

**Access to Land for Women's Empowerment: The Case of Basona Werana
Woreda, North Showa, Amhara National Regional State, Ethiopia.**

M.sc. Thesis

Rahel Kuma

July, 2021

University of Gondar

University of Gondar

College of Agriculture and Environmental Sciences

Department of Rural Development and Agricultural Extension

**Access to Land for Women's Empowerment: The Case of Basona Werana
Woreda, Amhara National Regional State, Ethiopia.**

By

Rahel Kuma

**A thesis submitted to the Department of Rural Development and Agricultural
Extension, in Partial Fulfilment of the Requirement for the Degree of Master
of Science in Agricultural Extension and Communication**

Major Advisor: Wuletaw Mekuria (PhD)

Co-Advisor: Degsew Melak (PhD)

July, 2021

Gondar Ethiopia

UNIVERSITY OF GONDAR

POSTGRADUATE DIRECTORATE

As thesis researcher advisor, we hereby certify that we have read and evaluated this thesis prepared under my guidance by Rahel Kuma entitled “Access to Land for Women’s Empowerment: The Case of Basona Werana Woreda, Amhara National Regional State, Ethiopia”. We recommend that it be submitted as fulfilling the thesis requirement.

| | | |
|---------------|-----------|-------|
| _____ | _____ | _____ |
| Major Advisor | Signature | Date |
| _____ | _____ | _____ |
| Co- Advisor | Signature | Date |

As a member of the Board of Examiners of the M.Sc. thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Rahel Kuma and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirements for the Degree of Master of Science in Agricultural Extension and Communication.

| | | |
|-------------------|-----------|-------|
| _____ | _____ | _____ |
| Chair Person | Signature | Date |
| _____ | _____ | _____ |
| Internal Examiner | Signature | Date |
| _____ | _____ | _____ |
| External Examiner | Signature | Date |

Final approve and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to council of graduate studies (CGS) through the department of school graduate committee (DGC or SDC) of the candidate.

DEDICATION

I dedicate this thesis to my mother, my sisters and my husband for their support in the whole of my life and also for their endless love.

STATEMENT OF THE AUTHOR

I declare that this thesis manuscript is prepared by my effort with the guidance and close supervision of my advisors. This thesis has been submitted in partial fulfillment of the requirement for M.Sc. Degree at the University of Gondar and is deposited at the University Library to be made available to borrowers under the rule of the library. I solemnly declare that this thesis is not submitted to any other institution for the award of academic degree, diploma or certificate.

Brief quotations from this thesis are allowable without special permission provided that accurate acknowledgment of the source is made. Request for permission for extended quotation from or reproduction of this manuscript in whole or part may be granted by the head of the Department or the Directorate of the Post Graduate program when in his or her judgment the proposed use of the material is in the interest scholarship. In all other instances, permission must be obtained from the author.

Name: Rahel Kuma

Signature _____

Place: University of Gondar, Ethiopia.

Date of Submission: _____

BIOGRAPHICAL SKETCH

The author was born on May 21, 1997, in Addis Ababa, the capital city of Ethiopia. She attended her junior school in Christian monastery mariyam tsion primary and secondary catholic school. She continued her elementary school in Misrak ber primary school. Then she attended her secondary and preparatory school in Kokebetsibah secondary and preparatory School. She has joined the University of Gondar College of Agriculture and Environmental Sciences in 2016 and graduated with B.Sc. Degree in Rural Development and Agricultural Extension in July 2019. After her graduation, she has been employed and working in the University of Gondar, College of Agriculture and Environmental Sciences, Department of Rural Development and Agricultural Extension as a graduate assistant since August 2019. Finally, she joined to pursue her MSc in Agricultural Extension and Communication in the same college of University of Gondar in 2019.

ACKNOWLEDGEMENT

First and for most, I would like to extend my unshared thanks to the Almighty God and Saintly Mary for smoothening of all aspects of my life and my study in particular.

I am indebted to and gratefully acknowledge Dr. Wuletaw Mekuria my principal advisor who put me on the right track of the research work. Successful and timely accomplishment of this study would have been very difficult without his generous time devotion from the early questionnaire design till the final write-up of the thesis through adding his constructive and extremely useful comments. Still, he deserves special thanks for providing pertinent materials helpful to this study.

My deepest appreciation and special thanks go to Dr. Degsew Melak, my co-advisor, without whom this study would have not been accomplished. He devoted his precious time and energy to follow up, comment on and improve the progress of the study since its initiation. Thus, I am very much indebted to him for his willingness to advise me and his guidance that enabled me to finalize the study.

I am intended to my gratitude to the University of Gondar for giving me the opportunity and its financial support to accomplish my thesis work. In addition, this research was undertaken with the support of Africa RISING, a program financed by the United States Agency for International Development (USAID) as part of the United States Government's Feed the Future Initiative. The content is solely the responsibility of the author/s and does not necessarily represent the official views of USAID or the U.S. Government or that of the Africa RISING program. Africa RISING is aligned with research programs of the CGIAR".

My special gratitude is forwarded to Dr. Kindu Mekonnen and Mr. Temesgen Alene for their acceptance on behalf of Africa RISING. Special thanks also go to my friends working in the Department of Rural Development and Agricultural Extension and Agricultural Economics staff for their valuable advice and encouragement throughout the study. Moreover, I acknowledge the Woreda agriculture office, Kebeles agricultural office, development agents, women households and other collaborated individuals for their help during data collection. Finally, my heartfelt thanks go to my mother Mrs. Etetu Degfe and my whole family.

ACRONYMS AND ABBREVIATIONS

| | |
|--------|--|
| CEDAW | Convention on the Elimination of All Forms of Discrimination against Women |
| CGIAR | Consultative Group for International Agricultural Research |
| ELD | Economics of Land Degradation |
| EPRDF | Ethiopian People's Revolutionary Democratic Front |
| FDRE | Federal Democratic Republic of Ethiopia |
| FLLC | First-level land certification |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| ICT | Information Communication Technologies |
| IOM | International Organization for Migration |
| MHH | Male Headed Household |
| RISING | Research in Sustainable Intensification for Next Generation |
| SDGs | Sustainable Development Goals |
| SLLC | Second-level land certification |
| SNNP | Southern Nations, Nationalities, and People's |
| SNZ | Statistics New Zealand |
| SPSS | Statics Package for Social Science |
| TLU | Tropical Livestock Unit |
| UN | United Nations |
| UNIDO | United Nations Industrial Development Organization |
| VIF | Variance Inflation Factor |

TABLE OF CONTENTS

| | |
|---|------|
| DEDICATION..... | IV |
| STATEMENT OF THE AUTHOR..... | V |
| BIOGRAPHICAL SKETCH..... | VI |
| ACKNOWLEDGEMENT..... | VII |
| ACRONYMS AND ABBREVIATIONS..... | VIII |
| LIST OF TABLES..... | XI |
| LIST OF FIGURES..... | XII |
| LIST OF APPENDIX..... | XIII |
| ABSTRACT..... | XIV |
| 1. INTRODUCTION..... | 1 |
| 1.1. Background of the Study..... | 1 |
| 1.2. Statement of the Problem..... | 3 |
| 1.3. Objectives of the Study..... | 5 |
| 1.3.1. General objective..... | 5 |
| 1.3.2. Specific objectives..... | 5 |
| 1.4. Research Questions..... | 5 |
| 1.5. Scope and Limitation of the Study..... | 5 |
| 1.6. Significance of the Study..... | 6 |
| 1.7. Organization of the Thesis..... | 6 |
| 2. LITRATURE REVIEW..... | 7 |
| 2.1. Definitions and Concept of Key Terms..... | 7 |
| 2.2. Theoretical Review..... | 9 |
| 2.2.1. Women’s land right..... | 9 |
| 2.2.2. Historical background of women’s land right in Ethiopia..... | 10 |
| 2.2.3. Role of land for women empowerment..... | 12 |
| 2.2.4. Land certification and tenure system in Amhara region..... | 13 |
| 2.3. Empirical Studies..... | 14 |
| 2.3.1. Women access to land in Ethiopia..... | 14 |
| 2.3.2. Land certification in Ethiopia..... | 14 |
| 2.3.3. How accesses to land empower women?..... | 16 |
| 2.4. Conceptual Framework..... | 17 |
| 3. RESEARCH METHODOLOGY..... | 19 |
| 3.1. Description of the Study Area..... | 19 |
| 3.2. Design of the Study..... | 22 |
| 3.3. Sampling Techniques and Sample Size Determination..... | 22 |
| 3.4. Types, Sources and Methods of Data Collection..... | 23 |
| 3.5. Method of Data Analysis..... | 24 |
| 3.6. Definition of Variables and Working Hypothesis..... | 27 |

| | | |
|--------|--|----|
| 3.6.1. | Dependent variable for access to land | 27 |
| 3.6.2. | Independent variables for access to land | 28 |
| 3.6.3. | Dependent variable for women empowerment..... | 30 |
| 3.6.4. | Independent variables for women’s empowerment..... | 30 |
| 4. | RESULTS AND DISCUSION..... | 36 |
| 4.1. | Access to Land of Women in Study Area..... | 36 |
| 4.1.1. | Means of land acquisition..... | 36 |
| 4.1.2. | The trend of land access | 37 |
| 4.1.3. | Land registration..... | 38 |
| 4.2. | Household Decision..... | 38 |
| 4.3. | Women Empowerment | 41 |
| 4.4. | Characteristics of Sample Respondents..... | 41 |
| 4.4.1. | Demographic characteristics..... | 41 |
| 4.4.2. | Economic characteristics of the respondents..... | 44 |
| 4.4.3. | Physical and institutional characteristics of the respondents..... | 46 |
| 4.5. | Factors Affecting Access to Land of Women..... | 49 |
| 4.6. | Access to Land for Women Empowerment..... | 54 |
| 5. | SUMMARY, CONCLUSION AND RECOMMENDATIONS | 58 |
| 5.1. | Summary | 58 |
| 5.2. | Conclusion | 59 |
| 5.3. | Recommendations..... | 60 |
| | REFERENCES | 61 |
| | APPENDIX..... | 69 |

LIST OF TABLES

| | |
|--|----|
| Table 1: Total number of population and households in the selected Kebeles | 23 |
| Table 2: Variables for access to land of women's | 34 |
| Table 3: Variables for women's empowerment | 35 |
| Table 4: Means of land acquisition | 37 |
| Table 5: The Distribution of Response of Women Decision Making (N=150) | 39 |
| Table 6: Age and Household size of household heads | 42 |
| Table 7: Marital and educational status for access to land | 43 |
| Table 8: Marital and educational status for empowerment | 44 |
| Table 9: Access to land and employment status for empowerment | 45 |
| Table 10: Continuous variable | 46 |
| Table 11: Physical factors | 47 |
| Table 12: Institutional factors for access to land | 48 |
| Table 13: Institutional factors for empowerment | 49 |
| Table 14: Logit model estimates for factor affecting the access to land of women | 53 |
| Table 15: Ordered Logit model for variables influencing women empowerment | 57 |

LIST OF FIGURES

| | |
|--|----|
| Figure 1: Conceptual frame work of the study | 18 |
| Figure 2: Map of study area | 21 |
| Figure 3: Trend of land access | 37 |
| Figure 4: Land registration | 38 |
| Figure 5: women empowerment in study area | 41 |

LIST OF APPENDIX

| | |
|---|----|
| Appendix 1: Conversion factors used to estimate Tropical Livestock Unit (TLU) | 69 |
| Appendix 2: Variance inflation factor (VIF) for explanatory variables of access to land | 69 |
| Appendix 3: Variance inflation factor (VIF) for explanatory variables of Empowerment | 69 |
| Appendix 4: Contingency coefficient for explanatory variables of access to land | 70 |
| Appendix 5: Contingency coefficient for explanatory variables of Empowerment | 70 |
| Appendix 6: Land size category | 71 |
| Appendix 7: Household income | 71 |
| Appendix 8: Household interview schedule | 71 |
| Appendix 9: Check List Questions for Focus Group Discussion | 76 |
| Appendix 10: Check List Questions for Key informant interviews | 77 |

ABSTRACT

There was inequality between women and men-headed households on landholding in Amhara region, so this study was conducted to examine access to land for women's empowerment in Basona Werana Woreda, Amhara National Regional State, Ethiopia. The specific objectives include assess the status of women's access to land, identify factors that affect access to land of women and analyze the role of access to land for women's empowerment level in the study area. In this study, multistage sampling technique was employed and samples of 150 representative households were selected using systematic random sampling technique. Both qualitative and quantitative research approaches were used. The data were collected from primary and secondary sources. Household interview, focused group discussion and key informant interview were major data collection methods. Descriptive and inferential statistics and econometric models were applied for analysis. Binary Logit was used for factors affecting access to land of women and ordered Logit to analyze the role of access to land for women's empowerment level. Among the total respondents, 52.7% were accessible while 47.3% weren't accessible to land. The result of binary Logit revealed that age of the household head, marital status, educational status, household size, distance from the rural land administration office, access to information and access to training significantly influenced access to land. The result of the ordered Logit model revealed that marital status, access to land, land size, access to information and access to credit significantly influenced women empowerment. The less accessibility of land for women should be improved by provisions of land equally. In addition the government bodies and the societies in the Basona Werana Woreda have to access education programs, roads, training and credit for women.

Keywords: *Empowerment, land certification, land right, Women*

1. INTRODUCTION

1.1. Background of the Study

Women are estimated at 43% of the agricultural labor force in the world. However, women own less land and have less secure rights over land than men around the globe. They make up on average less than 20% of the world's landholders. In addition, women in Africa contribute a crucial role in agriculture, food production, and land-based livelihoods. They also make up 60 to 70% of the agricultural labor force in Sub-Saharan Africa and South Asia. However, there is no consistent national or global data on the full scope of women's land rights or access to land to enable them to monitor and enforce their rights (Facio, 2017).

The land is one of the cornerstones of economic development on which farmers, pastoralists and other communities base their livelihoods. It also a significant component of business assets, that play a significant role in business investment strategies (Odeny, 2013). The land produces grains to feed producers, their family members, societies, and livestock. It gives a place where people's lives and their dignity. In addition, the land provides food, shelter and work for human beings (ELD Initiative, 2015). The other essential thing is that access to land is also guaranty to get other resources like access to water, as well as basic services such as sanitation and electricity (Moyo, 2017).

The land has a positive impact on women's status in the family and society (Koirala, 2015). Furthermore, it ensures the access and control of other productive resources to meet the standard life of the women. That is to say, efforts to ensure the right to equality and an adequate standard of living for women enable them to meet their need and their families. This is also linked to food security, sustainable economic development, as well as fight against the Human Immunodeficiency Virus (HIV) Acquired Immunodeficiency Syndrome AIDS. FAO (2011), argues that lack of land ownership and control of the property is creating the gender gap in women's economic well-being, social status, and empowerment (Varghese, 2016).

On the other hand, access to land is associated with women's empowerment. The more access to land the more empowered women and more likely to participate in community development (Janssens, 2010). Due to the fact of this land ownership is a crucial issue. There are policies, which encourage it at national and international levels. Mainly international human right is one of instrument for securing the right of land access (UN, 2013). In addition, Sustainable Development Goals (SDGs) contribute to the protection of land rights, for instance, Goal 5 stated "achieve gender equality and empower all women and girls," (FAO, 2018). Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) provides Article 14 for equal treatment of women in land and agrarian reform as well as in land resettlement schemes.

In Ethiopia, there are interventions to improve land tenure security, including the book of landholding (primary and secondary) land certification. Furthermore, the 1995 Federal Democratic Republic of Ethiopia (FDRE) constitution gives value to change the socio-economic condition of women which provides equal rights of women to property ownership (FDRE, 1995). In addition, in 1997 the FDRE rural land administration and use proclamation was issued and revised in 2005 to offer a mandate to regional governments to issue land policies based on the federal rural land, consistent with region-specific socio-economic situations (FDRE, 1997; FDRE, 2005).

Amhara region is one of the states among the regional state government in Ethiopia, which has implemented rural land registration and certification programs. The land registration program has demarcated and registered the agricultural landholding and provides households with documentary evidence of their land rights enforceable by the state (Houngbedji, 2018). The Environmental Protection Land Use and Administration Authority is established in 2000 with the mandate to improve tenure security and agricultural productivity of Amhara (Mebrat Gebreslassie, 2011). The rural land registration and certification program has been implemented across all zonal administration of the region including the North Showa administrative zone. According to the local source of information, Basona Werana Woreda has completed a land registration program. Thus, it gives prior information on land registration. This is a favorable condition to study land access for women's empowerment (Administrative Office of Basona Werana Woreda, 2020).

1.2. Statement of the Problem

Access to land and other natural resource increases the levels of child educational attainments, health care and children's clothing. This also in turn provides the improvements of individuals, households, communities as well as the country at large. Hence, the issue of land is a part of sustainable development. Santos et al. (2014) in West Bengal showed that having women's names on the land titles was positively associated with their participation in decisions regarding the use of agricultural land and purchase of productive assets. Similar to this, Valera et al. (2018) reported that women's land title ownership enhances their status and decision-making power in the household.

In Ethiopia, a gender-related study is interesting for researchers, because it is one of the most gender unequal countries. Ethiopia was ranked 127 out of 142 countries in the gender equality rankings by the report of the World Economic Forum in 2014 (World Economic Forum, 2014). In relation to the land, women are the most marginalized group of the society on access to and control over the rural land in Ethiopia. The reason for this is negative attitudes and harmful practices which deny a woman's right to own, administer property and control the rural land. In addition, women are restricted their customary right to inherit land from their family; and the control of the land during marriage falls chiefly under the control of their husband (Hussein Ahmed, 2014). As similar with this Yonas Tafesse (2011) conducted in Ethiopia argue that, the rural society is traditional and patriarchal in nature.

Land policies have been extensively studied in Ethiopia both by professionals, expatriates and donor agencies. However, the impacts of the land policies on gender are rarely studied as a subject of inquiry and this call for examining land policy through a gender lens. On the other hand, the land policy of Ethiopia has undergone changes in the last four decades, from the pre-1974 to the current Ethiopian People's Revolutionary Democratic Front (EPRDF). However, the system couldn't promote tenure security, agricultural productivity and women's land rights. The reason for this is reforms such as 1975 of Ethiopia that took a household as a homogenous unit and distributes land in the name household head that proved wrong (Tewodros Tefera, 2013).

There are various factors which contribute for the less ownership of land by women. The first and the most expressed is, 'men are head of the household, control and manage productive resources to the family'. But women's are going to other families due to marriage., So, giving the land for women is perceived as a lost (UN, 2013; Valera *et al.*, 2018). The other thing is the role of women like preparing food, child-rearing and other non-income generative activities led them to not exercise their land rights (Hanane Sharif, 2016).

