana which did not have queen mothers were supported by promoters of women empowerment to introduce them so as to increase efforts to address gender vulnerability which will contribute to the general developmental agenda. The Upper West Region of Ghana, has a male dominated culture which did not have queen mothers as part of its public and traditional institutions. Action Aid Ghana (AAG) and the Center for Indigenous Knowledge and Organizational Development (CIKOD) additionally supported the United Nations Children's Fund and request the institutionalisation of Queen mothers in the traditional institutions of the northern part of Ghana (Atuoye and Odame, 2013). The Queen mothers encourage women to take part in activities that inure to the development of the community by maintaining active women participation to realise their aspirations. The queen mothers will partner with the chiefs in their communities and lobby authorities to address development challenges including security of women tenureship to agricultural land among others. The Upper West Regional House of Chiefs has accepted the institutionalisation of Queen Mothers. The Paramount Chiefs including that of the two major ones in Wa West District assign Queen Mothers to address women development challenges. The Queen Mothers in Wa West District also facilitate women access to agricultural lands.

1.2 Problem Statement

As human society evolved from one epoch to the other, population increased and the demand for agricultural land keep increasing. Women's ability to benefit from resources such as land is constrained by the established specific political, economic and cultural frames which guide access to land (Ribot and Peluso, 2003). Wa West District comprises of a multi-ethnic group with different level of cultural orientation. Thus, there exist two separate systems of inheritance-

patrilineal and matrilineal and this influence women access to agricultural lands. The endemic patriarchal values within the ethnic groups in Wa West District discriminate against women access to agricultural lands. This is supported by Dery (2015), which among his research findings said women access to agricultural land in Nadowli-Kaleo district is influenced by patriarchal values. Marginal lands are given to women for agricultural purposes. Such lands already require investment to improve the quality of the soil and without any guaranteed tenure security. It makes it difficult for women to make such intensive investment in the land for fear of losing their investments in the land before the peak of the benefits of the investment.

Again, the Birifors who are among the dominant ethnic group in the Wa West District practice matrilineal mode of inheritance could also be influenced by some patriarchal cultural traits since they co-exist with the other ethnic groups in the district. This is because women from the Birifor communities also experience difficulties in accessing agricultural lands.

The effects of security of tenure to agricultural lands on women farmers have serious repercussions for food security and economic development. In the light of this, that CBOs (CAPECS, CARD) through MEDA, implemented the Greater Rural Opportunity for Women (GROW) project. The project seeks to promote women's economic empowerment in Upper West Region especially the Wa West District by facilitating women access and security of tenure to farm land to improve food security. The study investigated the issues surrounding women access and security of tenure to agricultural lands on soil management in Wa West District.

1.3 Research Questions

1.3.1 Main Research Question

How does security of tenure to agricultural lands affect soil fertility management practices among women farmers Wa West District?

1.3.2 Specific Research Questions

1. How do women farmers access land for agricultural purposes in the study area?
2. How is the nature of tenure security to agricultural lands by women farmers in Wa West District?
3. How does agricultural land tenure security influence soil management practices by women farmers in the study area?

1.4 Research Objectives

1.4.1 Main Research Objective

To examine how security of tenure to agricultural lands affect soil fertility management practices among women farmers.

1.4.2 Specific Research Objectives

1. To ascertain the processes women farmers access land for agricultural purposes.
2. To assess the nature of tenure security to agricultural land among women farmers.
3. To assess the relationship between agricultural land tenure security and soil fertility management practices among women farmers.

1.5 Significance of the Study

The study would generate information on the socio-cultural dynamics of access to agricultural lands by women farmers from within and among their respective families, ethnic groups, and communities in the Wa West District. The information generated would be used by policy makers as well as the local government authorities and other development agents such as NGOs to formulate policies and projects to improve women access to agricultural lands in Wa West District and Ghana as a whole to enhance agricultural production.

Also, information on soil fertility management practices would add to studies (Muniru, 2013; Agana, 2012; Bonye *et al.*, 2012) on women security of tenureship to agricultural lands and the findings use to guide further research. Research institutions such as the Savanna Agricultural Research Institute could use the findings i.e. soil fertility management practices used by women to guide further research in the county.

The study would create an opportunity for further research on women access to land especially women from the bilateral inheritable ethnic group (Birifor) in the Upper West Region. This would also assist the formulation of policy to address challenges that affect ethnic groups that inherit bilaterally (matrilineal and patrilineal) and also good practices would be tapped and in cooperated in policy formulation.

1.6 Scope of the Study

The study focused on women farmers in the Wa West District who are beneficiaries of the GROW project. Women Farmer Based Organisations (WFBOs)/Women Farmer Based Groups (WFGs); other stakeholders and organisations especially the Key Facilitation Partners (KFPs) that collaborated with MEDA on the GROW project and are located or operated in the Wa West District were contacted and information obtained from them for the study.

The content of this study concentrated on the following: women access to land as referred to in this study meant land given to women only for farming purposes. The processes Women Farmers go through to access land. Also, secured tenureship to agricultural land constituted a clear communication of the duration of usage of lands in years allocated to women farmers. The nature and type of land given to women and the soil fertility management practices that women farmers use. Finally, the relationship between secured tenure to agricultural lands and soil fertility management practices among Women Farmers. This research was conducted within two trimesters of the 2018/2019 academic year.

1.7 Limitation of the Study

High illiteracy rate among women farmers in the Wa West District impeded the use of questionnaire which could have been less costly in the data collection process. The researcher avoided the use of questionnaire administration but rather employ guided interviews, key informant interviews, and focused group discussion.

Also due to the multi-ethnic nature of the district, it was difficult for assigning the actual language equivalent of some English words which were used in the interview ground. The researcher engaged research assistants who could speak the local languages of the various ethnic groups in the study area to help in translating English words into the language of the respondents and vice versa.

Financial constrains also affected the Researcher in conducting the study. There is a huge financial demand for this kind of research. Research Assistants were recruited and paid to help in the data collection processes. The cost of logistics and stationery also deepened the financial woes of the Researcher. The Researcher overcame this limitation by relying on the benevolence of friends and limited family resources to finance the study.

The researcher employed chi-square to test the association between security of tenure to agricultural land and soil fertility management practices. There exists an influence of co-variation because of the individual analysis. That is why the researcher also used some background characteristic such as age, and farm size to test the association between them and soil fertility management practices to address the influence of co-variation.

1.8 Organisation of the Study

The Thesis was organized into five chapters. Chapter one constituted the background of the study, problem statement, research questions, and objectives. The Scope of the study, significance and limitations of the study also formed part of chapter one. Chapter two consisted of the review of relevant literature in specific thematic areas. Chapter three presented the description of the study area and the research data collection methods, processing and well as analysis. Chapter four presented the findings and discussion while Chapter five, the final chapter constituted the conclusions and recommendations.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter reviews existing literature on the necessary concepts on the topic. This is followed by the conceptual and theoretical frameworks. The chapter also covers a review of land ownership and rights in Ghana, access to agricultural lands, land tenure, processes of accessing agricultural lands by women farmers, land accessibility among women farmers in Northern Ghana, soil fertility management practices women farmers use and trends of the challenges women farmers face in accessing agricultural lands. Again, the chapter discusses the relationship between security of tenure to agricultural lands and soil fertility management practices. Finally, the study therefore summarises the need for further research and extension of literature.

2.2 Definitions and operationalisation of Concepts

The following concepts are defined and operationalised in this section: land, agricultural land, land tenure, tenure security, land access, land rights, land ownership, soil fertility and woman farmer.

2.2.1 Land

Aryeetey and Udry (2010) said land is a gift of nature from which, on which and with which man is created and makes a living. Allott (1966) conceptualised land by linking it to the Ashanti's conception of land as it extends only to the soil. Thus, things in the land (e.g. minerals) or on the land (planted trees, houses) would not fall within the definition of land *(asase*) and might be separately dealt with in law. Furthermore, Akudugu, Egyir, and Mensah-

Bonsu (2009) posits Land to be defined as the ground, soil, or earth, something on which people walk, houses are built or plants grown.

In the Ghanaian legal system, legal authorities such as Ollennu (1962) defined land to include the land itself, i.e., the surface soil; it includes things on the soil which are enjoyed with it as being part of the land by nature, example, rivers, streams, lakes, lagoons, creeks, growing trees like palm trees and dawadawa trees, or as being artificially fixed to it like houses, buildings and structures whatsoever. Amanor (2010) stated that land may be considered as any portion of the earth's surface over which ownership rights might be exercised.

From an economic standpoint, Antwi-Bediako (2013) also defined land as the sum total of the natural and man-made resources over which possession of the earth's surface gives control. He looked at this broad concept in a number of subdivisions. These divisions include; the concepts of land as space, nature, a factor of production, a consumption good, land as situation, property and capital. Land regarded as nature may be closely associated with the natural environment. It is thus conditioned by its access to sunlight, rainfall, wind, changing climatic conditions and different evaporation, soil and topographic conditions. According to Aregu (2010), land includes not only the arable land used by farmers and the city land used as building lots, but also the other gifts of nature that come with the land. From the above definitions, the term land means different things to different people depending on the perspective from which one looks at it. It is therefore difficult to give a single definition to land that would embrace the interests of various professions.

Aryeetey *et al.* (2010) definition of land as a gift of nature is from which man makes a living, is not specific. Things like rivers, trees, mountains, etc. are gift of nature and man makes a living from them. For instance, man depends on rivers for fish, etc. Also, Allott (1966) and Amanor (2010) conceptualised land to mean soil and any part of earth surface respectively, was

too narrow; meanwhile institutions that defined the rules which govern land tenure arrangements includes other resources like trees, minerals, rivers among others to be part of land. Antwi-Bediako (2013), Akudugu *et al.*(2009), and Ollennu (1962) definitions of land are broader enough and is well corroborated by the definition of Aregu (2010) to include the arable land used by farmers and the city land used as building lots and also the other gifts of nature that come with land.

For the purpose of this research, Aregu (2010) definition of land would be adapted. The study therefore conceptualised Land as the earth's surface and all resources attached; that is, the soil, plants, other living creatures, water bodies, mountains and valleys. Per the definition of land for this study, the physical supply of land may be said to be fixed but the supply of land for various uses can change. As rightly put by Bambangi *et al.* (2013) and Abubakari, (2013), it is no longer helpful to think of land as being fixed in supply. For instance, the supply of fertile land for agriculture can be depleted by bush fires, over cropping or other ill land use practices. Similarly, the supply of arable land can be increased through soil fertility management practices.

2.2.2 Agricultural Land

According to Bonye *et al.* (2012), agricultural land is any land that is used purposely for the rearing of animals and the growing of crops. Agricultural lands also provide important areas of open space and wildlife habitat. Also, Kurtz (2001) averred that agricultural land refers to land that is used or devoted to the raising and harvesting of crops or timber or fruit trees, the rearing, feeding, and management of farm livestock, poultry, fish, or nursery stock, the production of bees and apiary products, or horticulture, all for intended profit.

The operational definition of agricultural land for the purpose of this study is that of Bonye *et al.* (2012). Hence, agricultural land therefore refers to land that is used purposely for the rearing

of animals, growing of food crops, cash crops and vegetables, and the planting of economic trees.

2.2.3 Land Tenure

Rao (2006) defined land tenure as the set of relationships that legally or customarily govern how land is held or owned by individuals and groups. This means that tenureship reflects the relationships between people and land directly, and between individuals and groups of people in their dealings in land and natural resources. Land tenure can be a tool for conservation since it involves sets of rules and regulations used to control and manage land and the associated natural resources, and the general environment. The basic rules of land tenure define how property rights (use, control, and transfer) are to be allocated within societies, and are usually defined through statutory or customary law. Again, IFAD (2008) defines land tenure as the rules, norms and rights that govern the appropriation, cultivation and use of natural resources on a given space or piece of land. These rules, rights and norms are defined by the authorities and institutions that govern the use of resources especially farm land, and the duration and conditions associated with use. Regarding the use of land for agricultural purposes, tenureship arrangements affect the everyday choices of the types of investment to be made on the land. Access to land is administered through land tenureship frameworks and as per Kasanga (2003); land tenure is the relationship, regardless of whether legitimately or generally defined, among individuals, as people or gatherings using land. For purposes of this research, I adopt the definition of Kasanga (2003) of land tenure to mean the relationship that exist in the acquisition of land whether legitimately or generally between or among people, families, ethnic groups, and networks for use.

2.2.4 Tenure Security

Land tenure security is the individual's perception of his/her rights to a piece of land on a continual basis, free from imposition or interference from outside sources, as well as the ability to reap the benefits of labour or capital invested in land, either in use or upon alienation (Roth and Haase, 1998; ISSER, 2003). Furthermore, Aregu (2010) defines land tenure security as the right of individuals and groups of people to effective protection by their government against forcible evictions. Furtherance to defining tenure security, Bugri (2008) said is the ability to continually cultivate land without interference. As indicated by Cotula and Polack (2012), tenure security incorporates both objective components (level of enforceability of a given right) and subjective ones (landholders' view of the security of their privileges). The subjective components can be significant, as a farmer's view of reality can have real repercussions (for example increasingly secure land rights may make farmers all the more eager to put resources into their property). Subsequently, tenure security is ordinarily a matter of degrees along a range between pretty much 'secure'.

The study adapts and modified Cotula *et al. (*2012), ISSER (2005), Roth *et al. (*1998), and Bugri (2008) definitions of tenure security. Thus, tenure security is defined as the ability of an individual or group of persons to access agricultural land and is certain of the terms and conditions of access without interference or contestation and are accorded mutual respect for the rights and conditions of the land tenure, and that of the benefit of the proceeds obtained from the land. The study therefore measured tenure security as the certainty of the terms of access to mean secured tenure whilst uncertain terms of access mean insecure access. The security of tenure under the customary land arrangements is based on the agreements reached between or among the parties involved. The agreements could be made certain or uncertain because the period of tenureship in the customary land arrangements is mostly undocumented.

2.2.5 Land Access

According to Agana (2012) access to land refers to the ability to use land and other natural resources, to control the resources and to transfer the rights to the land and take advantage of other opportunities. Duncan and Brants (2004: 18) likewise refer to access to land as "the privilege to enter upon and use land". These rights are usufruct rights and can be allowed to male and female individuals from the family, lineage or stool. These rights as indicated by Duncan et al. (2004) portrays transient use rights to land without full power over the transfer or utilisation of that land. Agana's definition does not specify the type of natural resources that someone with only user rights can control. With the principle of eminent domain, certain natural resource such as the mineral and oil resources, are controlled by the state. If such resources are found in the land where someone has user rights to that land, the person cannot control such natural resources. Agana could have specified the type of natural resources that anyone who has user rights can control. The study therefore would adapt Duncan *et al.* (2004) definition of land access.

2.2.6 Land Rights

Land rights might be said to be complete when the accompanying three conditions are met: they are legitimately unmistakable, socially conspicuous, and enforceable by external experts (Duncan and Ping, 2001). This means land rights are the fundamental rights that allow people to have access and control on land for use. According to Budlender and Alma (2011), land rights refers to the legal and moral recognition of ownership of lands and continuous cultural survival of people on land resources. In this study, land rights are considered as the rights that people in a community, family either individually or collectively hold on land as claim of ownership or use.

2.2.7 Land Ownership

Land ownership involves multiple rights, collectively referred to as title, which may be separated and held by different parties. Ownership of land would have to go through some processes as confirmed by Bonye *et al.* (2012) that the processes and mechanics of land ownership are fairly complex; one can gain, transfer and lose ownership of land in different ways. According to Doss (2010) land ownership is a state or fact of exclusive rights and control over land. These rights may be acquired through legally regulated and customary means. This view is confirmed by Alidu (2015) definition of land ownership. Alidu advanced her definition of land ownership as a process of acquiring land rights through legally regulated or customary methods. This study however defined land ownership as the ability to make a claim over a piece of land based on the agreed mode of acquisition and the duration of occupancy clearly spelt out; and the user can transfer the land to a third party based on the agreement without hindrance.

2.2.8 Soil Fertility

For the purpose of this study, soil fertility is defined as the nutrient supplying ability of the soil to support plant growth. The definition is adapted and modified from Yaro (2002). According to Yaro (2002), soil fertility means the capability of the soil to supply nutrients that enhance plant growth. Soil fertility plays such a key role in the productivity of cropping systems that its decline has become a major biophysical constraint to crop production in the West African sub-region including Ghana. Farmers would want to access land for agricultural purposes when the ability of the soil of that particular land to support vegetative growth is high.

2.2.9 Woman Farmer

Rao (2006) noted that a woman farmer is a woman who farms. According to Twerefou (2011), a woman who works full time in agriculture is a woman farmer. Woman farmer takes care of

her household agricultural work and management. These women have taken farming as their job and they depend on it for their livelihood. For this study, a woman farmer is any female farmer who engages in any agricultural venture, owns and enjoys full benefit of the produce and can decide how to use the produce for with minimal or without interference. Therefore, any woman who works on her husband's farm or engaged in any agricultural venture but does not own the produce or cannot decide how the produce should be used is not considered as a woman farmer for the purpose of this study.

2.3 Conceptual Framework

When women are given access to land, it empowers them and when women are empowered, they are able to enjoy the same privileges as men enjoy in a patriarchal system and are also able to negotiate the status quo in order to access, own and manage land for production purposes. Thus, the study adopts a tripartite theoretical framework (Access Theory, Empowerment Theory and Theory of Patriarchy). The Access Theory explains women gaining access to land even when they do not 'own it' while the Empowerment Theory explains that, when women have access to dignified life choices such as land, broader empowerment is envisaged. Finally, the Theory of Patriarchy explains a social system that enforces the domination of men over women to appropriate power, have access and ownership of resources such as land over women.

In accordance with the theoretical framework adopted for this study (access theory), women's access to agricultural land is influenced by the social construct of Gender roles which assigned different roles and responsibilities to women in a dominant patriarchal society. These assigned gender roles and responsibilities create a value structure that perpetuates unequal power relations between men and women. Thus, a traditional value system and a country's policies maintain an intricate to women access to land. Gender relation therefore is influenced by the

legal regimes as well as social relations and the cultural orientation of the people, thereby contributing greatly to the promotion or otherwise of women access to agricultural land.

Any favourable improvement of the legal, social, and cultural factors will promote gender and power relations in our society which will enable women secured tenureship to agricultural land. Therefore, social and cultural context in relation to women's holding to agricultural land is one of the key areas of concern for this study. Security of tenure to agricultural and soil management practices is influenced by the culture of the people. This therefore is confirmed by Alidu (2015) that Culture influenced soil management practices, which is important to women holding and managing agricultural land. Indeed, the debate on secured tenureship to and control over land by women in the Upper West Region of Ghana continues to be an endless one, hence this study argues that equal security of tenure to agricultural land by women brings about women empowerment (Action Aid, 2013). When women have secured tenureship to agricultural land for farming purposes, it will lead to an investment in soil fertility management practices hence an improved agricultural production. Figure 1 shows the conceptual framework of the study.

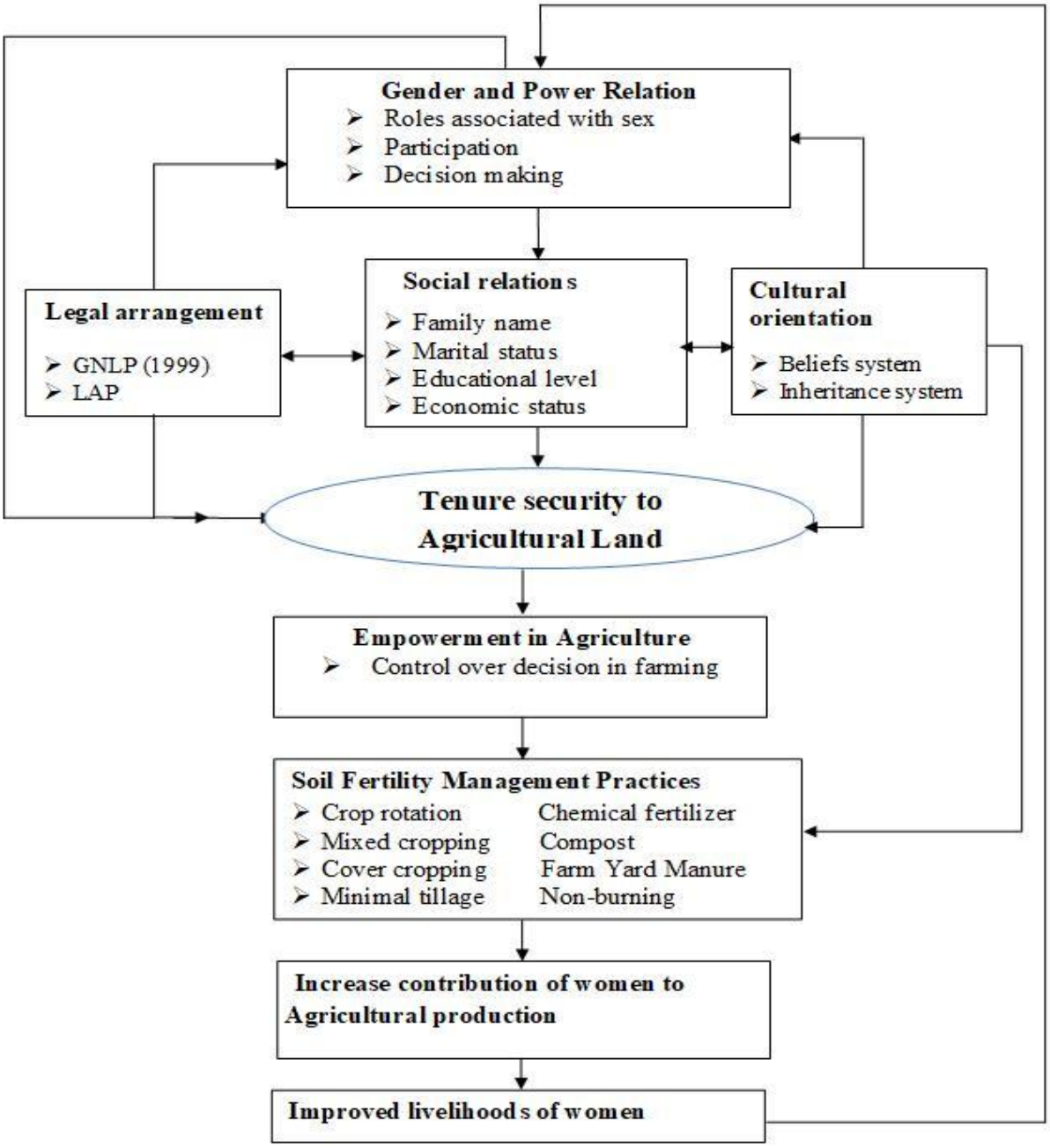

Figure 1: Conceptual Framework

Source: Author's Construct (2019)

Key

→ Linear relationship

↔ Inter relationship

2.4 Theoretical Framework

The study employs a three-dimensional theoretical approach drawing upon Theory of Access, Empowerment Theory and Theory of Patriarchy.

2.4.1 Theory of Access

Ribot and Peluso (2003) proposed a Theory of Access to take, explain the procedures of access, and defined it as the ability to derive benefits from things—including material items. According to Ribot and Peluso (2003), the theory focuses on the "ability" to benefit from resources rather than focus on one's rights of ownership or legal claims to those resources. The theory also focuses on those social connections that can compel or empower individuals to benefit from resources.

