
# ADDIS ABABA UNIVERSITY
# COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

## THE PRACTICES OF FARMERS' TRAINING CENTERS IN ENHANCING RURAL LIVELIHOODS: THE CASE OF DAWO WOREDA, OROMIA REGIONAL STATE

**BY**
**ALEMAYEHU GEMECHU ANGESSA**

**OCTOBER 2017**
**ADDIS ABABA, ETHIOPIA**

# ADDIS ABABA UNIVERSITY
# COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

## THE PRACTICES OF FARMERS TRAINING CENTERS' IN ENHANCING RURAL LIVELIHOODS: THE CASE OF DAWO WOREDA, OROMIA REGIONAL STATE

**A Thesis Submitted to the Department of Curriculum and Instruction, in Partial Fulfillment of the Requirements for the Degree of Masters of Arts in Adult Education and Community Development**

**By**
**ALEMAYEHU GEMECHU ANGESSA**

**ADVISOR: TESHOME TOLA (PhD)**

**OCTOBER, 2017**
**ADDIS ABABA, ETHIOPIA**

**STATEMENT OF THE AUTHOR**

First, I declare that this thesis is my original work and all sources of material used for this thesis have been duly acknowledged. I also declare that this thesis has never been submitted to any other institutions anywhere for academic awards.

**Name: Alemayehu Gemechu** **Signature**:_____ **Date**:_____

**Place:** Addis Ababa

## STATEMENT OF ADVISOR

I Teshome Tola (PhD.) hereby certify that I have read and evaluated this Thesis prepared, under my guidance, by Mr Alemayehu Gemechu, entitled ***The Practices and Role of Farmers Training Centers on Rural Livelihoods in Dawo Woreda, Oromia Regional State, Ethiopia***. I recommended that it can be submitted as it fulfills the necessary academic requirements.

**Name:** Teshome Tola **(PhD.)** **Signature**:_____ **Date**:_____

**Place: Addis Ababa**

## DECLARATION

This is to certify that the thesis prepared by **Alemayehu Gemechu Angessa**, entitled ***The Practices and Role of Farmers Training Centers on Rural Livelihoods in Dawo Woreda, Oromia Regional State, Ethiopia*** and submitted in partial fulfillment of the requirements for the degree of Master of Arts in Adult Education and Community Development, complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

By: Alemayehu Gemechu

**Approved by bord of Examiners**

| | | |
|---|---|---|
| _____ | _____ | _____ |
| Name of Advisor | Signature | Date |
| _____ | _____ | _____ |
| Name of External Examiner | Signature | Date |
| _____ | _____ | _____ |
| Name of Internal Examiner | Signature | Date |

_____

Chair of Department of Graduate Program Coordinator

# ACKNOWLEDGMENTS

First and foremost, my greatest gratitude reaches to the almighty God, who helped me just from the beginning of my studies to the end and permits me to see the fruit of my efforts.

I would like to extend my heartfelt thanks to my advisor Dr. Teshome Tola for his valuable advice, comments, insight and guidance starting from proposal development to the completion of this research work. I would like also to express my sincere gratitude to my colleagues of MoANRs; Mr. Tasfaye Dadi, Mr. Urgie Gowe and Mr. Adunga Hambissa and to my friend Mr. Jean Jacques Souvenir Bucyana who proofread my thesis. Without their unfailing support, I would not have been successful in my work.

I also remain thankful to Dawo woreda agricultural office head, Youth and Sport Affair and all the enumerators who assisted me in data collection with patience, commitment and dedication. Their cooperation was not on the basis of their material benefit but is really their own commitment to help me.

I am deeply grateful to farmers of Dawo woreda district who responded to all questions with patience and gave information for this research work.

Finally, I would like to recognize my wife, W/ro Sara Tolosa, for her consistent encouragement, wishes and moral support all the time.

Last, but not least, I am grateful to the Addis Ababa University's lecturers especially those of College of Education and Behavioral studies for the knowledge imparted.

**Thanks all!**

# TABLE OF CONTENTS

**Contents** **Page**

## LIST OF TABLES

**Page**

## LIST OF FIGURES

**Page**

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AAS | Agricultural Advisory Services |
| ADLI | Agricultural Development-Led Industrialization |
| AGP | Agricultural Growth Program |
| ARDU | Arsi Rural DevelopmentUnit |
| ATA | Agricultural Transformation Agency |
| ATVET | Agricultural Technical Vocational Educational Training |
| CADU | Chilalo Agricultural Development Unit |
| CPPs | Comprehensive Package Programs |
| CSA | Central Statistical Agency |
| DAs | Development Agent |
| EARO | Ethiopia Agricultural Research Organization |
| EEA | Ethiopian Economic Association |
| EEPRI | Ethiopian Economic Policy Research Institute |
| EPID | Extension and Project Implementation Department |
| FAO | Food and Agricultural Organization |
| FDRE | Federal Democratic Republic of Ethiopia |
| FFS | Farmers Field School |
| FMoE | Federal Ministry of Education of Ethiopia |
| FTCs | Farmers' Training Centers |
| GDP | Growth Domestic Product |
| GNP | Growth National Product |
| GTP | Growth and Transformation Plan |
| IECAMA | Imperial Ethiopian College of Agriculture and Mechanical Art |
| IFAL | Integrated Functional Adult Literacy |
| IFPRI | International Food Policy Research Institute |
| MDG | Millennium Development Goal |

| | |
|---|---|
| MEA | Millennium Ecosystem Assessment |
| MoA | Ministry of Agriculture |
| MOANR | Ministry of Agriculture and Natural Resources |
| MoARD | Ministry of Agriculture and Rural Development |
| MoFED | Ministry of Finance and Economic Development |
| NIOSH | National Institute for Occupational Safety and Health |
| NPC | National Planning Commission |
| OBoAR | Oromia Breaw of Agricultre and Rural Development |
| PADETES | Participatory Demonstration and Training Extension System |
| SPSS | Statistical Package for Social Sciences |
| TLU | Tropical livestock Unit |
| TVET | Technical vocational Educational Training |
| UNDP | United Nations Development Program |
| UNSD | United Nations Statistics Division |
| URRAP | Universal Rural Road authority Program |
| USAID | United States Agency for International Development |
| WAO | *Woreda* Agricultural Office |
| WFP | World Food Program |

**ABSTRACT**

*This study surveyed the practices of farmers' Training centers found in Dawo Woreda. A descriptive survey design that employed both qualitative and quantitative approach was used by collecting data from 52 randomly selected households. In addition qualitative data were gathered from DAs, community elders, youth and women groups through interviews and FGDs. Frequency counts, percentage, mean and standard deviation were used as statistical tools to analyze quantitative data. The results indicated that the majority of the sample household had an experience of 5 years working with FTCs. It was found out that FTC users were satisfied by the trainings about crop production, natural resources management and animal production at different rates. The results also indicated that the majority of the users recognized to have benefited from FTCs trainings in terms of developing the culture of saving, access to market and improved knowledge on agriculture and environment. Nevertheless, most of the FTC-users evaluated the training received as irrelevant to their needs. Qualitative analysis revealed the most critical challenges of FTC were the lack of necessary resources and equipment. The study concludes that the contribution of FTCs practices on farmers' livelihoods in the study area has both negative for landles youth and positive in improving farmers livelihood. Recommendations having implications for future interventions and research are forwarded.*

**Key words:** *Farmer training centers, rural livelihood, extension, adult literacy*.

# CHAPTER ONE: INTRODUCTION

This chapter provides a background, Problem Statement, objectives, significance, scope, limitations and operational definition of terms of the study on the subject under study of the empirical evidences on FTC done by other researchers which includes concepts related to training in the Ethiopia Agricultural sector, and on the sustainable livelihood approach are presented.

## 1.1 Background of the Study

Agriculture is Ethiopia's most important economic sector with 85% of its population being rural and depending for their livelihoods on subsistence agriculture. However, inappropriate agricultural practices are reducing soil fertility, rend the sector vulnerable to climate variability and consequently lead to decline in farm yields exposing the country to relying on imported food from international markets (www.giz.de). Since the last century, various policies and strategies have been set to move the country's agriculture technology development and dissemination efforts. According to Berhanu et al. (2006), the rate of agricultural growth in Ethiopia depends on the speed with which the current subsistence production system is transformed into knowledge based and market-oriented production systems. However, to sustainably increase agricultural production that meets the growing demand for food, industrial raw materials, and foreign currency earnings and to respond to the growing demand from different stakeholders, a more dynamic and proactive extension system has recently been pointed to be more than necessary (MoANR, 2017).

The newly drafted strategy highlights the need for a rigorous and vibrant extension system that ensures that farmers embrace necessary behavioral and attitudinal changes and improve or adopt new agricultural practices that can lead to achieving agricultural development, poverty reduction, and food security (Ministry of Agriculture and Natural resources (MoANR, 2017). Those strategies include the Agriculture Development Led Industrialization (ADLI),that lead to the implementation of the three most recent five year national plans namely: the Sustainable Development and Poverty Reduction Program (SDPRP), 2002/03-2004/05; a Plan for

Accelerated and Sustained Development to End Poverty (PASDEP), 2005/06-2009/10; and the Growth and Transformation Plan-I (GTP-I), 2010-2015 (MoANR, 2017).

In general, Ethiopia's rural development policy and strategies prioritize the transformation of smallholder subsistence agriculture to commercial agriculture through market-orientated production system. Accordingly, the government has been investing heavily in agriculture with a focus on public extension services by deploying considerable human and financial resources. For example the GTP-I mainly focused on accelerated growth in agricultural productivity for ensuring food security and supporting the food industry through increasing crop production, enhancing crop productivity by applying good agricultural practices and improving extension services. Moreover, it emphasized on the utilization of agricultural inputs, strengthening agricultural marketing system, enhancing agricultural research and strengthening natural resource conservation. During the period of GTP-I, the number of agricultural extension beneficiaries has increased from 5.1 million in 2009/10 to 13.95 million farmers by the end of 2014/15. At the same time, the Ethiopian agricultural sector contributed about 39% of the country's Gross Domestic Product (GDP) by the end of 2014/15. Crop and livestock subsectors accounted for 27.4% and 7.9% respectively, while the residual accounted for by forestry and fishing (NPC, 2016). Despite its pivotal role, and in spite of considerable efforts made to improve the extension system of the country in the past, the system is not yet bringing the desired results as the performance of this sector has remained largely unsatisfactory (Gregory, 2013, MoANR, 2017).

Further, in order to boost economic growth, the GTP and its implementation give particular attention to developing the natural, physical and human resources through the development of agriculture. Agricultural extension has been emphasized by different development experts as crucial in achieving agricultural development, poverty reduction, and food security. Among the many institutional support services that need to catalyze the transformation process, the agricultural extension service is expected to play a major role, since it contributes to the development of the skills and knowledge of farmers and allow them to adopt new and improved technologies and the approaches and processes with which the skills development and access to information are realized (MoANR, 2017). It was also highlighted by Feder et al. (2004b) that a rigorous and vibrant extension system is a key policy instrument to enhance agricultural

development. On the top of that, Dercon et al. (2007) showed that a farmer receiving at least one extension visit per year reduces the likelihood of being poor by 10% in Ethiopia.

Cognizant of the above evidences, the Government of Ethiopia has renewed efforts to transform the agricultural sector mainly by strengthening its extension services as part of the general agriculture policy reform. To this effect, farmer training centers (FTCs) are seen as the cornerstone of Ethiopia's strategy that act as critical knowledge institutions geared towards supporting the transformation of the agricultural sector in general and small-scale farming as a business in particular. Hence, FTCs are envisaged to be major transformational institutions that will enable rural commercialization and industrialization to spur. The linkage between agriculture and industry will be driven by the training of young female and male farmers who would take up entrepreneurial opportunities to engage in agriculture as a business such as producers, agro-processers and marketers (MoANR, 2017).

Specifically, the FTCs are expected to serve as hubs/centers for farmers to receive advisory services and information, training, and demonstrations on improved and sustainable farm management practices for their livelihoods (Gebremedhin et al., 2006; Mogueset al., 2009b; IFPRI, 2010). So far the centers provide a wide range of services: farmer training and extension services on improved farming techniques (through training courses, exhibits, demonstration farms, field days and farmer-to-farmer extension); market-oriented information and advisory services; meeting and communication facilities; and seed and seedlings of new crops, vegetables, fruit and forage varieties (Ousman, 2007).

The FTCs extension approach is guided by the principles of the Integrated Functional literacy Curriculum Framework (IFAL) designed by the Federal Democratic Republic of Ethiopia Ministry of Education (MoE, 2011).The IFAL's vision to see a literate Ethiopian adult citizenry, enabled to take their own initiatives in fighting poverty; enabled to change their life; and enabled to participate actively in and benefit from processes of national building coins with the current Ethiopia movement as whole which is to improve the citizen's life and place the country in the twenty years among the middle income countries.

Since their establishments (FTCs) have a great role to play in the process of transforming the agricultural sector which is the most important sector of Ethiopia, understanding their relevance

on improving the livelihoods of rural farmers seems to be an of great importance. Therefore, this study tries to look into the practices of FTCs and examine their effects on the rural farmers' livelihoods situation in Dawo woreda.

## 1.2 Problem Statement

According to the World Bank (2007c), three out of four poor people in the developing world live in rural areas and most of them depend directly or indirectly on agriculture for their livelihoods. In the twenty-first century, agriculture remains a fundamental tool for lifting them out of poverty, as has been highlighted in the World Development Report 2008. Therefore, in light with recent food crisis, supporting agricultural development using economic services, such as agricultural extension, is essential in using agriculture for development.

Education in all its forms has the potential to empower people, by increasing their self-confidence, their capacity to improve their livelihoods and their participation in wider process of social and economic changes (FAO, 2009 cited in FMoE, 2011). Hartl (2009) viewed education, skills development and technical training as central elements to the agricultural and rural employment. The better the training and the more refined the skills are in terms of human capital, the higher the income and returns and the better the rural livelihoods.

Agricultural transformation in any country is conditioned by a mixture of policy and country contexts such as land tenure, resource constraints, skills and education, research and development, infrastructure, climate change as well as fiscal and monetary regulations. The rapidly evolving nature of agricultural innovation processes in developing countries requires agricultural extension to make necessary transformations of classical roles that previously supported linear knowledge circulation and adoption. In Ethiopia, Farmer Training Centers (FTCs) extension system is expected to serve as an entry point that will move the country towards establishing a knowledge-based agricultural sector (FAO, 2006, p. 29) by promoting participation of smallholder farmers in the use of improved agricultural technologies, to improve productivity, incomes and livelihoods of the rural community.

Nevertheless, the established FTCs are found at varying levels of functionality and currently most of them are not capable of providing the expected services to farmers (MoANR, 2017). In addition to this, the current extension service is blamed of different shortcomings. Among others

include: top-down approach, non-participatory, supply driven not demand driven, gender bias extension services, lack of staff morale, capacity and capability of staff, development agents involvement in non-extension activities, lack of qualified extension supervisors, insufficient appropriate and relevant technology options both for crops and livestock sector and inadequate public funding among others (Mengiste and Belete, 2014).

Furthermore, Ethiopia is a nation of great diversity with regard to its biophysical environment, socio-cultural practices, and the livelihoods activities of the people (Degefa,2004), each FTC in different parts of the country and in Dawo woreda, in particular, most of the time is dealing with context specific socio-cultural systems of the area where it is established. This diversity may differently affect the performance of the FTCs activities and the extent to which the latter respond to the numerous needs of the people and how they impact on the livelihoods of the beneficiaries.

The success of FTCs is expected to come from people acceptability and ownership of these institutions. However, it is worth to argue that unless and otherwise people perceive tangible benefits from FTCs on their livelihoods, the sustainability of these institutions may be difficult to realize. Furthermore, the different ways by which these institutions are supposed to impact on different dimensions of rural livelihoods are not clear, given the complexity of rural communities' issues that are most of the times context specific especially in Ethiopia. These include environmental degradation, landlessness, climate change, vulnerability, and marginalization, poverty and others (Degefa, 2004).

Besides, inspite of the high level of expectations attached to establishment of FTCs, and the continuous contestations that have been raised on the situations and performance of these establishments, however, research undertaking dealing with the FTC-based extension system in Ethiopia are still few. These include IFPRI (2010), Tesfaye et al. (2011), Fisseha (2009) and recently Muluken et al. (2014) and Luchia (2015). In their detailed assessment of AASs in the country, IFPRI (2010) investigate the pros and cons associated with public AASs, including the policy environment, FTC establishment and functioning, Agricultural Technical and Vocational Education and Training (ATVET) colleges, in order to provide feedbacks and recommendations on how to improve performance of the overall system. Likewise, though at smaller scale compared to IFPRI (2010), Tesfaye et al. (2011) made an assessment of IPMS-sponsored FTCs

in IPMS Pilot Learning Woredas. This group of researchers documented and provided evidences on the extent and efficiency of resource use (physical, human and other resources), training programs of the FTCs, and good practices and lessons for future reference and replication from different parts of the country. Whereas Muluken et al. (2014) and similarly Bamlaku et al. (2015) tried to assess the impact of FTC on farmers' income and FFS (one of activities of FTC) on income respectively.

Evidently, all of these investigations did not emphasize on finding empirical evidences on the practices of FTCs and on how they are embedded in the rural livelihoods context. Instead, most of the studies focused on the supply side of the system, and paid less effort in understanding the relevance of practices of FTCs to the needs of farmers who are their most important stakeholders (customers of FTCs). However, understanding the way in which farmers of today as well as future generations are acquiring knowledge and skills, and their perceptions of the sector, is critical in forming responses to rural poverty and food insecurity. The neglect that agriculture has suffered in terms of national budgets, policies and investment is often being reinforced through inadequate farmers' education and training.

Therefore, this work thrives to appreciate how the practices of FTCs are affecting Dawo woreda's farmers' diverse livelihoods contexts. Given the importance of the subject under study a number of questions sought to be answered by evidences from this study and are thrown as follow:

1. What are the practices (trainings, services, products, etc.) of FTCs in Dawo woreda?
2. What are the challenges facing FTCs established in Dawo woreda?
3. What are the farmers' perceptions of FTCs practices in different Kebeles of the study area?
4. How are FTCs affecting the livelihoods of farmers of Dawo woreda?

## 1.3. Objectives

### 1.3.1. General Objective

This study aims to understand the practices of farmers training centers and how they affect rural farmers' livelihoods in Dawo woreda.

### 1.3.2. Specific Objectives

1. To identify the different practices undertaken by FTCs in the rural kebeles of Dawo woreda.
2. To identify different challenges of FTCs established in Dawo woreda.
3. To assess the perceptions of farmers about FTCs practices in different Kebeles of the study area
4. To examine how FTCs are affecting rural farmers livelihoods.