There is a lack of study in the title of land access for women's empowerment in the Amhara region. Some studies were conducted only on land issues or women empowerment. The study conducted by Birtukan Atinkut (2016) on land registration and women's access to land showed that the recent provisions in legislation and policy in the region provide an improved context for women's access to land. On the other hand, Mikyas Abera *et al.* (2020) deals with empowerment with early marriage. Due to this reason, this study was conducted on access to land for women's empowerment. The majority of the population in the Amhara region lives in rural areas. About 90% of people's lives in rural areas, which need to give concern for the rural people (Hanane Sharif, 2016). There was also inequality between women and men-headed households on landholding in the region, which is 0.67 and 1.32 ha per women and men, respectively (Administrative office of Basona Werana Woreda, 2020).

In Basona Werana Woreda (an administrative unit greater than Kebele and equivalent to district) the condition of access to land was insecure. For instance; the population density of the Woreda is 119 persons per sq. km. There are 140557 of people in the study area, while only 11612 and 13120 of women and men had land access respectively. In addition 64090 of women depend on agriculture, while only 11612 of them were own land. Furthermore, the educational and employment status of the household indicated that women were lack in involvements in education and employment. Among the total population, 45 women were held from certified to the second degree, while 101 men were held. In terms of employment, 27 of women were employed from 92 employees in irrigation, crop expert, natural resource and extension experts (Administrative office of Basona Werana Woreda, 2020). This shows that there was less accessibility of land and involvement of women. Therefore, this paper is intended to contribute to filling the gap of information on access to land for women's empowerment in the study area.

1.3. Objectives of the Study

1.3.1. General objective

The general objective of the study was to examine access to land for women's empowerment in Basona Werana Woreda, Amhara national regional state, Ethiopia.

1.3.2. Specific objectives

The specific objectives of the study are:

- To assess the status of women's access to land in the study area.
- To identify factors affecting access to land of women in the study area.
- To analyze the role of access to land on women's empowerment level in the study area.

1.4. Research Questions

1. What is the status of women's access to land in the study area?
2. What are the factors affecting access to land of women in the study area?
3. What is the role of access to land on women's empowerment in the study area?

1.5. Scope and Limitation of the Study

The study was conducted in Basona Werana Woreda, North Showa administrative zone of the Amhara National Regional State. This is, due to the fact that the title needs a specific study. Women have different statuses and also need diverse interventions to meet their issues. So, it lacks to generalize the condition at the national level. Access to land is not to be a specific study. It is related to other natural resources. However, the study was conducted only in access to land, due to lack of time to study broad perspectives. In addition, access to land has a diver's scope.

However, the purpose of this study was restricted. It means that a woman can access when they have land on their self alone or jointly with others, unless they were not accessible.

1.6. Significance of the Study

The study will give great value to various stakeholders in the issue of access to land for women's empowerment. Firstly, women are the major beneficiary of this study, because the study was focused on access to land for women's empowerment. Due to this reason, it shows factors and what interventions have to do to improve such conditions of women. Secondly, it will contribute to the households. This means, if women are empowered by creating favorable conditions to get land, they may invest to their and their child education, health and other expenditure, which sustain household wellbeing (Hirut Girma and Giovarelli, 2013). Thirdly, it can contribute to improvements of the country as a whole, country's development taken from the individuals. Thus, the improvements of the women in the family contribute to country improvements. The research also uses for policy-makers, land administration offices, NGOs, GOs and private organization. It also use as a base for other studies.

1.7. Organization of the Thesis

The thesis is structured in to five chapters. Chapter one introduces the background, statement of the problem, objectives of the study, scope and limitation, and significance of the study. Chapter two includes definition and concepts of key terms, review of the literature on access to land for women's empowerment and that include conceptual framework. The third chapter contains methods of the study including description of the study area, design of the study, sampling technique and sample size determination, type, source and method of data collection and method of data analysis. The findings of the study were presents and discussed in the fourth chapter. Finally, chapter five presents the summary, conclusion and recommendations of the study.

2. LITRATURE REVIEW

2.1. Definitions and Concept of Key Terms

Access to land: According to Cotula *et al.* (2006) access to land is the process by which people, individually or collectively, gain rights and opportunities to occupy and use land, whether on a temporary or permanent basis. These processes include participation in both formal and informal markets, land access through kinship and social networks, including the transmission of land rights through inheritance within families. For the purpose of this study, women's access to land refers to the existence of land in women's name (alone or jointly) or not exists.

Control over the land: According to Almaz Woldetnsaye (2007) women's control over land means that women can access land, and can make decisions on selling or leasing out the land. Therefore, women's control over land is defined as women get access to land and they make decisions on land. It also realizes equality.

Empowerment: Fox and Romero (2017), in World Bank has defined empowerment as “the process of increasing capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes”. Empowerment is known as a process that expands women's agency or, more simply put, it is an increase in women's ability to make choices about their lives and environment. Land accessibility of women gives women to be empowered in economic, social and political dimensions. The empowerment also gives women the ability to struggle for their freedom and to reduce the gender disparity in the household and society (IOM, 2016). Empowerment is achieved through property access. It is the ability of a person to interpret the situation, make informed choices and decisions affecting oneself, family and community (UNIDO, 2010). In this study woman's empowerment is related to their ability to decide in the household and land-related decisions.

Gender: Unlike sex gender is socially and culturally constructed based on the expectation of what it means to be a man and/or a woman, including roles, expectations, and behavior. Gender has different constructs and expectations, and cultures within societies over time (SNZ, 2015).

Gender is something persons do, something they perform (Penelope and Sally, 2012). The gender role of women are led them to not empower. Women's participation in productive activities affect their status and autonomy (Dejene Debsu, 2009). The role of gender refers to socially constructed roles and responsibilities given to women and men in a given culture as though these roles arise from sexual differences. The proposed study deals on women who have above 18 years old and it includes all groups of women, single, divorced, widow and married.

Land tenure: Land is guaranteed through the land tenure system. Land tenure is an arrangement (rules, institutions and processes) through which people gain legitimate access to land. People use land and participate in the benefits deriving from it, and they hold, manage and transact it. Land tenure is an important part of social, political and economic structures (Boto and La Peccerella, 2012). Chigbu et al. (2019) defined land tenure as, "rights individuals and groups have to effective protection by the state against forced eviction". The security of tenure is a pre-condition for sustaining livelihoods in human settlements.

Ownership of the land: ownership of the land is the most complete type of property right. Looking into existing the Ethiopian Civil Code, under Article 1204 the ownership of the land defined as, "the widest right that may be had on a corporeal thing;" and "such right may neither be divided nor restricted except in accordance with the law (Temesgen Gebeyehu, 2018).

Sex: Sex is a distinction between males and females based on the biological differences in sexual characteristics (SNZ, 2015). As similar with this Penelope and Sally (2012) stated that, sex is a biological categorization primarily on reproductive potential.

2.2. Theoretical Review

2.2.1. Women's land right

The U.S. Agency for International Development (USAID) stated the role of gender equality and women's empowerment as fundamental for the realization of human rights and key to effective and sustainable development outcomes. In addition to this, equality of men and women, boys and girls contribute to the improvement of quality life of the whole people. The right of land for women is translated into higher economic gains, increased empowerment to make household decisions, more efficient land use, increased agricultural investment and improved food security. Women are playing a crucial role in primary laborers and users of land, yet their rights to land and resources are rarely recognized (USAID, 2020).

There are various land rights from the international to the national level. SDGs are one of the Goals which include women's right to equality and other rights. SDGs places the land at the center of development and recognizing it as the fundamental links to eradicating poverty (Goal 1), ending hunger and ensuring food and nutrition security (Goal 2), promoting gender equality and the empowerment of women and girls (Goal 5), sustainable cities (Goal 11) and life on land (Goal 15) (UN, 2019). In addition to this Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) provide women right. Article 14 of CEDAW declared, the equal treatment of women in land and agrarian reform as well as in land resettlement schemes (Mebrat Gebreslassie, 2011).

However in practice, women do not assure equal land rights when compared to their male counterparts. There is a gender gap in ownership, control, access to land and its resources in many parts of the world (UN, 2019). According to Pallas (2017) women face challenges ranging from their status within the household and community to their status under customary and/or statutory laws. Even women have *de jure* property rights; their *de facto* control of land is weak. It seems that the community is not willing to respect the right of women (Hussein Ahmed, 2014).

2.2.2. Historical background of women's land right in Ethiopia

Women's land Right in Ethiopia pre-1974: Ethiopian land policy is different across different regimes (Beyene Chekol, 2017). In this study, the three regimes are discussed. The first one is pre-1974 of Ethiopia, known as feudalism. It ignores the social equality of the peoples, and; land was mostly in the hand of few individuals. It was characterized by the nobility, government bureaucracy, military and church. Under this feudal era, Ethiopia had *Rist*, *Gult*, *Maderia* (*Yemengist*), and *Semon* (Church) land rights, but the most common ones are *Rist* and *Gult* (Belay Zerga, 2016).

Even though this era is known with various systems of the northern and southern parts of Ethiopia, it commonly lacked insecurity of land tenure for the peasant. It inhibits the peasant farmer to enhance production because of land fragmentation, no access to credit, and lack of modern inputs (Hanane Sharif, 2016). In *Rist* system, there was a right for women to get their ancestors land, but in practice, it does not work. During the marriage, women went to their husband's family, so the boys ignore their sisters' rights and they were not accounted as a descent group (Mebrat Gebreslassie, 2011).

Women land right in the *Derg* regime: the *Derg* regime (1974-1990) was proclaimed on rural land. It proclaimed public ownership of rural land and nationalized rural land. It also abolished tenancy and private ownership of land. *Derg* permits the family to hold up to ten ha of land. However, it restricted any transfer of interest by sale, lease, mortgages or similar means on land. The main focus of the system is addressing the inequality created by the feudal system. It distributed rural land to peasant farmers to access them. It seems that the system gives an equal right for women as men to acquire rural land under Proclamation No. 31/1975. The land policy of the government stated: "without differentiation of the sexes, any person who is willing to personally cultivate land shall be allotted rural land sufficient for his maintenance and that of his family" (Almaz Woldetnsaye, 2007).

However, it couldn't promote women's land access. Since, the proclamation of 1975 sated that land was given for the head of the household, which was mainly men. Thus, it discouraged the

right of women to land (Enyew Adgo *et al.*, 2014). In addition, the phrase “to personally cultivate” had also inhibited women’s to not use this right, because it needs to use oxen for plowing, which is culturally forbidden for women. . Furthermore, the proclamations were poorly implemented especially to protect women’s right to land during divorce and the death of a husband (Birtukan Atinkut, 2016).

Women land right in FDRE: EPRDF comes to power in 1991. EPRDF adopts the same rule that restricts the private ownership of land. It declared that land is in the hand of the peoples not privately, FDRE constitution of Ethiopian (1995) states that, "Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange” under the Article 2(13). FDRE Constitution provides separate articles, which encourage the equality of women with men. For instance, Article 35(7) stipulates that women have equal rights to property as men. They have the right to acquire, administer, control, use and transfer property (Hussein Ahmed, 2014).

On the other hand, the government ensures women’s equal rights in the process of land registration. In the land registration process, each Kebele (the lowest administrative unit settled in the rural area) was formed Land Administration Committee by and from the local population, including at least one female member. It encourages the involvement of women (Lavers, 2018). In addition, the revised family laws, adopted following this Constitution recognized the equality of men and women in all aspects especially regarding the ownership and administration of personal and common property. Article 90 of the Revised Family Code stated that the common property shall be divided equally between spouses (Hussein Ahmed, 2014; Selam Gebretsion and Yalemzewd Demssi, 2014). However, there is a debate on FDRE land right and ownership among politicians, academicians and other concerned parts in Ethiopia (Mebrat Gebreslassie, 2011; Achamyeleh Gashu, 2014; Enyew Adgo *et al.*, 2014; Birtukan Atinkut, 2016). In addition, the intervention conducted by the government had still a problem of implementation on women’s property right (Hussein Ahmed, 2014).

2.2.3. Role of land for women empowerment

Access to land has an important thing for women. Women's access to, use and control over land are essential to ensuring their right to equality and an adequate standard of living. Access to land of women led them to provide for their day-to-day needs and their families (UN, 2013). Land serves as a key input for agricultural production. It can be used as collateral to access financial resources and generating income in both rural and urban areas. Furthermore, it is critical for poverty reduction, food security, inclusiveness and overall sustainable development objectives in both rural and urban settings (FAO, 2018). On the other hand, the land is used as a recovery, during and after conflict situations. The number of women-headed households often increases sharply as many men have either been killed or are absent. However, they were denied access to their homes and fields by male family members, former in-laws or neighbors (UN, 2020).

Secure lands have a strong empowering effect on women. It reduces their reliance on male partners and relatives, increases their bargaining power within the household and improves their chances of accessing a wide variety of productive resources. The security of tenure provides confidence in women, which encourages women to undertake or expand their entrepreneurial activities (FAO, 2018). In addition to this Murugani et al. (2014) stated that investing on land serve as a security options for women, therefore land is urgent in combating food insecurity and fostering sustainable livelihoods in the context of a largely female rural population. The rural titling of women's land was also used as a means for identity, power, belongingness, means to produce food, and a way out of poverty (Cousins *et al.*, 2011).

However, most rural women are unemployed and engage in subsistence agriculture. Many countries also related gender disparities with land and other productive resources. They linked to assumptions that men, as heads of households, control and manage land implicitly reflecting ideas that women are incapable of managing productive resources such as land effectively. Productive resources given to women are considered as "lost to another family" in the event of marriage, divorce or death, and that men will provide for women's financial security (UN, 2013).

2.2.4. Land certification and tenure system in Amhara region

In the current regime, land registration was begun in 1998 in Ethiopia. The four regions Tigray, Amhara, Oromia and SNNP have conducted land registration and certification programs with different approaches. Amhara region started land registration and certification in 2003 with donor supports and used modern equipment (Ayele Behailu *et al.*, 2015). In the Amhara region land under private cultivation is registered with its actual size and identification of the individual who has been cultivating since 1991-1996. When conduct the pilot project program (supported by Swedish SIDA) modern techniques, such as Geographic Information System-Global Positioning System GPS-GIS techniques were used. The information in the certification includes land size, land cover, level of soil fertility, borders, obligations and rights of the holder (Adane Dabissa, 2013).

The region put the regional government Land Use and Administration Proclamation No. 46/96, drafted in 2000. The proclamation defined rights of possession as well as the right to use, rent, and inheritance. In addition to this, the region put the following regional state laws for women's land rights: (i) after the marriage ends both women and men have equal rights to land held faintly. (ii) land only transfers via inheritance with the permission of women. (iii) in the process of certification both the husband and wife are included with their photographs attached to the certificate (Adane Dabissa, 2013; Hanane Sharif, 2016).

However, the customary rights are patriarchal in nature, which restricts land ownership of women after marriage. A woman in the Amhara region is expected to move to her husband's home, which led them to lost land from inheritance. The society of the region believes that women are incapable of leadership and participating in activities outside homework, except helping her husband in the field by weeding and harvesting. In addition, there is a traditional saying "a women's place is in the kitchen". This traditional folklore influenced women's intra household bargaining power and their participation in the community (World Bank, 2011 as cited in Adane Dabissa, 2013).

2.3. Empirical Studies

2.3.1. Women access to land in Ethiopia

Even though Ethiopian women represent above half of the national labor force and contribute significantly to agricultural production, they have not benefited equally from national economic growth (Ziade Hailu *et al.*, 2019). Women are restricted or limited access to important agricultural resources such as land, livestock, farm implements, physical resources, knowledge and information. Due to the fact of this, the country lost benefits which got from national economic growth, such as a rise in net household income. The patriarchal orientation, socioeconomic and institutional constraints limit women's access to land (Hirut Girma and Giovarelli, 2013; Birtukan Atinkut, 2016).

In addition, there are kinds of literature that show the limited access to the land of women in Ethiopia. The research conducted in Hamer showed that the average farmland holdings of male-headed household are higher by almost one ha than that of female headed-households, livestock holding in pastoral areas for male and female-headed households were 32.8 and 24.5 tropical livestock unit (TLU), respectively (Adugna Enyew and Sileshi Mengstu, 2013). According to Kumar and Quisumbing (2015) male-headed households hold more land sizes, of which a larger proportion is cultivable compared with female-headed households at the national level.

In the Amhara region, women lack in the accessibility of land. In the region, there is a land policy that gives women equal access to land as men. However, the landholding of women is less than that of men. For instance, the Amhara Region Natural Resource and Land Administration Bureau stated that 38.6% of privately held land is registered under joint titling, 28.9% and 32.5 % of the registered land is under women and men respectively (Hanane Sharif, 2016).

2.3.2. Land certification in Ethiopia

The land certification supports women in the transfer of land through inheritance, rental and donation. This can be legal when the wife supports it. It provides the bank loan for men and

women using the certified land. Certification also securing women equal access to land at the time of death; divorce and other situation through registration. This provision has been put into practice by registering household land as a joint resource and providing the book that ensures joint ownership. Thus, a large majority of women have secured land titles either jointly with their husbands or independently. The current practice of land registration and certification provides tenure security. It has been claimed that reduces land-related disputes as land is registered and certified (Amanuel Lamessa, 2014; Birtukan Atinkut, 2016).

Ethiopia carried out the First-level land certification (FLLC) program between 1998 and 2004. The first land certification of the country is registered land holdings of rural smallholder farming households and it improves tenure security. Six million households registered in Amhara, Oromia, SNNP and Tigray region. Even though FLLC carried out with the most successful and low-cost land registration schemes in the world, it is suffered from deficiencies in Ethiopia. FLLC was characterized by poorly described spatial data of land parcels, provided a rough estimate of the area of the plots and landholders do not receive a map or spatial reference of their parcel. In addition, there was a variation of procedural operation across regions. For instance, in the Tigray region, only the men's name was registered and in Amhara, both men and women's names were registered (Ziade et al., 2019).

To overcome the above problems, the government of Ethiopia is supported by international donors launched second-level land certification. It is launched to improve tenure security and enhance the maintenance and updating of records and land management. This level of land certification is involved mapping landholding using satellite technology. It benefits women from land certification through the certificate made space for two people or husband and wife, instead of the only husband. In addition, it has given wives, widows and divorce rights, status and confidence. Unlike FLLC, Second-level land certification SLLC uses ortho-photo images to produce high-resolution maps on which landholders, assisted by trained field teams, identify their parcel boundaries in the field in the presence of their neighbors, Kebele land Administration Committee members and village elders. The Land Administration Committee is enacted by the law, while village elders and women representatives are introduced by the program as a support system for women (Ziade Hailu *et al.*, 2019; Barne, 2010).