The important questions which are normally regarded as to how and why persons, group of persons, and communities access resources (which they could have legal possession rights to), and on the other hand, how people and networks might be denied access to resources (for example forests, land) notwithstanding when they have legitimate property rights. Access works through 'packs and networks of forces,' in various ways that can be lumped into classes of 'rights-based access' and structural and relational access mechanisms (Ribot and Peluso, 2003). The structural and relational access mechanisms component of the theory is adopted to explain women access to agricultural land even when they do not 'own it'. It is contended that auxiliary and social access instruments are vital to seeing how ladies are accessing farm land notwithstanding when they don't 'possess it'. Some people and institutions control resource access while others must maintain their access through those who have control over it. This is the case of customary institutional heads such as the family, clan, community, and traditional areas. Women access to agricultural lands in Wa West District can be theorized under the theory

of access. This theory would help us understand why some people or institutions or women gain access to land even when they do not own it.

2.4.2 Empowerment Theory

Empowerment theory developed by Zimmerman and Perkins (1995), explained that empowerment is the process and consequences of efforts to exert control and influence over decisions and actions, and access to resources. As indicated by Rao (2006) "Empowerment" is a method and an end, a procedure and a result that can be estimated against anticipated achievements. Runger (2006), additionally affirmed that empowerment is an on-going process by which individuals start making choices on issues which affect their lives and having the option to do them. Rungers' definition is corroborated with Aasoglenang *et al.* (2013) definition of empowerment as the process by which those who have been denied the ability to make strategic life choices acquire such ability.

Tesfahunegn (2014) related empowerment to individual capacities developed through the process of gaining education, skills, and knowledge in order to improve the life-chances of individuals or groups to have a better quality of life.

When women have wide sources of empowerment, their bargaining power, ability to define their own lives with dignity, live in a secure sphere and their inclusion in important decision making are enhanced. Indeed, when women have access to dignified life choices, broader empowerment is envisaged, which has been a major concern for development activists and social actors who are interested in poverty alleviation among the marginalised. That is, empowerment is said to take place when there is a positive change in the lives of a group of individuals (or an individual) in a context in which such choices were unthinkable.

In these regards, this study investigates whether or not access to land has empowered the women farmers in Wa West District. Women farmers who whether or not built up their individual abilities to address, to think about, and to follow up on the states of their lives that were constraining their security of tenureship to farm land.

2.4.3 Theory of Patriarchy

Walby (1990), theorised Patriarchy to better explain a social system that enforces the domination of men over women to appropriate power, have access and ownership of resources such as land over women. In land rights discourses and other gender related discussions, patriarchy has widely been conceived of either as a tool or an ideology that governs the gender order in society (Adeola, 2009). It is an ideological frame that gives fathers as patriarchs – the ability to transmit power to sons, a process that sustains, or is taken to sustain, the monopolisation or legitimisation of the hegemonic rights of men over women in both public and private arenas. Patriarchy has also been conceived of as a social system that enforces the domination of the category "men" which also reinforces and perpetuates the systemic oppression, exploitation and subordination of the category "women" (Agarwal, 2003). Despite such arguments, it is important to reiterate here that not everybody in the category "men" enjoys equally patriarchal privileges, although all men contribute in varying ways towards maintaining some sort of a status quo, either as part of a private patriarchy or a public one.

As a social system, patriarchy is dynamic and fluid and changes over time. Cultural norms, coupled with other forms of social capital – marriages, the patriarchal system of inheritance, the sexual division of labour, social class, and decision making – all serve as rules for men or the prerogative of men to appropriate power over women (Agarwal, 2003). Women therefore need to contest, challenge and negotiate the taken for granted status quo in order to access, own and manage land as an important factor of production.

2.5 Land ownership and right in Ghana

In Africa, the subject of who owns land is dynamic and depends on the societies, regions and countries. This means land administration is country specific and in some cases regime specific. Apusigah (2009) asserted that different colonisers and post-independence legal trials have resulted in this particular feature of a differentiated form of land administration system in Africa. Even though the continent basically shows an intermarriage of statutory and customary land tenure systems, it differs across the length and breadth of the continent. Customary land tenure is common and widely practiced in West Africa (Ajayi *et al.,* 2007). Land ownership is grouped into two main categories in Ghana. They include the public owned lands and that of the customary owned lands. Lands that have been compulsorily acquired by the state using its compulsory purchase powers (eminent domain) for public benefit or interest are considered public lands. Such lands may also include vested lands and are normally managed by the state (i.e., government) on behalf of customary entities (Kuusaana, and Eledi, 2015).

On the other hand, customary owned lands are regarded as communal property and is further grouped either as skin/stool lands or family lands. Customary land tenure is more of a social construct from which land is vested in chiefs and head of clans who manage land on behalf of the people (Ayamga, Yaboah, and Dzanku, 2015). Also, according to Kasanga and Kottey (2001), customary lands accounts for 80% of all underdeveloped lands in Ghana and are largely used for agricultural purposes. Hence individuals belonging to any community enjoy inherent rights to access communal lands for housing and agricultural purposes. Even though there are different types of interest accompanying land ownership in Ghana, Kasanga (2002) attested that the allodial interest constitutes the highest interest accompanying land ownership especially agricultural lands. The practice of clearing of virgin lands earning usufruct interest for members of the lineage, are passed on to their generations (Tsikata and Yaro, 2011).

Again, Kasanga and Kottey (2001) espoused that the allodial title holders in the Upper West Region are the *tendamba* (First Settlers) who execute judicial, governance and land management functions; whiles individuals and families from the landholding group hold the 'customary freehold. The interests acquired are secure, alienable and inheritable. It is important to note that ownership of land governed by customary law is recognised in the article 11 clause 3 of the 1992 Constitution of Ghana.

Land that is vested in individuals by customary authorities is recognised and the rights to ownership of such lands are protected. Customary land rights are upheld through a lineage-based tenure system passed on to generation through inheritance and succession (Tsikata *et al.*, 2011). In Ghana, state laws influenced customary practices which is governed by succession under the customary system of inheritance. These include the patrilineal and matrilineal systems and influenced women's land rights significantly. This is corroborated by Kasanga and Kottey (2001) and Dery (2015) that inheritance and succession to land are determined by patrilineal systems in the northern Ghana.

Furthermore, Ownership of land often results in one claiming his/her rights associated with it. Ownership rights of land are grouped into two types; the primary and secondary type of ownerships (DFID, 1999). The former is gained by virtue of ancestral lineage or kingship, while the latter is a derived form of right gained from a primary right holder. In patrilineal communities, women have secondary rights to land. Both primary and secondary types of land ownership rights are very common to rural community dwellers in Ghana and Upper West Region in particular. It is also very vital and valuable to understand the gender dimension of land ownership when making comparisons across findings of women ownership and access to land. Both men and women can privately, collectively or jointly owned land (Doss, 2013). In

patrilineal networks in Ghana particularly the Upper West Region, marital status influences women tenureship to farm land (Bambangi *et al.*, 2013).

Apusigah (2009), Bonye *et al.* (2012), and Aasoglenang *et al*. (2013) affirmed the presence of complex cultural rights and responsibilities which impede women ownership to agricultural land. Culturally, people are of the view that women hold temporal rights to agricultural lands. Men, in their endeavour maintain their dominance in inheriting agricultural lands over women. The reason being that if women are permitted to inherit agricultural land that land will turn into the property of the spouse's family when she is married (Bonye *et al*., 2012). Agricultural land for this situation is not simply seen as a resource for agricultural production; however, is seen as power, riches, influence and control at the family level.

Kpieta *et al.* (2012) did not only identify the economic benefits land has but the spiritual value which is considered as a valuable asset and for that reason limits women ownership. Since women cannot make sacrifices to pacify the land, then they cannot own land. This is because making sacrifices to appease the land is the ascribed role for men. Women are considered as individuals who cannot be entrusted to manage a profitable resource like land. Also, women cannot own land because it belongs to the husband's family as confirmed in the works of Budlender *et al.* (2011).

The term patriarchal bargains in the work of Bhagowalia, Chen, and Shively (2007), draws our attentions to renegotiate and address patriarchal systems which affect women in different contexts. This led to the advocating for the introduction of Queen mothers in patriarchal society and the Upper West Region for that matter (Atuoye *et al.*, 2013).

From the above literature, especially Dery (2015); Kuusaana, *et al. (*2015); Aasoglenang *et al. (*2013); Bonye *et al. (*2012); Kasanga *et al. (*2001); it is clear that patrilineal inheritance among other things influenced women ownership and rights to agricultural lands. The case of

patrilineal inheritance which influenced land ownership rights has been generalised for the people in the Upper West Region including Wa West District by the Authors. However, not much have been said about the Matrilineal Birifor ethnic group in the Wa West District. Meanwhile, the Wa West District in the Upper West Region of Ghana is a mixture of patrilineal and matrilineal societies.

2.6 Access to Agricultural Lands/Land Tenure

Land tenure defines farmers' access to land resources. This influences the decisions farmers make with regards to the use of land (Clay, Guizlo, and Wallace, 1994). Women farmers' access to agricultural lands are governed within the land tenure system. The norms, rules within the institutions that guide the use of land play a key role regarding the use of land resources. Access to agricultural land have implications for agricultural development and as well as improving incomes of women farmers.

Northern Ghana and Wa West District in Upper West Region of Ghana vary from ethnic group to the other or one traditional area to the other. The same can be said about being allodial owners and that of settlers. Women access to agricultural lands is tied to allodial and settler status. Allodial owners are the representatives of either the skin or stool lands (Kuusaana, 2007). People of allodial decent have free access to agricultural lands and do not require to pay any token for the use of the land. Settlers are the ethnic groups whose settlements were conquered or they agreed to be protected by strong and powerful ethnic group. By this arrangement, they forfeit their allodial ownership to their lands as supported by the findings of Kunbour (2002). According to Kunbour, the *tendamba* of the Suuriyiiri clan in Wa conquered the *Lobis* (*Dagara*) who were the first settlers and drove them further westwards along the Black Volta River and eventually became the landlords. Many people in Wa generally refers to them as the *Lobis*

(*Dagara*) including Birifors, Daga-wiile, etc. They lost their position as first settlers (*tendaaba*) through conquest and are now being called settlers or migrants farmers.

Also, Kuusaana (2007) espoused that settlers are migrant farmers who by customary arrangements have lands allocated to them for farming. They pay token for the allocation of the land and annual royalties to the allodial owners to pacify the Tengan for good rains and harvest. These arrangements are peculiar in Wa West District regarding access to agricultural lands.

Women access to agricultural lands in Wa West District also vary from allodial owners to settler status. The dynamics of access to agricultural lands by women from the allodial owners to lands for farming equally varies from that of women from settler status. The allodial ethnic groups in Wa West are the Dorimon and Waala traditional areas. The settler ethnic groups are the Daga-wiile, Birifor, Dagaaba, etc. The Wa West District comprises of multi-ethnic groups and customary land tenure system is dominated mainly by Mole-Dagbani group as allodial owners.

Access to land is governed through land tenureship frameworks and in the view of Kasanga (2003); Bambangi, and Abubakari, (2013); Dery (2015); Bonye *et al.* (2012); Kuusaana *et al.* (2013); land tenure relationship, whether legally or customarily defined, exist among people. Rules of tenure define how property rights in land are to be appropriated using frameworks to figure out who can utilise what asset, for to what extent, and under what conditions. As per Ghana's 2010 Population and Housing Census, 51.3% of the populace from 18 years and above is rural; most of whom exclusively rely upon agricultural land for their sustenance (GSS, 2012). Land control has throughout the years continued the chieftaincy framework in Ghana. From the colonial days to the present, chiefs have transparently challenged the attempts by progressive governments to take control over lands in this country (Apusigah, 2009; Kasanga *et al.*, 2001). Three legal land systems are recognised in Ghana involving customary, statutory, and common practice.

The rules guiding land tenureship arrangements is normally characterised by customary land tenure system. It is largely unwritten in nature but with flexible norms associated with a defined traditional area. Also, it is based on first clearance and conquest. Customary land management system is generally overseen by traditional authority like chief, tendana and family head (Kuusaana, 2007). Through patrilineal or matrilineal system of inheritance frameworks, communities, families and persons have the rights to use land for agricultural purposes. Agricultural productivity has become restricted moving away from traditional family land tenure system to share cropping and rents in southern Ghana while payment of royalties is case in the Upper West Region including Wa West District (Kasanga *et al.*, 2001).

2.7 Processes of accessing agricultural lands by women farmers

Kasanga (2003) hypothesised that one of the main ways by which women acquire agricultural land is through marriage, inheritance, lineage, or by contractual arrangements. The establishment per customary principle is that, all subjects of the stool/skin and lineages, regardless of sex, have inalienable privileges of access to the land held by the stool or family head in trust (Cotula, 2007). This interest, to which all subjects are entitled, is alluded to as the usufructuary interest or customary freehold. As indicated by Cotula, women access to the usufruct is influenced by various factors including marital residence, land shortage, production relations and sex when given land to women among certain groups. The most crucial determinant being the practical gender needs associated with men and women in both patrilineal and matrilineal societies.

Again, Cotula, Vermeulen, Leonard, and Keeley (2009) described some of the ways by which women are challenged access agricultural lands because of rituals associated with land. Furthermore, Cotula (2011) asserted that one of the most significant traditional channels for women to own land is the transfer of land as gifts from families or life partners. Women are

privileged to benefit from such transfers. But evidence on the extent to which families take advantage of this option to give women control of land is lacking. Furthermore, the practice is subject to land availability and the benefactor's personal wealth (Cotula, 2011). It appears that in most cases it is the contribution that a wife or female relative has made to the benefactor's wealth that prompts the gift of land, which supports the fact that this option is not generally available to everybody.

From review of literature, it is very clear that a number of studies have been conducted on the state of women access to agricultural land in upper west region. However, little is said about the processes of accessing agricultural lands by women farmers in Wa West district**.** This study sought to fill this knowledge gap.

2.8 Land Accessibility among Women Farmers in Northern Ghana

Akudugu *et al.* (2009) indicated that women held land in only 10 % of Ghanaian households. In spite of women's contribution to household food stock, there still exist disparities between men and women access to agricultural land (Amanor, 2010).

According to Amanor (2010), the most vulnerable population in the agricultural sector is the small holder farmers and women are at the receiving end of it. Land use and allocation for agricultural purposes is determined by men. At the Family and household levels, men decide for the allocation and use of land by its members. Various factors including tenureship system of land, patriarchal dominance, high population pressure and expansion of the market influences women tenureship to land in developing countries (Bonye *et al.*, 2012; Duncan *et al.*, 2004).

2.9 Soil fertility management practices

Soil fertility management techniques differ among different ethnic groups (Adjei-Nsiah, Saïdou, Kossou, Sakyi-Dawson, and Kuyper, 2006). According to Adjei-Nsiah *et al.* (2006),

natives of Wenchi now in the Bono East Region who are matrilineal use long-term soil fertility management strategies such as bush fallowing and crop rotation. Adjei-Nsiah *et al.* (2006) also averred that migrant farmers in Wenchi use short term soil fertility management strategies like cover cropping, chemical fertilizer, mixed cropping, etc. When land tenureship is insecure, farmers are not motivated to such long-term soil management practices

According to ISSER (2003) the utilisation of animal dropping, and others are among the long-term soil management practices which is highly and commonly practised in Ghana; but at first it was viewed as waste (Quansah, 2001). Jayne (2014) posited that women farmers in Northern Ghana use relatively more manure from livestock such as cows, goats and sheep. This is consistent with Donkoh, and Awuni (2011) that there is high utilisation of local soil fertility management practices including animal droppings among women farmers to improve the soils. The use of animal manure as a fertilizer seems to be quite widespread in West Africa. In addition to the use of animal manure, compost also helps to improve soil structure, water holding capacity, soil stability and biological activities (Headey, 2014). Different type of cropping systems is another type of soil fertility management technique including crop rotation and crop residues with some limited input of artificial fertilizers are also used by farmers (IFAD, 2005). However, as long as nutrients are supplied at very low costs, the farmer needs more planting seasons to reap full benefit from its application.

Meanwhile, Kassie (2017) said women farmers in rural areas in developing countries failed to actively involve themselves in soil fertility management practices. This is because women farmers in the region cannot freely choose soil fertility improvement methods without prior consent of their husbands or land owner who controlled the land. Factors such as age, farm size, level of education, and cost of technology influences the type of land management practices that women farmers adopt which in turn affects productivity (Alidu, 2015; Dowuona-

Hammond, 2003). Male farmers have the leeway over women farmers with regards to the selection of soil fertility improvement methods (Fakoya *et al*., 2007).

According to FAO (2011) the majority of the poor in rural communities are among women farmers who contribute to the household food stock, yet are constrained by high cost of some modern soil fertility management technologies. For instance, in the Northern Regions of Ghana most women found it difficult to access modern technologies due to the high cost (Agana, 2012). Amidst these challenges, the media plays an important role in creating awareness about the adoption of modern technology and agricultural information in general (Muniru, 2013).

Women farmers' access to agricultural land has a positive correlation with soil fertility management practices they use (Akudugu, Guo, and Dadzie, 2012). It assists farmers to use innovations to increase agricultural production (FAO, 2011). Regarding the number of female Agricultural Extension Agents (AEA), out of the 2,068 AEAs in Ghana in 2013, only 276 were females. It is indicated that most AEAs concentrate on male farmers (FAO, 2011; Fofie, 2013). Female farmers are likely not to get equal access and services from AEAs in Ghana, particularly in rural communities. Notwithstanding the aforementioned challenges, Muniru (2013) in his study regarding women access to agricultural land in the Upper East and West regions of Ghana indicated that both male and female had access to agricultural lands.

According to Fofie (2013), organisations should concentrate on deepening the facilitation on interventions to address socially accepted roles such as land tenure system that negatively affect women rather working to bridge gender inequalities (2013). The interventions concentrate on practical and strategic gender needs. Furtherance to assertion, Fofie (2013) outlines the need to concentrate and address issues of practical and strategic gender needs of women in their interventions. Meeting the strategic needs of women in interventions includes challenging the gender division of land access labour, power and control which is such an important ingredient

in achieving equity. The concentration on interventions and programmes to focus on both practical and strategic gender needs, has a great potential to influence gender disparities or address inequalities in access to agricultural land (Goldstein, 2008).

This study explored the type of soil fertility management practices women farmers use on their farms in Wa West District of the Upper West Region of Ghana.

2.10 Challenges women farmers face in accessing agricultural lands

The below are the challenges women farmers face in accessing agricultural land in developing countries like Ghana:

2.10.1 Limited access to and control over land

Studies have demonstrated that one of the primary difficulties for female farmers in developing nations is the security of tenureship of land (Kranjac-Berisavljevic, 2015). According to Duncan *et al.* (2004), farmers need adequate access to agricultural resources-women have less access to agricultural resources than men. This is fundamentally because of statutory enactment and standard laws and practices that limit their privileges to land. For example, in Ghana, in spite of the fact that there are constitutional arrangements that ensure the rights of women with respect to land, land is held in trust by the leaders of the stool/skin/family, who are mostly men (Kranjac-Berisavljevic, 2015). Duncan *et al*. (2004) attributes this to the Ghanaian custom as indicated by which men are seen as leaders. In most Ghanaian communities like that of the Wa West District in the Upper West Region, power within the family is additionally ruled by men through the progression of male centric command over outer family issues, with innate power appointed to older men (Kranjac-Berisavljevic, 2015).

In Ghana, particularly in the Wa West District of the Upper West Region land titles are normally registered in male household head's name, paying little respect to how much women have

contributed to the purchasing of that land. Ghanaian women are accordingly disadvantaged in both statutory and customary land tenureship frameworks (Kevane, 2004). Indeed, even where existing enacted legislation made provision for the protection of women rights to property, absence of lawful information and feeble execution may constrain women ability to practice these rights (Kuusaana, 2007).

In nations where the laws on ownership and inheritance have been transformed to favour women, women still do not have more rights to land, as tradition and lack of information act as barriers (Kuusaana, 2007). Marriage is the most significant source of access to land for Ghanaian women, and any separation or divorce may affect women access to land without regards to the development made on the land (Kuusaana *et al.*, 2015). Women are disadvantaged in the allocation of lands for reasons that are associated with marriage. Women lose their privileges to control land after marriage. In Ghana, much the same as in Tanzania and Zambia, women only have access to land through male relatives and most land belongs to the lineage (Meinzen-Dick, Quisumbing, Doss, and Theis, 2017).

An investigation attempted by Leonard, and Toulmin (2000) revealed that majority of the decisions about the utilisation of land are made by male spouses. Women by and large access land through marriage, yet when the man dies, the man's family take his land leaving the widows and orphans (Lowder, Skoet, and Singh, 2014). Widows most often than not have no right to sell land and upon separation, women's families returned the bride price and the divorcees are sent away without marital property (Lowder *et al.*, 2014).

2.10.2 Limited financial resources and access to credit

In Africa, women are among the low-income bracket. Majority of economically active women work in the informal sector and have restricted access to the family resources especially financial resources (Taylor and Boubakri, 2013). This translate to women's inability to have

enough savings resulting in their inability to access farm land by renting. Again, women also need access to credit because of their low degrees of savings (Manfre and Rubin, 2013). Having access to financial services allows women to procure inputs, and also rent farm land for agricultural purposes (World Bank, FAO and IFAD, 2009).

2.10.3 Cultural Barriers and patriarchal dominance

Women face difficulties, in particular cultural limitations in having secured tenureship to agricultural lands. In patrilineal communities in Ghana, women have insecure tenureship to farm lands (Duncan *et al.*, 2004; Agana, 2012). Also, it is argued that men play the spiritual role by making sacrifices to the land. This is identified as one of the factors which limits women's access to agricultural fields. Again, land is deemed a valuable asset within the patrilineal system and can only be kept and protected by men in the cultural framework (Kpieta *et al.*, 2012).

2.10.4 Social Relations and Access to Land

There are situations where a woman is permitted to access farm land after the demise of her husband. Meanwhile her use rights to the land are temporal and it depends upon the widow's relations she has with her in-laws (Duncan *et al.*, 2004).

2.11 Relationship between security of tenure to agricultural lands and soil fertility management practices

Women face several challenges in agricultural production, most importantly insecure land tenureship (FAO, 2010). Women's insecurity of tenureship to agricultural land is also likely to affect its utilisation (Aasoglenang *et al.*, 2013). Buah-Kwofie, Bempah, Enimil, Blewu, and Agyei- Martey (2011) asserted that, insecurity of land tenure is among the constraints facing women farmers who intend to invest in soil fertility management practices. Women who have

secured tenureship to agricultural land are able to adopt soil fertility management practices which result in higher output (Bonye *et al.*, 2012). Thus, security of tenure to land may influence farmers' decision to make long term investments or use certain soil fertility management practices which could improve the soil and enhance agricultural productivity. This is evidence in the work of Abakisi (2018) that the spontaneous taking back of land by husbands/owners affect the investments that women would make to improve soil fertility. This is substantiated with IFAD (2015) report that women are able to better manage land individually and collectively if they are strengthened to have secured tenure to agricultural lands.

By and large, women farmers who have secured tenureship to agricultural land adopt soil fertility management practice because they spend their money, labour and time to invest on the land. Therefore, Land tenure security is an important component in effective land management and among other things. Secured tenureship to agricultural land can reduce the incidence of food insecurity.

From the literature review, little is said about the relationship between women security of tenure to agricultural land and the type of soil fertility management practices being adopted. The decision for women to invest in soil fertility management practices depends on the security of tenure to farm land. However, women farmers will have to adopt some soil fertility management practices despite the insecurity of tenureship to farm land. This will enable them manage the degraded farm lands in the study area. The decision for adopting a particular type of soil management practice will be influenced by the tenure security. This therefore justifies the need to establish the relationship between security of tenure to agricultural lands and soil fertility management practices.

2.12 Summary of literature

The challenges women farmers in Wa West district face in accessing agricultural land further influence the processes of accessing agricultural. The theory of patriarchy used in this study sees gender and power relations influencing women tenure security to agricultural land in the Wa West district as depicted by the conceptual framework. Thus, the decision making processes, roles associated with sex are defined by society. So, it is men's role to accessing land for any purpose including agriculture. Decision making regarding land in the traditional palace is taken by men. Security of tenure to agricultural land among women farmers also influences the type of soil fertility management practices that women adopt in Wa West district.