## 1.4. Significances of the Study

Doing all possible efforts to eliminate agricultural problems by updating the country's labour force and giving due consideration will contribute to the overall development of the country (Luchia, 2010). In this regard, assessing the role and practical issues and constraints related to farmers training, has significant contribution in pin-pointing areas that need attention for future improvement. Therefore, this study is believed to generate useful information on FTC practices and on their effects on rural livelihoods. It provides feedbacks immediately from FTC-users farmers for policy makers and development practitioners so as to make the training process demand driven and effective**.** The findings of this study are expected to benefit local governments and development practitioners in particular, policy makers in general in terms of improving the knowledge on FTCs practices and how they are supporting rural farmers towards sustaining their livelihoods. On top of this, the findings of this research will serve as a basis for future researchers and students who will be interested in conducting research on adult education and agricultural extension for further investigation in other areas.

## 1.5. Scope of the study

This research study was conducted to assess practices of FTCs and their effects on farmers' livelihoods in Dawo woreda. The study involved only a total number of 52 farmers from 3 FTCs among 10 FTCs established in the study area. It deals with issues related with farmers trainings practices herein categorized under crop production, animal production and natural resources management.In addition it sheds light on how the established FTC in the study area are affecting the livelihoods of farmers in terms of five livelihoods assets.

## 1.6 Limitations of the study

Due to the fact that the study focused only Dawo woreda results cannot be generalized to other neighbouring woreda of South West Showa zone.

## 1.7 Operational Definition of key terms

- ✓ **Extension delivery methods:** techniques used by extension agents in teaching the target group; can be classified by contact as individual, group, and mass methods. (MoANR,2017)
- ✓ **Perception:** is the process whereby sensory stimulation is translated into organized experience, (Mesfin, 2006).
- ✓ **Adoption**: isthe decision to use a new technology, method, practice, *etc.* by a firm, farmer or consumer (Feder, 1985 cited by Tadesse, 2008).
- ✓ **Farmers training Centers (FTC)**; a place where farmers receive training or learn both theoretical and practical knowledge and information and agricultural input (MoANR, 2017).
- ✓ **Training:** a communication directed at a specific population for the purpose of developing skills, modifying behavior, and increasing competence (NIOSH, 1999).
- ✓ **Modular training:** is a short term curriculum-based training in which training course materials are compiled in modules and provided for farmers to enable them acquire knowledge and skills of specific agricultural production methods which is warranted by Green Certificate.(OBoAR,2008)
- ✓ **Green Certificate**: is a vocational qualification warrant (authorization) recognized by government for the farmers who have acquired knowledge and skill for a specific job /area/ of agricultural production method (Omer, 2013).
- ✓ **Livelihoods:** A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, and provide net benefits to the livelihoods locally and more widely, both now and in the future, while not undermining the natural resource base (Chambers et al., 1992)**.**

# CHAPTER TWO: REVIEW OF RELATED LITERATURE

In this chapter provides a review of related literature on the subject under study a summary of the empirical evidences on FTC done by other researchers which includes concepts related to training in the Ethiopia Agricultural sector, and on the sustainable livelihood approach arepresented.

## 2.1. The Concept of Training in the Ethiopian Agricultural Sector

Education is a formal and none formal type of training that have learning objectives and learning materials and that applies some sort of evaluation activities at the end of the training. It is applied in schools, colleges, polytechnics and universities for preparatory of later applications with fixed compartmentalized content and selective entry. Mostly it is long cycle, rigid structured, full time, terminal, examination oriented, self- assessing with regular academic years and recognized certification (Wuletaw, 2010 cited in Omer, 2013).

On the other hand, Extension service, modular training, package training, skill training, adult-learning, on the job-training and other agricultural related extension services are examples of non-formal trainings. It is non-school based program that provides basic skills to individuals. It is personal oriented for all age groups, especially for adults for their immediate application to change and integrate contents with an open entry and any location. It is a short cycle, environmentally based, flexibly structured, learner centered, part time, practical, non-terminal and so on. Informal training consists in a casual and incidental type of training having no special goals and has no curriculum. Learning from experience on the job, listening to a group of people, talking about a new idea, discussion, brain storming and reading a book are examples of informal trainings (YICDOL, 2006 cited in Omer, 2013).

The Education and Training Policy of Ethiopia focused on expanding equitable access to primary and vocational education to meet the demands of the country and the economy. In the situation analysis section, ESDP III notes that the adult and non-formal education programme includes a range of basic education and training components for out-of school children and adults and that it basically focused on literacy, numeracy and other relevant skills to enable learners to develop problem-solving abilities and, therefore, be able to change their lives(Omer,2013).

Three sub-components taining are: a programme for out-of-school children 7-14 years of age; literacy programme for youth and adults aged 15 and above; and basic skills training for youth and adults in the community skills training centers (CSTCs) (FMoE, 2008). Community Skills Training Centers were established in the 1970s to upgrade the skills of farmers to introduce new technologies and expand income-generating activities by providing short-term farming and vocational training. Accordingly, the education and training of rural farmers has been given higher priority during the last decade. Millions of adult farmers benefited from the agricultural extension programme, which is part of the national adult education endeavor. In the same way, other interventions such as the establishment of agricultural Technical Vocational and Educational Training (Agri-TVET) and Farmers' Training Centers (FTCs), among others have been launched, and the promotion of commercial farming have been encouraged. The Ministry of Agriculture has the plan that every community of 300 households will have three development agents, one plant science expert, one natural resource management expert and one animal science expert based in each Farmer Training Centers across the nation (FMoE, 2008).

Formal and non-formal trainings are equally important. But farmers need to have an opportunity to learn non-formal training at their farming community through different training programs. And thus, the government has launched potential development programs including modular training, extension and information service at FTC. Many efforts have been made by different organization to strengthen this program such as the training of extension agents and newly established FTCs (MoARD, 2008).

### 2.2. Integrated Functional Adult Literacy Curriculum Framework (IFAL) for the training of farmers

The establishment of Farmer training centers and the ultimate goal of all the non-formal trainings are supported by the principles of Integrated Functional Adult Literacy Curriculum Framework (IFAL) program which is, most of the time, the base for these trainings. With a vision to see a literate Ethiopian adult citizenry, enabled to take their own initiatives in fighting poverty; enabled to change their life, and enabled to participate actively in and benefit from democratic processes and nation building, IFAL focuses on integrating social, economical and pedagogical values unlike the education of children that focuses on learning contents that are immediate and responsive to current concerns, needs and interests of adults (FMoE, 2011).

IFAL focuses on adult behavior and psychological change, using adult knowledge and skills as a starting point, to improve, enable progress to a better stage, and introduce new technology, inputs and producers as part of the process of individual, local, community and national development. The process and activity begin with adults discussing life-related and life improving concerns, needs and interests common to the individual and group and then move to reading sentences, phrases, words and numbers etc. about these. IFAL is based on mutual learning-teaching, not on one-way communication between learners and facilitators. Facilitators teach adults; adults teach facilitators; everybody teaches everybody else. Collective learning is used for the solution of common problems; individual knowledge, and skill are pooled and coordinated to achieve the resolution of common problems. This approach to adult literacy helps adults to use, in practical terms their reading and writing and computational skills to advance their life, customs, traditions, experiences, strengths, environs, productivity, etc. The preparation of the syllabus is based on considerations of all these local conditions (FMoE, 2011).

### 2.3. Brief Overview of Agricultural Extension and its Evolution in Ethiopia

The birth of an agricultural extension service in Ethiopia dates back to 1953 when the then Alemaya Imperial College of Agriculture and Mechanical Arts, now Haramaya University started to provide research-based extension services to the surrounding communities based on the agreement made between the Ethiopian and US governments, following the Land Grant University approach. Since then, the country has implemented different types of agricultural extension systems, for instance, College System of Agricultural Extension Program (1953 to 1960s), Comprehensive Package Project (1960-1970s), the Minimum Package Project (1970-1980s), Peasant Agricultural Development Project and Farming System Research Project (1985-1990s). Major challenges encountered during these periods, among others, included instability of the extension system and management, unsustainability of the extension programs and projects (WADU, CADU, MPP etc.), lack of common perceptions between technology generators and extension personnel, inadequate representation and participation of farmers, inadequate trained manpower, limited finances, one way communication and insufficient or even absence of monitoring and evaluation (MoANR, 2017).

Over the years, a number of reforms have taken place to address gaps in the various systems adopted leading to the current system. In 1993, SG-2000 started to demonstrate agricultural

technologies as a pilot on major cereal crops. The demonstration conducted by SG-2000 clearly showed great successes and captured the attention of top level officials and development practitioners, encouraging them to replicate the experience of SG-2000 nationwide. The approach was later used as a basis for the current extension package services. In line with this, in 1995, the Government designed and implemented a Participatory Demonstration and Training Extension System (PADETES) as the core element of the extension system of the country. Its main objective was to improve participation of smallholder farmers and demonstrate improved agricultural technologies for improving productivity, incomes and livelihoods of the rural community (MoANR, 2017).

The government established and operationalized 25 ATVETs in different parts of the country to produce skilled development agents (DAs), decided to establish a Farmer Training Centers (FTC) in each Kebele and deployed three DAs with specializations in crops, livestock and natural resources to each FTC. To-date over 83,000 DAs have been trained and graduated, of whom about 56, 000 DAs are working in agricultural extension (MoANR, 2017 and CSA, 2017).

More than a decade has now passed since FTC-based agricultural extension system was introduced. FTCs have been established to serve as centers for information and knowledge sharing, training and demonstration of technologies and innovation close to farmers' residents. Currently, the government has established 12,500 FTCs and will construct the rest to meet the national target of 18,000 FTCs. These FTCs are one of the key instruments for delivery of extension services going forward and can serve as symbols for current successes that the country has achieved in agriculture (MoANR, 2017).

The country has recently developed and deployed a Participatory Extension System (PES), a modified version of PADETES, although the approach is not yet fully implemented nationwide. PES was started in 2010, following the commencement of Growth and Transformation Plan (GTP-I), as a means of strengthening participatory extension services. The major changes made in the approach were organization of farmers into development groups and social networks (development groups with 25-30 members on average and one in five group consisting one model farmer as a leader and 5 farmers as followers) (MoANR,2017).

### 2.3.1 Rationale behind Farmers' Training Centres Based Extension System

The agricultural sector has always been an important component of the Ethiopian economy. During 2012/13, agriculture accounted for 42.7 percent of the gross domestic product (GDP), 80 percent of employment and over 70 percent of total national foreign exchange earnings. In contrast, industry and service sector accounted for 12.3 and 45 percent of GDP, respectively, during the same period (MoFED, 2014 cited in Bamlaku et al., 2015).

The unique feature of Ethiopian agriculture is the role of smallholder farms in the total national output production and labor employment. For example, of the total production of 251 million quintals in 2012/2013, about 96 percent (241 million quintals) was produced by the smallholder farmers and the rest 4 percent (10 million quintals) was produced by commercial farmers. The average, land holding share of 83 percent by smallholders farming setup is less than 2 hectares and average size of small farms is about 1.25 hectare in Ethiopia. These data clearly denote that small farms are the main sources of production and employment and employment generation in Ethiopia. Evidence also suggests that farms provide a more equitable distribution of income and an effective demand structure for other sectors of the economy (Bravo-Ureta and Evenson,1994 cited in Bamlaku et al.,2015).Thus the current strategic focus on increasing the productivity and production of smallholder farmers in socio-economic development of the country is justified (Bamlaku et al.,2015).

FTC-based farmer training is the currently implemented extension strategy geared towards human capital development through need-based, hands-on practical training that aim to facilitate agricultural transformation and rural livelihood improvement. In fact, farmer training centers serve as the cornerstone of Ethiopia's strategy that supports the transformation of small-scale farming into business oriented activities. Therefore, the government of Ethiopia has planned to establish about 15000 centers in all. During the last two decades about 8500 farmers training centers were set up in 2002 in each rural kebeles. Initially, FTC at each kebele was proposed to serve as center for information, demonstration, source of advisory services, a bridge to different services providers and a place where different types of training are delivered (Luchia, 2015).

Each farmer training center is staffed by three extension agents. From the 8,500 such centers throughout the country only 2,500 are fully functional. So far the centers provide a wide range services: farmer training and extension services on improved farming techniques (through

training courses, exhibits, demonstration farms, field days and farmer-to-farmer extension); market-oriented information and advisory services; meeting and communication facilities; and seed and seedlings of new crops, vegetables, fruit and forage varieties. Besides hand on training, the Ministry of Agriculture has developed and distributed some 20 training modules for use in the centers. In effect, different capacity building programs have been delivering training at FTCs by subject matter specialists (SMSs) (Ousman, 2007 cited in Luchia, 2015).

### 2.4 Overview of the Livelihoods Approach

According to Springate-Baginski et al. (2009), livelihood assessment involves the application of the sustainable livelihoods analytical framework to rural households' productive activities and related socio-economic systems and conditions. Livelihood analysis emerged from rural development research during the 1980s, as it became recognized that for many households, particularly the poorer ones, agricultural systems alone were not their only-even their main-economical basis. A growing awareness of the diversity of rural livelihood practices, and the dependence of many rural households on common property or open access to natural resources (for instance fisheries, common forests and grazing lands) has led to the widespread use of livelihood analysis, leading to a better and more detailed understanding of how rural households access and use natural resources.

The livelihood approach is used to understand and analyze how rural households depend for their security not only on agriculture, but also on a diversity of other natural resources. It brings together assets and activities of human populations and illustrates the interactions between them. It is suggested that households' livelihoods are based on the use of assets in livelihoods strategies and activities. This is within a vulnerability context, and livelihoods are also mediated and affected by 'policies, institutions and processes'. Ultimately activities lead to outcomes which are hopefully improvements of the existing condition in various ways (FAO, 2009).

#### 2.4.1 Livelihood assets and activities

The fundamental social and economic unit is considered as the household, which is conceived as the social group which resides in the same place, shares the same meals and makes joint coordinated decisions over resource allocation and income pooling. Households depend on a

range of productive assets or capitals, which they may either own privately, or access as common property. According to tadesse (2008), these capitals are categorized into five distinct types:

- ✓ **Human capital**: It is often said that the chief asset possessed by the poor is their own labor.
- ✓ **Physical capital**: Physical assets comprise capital that is created by economic production process. Buildings, irrigation canals, roads, tools, machines, and so on are physical assets.
- ✓ **Natural capital**: comprises the land, water and biological resources that are utilized by the people to generate means of survival. Sometimes these are referred to as environmental resources and are thought of jointly as comprising the 'environment'.
- ✓ **Financial capital**: Financial capital refers to stocks of money to which the household has access. This is chiefly likely to be savings, and access to credit in the form of loans. Neither money savings nor loans are directly productive forms of capital, they owe their role in the asset portfolio of the households to their convertibility in to other forms of capital, or, indeed, directly in to consumption.
- ✓ **Social capital**: The term social capital attempts to capture community and wider social claims on which individuals and households can draw by the virtue of their belonging to the social groups of varying degrees of effectiveness in society at large.

Increasingly, it is being recognized that in addition to these five categories, it is important to include analysis of political capital. This goes beyond social capital, in that, an individual's stock of political capital will determine his/her ability to influence policy and the processes of government. An understanding of political capital is important in determining the ability of households and individuals to claim rights over resources use and entitlement. The extent to which a livelihood is sustainable is determined by the interaction of several forces and elements. Households' livelihoods exist in a context characterized by existing institutions and policies affecting people, from the extended family and local community to the larger context of the national state and beyond, and the vulnerability context which describes the set of external social, economic and political forces and stresses to which people are subjected (Springate-Baginski et al., 2009).

The Livelihood Approach focuses on the productive aspects of livelihood. That is ,it is concerned with the impact of external events(e.g. natural disasters or interventions, etc.) on how individuals

and households make a living (their capabilities and activities for earning income and the means of sustenance and accumulation).The focus on the productive aspect of livelihoods is to be distinguished from the reproductive aspect which is concerned with how incomes and other inputs into the household are used (e.g. In cooking and caring for children)to promote good mental and physical health of individuals within the household (Springate-Baginski et al., 2009).

### 2.4.2 Vulnerability and livelihood coping strategies

Households employ the productive capitals discussed above, in combination with their labour allocation in livelihood strategies in order to generate incomes and wellbeing. Within communities, a range of activities can be observed, including domestic activities (which are all too easily neglected by researchers through gender bias), agricultural cultivation, gathering or hunting/ fishing for a range of forest or wetland products, artisanal processing, trading, labouring and so on. Strategies can also relate to people's consumption choices (e.g. 'doing without' or the sale of assets). Mobility and migration is an important component of livelihood strategies (typically involving both men in the physical work, and women in the post-harvest sector) (Springate-Baginski et al., 2009).

The incomes generated (which may be in kind, for instance grain or fish, or in cash through trade), will then be allocated according to budgeting decisions. Some will be consumed, and some may be invested (for instance spent on productive assets or production inputs such as seeds) or saved (or indeed used to pay debts). Households exist within an uncertain environment, and livelihood sustainability is affected by external factors, referred to as the *vulnerability context*, reflecting the ever-present risk of seasonal fluctuations, other shocks, and underlying trends in livelihood conditions that are beyond the household's control. Trends might include decreasing productivity or decreasing catch rate, increasing prices of agricultural products, and factors unrelated to agriculture that nevertheless impact on farmers' households, such as rising costs of food staples or medicines. Shocks include storm damage to farm or shore facilities for fishing households, toxic algal blooms, fuel-price hikes and currency devaluations that affect the costs of production inputs and market prices for agricultural products. At a household level, illness or death of a family member and the theft or loss of livestock, oxen or fishing net are obvious shocks. Household resilience against shocks can involve both short-term coping

strategies and long-term adaptation measures (Ellis 1998, cited in Springate-Baginski et al., 2009).

Private assets represent private wealth. And as the distribution of private assets is typically uneven across households, those households with more assets are more 'wealthy', and are generally more resilient to socio-political or environmental shocks and more able to take advantage of o/pportunities. Access to both assets and activities, and the level of incomes derived, is mediated, enabled or hindered by *policies, institutions, governance* and *markets.* This can include social relations, organizations and longer-term processes of socio-economic change. It includes access and rights regimes and how they work or don't. The Sustainable Livelihoods Approach helps ensure that any intervention considers the range of resources that people may be able to draw on and the factors that may help some to do so, while hindering others (Springate-Baginski et al., 2009).

Finally, this framework points to the households' livelihood outcomes, in terms of their state of *wellbeing*. A livelihood is sustainable if people are able to maintain or improve their standard of living related to wellbeing and income or other human development goals, reduce their vulnerability to external shocks and trends, and ensure their activities are compatible with maintaining the natural resource base. The MEA (2005 cited in Springate-Baginski et al., 2009) indicates a holistic range of wellbeing indicators relevant here: Security, basic material for good life, health, good social relations and freedom of choice.

Understanding how people succeed or fail in sustaining their livelihoods in the face of shocks, trends and seasonality can help to design policies and interventions to assist people's existing coping and adaptive strategies. These may include improving access to education and health care facilities, strengthening rights to land for settlement and agriculture, reforming local tax and license systems, providing financial and enterprise development services (and not just credit for purchase of input) and promotion of diversification (Springate-Baginski et al.,2009). In this study, I tried to include some of the components of SLF to understand the rural farmers' livelihoods and how FTCs activities are affecting farmers in Dawo Woreda.