2.3.3. How accesses to land empower women?

Empowerment provides the ability for women to make choices about their lives and environment. Empowerment has three processes: The first one is precondition or resources. The second is the element of action or agency, and the third one is the outcome (Pallas, 2017). Related to this, access to land serves as a source of empowerment by increasing women's security and their control over household decisions (Allendorf, 2007). Women's empowerment provides a meaningful choice and ability to control women's life (O'Neil *et al.*, 2014).

The security of women's land rights is able them to make investments on land, acquire better quality inputs, participate in land rental markets and receive more incomes. They also get higher economic gains by increasing women's economic security and increasing their control over household decisions. On the other hand, Santos *et al.* (2014) state that the relationship between women's land title ownership and their participation in household decisions, they found that having women's name on the land titles was positively associated with their participation in decisions regarding the use of agricultural land and purchase of a productive asset (Valera *et al.*, 2018). In Nepal, 37% of women who owned land had the final say on a household decision. As similar with this, in Ethiopia, a household land certification program led to 44% of wife decides which crops to grow on lands under her control (USAID, 2016).

However, the land access and control couldn't empower women, because of various factors. Women are unable to be involved in political institutions as leaders and participants. There are historical legacy's which, discourage women and the vulnerable. Similarly, Pallas (2017) states that women face specific hurdles in economically, politically, legally and society levels. Even though decision-making is an indicator for the empowerment of women in Ethiopia, the share of women in knowledge decision-making society is low. In addition to this, examining sub-division of managers such as chief executives, senior officials, and legislators, women accounted for only 14% and among legislators and senior officials, less than 10% (Helina Beyene, 2015).

2.4. Conceptual Framework

Fain (2017), shows that a conceptual framework is developed from various theories. It includes the key factors, constructs or variables of the study and their relationship. It helps explain the interrelationship between those factors while also guiding the author's thesis and that of the researchers who will analyze the thesis (Hans-Gerd, 2014). This study relates the dependent and independent variables as shown in Figure (1). The conceptual framework told that demographic factors-like age of the household head, educational status, marital status and household size; the physical and institutional factors-like distance to the rural land administration office, distance from the main road, access to information and access to training, were affecting access to land. After that, the dependent variable access to land was affecting empowerment. In addition to access to land and other factors like demographic factors; the age of the household, marital status and educational status; economic factors like, , land size, livestock ownership, employment, income; physical and institutional factors, distance from the main road, access to information and access to credit were affecting women empowerment.

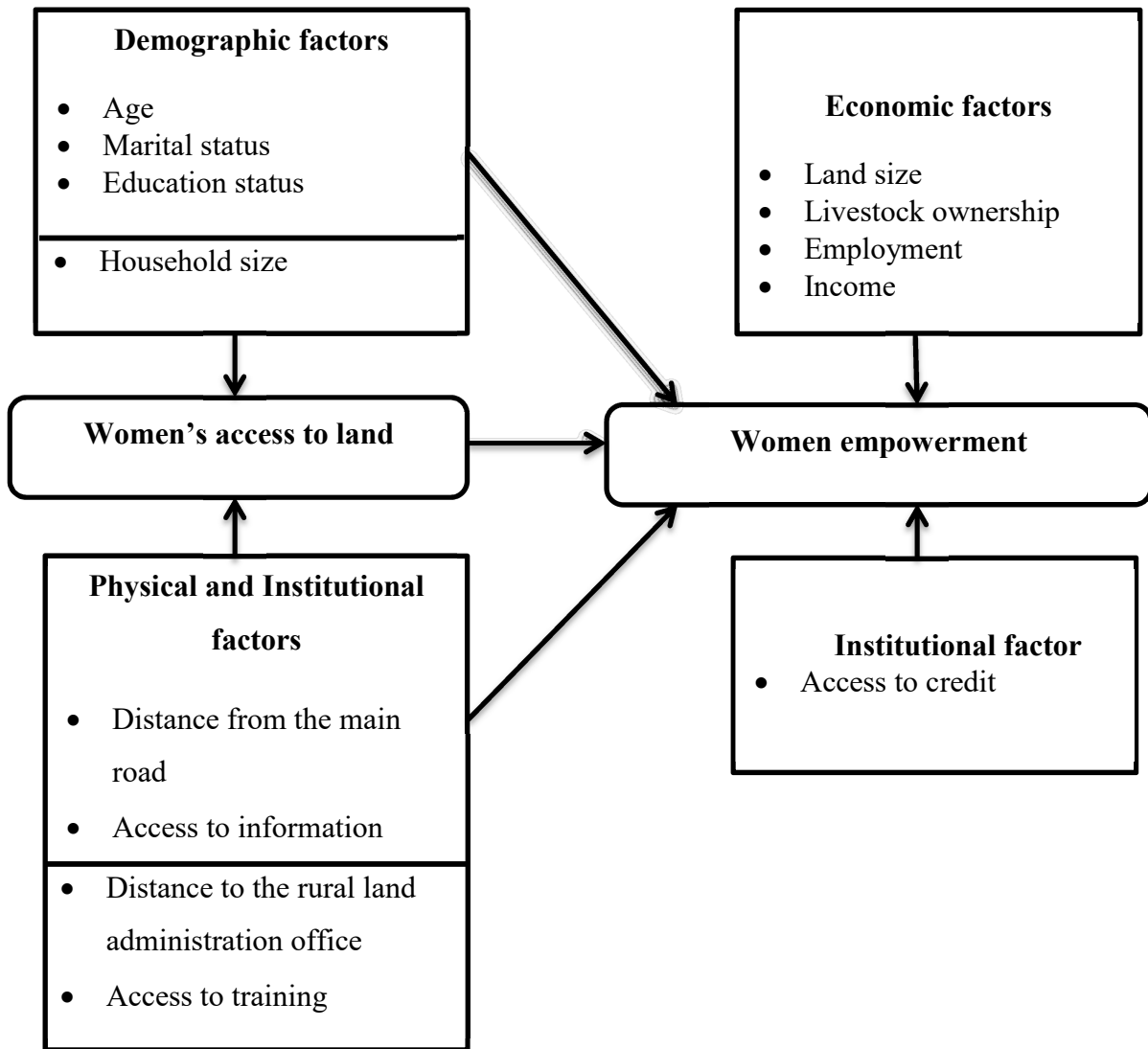


Figure 1: Conceptual frame work of the study

Source: Own presentation (2020)

3. RESEARCH METHODOLOGY

3.1. Description of the Study Area

Ethiopian highlands cover around 45% of the total land area of 1.12 million square km and support over 85% of the country's population that is overwhelmingly rural (Temesgen Gashaw *et al.*, 2014). This study was conducted in three Kebeles of Basona Werana Woreda. The Woreda is one of the 10 Woreda of North Shewa Zone in Amhara Regional State. It was completed the land registration program, so it gives prior information on land registration, which is favorable to study the relationship between land access and women's empowerment (Administrative office of Basona Werana Woreda, 2020).

Location: Basona Werana Woreda is one of the Woredas in the Amhara region. It is located between 9° 38' -09°41'00'' North Latitude and 39°30'00-39°32'00'' East longitudes. Its altitude ranges from 1300–3,700 m.a.s.l. It is located in the eastern edge of the Ethiopian highlands in the Semien Showa Zone, Basona Werana Woreda is bordered on the south by *Angolela Tera*, on the southwest by the Oromia Region, on the west by *Siya Debrina Wayu*, on the northwest by *Moretna Jiru*, on the north by *Mojana Wadera*, on the northeast by *Termaber*, and on the east by *Ankober*. The three selected Kebeles Angolela, Bakelo and Basodengora were present in southwest, southeast and northeast of North Showa (Administrative office of Basona Werana Woreda, 2020).

Socio-economy: Basona Werana Woreda has a total population of 126,604 of whom 64,824 are males and 61,780 are females. A total of 27,753 households were counted in the Woreda, resulting in an average of 4.36 persons per household. The majority of the population follows Ethiopian Orthodox Christianity, with 99.9%. The people in the area were depending on agriculture and agriculture related activities. Their agriculture system was crop livestock mixed farming system. Cereal crops and pulses such as malt and food barley, wheat, Teff, Faba bean and Field pea are some of the crop production practiced in the area. Their dominantly off farm activity was charcoal selling and preparing local drink known as *Areke*. The educational status of the Basona Werana Woreda showed that women were a lack in educational status. Among the

total population, 45 women were held from certified to the second degree, while 101 men were held. The number of professionals also showed that women were less likely involved in employment. Among the total 92 employees in irrigation, crop expert, natural resource and extension experts only 27 of them were women. This indicated that women needs encouragement (Administrative office of Basona Werana Woreda, 2020).

The land access of the Amhara region was 0.67 and 1.32ha for women and men respectively. The Basona Werana Woreda area coverage is about 1185.22 square kilometers. The landholding of persons per sq. km was 119. The landowner of women and men in the Woreda is 11,612 and 13,120 respectively. However, as compared to the total population 11, 612 women were accessible from 66156 women and 13120 men were accessible from 74401 men. People in the area are dependent on agriculture (Administrative office of Basona Werana Woreda, 2020).

Agro-ecology: most of the area in the Woreda is classified under moist Dega. Topographically the Woreda is largely mountainous with escarpments covered predominantly with reddish-brown soil. The Woreda receives monomodal rain whereas some parts receive bimodal rainfall. The bulk of the area receives rainfall between 900 and 1050 mm annually (Yehuala, 2019). The mean annual rainfall of the area varies from 950 -1200 mm and the mean annual temperature varies from 10⁰c to 22⁰c climatologically, there are four zones i.e. Wurch 2%, highland 50%, midland 46% and lowland 2%. Debre Berhan is the center of the Basona Werana Woreda 130 km far from Addis Ababa, Qeyit town is located at a distance of 10 km away from Debre Berhan (Hailu Tilahun et al., 2019).

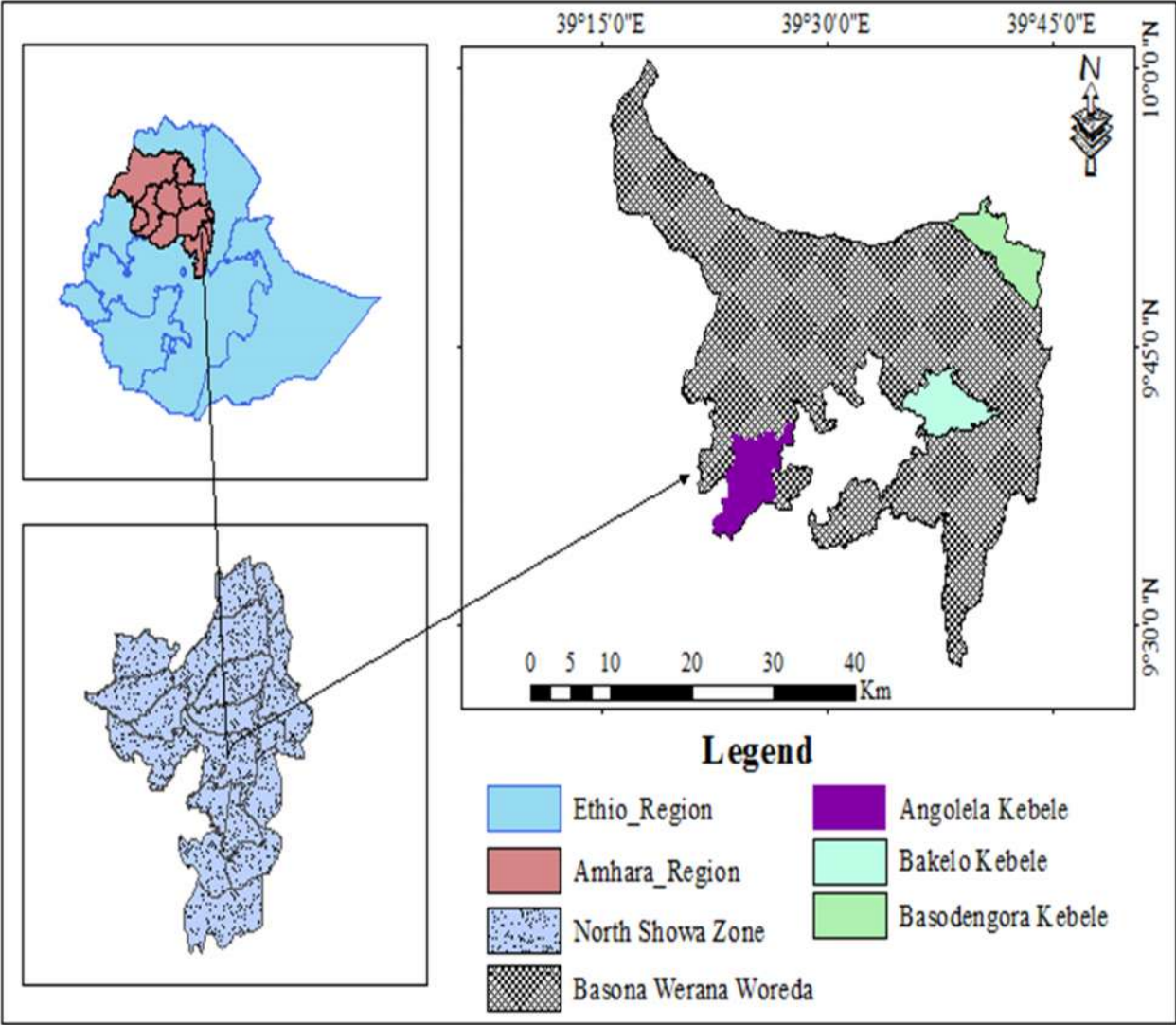


Figure 2: Map of study area

Source: GIS (2020)

3.2. Design of the Study

The overall framework of the study consists of qualitative and quantitative approaches, whereby the whole data collection processes were completed in a very short period of time or cross-sectional survey.

3.3. Sampling Techniques and Sample Size Determination

Sampling technique: A multistage sampling technique was used to select the sample population. In the first stage, Basona Werana Woreda was selected purposively. This was because women in the Woreda were a lack in access to land as stated in the above (Agricultural office of Basona Werana Woreda, 2020). Moreover, there was no study conducted previously about access to land for women empowerment in the area. In the second stage, three Kebeles were selected purposively from 30 Kebeles by considering their number of women into account. In addition due to shortage of time, budget and resources representing Kebeles were selected. Those are Bakelo, Angolela and Basodengora. In the third stage, 150 sample household heads were selected using a systematic random sampling technique from three Kebeles in probability proportion to size technique and K^{th} interval were fixed from the ratio of the population size. In the sampled households female headed households and females in male headed household were selected.

Sample size: Due to data management and resource issues, it was somehow impossible conducting the research in all household heads in the study area. Therefore, taking a representative sample household from the study population is necessary. The sample size of the study was determined based on Yemane (1970). The formula is working with a finite population and if the population size is known. In addition it also applicable for homogenous population, like study area. The Yamane formula for determining the sample size is given by:

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

$$(n) = \frac{3608}{1+3608(0.08)^2} = 149.76 \approx 150$$

Where, n =sample size

N= population

e = Marginal error/ the level of precision, 8 percent

Based on the proportion of households in the Kebeles 150 of females were selected using systematic random sampling techniques.

Table 1: Total number of population and households in the selected Kebeles

| Name of selected Kebeles | Total Household Head of selected Kebeles | Percent | No of sample taken |
|--------------------------|--|---------|--------------------|
| Bakelo | 1634 | 45% | 68 |
| Angolela | 976 | 27% | 40 |
| Basodengora | 998 | 28% | 42 |
| Total | 3608 | 100% | 150 |

Source: Administrative office of Basona Werana Woreda. 2020

3.4. Types, Sources and Methods of Data Collection

It is necessary for the researcher to; state the sources and type of the data in research. This helps to save time, labor, finance and other resource wastages. Both qualitative and quantitative data types were collected from primary and secondary sources to answer research questions. The primary data were collected through interview schedule, key informant interview and focused group discussion. The secondary data were collected from reviewing of secondary sources.

Interview schedule: interview schedule was employed to obtain both the qualitative and quantitative data about women’s land access, size of their landholding, marital status, and educational status, household size, the distance to the rural land administration office, their decision types and other relevant data to the study were gathered from primary sources. The

interview also includes factors affecting access to land and the role of access to land for women's empowerment by their decision. A total of 150 female household heads and females in male household heads were interviewed in the household survey. Since the local language of the respondents is Amharic, it was translated into the Amharic language. The pilot test was conducted before the data collection, in order to arrange the interview schedule. The collection of the data through the interview was conducted by the researcher supported by local people guides.

Focus group discussion: One focus group discussion was conducted within each selected Kebele. It was conducted the data collected from household interview. In the group discussion session, the researcher has participated as a facilitator. It helps the participant to remember a lot of points. It is a small group discussion (10 members) because it was easy to handle the discussion and able to give sufficient time to respondents.

Key informant interview: Key informant interview was conducted for further data triangulation. It includes two agricultural office experts, two land administration experts and six women, who have detail and depth information about the Woreda. Two women were selected from each Kebele by asking the community. The ten key informant interviews were conducted using a checklist to guide the interview.

Secondary sources: Secondary information from published and unpublished documents such as books, Journals, Conference papers, government reports from Development Agents' office/ Land administration office and other government offices related to land were collected.

3.5. Method of Data Analysis

The qualitative and quantitative data obtained through data collection methods were analyzed using different methods. **The first objective**, to assess the status of access to land of women in the study area was analyzed using descriptive statics. Descriptive statistics is important to have a clear picture of the characteristics of sampled units. By applying descriptive statistics like mean, standard deviation, frequency of appearance and percentage, one can compare and contrast different categories of sampled units with respect to the desired characters so as to draw

important preliminary conclusions. The result of descriptive analysis were presented in tables and figures.

For the second objective: factors affecting access to land of women in the study area, the binary logistic regression model was employed. This is due to the reason that the model relevance to deal with a dependent variable that is dichotomous. Logit regression analysis is divided into binary logistic regression analysis, where the dependent variables can only be 1 or 0. The number 1 indicates for women who have any type of land in their own name or jointly with others, 0 if women haven't any type of land in their own name or jointly with others (Admasu Bekele and Zegeye Paulos, 2018).

$$Pr(y=1/x) = pr(y=1) = \frac{e^{zi}}{1+e^{zi}} = \frac{1}{1+e^{-zi}} \quad (2)$$

$$z = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \beta_k x_k \quad (3)$$

$$1-pr(y=1/x) = \frac{e^{-zi}}{1+e^{-zi}} \quad (4)$$

$$\frac{Pr(y=1/x)}{[1-pr(y=1/x)]} = \frac{p(y=1)}{1-p(y=1)} = \frac{\frac{1}{1+e^{-zi}}}{\frac{e^{-zi}}{1+e^{-zi}}} = \frac{1}{e^{-zi}} = e^{zi} \quad (5)$$

$$Li = \ln\left(\frac{pi}{1-pi}\right) = \beta_0 + \beta_1x_i \quad (6)$$

Where; P_i = the probability that $Y = 1$ (if women access land)

$1-P$ = the probability that $y = 0$ (women doesn't access land,

L = the natural log of the odds ratio or Logit,

β_i = the slope, measure the change in L (logit) for unit change in explanatory variables (X);

β_0 = the intercept, it is the value of the log odd ratio, $\frac{pi}{1-pi}$ when X or explanatory variable is zero.