Also, social relation such as marital status, economic status, and educational level play a major role of women accessing land and holding on to the use of land for agricultural purposes. In addition, the cultural orientation including beliefs system among the people in the study area, demonstrate that women do not own land but can only access land for agricultural purposes. This is evidence in the conceptual framework, the theory of access. Women can only access land for agricultural purposes but cannot own it.

The legal arrangement such as the Ghana National Land Policy and the Land Administration Project seek to influence cultural orientation of the land administration system to include women. These create a platform for empowering women in the land governance system. Hence the theory of empowerment clearly demonstrate in the conceptual framework of the study.

In conclusion, Figure 2 presents a summary of the need and direction for the current research in the context of the existing literature.

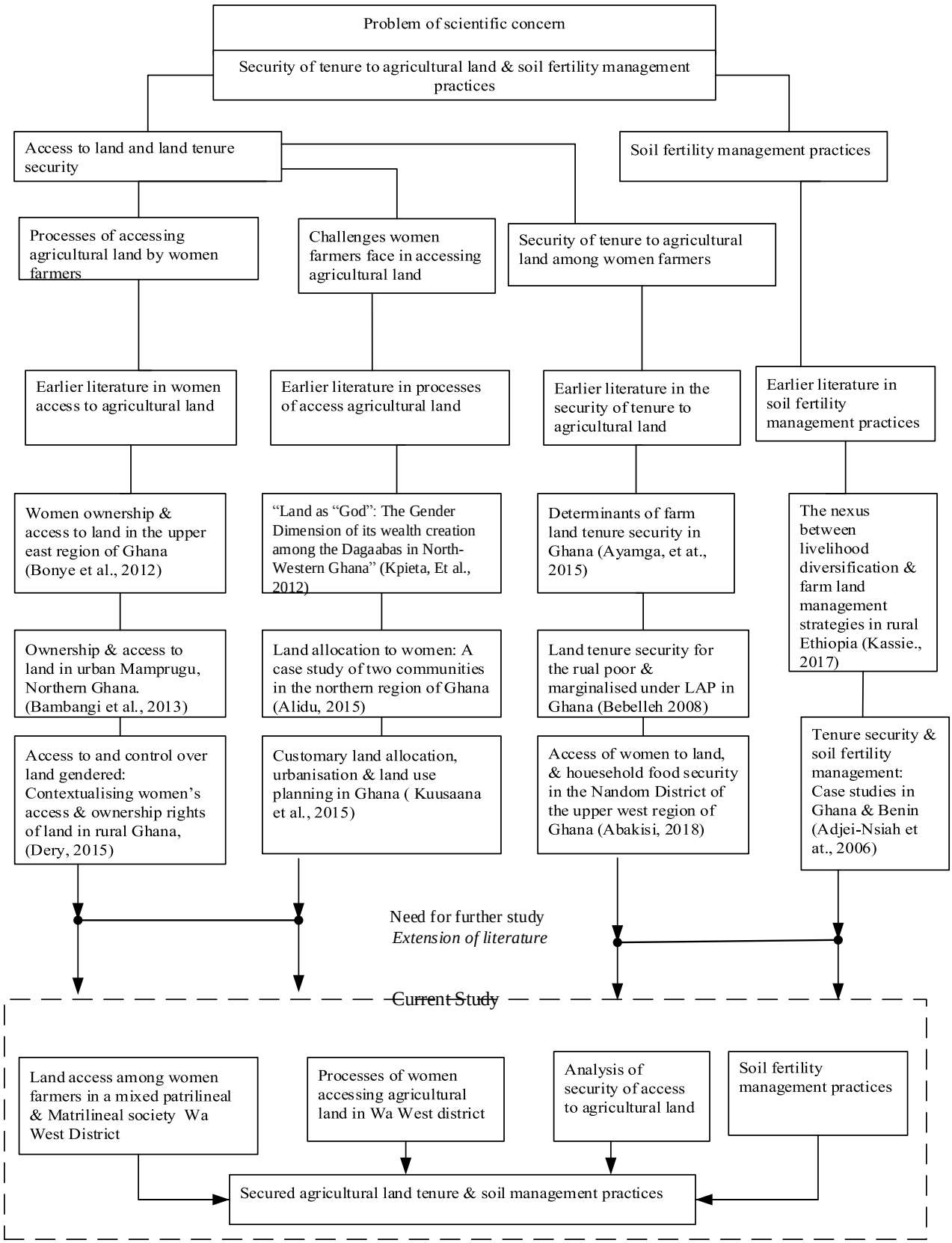

Figure 2: Summary of literature

Source: Adopted and modified from Aabeyir (2016)

CHAPTER THREE

STUDY AREA AND RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the study area and methodology of the research. It provides a framework for the methodology of the study. This includes data sources, population and sample size selection of participants, the data collection methods and its instruments, analysis and data management, reliability and validity of instrument and ethical considerations.

3.2 The Study Area

The Wa West District of the Upper West Region of Ghana was where the study had been conducted. It lies between longitudes 2º 50’ W and 2º 15’ W and that of latitudes 9º 20’ N and 10º 15’ N (Figure 3). The study area shares boundary with Nadowli-Kaleo District to the north, Sawla-Tuna-Karlba District to the south, the Republic of Burkina Faso to the west and finally Wa Municipal to the east. The district has a population of 81, 348 as at 2018 and has projected growth rate of 2.5% (GSS, 2012).

The vegetation of the district is dominated by shea, kapok, baobab, and dawadawa trees. The types of soils in the study area are laterite, sandy and sandy loam (savannah ochrosols); generally poor in organic matter and nutrients as a result of the absence of serious vegetative cover due to bush burning, overgrazing, over cultivation and protracted erosion.

Despite the poor soils and protracted erosion, 91.6 % of households in the district are engaged in agriculture. Many of the households in the study area (97.2%) are engaged in crop farming. Poultry (chicken) dominated all the animals that the people in the district are rearing constituting 33.4 % (GSS, 2012).

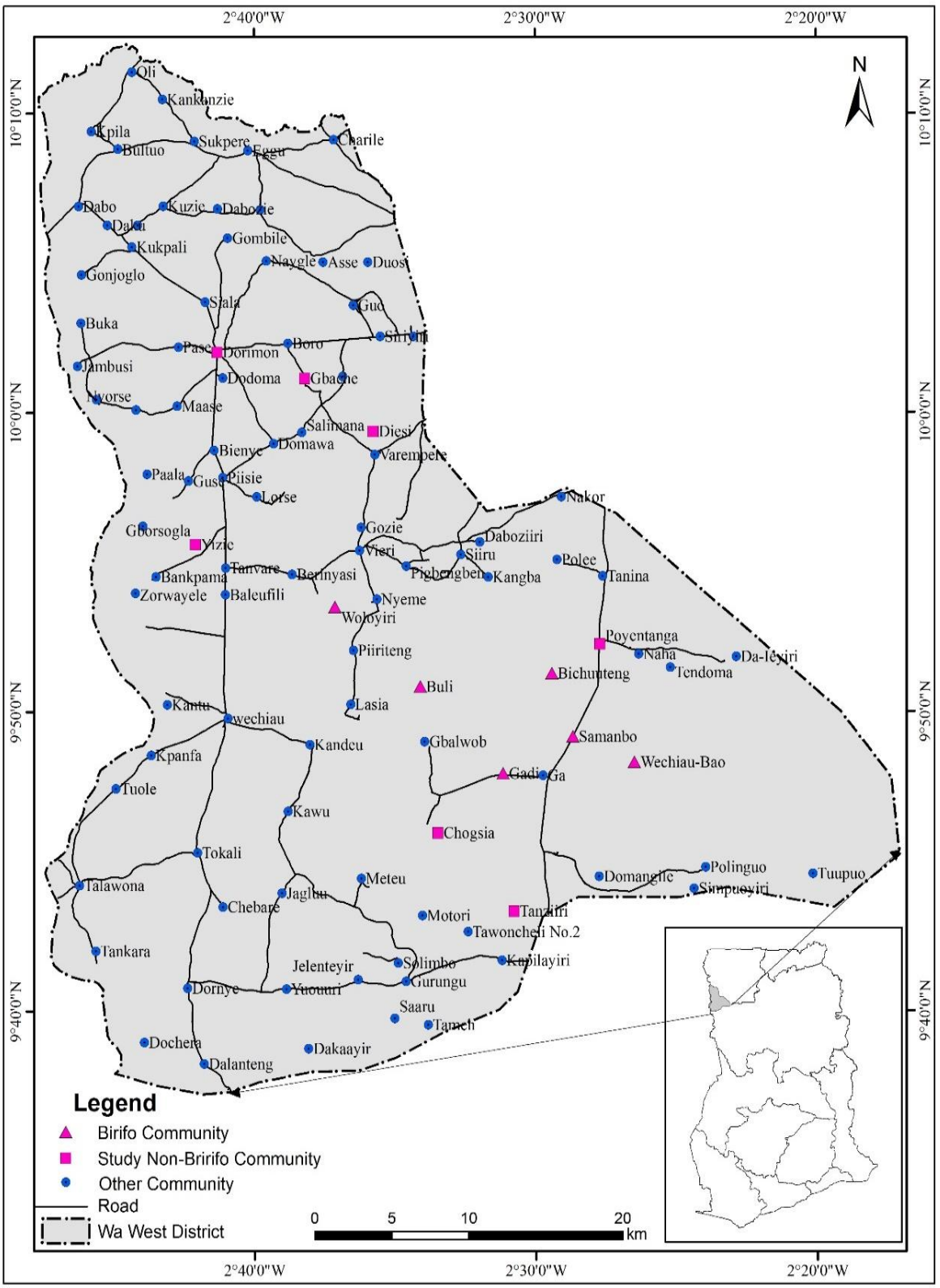

Figure 3: Map of Wa West District

Source: Author's Construct (2019)

The Wa West District has two rainy seasons, the wet and dry seasons. The South-Western Monsoon winds which move from the Atlantic Ocean bring downpours for the period between April and August, while the North-Eastern Trade winds from the Sahara Desert bring the long dry season starting from November to March. The mean yearly precipitation fluctuates somewhere in the range of 840mm and 1400mm (GSS, 2012). The greater part of the precipitation occurs between June and September. One feature of the rainfall pattern is that it tends to occur in heavy downpours thus, resulting in run-offs rather than soil moisture retention. The study area has four (4) humid months (June - September). The humid period is favourable and supports the cultivation of crops such as millet, guinea corn, yam, groundnuts and beans. However, the irregular and unreliable rainfall patterns affect crop yields (GSS, 2012). The issues regarding security of tenureship to agricultural land among women farmers coupled with the poor organic matter as a result of the less vegetative cover caused by bush burning, overgrazing, over cultivation and protracted erosion informed the choice of the district as the study area.

3.3 Socio-Cultural and Political Structure of the people in the study area

The Wa West district has two governance systems. Thus, the decentralised governance system and traditional governance system working parallel to advancing the development of the district. The decentralised governance system has five area councils made up of Dorimon, Ga, Gurungu, Vieri and Wechiau. Also, the traditional governance system of the district is made up of two paramountcies: Wechiau and Dorimon with titles ‘Wechiau Naa’ and ‘Dorimon Naa’ respectively. The District is ethnically dominated mainly by Mole-Dagbani group, which comprises the Waalas, Dagaabas and Sissalas with other minor ethnic groups (GSS, 2010). The Birifors are classified to be part of the Dagaaba ethnic group. The researcher for the purposes of this study regrouped the ethnicity as Birifors and Non-Birifors (Walaas, Sissalas, Dagaabas).

The people of the Birifor is an acephalous group. Politically, they are not into the building of kingdoms. They are less centralized. They are easily defeated by a more organized group politically (Kunbuor, 2002). As a result of that they are scatted and settled across Burkina Faso, Côte d'Ivoire and Ghana. In Ghana, the Birifor ethnic group are located in the northern part i.e. Wa municipality, Lawra Municipality, Wa East District, and Wa West District in the Upper West region. Also, they can be found in Sawla-Tuna Kalba and Bole Municipal Assemblies in the Savanna Region respectively (GSS, 2010).

In the Wa West district, Christianity is the largest religion with 38.6% of the people. Also, Traditionalists are the second dominant religion with 29.5% followed by Islam with 23.5% in the study area. The traditionalists have 30.1% of male adherents than 28.8% of female (GSS, 2010). Some cultural practices and artefacts among the Birifors included the marriage practices (use of cowries, cattle etc. to pay bride prize), settlement pattern and structure of houses, use of xylophone at funerals and festivals, among others (Kuba and Lentz, 2002). The Birifors are polygynous. A Birifor man can marry one to at least four wives depending on his wealth status (Kundlach, 2012).

The extended family system is common in the Wa West District. Both the Birifors and Non-Birifors ethnic groups practiced largely the extended family system. The Nuclear families constitute 22.1% of household structure while the extended families constitute 54.3% in the Wa West district (GSS, 2010). The succession to the throne in the Wa West district among the two paramountcies who are Non-Birifors and their sub-devision is patrilineal whilst the Birifors practiced the matrilineal system of inheritance. They Birifors hold the sub-clan ("bal") system in high esteem. There are four sub-clans among the Birifors and they include "Some", "Da", "Heame" and "Kaboole" (Kundlach, 2012). The 'bal" system follows strictly the mother line and the Birifors inherit along the sub-clan system. Inheriting of widows and their children is very common and is matriarchal in nature.

3.4. GROW Project

The Greater Rural Opportunities for Women (GROW) Project was a project implemented by Mennonite Economic Development Associates (MEDA) funded by the Canadian International Development Agency (CIDA). MEDA implemented the GROW project in Northern Ghana through local Non-Governmental Organisations (NGOs) referred to by the Project as Key Implementation Partners (KFPs). The GROW project was a six (6) year project which ended in 2018 with implementation facilitated by the KFPs. The GROW project was implemented in 8 out of the 11 districts in the upper west region which the Wa West District was among the beneficiaries' districts where the study was conducted (MEDA semi-annual report, 2015). The GROW project sought to promote women into agriculture and ensure they have nutritious food through soybean cultivation. Ninety-two (92) communities with a total population of 5471 women farmers are beneficiaries of the GROW project in Wa West District (MEDA semi-annual report, 2015). The GROW projected opened up to a lot of women farmers to take advantages of the capacity building training and the financial support to increase farming activity in the area. Even though access to agricultural land is an important tool for agricultural production, the processes of security of tenure to agricultural land among women farmers in Wa West District remains a hurdle.

3.5 Philosophical Underpinnings

This study used the philosophical world view of pragmatism as the underpinning philosophy of this research. The pragmatist philosophical approach to research allows the researcher to use mixed research method to develop research questions that can be answered by integrating the results of quantitative and qualitative research (Creswell and Plano Clark, 2011). The researcher holds a shared belief in methodology in addressing a research problem (Morgan, 2007). The mixed methods researchers are able to choose the combination of quantitative and qualitative

methods to answer their research questions (Johnson and Onwuegbuzie, 2004). This justifies why the study adopted mixed qualitative and quantitative approaches and applied them concurrently.

3.6 Research Design

A concurrent mixed method design was adopted for this research. The mixed method was adopted because the researcher would generalise the findings to a population as well as develop a detailed view of the meaning of a phenomenon or concept explained by individual respondents as supported by Creswell (2014). This facilitated confirmation, corroboration or cross-validation of findings (Creswell, 2014; Terrell, 2012). Hence, the findings of the processes of women access to agricultural land vis-a-vis the soil fertility management practices women farmers employ for agricultural production in Wa West district would be generalised whiles the detailed view of women access to agricultural lands was explored. In these situations, collecting both closed-ended quantitative data and open-ended qualitative data proves advantageous. This supported the work of Creswell (2014) that research design is the domain of generalization that indicates whether or not the data obtained could be interpreted to mimic a different situation.

A cross-sectional survey was used as a design for the study. Cross-sectional research includes utilising various groups of individuals who differ in the variable of interest but however share other similar characteristics, such as socioeconomic status, educational background, and ethnicity. Cross-sectional research studies are based on observations that take place in different groups at one time (Creswell, 2014). Hence there is no room for experimental procedure, so no variables are manipulated by the researcher. Rather than performing an experiment, cross sectional survey demands the researcher to simply record the information observed in the group s/he is examining (Creswell, 2014). This was the basis for this study by way of examining how

access to agricultural lands affect soil fertility management practices among women farmers in the Wa West District of the Upper West Region of Ghana.

Moreover, both quantitative and qualitative data were collected simultaneously and integrated during analysis. Quantitative data were collected using questionnaires from the number of persons involved in what king of processes women go through in accessing agricultural lands. Quantitative data were also collected from the number of women who face challenges in accessing agricultural land. The data on the number of women who practise various soil fertility management practices were also collected.

Qualitative data was captured using observation checklist, Focused Group Discussion and Key Informants Interview (KII) guides with key stakeholders to collect information on people opinions and views about the processes of women access to agricultural lands in Wa West district. Also, people opinions regarding the challenges of women access to agricultural land and whether the challenges contribute to insecure tenure and influence the choice of soil fertility management practices among women farmers in the GROW project. Stakeholders such as family heads, Queen Mothers, Male Gender Activists (MGA), *Tendaanas*, Chiefs, Gender Coordinators of Key Facilitating Partners (CAPECS and CARD) of the GROW Project constituted the Key Informants interviews and focus group discussion. Finally, the Area Manager, Gender Coordinator and the Agricultural Specialist from MEDA who are the GROW Project Holders were also contacted for the Key informant interview.

3.7 Data Sources

The research sourced information from both secondary and primary data.

3.7.1 Secondary Data

Processes of accessing agricultural lands by women farmers, type of soil fertility management practices women farmers use, challenges Women Farmers face in accessing agricultural lands and relationship between access to agricultural lands and soil fertility management practices use by Women Farmers as obtained from research works written by authors such as Kassie (2017); Dery (2015); USAID (2016); Kuusaana *et al. (*2015); Alidu (2015); Ayamga *et al. (*2015); Namubiru-Mwaura (2014); Perez *et al. (*2014); Bambangi *et al.* (2013); Kuusaana *et al. (*2013); Bonye *et al.* (2012); Agana (2012); Bebelleh (2008); Mutangadura (2004); and Kasanga *et al. (*2001).

Also, secondary data on the list of beneficiaries' communities and their respective women farmers on the GROW project was collected from MEDA and the Key Facilitating Partners NGOs; CAPECS and CARD.

3.7.2 Primary Data

The primary data was the information taken solely from women farmers in the field as first-hand data.

3.8 Sampling

The target population for this study constituted registered women farmers of the GROW Project in the Wa West District. The GROW Project in the Wa West District has a total population of 5471 women farmers.

Multistage sampling, was adopted. First stage involved the selection of beneficiary communities. The 92 GROW communities in the district were stratified into patrilineal and matrilineal ethnic communities. Thus, of the 92 GROW project communities in Wa West

District, 42 constitute the matrilineal (Birifor) ethnic communities while the rest of the 50 constitute the patrilineal ethnic communities. Fifteen percent (15%) of the 92 GROW project communities was computed as the sample size for the selection of the communities. This resulted in 14 communities, which were randomly selected and distributed equally between the two lineages. The 15% is representative enough for the generalization of the findings since the standardised percentage for generalisation ranges from 10% to 20% (Kombo and Tromp, 2006). The second stage involved the selection of the GROW farmers in each of the selected GROW communities. The selected 14 GROW communities had 868 beneficiaries' farmers. Sixteen percent (16%) was applied to 868 beneficiaries to compute the final sample size of 140 for the study.

Thirdly, a proportion of 16% was applied to each of the 14 communities to calculate the number of women to be selected (Table 3). Finally, random sampling technique was used to select respondents for the survey. The cumulative sample size of the 14 communities is 140 respondents.

Table 1: Proportions of beneficiary farmers allocated per community

SN	Sampled Communities	Linage	Population of beneficiary farmers	Proportions
1	Wechau-bao	Biriforr	102	16
2	Buli	Biriforr	57	9
3	Bichuteng	Biriforr	39	6
4	Woloyiri	Biriforr	100	16
5	Deriguoyiri	Biriforr	50	8
6	Gadi	Biriforr	111	18
7	Samanbo	Biriforr	68	11
8	Poyentanga	Non-Biriforr	37	6
9	Gbache	Non-Biriforr	57	10
10	Chogsia	Non-Biriforr	103	16
11	Diesi	Non-Biriforr	19	4
12	Dorimon	Non-Biriforr	51	8
13	Tanziiri	Non-Biriforr	29	5
14	Yizie	Non-Biriforr	45	7
TOTAL			**868**	**140**

Source: Author's construct, 2019

The Researcher purposively selected GROW communities, respondents for Key Informant Interviews (KII), and Focus Group Discussion (FGD). Key informants and discussants in the FGD were selected based on their knowledge on the process of accessing agricultural lands and involvement in the GROW project.

3.9 Summary of methodology

The data collection and analytical methods are summarized in (Table 2) below. Data collection using the mixed method approach and it includes surveys, interviews, and focus group discussions. The mixed method design was used for the study. Also, the mixed method approach was used in order to access respondent's experiences on processes of accessing agricultural lands by women farmers, type of soil fertility management practices women farmers use and challenges Women Farmers face in accessing agricultural lands.

Through interviews and focus group discussions, the researcher was able to obtain the stakeholders awareness level, opinions, feelings, values, attitudes, perceptions and practices regarding access to agricultural land and soil fertility management among women farmers.

Table 2: Summary of methodology

Research Objectives	**Variables**	**Indicator(s)**	**Research Design**	**Sources of data**	**Sampling**	**Methods of data collection**	**Data analysis**
Processes of access to agricultural lands	Inheritance system, Beliefs system, community/family Social status, Economic status, Educational background, Family relations	Type of inheritance, Type of religion, Social standings Educational status	Mixed method • Concurrent	**Primary sources** • Women farmers • NGO staff • Traditional authorities • Community and family heads **Secondary sources** GROW project reports	•Multistage ✓ *Selection of communities* ✓ *Selection of respondents* • Purposive ✓ *Selection of GROW communities* ✓ *Key Informants* ✓ *Focus Groups Discussants*	**Quantitative** • Survey **Qualitative** • FGD (4 discussions- 43 discussants) ✓ *Lead Farmers(women)* ✓*Chief, Tendaana, Family heads, Magazias* • KII (13) ✓*(NGOs Staff, AEA, Chief, Tedaana, Male Gender Activist, Magazia, Family head)*	Quantitative • Descriptive statistics • Chi-square Qualitative Thematic analysis
Challenges of Access to agricultural land	Inheritance, Belief system, Gender, Economic constraints, marginal lands, legal land policy, Educational level	Type of inheritance, Type of religion, Kinds of economic constraints					
Soil fertility management practices	Soil fertility management Practices	Number of soil fertility management practices					
Access to agricultural land & soil fertility management practices	Tenure Security, Soil fertility management practices	Characteristics of security of tenure (secured and Insecure), Types of soil fertility management practices					

Source: Author's Construct (2019)

3.9.1 Survey

Questionnaires were used as the main research instruments to collect data from women farmers who are beneficiaries of GROW Project in Wa West District for it would be easy to use large number of subjects, 140 respondents were selected for the study. A mobile application software was (Survey CTO version 2.50) designed to administer the questionnaire. Questionnaire (both close ended and open ended) were administered to the respondents through face-to-face encounters using a smart mobile phone device. Data was uploaded to the main server. It is easy and effective with regards to time management, minimises human errors like manipulating the questionnaire administration process. The survey CTO mobile application has trackers like automatically recording the GPS co-ordinates, audio voice recorder, time tacker, and other functions to ensure that the data collection protocol is followed to the later.