### 2.4.3 Policies, institutions and processes of livelihood

In the views of Springate-Baginski et al. (2009), the access to both assets and activities, and the level of incomes derived, is mediated, enabled or hindered by policies, institutions, governance

and markets. This can include social relations, organizations and long-term processes of socio-economic change. It includes access and right regimes and how they work-or don't. The policies and institutions represent an important set of external factors that influence the livelihoods of different people, influencing access to assets, vulnerability to shocks and livelihood outcomes.
*Example of institutions:*

- *Formal membership organizations such as cooperatives and registered groups;*
- *Informal organizations such as exchange labour groups or rotating savings groups;*
- *Political institutions such as parliament, law and order or political parties;*
- *Economic institutions, such as markets, private companies, banks, land rights or the tax system;*
- *Socio-cultural institutions, such as kinship, marriage, inheritance, religion or draught oxen sharing.*

An enabling policy and institutional environment makes it easier for people to gain access to assets they need for their livelihoods. A disabling policy and institutional environment may discriminate against them, thus making it difficult for them to get access to land, livestock, capital and information. Clearly, it is important to understand which institutions are enabling or impeding on people to realize their livelihood security and which ones are the best institutional entry points for ensuring that people are reached. The Sustainable livelihoods approach helps ensure that any intervention considers the range of resources that people may be able to draw on and the factors that may help some to do so, while hindering others.

### 2.4.4 Livelihood strategies and outcomes

The most basic livelihood outcomes relate to the satisfaction of elementary human needs, such as food, water, shelter, clothing, sanitation, health care, and others. The ultimate outcome is to achieve the preservation of the household and rear the next generation with a desirable quality of life. People tend to develop the most appropriate livelihood strategies possible to reach desired outcomes such as food security, good health, "well-being" etc. Unstable or unsatisfactory livelihood outcomes may be the result of several factors which often interact, including low levels of livelihood assets, high degree of vulnerability to external shocks, and insufficient livelihood support from surrounding institutions (e.g. local government, financial

markets).Therefore, thanks to Livelihood approach being able to separate the importance of these various factors can help to understand better the impact of a given event or intervention on the livelihood outcomes. A livelihood is sustainable if people are able to maintain or improve their standard of living related to wellbeing and income or other human development goals, reduce their vulnerability to external shocks and trends, and ensure their activities are compatible with maintaining the natural resource base they are using (Springate-Baginski et al., 2009).

# CHAPTER THREE: RESEARCH DESIGN AND METHODLOGY

This section of the study deals with research method and design, source of data, samples and sampling technique, data collection instruments, procedures of data collection and methods of data analysis.

## 3.1 Description of of the Study Area

Dawo *Woreda* is located in South West Shewa Administrative Zone of the Oromia National Regional State of Ethiopia. The *woreda* is bordered on the south and South west by Becho *Woreda*, on the west by Woliso *Woreda*, on the north by Dendi Woreda of West Shewa Zone and on the east by Ilu *Woreda*. The *woreda* is divided in to 11 *kebeles*; 10 rural, 1 urban *kebeles* and 10 farmers training centers (FTCs). The *woreda's* current administrative capital town Busa is located about 96 kilometers South West of Addis Ababa and 16km from the main road AA to Jimma.

Dawo *Woreda* is characterized by homogenic topographic features and *Woinadega* agro-ecology. The study site has relatively better accessibility to technology, marketing services and facilities. This is because of its favorable climatic conditions and nearness to capital city of the country. According to the 2006/07 population reports of the woreda, the total number of rural households is 18,783 (18333 male headed and 450 female headed), with a total population of 73,332 having a moderate share of the zone. Out of the total, economically active population (15-55 years of age) is 35933. It accounts for 49% of the total population (DWAO, 2014).

The altitude ranges from 2,200 to 2,400 meter above sea level (m.a.s.l.), having agriculturally suitable land, in terms of topography. Agro ecologically, it is classified as *woinadega*. The total cultivable land is 30042 hectare (80%).The annual rainfall varies from 900 to 1100 mm; while the annual mean temperature vary from 17 $^{o}$C to 20 $^{o}$C with mean value of 18 $^{o}$C. The area receives a bimodal rainfall where the small rain is between March and April, and the main rain is from July to September. According to FAO classification system, the most dominant soil of the woreda is Andosol (Orthic), followed by Phaeozems (Ortic) and Chromic Luivisols (Orthic). They are believed to be relatively fertile. The total land area of the *woreda* is 64,116.25 ha, of which 48,337 ha (75%) are considered suitable for agriculture. Grazing and forest lands accounts for 6.73% and 7% respectively. As a result of long history of agriculture and high population pressure in the area, vegetation cover is very low. Consequently, erosion hazards in the sloppy

areas are enormous. Even though, there have been some efforts of soil and water conservation (SWC) over the last twenty years, huge gullies are observed towards the southern end of the woreda, where soils have totally removed beyond recovery. The farming systems are ecologically mixed farming systems or crop livestock production systems (Dawo Woreda Agricultural Office, 2014).

The major crops grown in the area are maize, teff, wheat, chickpea, haricot bean, sorghum and millet, which are mainly rain fed. Livestocks are cattle, horse, donkey, goat, sheep and poultry and used for consumption, as major sources of farm power and cash income through sales. Oxen are the major source of draught power and Donkeys are used for transporting drinking water for and marketing processes (Dawo Woreda Agricultural Office, 2014).

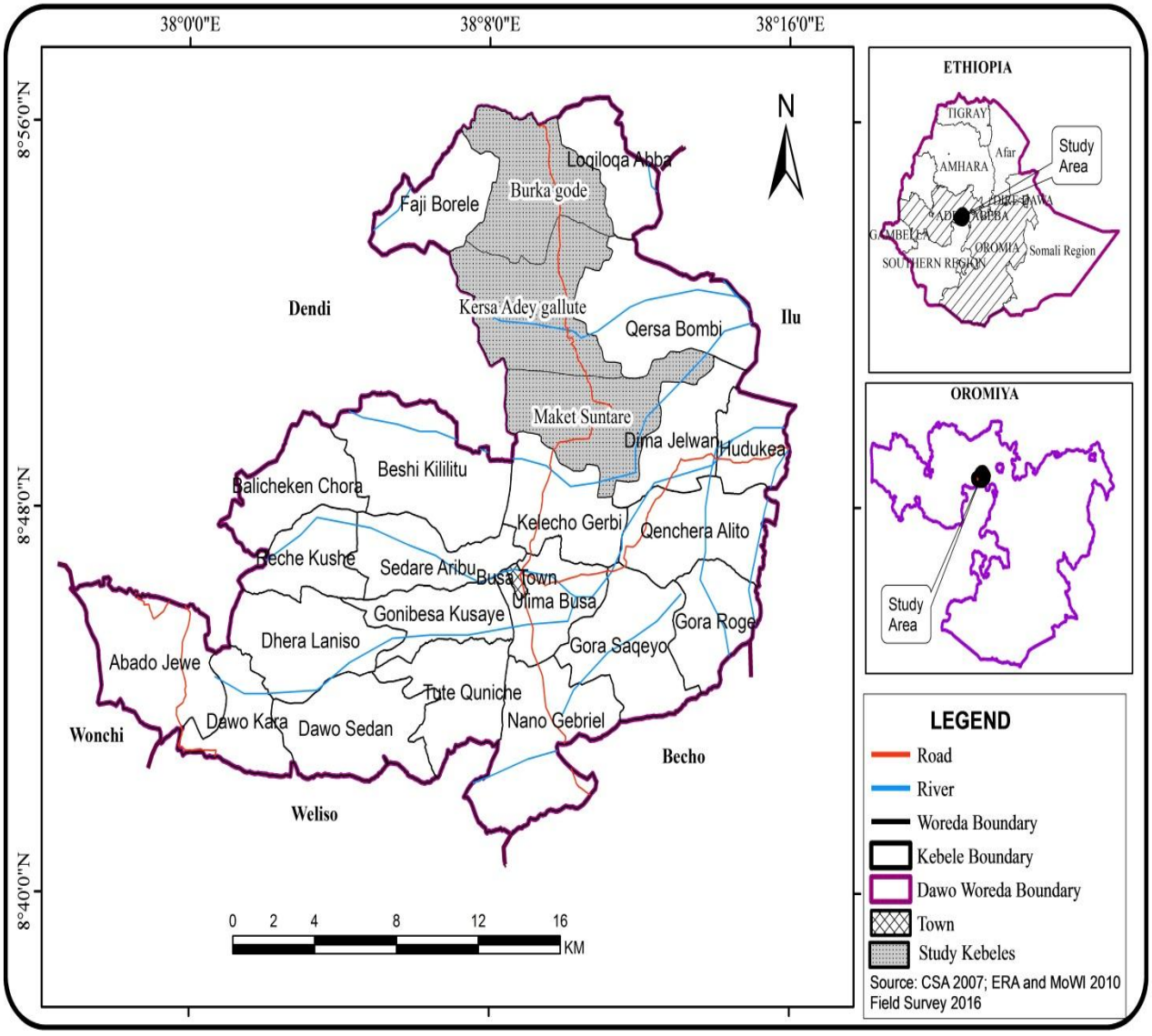


**Figure 3.1: Map of Dawo woreda**
**Source**: CSA, 2007

### 3.2 Research Design

It has been mentioned in chapter one that the purpose of this study is to investigate the practices and challenges of FTC. To this end, descriptive survey design that collected data of both quantitative and qualitative nature. The use of the two types of data is believed to provide adequate information that may not be obtained through the use of either quantitative or qualitative approach. Thus, data gathered through various means using multiple instruments

would help to overcome the weakness that could be observed in one instrument. It would also help to verify the truthfulness of collected information through triangulation.

### 3.3 Sources of Data

Primary information for this study was collected from farmers, development Agents (DAs), community elders, women and youth living and working in three randomly selected kebeles among the 10 FTCs of Dawo woreda. A total of 52 sample farmer households drawn from FTC user households' residing in the three kebeles selected for this study namely Maket Suntare, Kerta Adey Gallute and Burka Gode of Dawo woreda. The information collected is related to: household characteristics represented by (education of head of household, age, family, sex) family size, household assets, household income, livestock holdings, land size, and on livelihoods indicators. In addition information related to FTCs practices were also included in the questionnaire and collected. For FTC practices information was collected from three DAs and from Dawo woreda agricultural and rural development officer.

### 3.4 Sampling Techniques

Three kebeles namely Maket Suntare, Kersa Adey Gallute and Burka Gode were randomly selected from among 10 kebeles of Dawo woreda (South west Shoa zone).There were a total of 1258 households that were FTC-users out of these 52 households were selected by using stratified random sample method. The list of the FTCs participants of the three selected kebeles was obtained from DAs. Each household head name was given a number and written on pieces of papers which were rolled and made ready for drawing lottery. The respect sample of study participants selected from each kebele is shown below.

**Table 3.1: sample size calculation**

| Item | Population | Sample size | Sample Tool | Sampling technique |
|---|---|---|---|---|
| **FTC participants** | 1258 | 52 | Questionaires | stratified random Sampling |
| **DAs** | 5 | 3 | Interviewees | stratified random Sampling |
| **community elders** | 22 | 14 | FGD | stratified random Sampling |
| **women and youth** | 19 | 14 | FG D | Simple random Sampling |
| **Woreda office head** | 1 | 1 | Interviewees | Available |
| **Total** | 1305 | 82 | | 100% |

Source: Author own computation, 2017

### 3.5 Instrument of Data Collection

Three types of instruments namely: Questionnaires, observation, Interview protocol and focus group discussion guide were prepared and used to collect data from different specific group of respondents.

#### 3.5.1 Questionnaire

A household questionnaire was prepared for household heads by the researcher after reading related literature and conceptualizing the problem. The questionnaire was prepared by selecting items that are believed to answer each of the basic research questions raised in chapter one. The questionnaire has 6 parts with different number of items. The six parts include information on household identification, household information, household assets, household income, and household income sources and, FTC and agricultural extension related activities.

Part I (Household Identification) has 7 items. The second part (Household information) consists of 5 items. The third part (household assets) contains 4 items. The fourth part (Household income) contains 5 items, while the fifth (household income source) and the sixth (FTC & extension) contain 24 items. The nature of responses to items in the six parts varies depending on the types of questions. Some of the items were of 'Yes' or 'No' responses while other are of multiple choice types and open-ended answer that require respondents to express their views from their own experiences. The questionnaire was first prepared in English and later translated to Afan Oromo for use with Household heads. A household survey was conducted by 3 trained

enumerators who is using the prepared questionnaires interviewed the Household heads and recorded their responses on the questionnaires.

### 3.5.2 Observation

Observation entails gathering data through vision as its main source; it is a method by which information is required by way of investigators on observation without asking from respondents (Kothari, 2004). The real instructional activities are manifested on the demonistration while DAs facilitate demonistration activitis. Therefore, observation was used as data gathering instruments in the case of classroom delivery and center status or facilities in the study. Because, the information obtained under this method relates to what is currently happening without being complicated by the past behavior or future intentions or attitudes (Kothari, 2004). Hence, Observation was used to observe how the teaching and learning processes take place, condition of training centers, demonistration facilities, farmers' participation in the center as well as to see the overall livelihood of the farmers. The observation was carried out based on the checklist.

### 3.5.3 Key Informant Interview

An interview guide consisting of 7 items was prepared and used to collect data from DAs working in the three kebeles purposively. There were 3 interview sessions each with a Development Agent in a particular kebele. The interviews were held face-to-face in the respective FTCs. The researcher conducted the interview himself to ensure that the questions were clear enough and all the information collected. The interviews took between 60-90 minutes and the researcher took notes manually by writing the main points during the discussions. Afaan Oromoo was the language used during the interview because it is the commonly spoken language in the study area.

### 3.5.4 Focus Group Discussion

FGD guide consisting of 10 points of discussions was prepared and facilitated by the researcher. Three FGDs were conducted with selected farmers living in each kebele. The FGD participants were between 6 and 8 participants. Each FGD session consumed one hour with a total of three hours for the 3 FGDs. The discussions were held in each of the FTCs. Afaan Oromoo was the language used during the interview because it is the commonly spoken language in the study area. The researcher himself facilitated the FGDs.

## 3.6 Data Validity and Reliability

In order for assessments to be sound, the providers must be free of bias and distortion. So, reliability and validity are two concepts that are important for defining, measuring and controlling bias and distortion.

### 3.6.1. Validity

*Validity* refers to the accuracy of an assessment whether or not it measures what it is supposed to measure. Even if a test is reliable, it may not provide a valid measure. So, the researcher was undertook a pilot survey prior to the actual implementation of the questionnaire to prove legibility, formatting/type setting and logical sequences of the questions for actual survey. The researcher was also availed himself in friendly and good interpersonal relation with research subjects to extract reliable data in case of qualitative data collection procedures such as FGDs and KIIs.

### 3.6.2. Reliability

*Reliability* refers to the extent to which assessments are consistent or free from errors of measurement that can be gauged by consistency of scores while validity refers to the appropriateness, meaningfulness and usefulness of the specific inferences made from a given measurements(APA, 1985:19) .

## 3.7. Data Analysis Techniques

Two types of analyses were conducted based on the nature of data obtained from different instruments. Numerical data collected through the close ended questions in the questionnaire were categorized and organized into tables and analyzed using frequency counts, percentages, mean scores and standard deviation. The results were then interpreted by writing descriptions about the quantitative data. Responses to the open-ended questions of the questionnaire as well as those obtained through interviews and FGDs were categorized into themes and analyzed qualitatively using narratives.

### 3.8. Ethical consideration

Ethical consideration is one of the main concerns in scientific research, the researcher, cognizant of this will recognize the ethical principles of scientific research declared in Belmont Report1 of 1979. The principles were shading light on issues like informed consent, beneficence, anonymity and respect for the respondents. Cognizant of this truth the researcher was planned to get the consent of household questionnaire survey respondents, focus group discussants and key informants. They were also be informed by both researcher and the enumerators extremely about the objectives and outcomes of the research quite adequately as well as their personal information will be kept or would neither publicized nor given to any third party without their full willingness in case the need arise.

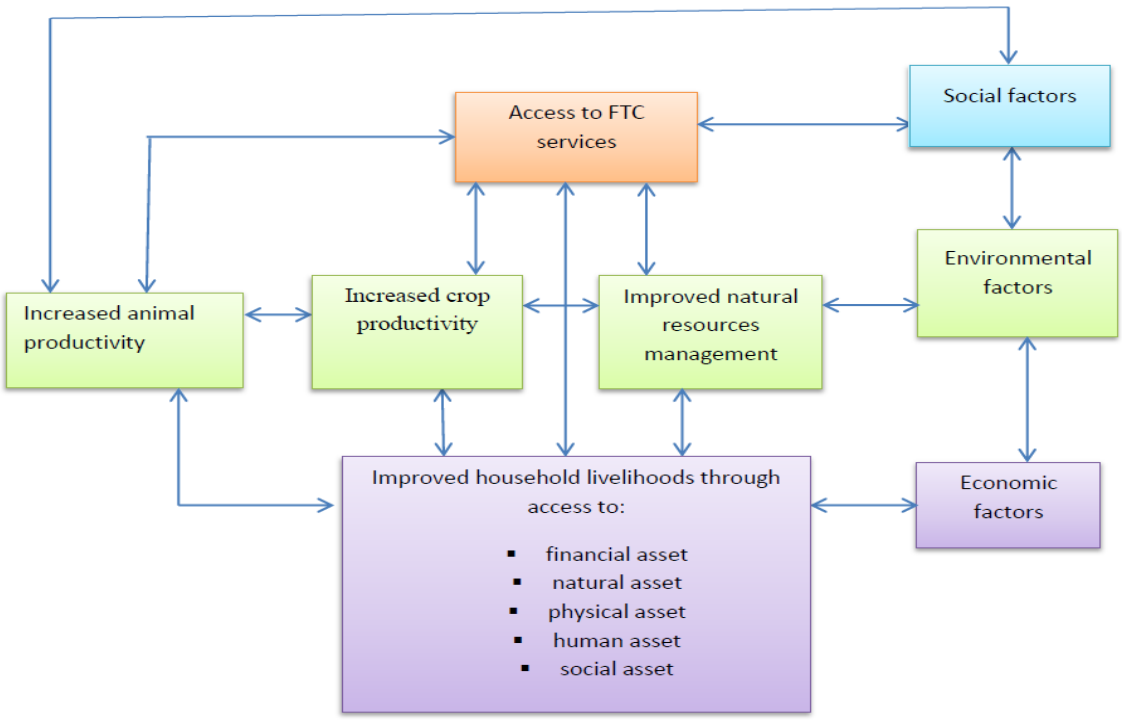


**Figure**: Analytical framework of farmer training centers and livelihoods

**Source**: Author's compilation from the Ethiopia Extension strategy (MOANR, 2017)

**Figure 3.2: Analytical framework of farmer training centers and livelihoods**

# CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter presents descriptive information about the characteristics of the the sources of data for the study. It presents the information on households' heads and on the composition of the households, agricultural related information, households economic related and on the perception of the surveyed farmers about FTCs services and how they see the effects of FTCs on their livelihoods.