Thus, if the stochastic disturbance term (U_i) is taken in to consideration the logit model becomes

$$Li = \beta_0 + \beta_1x_i + U_i \quad (7)$$

For the third objective: According to Campus (2016) and Allendorf (2007) the third objective was analyzed using the following approach. This study added the five decision, which was not

present in Campus (2016) and Allendorf (2007) to include the land-related decisions. The empowerment levels as a dependent variable were constructed from the decision of the household heads. Respondents were asked who in their household decides (i) on how to spend the money derived, (ii) on respondent's health care, (iii) on major household utilities purchases, (iv) on visits to family or relatives, (v) on purchase of agricultural technologies (fertilizer), (vi) on purchase of improved seeds, (vii) on land rent in/out, (viii) on sale of agricultural produce and (ix) on type of crops cultivated Campus (2016).

Then the answers were categorized into four options: decisions taken by someone else, decisions taken only by their husband/partner, decisions taken jointly with their husband/partner and decisions taken alone by the women interviewed. The measure of empowerment is derived by grouping the empowerment score values, so that 1 identifies the low, 2 middle, 3 High and 4 very high levels of empowerment (in detail: 1 represents the values of empowerment score between 9 and 15; values among 16 and 22 are encoded in group 2; values between 23 and 29 are group 3, and finally 4 corresponds to values ranging between 30 and 36).

Ordered Logit model: The model was used to estimate the relationship between an ordinal dependent variable and a set of independent variables. An ordinal variable is a variable that is categorical and ordered. If the outcomes cannot be ordered, the ordered Logit model cannot be used (Degye Goshu, 2017). Due to this reason, the level of empowerment (low, middle, high and very high) was led to use the ordered Logit model. The ordered Logit model has been used widely to analyze ranked responses (Asres Elias *et al.*, 2016). According to Adepju (2018) as cited in (Tariku Kassa *et al.*, 2021) the ordered Logit model expressed as follows:

$$y_i^* = \beta'X_i + \varepsilon_i \quad -\infty < y_i^* < \infty \quad (8)$$

Where, Y_i^* = Empowerment level, β_i = Parameters to be estimated, X_i = Observed vector of explanatory variables which shows the characteristics of the i^{th} household, and ε_i =Residual an error which is logistically distributed.

If Y_i is considered as a discrete (countable) and observable variable which shows different levels of households' multidimensional poverty, the relation between latent variable Y_i^* and observable Y_i is obtained from the ordered logit model as follows:

$$\begin{aligned}
 y_i = 1 & \quad \text{if} & \quad -\infty \leq y_i^* < \mu_1, & \quad i=1, \dots, n, \\
 y_i = 2 & \quad \text{if} & \quad \mu_1 \leq y_i^* < \mu_2, & \quad i=1, \dots, n, \\
 y_i = 3 & \quad \text{if} & \quad \mu_2 \leq y_i^* < \mu_3, & \quad i=1, \dots, n, \\
 \dots & \quad \dots & \quad \dots & \quad \dots \\
 y_i = J & \quad \text{if} & \quad \mu_{j-1} \leq y_i^* < +\infty, & \quad i=1, \dots, n,
 \end{aligned} \tag{9}$$

Where, n = value of the sample size, μ and ∞ = Thresholds that define observed discrete answers and should be estimated. The probability of $Y_i=j$ should be calculated by the following relation

$$\begin{aligned}
 \Pr(y_i = j) &= \Pr(y_i \geq \mu_{j-1}) = \Pr(\varepsilon_i \geq \mu_{j-1} - \beta x_i) \\
 &= F(\beta x_i - \mu_{j-1})
 \end{aligned} \tag{10}$$

In cumulative probability expression, the ordered logit model estimates the likelihood of household "I" to be at 'Jth' level or less (1, ..., j-1). It should be noted that the answer groups in the ordered logit model are ordered. The ordered logit model is expressed as follows:

$$\log \left[\frac{y_j(x_i)}{1 - y_j(x_i)} \right] = [\beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_k x_{ki}] \quad J= 1, \dots, J; i=1, \dots, n \tag{11}$$

3.6. Definition of Variables and Working Hypothesis

3.6.1. Dependent variable for access to land

Access to land (ACLA): According to Namubiru-Mwaura (2014) women have access to land when they have land individually or jointly. It is a dummy variable, 0 for women who haven't access to land, 1 for women who have an access to land jointly or lonely. It is also operationally

defined as women who have registered the land by their names or jointly with their partners are said to be accessible and not accessible otherwise.

3.6.2. Independent variables for access to land

Age of the household (AGE): The age of the respondents can be measured in the number of years completed by the respondents. It is a continuous variable. According to (Admasu Bekele and Zegeye Paulos, 2018) the age of women's is inversely related to land accessibility. When women become older they may be neglected from different responsibilities in the rural area that makes them participate less in things that can enhance the land access at the community level as well as in Kebele level. This study also expects the negative influence of age on women's access to land.

Marital status (MAST): The marital status of the household is a categorical variable, 1=Married, 2=Single, 3=Divorced and 4=Widowed. The access to land of women's mostly depending on their male relatives, usually her husband or her father. There is a belief that women live with their parents and go to their husband's family when they marry, so they might accord lesser rights to land than their brothers and in practice. In addition, their husband and his family also see them as an outsider, so they have lesser land rights. In this condition, women use their husband's land until their marriage continues. However, if she breaks it, her land access also ends (Landesa, 2012). Similarly, Mwangi (2013) showed that unmarried women or daughters have little access to land because they are not allowed to inherit property in most patrilineal societies. This study also expects the positive effect of married women for access to land and the negative effect of the singles, divorced and widowed.

Education status (EDST): the educational status of women is a dummy variable measured in zero for the household who can't read and write or 1 for literate. It affects how they access land and how they feel secure about their rights or ownership in land. The educated women are informed about their rights and laws concerning land and have initiatives to secure land (Chigbu *et al.*, 2019). Amanuel Lamessa (2014) states that women contribute the largest illiteracy rate and most women lack basic and formal education in the world. It also influences their access to land.

Due to this reason, the study also expects the positive influence of education on women's access to land.

Household size (HSIZ): it is measured in terms of the total number of members in the household including aged persons and children. The household size has an inverse relation with access to land of women's, fixed landholding with an increasing number of household lead to the decreased average share of women's holding (Admasu Bekele and Zegeye Paulos, 2018). This study also expects the negative influence of household size on women's access to land.

Distance from the rural land administration office (DIOF): It is a continuous variable measured in a minute. The mobility of women in villages is severely constrained by geographical remoteness. People have to travel to the rural land administration center and Woreda headquarters on foot for any kind of administrative matters. Moreover, the distance and limited mode of transportation, coupled with the burden of household work particularly limit women's mobility. This is always not possible for women since they have to handle the responsibilities of the household as well as agriculture (IOM, 2016). It is expected that the inverse relation of distance to rural land administration and land access.

Distance from the main road (DIRO): It is a continuous variable measured in kilometer. Distance from the main road directly influences access to land. As women were near to the road they can access the land. According to Metropolis and State (2018), distance from the main road was inversely affected access to land of women. Women live near to the road were informed about land access. This study expects the inverse relationship of distance from the main road and access to land.

Access to information (ACIN): Access to information is one of the necessary things to access and also secure land rights. It is a dummy variable measured in zero for not accessible households and 1 for accessible households. Women are not fully aware of their rights to land led them to not exercise their land right properly (IOM, 2016). The respondent asked about their information and procedural knowledge about policy and legal practices with regard to land

registration and inheritance. This study expects direct relation between access to information and access to land.

Access to training (TRAN): It is a dummy variable measured in zero for the not accessible households and 1 for accessible households. According to Namubiru-Mwaura (2014), land-related training is critical in promoting gender equity. Training programs are important because they can raise awareness about the rights of women with respect to land and property and how those rights can be protected and strengthened. Due to this reason, this study expects the direct relationship between access to training and access to land.

3.6.3. Dependent variable for women empowerment

Empowerment (EMPT): According to Campus (2016) and Allendorf (2007), the respondent's response were typically changed to the ordinal variable. It represents the sequentially ordered category and it has four outcomes. Such as low empowerment=1; middle empowerment=2; high empowerment=3 and very high empowerment=4.

3.6.4. Independent variables for women's empowerment

Age (AGE): The age of the respondents can be measured in terms of the number of years completed by the respondents. It is a continuous variable. According to Batool (2019), the age of the women's household has a direct relation to women's empowerment. The older the woman, the more likely she can influence the household's decisions. This might be due to women's status may differ over the different phases of their life span in their changing roles. Older women are expected to enjoy higher status, rights and duties and financial empowerment. Where a daughter takes on the responsibility of domestic work, a mother-in-law makes decisions. A higher level of empowerment with ensuing age might be caused by rich experiences as women are engaged in wiser decisions regarding economic matters. This study also expects the positive influence of age on women's empowerment.

Marital status (MAST): the marital status of the household is a categorical variable, 1=Married, 2=Single, 3=Divorced and 4=Widowed. According to Tewodros Tefera (2013), married women enjoyed less empowerment status as compared to women's household heads. As similar to this Allah Nikkhah and Abu-Samah (2010) showed that divorced women have a high level of empowerment compared to married women. This due to the reason that women are constrained by the norms, beliefs, customs and values they need permission from their husbands to attend any program. Thus, for divorced women, since they don't need the husband's permission, they can easily involve in the empowerment process. This study expects the inverse relation of married women with empowerment than other categories.

Educational status (EDST): the educational status of the household influences women's empowerment. It is a dummy variable measured in zero for the household who can't read and write or 1 for literate (who can read and write). According to Allah Nikkhah and Abu-Samah (2010), education is the key factor to increase women's empowerment by increasing their self-confidence and understanding of how to operate in the world. Furthermore, education has the strength to enable women to think critically and to question their disempowerment. Therefore, education could provide opportunities for women to evaluate themselves, and gradually develop self-confidence and a positive self-image so that they begin to appreciate their own capacities and potentialities. Due to these reasons, this study also expects the positive influence of education on empowerment.

Access to land (ACLA): It is a dummy variable measured in zero for not accessible households and 1 for accessible households. According to Tewodros Tefera (2013), access to land has improved women's empowerment. In addition Campus (2016) access to land has a positive influence on women's empowerment. This is due to the fact that land represents the basic capital asset in agriculture, and it's is considered a means to get out of poverty. This study expects the positive influence of access to land on women's empowerment.

Land size (LSIZ): It is a continuous variable measured in ha. According to Admasu Bekele and Zegeye Paulos (2018), the land size of women-headed households positively related and affect the household's decision. They conclude that as land size increase by a unit, the probability of

women to involve in household decisions increases. It is the total land size titled by women, includes cultivated, grazing, homestead and eucalyptus woodlots land. This study expected the positive influence of land size on women's empowerment.

Livestock ownership (LVON): It is a continuous variable and measured in TLU. According to Bhadauria (2019), livestock ownership has a direct relationship with women's empowerment. This is because of the fact that women were responsible for the day-to-day management of the livestock. The livestock rearing at the household level is largely women-led activity. Therefore income from livestock rearing and decision-related to the management of livestock within the household is primarily taken by women. It enhances women's personal capabilities and increases decision-making status in the family and society as a whole. This study expects the positive influence of livestock ownership on women's empowerment.

Employment (EMPL): It is a dummy variable, 0 for women who have not wage employed and who were not self-employed, 1 for women who have wage employed or self-employed women. According to Campus (2016), regards employment remuneration, being paid in cash increases the probability of being more empowered. Employment gives women access to own earnings or contributions to family income that in turn increase the women's power at the household and community level. This study also expects the positive influence of employment on women's empowerment.

Income (INCM): It is a continuous variable measured in Ethiopian birr. It includes annual production from crop production, animal production, labor works, hand works and eucalyptus changed into birr. Income improves women's position within the household and substantially gives them greater control over the distribution of such earnings and household resources. Women's income builds their capacity in decision-making areas personally and in family matters (Ildephose, 2013). This study expects the positive influence of income on women's empowerment.

Distance from the main road (DIRO): It is a continuous variable measured in km. Difficulties in physical mobility for women are an obstacle and it influences women's decision-making. This

means as the distance from the main road increases the woman's freedom to move decreases, while as the distance from the main road decreases movement autonomy increases (Nahusenay Abate, 2019). In addition to this Mila and Nicholas (2018) showed that distance from the main road was significant and negatively affected women's empowerment. This implies that women in remote rural areas, far from the main road, are less likely to be empowered than those living in more accessible areas. This might be due to the exposure to new ideas and ways of life as well as wider access to information that comes with proximity to urban areas. This study also expected the negative influence of distance from the main road to empowerment.

Access to information (ACIN): The most used means of accessing information to women include radio, television, and person-to-person communication either by word of mouth or by telephone. It is a dummy variable measured in zero for the not accessible household and 1 for the accessible household. Wakitole Dadi (2017), accessing any type of information or media is the window to the world that can play a pivotal role in acquainting the women about their rights and updating them in accordance with the present dynamic world. Access to information has a direct relation with empowerment. In addition, Mishra and Sam (2016) showed that access to land was a positive and significant influence on women's empowerment. This study also expects the positive and significant influence of access to land on women's empowerment.

Access to credit (ACCR): It is a dummy variable measured in zero for the not accessible households and 1 for accessible households. Access to credit can contribute to women's empowerment. According to Kifle Tesfamariam (2015), credit was directly correlated with women's empowerment. This study also expected a positive influence of credit on women's empowerment. It directly helps the poorest especially women, both for consumption and production (Sreemany, 2016).

Table 2: Variables for access to land of women's

| Variable acronyms | Definition of variables | Types | Measurement | Hypothesis |
|--------------------------|--|--------------|---|-------------------|
| ACLA | Access to land | Dummy | 0= No and 1=Yes | |
| AGE | Age of the household-head | Continuous | In number of year starting from birth | - |
| MAST | Marital Status | Discrete | 1=Married, 2=Single, 3=Divorced/separate, 4=Widowed | +/- |
| EDST | Education status | Dummy | 0= for who can't read and write 1=whom literate | + |
| HSIZ | Household size | Continuous | In number | - |
| DIRO | Distance from main road | Continuous | In kilometer | - |
| DIOF | Distance from the rural land administration office | Continuous | In minute | - |
| ACIN | Access to information | Dummy | 0= No and 1=Yes | + |
| TRAN | Access to training | Dummy | 0 for not access to training and 1 for access to training | + |

Table 3: Variables for women's empowerment

| Variables | Definition of variables | Nature | Values | Hypothesis |
|-----------|------------------------------------|-------------|---|------------|
| EMPT | Empowerment | Discreet | 1=Low, 2=Middle, 3=High, 4=High | |
| AGE | Age of the household | Continuous | In number of year starting from birth | + |
| MAST | Marital Status | Categorical | 1=Married, 2=Single, 3=divorced/separate, 4=widowed | +/- |
| EDST | Education status of the house hold | Dummy | 0= for who can't read and write 1=whom literate | + |
| ACLA | Access to land | Dummy | 0= No and 1=Yes | + |
| LSIZ | Land size of the household | Continuous | In hectare | + |
| LVON | Livestock ownership | Continuous | In number | + |
| EMPL | Employment | Dummy | 0 for not employee, 1 for employee | + |
| INCM | Annual income | Continuous | In birr | + |
| DIRO | Distance from the main road | Continuous | In kilometer | - |
| ACIN | Access to information | Dummy | 0= No and 1=Yes | + |
| ACCR | Access to credit | Dummy | 0 for not access to credit and 1 for access to credit | + |

4. RESULTS AND DISCUSSION

This chapter discussed the findings of the study with five major sections. The first section of this chapter discusses the characteristics of sample respondents, using frequencies, percentages, mean, maximum values, minimum values and standard deviations. The status of women's access to land in the study area was presented in the second section. Factors affecting access to land of women in the study area were discussed in the third section. In the fourth section role of access to land for women's empowerment was discussed. Finally, the fifth section presents the summary, conclusion and the recommendations.

4.1. Access to Land of Women in Study Area

Access to land of women in the study area was shown that women were less accessible to the land. Among the total respondents, 52.7% were accessible, while 47.3% weren't accessible. As stated in Appendix 6 from the total respondents, 74.7% of the sampled household heads had 0-1 ha, 17.3% had 1-2 ha and 8% had 2-3 ha. The accessible household heads were 62%, 26.6% and 11.4% in 0-1ha, 1-2ha and 2-3ha respectively. While not accessible ones were 88.7%, 7% and 4.3% in 0-1ha, 1-2ha and 2-3ha respectively. This indicated that above the half of the respondents had below one hectare.

4.1.1. Means of land acquisition

Out of the total 150 sampled households, 35.3%, 24%, 20.7%, 13.3% and 6.7% accessed land from the government, family, marriage, gift and other means respectively. Based on accessibility, 19% of accessible and 29.6% of not accessible sampled household gain their land from family. The 3.8% of accessible and 23.9% of not accessible were gained their land from the gift. The 65.8% of accessible and 1.4% of not accessible gain their land from the government. The 10.1% of accessible and 32.4% of not accessible gain their land from marriage and 1.3% of accessible and 12.7% of not accessible gain their land from other sources (Table 4). This shows that the government has secured larger source of the land for women than other source of land.

Table 4: Means of land acquisition

| Variable | Accessible | Not accessible | Total | χ^2 =value | |
|---------------------------|-----------------|----------------|------------|-----------------|------|
| Means of land acquisition | From family | 15 (19%) | 21 (29.6%) | 36 (24%) | 14.1 |
| | From gift | 3 (3.8%) | 17 (23.9%) | 20 (13.3%) | |
| | From Government | 52 (65.8%) | 1 (1.4%) | 53 (35.3%) | |
| | From marriage | 8 (10.1%) | 23 (32.4%) | 31 (20.7%) | |
| | Other source | 1 (1.3%) | 9 (12.7%) | 10 (6.7%) | |

Source: Own survey data. 2021

4.1.2. The trend of land access

According to the survey data the trend of land access by women, 20.3% of the sampled household heads were gain their land before 1987 (in the imperial era), 10.1% of sampled household heads accessed between 1987 and 1991 (during *Derge* regime) and 69.6% accessed their land between 1991 and 2019 (during EPRDF regime) Fig (3). This indicated that the land distribution which was conducted around 1997 favored for women’s land accessibility in the area. It was conducted without the determination of sex; it accesses both female and male equaliy relative to the previous land distribution. According to the qualitative information collected from FGDs, key informants and household interviews, most of the women who haven’t the land stated that the land distribution conducted around 1997 determines their access.