3.9.2 Key Informant Interviews

The interviews used in this study were guided by mainly open-ended questions arranged by thematic order: for example, how do women farmers access land for agricultural purposes, how do women farmers manage soil fertility, what are the challenges women farmers face in accessing agricultural lands and how does access to agricultural land influence soil fertility management Practices use by women farmers? The researcher conducted interviews with thirteen (13) key informants. The researcher adopted this method because MEDA and its KFPs provided the researcher in-depth information on the processes and challenges of the GROW project women beneficiaries farmers go through in accessing agricultural lands. The AEA also provided information on the soil fertility management practices women farmers use in the district. Finally, the traditional authorities, queen mothers and the family heads provided detailed information to the

researcher since they have deeper understanding of the processes of women access to agricultural lands, inheritance issues that affect women access to land, and among others. Table 3 below summarised the respondents of the key informant interview.

Table 3: Summary of Key Informant Interviewees

Key Informants	**Sex**		**Total**
	Male	**Female**	
Gender Co-ordinators from KFP organisations (CAPECS and CARD)	2	0	2
MEDA Staff	2	0	2
AEA- MoFA, Wa West District Office	1	0	1
Chief	1	0	1
Tendaana	1	0	1
Queen mothers	0	2	2
Male Gender Activist	2	0	2
Family Heads	2	0	2
Total	**11**	**2**	**13**

Source: Author's Construct

3.9.3 Focus Group Discussions (FGDs)

Four focus groups discussions were organised comprising 43 discussants taking part in all the discussions. Eleven (11) discussants participated in 3 FGDs while 10 discussants took part in 1 FGD. This is within the standardised range of 6 to 12 people per discussion (Mulwa, 2008). This enabled the researcher to have management control over the discussants per FGD.

One FGD was held at Gadi community (Birifor) and the other at Chogsia community (Non-Birifor) involving 22 Lead Farmers of the GROW project. The lead farmers were selected to constitute the

FGD because they have in-depth knowledge of the project and also served as the interface between the GROW project implementation team, the community and their respective groups. Also, two of the focus group discussions were organised. One FGD was held at Wechau-bao community (Birifor) and the other at Gbache community (Non-Birifor) involving family heads, community leaders, and other people who are knowledgeable in the traditions, and processes of women access to agricultural lands. In all, 43 discussants took part in the 4 FGDs. This method was used by the researcher to allow Discussants debate on women access to agricultural lands, security of tenure and the relationship of secure tenure and the choice of the type of soil fertility management practices.

3.10 Data Analysis

3.10.1 Quantitative Data

Survey data was edited and coded. This is where data was examined for errors and omissions corrected where necessary and possible. In the coding process, data was organised into categories after which, numerals were assigned to each item before entering them into the computer. After entering using SPSS version 21 programme, the computer was used to generate quantitative results including the percentages, frequencies, and chi-square test.

Chi-square test was used to analyse the relationship between security of tenure to agricultural lands and that of soil fertility management practices. Security of tenure to agricultural land is characterised by the following; clear terms of access, specified duration of access, no interference with access, planting of trees, and no restriction to any types of crops to be grown buy the user. This study considers secured tenure to agricultural land if at least three of the characteristics are met. Again, there is insecure tenure if at most two of the characteristics are met. The following

hypothesis are used to test the association between the security of tenure to agricultural lands and that of soil fertility management practices at 5% significance level.

H_0: There is no association between security of tenure to farm land and soil fertility management practices.

H_1: There is an association between security of tenure to farm land and soil fertility management practices.

Also, some background characteristic such as age, and farm size of respondents and the association between soil fertility management practices. The chi-square test was used to analyse the above-mentioned variables in order to understand whether there is an association between the variables.

With regards to the association between age and soil fertility management practices, the hypothesis below is used to test the association at 5% significance level.

H_0: There is no association between age and soil fertility management practices.

H_1: There is an association between age and soil fertility management practices.

Finally, with regards to the association between farm size and soil fertility management practices, the hypothesis below is also used to test the association at 5% significance level.

H_0: There is no association between farm size and soil fertility management practices.

H_1: There is an association between farm size and soil fertility management practices.

3.10.2 Qualitative Data

Qualitative data were examined for errors and omissions after which, corrections were made accordingly. Data were organised into classes/categories in relation to the themes/objectives of the study.

3.11 Validity of Instrument

The face validity of the questionnaire was established with the help of an expert in agricultural land and the model women farmers of the GROW Project. These experts helped to validate the content of the questionnaire and correct elements of ambiguity in the instruments before it was pre-tested. They deemed it suitable for gathering information on respondent's views on how access to agricultural lands affect soil fertility management practices among women farmers. This helped to improve the content validity of the instrument, because their collective judgments were used to establish congruence between all of them.

3.12 Reliability of Instrument

With regards to the reliability of the instrument, a pre-test of the instruments was carried out. Twelve (12) women farmers who shares similar characteristics with the sampled were chosen to respond to the pre-test survey questions. According to Sheatsley (1983) and Sudman (1983), at least 12 to 50 respondents are enough to pre-test a questionnaire before full scale administration of the questionnaire for any study. The main purpose of the pre-test was to verify that the target audience understands the questions and proposed response options as intended by the researcher, and is indeed able to answer meaningfully (Perneger, Courvoisier, Gayet-Ageron, and Hudelson, 2014); and also identify the problems the questionnaire poses to the interviewers. Thus, those chosen did not form part of the main study. This was to avoid contamination of the sample for the study and hence the results. The Pre-testing of the questionnaire was done at Yeleyiri and Ladayiri which were GROW project communities but were not part of the sample communities where the study was carried out.

3.13 Ethical Considerations

On the aspect of consent, before the researcher conducted the study in the Wa West District, the researcher explained the main objective and specific objectives of the research to the respondents and sought permission to carry out the study. The researcher additionally educated the respondents regarding their entitlement to withdraw when they wanted to do as such. To guarantee confidentiality, the interviews and focus group discussions were conducted in a place that the participants preferred. Before conducting the interview and focus group discussions, participants were assured by the researcher the data collected during the interviews would be kept securely and treated as confidential. To ensure confidentiality, all the participants were given anonymous names in the data analysis and interpretation. Therefore, private data identifying the participants were not included in the report.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The data of the research were analysed and presented in this chapter. Data analysis was done in a mixed research method perspective. Findings of both the quantitative and qualitative methods which complemented each other were reported. With regards to the quantitative methods, questionnaire survey data was analysed using the IBM SPSS version 21 in the form of tables and charts, and chi-square test were used whereas qualitative data from the key informant interviews and focus group discussions were categorised into themes and analysed. Key to the data presentation and analysis included the following: security of tenure to farm lands by women farmers; processes women farmers go through to access farm lands; challenges women farmers encounter in accessing farm lands; soil fertility management practices; and the relationship between security of tenure to farm lands and soil fertility management practices. The background characteristics of the respondents and their relationships with security of tenure to farm lands and that of soil fertility practices were also analysed and presented.

4.2 Background characteristics of respondents

Background characteristics of respondents were also derived from the quantitative survey. The variables involved are age, religion, educational level, marital status, cultural linage, number of male and female children, farm size and time/period women farmers were engaged with the GROW project.

4.2.1 Age of respondent

Age is considered important with regards to access to land for farming in Ghana. It is based on this that this research categorised the ages of respondents as 18-28, 29-39, 40-50, 51-61, and 62-72. The table below is a cross tabulation of age of respondents and number of years engaged in farming. From Table 4 below, 7 respondents are between the ages of 18 and 28 representing 5%. This age cohort is where a lot of youth stay in formal school system and also engaged in vocational skill trainings or not married. This could have accounted for the low percentage of respondents. Again, low percentage of respondents could also be as a result of young women not interested in farming

Table 4: Age of respondents and number of years of farming

Age of	Number of years of farming								Total
respondents	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	
18-28	6	1	0	0	0	0	0	0	7
29-39	14	20	2	0	0	0	0	0	36
40-50	13	25	8	2	1	1	1	0	51
51-61	11	14	6	2	1	2	0	1	37
62-72	1	3	1	3	0	1	0	0	9
Total	**45**	**63**	**17**	**7**	**2**	**4**	**1**	**1**	**140**

Source: Field Survey, 2019

The Table 4 above illustrated the ages of respondents and the number of years respondents engaged themselves as farmers. From the table above, 45 respondents between the ages of 18 and 72 years found to be farm holders for the past 5 years and below at the time of this study. Also 63 of the respondents were found to have their own farms for the period between 6 and 10 years at the time of the study. Again, only 7 of the respondents between the ages of 18 and 28 years were engaged

in their own farms. The respondents who aged between 29 and 61 and are engaged in their personal farms were 124 representing 88.6%.

In Ghana, for one to be able to gain formal employment should be between the ages of 18 and 60 years. However, in the case of informal employment like farming in Ghana, one should attain the ages of 18 and above to be considered as an adult to be engaged in any employment per Ghana's labour act 2003, act 651. What that mean is that anyone who is below the ages of 18 years is considered a minor and cannot access land on his/her own for farming unless he/she is under the guidance of an elderly person. On the other hand, there is no retirement age for farmers because people above the ages of 60 years are still engaged in farming. People in the farming occupation continuous to farm as long as they are physically strong.

4.2.2 Religious affiliation of respondents

Religion among the African is sacred. The association between land and religion cannot be delineated. From the survey, 59% of the respondents subscribed to the African Traditional Religion (ATR). The implication of this is that their religious beliefs about land is considered sacred. This confirmed the findings of Kpieta *et al.* (2012), that African sees the earth as a "divine being" or "Mother Earth", offering prayer in the form of libation pouring before cultivating the land and during harvest. From figure 4 below, decision regarding women access to land has an influence by the African traditional religious beliefs systems since majority of the respondents have faith in the ATR. This is well corroborated by the findings of Cotula (2011) that beliefs system influence women access to agricultural land.

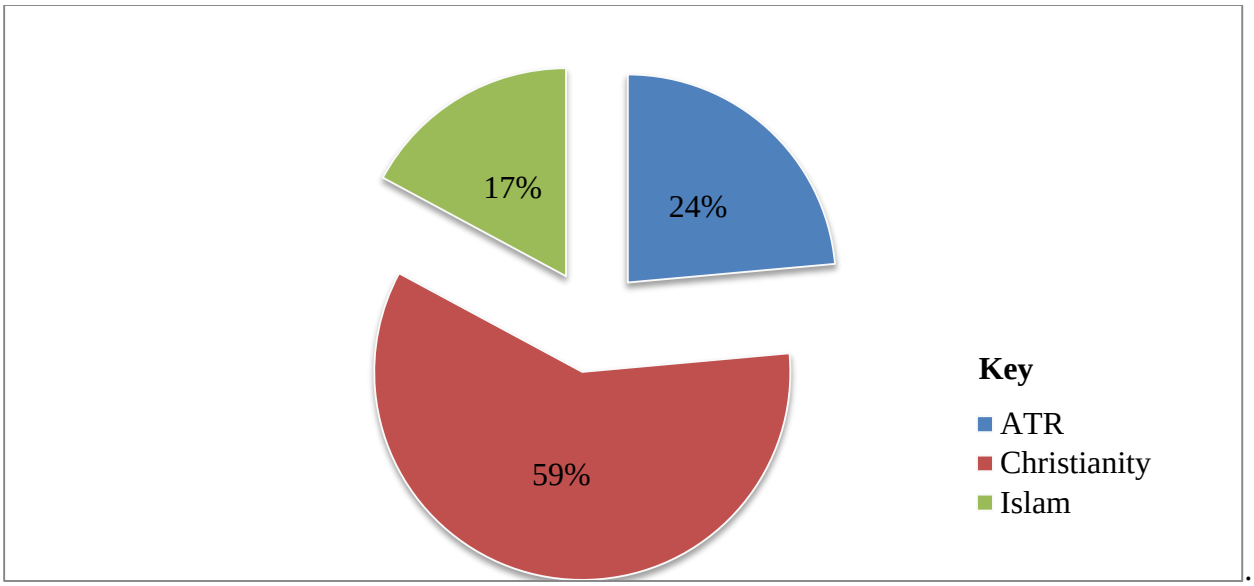

Figure 4: Religious Status of respondents

Source: Field Survey, 2019

4.2.3 Educational Level of Respondents

The survey revealed that 84.3% of the respondents had no literacy education whilst 11.4% had only basic education. Furthermore, 3.6% and 0.7% of the respondents are represented by the secondary and tertiary education respectively. The high percentage of illiterates in the survey confirmed the 2010 population and housing census report that 56% of females in the district are illiterates (GSS, 2012). This means that majority of the women in the district are illiterates and would not be able to read and understand the existing legal land reform policies thus Ghana National Land Policy (1999) and the Land Administration Programme (LAP). Literacy education not only build the capacity of individuals but also empower people as contained in the work of Tesfahunegn (2014). Illiterate women are denied of the opportunities in the existing legal land reforms policy documents which promote women access to farm land. There is the need for adult literacy education which could enable them read and understand legal land policies reforms in Ghana. Also, with the high

illiteracy rates, there should be more concentration on local radio programmes to educate people on the existing land reform policies than relying on the documents. These legal land policy documents should be translated in the various local Ghanaian languages to make it accessible for those who are functionally literate in their respective local languages. The Educational level of the respondents are summarized in figure 5 below.

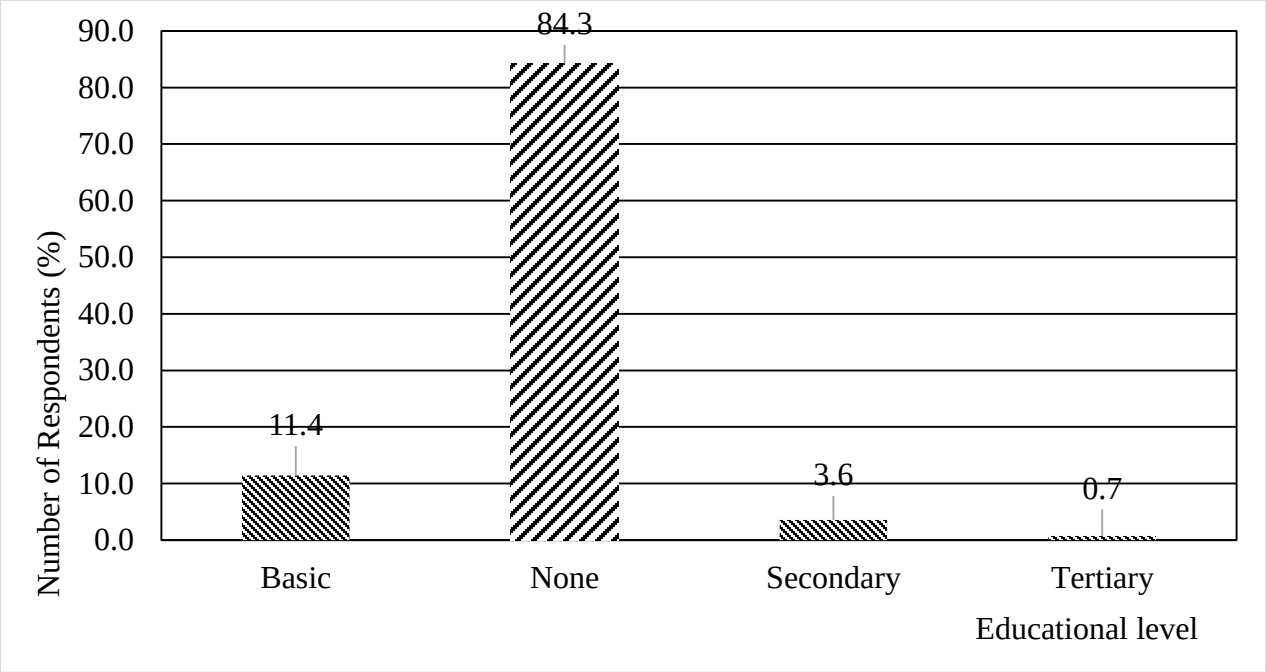

Figure 5: Educational level of respondents

Source: Field Survey, 2019.

4.2.4 Marital status

The study took keen interest in the marital status of the respondents. This is because marital status influence women farmers' access to farm land. This corroborates with the findings of Yakubu (2012) that level of access of a woman to agricultural land can be enhanced if she is married. A total of 98 respondents representing 70% survey are married, while 41 (29.3%) are widows. Only

1 of the respondents representing 0.7% is divorced. The marital status of the respondents is presented in Table 5 below.

Table 5: Marital status of Respondents

Marital Status of respondents	Frequency	Percent (%)
Divorced	1	0.7
Married	98	70.0
Widow	41	29.3
Single	0	0.0
Total	140	100.0

Source: Field Survey, 2019.

From Table 5 above, majority of the respondents are married. This means that their access to agricultural land could be influenced by their marital status as it is supported by the works of Kasanga (2003) and Alidu (2015), that women acquired/allocated farm land through/by their husbands. The 29.3% of the respondents which is a little more than a quarter of the respondents being widows also had implication on their access and security of tenure to farm land and this clearly outlined by the work of Dery (2015); that widows' access to farm land with or without children is not automatic but depended on the relation with the deceased husband's family.

4.2.5 Number of Male Children of Respondents

Children played an important role regarding women access to farm land. Male children are valued in the patrilineal context of Ghana (Alidu, 2015; Dery, 2015) and women who have male child have different experience regarding their access to farm land. Table 6 below shows a cross tabulation of the age of respondents with their corresponding male children.

Table 6: Age of respondents by number of male children

Age	Number of male Children							
	0	1	2	3	4	5	6	7
18-28	0	3	2	2	0	0	0	0
29-39	3	5	14	7	6	0	0	1
40-50	0	4	13	19	7	6	2	0
51-61	1	6	11	9	7	2	1	0
62-72	0	2	1	1	2	2	1	0
Total	**4**	**20**	**41**	**38**	**22**	**10**	**4**	**1**

Source: Field Survey, (March, 2019).

From Table 6 above, the mean number of male children per respondent across the age cohorts is 2.75. This means that, women farmers who responded to the questionnaire on the average per the age cohort has 3 male children. Only 1 woman within the 29-39 age cohort has 7 male children whereas 4 women have no male child. The 4 women who have no male child are most likely to be affected by security of tenure to farm land.

4.2.6 Number of female children of Respondents

Table 7 below shows a cross tabulation of the age of respondents with corresponding female children. From Table 7 below, 7 women across the various age cohorts have no female child while 1 woman from the 51-61 age brackets has 8 female children.

Table 7: Age of Respondents by female children

Age	Number of female children							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**8**
18-28	1	2	2	2	0	0	0	0
29-39	3	6	8	11	5	2	1	0
40-50	1	8	14	12	11	2	3	0
51-61	1	1	7	11	10	5	1	1
62-72	1	0	3	0	2	2	1	0
Total	**7**	**17**	**34**	**36**	**28**	**11**	**6**	**1**

Source: Field Survey, 2019.

4.2.7 Cultural Linage

From the Table 8 below, the study recognizes the importance of Cultural lineage. Cultural Lineage play an important role which influences women access to farm land. Different cultural lineage has different beliefs system and inheritance system. The Birifor constituted 61.4% of the respondents whereas 38.6% represented the respondents who are Non-Birifor.

Table 8: Cultural Linage of Respondents

Cultural Lineage	Number of respondents	Percent (%)
Birifor	86	61.4
Non-Birifor	54	38.6
Total	**140**	**100.0**

Source: Field Survey, 2019.

4.2.8 Period of being with GROW Project

The survey outlined the number of years that the respondents were engaged in the project. From the survey, few women farmers were enrolled in the first year of the project representing 0.7% of the respondents. The number of the beneficiaries' women farmers keep increasing after year 1 of the project. This is evidenced in the survey summarised in table 9 below.

Table 9: GROW project period

Years	Number of respondents
1.0	1
2.0	7
3.0	33
4.0	62
5.0	20
6.0	17
Total	**140**

Source: Field Survey, 2019.

From Table 9 above, the survey revealed that the number of respondents who enrolled in the GROW project increased from 1 beneficiary in year 1 to 62 beneficiaries in year 4, but declined to 17 beneficiaries in year 6. Modal year is 4 representing about 44.3% respondents who enrolled in the project. GROW project facilitated women access to farm lands and soil fertility management practices. This was what one female Key Informant has to say during the interviews:

> *When GROW started, our husbands were not willing to give us land. The few who allocated farm lands to their wives also benefited from the produce. Their wives were still obedient to their husbands. The news spread and many others joined in subsequent years.*

This means that the men resisted giving lands to women for farming at the beginning of the project.

Also, from the survey the number of respondents who accepted to be part of the GROW project varied from the Birifor cultural lineage to the Non-Birifor cultural lineage. From the graphical presentation below in figure 6, the number of Birifor women farmers increased from 3 in year 2 to 46 in year 4 whereas the Non-Birifor Women farmers only increase from 4 to 16 in years 2 and 4 respectively. However, the number of beneficiaries' women farmers from the Birifor lineage dropped from 46 in year 4 to 3 in year 5. Meanwhile, the Non-Birifor women farmers further increased to 17 in year 5. Finally, beneficiaries from the Birifor lineage again increased to 9 in the sixth year but however decreased to 8 in year 6 as in the case of the Non-Birifor women farmers.

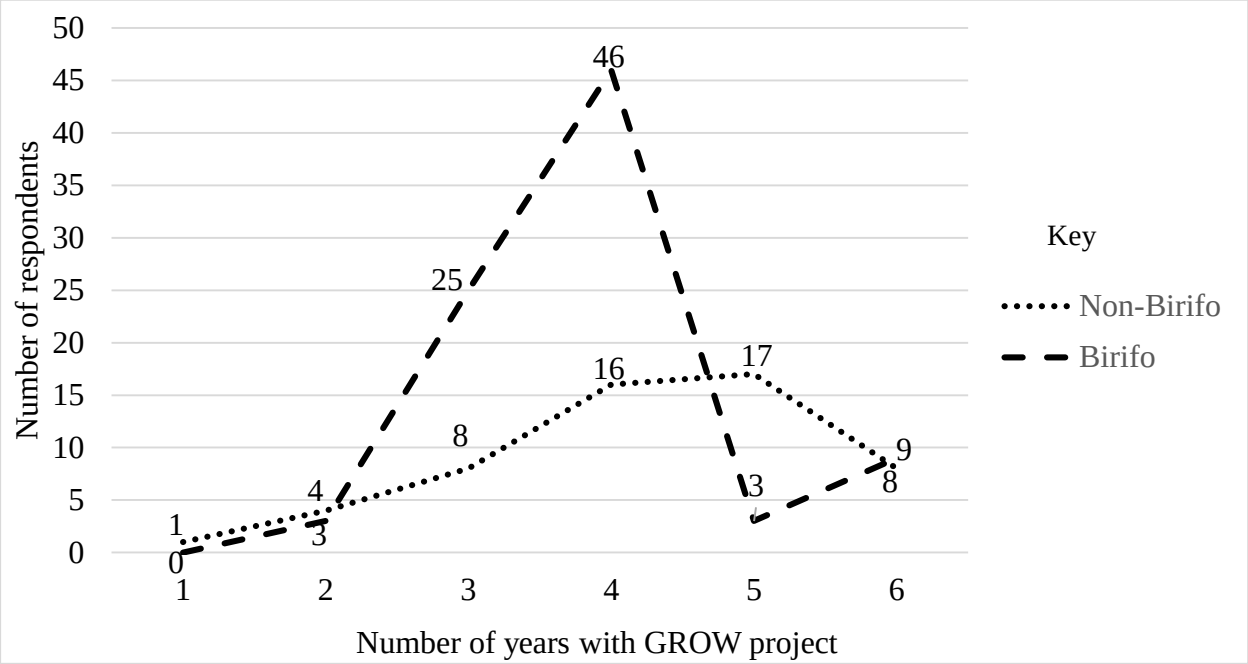

Figure 6: Time with GROW project by Cultural lineage

Source: Field Survey, 2019.