## 4.1. Sample Households' head Demographic Characteristics

### 4.1.1 Sex of Household Head

The results of the survey which involved 52 households of FTC users revealed that 11.5% were female headed households whereas the rest were male. Moreover, according to DAs of the three kebeles, females' participation was still very low due to their other roles at home and to the cultural setups. For example in the FTC of Maket Suntare kebele, the number of trained male on animal production was 320 whereas that of female was only 52.On the other hand the number of natural resources management was 360 male against 46 females in Kerta Ade Gallute kebele FTC, and 480 males farmers from Burka Goode kebele.

### 4.1.2 Household Head Age

The age of the household head was considered as a factor that can help to understand if a certain age group was attending trainings more than the others. The results (see table 4.1) revealed that the mean age of the sample population was 42.35(±9.9).The attendance rate was low (11.5%, N=52) among the age group of 20-30, but it increased for the age group of 31-40 to 28.8%, and become higher with 48.1% among the farmers aged between the age 41-50. It later dropped again to 11.5% for people aged more than 51 years. This can be explained by the fact that younger people do not have access to farm land and this may affect their motivation to attend trainings as they may not see agriculture as their livelihoods. Other reasons being that people with more than 51 years old tend to hold on their indigenous knowledge and may not be interested to learn new things as they generally want to pass to their children the right to take over the family possession for the future. But also due to the fact that most of them have started to experience reduced physical energy for agricultural activities or else is busy maintaining their farms.

**Table 4.1: Households' head age**

| HH head age | Frequency (N=52) | % |
|---|---|---|
| 20-30 | 6 | 11.5 |
| 31-40 | 15 | 28.8 |
| 41-50 | 25 | 48.1 |
| Greater than 51 | 6 | 11.5 |
| Mean | 42.35 | |
| SD | 9.89 | |

**Source:** Author, 2017

### 4.1.3 Education of Households' Head

The level of education was considered as a factor that may play a critical role especially as it may unleash the knowledge seeking behavior in farmers. The average level of education of the sample group was 1.83 (±1.26) grades. However, the results revealed further that people with the ability to only read and write were the one to attend the FTC training at a higher rate (30.8%, N=52) whereas illiterate attended at only 15.4% (N=52).The attendance rate was 21.2% for 1 -4 grade and grade 5-8 respectively. The attendance rate dropped to 11.5% for the people who have reached grade 9-12.The possible explanation may be that these p- nbeople most of the time are engaged in off-farm occupations.

**Table 4.2: Households' head level of education**

| Head education | Frequency (N=52) | % |
|---|---|---|
| Illiterate | 8 | 15.4 |
| Read and write | 16 | 30.8 |
| 1-4 grade | 11 | 21.2 |
| 5-8 grade | 11 | 21.2 |
| 9-12 grade | 6 | 11.5 |
| Mean | 1.83 | |
| SD | 1.26 | |

**Source:** Author, 2017

### 4.1.4 Household Size Information

Household size related information is important as they may reveal the demographic trends of a given household. The results of the descriptive statistics (see table 4.3) revealed that the average family size of the sample households of 5.29 (±1.054) was higher than national average of 4.9 for rural households (FMOH, 2011), with some households counting up to 8 members. In addition the results showed that the average labor for per households was 4.34 (±1.0) and that some households counted up to 6 active members of the family. The households average dependency ration was at 0.26 (±0.33) with the maximum dependency ratio being 2.0. Dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64).It indicates the potential effects of changes in populations age structures for social and economic development, pointing out broad trends in social support needs.

By relating the group of the population most likely to be economically dependent (net consumers) to the group most likely to be economically active (net producers), changes in the dependency ratio provide an indication of the potential social support requirements resulting from changes in population age structures. In addition, the ratio highlights the potential dependency burden on workers and indicates the shifts in dependency from a situation in which children are dominant to one in which older persons outnumber children as the demographic transition advances (that is, the transition from high mortality and high fertility, to low mortality and low fertility).

Households that own enough land and have enough labor force do not face labor shortage during farming and harvesting seasons and this limits the expenses of the households, allowing for the purchase of other important agricultural inputs necessary for productivity and to the overall development of the household through income and food availability. However, the increased number of member affects also the level of household's consumption.

**Table 4.3: Household size related information**

| Descriptive Statistics | HH members (N=52) | HH labor force (N=52) | HH dependency ratio |
|---|---|---|---|
| Mean | 5.29 | 4.34 | 0.26 |
| Median | 5.00 | 4.0 | 0.25 |
| Std. Deviation | 1.054 | 1.0 | 0.33 |
| Range | 6 | 4 | 2 |
| Minimum | 2 | 2 | 0.0 |
| Maximum | 8 | 6 | 2.0 |

**Source:** Author, 2017

### 4.2 Agricultural Related Information

The analyzed agricultural information is related with size of farmland, livestock ownership, agricultural coping strategies, and on agricultural production situation among sample households.

#### 4.2.1 Size of Farm Land

Land is the most critical resources for rural people's livelihoods in general and in the study area in particular, as the majority depends on agriculture for their survival. The average land ownership of the sample households was 2.48 (±1.43).The results also revealed that 7.7% (N=52) of sample households were landless and owned 0 ha. It further revealed that 57% (N=52) owned more than 1.6 ha. The results (see Table 4.4) point out the fact that FTC users tend to be the farmers who are the land owners.

**Table 4.4: Size of household's farm land**

| Size of household farm land | Frequency (N=52) | % |
|---|---|---|
| **0 ha** | 4 | 7.7 |
| **0.1-0.5 ha** | 1 | 1.9 |
| **0.6-1 ha** | 5 | 9.6 |
| **1.1-1.5 ha** | 12 | 23.1 |
| **1.6-2 ha** | 16 | 30.8 |
| **More than 2 ha** | 14 | 26.9 |
| **Mean** | 2.48 | |
| **SD** | 1.43 | |

**Source:** Author, 2017

### 4.2.2 Household Livestock Ownership

In Ethiopian rural context, livestock serve bear an important role in the livelihoods of people. It is has more than food value, is a mean of saving, is used for draught. However, the results revealed that 5.8% (N=52) of the sample households did not own any livestock whereas 65.4% owned more than 6.01 TLU. The average livestock ownership of the sample households was 13.02 (±12.08). Once again the results (See table 4.5) reveal that the majority of FTC beneficiaries are the people with livestock ownership. Of course people who are not struggling with their survival are better off and can get time to attend the trainings whereas the poor will always be working.

**Table 4.5: Household livestock ownership**

| **Livestock ownership** | **Frequency(N=52)** | **%** |
|---|---|---|
| 0 TLU | 3 | 5.8 |
| 0.01-3 TLU | 5 | 9.6 |
| 3.01-6 TLU | 10 | 19.2 |
| 6.01 and more | 34 | 65.4 |
| Mean | 13.02 | |
| SD | 12.8 | |

**Source:** Author, 2017

**Table 4.6: Summary of households' demographic characterstics**

| Households' characteristics variables | Frequency (N=52) | % |
|---|---|---|
| **HH head age** | | |
| 20-30 | 6 | 11.5 |
| 31-40 | 15 | 28.8 |
| 41-50 | 25 | 48.1 |
| Greater or equal than 51 | 6 | 11.5 |
| Mean | 42.35 | |
| SD | 9.89 | |
| **Head education** | | |
| Illiterate | 8 | 15.4 |
| Read and write | 16 | 30.8 |
| 1-4 grade | 11 | 21.2 |
| 5-8 grade | 11 | 21.2 |
| 9-12 grade | 6 | 11.5 |
| Mean | 1.83 | |
| SD | 1.26 | |
| **Size of household farm land** | | |
| **0 ha** | 4 | 7.7 |
| **0.1-0.5 ha** | 1 | 1.9 |
| **0.6-1 ha** | 5 | 9.6 |
| **1.1-1.5 ha** | 12 | 23.1 |
| **1.6-2 ha** | 16 | 30.8 |
| **More than 2 ha** | 14 | 26.9 |
| **Mean** | 2.48 | |
| **SD** | 1.43 | |
| **Livestock ownership** | | |
| 0 TLU | 3 | 5.8 |
| 0.01-3 TLU | 5 | 9.6 |
| 3.01-6 TLU | 10 | 19.2 |
| 6.01 and more | 34 | 65.4 |
| Mean | 13.02 | |
| SD | 12.8 | |
| **HH Average monthly income (ETB)** | | |
| <=1000 | 8 | 15.4 |
| 1001-2000 | 8 | 15.4 |
| 2001-3000 | 16 | 30.8 |
| >= 3001 | 20 | 38.5 |
| Mean | 6,055.60 | |
| SD | 10,417.30 | |

**Source:** Author, 2017

### 4.2.3 Agricultural Coping Mechanisms

Famers in their daily activities are confronted with constraining factors to which they are obliged to respond to for their survival. The set of responses or strategies to averse the effects of the negative factors are referred to as agricultural coping mechanisms. The constraining challenges

for farmers include among others insufficient land, infertility and degradation of land, labor shortage, and shortage of water for human consumption and agricultural use, pest infestations, feed shortage, and others. The results of the survey revealed that 80.8% of households reported that they owned their farmland, 11.5% reported to have rented their farm land and 7.7% to be in a share cropping agreement. Share cropping consists in a mechanism whereby people with land agree to let willing and able people to exploit their land in exchange of sharing the production. The results (see table 4.6) implies that land owners are the one to attend FTC activities in majority. In addition it was also found that 71.2% had own grazing land as a source of animal feed and that 76.9% used to purchase feed to cope up with shortage. Besides almost 70% of sample farmers were also hiring labor for farm activities.

**Table 4.7: Livelihoods (Agriculture) coping strategies related information**

| Agricultural coping strategies | Frequency (N=52) | % |
|---|---|---|
| **Source of farm land** | | |
| Owned | 42 | 80.8 |
| Rented | 6 | 11.5 |
| Share cropping | 4 | 7.7 |
| **Ways to supplement oxen** | | |
| Hire from other farmers | 7 | 13.5 |
| Coupling with other farmers | 8 | 15.4 |
| Borrow from friends | 16 | 30.8 |
| Contribute labor to oxen owners | 2 | 3.8 |
| Others | 19 | 36.5 |
| **Source of animal feed** | | |
| Own grazing land | 37 | 71.2 |
| Communal grazing land | 5 | 9.6 |
| Crop by products | 10 | 19.2 |
| **Coping with feed shortage** | | |
| Limit number of livestock | 1 | 1.9 |
| Purchase of additional fodder | 40 | 76.9 |
| Leave the problem as it is | 1 | 1.9 |
| Others | 9 | 15.4 |
| Limit livestock& purchase fodder | 2 | 3.8 |
| **Coping with labor shortage** | | |
| Hire | 36 | 69.2 |
| Exchange | 10 | 19.2 |
| Others | 6 | 11.5 |

**Source:** Author, 2017

### 4.2.4 Access to Veterinary Services

Access to veterinary services was found to be very limited in the study area with only 10% (N=52).Despite the capital role of livestock in the Ethiopian rural economy and livelihoods, veterinary services are still limited.

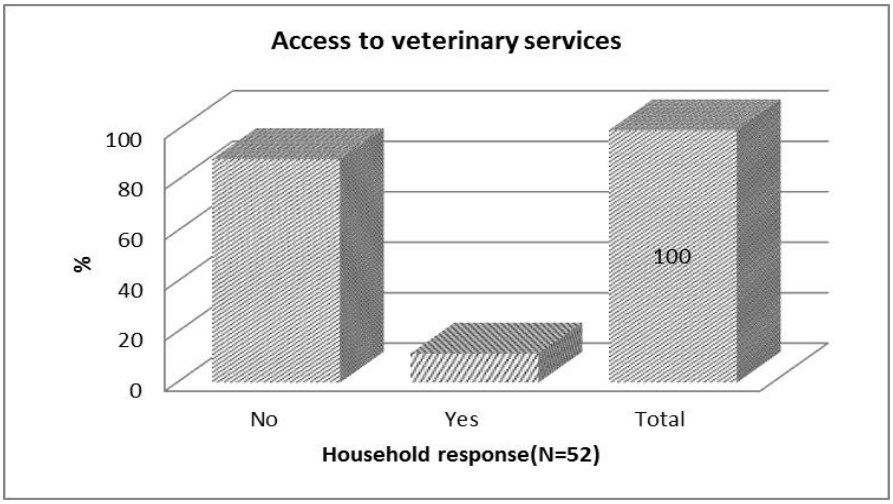


**Figure 4.1 Households' access to veterinary services**
**Source:** Author, 2017

### 4.2.5 Households Agricultural Production Trend

The results revealed that the agricultural production had increase over the last five years for 48% of the farmers. However, the production had not increased for the rest of the farmers.

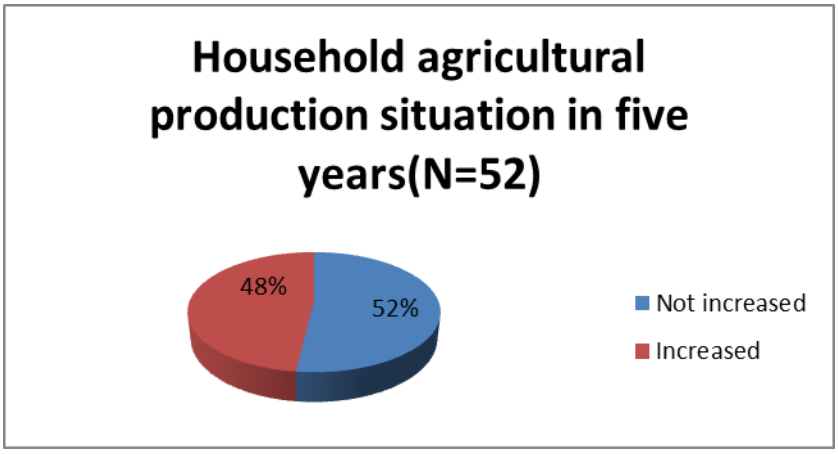


**Figure 4.2 Household agricultural production situations over 5 years**
**Source:** Author, 2017

### 4.3 Households' Economic Situation

The economic situation of the sample households was assessed by considering the average monthly income, the trends over five years and the food deficit experience.

#### 4.3.1 Household Average Monthly Income

Households' annual income was calculated from crops production, from animal products, from honey, from off-farm and from remittances. The Household total annual income was further divided by 12 months to obtain the average monthly income. The results revealed that the mean of average income of the sample households was SD= 10,417.3.It was also found that 38.5% were earning on average more than 3000 ETB, whereas at least 15.4% were getting equal or less than 2000 ETB per month. Again the results stipulate an inequality among FTC-users farmers households level of income.

**Table 4.8: Household average monthly income**

| HH Average monthly income(ETB) | Frequency (N=52) | % |
|---|---|---|
| less 1000 | 8 | 15.4 |
| 1001-2000 | 8 | 15.4 |
| 2001-3000 | 16 | 30.8 |
| more than 3001 | 20 | 38.5 |
| Mean | 6,055.6 | |
| SD | 10,417.3 | |

**Source:** Author, 2017

#### 4.3.2 Sample Households Income Trend in before and after joining FTC

The results revealed that 73.1% of sample households' level of income had increased substantially whereas for 19.2% their income has decreased. It was also found out that for 7.7%, their level of income was relatively the same as it was in before they join FTC. However, the possible explanation of this stagnation in level of income is beyond the scope of this research. Understanding the factors that push some beneficiaries of the same interventions to advance whereas others stagnate is an important research endeavor, which needs more resources and time. This research only tried to describe the situation as it is and supporting the findings with qualitative information related to the livelihoods context of the sample population. However, it would be inappropriate to try to generalize our findings with the current sample size. Therefore, I

call for further research on the determinants of any given positive outcome from the interventions of FTCs.

**Table 4.9: Household income situation over five years**

| Household income situation in 5 years[1] | Frequency(N=52) | % |
|---|---|---|
| Decreased | 10 | 19.2 |
| Increased substantially | 38 | 73.1 |
| The same | 4 | 7.7 |
| Total | 52 | 100.0 |

**Source:** Author, 2017

### 4.3.3 Sample Household Food Deficit Experience

For the sake of getting clear understanding on the well-being situation among the FTC users, households' food deficit experience was assessed as a proxy of well-being as food is the very basic need.

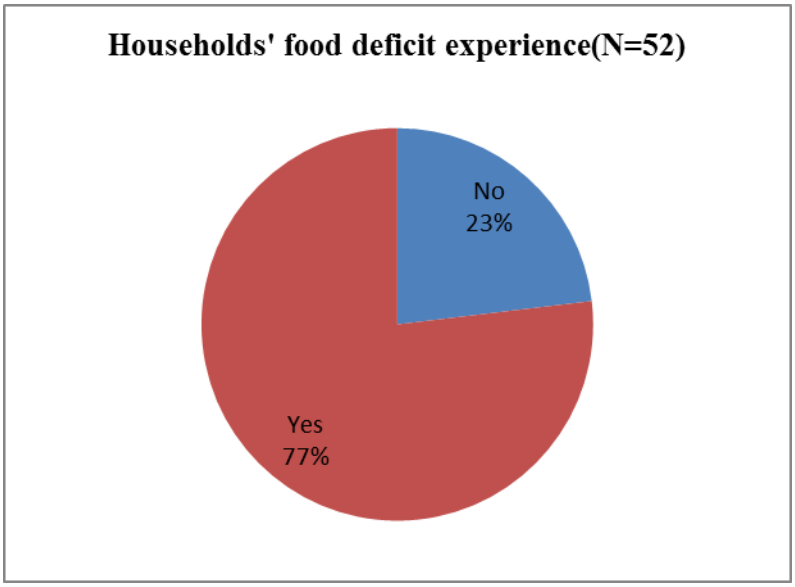


**Figure 4.3 Household food deficit experiences in the last year**
**Source:** Author, 2017

[1] The five years have been considered as a period for analysis because the selected FTCs have been established since 2007, but started to operate effectively since 2012.

The results revealed that (See figure 4.4) the proportion of 77% of the households had experienced food deficit during the last year. And only 23% of the sample households had never experienced food shortage. These results suggest that despite the establishment of FTCs farmers are still producing not enough for their survival.

## 4.4 Training Attendance Related Information

### 4.4.1 Household Representative at Training

The results revealed that 80.8% of the households were represented by the father at trainings, 9.6% represented by mother and father. The fact that people see training attendance as the responsibility of the parents shows another situation to consider especially for the trainings. This may in some ways portray the fact that the trainings do not capture the needs of the youth as they may find them not attractive.