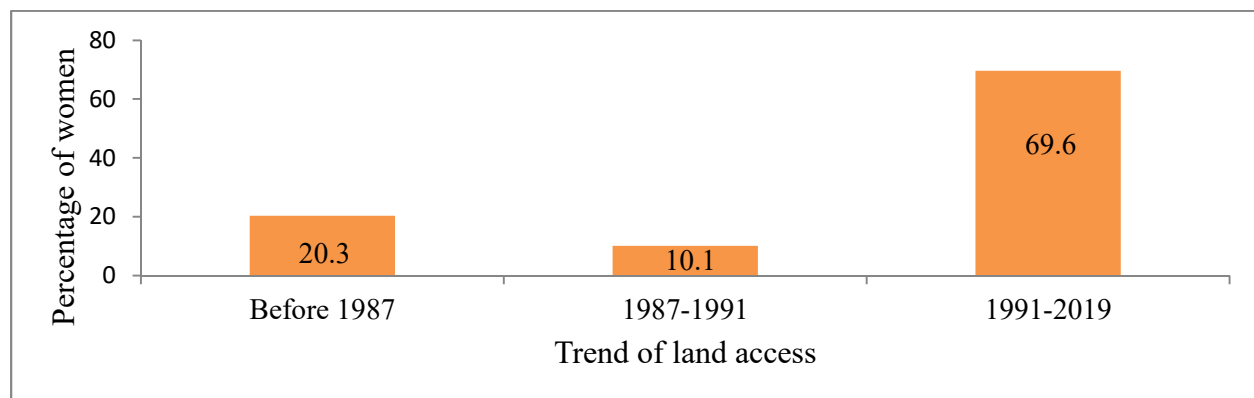


Figure 3: Trend of land access

Source: Own survey data. 2021

4.1.3. Land registration

Land registration is a process of giving a book of land holding for land owners. Data collected on land registration and certification revealed that, out of the total sampled household heads 28.7% were registered their name and 24% were registered jointly with their husband/partner, 20% of sampled household registered their husband name only and 27% of the sampled household heads weren't registered their name. Thus, it was registered by other names on the land the use Fig (4).

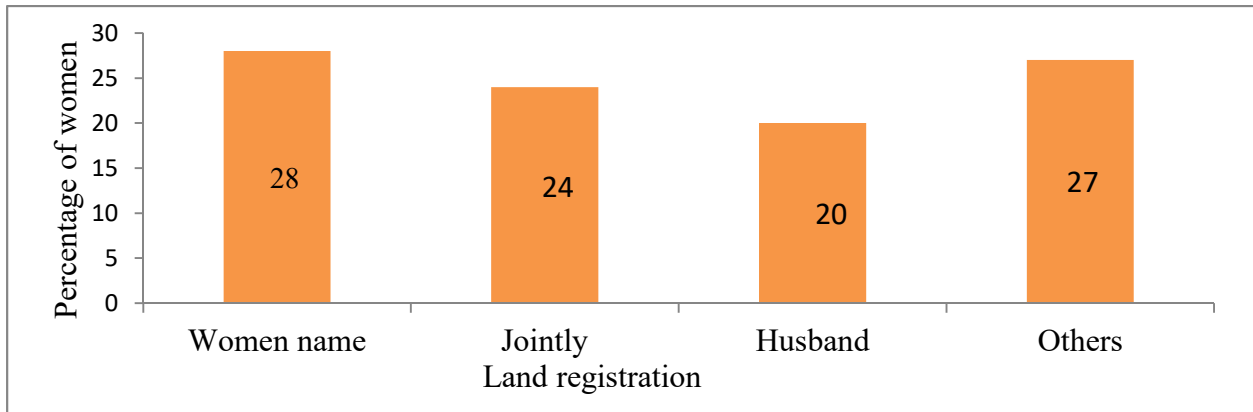


Figure 4: Land registration

Source: Own survey data. 2021

4.2. Household Decision

This section deals ability of women decision making based on nine categories of a decision criteria like, how to spend money derive, own health care, major utility purchase, on visiting family, purchase of agricultural technology, improved seed, land rent in/out, sale of agricultural produce and type of crop cultivate in terms of four categorical responses. The responses category were, I can decide; decide with my husband/partner jointly, decide by my husband/partner lonely and decide by someone else Table (5).

Table 5: The Distribution of Response of Women Decision Making (N=150)

| Decision | I can decide on it | decide with my husband/ partner | Decision by my husband/partner | Decision by someone |
|----------------------------------|--------------------|---------------------------------|--------------------------------|---------------------|
| How to spend money derived | 15 (10%) | 54 (36%) | 60 (40.0%) | 21 (14%) |
| Own health care | 51 (34.0%) | 61 (40.7%) | 31 (20.7%) | 7 (4.6%) |
| Major utility purchase | 39 (26.0%) | 56 (37.3%) | 53 (35.4%) | 2 (1.3%) |
| Visit to family | 48 (32.0%) | 80 (53.3%) | 19 (12.7%) | 3 (2.0%) |
| Purchase agricultural technology | 20 (13.3%) | 37 (24.7%) | 80 (53.3%) | 13 (8.7%) |
| Improved seed | 18 (12.0%) | 51 (34.0%) | 63 (42.0%) | 18 (12.0%) |
| Land rent in or out | 24 (16.0%) | 56 (37.3%) | 48 (32.0%) | 22 (14.7%) |
| Sale of agricultural produce | 27 (18.0%) | 58 (38.7%) | 57 (38.0%) | 8 (5.3%) |
| Type of crop cultivate | 19 (12.7%) | 52 (34.7%) | 63 (42.0%) | 16 (10.6%) |

Source: Own survey, (2021)

Regarding women decision on how to spend money derived 10% of the sampled households decide by their own (alone). While 36% of the sampled households decide jointly with their husband or partners, and 40% of the sampled household were not able to decide rather their husband or partner decide. The 14% of the sample respondents replied that they didn't decide and decision was made by someone else (Table 5). This indicated that women's involvement in the decision on how to spend money derived was low in the study area. In terms of the decision on their health care, 34% of women were able to decide by their own (alone), 40.7% of sampled household deiced jointly with their husband or partner, 20.7% of the sampled household couldn't decide and their husband or partner decide and 4.6% of the sampled household were not deiced and it was deiced by others. This indicated that the women's health care decision was relatively better; above half of the respondents decide alone or jointly.

The decision on major utility purchase showed that among the total respondent 26.0% of the households decide alone, 37.3% of the sampled households decide jointly with their husband or partner, 35.4% of the sampled households didn't decide and their husband or partner decide and

1.3% of the sampled household didn't decide and others decide on their major utility purchase. It showed that involvement of women in major utility purchase decisions better than other's decision. In addition decision on visit to family show that 32.0% of sampled household decide by their own self, 53.3% of the sampled household discussed with their husband or partner, 12.7% of the sampled household couldn't decide and their husband or partner decide and 2.0% of the sampled household couldn't decide and same one else decide. This also shows that above the half household heads did by their own self and jointly with husband/partner

The decision on the purchase of agricultural technology was the other decision. Among the total respondents, 13.3% of the household heads decide alone, 24.7% of the sampled household heads decide jointly with their husband or partner, 53.3% of the sampled household heads didn't decide and their husband or partner decide and 8.7% of the sampled household didn't decide and other's decide. It indicated a lack of households involvement in the purchase of agricultural technology. In addition decision on improved seed show that 12.0% of sampled household decide by their own self, 34.0% of the sampled household discussed with their husband or partner, 42.0% of the sampled household couldn't decide and their husband or partner decide and 12.0% of the sampled household couldn't decide and same one else decide. There was a lack in the decision of women in improved seed utilization.

On the other hand decision on land rent in or out show that 16.0% of sampled household decide improved by their own self, 37.3% of the sampled household discussed with their husband or partner, 32.0% of the sampled household couldn't decide and their husband or partner decide and 14.7% of the sampled household couldn't decide and same one else decide. In addition, the decision on the sale of agricultural production shows that 18.0% of the sampled household decide alone, 38.7% of the sampled households decide jointly with their husband or partners, 38.0% of the sampled household didn't decide and their husband or partner decides, 5.3% didn't decide and someone else decides. In terms of the decision on type of crop cultivate 12.7% of women were decided their self alone, 34.7% of sampled household deiced with their husband or partner, 42.0% of the sampled household couldn't decide and their husband or partner decide and 10.6% of the sampled household were not deiced and it was deiced by others. The data collected on the decision of the household heads indicated that women were involved in their

health care, major utility purchase, visit to family and sale of agricultural produce decision relative to others decisions. The decision about how to spend money, purchase of agricultural technology, on improved seed, on land rent in or out and the major household purchased showed that women involved slightly relative to the above decision.

4.3. Women Empowerment

In order to measure women empowerment (Campus, 2016; and Allendorf, 2007), the nine decisions criteria with four categories of the response were used and changed to one variable called empowerment level. The result of women empowerment revealed that, 4.7%, 33.3%, 50.7% and 11.3% household were live in the lowest, in the middle, high , and very high level of empowerment respectively (Figure 5).

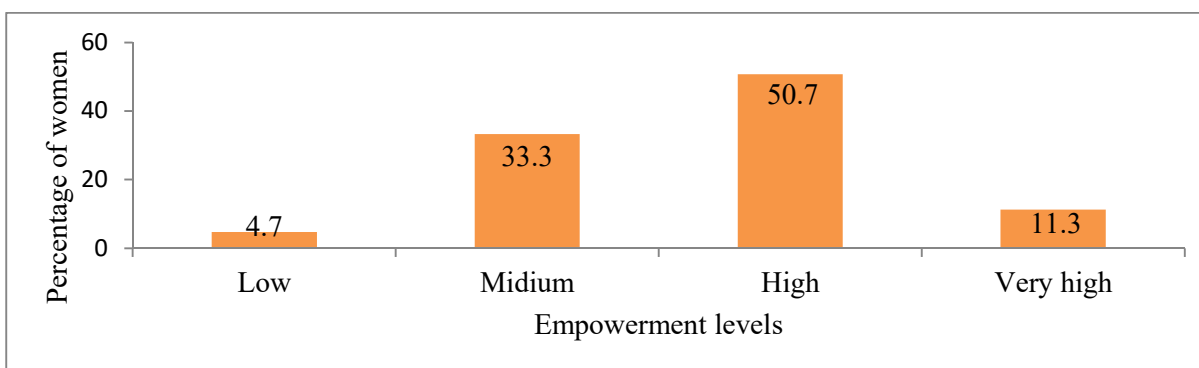


Figure 5: Women empowerment in study area

Source: Own survey data. 2021

4.4. Characteristics of Sample Respondents

4.4.1. Demographic characteristics

As displayed in Table 6 the minimum and the maximum age of the household were 18 and 70 years old respectively. The accessible women had an average age of 45.1; while not accessible had average age of 28 years old. An independent sample t-test was conducted to test if there is a

significant difference in the mean age of accessible and not accessible. The t-value ($t = -9.6$) indicated that there was a significant difference between the mean age of the accessible and not accessible women households at 1% level of significance. This indicated that the average age of the accessible women was older than that of not accessible women.

Household size of, sampled household heads range from 1-10 persons. The mean household size of accessible and not accessible household heads was 5.2 and 3.7 persons respectively. An independent sample t-test was conducted to test if there is a significant difference in the mean household size of accessible and not accessible. The result also points out that there was a mean difference between accessible and not accessible in terms of household size, which was statistically significant at 1% ($t = -5.4$) (Table 6).

Table 6: Age and Household size of household heads

| Variable | Access Category | Minimum | Maximum | Mean | STD | t-value |
|----------------|-----------------|---------|---------|------|------|---------|
| Age | Accessible | 20 | 70 | 45.1 | 12.9 | -9.6*** |
| | Not accessible | 18 | 57 | 28.0 | 7.9 | |
| Household size | Accessible | 1 | 10 | 5.2 | 1.8 | -5.4*** |
| | Not accessible | 1 | 8 | 3.7 | 1.5 | |

Source: Own survey data. 2021

With regards to marital status, 72.6%, 10%, 8.7% and 8.7% of the respondents were married, single, divorced and widowed respectively. Land access to married, single, divorced and widow women were accounted for 68.4%, 5.0%, 11.4% and 15.2% respectively. On the other hand, the women who haven't access to land for married, single, divorced and widow women was accounted for 77.5%, 15.5%, 5.6% and 1.4% respectively. In order to see the association between accessible and not accessible in terms of marital status, a chi-square test was conducted in each category of marital status. The result indicated that a strong association was found between accessible and not accessible at 5 % level of significance ($\chi^2=4.5$) for singles and at 1 % level of significance ($\chi^2=8.9$) for a widow, Whereas the married and divorced ones were not statistically significant (Table 7).

Education plays a key role for women to access their land from different sources and to protect their land from others. As showed in Table 7 out of the total 150 female household heads and female in male household heads 46.7% and 53.3% of the sampled household can't read and write and literate respectively. This indicated that the illiteracy rate is higher relative to the sample size in the study area. In addition, 63.3% accessible and 28.2% non-accessible can't read and write, whereas 36.7% accessible and 71.8% non-accessible were literate. In order to see the association between accessible and not accessible in terms education, the chi-square test was conducted and a strong association was found between levels of empowerment at 1% level of significance ($\chi^2=18.5$).

Table 7: Marital and educational status for access to land

| Variable | Category | Accessible (N=79) | Not accessible (N=71) | Total (150) | χ^2 =value |
|--------------------|--------------------|----------------------|--------------------------|-------------|-----------------|
| Marital status | Married | 54 (68.4%) | 55 (77.5%) | 109 (72.7%) | 1.6 |
| | Single | 4 (5.0%) | 11 (15.5%) | 15 (10%) | 4.5** |
| | Divorced | 9 (11.4%) | 4 (5.6%) | 13 (8.7%) | 1.6 |
| | Widow | 12 (15.2%) | 1 (1.4%) | 13 (8.7%) | 8.9*** |
| Educational status | Can't read & write | 50 (63.3%) | 20 (28.2%) | 70 (46.7%) | 18.5*** |
| | Literate | 29 (36.7%) | 51 (71.8%) | 80(53.3%) | |

Source: Own survey data. 2021

On the other hand in terms of empowerment, married one were 50%, 68.5%, 20.8% and 41.2% in low, middle, high and in a very high level of empowerment respectively. The single household heads were 50%, 18.5% and 5.2% in the low, middle and in a high level of empowerment respectively. The divorced ones were 11.1%, 7.8%, 5.9% in the middle, in high and in a very high level of empowerment respectively. The widow household heads were 1.9%, 7.8% and 35.3% in the middle, high and in a very high level of empowerment respectively. In order to see the association between levels of empowerment in terms of marital status category, chi-square was conducted and a strong association was found between levels of empowerment at 1% level

of significance for both singles ($\chi^2=11.8$) and for widow ($\chi^2=18.7$). However no association was found between levels of empowerment in terms of married and divorced (Table 8).

According to the data collected on the educational status of the household related to empowerment the household heads who can't read and write were 33.3%, 53.3% and 64.7% in the middle, high and in a very high level of empowerment respectively. The literate ones were live in, 100%, 66.7%, 46.8% and 35.3% in low, middle, high and in a very high level of empowerment respectively. In order to see the association between levels of empowerment in terms education, the chi-square conducted and a strong association was found between levels of empowerment at 5 % level of significance ($\chi^2= 9.2$) (Table 8).

Table 8: Marital and educational status for empowerment

| Variable | | Low | Middle | High | Very high | χ^2 =value |
|--------------------|--------------------|-----------|------------|------------|------------|-----------------|
| Marital status | Married | 1 (50.0%) | 37 (68.5%) | 16 (20.8%) | 7 (41.2%) | 4.3 |
| | Single | 1 (50.0%) | 10 (18.5%) | 4 (5.2%) | 0 | 11.8*** |
| | Divorced | 0 | 6 (11.1%) | 6 (7.8%) | 1 (5.9%) | 0.8 |
| | Widow | 0 | 1 (1.9%) | 6 (7.8%) | 6 (35.3%) | 18.7*** |
| Educational status | Can't read & write | 0 | 18 (33.3%) | 41 (53.3%) | 11 (64.7%) | 9.2** |
| | Literate | 2 (100%) | 36 (66.7%) | 36 (46.8%) | 6 (35.3%) | |

Source: Own survey data. 2021

4.4.2. Economic characteristics of the respondents

The household heads that have an access to land have empowerment levels 18.5%, 72.7% and 76.5% in the middle, high and in a very high level of empowerment respectively relative to women who had not land access. The empowerment levels of household heads with no land access were 100%, 81.5%, 27.3% and 23.5% in the low, in the middle, high and in a very high level of empowerment respectively as compared to household heads who had land access. The association between levels of empowerment in terms of access to land was checked by chi-

square and a strong association was found between levels of empowerment at 1 % level of significance ($\chi^2= 4.3$) (Table 9).

On the other hand, data collected on the employment status of the household related to empowerment levels showed that 37%, 53.3% and 29.4% of employee household were in the middle, in the high and in a very high level of empowerment respectively. However not employee ones were 100%, 63%, 46.8% and 70.6% in a low, in the middle, in the high and in a very high level of empowerment. In order to see the association between levels of empowerment in terms employment, the chi-square was conducted and an association was found between levels of empowerment at 10% level of significance ($\chi^2= 6.77$) (Table 9). According to the result of the focus group discussion, the governmental and non-governmental institutions are not opened to women employees. Moreover among the employee ones, most of them are held in private business like, they sell the local alcohol drink known as *Areke*.

Table 9: Access to land and employment status for empowerment

| Variable | | Low | Middle | High | Very high | χ^2 =value |
|----------------|----------------|----------|------------|------------|------------|-----------------|
| Access to land | Accessible | 0 | 10 (18.5) | 56 (72.7%) | 13 (76.5%) | 4.3*** |
| | Not accessible | 2 (100%) | 44 (81.5%) | 21 (27.3%) | 4 (23.5%) | |
| Employment | Employee | 0 | 20 (37.0%) | 41 (53.3%) | 5 (29.4%) | 6.77* |
| | Not employee | 2 (100%) | 34 (63.0%) | 36 (46.8%) | 12 (70.6%) | |

Source: Own survey data. 2021

As showed in the Table 8 the land size of the sampled household heads ranges from 0-3 hectare. The mean land size of accessible and not accessible household heads was 1.2 and 0.7 respectively (Table 10). On the other hand livestock ownership is the other economic factor, which affects women's empowerment. Data collected on livestock ownership show that the mean value of accessible and not accessible household heads was 3.8 and 2.0 respectively. The minimum and maximum value of livestock ownership was 0 and 9.5 respectively (Table 10). Qualitative information obtained from focus discussion and key informant interviews with rural women on access to land reflected that women own poultry, use and sell hens, eggs and animal

products like milk, butter and cheese. On the other hand, the cattle, sheep, goats and pack animals like donkeys and horses belong to men.