4.2.9 Farm size

Figure 7 below shows the farm size of the respondents. The number of respondents whose farm sizes were 2.9 hectares and below were 74 representing 52.9% while only 6 (4.3%) of the

respondents surveyed had their farm sizes between 9 and 12 hectares. Generally, from the chart, the number of women farmers reduce as farm size increases. This means that only 15.7% of women farmers surveyed had their farm sizes above 6 hectares. This finding supports that of Cotula, (2007) that production relations and gender bias affect the size of land given to women.

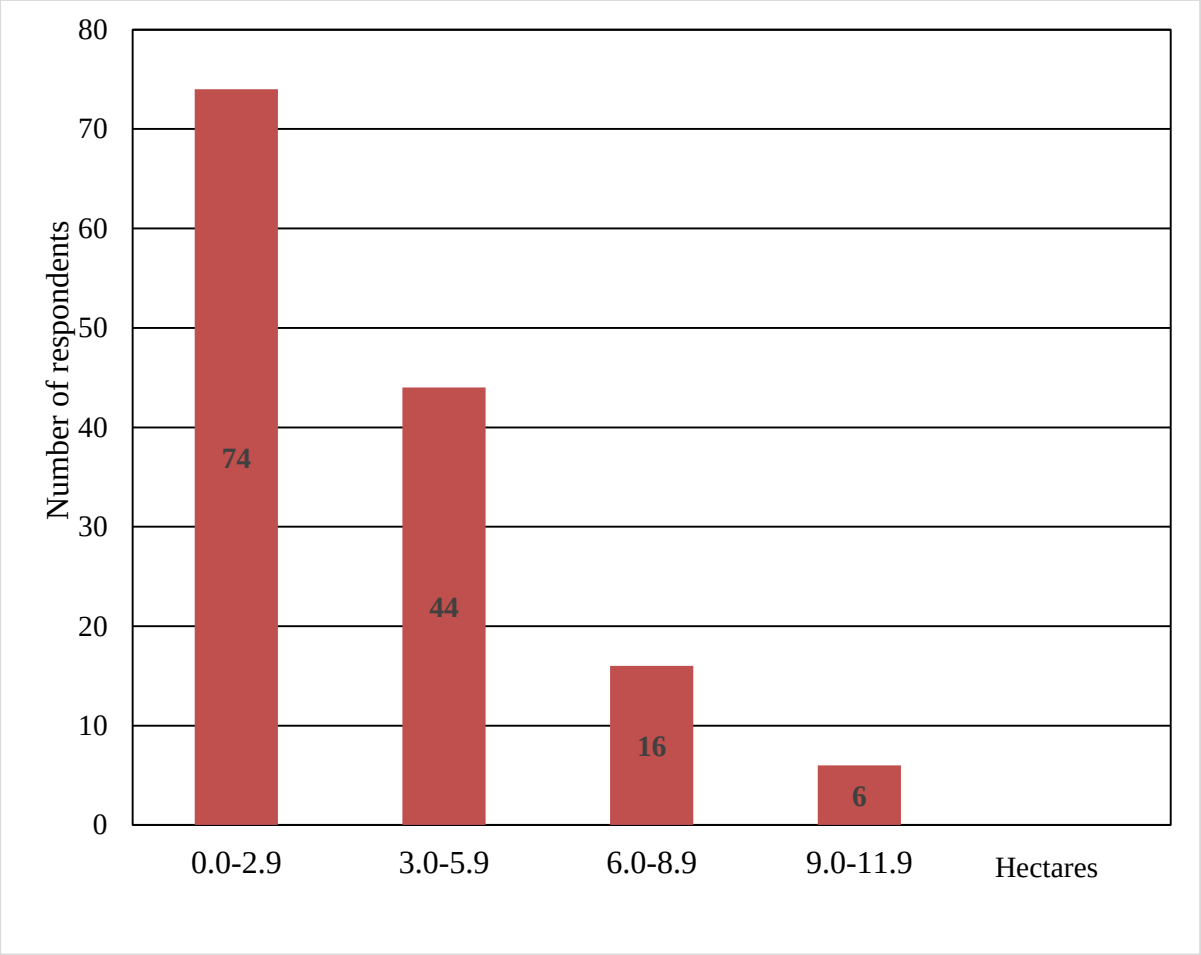

Figure 7: Farm size of respondents

Source: Field Survey, 2019.

4.3 Definition of a Woman Farmer

Who is a woman farmer?

The initial responses to the above question by focus group discussants and some community key informants include the following: Box 1

- *A woman farmer is a woman who farms.* This definition is confirmed by Rao (2006) that a woman farmer is a woman who farms.
- *A woman farmer is the one who is able to help the husband on their farms.* This is also supported by the definition of Twerefou (2011) that a woman farmer is the one who takes full time care of her household agricultural work and management.
- *Woman farmer is a woman who farms and take all the decision involving that particular farm.*
- *Woman farmer is the bread winner of her home.*
- *A hardworking woman is a woman farmer.*

Source: Source: Field Survey, 2009 (Responses from FGDs and KII).

From the third response in Box 1 above, *Woman farmer is a woman who farms and take all the decision involving that particular farm.* This response can therefore be used to support and conceptualize a definition of woman farmer as any female farmer who engages in any agricultural venture, owned and enjoyed full benefit of the produce and can decide how to use the produce for, with minimal or without interference.

Again, respondents from the survey described their position of women into farming. The views of sampled respondents describing women into farming are illustrated in figure 8 below. It can be deduced from figure 8 below that 9% of respondents described women into farming as non-farmers

whiles 43% described women into farming as assistants to their husbands. Furthermore, 48% of the respondents described women into farming as farmers.

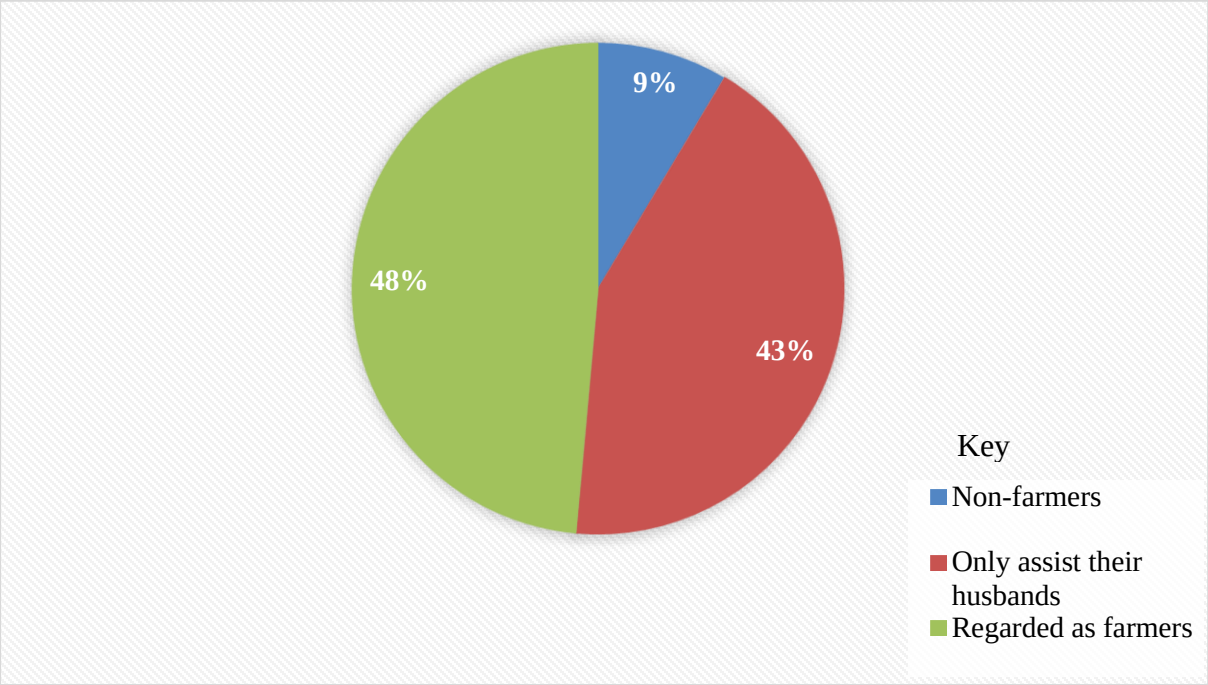

Figure 8: Description of women into farming

Source: Field Survey, 2019.

4.4 Processes of accessing agricultural lands by women farmers

4.4.1 Land Acquisition Process

The study found out that women farmers in Wa West District in the Upper West Region go through some processes to acquire farm land. These processes were systematically outlined by respondents and focus group discussants and some Key Informants. The processes are as follows:

Table 10: Processes of women farmers accessing farm land

Marital Status	Steps of accessing farm land
Married	• **Step 1:** Woman contact and request/beg for farm land from husband • **Step 2:** Husband gives land to wife in case the land is available • **Step 3:** If husband has no available or enough farm land, husband meets family head/Clan head to request for land on behalf of his wife. This is backed by the finding of Abakisi (2018) that a woman seeking to utilise a parcel of land outside the control of her husband has to inform the husband to initiate the process. • **Step 4:** Land is allocated to the husband of the woman • **Step 5:** Husband shows land to wife (woman)
Widow	• **Step 1:** Inform male children or husband's brothers or family/clan head • **Step 2:** If there is no available or enough farm land, husband's bothers or family/clan head request for land on behalf of widow from an outsider • **Step 3:** Land is then allocated to the widow's husband bother (s) or family/clan head • **Step 4:** Land is finally allocated to widow
Divorced	• Request for land through brother/father or family/clan head
Single/Never married	• Request for land through brother/father or family/clan head

Source: Field Survey, 2019.

From Table 10 above, the study finds out that the principal ways in which women acquire farm land is through their male counterparts. The theory of patriarchy supports this finding. Again, is evidence in the words of a female discussant that:

> "*If you by-pass your husband and beg for farm land from outside, you would find it very difficult getting the land because the giver of the land would always seek your husband's/family's approval" (Female Discussant at Chogsia community).*

Depending on the marital status, women experience different level of processes of accessing farm land. There exist processes and there is no difference between the Birifor and Non-Birifor women in going through the processes in accessing agricultural lands in Wa West District. This is done through their lineage, inheritance, marriage, etc. as confirmed in the works of Abakisi (2018); Meinzen-Dick *et al.* (2017); Kasanga (2003).

Marital status of women also influences the processes of accessing farm land. Hence how easy or difficult the process also depends on the marital status of the women. From the survey, respondents' views on the category of women with easy access to farm land are summarised in Table 11 below.

Table 11: Marital status of Women with easy access to farm land

Marital status of women with easy access to land	Frequency	Percent (%)
Divorced	2	1.4
Married women	20	14.3
Single	1	0.7
Widows	117	83.5
Total	140	100.0

Source: Field Survey, 2019.

It can be deduced from Table 11 above that widows have easy access to farm land. This is evidence from the table above that 83% of the respondents confirmed that widows have easy access to farm land. An argument made to that effect was that people are more sympathetic to widows than women in another marital category. This finding contradicts that of Lowder (2014), that when the man dies, it is common for his family to take his land, leaving the widows and orphans destitute. The finding of this study added to that of the finding of Dery (2015) that widows with children are not only allowed to farm on a portion of their late husbands' land but have easy access to farm land because of the sympathy people showed them. This finding corroborates with the statement made by a focus group discussant during a focus group discussion session as follows:

> *.... When it comes to women begging for farm land, it is the widows who have easy access to land for farming in our community. Our people are more sympathetic towards widows. The belief is that when a widow begs for land and you deny her especially the family land and she say anything negative; the spirit of the late husband or the ancestors will hunt the family. But a married woman who begs for land from anybody without the husband leading her, she cannot get it easily. Any man who gives land to a married woman without the concern of the husband can be misinterpreted to mean the man has a hidden agenda (Female Discussant at Dorimon community).*

From Figure 9 below, 95% of the respondents said yes; women in the Wa West District have access to agricultural land; consistent with Kuusaana *et al.* (2015). Also, the access theory supports the finding that women have access to farm land even when they do not own it. Again, this finding also supports Muniru (2013) that both male and female had access to agricultural land in the Upper West Region of Ghana. Only 5% of the respondents answered no; indicating that women did not have access to agricultural land.

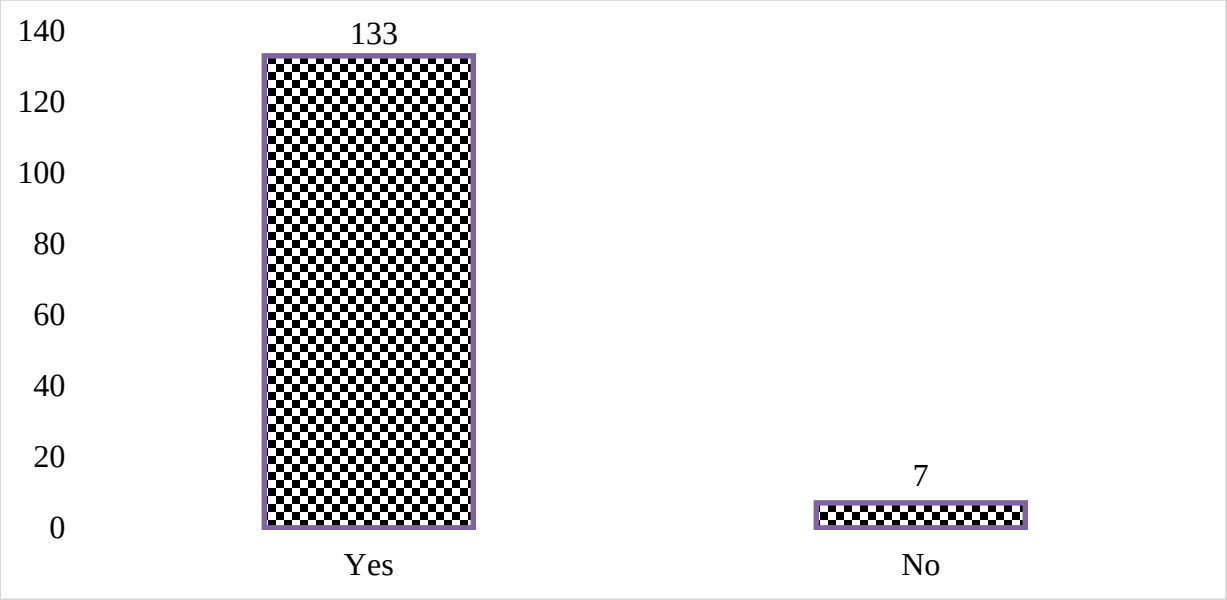

Figure 9: Women access to agricultural land

Source: Field Survey, 2019.

Furthermore, the bar chart in figure 10 below illustrated that 140 respondents were surveyed and analysed. As a result, views were sought about the influence of GROW project on women access to agricultural lands in the Wa West District. It can be deduced from the figure below that 85.5% were in favour of the proposition that the GROW project influenced women access to farm land. However, only 14.2% of them were not in support of the position that the GROW project influenced women access to farm land and as well as 2.1% were indifferent.

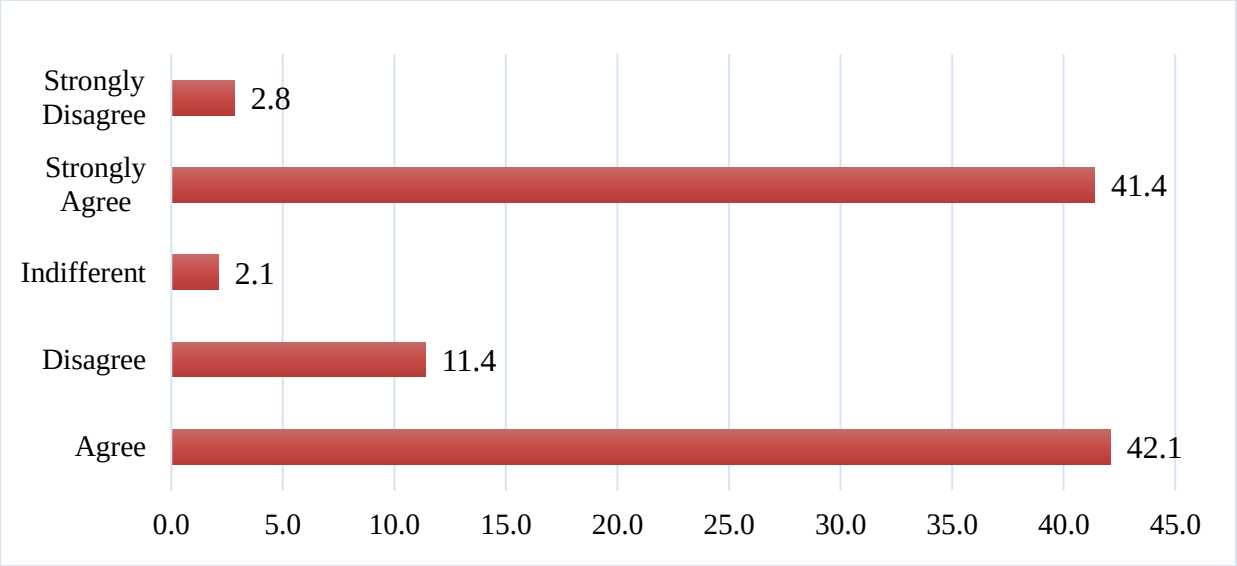

Figure 10: GROW Project influence on women access to agricultural land

Source: Field Survey, 2019.

From Table 12 below, 134 respondents representing 95% responded in the affirmative that women would continue to have access to farm land if GROW project ends. The discussants were also confident that the benefits husbands gained from their wives would continue to allocate farm lands to them.

However, 2.1% of the respondents said women would not be able to have continuous access to farm land after the GROW project ends whereas same 2.1% were indifferent. The responses were summarised in Table 12 below.

Table 12: Perception of future access to farm land by women after GROW project

Future access to land after GROW project	Number of respondents	Percent (%)
No	3	2.1
Not certain	3	2.1
Yes	134	95.0
Total	**140**	**100.0**

Source: Field Survey, 2019.

4.4.2 Perceptions about the processes of women accessing farm land

Respondents during the survey described the processes women go through to access farm land in Table 10 above. As a result, this study tested respondents' levels of perception from very difficult to very easy of the processes of women acquiring farm lands in the Wa West District. The results of the processes of women acquiring farm land and cultural lineage are illustrated in Table 13 below.

Table 13: Perceptions about the processes of accessing farm land

Perception on the process of accessing farm land	Cultural lineage		Total (%)
	Birifor	Non-Birifor	
Very Difficult	0	2(1%)	2(1%)
Easy	68(48%)	38(27%)	106(76%)
Difficult	7(5%)	10(7%)	17(12%)
Very easy	11(8%)	4(3%)	15(11%)
Total	**86 (61%)**	**54(39%)**	**140(100%)**

Source: Field Survey, 2019

From Table 13 above, 76% of the respondents from both cultural lineages described that the processes of accessing farm land by women farmers was easy while 11% described the process to be very easy. However, 17 respondents from the lineages described the process as difficult representing 12% and only 2% of the Non-Birifor lineage considered the process to be very difficult. The finding from one of the perceptions was well corroborated with comments from a female focus group discussant. She had this to say:

> *When it comes to the processes of accessing farm land, the men continuous to bluff us (women). When you have disagreement with your husband and you need land for farming, you go through hell. If you by-pass him and beg for farm land from outside, you would find it very difficult getting the land because the giver of the land would always seek your husband's approval. Master, you can imagine what happens..... (Female Discussant at Chogsia community).*

This finding is supported by the finding of Abakisi, (2018) that a woman seeking to use a piece of land outside the control of her husband has to inform the husband. Again, this confirmed the explanation of the theory of patriarchy.

For anyone to have access to land for any purpose, it is important to understand who owned the land. It is in this regard that the survey engaged women farmers to understand who owns the land in their respective communities. The finding from the survey on land ownership were given by respondents from both cultural lineages and are summarised in figure 11 below.

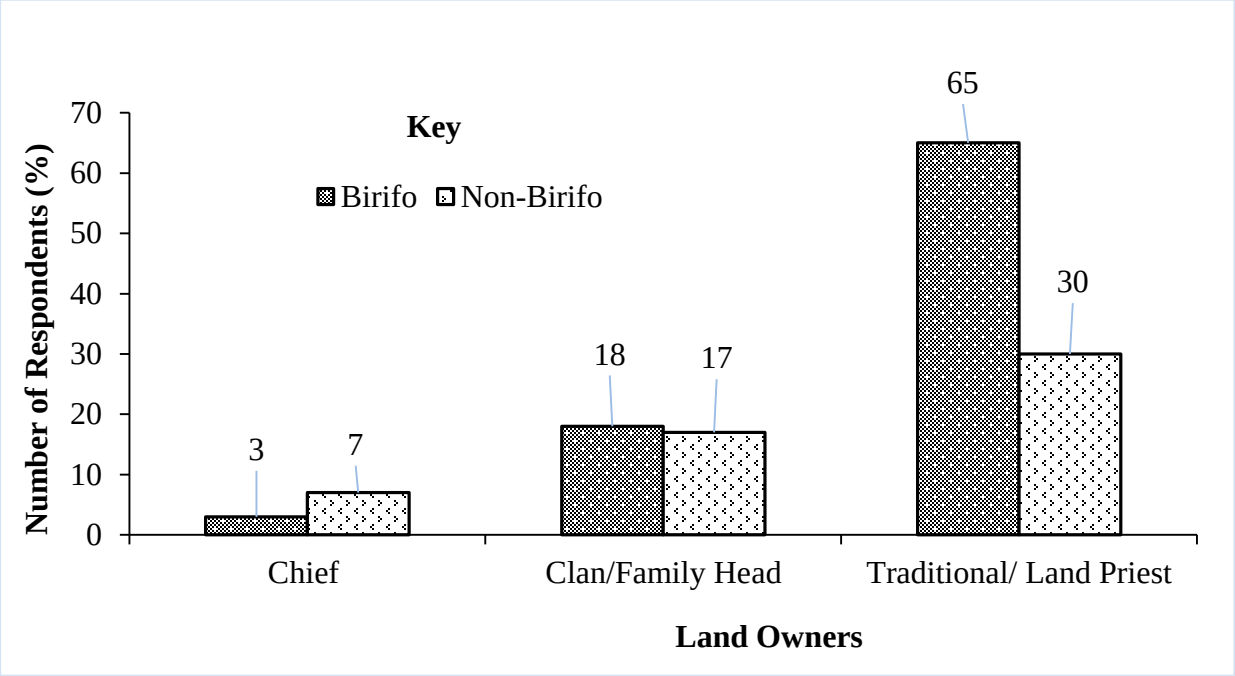

Figure 11: Land Ownership

Source: Field Survey, 2019.

From figure 11 above, the Tendaana/Land priest was identified as the main owner of the land among the Birifor and Non-Birifor communities. From the figure above, 65 respondents from the Birifor communities said the Tendaana owned the land whereas 30 respondents from the Non-Birifor communities also confirmed that the Tendaana owned the land. This finding is supported

by several works that in the Upper West region, Tendamba are considered the owners of the land (Kasagna *et al.* (2001); Kunbuor (2002); and Kuusaana *et al.* (2015). Furthermore, Bonye *et al.* (2012) found out that, the Tendaana is the agricultural land owner. Also, 25% of the respondents surveyed from both cultural lineages said land is owned by family/clan head. This finding is also backed by the works of Tsikata *et al.* (2011); and Cotula (2007) that lineage-based systems are common with the clearing of virgin lands earing usufruct interest for members of the lineage, which can be passed onto their generations. Finally, 7.1% also said land is owned by the chief.

4.4.3 Mode of women accessing agricultural land

The survey revealed that, 95% of the respondents in Table 8 above are of the view that women acquired farm land through marriage. This is confirmed by (Kasanga, 2003) that women acquired farm lands through marriage or contractual agreement. Processes for women accessing farm land is largely attributed to begging, constituting 97.9% as summarised in Table 14 below.