**Table 4.10: Household representative at training**

| HH representative at training | Frequency (N=52) | % |
|---|---|---|
| Father | 42 | 80.8 |
| Mother | 5 | 9.6 |
| Mother and father | 5 | 9.6 |
| Total | 52 | 100.0 |

**Source**: Author, 2017

### 4.4.2 Training Attendance Experience

The results revealed at least 26.9% (N=52) have been attending trainings for at least 5 years. But also that 19.2% have enrolled in the training since one year. This shows that FTCs are registering success which can be seen by others who on their term decide to get involved with trainings. This highlights the needs to continuously support this establishment so as to enhance their effects on the livelihoods of rural farmers.

**Table 4.11: Household training experience**

| For how long have you been attending training of FTC | Frequency (N=52) | % |
|---|---|---|
| More than 10 years | 10 | 19.2 |
| 7 years | 5 | 9.6 |
| 5 years | 14 | 26.9 |
| 2 years | 13 | 25.0 |
| less than 1 year | 10 | 19.2 |
| Total | 52 | 100.0 |

**Source**: Author, 2017

### 4.4.3 Extension Approach Preference

To understand the activities of the FTC the approach of these institutions were also assessed. The results revealed that training and visit were the most famous and preferable one (53.8%,N=52), followed by farmer to farmer experience sharing (38.5%).What can be deducted from this results is that farmers are interested in on hand practical skills development and are mostly interested in learning knowledge that is proved to work. Therefore, it is important to focus on the approaches that combine on hand skills accumulation and are beneficial to their livelihoods' activities.

**Table 4.12: Household extension approach preference**

| Extension approach preference | Frequency(N=52) | % |
|---|---|---|
| Farmer field school | 4 | 7.7 |
| Training and visit | 28 | 53.8 |
| Farmer to farmer experience sharing | 20 | 38.5 |
| Total | 52 | 100.0 |

**Source**: Author, 2017

### 4.4.4 Farmers Level of Satisfaction with Training Level

Farmers' level of satisfaction was also assessed to check on their feelings about the approach content and methods of training of different subjects. It was found out that at least 67.3 % (N=52) were not satisfied with training received on crop production, on animal production and on natural resources management (See summary table 4.12).Therefore there is a need to upgrade the methodology used by farmer training centers so as to satisfy their clients.

**Table 4.13: Farmer level of satisfaction with FTC trainings**

| Level of satisfaction | Frequency(N=52) | % |
|---|---|---|
| **Training on crop production** | | |
| Satisfied | 17 | 32.7 |
| Unsatisfied | 35 | 67.3 |
| **Training on natural resources management** | | |
| Satisfied | 16 | 30.8 |
| Unsatisfied | 36 | 69.2 |
| **Training Animal production** | | |
| Satisfied | 13 | 25.0 |
| Unsatisfied | 39 | 75.0 |

Source: Author, 2017

### 4.4.5 FTC Training Relevance to the Needs of Farmers

Training relevance refers to the nature of training provided by FTCs in addressing the right knowledge gap of farmers using the right methods and resources. The farmers' perception about the relevance of the received training is an important element to be considered as it conveys a message on what exactly the FTCs are doing.

The results revealed that 82.7% (N=52) of the sample did not find the trainings relevant to their daily needs. This implies that these establishments may be providing trainings on subjects that farmers are not interested in and this may hinder the sustainability of this extension system as farmers are expected to take the full responsibility and ownership of the running of FTC.

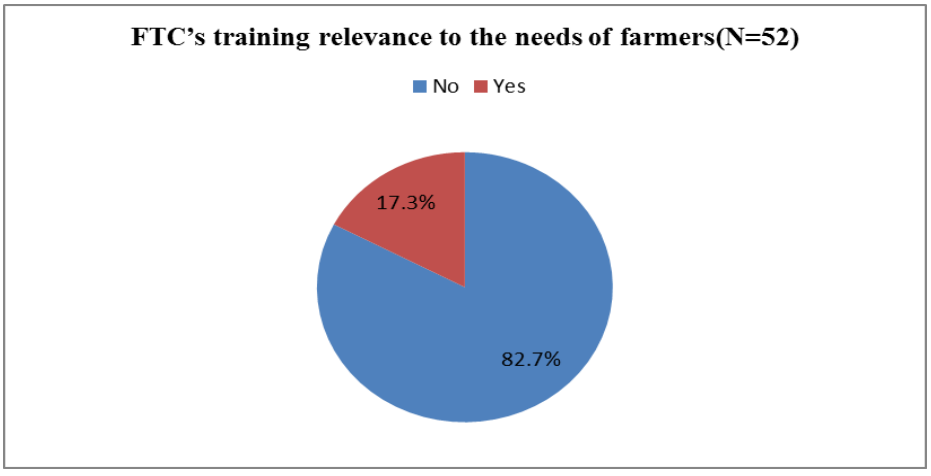


**Figure 4.4 FTC's training relevance to the needs of farmers**
**Source:** Author, 2017

### 4.4.6 Other Trainings Accessed by Farmers

In the study area, the farmers reported that other kind of training from different institutions including government, and NGOs. It was found out that 36.5% of sample population had received all the trainings namely crop husbandry, crop diversification, animal husbandry, marketing, irrigation development, and postharvest. Only 1.9% had not received any training bisedes the ones provided by FTC.

**Table 4.14: Names of training received by farmers**

| Name of training received | Frequency (N=52) | % |
|---|---|---|
| None | 1 | 1.9 |
| Crop husbandry | 8 | 15.4 |
| Crop diversification | 12 | 23.1 |
| Animal husbandry | 7 | 13.5 |
| Marketing | 1 | 1.9 |
| Irrigation development | 2 | 3.8 |
| Postharvest | 2 | 3.8 |
| All | 19 | 36.5 |

**Source**: Author, 2017

### 4.5 Effects as Perceived by FTC user-farmers

According to the respondents FTCs' effects can be perceived at different levels and by different people. The results revealed that 5.8% have opened saving account thanks to awareness created through the training at FTC. For 17.3% attending FTC trainings allowed them to improve their knowledge on agriculture and environment protection. For 15.4% attending FTCs trainings improved access to market. On the top of that 61.5% perceived more than two benefits of the above benefits. This shows that for more than 60% of the sample with the access to resources including trainings can see their livelihoods changed even with the FTC working ineffectively.

**Table 4.15: FTC effect on participants' livelihoods**

| FTC effect on participants livelihoods | Frequency(N=52) | % |
|---|---|---|
| Opened saving account | 3 | 5.8 |
| Improved knowledge on agriculture and environment | 9 | 17.3 |
| Improved access to market | 8 | 15.4 |
| More than two cited benefits | 32 | 61.5 |

**Source**: Author, 2017

### 4.6 Livelihoods Assets

In the views of elders from the study area land and other resources embedded in it are crucial for study area farmers in making their livelihoods. Owning oxen is also important as it is a useful tool for agriculture. Access to water for both daily use and for irrigation is equally of paramount importance in the study area for farmers to be able to keep up against weather variability through irrigation and livestock watering. On the side of the female groups the important assets include land, ox, cow and labour (for cultivating land), water for animals and household consumption. On the side of the youth in addition to the other important resources named by the previous groups they added power draught at their list of important production resources.

### 4.7 Vulnerability Context

In the views of all of the three community elders interviewed food, and agricultural input prices fluctuations are the most important problems that impede on their communities. Given low liquidity in the rural areas, farmers find difficult to buy always input before farming season.

For example the elder farmer (Farmer A) from Burka Gode stated thefollowing:

*"We feel more dependent on the improved inputs which sometimes do not arrive at time*."(Farmer A).

Whereas another from Kersa Ade (Farmer B) indicated his concern in the following words:

"*We are afraid that the new varieties will totally replace our local seeds which we used to plant without buying all the time. Now almost all of us have accumulated depositswhich when the climate is not favorable have to be paid by selling our assets to pay depts so as to get seeds for the next season"* (Farmer B).

Low productivity of land for which they have to continuously supply more and more input (fertilizer) from year to year was also an issue that was raised by community elder who are also farmers. They reported that the supply of fertilizer has been growing continuously in terms of quantity supplied per ha. Therefore, for poor farmers this consists a serious threat to their livelihoods. Other problems reported by those elders include among others: Soil erosion and environment degradation, ground water scarcity for irrigation, animal diseases outbreak and pests and lack of veterinary services.

In addition to the problems indicated by community elders, the Agriculture and rural development officer of Dawo Woreda added that the issue of population growth in the study area as another threat to the rural livelihoods.

"*The fact that the population has been growing rapidly in the study communities has put considerable pressure on existing resources (land, water, vegetation cover) and the resources per capita has become scarce over time*"(Dawo woreda Agricultural officer).

This not only implies an increase in supply of food to feed the growing population but also new technology to be able to intensify the agriculture, increase productivity and production.

The focus group conducted with the group of youth pointed out that the critical concerns of the youth in the study area include:

- Unemployment,
- landlessness,
- lack of access to credit by financial institutions,
- and marginalization

The focus group conducted with women in the study area indicated that the common challenges to the livelihoods of women include among others:

- Low income,
- Unequal power control over resources between husband and wife,
- Water shortage for animals and household consumption,
- Low productivity of the cultivated land,
- High illiteracy especially among women and lack of assets for women.
- Limited access to health services, etc.

### 4.8 Livelihoods Coping Strategies

People in the study area have developed different coping strategies through livelihoods diversification to complement crop production. For example people get engaged in cattle rearing, goat and sheep rearing and in different kinds of trading as a way to diversify their livelihoods and adapt against the different shocks. In addition, migration is also one of the strategies realized by different people in the study area. Households allow some of members to migrate to the cities in search of off-farm jobs to either supplement agriculture production.

According to the focus group discussion conducted with the youth group, the people in the study area have been coping thanks to indigenous knowledge through different methods. For example community elders have a great role in exchanging/providing on farm indigenous knowledge and experiences, on soil characteristics, weather, plants and animals. People in the rural area have established different institutions that help them to cope with hard times through animals, crop and money relief for each other during difficult times by interchanging socio-cultural livelihoods information at social meetings such as *idir*, *equib*, weedings, *dabo*, *jigie* and etc., and learning from model farmers' through experiences sharing and through others various ways.

### 4.9 Institutions, Governance and Policies of livelihood

FTCs are institutions established to help people to improve their livelihoods and food security through access to trainings improved agricultural input and information. Farmers in the study area underlined that FTCs in the area have allowed them to know that there are new technologies which can help them to improve their productivity and hence can possibly increase their level of income. They added that people have started to work together more than before to promote soil protection and water conservation.

**Table 4.16 Situation of FTC services related to Natural resources management in Maket Suntare Kebele**

| FTC services &Trainings activities | Attendants | Challenges | Impact sought |
|---|---|---|---|
| • Provide to farmers agro-ecological specific information for sustainable natural resources management<br>• Train farmers in soil protection and water conservation techniques<br>• Provide advisory services<br>• Training on the use of new technologies | 406 farmers (46 females) | • Inconsistent attendants<br>• Farmer reluctance towards new technologies<br>• Scarcity of land for demonstration purposes<br>• Lack of FTC necessary equipment and basic infrastructures (such as water, electricity, furniture, etc.)<br>• Farmers dropping out of training<br>• Landlessness among youth<br>• Inactive farmers' groups<br>• Lack of incentive for Das | ✓ Farm productivity increased through adopted techniques of soil and water conservation<br>✓ Level of income increased<br>✓ Food consumption habit improved/changed<br>✓ Acess to input, etc.<br>✓ Environment's benefits acknowledged, etc. |

**Source**: Maket Suntare DA of Natural resource management, 2017

**Table 4.17 Situation of FTC services related to Animal production in Kerta Ade Gallute kebele**

| FTC services &Trainings activities | Attendants | Challenges | Impact sought |
|---|---|---|---|
| • Access to information related to animal production<br>• Pre-scaling up of new animal production technology<br>• Serve as a mini-research center | 320 Farmers (52 females) | • Non-consistent participants<br>• Reluctant farmers towards adoption of new technologies<br>• Shortage of FTC budget<br>• Inadequate training facilities<br>• Lack of infrastructure for center's effective functioning (land, water, electricity, etc.)<br>• Gaps in the DAs skills<br>• Complaints from farmers on subjects of training that have more theories | ✓ Information on climate change and its impact on agriculture delivered<br>✓ Awareness on saving culture created<br>✓ Information on livestock health delivered<br>✓ Livestock productivity increased<br>✓ Market linkages created<br>✓ Disaster and risk management skills created |

**Source**: Kerta Ade Gallute kebele DA of animal production, 2017

**Table 4.18: Situation of FTC services on crop production in Burka Gode kebele**

| FTC services & Training activities | Attendants | Challenges | Impact sought |
|---|---|---|---|
| ✓ Distribute improved crop varieties<br>✓ Disseminate information on new agricultural technology<br>✓ Facilitate access to agricultural input<br>✓ Access to different information | 480 farmers (35 Females) | ✓ Irregularity in farmers' attendance due to on farm & social activities<br>✓ Shortage of training materials<br>✓ Reluctant farmers towards new technology adoption<br>✓ DA turnover due non-attractive facility and payment (salaries)<br>✓ Lack of necessary material and equipment<br>✓ Shortage of budget<br>✓ Gaps in skills of DA, etc. | ✓ New farming technology introduced to farmers<br>✓ Increased crop productivity and income<br>✓ Increased farm products and households food diversity |

**Source**: Burka Gode kebele DA of crop production, 2017

Moreover, the culture of saving part of their gained income is also gaining momentum among farmers thanks to FTC and it was noted however that more awareness was still needed. Other changes already remarked by farmers include:

- *Ways of farming*: People have started to use improved seed varieties and other agricultural input such as fertilizer and new crop varieties.
- *Behavioral change*: There is a positive trend over new technology acceptance on behalf of farmers.(Contrary to what was mentioned above)
- *Environmental protection*: This is seen through activities related with soil protection and water conservation that are already being undertaken by different farmers in the study area.
- *Animal health*: Farmers have received advisory services on animal health and go to the FTC to get assistance from DA in case their animals manifest sign of illness.
- *Family planning*: The people also sometimes get advises from health extension agents about birth control.

- *New method of seed saving*: Methods such as seed storing practices have been adopted by a good number of farmers and is thanks to FTCs.

Nevertheless, despite all the benefits brought by FTCs, people still perceive them as "Government's institutions that have been established to teach people and develop the tradition of work". The FTCs are mainly serving land owners and model farmers. They highlighted that reinforcing the capacity of FTC by improving the skills of DAs and facilitating infrastructures are still needed for the effective functioning of these institutions

The women group recognized that though FTC's training is not participatory most of the times however, FTC benefits include the following:

- Increased the culture of cropping effectively
- Increase the need for technology
- Increased the saving culture
- Promoted the culture of housing animal and persons separately, etc.

They recommended that FTC should be people needs centered, and that DAs skills have to be improved. Moreover, they also underlined the need for FTC need to include gender issues in the mandate of FTCs.

The benefits of FTCs perceived by youth were that "they improve the life of land owners" through people access to new knowledge and new technology adoption.

Nevertheless, people also reported that still the training are not yet relevant to their needs and are most of the time oriented towards promoting the use of new technologies. The level of skills of Development agents which is not better than that of model farmers.This can reduce the credibility of these institutions and decrease the sense of ownership by the local communities. Moreover, the issues raised by women and youth that FTCs have reduced their ability to secure access to land through local arrangements, raises a concern and should be looked into, if the FTCs need to be upgraded towards needs of all the members of the community "*since the land owners have started to participate in trainings it is very difficult to get land for rent*".

They recommended the creation of employment opportunities for the rural youth to stop emigration, employing skilled DAs and allocating demonstration space as ways to improve rural livelihoods and food security.

# CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Summary

Agriculture is Ethiopia's most important economic sector with 85% of its population being rural and depending for their livelihoods on subsistence agriculture. However, inappropriate agricultural practices have led to reduction in soil fertility, rendered the sector vulnerable to climate variability and consequently lead to decline in farm yields exposing the country to relying on imported food from international markets. Cognizant of the role of training in the transformation of the country agricultural sector and of rural development in particular, the Government of Ethiopia has established farmer training centers as a new extension approach that is expected to move the rural communities towards a knowledge based agriculture and hence to agricultural transformation. However, whether this approach is delivering remains weakly investigated and the ways in which farmers perceive FTC has not until then explored.

Therefore, this study was undertaken to shed light on the practices of FTC and whether they successfully enhancing the livelihoods systems of people in Dawo woreda especially FTCs users. A sample of 52 households of FTCs-users randomly selected from three kebeles among the 10 FTCs of Dawo woreda were surveyed to gather information on livelihoods conditions at household level whereas the overview of the context at community level involved focus groups of women, youth and interviewed community elders to capture the situation of people's livelihoods in the study area. FTC practices information was obtained from DAs and from respective agricultural authority at woreda level through both formal and informal interviews.

The findings revealed that of FTCs in the study area were undertaking trainings on crop production, animal production and on natural resources management. They were also providing access to agricultural input such as fertilizer and improved seeds. Furthermore, the quantitative results pointed out that most of the beneficiaries (at least 60% of FTC-users) were land owners, livestock owners, high income segment earner, but these people did not include youth and female.

The most critical challenges to the functioning of the FTCs were the lack of necessary resources and equipment (land for demonstration, budget, water, electricity and others,) which undermined the motivation of both DAs and trainees.

Regarding the perceptions of farmers about FTCs practices, the results revealed that at least 67.3% of FTC-users farmers were not satisfied by any training provided by different DAs under the selected subjects. In addition, 82.7% of the sample population found trainings delivered by FTCs in the study area not relevant to the needs of farmers.

Finally, results revealed that despite poor performance of FTCs, 60% of users could reap more than two benefits from FTC practices, namely increase in the culture of saving, improved access to market and improved knowledge on agriculture and environment.

It was also raised by farmers that FTCs could have negatively affected access to land among the youth and the poor who used to benefit from local institutional arrangements aimed at sharing the land resources among community members, through renting land and using share cropping. Nevertheless, after the land owners have got trained, they refused to lease or to share cropping with landless. This is thought to have resulted in a massive youth emigration from the rural area to the city to look for jobs out of agriculture.

### 5.2 Conclusions

The study concludes that in the study area, FTCs practices are not yet appreciated by the majority of their beneficiaries who considered them not relevant to their needs. It was found out that FTCs have been affecting farmers' livelihoods in both positive and negative ways. On one side, the activities and practices of FTCs are found to have improved the livelihoods of land owner farmers, (model farmers) by increasing their access to agricultural input, knowledge on crop, animal production and on environment and for some on the overall production and level of income. On the other side, FTCs were blamed to have affected the local institutions regarding land access for landless people mainly the rural youth and disregarded gender issues related with agriculture, and hence failed to adequately respond to the special needs of the youth and women farmers. This has consequently led to low participation by women farmers in FTCs activities, and in migration of youth to the cities in search of employment outside agriculture. The

identified causes of low performance of FTCs are lack of resources and equipment necessary for their functioning and limited consultation of farmers before trainings.

### 5.3 Recommendations

Based on the major findings and conclusion drown, the following recommendations are forwarded.