The mean annual income of the accessible and not accessible household head was 53457.1 and 30809.0 birr respectively. The minimum and maximum values for the sampled respondent were 600 birr and 180000 birr respectively (Table 10). This also shows there was a lack of income in many households, while few households gain high income. In terms of source of income, farming was the main occupation and source of livelihood for most of the sample household heads in the study area. It accounts for the mean annual income of 18720.13 birr. In addition, household gain mean annual income from animal production was 12078.87 birr, from labor works was 11544.01 birr, from hand works was 12.04667 birr and from eucalyptus 557.3 birr (Appendix 7). The value of income from these sources shows that the involvement of household heads in off-farm and non-farm activities was less as compared to the farm activities. It also indicated that there was less involvement of households in diverse working areas.

Table 10: Continuous variable

| Variable | Access Category | Mean | Std. Dev. | Min | Max |
|---------------------|-----------------|---------|-----------|------|--------|
| Land size | Accessible | 1.2 | 0.7 | 0.5 | 3 |
| | Not accessible | 0.7 | 0.6 | 0 | 3 |
| Livestock ownership | Accessible | 3.8 | 1.9 | 0 | 9.5 |
| | Not accessible | 2.0 | 1.8 | 0 | 6.0 |
| Income | Accessible | 53457.1 | 43567.0 | 1750 | 177200 |
| | Not accessible | 30809.0 | 30095.2 | 600 | 180000 |

Source: Own survey data. 2021

4.4.3. Physical and institutional characteristics of the respondents

The distance to the rural land administration office had an influence to women to not exercise their rights properly. The result indicated that the mean distance to the rural land administration office of accessible women was 64.8 minutes; while not accessible were 56.7 minutes. An independent sample t-test was conducted to test if there is a significant difference in the mean distance from the rural land administration of accessible and not accessible. The t-value ($t=2.1$)

indicated that there was a significant difference between accessible and not accessible in terms of the distance from the rural land administration at 5% level of significance (Table 11).

The other factor was the distance from the main road. As shown in Table 11, the minimum and maximum values for the sampled respondents were 0.5 km and 7 km respectively. The accessible women had a mean distance of 3.8 km, while those not accessible had a mean distance of 3.8 km from the main road. An independent sample t-test was conducted to test if there is a significant difference in the mean distance from the main road of accessible and not accessible. The t-value ($t = 0.12$) indicated that there was no significant difference between the mean distance of accessible and not accessible.

Table 11: Physical factors

| Variable | Access Category | Mini Mum | Maxi Mum | Mean | STD | t-value |
|--|-----------------|----------|----------|------|------|----------------|
| Distance from the rural land administration office | Accessible | 5 | 240 | 64.8 | 47.4 | $t = 2.1^{**}$ |
| | Not accessible | 3 | 240 | 56.7 | 35.7 | |
| Distance from the main road | Accessible | 0.5 | 7 | 3.8 | 1.2 | 0.1 |
| | Not accessible | 1 | 7 | 3.8 | 1.5 | |

Source: Own survey data. 2021

Access to information is important to identify the knowledge level on legal and administrative policies regarding land. Among the surveyed sample, 58.7 percent of women respondents had land-related information (land registration), while 41.3% of sampled respondents hadn't information (Table 12). Such lack of knowledge acts as a significant barrier to women to have an access to land because, without the information, they couldn't be in a position to demand or exercise their rights. In terms of land accessibility, 83.5% of accessible and 31% of not accessible have an access to information, whereas 16.5% of accessible and 69.0% of not accessible haven't access to information. In order to understand the association between accessible women and not accessible in terms of access to information, chi-square was conducted and a strong association was found between accessible and not accessible ones at 1% level of significance ($\chi^2 = 42.6$) (Table 12). Information collected using the Focus group discussion showed that the male partner

of the households (husband, brother, uncle and father) were influence women to not use their right.

Access to training is an important factor that determines the access to land of any given household. Women were less accessible to training services and the number of households that took the training is very small. Out of the total respondents, only 22 % of them have access to training. However, the rest 78 % couldn't. Women who have land access gain training 36.7 % relative to the women who haven't a land access 5.6%. In order to understand the association between accessible women and not accessible in terms access to training, the chi-square test conducted and that strong association was found between the accessible women and not accessible household heads at 1% level of significance ($\chi^2=14.8$) (Table 12).

Table 12: Institutional factors for access to land

| Variable | Access category | Accessible (N=79) | Not accessible (N=71) | Total (150) | χ^2 =value |
|-----------------------|-----------------|----------------------|--------------------------|-------------|-----------------|
| Access to information | Accessible | 66 (83.5%) | 22 (31.0%) | 88 (58.7%) | 42.6*** |
| | Not accessible | 13 (16.5%) | 49 (69.0%) | 62 (41.3%) | |
| Access to training | Accessible | 29 (36.7%) | 4 (5.6%) | 33 (22%) | 14.8*** |
| | Not accessible | 50 (63.3%) | 67 (94.4%) | 117 (78%) | |

Source: Own survey data. 2021

On the other hand, access to information related to empowerment showed that accessible households live, 35.2%, 70.1% and 88.2% in the middle, in the high and in a very high level of empowerment respectively. Among the not accessible households 100%, 64.8%, 29.9% and 11.8% of household heads were in the low, in the middle, in the high and in a very high level of empowerment respectively. In order to see the association between levels of empowerment in terms of access to information of the household, the chi-square was conducted and a strong association was found between levels of empowerment at 1% level of significance ($\chi^2= 25.4$) (Table 13).

The last but not the least factor of empowerment was access to credit. Women were less accessible to credit service and the numbers of household heads that receive credit were very small. In terms of credit, household heads who have an access to credit were live, 7.4%, 28.6% and 41.2% in the middle, in the high and in a very high level of empowerment respectively. The household heads that hasn't an access to credit was live 100%, 92.6%, 71.4% and 58.8% in the low, in the middle, in the high and in a very high empowerment level respectively. In order to see the association between levels of empowerment in terms of credit access, chi-square was conducted and a strong association was found between levels of empowerment at 5 % level of significance ($\chi^2 = 12.8$) (Table 13).

Table 13: Institutional factors for empowerment

| Variable | | Low | Middle | High | Very High | χ^2 =value |
|-----------------------|----------------|----------|------------|------------|------------|-----------------|
| Access to information | Accessible | 0 | 19 (35.2%) | 54 (70.1%) | 15 (88.2%) | 25.4 |
| | Not accessible | 2 (100%) | 35 (64.8%) | 23 (29.9%) | 2 (11.8%) | |
| Access to credit | Accessible | 0 | 4 (7.4%) | 22 (28.6%) | 7 (41.2%) | 12.8** |
| | Not accessible | 2 (100%) | 50 (92.6%) | 55 (71.4%) | 10 (58.8%) | |

Source: Own survey data. 2021

4.5. Factors Affecting Access to Land of Women

Women's access to land was hypothesized to be affected by various factors like demographic, physical and institutional factors. Different variables are important across different space and time in explaining the access to land of women. Many factors were hypothesized to influence access to land of women in the study area. According to theoretical and empirical review, four continuous and four discrete variables were selected to understand their influence on women's access to land. These are the age of the household head, marital status, educational status, household size, and distance from the main road, distance from the rural land administration office, access to information and access to training.

The binary Logit model was employed in this study to estimate the effects of the hypothesized independent variable on access to land of women. The goodness of fit measure state that the

model fit the data well. The model explained about 56.1% of total the variation in the sample for access to land. In addition, the assumption in the logistic show that if the probability of ch2 is significance reject the null hypothesis and accept the alternative hypothesis, While if the probability of ch2 is not significant accept the null hypothesis and reject the alternative hypothesis. The model was statistically significant at 1% level of significance. This indicates the model was fit the data well.

As indicated in Table 14, marital status (single and widow) and distance from the main road have no significant influence on access to land even though their sign indicate a relationship to increase or decrease access to land of women household heads. However, age of household, marital status (divorce), educational status, household size, distance to land administration office, access to information and access to training were statistically significant. The significant variables affecting access to land obtained from the model result were discussed as follows.

Age of the households: Contrary to the expected one, the age of the household heads positively and significantly influence access to land at 5% significant level. It indicated that, as the age of the household-head increases by one year, the probability of access to land increases by the odds ratio of 1.094. This implies that the older women were more likely to access land than young women. This might be because of the fact that, they got various opportunities through their life like land distribution. This study was in line with the study of Sosina Bezu and Holden, (2014) and Urgessa Tessema (2015) finding stated that, as the age of households' head increases the probability to access rural land also increases. Contrary to this Admasu Bekele and Zegeye Paulos (2018), women's age and their land access have an inverse relationship. This was because when women have become older they may be neglected from different responsibilities in the rural area that makes them participate less in things that can enhance the access of land.

Divorced: Similar to the expected one the divorced women were positively and significantly influences access to land at 10% significance level. It indicated that as the household divorced status increases by a unit, the probability of access to land increases by the odds ratio of 11.263 (Table 14). However, as per the findings from the logit model, there was no significant difference between single and widowed women. Divorced women were more accessible to land

because they got the land from different sources. Firstly they got the land when they married from family, from government land distribution and when their marriages end from their husband. As similar with this, Selam Gebretsion and Yalemzewd Demssi (2014), shows that the Ethiopian legal system allows women to take their share of land equally at the end of marriage helps women to access land. On the other hand, Hussein Ahmed (2014), show that the equal right of women to the division of property upon divorce helps them to access land. According to the data of FGD the customary rights were respected in the society, so it helps women to access their land at the time of divorce.

Educational status: Households' education status as a variable captures the influence of literacy on household land access. Contrary to the expected one, the education status of households was negatively and significantly influences access to land of the household at 10% level of significance. It indicated that, as the educational status of the household increase by a unit, the probability of access to land decreases by the odds ratio of 0.346 (Table 14). It was established that less literate households were more likely to have land access compared to the better educated. Here what should be realized is that literacy does not directly lead to less accessibility. However, the less literate farmers were able to access land during previous land allocation. The finding evokes a similar result with Gashaw Tenna et al. (2017) and Teshome Beyene et al. (2021) support that in Ethiopia farmers' literacy is negatively significant in association with households' land. Contrary to this Adane Dabissa (2013), show that the probability of joint land certification for women increases with women's literacy. This might be due to the fact that education increases the awareness about the importance of registering land and enables meeting all the required legal requirements easily.

Household size: Contrary to the expected one the variable household size was positively and significantly influences the probability of access to land at 5% level of significance. Keeping the influence of all other factors constant, as household size increases by a person the probability of access to land increases by odds ratio of 1.520 (Table 14). The result implies households with large household size were more likely to access land than those who have small household size. Different from the expected one household size was positively affecting the access to land, this was because of the fact that the land distribution was considering the number of peoples who

were in the household. As similar with this Bodurtha et al. (2011) and Daniel (2015), show that household size was significant influence on access to land, because Ethiopia has a trend of family size-based government land allocation in land reforms.

Distance from the rural land administration office: Contrary to the expected one the distance from the rural land administration office had positively and significantly influenced the probability of access to land at 1% significance level. As the distance from the rural land administration increase by one minute, the probability of women to access land increase by a factor of 1.021 (Table 14). This implies women who live farther to the rural land administration office can get access to land than women who live near to rural land administration. Women got land which is farther from the rural land administration office. It might be because such place may be not convenient to marketing, road and information, so they were control by women. Contrary to this IOM (2016), show that the distance from the rural land administration have an inverse relation with women access to land, they state that when women live near to the rural land administration they could easily access land and protect their land.

Access to information: similar to the expected one access to information had positively and significantly associated with the probability of access to land at 1% significance level. As access to information increase in a unit the probability of women to access to land were increases by 22.341 (Table 14). This is due to the fact that women who have an access to information were able to influence their right to land access. In line with this, IOM (2016) show that access to information is vital to access land rights. It helps women to know about policies regarding women's land rights and able to be in a position to demand or exercise their rights.

Access to training: similar to the expected one access to training was positively and significantly affected the probability of women to access land at 10% significance level as expected. When access to training increases in a unit the probability of the women to access the land was increases by 3.284 (Table 14). The possible explanation for this could be the availability of training encourages women to know their right on land, which helps them how to gain land from a different source. It also helps to protect their right of land. According to (Namubiru-Mwaura, 2014), land-related training is critical in promoting gender equity. Training

programs are important because they can raise awareness about the rights of women with respect to land and property and how those rights can be protected and strengthened. In addition, access to training enables women to claiming their rights and to overcome sociocultural norms (UN, 2013).

Table 14: Logit model estimates for factor affecting the access to land of women

| Variables | Odds Ratio | Coef. | Std. Err. | Z | P>z |
|--|------------|----------|-----------|-------|-------|
| Age | 1.094 | 0.090** | 0.039 | 2.32 | 0.020 |
| Marital Status | | | | | |
| Single | 2.064 | 0.725 | 0.826 | 0.88 | 0.380 |
| Divorced | 11.263 | 2.421* | 1.343 | 1.80 | 0.071 |
| Widow | 4.137 | 1.420 | 1.049 | 1.35 | 0.176 |
| Educational status | 0.346 | -1.061* | 0.615 | -1.73 | 0.084 |
| Household size | 1.520 | 0.419** | 0.187 | 2.24 | 0.025 |
| Distance from the rural land administration office | 1.021 | 0.021*** | 0.008 | 2.63 | 0.009 |
| Distance from the main road | 0.797 | -0.227 | 0.192 | -1.18 | 0.236 |
| Access to information | 22.341 | 3.106*** | 0.807 | 3.85 | 0.000 |
| Access to training | 3.284 | 1.189* | 0.670 | 1.78 | 0.076 |
| _cons | 0.001 | -7.326 | 1.749 | -4.19 | 0.000 |
| Log likelihood | | 45.554 | | | |
| Wald chi2(10) | | 42.62 | | | |
| Pseudo R ² | | 0.561 | | | |
| Prob > chi ² | | 0.000 | | | |
| Number of obs. | | 150 | | | |

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Own survey result, 2021

4.6. Access to Land for Women Empowerment

Women's empowerment is affected by various factors like demographic, economical, physical and institutional factors. Different variables are important across different space and time to explain the empowerment of women households. Many factors were hypothesized to influence women's empowerment in the study area. According to theoretical and empirical review, five continuous and six discrete variables were selected to see their influence on women's empowerment. These are the age of the household head, marital status, educational status, access to land, land size, livestock ownership, employment, income, distance from the main road, access to information and access to credit.

The ordered Logit model was employed in this study to estimate the effects of the hypothesized independent variable on levels of empowerment. The probability of Chi-square was significant at 1%, so reject the null hypothesis and accept the alternative hypothesis. This indicated that the model was fit the data well. Out of 11 explanatory variables only six of them were found to be significant at various levels of significance (Table 15). Those were marital status, access to land, land size, access to information and access to credit.

Single: Contrary to expected the singles were negatively and significantly influence women's empowerment at 1% significance level. All others are held constant, a household head being single the probability of high and very high empowerment decrease by 49.7% and 11.4% respectively. According to the qualitative information collected in the area, most of the single household heads were young and depend with the support of parents, so they couldn't decide by themselves. As similar with this Nardos Chuta (2017), conducted on young women's household bargaining power in marriage and parenthood in Ethiopia show that, young women in the rural area exhibited less bargaining power.

Widow: Similar to the expected one widowed were positively and significantly influence women's empowerment at 5% significance level. All others are held constant, a household head being widowed the probability of high and very high level empowerment increase by 33.8% and 7.7% respectively. This was due to the fact that most widows were household heads and they

were responsible for the most of decisions in the household. As similar with this Tewodros Tefera (2013), conducted on Land ownership the path towards rural women empowerment: A case from Southern Ethiopia show that married women are enjoying less empowerment status as compared with women headed counterparts.

Access to land: Similar to the expected one access to land has positively and significantly influence women's empowerment at 5% significance level. All other being constant, as women land access increases the probability of high and very high empowerment level increases by 22.5% and 5.2% respectively. These due to the fact that land improves the components of empowerment; especially it encourages the economic aspect. In line with this Adane Dabissa (2013), conducted on impacts of joint land rights titling on women empowerment: evidence from Ethiopia shows that joint land titling has a positive and significant impact on women empowerment. This is due to the fact that land titling for women increases their participation in community activities, such as in village meetings, voting and public information meetings. In addition to this Tewodros Tefera (2013), conducted on land ownership- the path towards rural women empowerment: A case from Southern Ethiopia show that the land has improved women level of empowerment.

Land size: Contrary to the expected, land size was negatively and significantly influences women's empowerment at 5% significance level. All other being constant, as land size increases in 1ha the probability of high and very high empowerment level decreases by 11.4% and 2.6% respectively. This might because land size couldn't to increase the productivity. According to the Focus group discussion the increase of the land size couldn't bring a major change in the women's life. Contrary to this Admasu Bekele and Zegeye Paulos (2018), the land size of women-headed households positively related to the household's decision. They conclude that as land size increase by a unit, the probability of women to involve in household decisions increases.

Access to information: Similar to the expected one access to information has positively and significantly influences women's empowerment at 5% significance level. All other being constant, as women access to information increases the probability empowerment of high and

very high empowerment level increase by 18.0% and 4.1% respectively. This was due to the reason that information is a tool to use the economic, social, political and other rights, which was one of the issues of empowerment. As similar with this Wakitole Dadi (2017), Who was studied on determinants of rural women economic empowerment: the case of Guduru Woreda of Oromia Regional State show that information access was positively and significant influence empowerment at 1% significance. Moreover, Oyelude and Bamigbola (2013), indicated that Information remains a critical commodity for empowerment, educating women on diverse areas, such as economic, social, and political was conducted through gendered information provision. Although everyone needs information, women particularly need information on issues affecting their life.

Access to credit: Similar to the expected one access to credit positively and significantly influence women's empowerment at 5% significance level. All other being constant, as women access to credit increase the probability of high and very high empowerment level increase by 18.5% and 4.2% respectively. It implies access to credit increases the probability of women's empowerment. Access to credit build the financial capacity of women, it also improves other aspects of empowerment like social interaction indirectly. In line with this idea Kifle Tesfamariam (2015), conducted on determinants of women empowerment in cooperative societies in South Eastern Zone of Tigray Region, Ethiopia that shows that loan was positively correlated with women's empowerment.