From Table 14 below, inheritance or both inheritance and begging constituted the remaining 2.1% of the respondents acquired farm lands. The processes of women acquiring farm lands is different from that of the men. A female focus group discussant had this to say:

> *Men can acquire farm land on their own but we as women would have to acquire farm land through men either your husband or a male family head. If you don't pass your request through your husband or male family member/head, anybody whom you confronted for farm land would have to consult your family head or husband before giving the land to you* (FGD at Wechau-bao).

This finding corroborates with that of Walker (2003) and Dery (2015) that women cannot initiate the process of acquiring farm land without involving their husband or a male family head.

Table 14 Mode of women accessing agricultural land
Source: Field Survey, 2019.

Ways of women accessing farm land	Frequency	Percent (%)
Begging	137	97.9
Inheritance	1	0.7
Inheritance and Begging	2	1.4
Total	140	100.0

The inheritance system in every cultural lineage influences the acquisition of a resource for example farm land. There are two cultural lineages which include the Birifor (refers to as the Lobi) and the Non-Birifor (i.e. Dorimons, Waalas Dagaaba, Daga-wiile, etc.) in the study area. The Birifor and Non-Birifor cultural lineages have different inheritance system. The Birifor (Lobi) is the only lineage in the Upper West Region which is matrilineal whereas the rest of the cultural lineages are patrilineal (Dowuona-Harmond, 1998). The study sampled the views of respondents from two lineages about how women acquired farm land through inheritance. The opinions of respondents are summarised in Table 15 below.

Table 15: The influence of cultural lineage on women inheriting farm land

Women inheriting farm land	Cultural lineage		Total
	Birifor	Non-Birifor	
No	86	52	138
Yes	0	2	2
Total	**86**	**54**	**140**

Source: Field Survey, 2019.

From Table 15 above, 86 of the respondents who are from the Birifor cultural lineage said women do not inherit farm land whereas 52 of the Non-Birifor respondent said women do not inherit farm land. Response from a focus group discussant from the Birifor communities confirmed that women of the Birifor cultural lineage do not inherit land. The finding from a focus group discussant from the Birifor communities revealed the Bi-lateral inheritance system among the Birifors. This was captured in the words of a discussant as follows:

> *We the Birifors have two system of inheritance. The "Bal bomo" (Matrilineal inheritance) and the "Saabie bomo" (Patrilineal inheritance). Things that we inherit patrilineally includes land, and house, properties acquired without the support of the matriclan ("Bal") family. Also, things that we consider to be the "Bal bomo" include cattle, widow and her children. The widow and her children are inclusive when the cattle which is used to pay the bride price of the widow is a "Bal bomo" (Male Discussant at Wechau-bao).*

4.5 Challenges with women access to agricultural land

The study delved deep into these challenges and how they affect women access to agricultural land. Below are the findings presented in Table 16 as follows:

Table 16: Challenges of accessing farm land by women

Challenges of accessing agricultural lands	Views of women farmers		Total
	Agreed	Disagreed	
Low Literacy level	102 (73%)	38 (27%)	140 (100%)
Low level of awareness of legal land reform policy	126 (90%)	14 (10%)	140 (100%)
Unfavourable beliefs system to women	98 (70%)	42 (30%)	140 (100%)
Patriarchal inheritance	103 (74%)	37 (26%)	140 (100%)
Poverty (low economic status)	113 (81%)	27 (19%)	140 (100%)
Gender role	82 (59%)	58 (41%)	140 (100%)
Allocation of marginal land to women	107 (76%)	33 (24%)	140 (100%)

Source: Field Survey, 2019.

The Table above presents the findings and discussions on beliefs system, system of inheritance, literacy level of women, economic status (poverty), and low level of awareness of legal reform policy, gender role, and the allocation of marginal lands to women influence women access to agricultural land. From Table 16 above, more of the respondents constituting 90%, agreed that low

level of awareness of legal land reform policy affects women access to agricultural land. Also 113 of the 140 respondents surveyed agreed that low economic status (poverty) of women affect access to agricultural land. However, 58 of the 140 respondents disagreed that gender role ascribed to women by society affect women access to agricultural land. The above challenges regarding women access to farm land are separately discussed in the ensuing paragraphs.

The study explored how low level of awareness of legal land reforms policies is a challenge facing women access to agricultural lands. Legal land policies such as Ghana National Land Policy (1999) and that of the Land Administration Programme (LAP), etc are not known among the respondents and their (policies) influence on women access to farm land. The views of the respondents are summarised below:

Table 17: Respondents' knowledge on the existence of legal land policy

Awareness of legal land reform policy	Number of respondents	Percent (%)
No	126	90.0
Yes	14	10.0
Total	140	100.0

Source: Field Survey, 2019.

From Table 17 above, it is clear that 90% of the respondents are not awareness of the any legal land policy which promote women access and security of tenure to land. Only 10% of the respondents are aware of the legal land policy.

The study also explored how legal land policy reforms influenced women access to agricultural land. It can be deduced from the Table 18 below that 61 respondents from both cultural lineages

representing 43.6% are indifferent whether legal land policy reforms influenced women access to agricultural land. Also, 44.3% respondents from both lineages agreed with proposition that legal land reform policy influenced women access to farm land. Furthermore, 12.1% of the respondent thinks that legal land policy cannot influence women access to farm land.

Table 18: Legal land reforms policy

Legal land reforms as a challenge to women secured tenureto agricultural land	Cultural lineage		Total
	Birifor	Non-Birifor	
Strongly Agree	2	4	**6**
Agree	26	30	**56**
Indifferent	56	5	**61**
Disagree	2	14	**16**
Strongly Disagree	0	1	**1**
Total	**86**	**54**	**140**

Source: Field Survey, 2019.

From Table 18 above, this research is of the view that lack of legal knowledge and weak implementation may limit women's ability to access agricultural lands. This is supported by the findings of (Kuusaana, 2007) that women are not able to exercise user rights because of their limited or lack of legal knowledge and its implementation.

The study further explored how low literacy level of women is a challenge to women access to agricultural land using a five-point Likert scale as summarised in Table 19 below.

Table 19: Low Literacy level of women and access to farm land

Perception	Number of respondents	Percent (%)
Strongly Agree	81	57.9
Agree	21	15.0
Indifferent	6	4.3
Disagree	30	21.4
Strongly Disagree	2	1.4
Total	**140**	**100.0**

Source: Field Survey, 2019.

From Table 19 above, 72.9% of the respondents agreed with the position that low literacy level affect women access to agricultural land since 84.3% of the respondents in Figure 5 above are illiterates. From Table 19 above, 22.8% of the respondents disagree with the view that literacy level is a challenge to women access to agricultural land whereas 4.6 % were indifferent with the proposition.

From figure 12 below, 19 and 79 respondents respectively agreed and strongly agreed that unfavourable beliefs system is a challenge to women access to agricultural land. Also, 25 respondents disagreed while 7 respondents strongly disagreed that beliefs system is a challenge to women access to agricultural land. Only 10 of the respondents were indifferent with the proposition that beliefs system is a challenge to women access to agricultural land. The researcher is of the view that unfavourable beliefs systems limit women access to farm land. This finding is in

consonant with that the works of Bonye, *et al.* (2012), Cotula (2009) and Liaw (2008) that cultural traditions and rituals control women access to agricultural land.

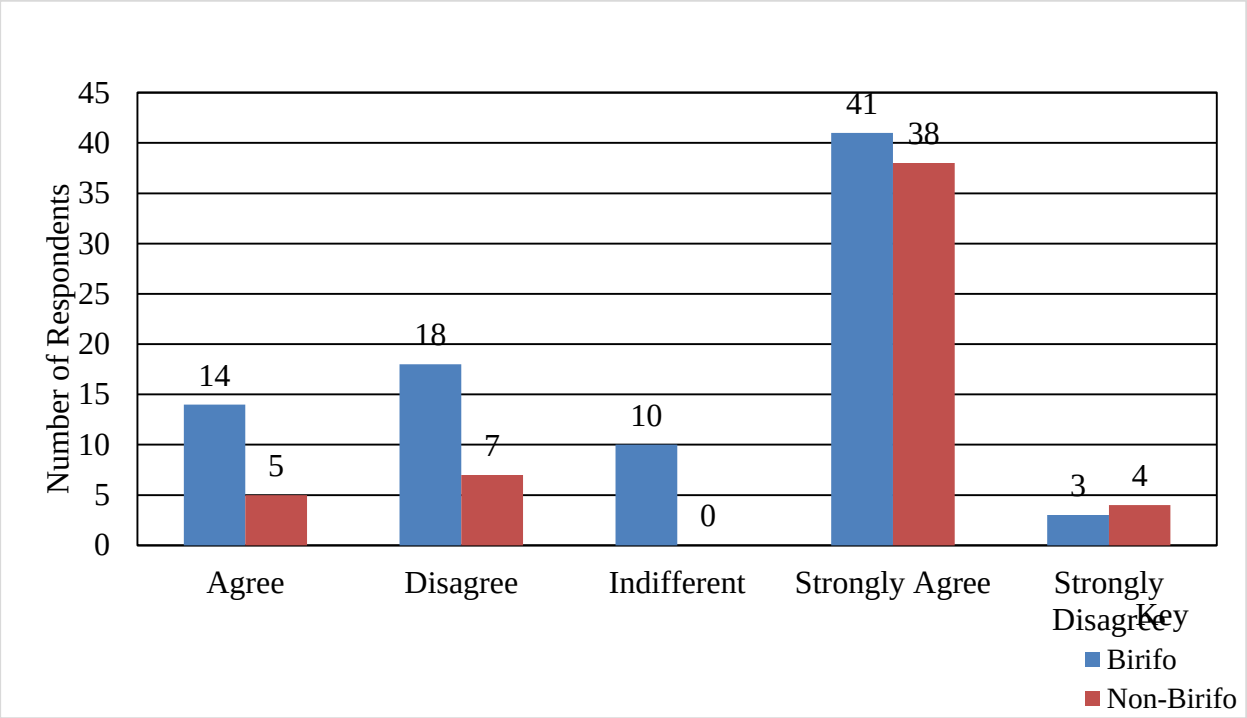

Figure 12: Unfavourable beliefs system

Source: Field Survey, 2019.

From figure 13, it can be inferred that 103 respondents agreed with the assertion that inheritance is a challenge to women access to farm land. The inheritance system is patriarchal with regards to land in the study area and that influence women access to agricultural lands. Also, 32 respondents disagreed with that assertion, whiles 5 respondents assumed a neutral position and therefore indifferent as to whether inheritance is a challenge to women access to farm land or not. Based on the responses, it was found that more respondents agreed with the statement than disagreed. Just as 103 respondents with a percentage of 73.6 agreed, 32 out of the 140 respondents with a percentage of 22.9 disagreed. This has a lot of implication of inheritance on women access to

agricultural land, since women largely do not inherit agricultural land, therefore inheritance has become a challenge to woman access to agricultural land. This finding supports the works of Agana (2012) and Steinzor (2003) that women are frequently denied the right to inherit land and landed property.

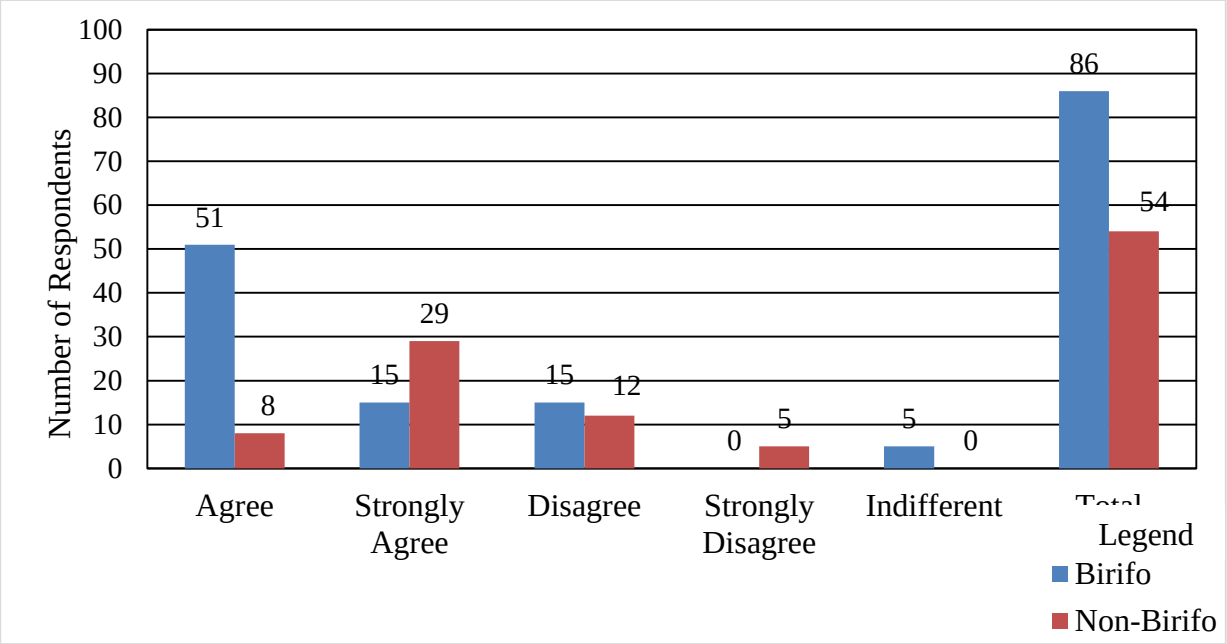

Figure 13: Patriarchal inheritance system and women access to farm land

Source: Field Survey, 2019.

Respondents' views were also sought with regards to the proposition that poverty is a challenge facing women access to agricultural land. Respondents' views ranging from strongly agree to strongly disagree, a total of 106 respondents representing 75% strongly agreed that poverty is a challenge facing women access to agricultural land, whiles 1 respondent strongly disagreed with the proposition. A summary of the proposition that poverty is a challenge and do not guarantee women secured tenure to agricultural land is presented in Table 20 below.

Table 20: Poverty and women access to farm land

Poverty as a challenge to women secured tenure to agricultural land	Cultural lineage		Total (%)
	Birifor	Non-Birifor	
Strongly Agree	66	40	**106 (75%)**
Agree	6	1	**7 (5%)**
Indifferent	0	0	**0**
Disagree	13	13	**26 (19%)**
Strongly Disagree	1	0	**1 (1%)**
Total	**86**	**54**	**140 (100%)**

Source: Field Survey, 2019.

From the data in Table 20 above, 80% of the 140 sampled surveyed agreed and supported the proposition that poverty is a challenge facing women access to agricultural land. However, 20% of the respondents did not support the proposition. This therefore suggest that majority of the respondents viewed poverty as a challenge to women access to agricultural land. The position of this study is that one's economic status adds up to one's social status. The high the economic status of a woman in a community, the more people accord her respect. Therefore, poor people and for that matter women are not given the necessary respect and that affect their access to farm land. This finding confirmed that of Abakisi (2018: 110) that "women's poverty status limits their access and use of land".

Furthermore, respondents' views were sought on the proposition that gender role, society ascribed to women stance as a challenge to women access to agricultural lands. In the upper west region, society ascribed men as their responsibility to till the land and feed their wives and families. Women has no business accessing lands to till and feed their families. The status quo has change

and is being a challenge for women accessing farm land. This is evident in the work of Goldstein, (2008) that gender role is a great potential to influence gender disparities or address inequalities in access to agricultural land.

Table 21: Gender roles and women access to farm land

Perception	Frequency	Percent (%)
Strongly Agreed	70	50.0
Agreed	12	8.6
Indifferent	14	10.0
Disagreed	32	22.9
Strongly Disagreed	12	8.6
Total	140	100.0

Source: Field Survey, 2019.

From the figure 14 below, respondents' views were assessed on the proposition that women are allocated marginal (degraded) land as a challenge to women accessing farm lands.

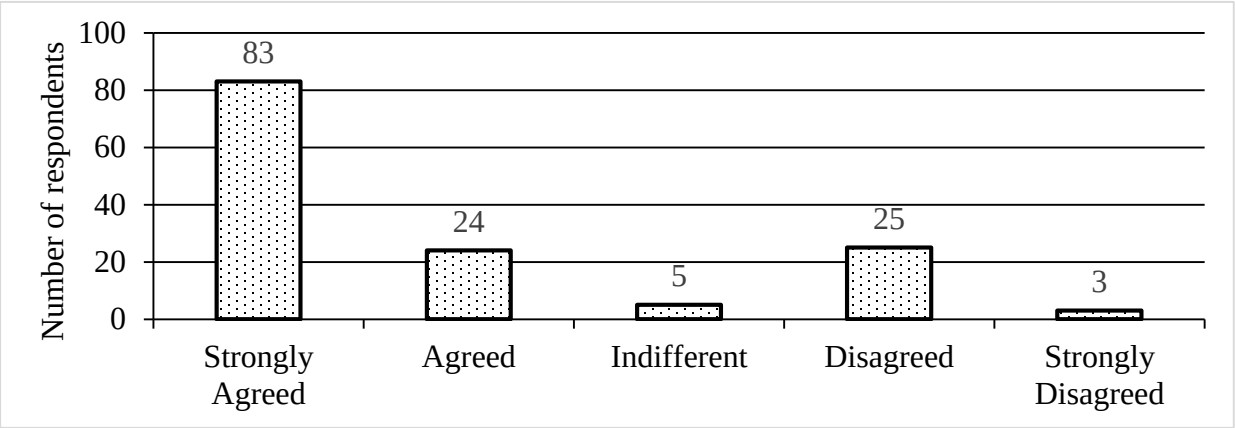

Figure 14: Allocation of marginal lands to women

Source: Field Survey, 2019.

From figure 14 above, 108 respondents representing 77.1% agreed to the proposition that women farmers are allocated marginal lands as against 20% of those who disagreed. However, 2.9% neither agreed nor disagreed with the proposition. This means, many of the respondents agreed that women are allocated degraded lands. The finding also corroborates with the words of a focus group discussant captured as:

> *Our men normally allocate the portion of their land which they considered less fertile to us. As a woman you cannot reject it. You have to farm on it like that. No man will give a woman the best part of his farm land..... (Female FGD).*

This study is also of the view that the allocation of marginal lands to women farmers discouraged women from access land for farming. This finding is in consonant with the findings of Perez (2014); Action Aid (3013); Bonye *et al.* (2012); Yakubu (2012); and Muteshi (1995) that women are given less fertile (degraded) lands.

4.5.1 Ranking of constraints regards women access to farm land

Table 22: Ranking of constraints

Constraints regard women access to farm land	Number of respondents	Percent (%)	Rank
Low Literacy level	7	5.0	6th
Low level of awareness of legal reform policy	24	17.1	3rd
Unfavourable beliefs system	50	35.7	1st
Patriarchal inheritance	27	19.3	2nd
Poverty (low economic status)	6	4.3	7th
Gender role	9	6.4	5th
Allocation of marginal land to women	17	12.1	4th
Total	140	100.0	

Source: Field Survey, 2019.

The data in Table 22 above indicate that unfavourable beliefs system which is an immaterial culture is the most challenging constraint to women access to agricultural land representing 35.7% of the respondents as being ranked first. Furthermore, 19.3% of respondents' think that patriarchal inheritance system affects women access to agricultural land and was considered second most challenging constraint. Also, low level of awareness of legal reform policy was ranked third most challenging constraint that affects women access to farm land whilst allocation of marginal land to women occupied the fourth position. Gender role, low literacy level and economic constraints (poverty) were considered by respondents as a challenge to women access to farm land and ranked

fifth, sixth and seventh positions respectively. Cultural constraints and for that matter unfavourable beliefs systems remained the most prominent challenge regarding women access to farm land as it is evident in the works of Liaw, (2008). This finding also corroborates with that of Yakubu, (2012) that culture limits women access to farm land.

4.6 Perception of tenure security to agricultural land

Respondents' views sought to enable the researcher conduct an assessment of the security of tenure to agricultural land among women farmers in the study area. Table 23 below summarised the opinions of respondents according to their ages per their cultural lineages about the tenure security to agricultural land.

Table 23: Views on security of tenure by age per cultural lineage

Age of respondents	Respondents views on security of tenure				Total
	Birifor		Non-Birifor		
	Yes	No	Yes	No	
18-28	0	3	1	3	7
29-39	2	20	0	14	36
40-50	2	30	2	17	51
51-61	2	22	1	12	37
62-72	0	5	0	4	9
Total	6	80	4	50	140

Source: Field Survey, 2019

In the Table above, 10 respondents from both cultural lineages are of the opinion that women have secured tenureship to agricultural land in the study area representing 7%. Also, 130 of the respondents representing 93% are of the opinion that women farmers have insecure tenureship to agricultural land across both cultural lineages.

4.6.1 Security of tenure to agricultural land

The researcher has been guided by the opinions of respondent to assess the security of tenure to agricultural land. Security of tenure to agricultural lands in this study is defined by the following characteristics. They include the specification of clear terms of access to land, specified duration of access, no interference with the access, planting of trees, and no restriction by the owner of the land to any types of crops to be grown by the user of the land. Any women who is made known to the conditions concerning the access and face no user restriction to at least three of these characteristics is said to have secured tenure. The views of respondents on these characteristics are summarised in the table below.

Table 24: Security of tenure to agricultural land

Characteristics of security of tenure to farm land	Number of respondents (n = 140)	
	Yes	No
Specified terms of access	54 (38.6%)	86 (61.4%)
Specified duration of access	4 (2.9%)	136 (97.1%)
None interference with access	111 (79.3%)	29 (20.7%)
Allow to planting of trees	4 (2.9%)	136 (97.1%)
No restriction to any types of crops to be grown	23(16.4%)	117 (3.6%)

Source: Field data, 2019

From Table 24 above 97.1% of respondents revealed that women farmers are not allowed to plant trees on their farms. This finding is confirmed by that of Kuusaana, *et al.* (2013) that women are not entitled to grow tree crops without the permission of their grantors this arrangement does not guarantee tenure security. This has implication for development; for example, government policy on cashew production.

Also, 79.3% of the respondents said that their user rights are being interfered with. According to Bugri (2008), the ability to continually cultivate land without interference is termed secure tenure. As one compares this finding with the definition of Bugri, it is clear that the finding constitutes an insecure tenure to farm land. Furthermore, the finding on interference corroborates with the words of one of the Key informants as stated below:

> *When land is given to you to farm, you have to keep good relation in order to hold on to that land. Any time you disagree with the owner of the land or any of his relatives, whether you have a good point on the disagreement or not, the land is being taken away from you after the disagreement. You are simply informed that he needs his land back. My son, you see, you can no longer continue..... (Female Lead farmer at Dorimon, KII).*

Also, from the survey, 136 respondents representing 97.1% said the duration of access is normally not made known to them. The same can be said about specified terms of access. Thus, 61.4% of the respondents interviewed said they do not have clear terms of access.

Even though from figure 9 above, 95% of respondents said women have access to agricultural land, but insecure of tenure still exists. This affirmed the finding of FAO (2011) that land tenure rights and policies on access to land for agricultural purposes do not guarantee women secured tenureship to agricultural land. From figure 15 below 99% of the respondents said women farmers do not

have secured tenure to farm lands whilst only 1% said women farmers have secured tenure to farm land. From the researcher's assessment and that of the respondents' views on security of tenure to agricultural land, most women have insecure tenureship to agricultural land. This finding supports the structural and relational access mechanisms component of the access theory adopted. It explains why women only have access to agricultural land but do not have tenureship right over the land. This finding corroborates with that of Kuusaana *et al.* (2013) that women have restricted user rights and that does not guarantee tenure security.