- All the concerned program implementers should to improve a need to devise different strategies aiming at upgrading the current status of FTCs in Dawo woreda in consultation with people including youth and women.
- The study shows that, lack of farmers' participation was the major factor that hindered successful FTC implementation. Hence, the integration and involvement of stakeholders is important for the development of FTCs implementation.
- FTCs need to find ways to attract all the segment of famers not only the wealthy farmers
- DAs should be given incentives and necessary resources and equipment to do their job effectively.
- DAs skill gaps should be given attention since they expected to transform farmers' illiteracy and technological benefeting problems.
- Research on FTCs is still lacking and most of the research done are from students who most of the time do not have adequate funding to address all the sides of the problem around effectiveness of FTCs. Therefore, researches that involve bigger sample size and if possible carried out over longer period of time to better understand FTCs should be promoted.

## REFERENCES


Abrha, B. K. (2015). Factors affecting agricultural production in Tigray Region, Northern Ethiopia (Doctoral dissertation). Mekelle University, Ethiopia.

Addis Yalew (1991) The Role of Farmers Training Centers in Rural Development with Special Reference to Ethiopia, Master's thesis. Reading University, London

Adugna Haile, Workneh Negatu, and Bisrat Retu (1991). Technology transfer for wheat production in Ethiopia. In Wheat Research in Ethiopia: A Historical Perspective (Haile Gebremariam, D.G. Tanner and Mengistu Hulluka, eds.). IAR/CIMMYT, Addis Ababa.

Aklilu Bisirat (1977). Technological Change in Subsistence Agriculture: The Adoption and Diffusion of Fertilizer in Ethiopian's Minimum package Area. Vol 1:72-73.

Almaz Eshete (2000). Why is gender a development issue, in the proceedings of National Workshop on institutionalizing gender planning in agricultural technology generation and transfer process, EARO. Addis Ababa.

Al-Riffai, P., Dimaranan, B., & Laborde, D. (2010). Global trade and environmental impact study of the EU biofuels mandate. Vol. 125. Washington, DC: IFPRI.

Anderson, J. R. (2008). Agricultural Advisory Services. Work Bank.

Aregay Waktola (1980). Assessment of Diffusion and Adoption of Agricultural Technologies in Chilallo. Ethiop. J. A. Sci. Vol 2: 51-68.

Asenso-Okyere, K., Davis, K., & Aredo, D. (2008). Advancing Agriculture in Developing Countries through knowledge and innovation: Synopsis of an international conference. IFPRI

Asfaw Negassa, K. Gunjal, W. Mwangi, and Beyene Seboka (1999). Factors affecting the adoption of maize production technologies in Bako Area, Ethiopia. J. Agricultural Eco. Vol 1:2. Ethiopia.

Assefa Admassie (1995). Analysis of production efficiency and the use of modern technology in crop production: A study of smallholders in the central highlands of Ethiopia. PhD dissertation. Ethiopia.

ATA/FCA (2012). Agricultural Cooperative Sector Development Strategy. Addis Ababa.

Ayala Wineman (2014). Multi-dimensional household food security measurement in rural Zambia. Michigan State University, USA.

Aynalem Gezahegn (2003). Agricultural Extension Policy and Strategies in the Amhara National Regional State. In: Proceedings of the Conference on Natural Resourses Degradation and Environmental concerns in the Amhara National Regional state: Impact on Food Security, Bahir Dar.

Baiphethi, M. N., & Jacobs, P. T. (2009). The contribution of subsistence farming to food security in South Africa. Agrekon, Vol. 48(4), 459-482.

Bamlaku Alemirew, Adugna Lemi, Sisay Asefa, Workineh Negatu, Admassu Tesso (2015).Does Farmers field school training improve technical efficiency? Evidence from smallholder Maize farmer in Oromia, Ethiopia. International journal of African development. Vol 3 (3):23-50 Fall 2015.Addis Ababa, Ethiopia.

Belay Kassa (2002). Constraints to Agricultural Extension Work in Ethiopia: The Insiders View, Alemaya University, and Department of Agricultural Economics.

Belay Kassa (2003). Agricultural Extension in Ethiopia. The Case of Participatory Demonstrations and Training Extension System. Journal of Social Development in Africa. January (003, Vol 18(1): 49-83.

Berger, M., DeLancey, V., and Mellencamp, A. (1984). Bridging the gender gap in agricultural extension. Washington, DC: ICRW.

Berhanu Gebremedhin, Hoekstar, D and Azage Tegegne (2006). Commercialization of Ethiopian agriculture. Extension service from input supplier to knowledge broker and facilitator. IPMS Working Paper No1, ILRI, Nairobi.

Betru, G. (1975). Integrated Development in Rural Ethiopia: An Evaluative Study of the Chillalo Agricultural Development Unit, Bloomington International Development Research Center, Indiana University, Indiana.USA.

Beyene Seboka, Asfaw Negassa, Mengesha Bekele, and Tefera Ajeema (1991). Adoption of maize Production Technologies In the Backo Area, Western Shewa and Welega Regions of Ethiopia Research report No.16.

Bezabih Emana (2000). The role of new crop varieties and chemical fertilizer under risk: the case of smallholders in Eastern Oromia, Ethiopia. Ph.D. Thesis, University of Hannover, Germany.

Birhane Gebrekidan, Seme Debela, and Ibrahim Mohammed (2004). Development and Application of Agricultural Technology in Ethiopia: A discussion paper Under the theme "Transferring Ethiopian Agriculture" on the occasion of Celebrating The 50th anniversary of the Establishment of the Alemaya University, October 23 and 24, 2004.

Birkhaeuser, D., Evenson, R. E., & Feder, G. (1991). The economic impact of agricultural extension: A review. Economic development and cultural change, 39(3), 607-650.

Bolding A., Jeff M., and van der Zag. (2003). Interventions in Stallholder Agriculture: Implications for Extension in Zimbabwe. University of Zimbabwe Publications, Harare.

Byerlee, D., and E. Hesse P. (1986). Farmers Stepwise Adoption of Technological Packages: Evidence from the Mexican Alitiplano. American Journal of Agricultural Economics, Vol 68: 519-527.

Byrnes, F.C, and Byrnes, K.J.(1971). Agricultural extension and education in developing countries; in rural devel changing world, MIT press, Cambridge.

Cedefo, J.B (2003) European Forum for Quality of TVET (2001), transparency and validation (Working paper).

Chambers and Conway (1992) Sustainable livelihoods: Practical Concepts for the 21st Century IDS Discussion Paper 296.

Chambers, R. (1983). Rural development. Putting the last first, Alfred place, London. pp104-105.

Chambers, R. (1993). Challenging the profession: Frontier for rural development. Intermediate Technology Publications, London.

Chandan, J.S. (1998). Statistics for Business and Economics. Vikas Publishing House Put Ltd, New Delhi.

Chilot Yirga (1994). Factors Influencing Adoption of Wheat Technologies. In the Wolemera and Addis Alem Areas of Ethiopia. Master's Thesis, Alemaya University, Ethiopia.

Chilot Yirga, Shapiro, B.I.,and Mulat Demeke (1996). Factors influencing the adoption of new wheat technologies in Wolmera and Addis Alem Areas of Ethiopia. Ethiopian Journal of Agricultural Economics, Addis Ababa. Vol 1(1).

Chimdessa Bure (1998). The Package Extension Approach and Smallholders, Farmers and Productivity in High Potential Areas of Ethiopia: The Case of Shashemene Area. Master's thesis, Alemaya University, Ethiopia.

Ciais, P., Sabine, C., Bala, G., Bopp, L., Brovkin, V., Canadell, J., ...& Jones, C. (2014). Carbon and other bio-geochemical cycles. In Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (pp. 465-570). Cambridge University Press.UK

Cochran, W. (1977).G.(1977); Sampling techniques. New York, Wiley and Sons, 98, 259-261.

Cohen N. and Isaksson, Nils-Ivr. (1980). Machinery selection modeling: Incorporation of weather variability. American Jornal of Agricultural Economics, Vol 62:700-708.

Collett, K., and Gale Ch. (2009). Training for Rural Development: Agricultural and Enterprise Skills for Women Smallholders. 24-30 West Smith field,London, EC1A9 DD 68. (www.skillsdevelopment.org/.../Training%20for%20Rural%20Development.) Accessed on 10/04/2017.

Croppenstedt, A., Mulat Demeke and Meshi, M. (1999). "An Empirical Analysis of Demand for Fertilizer in Ethiopia," Ethiopian Journal of Agricultural Economics Vol 3: 1-27.

CSA (Central Statistics Agency) (1996). Agricultural Sample Survey 1995/1996. Report on area and Production for Major Crops. Statistical Bulletin Vol 1:171.

Dagnachew Tesfaye (2002). Factors hampering women farmers' involvement in current extension packages: Case studies of Sulta and Mulu districts of Ethiopia, Senior Research Report, Alemaya University. Ethiopia.

David Acker and Lavinia Gasperini (2009). The Role of Education, Training and Capacity Development in Poverty Reduction and Food Security.

Dawo woreda Agricultural offices (2014). Annual report. Ethiopia.

Degefa Tolossa (2004). Rural livelihoods, poverty and food insecurity in Ethiopia: A case study at Erensa and Garbi communities in Oromiya Zone, Amhara National Regional State. PhD dissertation, NTNU. Trondheim, Norway.

Degefa Tolossa (2008). Realities of urban poverty and food insecurity situations: A case study at Berta Gibi and Gemachu Safari in Addis Ababa city, Ethiopia. Institute of developing economies, Japan external trade organizations. Japan

Degenet Abebaw (1999). Determinants of adoption of high yielding varieties of maize in Jimma zone. The case of Mana and Kesa woreda woredas. Thesis Presented to the School of Graduate Studies of Alemaya University. Ethiopia.

Dercon, S., D. Gilligan, J. Hoddinott, and T. Woldehanna (2007).The Impact of Agricultural Extension and Roads on Poverty and Consumption Growth in Fifteen Ethiopian Villages. CSAE WPS/2007-01. Centre for the Study of African Economies, University of Oxford.

EARO (2000). Institutionalizing Gender Planning in Agricultural Technology. Generation and Transfer Processes, Addis Ababa, Ethiopia.

EEA/EEPRI (2006). Evaluation of the Ethiopian Agricultural Extension with a particular Emphasis on PADETES. Addis Ababa.

EHNRI (1968). Food composition table for use in Ethiopia, Part III.

Elias, Z., and Agajie, T.(2001). The History, Present Challenges and Future Approaches to Agricultural Technology Transfer in Ethiopia. In: Berhanu, M. and Vogel, E. (eds.) International Conference on Public Management, Policy and Development. Proceedings Governance and Sustainable Development: Promoting Collaborative Partnership, held in Addis Ababa, Ethiopia, June 3-6, 2001. pp 344-349.

Ellis, F.(1992). Peasant Economics, Farm Households and Agrarian Development. Cambridge University Press, New York, U.S.A

Estrella, M., & Gaventa, J. (1998).Who counts reality? Participatory monitoring and evaluation: a literature review. Brighton: Institute of Development Studies.

Ethiopia Ministry of Agriculture and Natural Resources (MoANR) (2015). Agricultural sector Growth and Transformation Plan II (2015-2020) (Base Case Scenario). Addis Ababa. Ethiopia

Ethiopian Agricultural Transformation Agency (ATA) (2016). Agricultural Transformation Agenda progress report covering 2011-2015 in GTP I period.

FAO (1986). Rural Women and Food security: Current Situation and Perspectives. Food and Agricultural Organization the United Nations Rome, Italy.

FAO (1993). Agricultural Extension and Farm Women in the 1980s. Food and Agricultural Organization the United Nations Rome, Italy.

FAO (1996). Improving Extension work with Rural Women. Food and Agricultural Organization the United Nations Rome, Italy.

FAO (2002). Planning for Effective Training : A Guide to Curriculum Development. Rome, Italy.

FAO (2006). The State of Food InSecurity in the World.Rome: Italy.

Feder, Gershon, Rinku Murgai, & Jaime Quizon. (2004a). Sending farmers back to school: The impact of farmer field schools in Indonesia. Review of Agricultural Economics, 26(1), 45–62.

Feder, Gershon., Rinku. Murgai, & Jaime Quizon. (2004b). The acquisition and diffusion of knowledge: The case of pest management training in farmer field schools, Indonesia. Journal of Agricultural Economics 55(2), 217–239.

Feder, L., R.E. Just, and D. Zilberman (1985). "Adoption of Agricultural Innovation in Developing Countries: A survey." Economic Development and Cultural Change, Vol 32(2): 255-298.

Federal Democratic Republic Government of Ethiopia (FDRE, 2014). Country report on policies and mechanisms for labor market oriented Technical and Vocational Education & Training (TVET) provision and employment creation, Addis Ababa. Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of education (MoE, 2011) Integrated functional adult literacy curriculum framework. Addis Ababa. Ethiopia.

Fisseha Teshome (2009). Problems and Prospects of Farmers Training Centers: The Case of Ada`a Woreda, East Shewa, Oromia Region Master Thesis, Haramaya University, Ethiopia.

Frankenberger, T. (1992). Indicators and Data Collection Methods for Assessing Household Food Security. Household Food Security: Concepts, Indicators, and Measurements. A Technical Review. Rome, IFAD. pp. 73-134

Franzel, Steven, and Helen van Houten (1992). Research with Farmers. Lesson from Ethiopia C.A.B. International, Oxon; UK.

Gallin, M. Aronoff, & A. Ferguson (not-dated) The women and international development annual: Vol. I. Boulder, CO: Westview Press.

Gebremedhin, B., Jemaneh, S., Hoekstra, D., Anandajayasekeram, P. (2012). A guide to market-oriented extension services with special references to Ethiopia. IPMS (Improving Productivity and Market Success) of Ethiopian Farmers Project. Nairobi. ILRI. Pp 101.

Gittinger, J. P., Chernick, S., Horenstein, N. R., and Saito, K. (1990). Household food security and the role of women. Washington, DC: World Bank.

Green, D.A.G., and D. H., Ng'ong'ola (1993). Factors affecting fertilizer adoption in less developed Countries: An application of multivariate logistic analysis in Mali. Journal of Agricultural Economics, Vol. 44 (1):103-113.

Gregory, P.J.(2013). Food and agriculture in Ethiopia-progress and policy challenges Food Security 5, 475-476.

Gujarati, D.N (1995). Basic Econometrics. 3rd Edition. McGraw-Hill Inc, New York.USA.

Habtemariam Abate (1997). Targeting Extension Service and the Extension Approach in Ethiopia, Addis Ababa, p 32.

Habtemariam Abate (2004). The comparative influence of intervening variables in the adoption behavior of maize and dairy farmers in Shashemene and Debre Zeit, Ethiopia. PhD. Thesis, University of Pretoria, Pretoria, p 294.

Habtemariam Kassa (1996). Agricultural Education, Research and Extension in Ethiopia.

Habtemariam Kassa (2004). Agricultural Extension with Particular Emphasis on Ethiopia. Ethiopian Economic Policy Research Institute, Addis Ababa, pp 80.

Hartl, M.(2009). Technical and Vocational education and training (TVET) and skills development for poverty reduction-do rural women benefit? Paper presented at the FAOIFAD-ILO workshop on Gaps, trends and current research in gender dimensions of agricultural and rural employment: differentiated pathways out of poverty. International Fund for Agricultural Development; Rome, Italy.(http://www.fao.org/fileadmin/user_upload/fao_ilo/pdf/Papers/25_March/Hartlformatted_01.pdf.) Accessed on 27/09/2017

Havnevik, K., Bryceson, D., Birgegård, L. E., Matondi, P., & Beyene, A.(2007). African agriculture and the World Bank: development or impoverishment.

Heinemann, E., (2011). TVET, Agricultural Development and Rural Poverty Reduction, in NORRAG NEWS, Towards a New Global World of Skills Development? TVET's turn to Make its Mark, No.46, September 2011, pp. 61-64, available: http://www.norrag.org.

Hoddinott, J. (1999). Operationalizing household food security in development projects: An Introduction (Technical Guide1). International Food Policy Research Institute (IFPRI), Washington D.C

Hoddinott, J. (2001). Methods for Rural Development Projects. Choosing Outcome Indicators of Household Food Security. IFPRI, Washington, D.C. pp. 31-73

Horenstein, N. R. (1989). Women and food security in Kenya. Washington, DC: World Bank.

IFPRI. (2010).In-depth assessment of the public agricultural extension system of Ethiopia and recommendations for improvement. IFPRI discussion paper 01041, December 2010, Eastern and southern Africa regional office. International Food Policy Research Institute.

Itana Ayana (1985). An analysis of factors affecting the adoption and diffusion pattern of packages of agricultural technologies in subsistence agriculture: A case study in two extension districts of Ethiopia. Master's Thesis. Addis Ababa University. Ethiopia.

Jabbar, M. A., and M. Shahe Alam (1993). Adoption of modern rice varieties in Bangladesh. Bangladesh Journal of Agricultural Economics, Vol 16(2): 77-95.

Jacobs, M. J., & Schloeder, C. A. (2001). Impacts of conflict on biodiversity and protected areas in Ethiopia. Biodiversity Support Program.Washington D.C. Available on http://www.worldwildlife. org/bsp/publications/africa/147/titlepage. htm.

Janelid, I. (1975). The Role of Women in Nigerian Agriculture. Food and Agricultural Organization the United Nations Rome, Italy.

Jha, D., B. Hojjati and S. Vosti (1990). The use of improved agricultural technology in Eastern Province. In adopting improved agricultural technology: A study of smallholder farmers in Eastern Province, Zambia, Washington D.C: University of Zambia, Government of the Republic of Zambia and IFRPI.

Jiggins, J. (1989). Farmer Participatory Research and Technology Development. Occasional Paper in Rural Extension No 5. University of Guelph, Canada.

Jiggins, J. (1989a). Agricultural technology: Impact, issues and action (chapter 1, part I).

Jiggins, J. (1989b). How poor women earn income in sub-Saharan Africa and what works against them. World Development, 17 (7):953-963.

Jones, K. (2014). The Role of Agricultural Technical and Vocational Education and Training in Developing Countries: A Review of Literature, Issues and Recommendations for Action. Pennsylvania State University.USA.

Kansana, H. S., R.P. Sharma and S.K Sharma (1996). Knowledge and adoption of wheat technology among contact and non-contact farmer. Agricultural Science, Digest Karnal. Vol 16:154 –156.

Kiresur, V. R., R. K. Pandey and Mruthyunjaya (1999). Determinants of adoption of modern sorghum production technology: The experience of Karnataka State. Indian Journal of Agricultural Economics, Vol 2: 54.

Leathers, H.D., and M. Smale (1991). A baysian approach to explaining Sequential adoption of components of technological Package. American Journal of Agricultural Economics, Vol 73(3): 734-742.

Legesse Dadi (1992). Analysis of Factors Influencing Adoption and The Impact of Wheat and Maize Technologies in Arsi Negele. Ethiopia. Master's thesis, Alemaya University of Agriculture. Ethiopia.