Table 15: Ordered Logit model for variables influencing women empowerment

| Ordered Logit Variables | Marginal effect | | | | | |
|-----------------------------|-----------------|----------|---------|-----------|-----------|-----------|
| | Coef. | Std.Err. | Low | Middle | High | Very high |
| Age | 0.790 | 0.769 | -0.008 | -0.166 | 0.142 | 0.032 |
| Marital status | | | | | | |
| Single | -2.775*** | 0.729 | 0.027** | 0.584*** | -0.497*** | -0.114*** |
| Divorced | -0.782 | 0.725 | 0.008 | 0.165 | -0.140 | -0.032 |
| Widow | 1.886** | 0.738 | -0.019 | -0.397*** | 0.338** | 0.077** |
| Educational status | -0.159 | 0.407 | 0.002 | 0.033 | -0.028 | -0.007 |
| Access to land | 1.259** | 0.616 | -0.012 | -0.265** | 0.225** | 0.052* |
| Land size | -0.639** | 0.292 | 0.006 | 0.134** | -0.114** | -0.026* |
| Livestock ownership | 0.155 | 0.108 | -0.002 | -0.033 | 0.028 | 0.006 |
| Employment | -0.089 | 0.378 | 0.001 | 0.019 | -0.016 | -0.004 |
| Income | -0.143 | 0.182 | 0.001 | 0.030 | -0.026 | -0.006 |
| Distance from the main road | 0.111 | 0.146 | -0.001 | -0.023 | 0.020 | 0.005 |
| Access to information | 1.002** | 0.467 | -0.010 | -0.211** | 0.180** | 0.041* |
| Access to credit | 1.032** | 0.492 | -0.010 | -0.217** | 0.185** | 0.042** |
| Log likelihood | | | 119.66 | | | |
| LR chi2(13) | | | 90.83 | | | |
| Pseudo R ² | | | 0.275 | | | |
| Prob > chi ² | | | 0.000 | | | |
| Number of obs. | | | 150 | | | |

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Own survey result, 2021

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

Land represents the basic capital asset in agriculture and its access is considered a means to get out of poverty. In addition, efforts have been made towards improving women's land access, which usually leads to women's empowerment. However, the majority of women have limited property rights. In the face of such a sensitive and fundamental issue, it is critical to better understand the current situation on access to land for women empowerment. This paper sets out access to land for women's empowerment in Basona Werana Woreda. It also assesses access to land of women, identifies factors affecting access to land of women and analyzes the role of access to land for women empowerment level in the study area. A multistage sampling technique was used to select a sample of 150 female household heads and females in male headed household. The qualitative and quantitative data types were collected from primary and secondary sources to answer research questions.

The first objective of this study was to assess women's access to land in the study area. It was analyzed using descriptive analysis. The result of the analysis shows that among sample respondents 52.7% of women's household heads were accessible, whereas 47.3% of women household heads weren't accessible. Land size of the household head indicated that above half of the sampled household heads 62.0% had below 1 ha of the land. Furthermore, the government was secured source of land for women. This means women who gained their land from the government register their land. However, other land sources like family, gift and marriage may be temporarily/ only for use. In addition, the land allocation conducted in the EPRDF was the major source of land for 69.6% of sampled household heads.

The second objective of this study was to identify factors that affecting access to land of women in the study area. It was analyzed using binary Logit model. The result of binary logistic regression revealed that age of the household-head, marital status, access to information, access to training and distance from the rural land administration office was positively and significantly

influenced access to land for women; but, educational status of the household-head influence access to land negatively and significantly.

The third objective of this study was to analyze the role of access to land on women's empowerment level. It was analyzed using ordered Logit model. The probability of households in the study area to be empowered in low, middle, high and very high is 4.7%, 33.3%, 50.7% and 11.3% respectively. The majority of household heads are likely to be in the high empowerment level. The result of the ordered model showed that access to land has a positive and significant influence on women's empowerment. Women who have access to land were more likely to have the final say in household decisions. These results suggest that women's land access promotes their empowerment in the study area. Furthermore, the result also revealed that marital status (widow), access to information and access to credit positive and significantly influences women's empowerment; but marital status (single) and land size negatively and significantly influences women's empowerment.

5.2. Conclusion

In general, the access to land of women in the study area was low. The diverse source of the land for women's were not secured, the government was secured source from the others one. This shows that their accessibility also depends on the land distribution, which was difficult to conduct in the current condition. Due to this reason, women in the area have to change their lifestyle from an agricultural base to others. On the other hand, the land was in the hand of older women and women who can't read and write rather than young and literate, this also influences productivity. The women who have an access to information and training also have more chance to access land than women who haven't access to information and training. Women hold the land which was far from the rural land administration. This indicated that lack of the land administrator's contribution on women's access to land. Furthermore, the empowerment levels of sampled household heads indicated that most of the women were live in the high levels of empowerment than others; a few of them were live in very high and low empowerment level. Access to land provides women's empowerment. In addition, access to land, access to credit and access to information were also significant contributors to women's empowerment. On the other

hand, the marital status of the household heads shows the diverse empowerment levels. The widow ones were positively related with empowerment; however the single ones were negatively related. Others like married and divorce weren't related.

5.3. Recommendations

Depending on the data collected, discussed, analyzed and interpreted data, the following recommendations were made:

- Land was one of the significant factors for women empowerment. However, women were less accessible in the study area. Due to this reason land should be provided equally for women and men. In addition the administrative office of Basona Werana Woreda and women's related office should encourage women's intensive farming systems and encourage the women's to involve in off-farm activities like lesser and hand.
- The land was in the hand of women's who can't read and write, so the education office of Basona Werana Woreda has to provide education programs for accessible women. In addition the accessible women were far from the main road, which was difficult to get information, market and other services. The Transport office of Basona Werana Woreda should build roads for rural women.
- Information was one of the significant factors, which influence access to land and empowerment positively. The diverse source of information has to be accessible and affordable to women. For instance Amhara Radio and Television have to work in providing information for women's. Furthermore, land administration and gender office have to access to training about their right (including land right) and Amhara Credit and Saving Institution have to access a credit for women.
- It is a fact that women's problems can only be solved through their own active and devoted effort and participation. That means all women are aware of the fact that the challenges that face them can only be overcome through their own struggle, through their own awareness, and capacity and participation.

REFERENCES

- Achamyelch Gashu. 2014. Urbanization and the Struggle for Land in the Peri-Urban Areas of Ethiopia. 1–21.
- Adane Dabissa. 2013. Impacts of Joint Land Rights Titling on Women Empowerment : Evidence from Ethiopia. M.S.c. Thesis, Wageningen universty, Wageningen [Unpublished].
- Adepoju, A. 2018. Determinants of Multidimensional Poverty Transitions among Rural Households in Nigeria, *Agricultural Economist*, JEL Codes: 132, DOI.
- Admasu Bekele and Zegeye Paulos. 2018. Factors Affecting Rural Women Land Ownership in the Case of Boloso Sore District, Wolaita Zone, Southern Ethiopia. *Journal of Resources Development and Management*. 32. 30-37.
- Adminstrative office of Basona. 2020. Information about Basona Werana District [Unpublished].
- Adugna Enyew and Sileshi Mengstu. 2013. Double Marginalized Livelihoods: Invisible Gender Inequality in Pastoral Societies. *Jornal of Societies*. doi.:10.3390/soc3010104.
- Allah Nikkhah, H. and Abu-Samah, A. 2010. The Effect of Women’s Socio-demographic Variables on their Empowerment. *Journal of American Science*, 6(11): 1545–1003.
- Allendorf, K. 2007. Do Women's Land Rights Promote Empowerment and Child Health in Nepal? *Jornal of World Development*. doi:101016/j.worlddev.2006.12.005.
- Almaz Woldetnsaye. 2007. Women’s Access To and Control Over Land in the Current Land Adminstration System in Two Rural Land Kebeles in Ada’s Woreda of Oromia Region. M.S.c. Thesis, Addis Ababa Universty. Addis Ababa, Ethiopia [Unpublished].
- Amanuel Lamessa. 2014. The role of Property Ownership To Women’s Empowerment: The Case Of Housing In Mandi Town. M.S.c. Thesis, Indira Gandhi Natinal Open Univerty. Mandi Ethiopia [Unpublished].
- Asres Elias, Nohmi, M., Yasunobu, K. and Ishida, A. 2016. Farmers’ satisfaction with agricultural extension service and its influencing factors: A case study in north west Ethiopia. *Journal of Agricultural Science and Technology* 18(1): 39–53.
- Ayele Behailu, Abineh Tilahun and Tahir Hussai. (2015). The Role of Rural Land Registration and Certification Program in Ensuring Tenure Security in Menz Gera Midir District, Ethiopia, *International Journal of Social Sciences Arts and Humanities*. 2(4): 65–70.
- Barne, D. 2010. Ethiopian Women Gain Status Through Landholding.
- Batool, S. A. 2019. Women ’ s Empowerment and Associated Age-Related Factors. *Pakistan Journa of Social and Clinical Psychology* 16(2): 52–56.

- Belay Zerga. 2016. Land Resource, Uses, and Ownership in Ethiopia: Past, Present and Future. *International Journal of Scientific Research & Engineering Trends* 2(1): 17–24.
- Beyene Chekol. 2017. Contending views on land tenure system in Ethiopia : Historiographical essay. *African Journal of History and Culture* 9(1):1–6. doi:10.5897/AJHC2016.0335.
- Bhadauria, P. 2019. Women Empowerment through Livestock Based Enterprises. *National Conference Women Empowerment through Agro-Entrepreneurship for Livelihood Security*, 127–135 February 2019. India.
- Birtukan Atinkut. 2016. Rural women’ s access to and control over land in East Gojjam during the Derg and EPRDF. *Journal of Environmental System Research* 5: 1-8. doi: 10.1186/s40068-016-0062-5.
- Bodurtha, J., Caron, J., Chemedda, D., Shakhmetova. and Vo, L. 2011. Land Reform in Ethiopia: Recommendations for Reform. Solidarity Movement for a New Ethiopia (SMNE), Ethiopia.
- Boto, I. and La Peccerella, C. 2012. *Land access and rural development : new challenges, new opportunities* (Issue Resource on Land access and rural development).
- Campus, D. 2016. Does Land Titling Promote Women ’ s Empowerment ? Evidence from Nepal. Department of Economics and Management. University of Firenze, Italy.
- Chigbu, U. E., Paradza, G. and Dachaga, W. 2019. Differentiations in women’s land tenure experiences: Implications for women’s land access and tenure security in sub-saharan Africa. *Journal of Land* 8(2): 1–21. doi:10.3390/land8020022.
- Cotula, L., Toulmin, C. and Quan, J. 2006. *Better Land Access for the Rural Poor; Lessons from experience and challenges*. Food and Agricultural Organization, Porto Alegre, Brazil.
- Cousins, B., Alcock, R., Dladla, N., Hornby, D., Masondo, M., Mbatha, G., Mwel, M. and Alcock, C. 2011. A research report on the living low of Land in Msinga, Kwazulu-Natal. Institute for Poverty, Land and Agrarian Studies, School of Government, Faculty of Economic and Management Sciences, University of the Western Cape, Cape Town, South Africa.
- Daniel W. Ambaye. 2011. Land Rights and Expropriation in Ethiopia, Doctoral Dissertation, Bahir Dar University [Unpublished]..
- Deye Goshu. 2017. Quantitative Techniques and Applied Econometrics (*ABVM 551*) *Econometrics and Software Applications (AgEc 551) Lecture Notes Table of Contents*. November [Unpublished].
- Dejene Debsu. 2009. Gender and culture in south Ethiopia: an ethnographic analysis of guji-Oromo women’s. *Journal of African Study Monographs* 30: 15–36.

- ELD Initiative. 2015. Report for policy and decision makers: Reaping economic and environmental benefits from sustainable land management. Available from www.eld-initiative.org.
- Enyew Adgo, Yihene G.Selassie, Abate Tsegaye, Solomon Abate, and Abiye Alemu. 2014. Impact of Land Certification on Sustainable Land Resource Management in the Amhara Region , Ethiopia DCG Report No . 75. Drylands Coordination Group, Norway.
- Facio, A. 2017. Insecure land rights for women threaten progress on gender equality and sustainable development. United Nations Human Rights Special Procedures.
- Fain, J. A. 2017. *Reading, Understanding, and Applying Nursing Research . 4th ed. Philadelphia.*
- FAO. 2011. *The state of food and agriculture.* Food and Agriculture Organization of the United Nations, Rome, Italy.
- FAO. 2018. *Aguide for reporting on SDG indicator 5.a.2 :Realizing women’s rights to land in the law.* Food and Agriculture Organization of the United Nations, Rome.
- FDRE. 1995. *Constitution of The Federal Democratic Republic of Ethiopia.* In *IMF Staff Country Reports.* Natinal Legslative Body. <https://doi.org/10.5089/9781513542935.002>. National Legislative Bodies/ National Authorities, Ethiopia.
- FDRE. 1997. *Constitution of The Fedral Democratic of Ethiopia* (Vol. 12, Issue 3).
- FDRE. 2005. *Constitution of The Fedral Democratic of Ethiopia No.456/2005* (Federal anaegarit Gazeta (ed.), Addis Ababa, Ethiopia.
- Fox, L. and Romero, C. 2017. In the Mind , the Household , or the Market? Concepts and Measurement of Women ’ s Economic Empowerment (No. 8079).
- Gashaw Tenna, Zewdu Berhanie, and Assefa Abelieneh. 2017. Effects of Land Fragmentation on Productivity in Northwestern Ethiopia. *Journal of Advances in Agriculture* doi:10.1155/2017/4509605.
- Gujarati, D. N. 2003. *Basic Econometrics.* McGraw-Hill, New York.
- Hailu Tilahun, Aynalem Haile, and Ahmed Seid. 2019. Phenotypic Characterization of Indigenous Goats in North Showa Zone, Amhara Region, Ethiopia. *International Journal of Research Studies in Agricultural Sciences* 5(7): 44–55.
- Hanane Sharif. 2016. Gender and rural land reform in Ethiopia: reform process, tenure security, and investment, Doctoral Dissertation, Universty of Sussex,. <http://sro.sussex.ac.uk/72414/>.
- Hans-Gerd, R. 2014. *Review Reviewed Work (s): Qualitative Data Analyisi 3rd Edition. , SAGE*

Publications: Los Angeles, London, New Delhi, Singapore, Washington DC.

- Healey, J. F. 2010. *Statistics: A tool for Social Research. tistics: 9th Edition*. Cengage Learning, Australia, Brazil, Japan, Korea, Mexico, Spain, United Kingdom.
- Helina Beyene. 2015. Final Report National Assesment : Ethiopia. Women in Global Science and Technology, Los Angeles.
- Hirut Girma, and Giovarelli, R. 2013. The gender implications of joint land titling in ethiopia. Landesa, Ethiopia.
- Houngbedji, K. 2018. Property rights and labour supply in Ethiopia. In *Annals of Economics and Statistics*. doi:10.15609/annaeconstat2009.131.0137.
- Hussein Ahmed. 2014. A Woman 's Right to and Control over Rural Land in Ethiopia : The Law and the Practice. *International Journal of Gender and Women's Studies* 2(2): 137–165.
- Ildephose, N. 2013. Women Empowerment Through Income Generating Activities - G, RIN. Thesis, National University of Rwanda [Unpublished].
- IOM. 2016. Barriers to women's land and property access and ownership in Nepal. Nepal.
- Janssens, W. 2010. Women's empowerment and the creation of social capital in Indian villages. *Journal of World Development* 38(7): 974-988. doi:10.1016/j.worlddev.2009.12.004.
- Kifle Tesfamariam. 2015. Determinants of Women Empowerment in Cooperative Societies A Survey in South Eastern Zone Tigray Region of Ethiopia. *Journal of Economics and Sustainable Developmen* 6(3): 18–26. <http://www.ijmra.us>.
- Koirala, K. H. 2015. Three Essays on Land Ownership , Gender , and Agricultural Productivity in The Case of Developing Countries, Doctoral Dissertation, Louisiana State Universty.
- Kumar, N. and Quisumbing, A. R. (2015). Policy Reform toward Gender Equality in Ethiopia : Little by Little the Egg Begins to Walk. *Journal of World Development* 67 :406–423. doi:10.1016/j.worlddev.2014.10.029.
- Landesa. 2012. Women ' s Secure Rights to Land. 1–6. Landesa, India, China.
- Lavers, T. 2018. Responding to land-based conflict in Ethiopia: The land rights of Ethnic minorities under federalism. *Journal of African Affairs* 117(468). doi: 10.1093/afraf/ady010.
- Mebrat Gebreslassie. 2011. Breaking the Norms : Gender and Land Rights in Breaking the Norms : Gender and Land Rights in Tigray , Ethiopia. Thesis, Norwegian Universty. Norway [Unpublished].

- Metropolis, L. and State, K. 2018. Evaluation of Factors Influencing Access to Residential Land in Lokoja Metropolis, Kogi State, Nigeria. *Journal of the Environment* 12(1): 1–10.
- Mikyasa Abera, Nega Ansha, Yifokire Tefera, and Abebaw Addis. 2020. Early marriage and women's empowerment: the case of child-brides in Amhara National Regional State, Ethiopia. *International Journal of Health and Human Rights* 20(1): 1-16. doi:10.1186/s12914-020-00249-5.
- Mila, S. and Nicholas, M. 2018. What factors explain women's empowerment? Decision-making among small-scale farmers in Uganda. *Journal of World Development* 71 (2018): 46–55.
- Mishra, K. and Sam, A. G. 2016. Does Women's Land Ownership Promote Their Empowerment? Empirical Evidence from Nepal. *Journal of World Development* 78: 360–371. doi:10.1016/j.worlddev.2015.10.003.
- Moyo, K. J. 2017. Women's Access to Land in Tanzania: The Case of Maket District, Doctoral Dissertation, Royal Institute of Technology, Stockholm.
- Murugani, V. G., Thamaga-Chitja, J. M., Kolanisi, U. and Hussein Shimelis. 2014. The Role of Property Rights on Rural Women's Land Use Security and Household Food Security for Improved Livelihood in Limpopo Province. *African Journal for Food Security* 46(2). 205–221: doi: 10.1080/09709274.2014.11906721.
- Mwagae, E. W. 2013. Factors Hindering Realization of Women's Land Rights a Case of the Luhya Community in Kakamega County, Kenya. Thesis, University of Nairobi, Kenya [unpublished].
- Nahusenay Abate. 2019. Rural Women Participation in Decision-Making Power and Natural Resource Management in Ethiopia: A Case of Delanta District, South Wello Zone. *Journal of Eagriculture* 8 (2019): 448–460.
- Namubiru-Mwaura, E. 2014. Land Ttenure and gender: approaches and challenges for strengthening rural women's land rights. World Bank.
- Nardos Chuta. 2017. Young Women ' s Household Bargaining Power in Marriage and Parenthood in Ethiopia. Oxford Department of International Development, Oxford.
- Odeny, M. 2013. *Annual World Bank Conference on Land and Poverty, The World Bank - Washington DC*, 8-11 April 2013.
- O'Neil, T., Domingo, P. and Valters, C. 2014. Progress on women ' s empowerment From technical fixes to political action. Overseas Development Institute, London.
- Oyelude, A. A. and Bamigbola, A. A. 2013. Women Empowerment Through Access to Information: The Strategic Roles of Non-governmental Organizations in Nigeria. *Education Review* 3(2): 103–115.