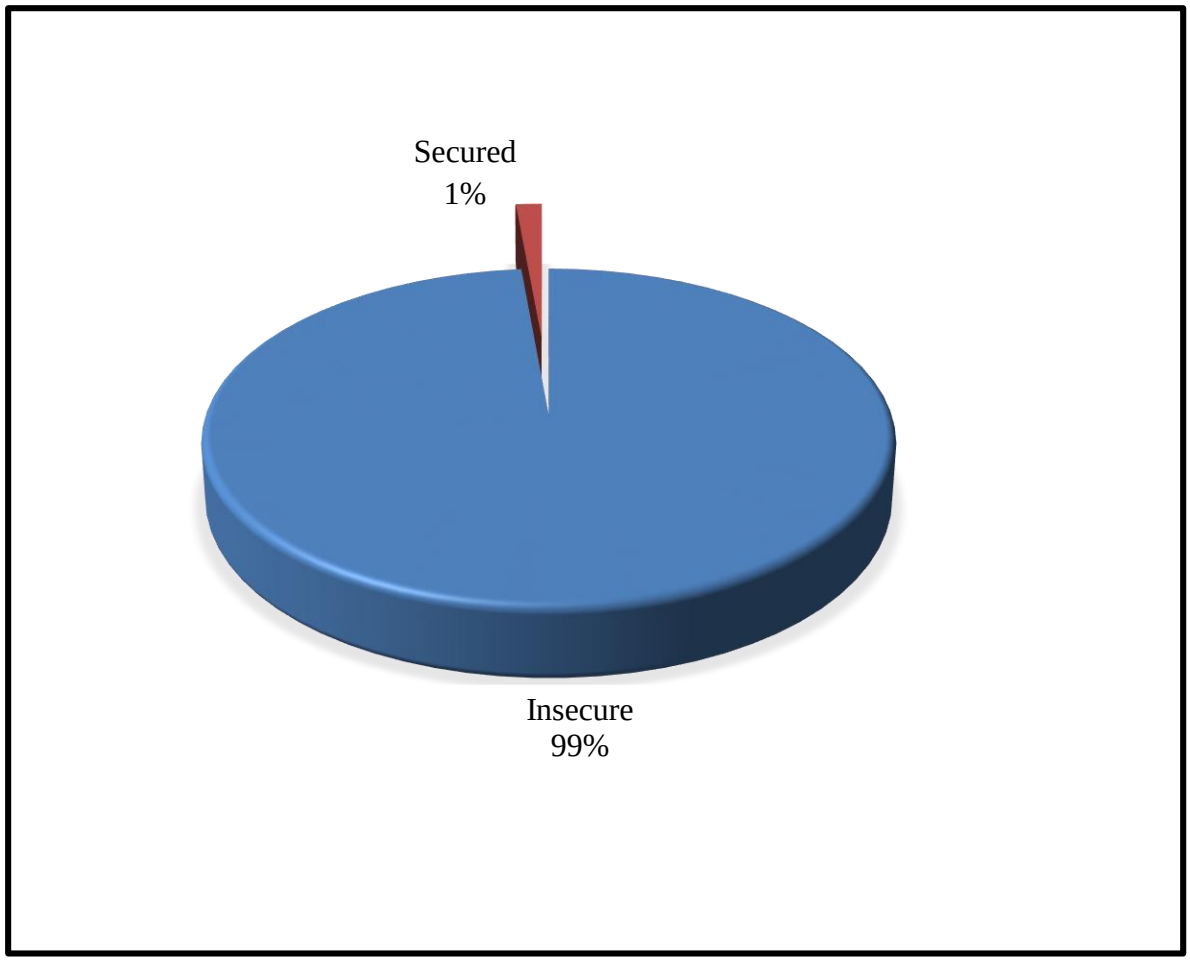

Figure 15: Security of tenure to farm land

Source: Field data, 2019.

Furthermore, the age of a woman farmer could also be influenced by security of tenure to farm land as summarised in Table 25 below.

Table 25: Age of Respondents by security of tenure to farm land

Age	Security of tenure		Total
	Insecure	**Secured**	
18-28	7	0	7
29-39	36	0	36
40-50	51	0	51
51-61	36	1	37
62-72	8	1	9
Total	**138**	**2**	**140**

Source: Field Survey, 2019.

This is evidenced in table 25 above that 94 women farmers from 18 to 50 years who responded to the questionnaire are within the child bearing age constituting 67.1%, have insecure access to farm land. This was well corroborated with the response from one of the focus group discussants who had this to say:

> *Your farm land is collected by your husband because he has been able to farm the whole of his farm land including the portion allocated to you. Since as a woman, you work to support your husband, you have no choice (Female Discussant at Chogsia)*

This confirms the work of Runger (2006) that in Ghana, a wife is by tradition under obligation to help her husband on his farm and they tend to respond to this by abandoning their own farms. Again only 1.4% of women above the ages of 50 years from the Table 25 above have secured tenure to farm land. This could be as a result of the fact their labour contribution is low because of

old age, they cannot remarry, and they might have finished child bearing and have grown up children.

The study further explored whether secured tenure to farm land is influenced by marital status of women farmers. A survey of 140 respondents that were interviewed, 138 of them indicated they had insecure access to farm land devoid of their marital status. From Table 26 below, 98 married women had insecure access to farm land representing 70% of the respondents. This corroborates with the finding of Abakisi (2018) that there is a spontaneous taking back of land by husbands/owners. The finding of Dery (2015) also confirmed the insecure access to farm land by married women as Dery proverbially puts it as one could be given a piece of farm land today, only for it to be taken away tomorrow. Also, 39 of the respondents who are widows said they have insecure tenure to farm land and only 2 of the widows confirmed that they haves secured tenure to land.

Table 26: Marital status and security of tenure to farm land

Marital status	Status of tenure		Total
	Insecure	Secured	
Divorced	1	0	**1**
Married	98	0	**98**
Single	0	0	**0**
Widow	39	2	**41**
Total	**138**	**2**	**140**

Source: Field Survey, 2019.

The sampled respondents viewed the duration of the project phase on women security of tenure to farm land as summarised below.

Table 27: GROW project and security of tenure to farm land

Time with GROW	Status of tenure		Total
	Insecure	Secured	
1.0	1	0	1
2.0	7	0	7
3.0	33	0	33
4.0	62	0	62
5.0	20	0	20
6.0	15	2	17
Total	**138**	**2**	**140**

Source: Field Survey, 2019.

From Table 27 above, 138 of the respondents said there is an insecure tenure to farm land while 2 said there is secured tenure to farm land. The Grow project influenced women access to farm land by recruiting Male Gender Activists (MGA) to help facilitates women access to farm land.

4.7 Soil Fertility Management practices adopted by women farmers

From the study, respondents indicated crop rotation, mixed cropping, cover cropping, minimal tillage, chemical fertilizer, farm yard manure, compost and non-burning of crop residue as soil fertility management practices adopted by women farmers. The number of soil fertility management practices respondents mentioned confirmed the work of GSS (2012) that Wa West District has poor organic matter and nutrients content in the soil as a result of the absence of serious vegetative cover due to bush burning, overgrazing, over cultivation and protracted erosion. This

means that farmers especially women farmers for that matter employed soil fertility improvement techniques. These soil fertility improvement techniques were identified during the study and discussed as follows:

4.7.1 Crop Rotation as a soil fertility management practice

From Table 28 below, only 28.6% of the 140 respondents practised crop rotation as a soil fertility improvement technique whiles 71.4% do not. This is because crop rotation is a long-term soil fertility management strategy as confirmed in the work of Adjei-Nsiah *et al.* (2006). This means that only few of the respondents practiced crop rotation because of the security of tenure to farm land. This finding was well corroborated with the statement captured from a Key informant as stated below:

> *...they give us the land and we struggle to farm on it like that. The following year, the owner takes it away. Whatever you planned to grow in the coming season, you cannot achieve it (Female, KII).*

Table 28: Crop Rotation

Crop Rotation	Number of respondents	Percentage
Practicing (Yes)	40	28.6
Not Practicing (No)	100	71.4
Total	140	100

Source: Field Survey, 2019.

4.7.2 Mixed cropping as a soil fertility management practice

Respondents views as summarised in Table 29 below, 56 out of the 140 respondents practised mixed cropping as a soil fertility improvement technique representing 40% whereas 60% did not. During the focus group discussion session, discussants shared their experiences why women farmers used mixed cropping techniques. The reasons were captured as follow:

- Women would like to cultivate more than one crop on their fields.
- Women farmers are not sure whether they would have access to the land in the next season. So, they tried to maximize the land given to them.
- Women practiced mixed cropping to avoid total crop failure.

This finding affirmed that of Alidu (2015) that women farmer would have more than two crops such as groundnuts, okra, soya beans, cowpea, maize, and pepper.

Table 29: Mixed Cropping

Mixed Cropping	Number of respondents	Percent (%)
Practicing (Yes)	56	40
Not Practicing (No)	84	60
Total	140	100

Source: Field Survey, 2019.

4.7.3 Cover cropping as a soil fertility management practice

The views of respondents were sought on cover cropping as a soil fertility improvement technique. Most of the sampled 140 respondents, 139 of them practised cover cropping as a soil fertility management practice representing 99.3%. Only 0.7% of the respondents did not practice cover cropping. The finding is well corroborated with Alidu (2015: 26) that "crops usually grown by women are legumes which fix nitrogen into the soil and will do well even on poor land". The responses are summarised in Table 30 below.

Table 30: Cover Cropping

Cover Cropping	Number of respondents	Percentage
Practicing (Yes)	139	99.3
Not Practicing (No)	1	0.7
Total	140	100

Source: Field Survey, 2019.

4.7.4 Minimal tillage as a soil fertility management practice

Table 31 below also summarised the numbers of respondents who practised minimal tillage. About 71.4% of the respondents across the various ages indicated they practised minimal tillage while a percentage of 28.6 did not practice minimal tillage. The respondents indicated they insist that the tractor operators should not do deep ploughing. A female focus group discussant said:

Some of the *women in this community use weedicides to spray before planting and use the hoe to weed afterwards (Female FGD at Wechau-bao community).*

Table 31: Minimal tillage

Minimal Tillage	Number of respondents	Percentage
Practicing (Yes)	100	71.4
Not Practicing (No)	40	28.6
Total	140	100

Source: Field Survey, 2019.

4.7.5 Chemical fertilizer as a soil fertility management practice

From Table 32 below, it can be deduced that 42 out of the 140 respondents use chemical fertilizer to improve the soil. Also, 98 respondents representing 70% did not use chemical fertilizer to improve their soil fertility. This means that more women are not using chemical fertilizer as a soil fertility management practice. A key informant had this to say:

We (women) don't have enough money to buy chemical fertilizer. Is because of poverty. We suffer a lot. Even government is not fair to subsidize chemical fertilizer to both men and women farmers at the same price. The men will just buy it and we the women will just struggle to buy. Women farmers should have been given much lower price than the men (Magzia at Dorimon, KII).

This finding confirmed that of Alidu, (2015) that women do not have enough money to purchase chemical fertilizer for application on their fields. Again, farmers also used chemical fertilizer because is a short-term measure. This is confirmed by the work of Adjei-Nsiah *et al.* (2006) that farmers use short term soil fertility management strategies like chemical fertilizer, mixed cropping, etc.

Table 32: Use of chemical fertilizer

Chemical Fertilizer	Number of respondents	Percent (%)
Practicing (Yes)	42	30
Not Practicing (No)	98	70
Total	140	100

Source: Field Survey, 2019.

4.7.6 Farm Yard Manure as a soil fertility management practice

Farm Yard Manure (FYM) is one of the soil fertility management practices identified to be practised by women farmers in the study area as summarised in Table 33 below.

Table 33: Farm Yard Manure (FYM)

FYM	Number of respondents	Percent (%)
Practicing (Yes)	40	28.6
Not Practicing (No)	100	71.4
Total	140	100

Source: Field Survey, 2019.

In Table 33 above, 40 of the respondents indicated that they used FYM to fertilize their fields. Also 100 respondents said they did not use FYM to improve their soil fertility. This means that more of the respondents are not practicing the use of FYM as soil improvement technique. One of the female lead farmers in Dorimon community had this to say:

> *Women don't keep enough animals. So, we don't get enough manure for use. You cannot go to somebody animal pen for manure. Our husbands who own the animals will instruct you to carry manure to his farm. You as a woman will not get to use (Female lead farmer, KII).*

4.7.7 Compost as a soil fertility management practice

Compost was also identified to be one of the soil fertility management practices women farmers used. From the survey, only 38 respondents representing 27% indicated that they practised composting as a soil fertility improvement technique. However, 102 respondents representing 73% did not use compost as soil improvements methods. Composting has been the lowest soil fertility management practices used and was identified as a long-term soil fertility management among women farmers in this study as also confirmed by Adjei-Nsiah *et al.* (2006) that compost is a long-

term soil fertility management strategy. This means that one cannot use compost when the security of tenure to farm land cannot be guaranteed. However, the preparation of compost is quite tedious. One this account, focus group discussant had this to say:

> *It is difficult preparing compost. You need to prepare plenty of it to be able to fertilize even half an acre. The GROW project taught us. Is very good. Master! If you are lazy, you cannot prepare compost (Female Discussant, Gadi).*

The responses on the use of compost as soil fertility management practices are summarised below.

Table 34: Compost

Compost	Number of respondents	Percent (%)
Practicing (Yes)	38	27
Not Practicing (No)	102	73
Total	**140**	**100**

Source: Field Survey, 2019.

4.7.8 Non-burning as a soil fertility management practice

Table 35 below summarised responses on the use of non-burning as identified as soil fertility improvements techniques. From the table below, 63% of the respondents do not burn their farms after harvesting while 37% do not practice non-burning. The details are summarised below.

Table 35: Non-burning

Non-burning	Number of respondents	Percent (%)
Practicing (Yes)	88	63
Not Practicing (No)	52	37
Total	**140**	**100**

Source: Field Survey, 2019.

4.7.9 Sources of Knowledge of soil fertility management practices

Results of the discussions from the interviews indicate that women farmers obtained extension education on soil fertility management practices through the Agricultural Extension Agents (AEA), Non-Governmental Organisations (NGOs), Family members and friends. The finding further revealed that 15% of the respondents received extension education on soil fertility management practices from AEA while 95% did not. This means that more work needs to be done on extension education on the part of the AEAs. A Key Informant interview revealed that insufficient and irregular release of government subventions for fuel to AEAs is one of the major causes for AEAs not being able to reach out to women farmers in the district. Also, inadequate AEAs especially female is another cause.

Table 36: Extension education on soil fertility management practices

Sources of extension education	Number of respondents (n = 140)		
	Yes	No	**Total**
AEA	21 (15%)	119 (95%)	**140 (100%)**
NGOs	120 (85.7%)	20 (14.3%)	**140 (100%)**
Family Members	28 (20%)	112 (80%)	**140 (100%)**
Friends	1 (0.7%)	139 (99.3%)	**140 (100%)**

Source: Field Survey, 2019.

Table 37 below provide a detailed information on the sources of knowledge on soil fertility management practices. Respondents representing 85.7% of the 120 said they received extension education on soil fertility management practices through NGOs whereas 14.3% did not. This means that majority of the women farmers received extension education through NGOs. Twenty-eight (28) respondents constituting 20% gained knowledge on the soil fertility management practices from family members while 80% did not. Finally, 1 person also gained knowledge on the soil fertility management practices from a friend.

Table 37: Sources of extension education on soil fertility management practices

Sources of extension education on soil fertility management practices	Frequency	Percent (%)
AEA	7	5.0
AEA and Family members	2	1.4
AEA and NGOs	8	5.7
AEA, NGOs and Family members	4	2.9
Family members	11	7.9
NGOs	96	68.6
NGOs and Family members	11	7.9
NGOs and Friends	1	0.7
Total	**140**	**100.0**

Source: Field Survey, 2019.

The details of the responses as summarised in Table 37 above indicates how respondents were engaged to understand whether they received extension education on soil fertility management practices from multiple sources. Sixty-nine percent (69%) of respondents indicated that they received extension from only NGOs while, 5% said AEAs. This finding therefore contradicts that of Muniru (2013) that AEAs serve as major sources of agricultural information to farmers across the ecological zones in Ghana. Also, 8% of respondents received extension education on soil fertility management practices from family members. The rest of the respondents received extension education on soil fertility management practices from more than one sources.

4.8 Relationship between Security of tenure to Agricultural lands and soil fertility management practices used by women

H_0: There is no association between security of tenure to farm land and soil fertility management practices.

H_1: There is an association between security of tenure to farm land and soil fertility management practices.

The above hypothesis was tested and summarised in Table 38 below given that 5% margin of error was allowed.

Table 38: Association between security of tenure to farm land and soil fertility management practices

Practicing Soil Fertility Management practices	Security of tenure		Chi-square (χ^2) Statistic	df	P-Value (Sig)
	Insecure (No)	Secured (Yes)			
Crop rotation	100	38	**5.084**	1	**0.024***
Mixed cropping	84	54	3.709	1	0.054
Minimal tillage	40	98	1.357	1	0.244
Chemical Fert.	98	40	**4.884**	1	**0.027***
FYM	49	89	**5.024**	1	**0.024***
Compost	100	38	0.385	1	0.258
Non-burning	51	87	1.357	1	0.709

Source: Field Survey, 2019. Critical value for a 0.05 significance level with d f = 1 is 3.84.

From Table 38 above, three of the variables thus crop rotation, chemical fertilizer and farm yard manure (FYM) were considered significant. This is because the critical value for χ^2 with 1 d f at 0.05 significance is 3.84. Since our calculated value of χ^2 =5.084, 4.884 and 5.024 > 3.84 we can

reject the null hypothesis. There is enough evidence to suggest that some soil fertility management practices are associated with security of tenure to agricultural land. This finding supports the statement made by a female key informant:

> *"Our husbands give us less fertile land. We will suffer and work on it with the hope that the land will be better in the next season; only to be taken away and allocate another land worse than the previous one… It discourages us to spend our time and resources improving the soil."* (KII, Gadi).

The study therefore concludes that, crop rotation, chemical fertilizer and farm yard manure (FYM) as soil fertility management practices depend on the security of tenure to agricultural lands at 5% significant level. However, mixed cropping, minimal tillage, compost, and non-burning are not significant.

4.8.1 Soil fertility management practices and age of respondents

H_0: There is no association between age and soil fertility management practices.

H_1: There is an association between age and soil fertility management practices.

Again, 5% significance level was used for the analysis in Table 39 below with df = 4. The Chi-square (χ^2) analysis shows three of the variables thus crop rotation, chemical fertilizer and farm yard manure (FYM) were considered significant. This is because the critical value for χ^2 with 4 df at 0.05 significance is 9.49. Since our calculated value of χ^2 = 13.635, 12.593 and 13.635 > 9.49; we can reject the null hypothesis. There is enough evidence to suggest that some soil fertility management practices are associated with age of women farmers. The study therefore concludes that, crop rotation, chemical fertilizer and farm yard manure (FYM) are associated with age of women farmers at 5% significant level. However, mixed cropping, minimal tillage, compost, and

non-burning as soil fertility management practices are not significant and not associated with age of women farmers.

Table 39: Soil fertility management and age of respondents

Practicing Soil Fertility Management practices		Age category						Chi-sq. (χ^2) Statistic	df	P-Value (Sig)
		18-28	29-39	40-50	51-60	62-72	Total			
Crop rotation	Yes	3	9	10	11	7	40	**13.635**	4	**0.009***
	No	4	27	41	26	2	100			
Mixed cropping	Yes	4	13	15	17	7	56	9.363	4	0.053
	No	3	23	36	20	2	84			
Minimal Tillage	Yes	6	21	35	30	8	100	6.955	4	0.138
	No	1	15	16	7	1	40			
Chemical Fertilizer	Yes	3	9	11	12	7	42	**12.593**	4	**0.013***
	No	4	27	40	25	2	98			
FYM	Yes	3	9	10	11	7	40	**13.635**	4	**0.009***
	No	4	27	41	26	2	100			
Compost	Yes	2	10	17	7	2	38	2.378	4	0.667
	No	5	26	34	30	7	102			
Non-burning of crop stalk	Yes	3	26	31	23	5	88	2.859	4	0.582
	No	4	10	20	14	4	52			

Source: Field Survey, 2019. Critical value for a 0.05 significance level with d f = 4 is 9.49.

4.8.2 Soil fertility management practices and farm size of respondents

H_0: There is no association between farm size and soil fertility management practices.

H_1: There is an association between farm size and soil fertility management practices.

Again, 5% significance level was used for the analysis in table 40 below with df = 3.

Table 40: Soil fertility management practices and farm size

Practicing Soil Fertility Management practices		Farm Size					Chi-sq. (χ^2) Statistic	df	P-Value (Sig)
		0-2.9	3-5.9	6-8.9	9-11.9	Total			
Crop rotation	Yes	52	31	14	5	102	1.332	3	0.721
	No	22	13	2	1	38			
Mixed	Yes	42	27	12	5	86	5.808	3	0.121
cropping	No	32	17	4	1	54			
Minimal	Yes	45	22	6	2	75	1.332	3	0.721
Tillage	No	29	22	10	4	65			
Chemical	Yes	36	33	14	5	88	2.151	3	0.542
Fertilizer	No	38	11	2	1	52			
FYM	Yes	65	27	5	3	100	**25.954**	**3**	**< 0.001***
	No	9	17	11	3	40			
Compost	Yes	36	15	4	1	56	**14.417**	**3**	**0.002***
	No	38	29	12	5	84			

Source: Field Survey, 2019. **Critical value for a 0.05 significance level with d f = 3 is 7.82.**

The Chi-square (χ^2) analysis in table 40 above shows that farm yard manure and compost as soil management practices are significant. The critical value for χ^2 with 3 d f at 0.05 significance is 7.82. Since our calculated value of χ^2 = 25.954, and 14.417 > 9.49; we can reject the null hypothesis. There is enough evidence to conclude that soil fertility management practices such as farm yard manure and compost are associated with farm size at 5% significant level. However,

crop rotation, mixed cropping, cover cropping, minimal tillage and non-burning, and chemical fertility are not significant and are independent from the farm size of women farmers.

4.8.3 The period of the GROW project and the number of years women are engaged as farmers

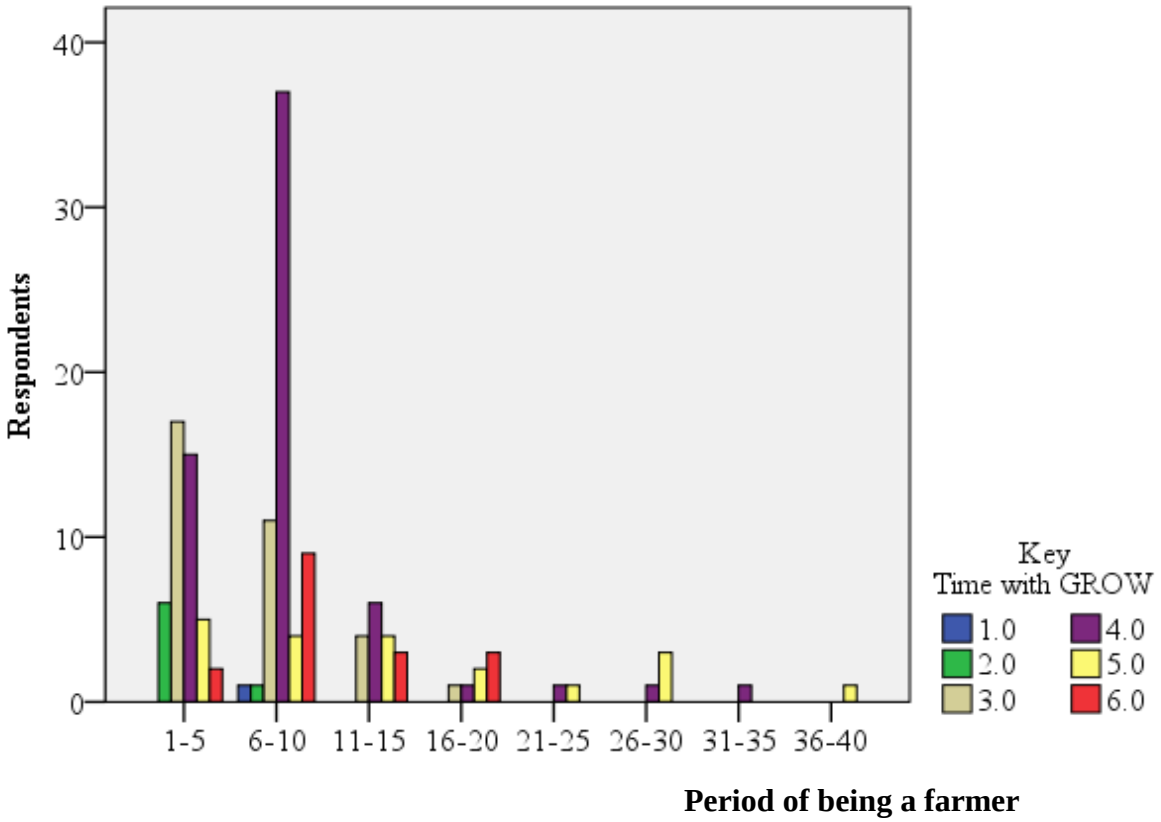

Figure 16: Number of years women are engaged in farming

Source: Field Survey, 2019.