Leggesse Dadi (2001). Adoption and Intensity of Fertilizer and Herbicide use in the Central Highlands of Ethiopia, Agricon, Vol. 4 (3), South Africa.

Lelissa Chalchissa Argeta (1998). The Determinants of Adoption, Intensity and Profitability of Fertilizer Use, The case of Ejere District, West Shewa. Master's Thesis, Addis Ababa University, Ethiopia.

Liao, T.F. (1994). Interpreting Probability Models: Logit, Probit, and Other Generalized Linear Models. Sage University Paper Series on Qualitative Applications in the Social Sciences. Thousand Oaks. CA: Sage.

Lisa, S. and K. Jakob (1992). Agricultural Extension in East Africa, World Bank technical papers. The World Bank Washington D.C.USA.

Long (1985). 'Interface between official and local knowledge systems.' Paper for seminar Wetenschappelijke Aspekten van Landbouwkennissystemen ter gelegenheid van het vierde Iustrum van de Vakgroep voorluchtingskunde wageningen: Landbouwuniversiteit.The Netherlands.

Loranza, C. (2002). Gender and Low, Woman Rights in Agriculture, Food and Agricultural Organization of the United Nations. Rome. Italy.

Luchia Tekle (2015). Analysis of Positive Deviance Farmer Training Centers in Northern Ethiopia, American Journal of Rural Development, vol. 3 (1): 10-14. doi: 10.12691/ajrd-3-1-3.

Luchia Tekle. (2010). Analysis of relevance and effectiveness of FTC-based training: The case of Alamata Woreda, Southern Tigray. Ethiopia. Doctoral dissertation, Haramaya University. Ethiopia

Maddala, G.S. (1989). Limited Dependent and Qualitative Variable in Econometrics. Cambridge University Press, New York. USA.

Maxwell, S. (2001). Agricultural Issues in Food Security pp. 32-63. In Stephen D and Simon M, 2001 (eds.). Food Security in Sub-Saharan Africa, Institute of Development Studies, UK.

Maxwell, S., and Smith, M.(1992). Household Food Security: A Conceptual Review. Household Food Security: Concepts, Indicators, Measurements. A Technical Review. IFAD/UNICEF, pp. 1–72

McSweeney, B.G.(1979). Collection and Analysis of Data on Rural Women's Time Use. Studies in Family Planning. Vol 10(11/12): 379-383.

Mengiste Mossie & Belete Meseret (2015). A review on the role of extension services for agricultural transformation with particular emphasis on Ethiopia. Journal of Agricultural Economics, Extension and Rural Development: ISSN-2360-798X Vol. 2(1): pp. 224-228.

Mengistu Tessema (2003). Impacts of technology on Wheat production in Bale Highland. The case of small holders farmers. Master's Thesis. Haramaya University. Ethiopia

Mesfin Duguma (2006). Farmers' Perception on Soil Erosion and Decision on Land Management In Assosa Woreda, M.Sc Thesis. Haramaya University, Ethiopia

Mettrick, H. (1993). Development Oriented Research in Agriculture. ICRA, Wageningen. The Netherlenads.

Million Tadesse and Belay Kassa (2004). Determinants of fertilizer use in Gununo Area, Ethiopia. In agricultural technology evaluation, adoption and marketing: proceedings of the workshop held to discuss the socio-economic results of 1998 – 2002 from August 6 – 8, 2002. Ethiopian Agricultural Research Organization, Addis Ababa.

Mills B.F. (1997). Ex-ante Agricultural Research Evaluation with site–specific Technology Generation. The case of sorghum in Kenya. Agricultural Economics, Vol 16 :125-138.

MoA (1984). Agriculture in Ethiopia. The Establishment and Development of MoA. Committee for Compiling the History of MoA. July 1984. MoA. Addis Ababa. (Amharic Text).

MoA (1993). Principles of Organization and Implementation of Agricultural Extension Services. MoA Addis Ababa (Amharic Text).

MoANR, 2017(Ethiopia Ministry of Agriculture and Natural Resources). Ethiopia's Agricultural Extension Strategy (Draft), vision, Systemic Bottlenecks and Priority Interventions. Addis Ababa, Ethiopia.

Mulugeta Mekuria (1992). Farming systems Research in Ethiopia: evolution, development and organization.

Mulugeta Mekuria (1995). Technology Development and Transfer in Ethiopian Agriculture: Empirical Evidence. Proceedings of the Inaugural and First Annual Conference of the Agricultural Economics Society of Ethiopia.

Muluken G.Wordofa,Maria Sassi (2014) Improving Sallholders' income through Farmer Training centers:An Impact evaluation in Haramaya district,Ethiopia.NAF International Working Papr Series.Paper n.14/7.Also available at http://economa.unipv.it/naf.

Nagy, Josef G., and John H. Sanders (1997). Agricultural technology development and dissemination within a farming system perspective. Agricultural Systems Vol 32:305-320.

Nair, K.N.N.S. (1984). Economic Analysis of Land Use. Assistance to Land Use Planning/ Ethiopia. Technical Report– 8. FAO. Rome.

Negatu W., and A. Parikh (1999). The Impact of Perception and Other Factors on the Adoption of Agricultural Technologies in the Moret and Jiru Woreda of Ethiopia. Agricultural Economics Vol 21:205-216.

NIOSH (National Institute for Occupational Safety and Health) (1999). A Model for Research on Training Effectiveness. Published by US Department of Health and Services, Washington.

Nkonya, E.T. Schroeder, T. and Norman D.(1997). "Factors Affecting Adoption of Improved Maize seed and fertilizer in Northern Tanzania." Journal of Agricultural Economics. Vol 4:1-11.

Norman, D.W., J.D. Siebert, E. Modiakgotla, and F.D. Worman (1994). Farming Systems Research Approach: A Prime for Eastern and Southern Africa. FAO/SIDA, Botswana.

NPC (National Planning Commission) (2016). Growth and Transformation Plan II (GTP II) (2015/16-2019/20). Addis Ababa.

Olawoye, J. E. (1989a). Difficulties for rural women in securing resources for agricultural production: Two case studies from Oyo State, Nigeria. Rural Development in Nigeria.

Omer H. Guyisso (2013). Women participation in modular training programs in Farmers' training centers: The case of Wolisso district, Oromiya Regional state. Master's thesis, Haramaya University. Ethiopia.

Omer Hinde G. (2013) Women's participation in modular training programs in farmers training centers: The case of Woliso district, Oroma regional state, Master's thesis, Haramaya University. Ethiopia.

Oromia Bureau of Agriculture and Rural Development (2008). Directives and Guidelines of Implementation of Modular Training at Farmers. Training Centers. Addis Ababa, Ethiopia.

Osman Surur (2007). Effectiveness of agricultural training development program: The case of teff and livestock farmers of Alaba woreda. An Master's thesis, Haramaya University.

Ousman, O. S. (2007). Effectiveness of agricultural development training program: The cases of teff and livestock farmers of Alaba Woreda, Southern Ethiopia. Doctoral dissertation, Haramaya University. Ethiopia.

Problems and Linkages. In: Mulat, D., Aregay W., Tesfaye Z, Solomon B.( 1996) Sustainable Intensification of Agriculture in Ethiopia. Proceedings of the Second Conference of the Agricultural Economics Society of Ethiopia, held in Addis Ababa3-October 1996. Agricultural Economics Society of Ethiopia, Addis Ababa, pp 161-181.

Rahel, K. (2003). Ethiopia's recent growth performance: A survey of the literature. Washington, DC: World Bank.

Ramasamy, C., Cynthia S. Bantilan, S. Elangovan, and M. Asokan (1999). Perceptions and Adoption decisions of farmers in cultivation of improved pearl millet cultivars: A study in Tamil Nadu. Indian Journal of Agricultural Economics, :Vol 2:54.

Rangaswamy, R. (1995). A textbook of Agricultural Statistics. Weley Eastern Limited, New Delhi. India.

Reij, Chris and Ann W. Bayer (2002). Farmer Innovation in Africa: A Source of Inspiration for Agricultural Development. Earths can publications Ltd, London.UK.

Rogers, E. M., and F.F. shoemaker (1971). Communication of Innovation. A Cross-cultural Approach, Second Edition. The free press, New York.USA.

Rogers, E.M. (1983). Diffusion of Innovations. The Free Press, McMillan Publishing Co. New York.

Röling, N.G. (1988). Extension Science, Information Systems in Agricultural Development Cambridge University Press. Cambridge. pp 37-187.

Röling, N.G., and Jiggins, J.(1998). The Ecological Knowledge System. In: Röling, N. G., and Wagemakers, M.A.E. (eds.). Facilitating Sustainable Agriculture. Participatory Learning and Adaptive Management in Times of Environmental Uncertainty. Cambridge University Press. New York. pp 283-331.

Saito, K., and Weidemann, C. J.(1990). Agricultural extension for women farmers in Africa. Washington, DC: World Bank.

Saito, K., Hailu Mekonen, and Spurling, D. (1994). Raising the Productivity of Women in Sub-Saharan Africa. The International Bank for Construction and Development of the World Bank, Washington D.C, USA. 110 pp.

Samanta, R. K. (1994). They reap less than they sow. The Hindu (April), No. 7. Madras: India.

Sarantakos, R. (1988). Social Research, Second Edition. Macmillan Press Londen.pp350.

Sarantakos, S. (1998). Sampling procedures. In Social Research (pp. 139-164).Macmillan Education UK.

Schultz, T.W.(1975). The Value of the Ability to deal with Disequilibria. Journal of Economic Literature, Vol 13: 827-846.

Seme Debella (1988). Agricultural research and food production in Ethiopia. Ethiopian Journal of Agricultural sciences Vol 10:25-37.

Sen, A. (1981). Poverty and Famine: An essay on entitlement and deprivation. Claredon press, Oxford.UK.

Smith, M., S. Maxwell and J. Pointing (1992). Household Food Security: Concepts and Definition: An Annotated Bibliography. Household Food Security: Concepts, Indicator and Measurements. A Technical Review. Rome, IFAD/UNICEF, pp.135 -192.

Spielman, D. J., Ekboir, J., Davis, K., &Ochieng, C. M. (2008). An innovation systems perspective on strengthening agricultural education and training in sub-Saharan Africa. Agricultural systems. Vol. 98 (1), 1-9.

Springate-Baginski, O., Allen, D. and Darwall, W.R.T. (eds.) (2009). An Integrated Wetland Assessment Toolkit: A guide to good practice. Gland, Switzerland: IUCN and Cambridge, UK: IUCN Species Programme. xv+144p. Available at: www.iucn.org/species/IWAToolkit

Stommes, E. and Sisaye, S. (1979). The administration of agriculture development programs. A look at the Ethiopian approach; Part one Agricultural Administration.

Strock, H., Bezabeh Emana, Brhanu Adenew, and Shimels W/ Hawariate (1991). Farming system and Farm Management Practices smallholders in Harerge Highlands. In farming Systems and Resource Economics in the Tropics: Vol. 11, Wisse schaftsuerlage, Vauk, kicl, F.R. Germany.

Swanson, B. E. (2008). Global review of good agricultural extension and advisory service practices. Food and Agriculture Organization of the United Narions. Retrieved from ftp://ftp.fao.org/docrep../fao/011/i0261e/i0261e00.pdf

Tadesse Adgo Mihiretu (2008). Farmers' Evaluation and Adoption of Improved Onion Production Package In Fogera District, South Gondar. M.Sc.Thesis. Haramaya University, Ethiopia.

Tadesse Berhe (2008).The Role of Rural Credit in Reducing Households' Vulnerability to Food Insecurity in Ganta-Afeshum Wereda, Eastern Tigray. M.Sc.Thesis,HaramayaUniversity, Ethiopia.

Techane Adugna (2002). Determinants of fertilizer adoption in Ethiopia; The case of Major cereal Producing Areas, Master's Thesis, Agricultural Universities Alemaya University.

Teressa Adugna (1997). Factors Influencing the Adoption and Intensity of Use of Fertilizer: The Case of Lume District, Central Ethiopia, Quarterly Journal of International Agriculture, Vol 36: 173-187.

Tesfaye Lemma (2003). Livelihood strategies in the context of population pressure: A case study in the Hararghe highland, Eastern Ethiopia. Ph. D. Thesis. University of Pretoria.

Tesfaye Lemma , Ermias Sehai and Dirk Hoekstra (2011). Status and Capacity of Farmer Training Centers (FTCs) in the Improving Productivity and Market Success (IPMS) Pilot Learning Woredas (PLWs). Improving Productivity and Market Success of Ethiopian Farmers Project (IPMS) -International Livestock Research Institute (ILRI), Addis Ababa, Ethiopia.

Tesfaye Tekle (1974). An Economic Evaluation of Package Programs in Ethiopia. PhD dissertation, Cornel University. USA.

Tesfaye Tekle, 1975. Application of Multivariate Probit Analysis to Adoption of new Agricultural Practices. Ethiopian Journal of Development Research Vol 2(1): 43-54.

Tesfaye Zegeye, Bedassa Tadesse, and Shiferaw Tesfaye (2001). Determinants of high yielding maize technology adoption. Empirical evidence from Southwestern Oromia. Research Report No. 38. Ethiopia Agricultural Research Organization (EARO), 2001. 39.

UNAIDS (2010). An introduction to triangulation. Geneva. Switzerland

United Nations (1994). Discrimination against women: The convention and the committee facts.USAID.1999. Food security indicators and framework for use in the monitoring and evaluation of food aid programs.

van den Ban, A. W. (1996). Agricultural Extension. Formaly of department of Extension Education Agricultural University. Wagieningen ,The Netherlands. Second Edition.

Van Veldhuizen D., Laurens V., Ann W., and Henk, D. Z. (1997). Developing Technology with Farmers: A Trainer's Guide for Participatory Learning. Zed Books Ltd, London.

Vanclay, F. and Lawrence, G. (1996). Farmer Rationality and the Adoption of Environmentally Sound Practices: A Critique of the Assumptions of Traditional Extension. Journal of Agricultural Education and Extension. Vol 1. (1). (On-line journal).

Von Braun, J., Ahmed, A., Asenso-Okyere, K., Fan, S., Gulati, A., Hoddinott, J.& van Rheenen, T. (2008). High food prices: the what, who, and how of proposed policy actions. Washington, DC: International Food Policy Research Institute.

Wolday Amaha (1999). "Improved Seed Marketing and Adoption in Ethiopia. "Ethiopian Journal of Agricultural Economics. Vol 3:41-81.

Wordofa, M. G., & Sassi, M. (2014).Improving Smallholder Farmers' Income through Farmer Training Centers: an Impact Evaluation in Haramaya District, Ethiopia.

World Bank (1986). Poverty and Hunger: Issues and Options for Food Security in Developing Countries. A World Bank Policy Study. Washington D.C. USA

World Bank (1995). Toward Gender Equality: The Role of Public Policy. The World Bank, Washington D.C. USA.

World Bank (2007c). World Development Report 2008: Agriculture for Development. Washington, DC: World Bank.

YICDOL (Yardstick International College of Distance and Open learning) (2006). Basic of Extension Education. Extension Methods and Approaches. Addis Ababa. Ethiopia.

Youdeowei, A. and Joseph, K.(1995). Development of Training Materials in Agriculture: A Course Manual. Sayce Publishing, London.

**Websites consulted**

www.ipms-ethiopia.org Accessed on 21st May 2017 at 8:04 PM

www.giz.de Accessed on 21st May 2017 at 7:46 PM

# APPENDIX

**APPENDIX 1: HOUSEHOLD QUESTIONNAIRE**

***I. Household identification***

Questionnaire number_____

Name of the household head_____

Date of interview _____

***II. Household information***

2.1. Information on Head of Household.

2.1.1 Age of HH head _____ (yrs)

2.1.2 Sex 1.Male 2.Femal

2.1.3 Ethnicity 1. Oromo 2. Amhara 3. Guraghe 4. Others

2.1.4 Religion 1. Islam 2. Orthodox 3. Wakefeta 4. Protestant 5.Others

2.1.5 What is the level of education of the household head?

1. If illiterate 2. read and write 3. 1- 4 grade 4. 5-8 grade 5. 9-12 grade 6. Vocational 7. Others

2. 2. Information on HH- members

| N0 | Name (Permanent HH Members) | Sex | Age | Relation to HH-Head | Level of education |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Code: Sex 1=Male 2=Female

Relationship: 1= Self 2=Husband 3=Wife 4=Daughter 5= Son
6 = Grandchild 7=Parent 8=Labourer 9=Sister
10=Brother 11=Step child 12=others

Level of education: 1. 0= if illiterate, religious education 2. Write grades starting from grade 1 to 12 3. Write 12 + years for those above grade 12:

***III. Household assets***

*3.1. Land resources*

3.1.1 Do you have your own land? 1. Yes 2. No

3.1.2 If no to Q.3.1.1, source of land for cultivation is _____

3.1.3 What is the total size of your land? _____in hectare or local units

3.1.4 What is the total area of land you cultivated in 2008 E.C? _____

1. Owned _____ 2. Rented in _____ 3. Share cropped _____ 3. Received as a gift _____ 4. Others (specify)_____

*3.2. Livestock*

3.2.1 Do you own livestock? _____ 1. Yes 2. No

3.2.2 If yes, indicate type and number of livestock owned currently and five years back.

| Type of Livestock | | Number(Current) | Number( Five years back) |
|---|---|---|---|
| Cattle | Oxen | | |
| | Cows | | |
| | Heifer | | |
| | Bull | | |
| | Calves | | |
| *Sub total* | | | |
| Sheep and goat | Sheep | | |
| | Goat | | |
| Equines | Horses | | |
| | Mules | | |
| | Donkeys | | |
| Poultry | Chicken | | |
| Beekeeping | Beehives | | |

3.2.3. If you don't have enough oxen, how do you get additional oxen you need.

1. Hire from someone 2. Coupling with other farmer 3. Borrow from friends 4. By contributing labour to a person who has oxen. 5 .Others (specify) _____

3.2. 4 Do you have enough feed for your animals? _____1. Yes 2. No

3.2. 5 If yes what are the sources? _____ (multiple answers possible)

1. Own grazing land 2. Communal grazing land 3. Crop by-products 4. Others (specify) __

3.2.6 If no how do you cover the deficit? 1. Limit number of livestock 2. Purchase of additional fodder from other source 3. Leave the problem as it is 4. others

3.2.7. Is animal disease a problem to you? _____1. Yes 2. No 3. Does not concern me

3.2.8 If yes to question number 3.2.7, what is the type of disease?

3.2.9. If yes to Q. no 3.2.7, do you get enough drugs to treat your animals?____1. Yes 2. No

*3.3. Other Household assets*

3.3.1 If you have the following items currently, please complete the following table.

| Items | Amount | | Estimated value in Birr | |
|---|---|---|---|---|
| | Current | Before 5 years | Current | Before 5 years |
| House | | | | |
| Stored agricultural produce | | | | |
| Valuables | | | | |
| Jewelry | | | | |
| Wrist watches | | | | |
| Agricultural equipment | | | | |
| Hoe | | | | |
| Maresha | | | | |
| Sickle | | | | |
| Axe | | | | |
| Others | | | | |

| | | | | |
|---|---|---|---|---|
| Non-agricultural equipment | | | | |
| Carpenter equipment | | | | |
| Building equipment | | | | |
| Others | | | | |
| Furniture | | | | |
| Bed | | | | |
| Tables & chairs | | | | |
| Radio/tape recorder | | | | |
| Sanduk, Kumsaten | | | | |
| Other kitchen equipment | | | | |

***IV. Household income***

5.1. Off- farm income

5.1.1 Do you or any member of your family have an off-farm job? ____ 1. Yes 2. No

5.1.2 If yes, indicate the type of work and duration for the year 2008 E.C

| Family Member | Type of Jobs (see below) | Annual Income(Birr) |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| Total | | |

* if payments were made in kind, convert them to birr at the prevailing price.