- Pallas, S. 2017. *Women's land rights and women's empowerment: one and the same?*. (<https://doi.org/10.4000/books.iheid.6760>).
- Penelope, E. and Sally, M.-G. 2012. *An Introduction to Gender*. Cambridge University Press, Cambridge and New York.
- Santos, F., Fletschner, D., Savath, V. and Peterman, A. 2014. Can government-allocated land contribute to food security? Intra-household analysis of West Bengal's microplot allocation program. *Journal of World Development* 64: 860-872. doi: 10.1016/j.worlddev.2014.07.017.
- Selam Gebretsion. and Yalemzewd, Demssi. 2014. Tackling Gender Gaps in the Ethiopian Rural Land Administration. 1–9.
- SNZ. 2015. *Gender identity: Developing a statistical standard* Available from www.stats.govt.nz.
- Sosina Bezu. and Holden, S. 2014. Are rural youth in Ethiopia abandoning agriculture? *Journal of World Development* 64: 259–272. doi:10.1016/j.worlddev.2014.06.013.
- Sreemany, I. 2016 Access to credit to empowerment of women: Impact of Micro-credit interventions. November.
- Storck, H., Emanu, B., Adnew, B., Borowiecki, A. and W/Hawariate, S. 1991. Farming systems and farm management practices of small holders in the Hararghe highlands: Farming systems and resources economics in the tropics.
- Tariku Kassa, Abraham Siyoum. and Alemseged, Gerezgiher. 2021. Application of Ordered Logit Model to Analyze Determinants of Rural Households Multidimensional Poverty in Western Ethiopia. *International Journal of Development and Economic Sustainability* 9(1), 18–62.
- Temesgen Gashaw, Amare Bantidr. and Abraham, Mehari. 2014. Farming households' knowledge and perception on soil degradation in Dera Woreda, Ethiopia. *Journal of Agricultural Science, Engineering and Technology Research*. 2(3), 1–10.
- Temesgen Gebeyehu. 2018. Property Rights and Their Implications on Agricultural Productivity in Ethiopia: A History. *Journal of Economics* 45(1): 113–135. Available from <http://asetr.org/>.
- Teshome Beyene, Arega Bazezew. and Mehrete, Belay. 2021. Effects of the current land tenure on augmenting household farmland access in South East Ethiopia. *Journal of Humanities and Social Sciences Communications*. doi:10.1057/s41599-021-00709-w.
- Tewodros Tefera. 2013. Landownership- the path towards rural women empowerment: A case from Southern Ethiopia. *International Journal of Sociology and Anthropology* 5(9): 330–

338. doi:10.5897/ijisa2013.0481.

UN. 2013. *Realizing Women ' S Rights To Land. Realizing Women's Right to Land.* <https://www.unwomen.org/en/digital-library/publications/2013/11/realizing-womens-right-to-land>. United Nations Women, New York and Geneva.

UN. 2019. Women' s Land Rights and Tenure Security in the Context of the SDGs. United Nations Women, Ethiopia.

UN. 2020. *Realizing Women ' S Rights To Land And Other Productive Resources 2nd Edition.* <https://creativecommons.org/licenses/by-nc-nd/3.0/igo/>.

UNIDO. 2010. Summary Report on Women's Economic Empowerment, Accountability and National Ownership. <http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf>.

Urgessa Tessema. 2015. The Determinants of Agricultural Productivity and Rural Household income in Ethiopia. *Thesis Addis Abab Universty, Addis Ababa ,Ethiopia* [http://etd.aau.edu.et/bitstream/123456789/6809/1/Tessema Urgessa.pdf](http://etd.aau.edu.et/bitstream/123456789/6809/1/Tessema%20Urgessa.pdf).

USAID. 2016. Fact Sheet : Land Tenure and Women ' s Empowerment.

USAID. 2020. 2020 Gender equality and women's empowerment.

Valera, H. G. A., Yamano, T., Puskur, R., Veetil, P. C. and Valer, H. G. A. 2018. Women ' S Land Title Ownership and Empowerment : Evidence from India African Development Bank Economics Working Paper Series ship and werment t : m India Evide nce from (No. 559).

Varghese, T. 2016. Women Empowerment in Oman : A study based on Women Empowerment Index Women Empowerment in Oman : A study based on Women Empowerment Index. *Far East Journal of Psychology and Busines* 2(2): 1–53.

Wakitole Dadi. 2017. Determinants of Rural Women Economic Empowerment : The Case of Guduru District of Oromia Regional State. *International Journal of Research in Social Sciences* 7(5): 258–281. <http://www.ijmra.us>.

World Bank. 2011. *world Development Indicators 5th edition.* World Bank, Washington, D.C. 20433

World Economic Forum. 2014. The Global Gender Gap Report 2014.

Yamane. 1970. *Sample Size formula.*

Yehuala, Kassa. 2019. Determinants of Improved Faba Bean Seed Adoption and Value Chain Mapping: The Case of Basona Worena District in Amhara Region, Ethiopia.

Yonas Tafesse. 2011. Women and Land Rights in Rural Ethiopia: The Case of Wolaita. Thesis,

Universty of Tromso, Norway [unpublished].

Ziade Hailu., Workwoha Mekonnen, Savolainen, G. and Leckie, J. 2019. Protecting land tenure security of women in Ethiopia. Land Investment for Transformation, Ethiopia.

APPENDIX

Appendix 1: Conversion factors used to estimate Tropical Livestock Unit (TLU)

| Animal Category | Total TLU | Animal Category | Total TLU |
|-----------------|-----------|-----------------|-----------|
| Calf | 0.25 | Sheep and goats | 0.13 |
| Bull | 1.0 | Cow and ox | 1.00 |
| Donkey | 0.70 | Horse/mule | 1.10 |
| Heifer | 0.75 | Chicken | 0.013 |

Source : Storck et al., (1991)

Appendix 2: Variance inflation factor (VIF) for explanatory variables of access to land

| Variables | VIF | 1/VIF |
|---|------|-------|
| Age | 1.28 | .783 |
| Household size | 1.28 | .782 |
| Distance from the main road | 1.02 | .983 |
| Distance from the rural land administration office | 1.02 | .984 |
| Mean VIF | 1.15 | . |

Source: Computed from own survey, (2021)

Appendix 3: Variance inflation factor (VIF) for explanatory variables of Empowerment

| Variables | VIF | 1/VIF |
|-----------------------------|------|-------|
| Age | 1.14 | .874 |
| Land size | 1.18 | .844 |
| Livestock ownership | 1.22 | .817 |
| Income | 1.14 | .876 |
| Distance from the main road | 1.02 | .983 |
| Mean VIF | 1.14 | . |

Source: Computed from own survey, (2021)

Appendix 4: Contingency coefficient for explanatory variables of access to land

| Variables | Single | Divorced | Widowed | Educational status | Access to information | Access to training |
|-----------------------|--------|----------|---------|--------------------|-----------------------|--------------------|
| Single | 1.000 | | | | | |
| Divorced | -0.103 | 1.000 | | | | |
| Widowed | -0.103 | -0.095 | 1.000 | | | |
| Educational status | 0.223 | -0.044 | -0.139 | 1.000 | | |
| Access to information | -0.081 | -0.175 | 0.114 | -0.161 | 1.000 | |
| Access to training | -0.005 | 0.079 | 0.079 | -0.090 | 0.260 | 1.000 |

Source: Computed from own survey, (2021)

Appendix 5: Contingency coefficient for explanatory variables of Empowerment

| Variables | Single | Divorced | Widow | Educational status | Access to land | Employment | Access to information | Access to credit |
|-----------------------|--------|----------|--------|--------------------|----------------|------------|-----------------------|------------------|
| Single | 1.000 | | | | | | | |
| Divorced | -0.103 | 1.000 | | | | | | |
| Widowed | -0.103 | -0.095 | 1.000 | | | | | |
| Educational status | 0.223 | -0.044 | -0.139 | 1.000 | | | | |
| Access to land | -0.174 | 0.102 | 0.245 | -0.352 | 1.000 | | | |
| Employment | -0.161 | 0.013 | -0.082 | -0.032 | 0.060 | | | |
| Access to information | -0.081 | -0.175 | 0.114 | -0.161 | 0.533 | 0.117 | 1.000 | |
| Access to credit | -0.070 | 0.065 | 0.065 | -0.181 | 0.375 | 0.080 | 0.152 | 1.000 |

Source: Computed from own survey, (2021)

Appendix 6: Land size category

| Variable | | Accessible (N=79) | Not accessible (N=71) | Total (150) |
|----------|-----|-------------------|-----------------------|-------------|
| LSIZ | 0-1 | 49 (62%) | 63 (88.7%) | 112 (74.7%) |
| | 1-2 | 21 (26.6%) | 5 (7%) | 26 (17.3%) |
| | 2-3 | 9 (11.4%) | 3 (4.3%) | 12 (8%) |

Source: survey data. 2021

Appendix 7: Household income

| Variable | Minimum | Maximum | Mean | STD |
|-----------------------------|---------|---------|----------|----------|
| Income from crop production | 0 | 93000 | 18720.13 | 18391.27 |
| Income from Animal rearing | 0 | 97200 | 12078.87 | 21201 |
| Income from labor working | 0 | 120000 | 11544.01 | 17353.1 |
| Income from hand works | 0 | 1000 | 12.04667 | 94.06012 |
| Income from eucalyptus | 0 | 20000 | 557.3333 | 2451.898 |

Source: own survey, (2021)

Appendix 8: Household interview schedule

University of Gondar

College of Agriculture and Environmental Science

Department of Rural Development and Agricultural Extension

Household interview

Dear respondents the aim of this interview is designed to gather data on **“access to land for women’s empowerment: the case of Basona Werana Woreda, Amhara national regional state, Ethiopia.”** The final paper that will be written based on the data you have provided is intended to serve for the MSc Thesis. Your response will be used only for academic purpose and recommendation to improve access to land of women in the study area. Thus, for the realization of this research your genuine response to the following questions is highly appreciated and the researcher would like to confirm, that the information you provide will kept confidentially.

Date _____
 Name of interviewee (women) _____
 Interview No. (Code) _____

Part 1: Personal information

1. Household size

| | 1-14 years | 15-64 years | Above 64 years old |
|--------|------------|-------------|--------------------|
| Male | | | |
| Female | | | |

2. The age of the respondent _____ years old.
3. Marital status of the respondent
 1) Single 2) Married 3) Divorced 4) Widow
4. Educational status of the household:
 1) Can't read and write 2) Read and Write 3) primary school (1-8)
 4) Secondary school (9-12) 5) above secondary school
5. What is your religion?
 1) Orthodox 2) Muslim 3) protestant 4) Other

Part 3: physical and institutional factors

5. Do you have a land? 1) Yes 2) No
6. If your response is No for Q5 why?
 1) Because I am not reach in the time of Distribution 3) my husband not willing
 2) Because of my family exist 4) because of I am single
7. When did you get the land? _____
8. What is the total size of your own land in hectare? _____
9. In whose name is, your land registered?
 1) In my name 2) in my husband name 3) jointly 4) others
10. What is your source of land?

- 1) Family 2) Gift 3) State 4) Marriage 5) other.
11. Do you believe women are accessible to the land related information? 1)Yes 2) No
12. Did you have an access to credit service?
- 1) Yes 1) No
13. If your response is yes for Q12 from which source?
- 1) ACSI 2) Bank 3) Ekub 4) Edr
- 5) Family 6) Neighbor 7) other specify
14. If your response is no for Q12 why?
- 1) I have enough money 2) I hate a credit 3) I haven't enough money to repay
- 4) Lack of awareness 5) Lack of collateral 6) other _____
15. Did you get training about the land related information? 1) Yes 2) No
16. For how many times you took the training?
- 1) Once a week 2) Once month 3) Twice month
- 4) Once a year 5) Twice and above a year
17. From whom you took the training?
- 1) Extension agents 2) Land administrator 3) NGO 4) Other specify _____
18. Did you get extension service? 1) Yes 2) No
19. For how many times you took the training?
- 1) Once a week 2) Once month 3) Twice month
- 4) Once a year 5) Twice and above a year
20. Did you get land related information? 1) Yes 2) No
21. If your response is yes for Q20 from which source?
- 1) Family 2) neighbor 3) ICT
- 4) Development Agent 5) Land Administrators

Part 2: Socio-economic factors

22. Livestock ownership in Number?

| | | | | | | | | | | |
|----------------|----|-----|------|-------|------|--------|-------------|---------|-------|--------|
| Livestock Name | Ox | Caw | Calf | Sheep | Goat | Donkey | Horse /Mule | Poultry | Honey | Heifer |
|----------------|----|-----|------|-------|------|--------|-------------|---------|-------|--------|

| | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|
| Local | | | | | | | | | | |
| Improved | | | | | | | | | | |
| Total | | | | | | | | | | |

23. For whom you may transfer your land?

- 1) For my sons 2) for my daughters 3) for both

24. Do you transfer the land for sons and daughters equally? 1) Yes 2) No

25. Why for the above?

26. Are you able to decide as men equally? 1)Yes 2) No

27. Why for question number Q26 if your response is no?

28. Which role is taken your much of time?

- 1) Productive 2) Reproductive
3) Community 4) Home works

29. Do you believe by “A women’s place is in the kitchen”? 1)Yes 2) No

30. Are you employed? 1) Yes 2) No

31. In what type of organization are you employed?

- 1) Private 2) Non-government 3) Government

32. If your response for Q30 is no, Why?

- 1) Because of my education is not sufficient 2) Lack of works

3) I have not a capacity to work 4) other specify

33. How much time you need to go for Land Administration Office in minute? _____

34. Who are efficient in the managing the lands?

- 1) Male 2) Female 3) both

35. Can your husband transfer the land through inheritance, rental and donation without the permission of you? 1) Yes 2) No

36. Does statutory rights really practiced? 1) Yes 2) No

37. Which rights are respected in the community?

- 1) Use right 2) Transfer right 3) Right to get free grazing area
4) Right to control 5) Right to not displace from the your area

38. Do you know women customary rights on land 1) Yes 2) No

39. Does customary rights really practiced? 1) Yes 2) No

40. Is land serves as means of equality for women with men? 1) Yes 2) No

41. If yes, do you feel equal with men by your land?

42. Do you have an Ox? If it is yes how many? _____ 1) Yes 2) No

43. What is the role of land for you?

44. What are the main problems which affects your access land in the area?

45. Do you believe that the land certification is importance for you? 1) Yes 2) No

46. If you answer is yes, list its importance?

47. Annual income of the household from

- 1) Crop production _____ 2) Animal production _____
3) Labor works _____ 4) Hand works _____ 5) From eucalyptus _____

Part 4: Empowerment

48. Who makes decision in your household in relation to the following statements? (circle one)

1= Decisions taken by someone else 2= Decision is made by husband/partner

3= I can decide with my husband/partner 4= I can decide on it,

| Statements | Response (circle one) | | | |
|--|-----------------------|---|---|---|
| | 1 | 2 | 3 | 4 |
| Decision on how to spend money derived | 1 | 2 | 3 | 4 |
| Decision on health care | 1 | 2 | 3 | 4 |
| Decision on major household utilities purchases | 1 | 2 | 3 | 4 |
| Decision on visits to family or relatives | 1 | 2 | 3 | 4 |
| Purchase of agricultural technologies (fertilizer) | 1 | 2 | 3 | 4 |
| Purchase of improved seeds | 1 | 2 | 3 | 4 |
| Land rent in/out | 1 | 2 | 3 | 4 |
| Sale of agricultural produce | 1 | 2 | 3 | 4 |
| Decision on type of crops cultivated | 1 | 2 | 3 | 4 |

Appendix 9: Check List Questions for Focus Group Discussion

1. Do you believe women are accessible to the land related information?
2. Does women are used the available information on the land.
3. What factors determine women to access land?
4. Does women's land is secured in the time of divorce, death and other situation through registration?
5. Does women's customary rights practiced?
6. Whether land serves as means of equality for women with men? 1) Yes 2) No
7. Why for above question _____?
8. Who is better capable in managing productive resources such as land effectively?
1) Male 2) Women 3) Both
9. Do you believe that the land certification is importance for you? 1)Yes 2)No
10. If you answer is yes, list the main importance?
11. Do you believe that women were accessible for GO and NGO works?
12. What kind of animals own by women and men?
13. What should be done for the future to improve women security of the land by government?
14. What should be done for the future to improve women security of the land by society?

Appendix 10: Check List Questions for Key informant interviews

1. Do you believe women are accessible to the land related information?
2. What factors determine women to access land?
3. Does women are used the available information on the land.
4. Which Statuary Right are mostly practices in the area?
5. Which customary Right are mostly practices in the area?
6. It there any rights which are not practice in the area?
7. Did you gain any support from the government to support security of women land access?
8. What should be done for the future to improve women security of the land by government?
9. What should be done for the future to improve women security of the land by society?

APPROVAL SHEET
UNIVERSITY OF GONDAR
POSTGRADUATE DIRECTORATE

ACCESS TO LAND AND WOMEN’S EMPOWERMENT: THE CASE OF
BASONA WERANA WOREDA, AMHARA NATIONAL REGIONAL STATE,
ETHIOPIA

Submitted by:

| | | |
|-------------------|-----------|-------|
| <u>Rahel Kuma</u> | _____ | _____ |
| Name of Student | Signature | Date |

Approved by:

| | | |
|---------------------------------|-----------|-------|
| 1. <u>Wuletaw Mekuria (PhD)</u> | _____ | _____ |
| Name of Major Advisor | Signature | Date |

| | | |
|-------------------------------|-----------|-------|
| 2. <u>Degsew Melak, (PhD)</u> | _____ | _____ |
| Name of Co- Advisor | Signature | Date |

| | | |
|-----------------------|-----------|-------|
| 3. _____ | _____ | _____ |
| Name of Chairman, DGC | Signature | Date |

| | | |
|-------------------------------|-----------|-------|
| 4. _____ | _____ | _____ |
| Name of Coordinator, CART PGC | Signature | Date |