From figure16 above many women were engaged in farming within the period of the project as against the rest of the years that women have been engaged in farming. From the figure above, the number of years women are engaged in farming is highly skewed to the right. Many women are engaged in farming from 1-10 years' period. The GROW project lasted for 6 years which falls within 1-10-year period as illustrated above.

It can be deduced from figure 16 above that the respondents who are farmers during the first 1-5 years of the GROW project was 45. The numbers increased to 63 in the second-class interval as represented in figure 16 above. The number of respondents who engaged in farming within 1-10 summed up to 108 representing 77.1% across all age categories in Table 16 above. This could be influenced by the GROW project. This was attributed to the fact that the GROW project recruited Male Gender Activists (MGA) within the project beneficiaries' communities who lobbied Community leaders, family heads to grand women farmers access to farmland. This confirmed the statement made by one of the key Informant in an interview session below:

> *It was difficult talking to Community leaders, family heads to release farmland to women and to allow their wives join the project. But with perseverance, men gave land to their wives to farm and to be part of the project (MGA at Gadi, KII 2019).*

The number of respondents who are farm holders reduced in 11-15-year cohort and worsened as you moved further right of figure 16 above. This means that few women farmed on their own in the past three decades.

Table 41: Contribution to house hold food stock

Food contribution to Household (on a scale of 1 to 10)	Frequency	Percent (%)
1.0	0	0.0
2.0	2	1.4
3.0	1	0.7
4.0	9	6.4
5.0	16	11.4
6.0	22	15.7
7.0	35	25.0
8.0	41	29.3
9.0	9	6.4
10.0	5	3.6
Total	140	100.0
Mean contribution = 6.9		

Source: Field Survey, 2019.

The results from Table 41 above also indicate that 35 women on the GROW made a modal contribution of 7 out of 10 representing 70% contribution to house hold food. It is further observed from the table below that, women farmers made an average contribution of 6.9 out of 10 representing 69% to house hold food stock. This finding confirmed that of Bonye *et al.* (2012) that men recognized the contributions women make to the family. Also, the supports IFAD (2011) that women contribute about 60% of the total agricultural production in Ghana.

From the surveyed data, the finding positively supports the proposition that women are involved in the decision-making process at the family and community level. A detailed analysis of the proposition that women farmers are involved in decision and is presented in Table 42 below.

Table 42: Women farmers' involvement in decision making process

Decision making	Frequency	Percent (%)
Strongly Disagree	2	1.4
Disagree	9	6.4
Indifferent	1	0.7
Agree	32	22.9
Strongly Agree	96	68.6
Total	140	100.0

Source: Field Survey, 2019.

From Table 42 above, 140 respondents that were interviewed, 128 representing 91.4% positively support the proposition that women are involved in decision making due to their contribution that they make to house hold food stock. However, 11 respondents did not support the proposition that women are involved in decision making. Only 1 person neither agreed nor disagreed with the proposition. The implication of the analysis is that greater percentage of the respondents are involved in the decision making. Therefore, decision making is an empowerment process. Once women farmers are involved in decision making, they are empowered. This finding supports the empowerment theory adopted. The finding is also well corroborated with that the works of Aasoglenang *et al.* (2013), Rao (2006), and Runger (2006); that empowerment is an on-going process by which people begin with or are involved in decision making.

Respondents' views were also sought with regards to the proposition that women farmers who contribute to house hold food stock are involved in decision making. Respondents views were summarised using a five-point Likert scale in Table 43 below.

Table 43: Contribution to household food and decision making

Contribution to household food stock (%)	Involvement in decision making					Total
	Agree	Strongly Agree	Indifferent	Disagree	Strongly Disagree	
10.0	0	0	0	0	0	0
20.0	1	0	0	0	1	2
30.0	0	0	0	1	0	1
40.0	4	3	0	2	0	9
50.0	8	7	0	1	0	16
60.0	9	12	0	1	0	22
70.0	4	31	0	0	0	35
80.0	1	39	0	1	0	41
90.0	2	4	0	2	1	9
100.0	3	0	1	1	0	5
Total	**32**	**96**	**1**	**9**	**2**	**140**

Source: Field Survey, 2019.

From Table 43 above, a total of 128 respondents representing 91.4% agreed to the proposition that women farmers who contribute to household food stock are involved in decision making as against 11 (7.9%) of those who disagreed with the proposition. However, 1(0.7%) respondent was indifferent with this assessing.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarised the findings of the study on women farmers' security of tenure to agricultural land and soil fertility management practices. The objectives of the study served as a guide to the discussions and the data collection processes. The data presentation, discussions and analysis led to certain findings on the processes of women access to land, challenges of access, security of tenure and soil fertility management practices among GROW project beneficiaries in the Wa West District in the Upper West Region. The following objectives below were targeted to be achieved by the study:

I. To ascertain the processes women farmers access land for agricultural purposes.

II. To assess the nature of tenure security to agricultural land among women farmers.

III. To assess the relationship between agricultural land tenure security and oil fertility management practices among women farmers.

The achievement of these objectives would lead to the realisation of how women farmers access to agricultural lands affect soil fertility management practices. The study again examined the different types of inheritance systems practised among the people in the Wa West District which influenced women access and security of tenure to farm land. This study concluded on its findings and generalised it to the population in the Wa West District. Recommendations are made based on the gaps identified in the study which would be useful for both individuals and institutions into research and policy formulation on land management. The discussion of the data yielded interested findings as summarised below:

5.1 Processes of women access to farm land

There exist some processes and there is no difference between the Birifor and Non-Birifor women in going through the processes in accessing agricultural lands in Wa West District. The study also revealed that the main mode of women access to agricultural land in the Wa West District is through begging. A woman must beg for farm through the male gender devoid of her marital status. Depending on the marital status, women experience different level of processes of accessing farm land in Wa West District. The study further revealed that married women and widows must follow due process in order to access farm land. The first point of call for married woman to access farm land is through the husband; the husband allocates the land to her or beg for it either from family or an outsider on behalf of the woman.

The study also established that a woman cannot access farm land from any outsider without the husband or any male member from her marital home leading her in the process. In the same vain, a widow must consult her male children in case the children are adults or any male member of her matrimonial home to lead the process. Again, both divorced and single women also follow a process of accessing farm land in their respective homes through a male member of their patrimonial home leading them.

Finally, the study revealed that widows have easy access to agricultural in the Wa West District than women in the other category i.e. married, divorced and single.

The study revealed that Wa West District in the Upper West Region has a mixture of inheritance system. The Non-Birifor (i.e. Dorimons, Waalas Dagaaba, Daga-wiile, etc.) population in the district practised the patrilineal system of inheritance. On the other hand, the Birifor ethnic group practised the Bi-lateral system of inheritance (Matrilineal and Patrilineal system of inheritance).

Despite the mixed system of inheritance that both Birifor and Non-Birifor cultural lineages have, only men can inherit landed property.

5.1.2 Challenges of women access to farm land

Unfavourable beliefs systems, patriarchal inheritance system, low level of awareness of legal land reform policies, allocation of marginal farm lands, and gender roles are the top five challenges of women access to farm lands in Wa West District.

5.2. Security of tenure to farm land

Access to agricultural land in the Wa West District is one thing and security of tenure is another. Generally, women have access to agricultural land in Wa West District. The study found out that there exists a perceived insecurity of tenure to agricultural lands among women farmers in Wa West District. However, only 1 % of women has secured tenure to agricultural land. Security of tenure to agricultural land would be enhanced when there are conscious efforts on facilitating women farmers to have secured tenureship to farm land by stakeholders.

The fact that women farmers have insecure tenure to farm land on one hand, the nature of farm land allocated to them is on the other hand. Lands allocated to them are degraded lands and normally described as marginal lands. The study therefore confirmed that the most degraded/less fertile lands are normally given to women by their male counterparts within the same family for farming.

The GROW project facilitated women access and secured tenure to agricultural land among women farmers in Wa West District and the Upper West Region as a whole. Through the GROW project, Male Gender Activists were recruited at the community levels to facilitate women access to farm

land. Also, MEDA the GROW project holder, organised a regional symposium for stakeholders to facilitate regional and traditional Authorities to grant women farmers secured tenure to farm land.

5.2.1 Types of soil fertility management practices women farmers use

The study revealed that women farmers used both short-term and long-term soil fertility management practices in the Wa West District in the Upper West Region of Ghana. These soil fertility management practices included crop rotation, mixed cropping, cover cropping, minimal tillage, chemical fertilizer, farm yard manure, compost and non-burning of crop stalk in the farm.

5.3 Relationship between security of tenure and soil fertility management practices

There is a significant relationship between security of tenure and soil fertility management practices among women farmers in the Wa West District. Secured tenureship to agricultural land among women farmers leads to the practised of both short-term and long-term soil fertility management techniques. Some soil fertility methods are significantly associated with security of tenure to agricultural lands among women farmers. Thus, the practices of crop rotation, farm yard manure, and fertilizer application are significantly associated with the security of tenure to farm land among women farmers.

5.4 Conclusion

Women play a major role and are central in providing the nutritional needs for the home. Women contribute greatly to agricultural production. It is in this regard that the Government agencies in Ghana, including World Bank, Non-governmental Organisation such as GIZ, UN-Habitat, FAO, among others have pushed for women ownership especially to agricultural lands. Over the years, this push for ownership have not yielded the desired results. Meanwhile, women access to

agricultural lands must go through assisted processes or intermediaries. Knowledge acquisition is also important with regards to women access to agricultural land. Most women farmers have insecure tenure to agricultural lands in Wa West District. This is because women farmers are not sure of the land, they farm on in the next cropping season. However, it is within this context that we need to change the narrative by facilitating security of tenure among women farmers. When women have secured tenureship, they adapt long term soil fertility management practices; where they have insecure tenureship, short term soil fertility management practices are adapted.

5.5 Policy Recommendation

- Interventions of Government and Non-governmental Organisations should be focused on facilitating women to have tenure security to agricultural land.
- Government and Civil Society Organisations should concentrate on deepening information access for women to have secured tenure to agricultural land. Thus, more concentration should be on local radio programmes to educate people on the existing land reform policies than relying on the legal land policies reform documents.
- Government and other should translate legal land policy documents into the various local Ghanaian languages to make it accessible for those who are functionally literate in their respective local languages.
- There is the need for adult literacy education which could enable them read and understand legal land policies reforms in Ghana. The non-formal education division should be resourced to continue the adult literacy facilitation.

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APPENDENCES

APPENDIX 1

QUESTIONNAIRE

Introduction

My name is Amos Baafira Ngmendoma. I am a Student from the University for Development Studies. As part of my training, I am conducting a research on women access to agricultural land in Wa West District. I am interested to hearing from you. I will treat everything you tell me in this study as confidential. Nothing you say will be personally attributed to you in the report resulting from this interview. My report will be written without attributing any comment to a specific person. Your participation in this interview is voluntary and you decide what you are willing to share with me.

Metadata

GPS Coordinates……

Community…….

Date and Time……..

Background characteristics of respondents

1. Age of respondent ……

2. Religion: **1** Christian [ ] **2** Moslem [ ] **3** Traditional [ ] **4** other, specify ……

3. Educational status: **1** basic [ ] **2** Middle school [ ] **3** Secondary/senior high [ ] **4** Vocational [ ] **5** tertiary [ ] **6** none [ ]

4. Marital status: **1** Married [ ] **2** Single [ ] **3** Divorced [ ] **4** Widowed [ ]

5. Number of male children…….

6. Number of female children……

7. How long have you been a beneficiary of the grow project in years?

1 below 1 [ ] **2** 1-2[ ] **3** 3-4[ ] **4** 5-6 [ ]

8. Farm size

1. Less than 1ha. [ ] **2.** 1 to 2 ha. [ ] **3.** 2.1 to 3 ha. [ ] **4.** More than 3 ha. [ ]

9. Cultural Linage **1**. Birifor [ ] **2.** Non-Birifor [ ]

Processes of access to agricultural lands

10. Who owns land in your community?

1 Chief [ ] **2** Tendana (Land priest) [ ] **3** Clan/family head[ ] **4** Occupier of the land [ ]

5 other (specify) ……

11. How do women acquire farm land for farming?

1 Inheritance [ ] **2** Rental [ ] **3** Cash purchase [ ] **4** begging [ ] **5** Others

…….

12.What is the procedure for you (women) acquiring farm land?

1 stage one ……

2 stage two ……

3 stage three……

4 stage four ……

5 stage five …….

6 stage six …….

Other stages ……

13. How will you describe the procedure of acquiring farm land? **1** Very easy [ ] **2** easy [ ] **3** difficult [ ] **4** Very difficult [ ] **5** others (specify) [ ] ……

14. Explain your answer……..

15. How long have you been farming? ……..

16. Do women inherit land? **1**. Yes) [ ] **2.** No) [ ]

17. What is the level of women access to farm land through inheritance compared to men?

1 Equal access as men access [ ] **2** Greater access than men [ ] **3** No access [ ] **4** Less access than men [ ]

18. Which of the following category of women are most likely to have easy access to farm lands?

1 Married women [**]** **2** Single [ ] **3** Widows [ ] **4** Divorce [ ]

5 Other (specify) [ ] ……

19. Being a beneficiary of GROW project influence your access to farm land? levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

20. Do you think you will still continue to have access to the land after GROW has exited the community?

1. Yes) [ ] **2.** No) [ ] **3** Not certain [ ]

Challenges of women access to agricultural land

21. Literacy level of women influences their access to farm land levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

22. Poverty affects women's access to farm land. **1** Strongly Agree [ ] **2** Strongly Disagree [ ]

3 Disagree [ ] **4** Agree [ ] **5.** Indifferent [ ]

23. Beliefs system influences women access to farm land. levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

24. System of inheritance influences women access to farm land? levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

25 Are you aware of the existence of any legal land reform policy? **1** Yes [ ] **2** No [ ]

26. Does your access to farm land enhanced under the Ghana legal land reform policy?

1 Yes [ ] **2** No [ ]

27. Legal land reforms do not guarantee women secured tenureto farm land levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

28. How are women regarded in terms of farming occupation? **1** Regarded as farmers [ ] **2** Only assist their husbands[ ] **3** Non – farmers [ ] **4** Other (please specify) [ ].....

29. Which of the following constraints is the most challenging as regards women security of tenure to farm land?

1 Beliefs System [ ] **2** Educational limitations [ ] **3** Economic constraints (poverty) [ ] **4** Inappropriate legal reform policies[ ] **5** Gender [ ] **6** Allocation of marginal land to women [ ] **7** Patriarchal inheritance [ ]

Soil fertility Management practices and security of tenure to land

Use the preamble below to answer the following questions 30 to 35 in the table:

Below are the characteristics of land tenure security. Indicate whether the conditions below were made clear to you during the allocation of the farm land to you.

Question Number.	characteristics of land tenure security	1= Yes	0 = No
30	Clear terms of access		
31	Certainty with the duration of access		
32	No interference with the terms and duration of access		
33	Is there any possibility of renewal?		
34	Planting of trees		
35	Type of crops		

36. At the time of farm land allocation, were you made known how long you can farm on the land?

1 Yes [ ] **2** No [ ]

37. In your view, how can you describe your holding to the land you are farming on?

1 Secured [ ] 2 Insecure [ ]

38 How long can you farm on the land allocated to you in years?

……..

39. Women are given degraded (less fertile) land for farming. levels

1 Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

40. Who taught you the soil fertility management practices? **1** Agricultural Extension Agents [ ]

2 NGOs [ ] **3** Friends [ ] **4** Family members [ ] **5** Other (Specify) [ ]……

41. Have you been able to improve your production? **1** yes [ ] **2** No [ ]

42. How will you describe your contribution to household food stock since with being part of GROW project? **1** Very high [ ] **2** High [ ] **3** Medium [ ] **4** Low [ ] **5** Indifferent [ ]

43. Women farmers who are beneficiaries of the GROW project with improved livelihoods are considered to be part of decision making at household and community levels **1** Strongly Agree [ ] **2** Agree [ ] **3** Indifferent [ ] **4** Disagree [ ] **5** Strongly Disagree [ ]

Use the preamble below to answer the following questions 42 to 49 in the table:

Below are some of the soil fertility management practices women farmers use. Indicate **1** to mean **Yes** to the soil fertility practice you will use if you have **secure access** to farm land and **0** to mean **No** to the soil fertility practice you will use if you have **insecure access** to farm land in the below:

Question Number.	**Soil fertility management practices**	**Secure Access (1 = Yes)**	**Insecure Access (0 = No)**
44	Practicing crop rotation		
45	Practicing mixed cropping		
46	Practicing cover cropping		
47	Practicing minimal tillage		
48	Using chemical fertilizers		
49	Using farmyard manure		
50	Using compost		
51	Practicing none burning of stalk		

Thank you for your time!!!!

APPENDIX 2

KEY INFORMANT INTERVIEWER'S GUIDE FOR COMMUNITY STAKEHOLDERS

(Traditional Authorities-Chief & *Tendaana*, Family Heads, Queen mothers)

Introduction:

My name is Amos Baafira Ngmendoma. I am a Student from the University for Development Studies. As part of my training, I am conducting a research on women access to agricultural land in Wa West District. I am interested to hearing from you. I will treat everything you tell me in this study as confidential. Nothing you say will be personally attributed to you in the report resulting from this interview. My report will be written without attributing any comment to a specific person. Your participation in this interview is voluntary and you decide what you are willing to share with me.

1. Can you share with me how people get agricultural land in this community?
2. How do women get land for farming?
   - Is it the same process for all women or different for different groups of women?
3. Have there been difficulties with regards to women's access to land for farming? If yes, what are the challenges and reasons for them?
4. Do you think women are giving high- or low-quality land for farming? Explain.
5. What soil fertility management practices do women use on their field?
6. What challenges do women farmers face in practicing soil fertility management option(s)?
7. How long do women hold land allocated to them for farming?
8. Are there changes in the duration with regards to women in the GROW project farm on land allocated to them? What brought about it?

9. What is the traditional role of women in the family /household? Can you consider women as farmers or? Explain.

10. Do you have any question for me or any other view you want to share?

Thank You.

APPENDIX 3

KEY INFORMANT INTERVIEWER'S GUIDE FOR 7 NGOs STAFF (MEDA, CARD, CAPECS)

Introduction

My name is Amos Baafira Ngmendoma. I am a Student from the University for Development Studies. As part of my training, I am conducting a research on women access to agricultural land Wa West District. I am interested to hearing from you on number of issues. I will treat everything you tell me in this study as confidential. Nothing you say will be personally attributed to you in the report resulting from this interview. My report will be written without attributing any comment to a specific person. Your participation in this interview is voluntary and you decide what you are willing to share with me. Your contribution is very much appreciated.

1. Working with women farmers in your project, how do women get land for farming? Explain the processes

2. Do you encounter some resistance from men why the project is working with only women? Explain

- What about men giving land to women under the project?
- How do men describe women having their own farms?
- Are women considered as farmers or what?
- What type of land is giving to women under your project for farming? Describe
- Any other issues regarding the challenges of women access to land

3. How do women farmers prepare and improve the soils of the land giving to them for farming?

- Describe some of the practices.
- Do you also teach women some soil fertility improvement practices?

- What challenges do women face in sustaining the soil fertility improvement practices?
- How long do women hold land allocated to them for farming under the project?
- Are there changes in the duration from the start and now with regards to women in the GROW project farm on land allocated to them? What brought about it?
- Can you share some lessons experiences or others regarding women access to agricultural land?

Thank you very much for your time.

APPENDIX 4

INTERVIEW GUIDE FOR KEY INFORMANT FOR STAFF OF MoFA DISTRICT OFFICE (1 Agricultural Extension Agent)

Introduction:

My name is Amos Baafira Ngmendoma. I am a Student from the University for Development Studies. As part of my training, I am conducting a research on women access to agricultural land in Wa West District. I am interested to hearing from you, on the following issues:

1) Extension services your outfit renders to women farmers regarding soil fertility management practices in the project

2) Your assessment on the quality of land allocated to women.

I will treat everything you tell me in this study as confidential. Nothing you say will be personally attributed to you in the report resulting from this interview. My report will be written without attributing any comment to a specific person. Your participation in this interview is voluntary and you decide what you are willing to share with me. Your contribution is very much appreciated.

1. Working with women farmers, do you think they have access to high- or low-quality land for farming? Explain
2. What do you consider to be the major constraints of women farmers with regards to access to farm land?
3. How do you involve women in improved soil fertility management practices or technology in your extension services?
4. What type of soil fertility management practices do women farmers use? Explain

Thank you

APPENDIX 5

FOCUS GROUP DISCUSSION GUIDE

Introduction:

My name is Amos Baafira Ngmendoma. I am a Student from the University for Development Studies. As part of my training, I am conducting a research on women access to agricultural land in Wa West District. I will treat everything you tell me in this study as confidential. Nothing you say will be personally attributed to you in the report resulting from this interview. My report will be written without attributing any comment to a specific person. Your participation in this interview is voluntary and you decide what you are willing to share with me. Your contribution is very much appreciated.

Information on gathering of data:

Date:

Location of FGD:

Facilitator of FGD:

Section (A) Women access to land for farming

(NB – you/facilitator must write approximate age and marital status of each woman answering, to make it clear who is talking about her experience in a), for example: married

1. How did you get land to farm?

- Who allocated it (Chief, husband, brother, in-law, etc.?)
- Was it easy for you to get the land?
- Is it the same process for all women or different for different groups of women? Explain
- Are there any traditional beliefs regarding what type of field should be given to women for farming, and the type of crop women cultivate? Explain

- How long do you farm on the land allocated to you?
- Can women inherit your husband's or father's farm land? Explain

Section (B) Soil fertility management practices

2. How will describe the type of land that was allocated to you- high or low quality

- Do you think women in this community are generally given poor or good quality land to farm? Explain why?
- Do you think the quality of your land affects your production or income?
- Can you share with me the management practices you use to improve land quality? (Local/indigenous and new management practices. E.g. composting, fertilizer use, soil water conservation methods, animal dropping, tractor ploughing, pesticide use, etc.)
- Why did you choose the kind of soil fertility improvement practice(s)? Explain
- Who taught you how to use these indigenous or new management practices? (Father, mother, husband, extension officers, NGOs, etc.)
- What challenges do you face in using these improvement practices?
- Can you share your experiences or anything with me?

Thank you for taking time to discuss with me.