Types of jobs - 1. Livestock trade 2. Sale of local drinks 3. Pity trade (grain, vegetables, fruits, etc.) 4. Sell of firewood and grass 6. Daily labour 7. Others (specify)

**5.2 Other source of Income**

5.2.1 Remittance_____

5.2.2 Others, specify _____

**5.3 Income from Livestock**

| **Income From** | **Amount(Birr)** |
|---|---|
| Sales of chicken | |
| Sales of eggs | |
| Sales of milk | |
| Sales of cheese | |
| Sales of butter | |
| Sales of hide & skin | |
| Sales of calves | |
| Sales of heifer | |
| Sales of oxen | |
| Sales of cow | |
| Sales of sheep | |

| | |
|---|---|
| Sales of goat | |
| Sales of honey | |
| Others, specify | |

**5.4. Crop Income**

| **Income From** | **Amount(Birr)** |
|---|---|
| | |

**Crop type** : 1. Maize 2. Sorghum 3. Wheat 4.Teff 5.Haricote bean 6. Barley 7. Others

5.4.12. Number of family members permanently working

1. Full-time on farm _____
2. Part time on farm _____

5.4 .13. Is the family labor enough for your agricultural operation 1.yes 2. No

5.4. 14. If no for 5.4.13, how do you get additional labor 1. Hire 2. Exchange 3. Others (specify)

5.5 In the last five years how is your level of household income? household 1. Decreased 2.Not increased 3. Increased substantially

***VI. FTC and extension related information***

6.1 How often have you been attending the Farmers Training program within a week in your area?

1. 2-3 in a week 2. 3-4 in a week 3. More than 4 per a week 4. None

6.2 Who attends the Farmers Training program in your family?

1. Father 2. Mother 3. Both (A & B)
4. Any member of the family 5. All members of the family
6. Alternate (one at a time)

6.3. How often do you attend extension education/FT programs in a month?

1. One week in a month 2. Two week in a month 3. Three week in a month
4. More

6.4. How long have you been attending the training program?

1. More than 10 years 2. 7 years 3. 5 years 4. 2 years 5. less than 1 year

6.5. Which extension approach do you like the most?

1. Farmer Field School (FFS) 2. Training and visit 3. Farmer to farmer experience sharing
4. Others

6.6. Are you satisfied by the duration, the venue, the technology used and skills from the training on crop production? 1. Yes 2. No

6.7. If your answer is yes, what is the level of your satisfaction? 1.Very satisfied 2. Satisfied 3. Unsatisfied 4. Very un satisfied 5. I don't know

6.8. Are you satisfied by the duration, the venue, the technology used and skills from the training on Natural resources management training? 1. Yes 2. No

6.9. If your answer yes, what is the level of your satisfaction? 1. Very satisfied 2. Satisfied 3. Unsatisfied 4. Very unsatisfied 5. I don't know

6.10. Are you satisfied by the duration, the venue, the technology used and skills from the training on animal production training? 1. Yes 2. No

6.11. If your answer is yes, what is the level of your satisfaction? 1. Very satisfied 2. Satisfied 3. Unsatisfied 4. Very un satisfied 5. I don't know

6.12. Do you think the training you obtained was relevant and in line with your needs?

1. Yes 2. No

6.13 Have you got advice in agricultural activities from extension service in year 2008 EC? 1. Yes 2. No

6.14 If yes to who provided you the advices? (Multiple choices is possible)

1. Government extension officers 2. Farmer group 3. NGOs (specify) 4. Marketing agents 5. Other (Specify)_____

6.15 On which area the advice was given? 1. Crop Husbandry 2. Crop diversification 3. Animal husbandry 4.Marketing 5.Irrigation development 6. Post-harvest 7.Other (Specify)_____

6.16 How often do you get advice 1. Once a week. 2. Every 15 days 3. once a month 4. Once in three month 5. Once in a season.

6.17 Do you think the extension and training you have obtained helped you to improve your production situation? 1Yes 2.No

6.18 If Yes, how have you benefited from the farmers trainings you have attended in enhancing your livelihoods situation? ----------

---

6.19 What advice would you give to improve the training and delivery of the extension education program?

---

6.20. How did your participation in FTC activities in your area affect your livelihoods? Multiple choices is possible) 1. Became a member of cooperative/*Ikub*/self-help group 2.Opened a saving account 3.Raised my knowledge on agriculture and environment 4.More access to market for production's input and produce 5.Other benefits(please specify)……..

**Thank you for your collaboration!**

**APPENDIX 2: KEY INFORMANT INTERVIEW PROTOCOL FOR DAs**

1. What are the main areas of work of your farmer training Centre in this Kebele?
2. How many farmers have you trained so far? Do you have regular attendants or they keep changing?
3. How do you choose a subject to train farmers on?
4. When is the specific time to provide training to farmers? When is the pick (when farmers' attendance is high) season for trainings?
5. How do you evaluate the impact of the FTC work on food security and on the livelihoods (agriculture)? Do you have any indicator(s) to assess the performance of the FTC's work?
6. What are the main challenges to the activities of this FTC?
7. What are the main complain you received from the attendants?

**Thank you for your collaboration!**

## APPENDIX 3: FOCUS GROUP GUIDE

### Questions

1. What are the most important resources for people's livelihoods in the study area? Land, water, vegetation?
2. What are the most critical challenges people are facing nowadays with respect to livelihoods?
3. How has the local population using indigenous knowledge has been improving livelihoods since times?
4. What is the role played by practices/activities of FTCs in helping people to improve their livelihoods in the study area? (E.g. Promoting the culture of working together and sharing information, improving knowledge on livelihoods, protect environment, increase income and financial literacy, etc.)
5. What are the main livelihoods activities being impacted by FTCs practices in which way?
6. How many people are involved in these livelihood activities in the study area? (e.g. livestock production or crop production or fish production?
7. How do local people see FTCs practices taking into consideration their social-cultural context?
8. Do FTCs give importance to indigenous knowledge?
9. Do people in the study think that FTCs are necessary in enhancing their livelihoods?
10. What can be changed for FTCs to work better for people?

**Table A1**. Conversion factors used to estimate Tropical Livestock Unit (TLU)

| Livestock Type | TLU (Tropical Livestock Unit) |
|---|---|
| Calf | 0.20 |
| Weaned Calf | 0.34 |
| Heifer | 0.75 |
| Cows/Oxen | 1.00 |
| Horse/Mule | 1.10 |
| Donkey | 0.70 |
| Donkey (Young) | 0.35 |
| Sheep/Goat | 0.13 |
| Sheep/Goat (Young) | 0.06 |
| Camel | 1.25 |
| Chicken | 0.013 |

Source: Storck *et al.*, 1991

**APPEENDIKSII- 1: TRANSLATION AFAN OROMO OF USED TOOLS**

**Gaafannoo Abbaa Warraatif**

***I. Haala maatii***

Lakk. Gaafatamaa _____

Garee Wiirtuu Leenjiitti Q/bulaa 1. Kan hirmaatu 2.kan hin hirmaanne

Guyyaa gaafatame _____

Maqaa ragaa funaanaa_____ Mallattoo _____

Kan qulqulleesse _____ Mallattoo_____

***II.* Odeeffannoo raga haala Maatii**

2.1. Odeeffannoo Hoogganaa warraa

2.1.1 Umurii hoogganaa maatii _____ (waggaa)

2.1.2 Saala 1. Dhiira 2. Dubartii

2.1.3 Gosa 1. Oromoo 2. Amaara 3. Guraagee 4. kan biroo

2.1.4 Amantaa 1. Islaama 2.kiristaana 3. Waaqeffataa 4. Pheenxee 5. Kan biroo

2.1.5 Sadarkaa barnoota hoogganaa maatii

1. Kan hin baranne 2. barreessufi dubbisuu danda'u 3. Kutaa 1-4 4. Kutaa 5-8

5. kutaa 9-12 6. Vokeeshinii 7. Kan biroo

**2. 2. Odeeffannoo Haala Miseensa Maatii**

| Lak. | Maqaa miseens maatii (dhaabbii) | Saala | Umurii | Walitti dhufeenyaa hoogganaa maatii | Sadarkaa barnotaa |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*Koodii:*

*saala 1=Dhiira 2= dubartii Firooma; 1= ofuma 2= A/manaa 3=H/manaa 4= intala 5= Ilma 6= akaakayyuu 7=warra 8=hojjataa guyyaa 9= obboleettii 10=obboleessa 11=mucaa intalaa 12=kan biroo*

*Sadarkaa barnootaa; 1. 0=barreeessu, dubbisuu kan hin dandeenye fi barnotaa amantaa qofa 2. barreessuu kutaa 1 hanga 12 3. Barreessuu fi kutaa 12+isaa olii*

## *III.* KAAPPITAALA MAATII

### *3.1. Qabeenyaa Lafaa*

3.1.1 Lafa dhuunfaa keetii qabdaa? 1. Eeyyee 2. Lakki

3.1.2 Gaafii lak.3.1.1f yoo lakki jette maddi lafa qonnaa kee maali irraayii?

1. horachuun 2.kiraa 3. omisha hirtaa 4.kennaa 5.kan biro (yaa ibsamu)

3.1.3 Bal'inni lafa qabdanii heektara meeqa ta'a?

1. Hinqabu 2. 0.5 3.1 4. 1.5-2 5. Kanaa ol

3.1.4 Bara 2008 ALItti bal'inni lafa qottee hangamii/heek.?

1. 1/4 2. 2/4 3. 3/4 3. 1 4. 1 oli (yaa ibsamu)

### *3.2.* Beellada

3.2.1 Beellada qabduu? 1. Eeyyee 2. Lakki

3.2.2 Yoo eeyyen ta'e baay'inaa fi gosa beelladaa gabee armaan gadii guutaa.

| Gosa beelladaa | | Lakkoofsa (yeroo ammaa) | Lakkoofsa (waggaa shan dura) |
|---|---|---|---|
| Loon | Qotiyyoo | | |
| | Saawwan | | |
| | Raada | | |
| | Korma | | |
| | Jabbii | | |
| *Ida'ama* | | | |
| Bushaayee | Hoolaa | | |
| | Re'ee | | |
| Kotte duudaa | Farad | | |
| | Gaangee | | |
| | Harree | | |
| lukkuu | Indaanqqoo | | |
| Horsiisa kanniisaa | Gaag/kanniisaa | | |

3.2.3. Qtiyyoo gahaa hin qabdu yoo ta'e,haala kamiin dabalataan argachuu dandeessuu?

1. inyii fudhachuun 2. Qarree bu'uun 3.hiriyaa irraa ergifachuun 4.nama sangaa qabuu hojjachuun

3.2. 4 Nyaata gahaa beelada keetif qabdaa? 1. Eeyyee 2. Lakki

3.2. 5 Eeyyeen yoo ta'ee maddi isaa eessarrayii? (Deebii heddu deebisuun ni danda'ama)

1. Tifkata dhuunfaa kiyyarraa 2. Lafa waliinii 3. Haftee midhaanii 4. Kan biro (adda haa bahu)

3.2.6 Yoo lakki ta'e, hanqina isaa akkamiin cuftuu? 1. lakkoofsa beelladaa hir'isuun 2. Nyaata bakka birootii bituun 3. Rakkooo akkuma jirutti bira taruun. 4. Kan biroo

3.2.7. Dhukkubni beelladaaa rakkoo isinitti ta'ee jiraa? 1. Eeyyee 2. Lakki 3. Na hin laallatu

3.2.8 Lakkoofsa 3.2.7. eeyyen yoo ta'e, gosti dhukkubaa maali?

3.2.9. Lakkoofsa 3.2.7. eeyyen yoo ta'e, beellada keessaniif qoricha gahaa argachaa jirtuu? 1. Eeyyee 2. Lakki

***3.3.*** **Qabeenya Maatii Kan Biroo**

3.3.1 Yeroo ammaa kanatti wantoota armaan gadii yoo qabaattan, gabatee isaa guutaa

| Wantoota | Baay'ina | | Tilmaama qarshii | |
|---|---|---|---|---|
| | Yeroo kanatti | Waggaa 5 dura | Yeroo kanatti | Waggaa 5 dura |
| Mana | | | | |
| Omisha qonnaa kuufame | | | | |
| Wantoota gatii qaban | | | | |
| Faaya | | | | |
| Sa'aatii harkaa | | | | |
| Meeshaa qonnaa | | | | |
| Kotkottuu | | | | |
| Maarashaa | | | | |
| Haamtuu | | | | |
| Qottoo | | | | |
| Kan biroo | | | | |
| Meeshaalee qonnaan alaa | | | | |
| Meeshaalee anaatsii | | | | |
| Meeshaalee ijaarsaa | | | | |
| Kan biro | | | | |
| Meeshaa manaa | | | | |
| Siree | | | | |
| Minjaala fi teessoo | | | | |
| Raadiyoo/rekoordara | | | | |
| Sanduqa, qum - saaxinii | | | | |
| Meeshaalee biro | | | | |

***Iv.* Galii Maatii**

5.1. Galii Qonnaan alaa

5.1.1 Isin yookin maatin keessan galii qonnaan alaa qabduu? 1. Eeyyee 2. Lakki

5.1.2 Yoo eeyyeen ta'e, bara 2008titti gosa maalii irratti hangamiif akka hojjattan ibsaa?

| Lakkoofsa maatii | Gosa hojii | Galii waggaa |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| Ida'ama | | |

** Kaffaltiin isaa hojii hojjatame irraa yoo ta'e, gara maallaqaatti yaa jijjiramu.*

Gosa hojii -
*1. daldala beelladaa 2. Dhugaatii naannoo gurguruu 3. Daldala karaarraa 4.margaa fi qoraan gurguruun 5. Hojii guyyaa hojjachuun 6. Kan biroo*

**5.2 Madda Galiiwwan Biroo**

5.2.1 Deeggarsa _____

5.2.2 Kan biro _____

**5.3 Galii beellada irraa**

| **Madda galii** | Hanga galii |
|---|---|
| Gurgurtaa lukkuu | |
| Gurgurtaa buuphaa | |
| Aannani gurguruurraa | |
| Dhama gurguruurraa | |
| Dhadhaa gurguruurraa | |
| Gogaa fi kal'ee gurguruu irraa | |
| Jabbii gurguruurraa | |
| Raadden gurguruurraa | |
| Qotiyyoo gurguruurraa | |
| Saawwan gurguruurraa | |
| Hoolota gurgurruurraa | |
| Ro'oota gurgurruurraa | |
| Damma gurgurrurraa | |
| Kan biro yoo jiraatan yaa ibsaman | |

**5.4. Galii midhanii**

| **Madda galii** | **Hanga galii (Birr)** |
|---|---|
| | |
| | |

***Gosa midhaanii****: 1. Boqqoolloo 2. Mishingaa 3. Qamadii 4. Xaafii 5. Boloqqee 6. Garbuu 7. Kan biro*

5.4.12. Lakkofsa maatii dhaabbataan hojjatanii

1. Guyyaa guutuu hojii qonnaa kan hojjatan _____
2. Guyyaa wlakkaa hojii qonnaa kan hojjatan _____

5.4 .13. Humni namaa hojii qonnaa sochoosuf gahaa dhaa? 1. Eeyyee 2. Lakki

5.4. 14. Lakkoofsa 5.4.13 irratti lakkii yoo ta'e, human dabalataa akkamiin argattu?1. kiraa 2.

Waljijjiirraa 3. Kan biro (adda yaa bahu

5.5 Waggoottan shaman darbanitti sadarkaan galiin maatii keessanii maali fakkaataa? 1. Ni hir'ata 2. hin dablu 3. Itti fufinsi isaa dabalee jira

***V.*** **Nyaata Maatin Sooratu**

Gosaa fi hanga nyaataa guyyoota kudha arfan darban keessa maatin sooratan ibsaa

| **Lak.** | **Gosa nyaataa** | **safartuu** | **Nyaataa bitame** | **Nyaata ofii omishame (Kg)** | **Waliigala baay'ina sooratamee** |
|---|---|---|---|---|---|
| **A** | **Midhaan agadaa** | | | | |
| 1 | Boqqoolloo | | | | |
| | ❖ Marqaaa | | | | |
| | ❖ Daabboo | | | | |
| | ❖ Buddeena | | | | |
| | ❖ Hunda Akaayyii | | | | |
| | ❖ Shuummoo | | | | |
| 2 | Qamadii | | | | |
| | ❖ Daabboo | | | | |
| | Hunda shummoo | | | | |
| | ❖ Hunda akaayyii | | | | |
| | ❖ Kan biroo | | | | |
| 3 | Xaafii | | | | |
| | ❖ Buddeena | | | | |
| | ❖ Marqaa | | | | |
| 4 | Boloqqee | | | | |
| | ❖ Shuummoo | | | | |
| | ❖ Ittoo | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5 | Garbuu | | | | |
| | ❖ Bassoo | | | | |
| | ❖ Akaayyii | | | | |
| **B** | **Ashaakiltii** | | | | |
| **1** | Shunkurtii | | | | |
| **2** | Raafuu maramaa | | | | |
| **3** | kaarota | | | | |
| **4** | Qaaraa | | | | |
| **5** | Kan biro | | | | |
| **C** | **Omisha beelladaa** | | | | |
| 1 | ❖ Aannan | | | | |
| 2 | ❖ Foon | | | | |
| 3 | ❖ Buuphaa | | | | |
| 4 | ❖ kan biro | | | | |
| **D** | **Gosoota nyaata biro** | | | | |
| 1 | | | | | |

5. 2 Bara darbe maatii keessaniif nyaataa gahaa mali ooishtaniif? 1. Eeyyee 2. Lakki
5. 3. Lakk.5.2. Irratti lakkii yoo ta'e,ji'oota meeqaaf dadhabdanii?----------
5.4. Waggoottan shaman darbaniif nyaanni mana keessatti argamu, 1. Ni hir'ata 2. hin dablu 3. Itti fufinsi isaa dabalee jira
5.5. Waggoottan shaman darbaniif nyaanni mana keessatti hir'inni nyaataa mana keessanitti mul'atee jiraa? 1. Eeyyee 2. Lakki

## *VI.* Odeeffannoo WLQ fi ekisteenshinii waliin wal qabatan

6.1 Torban keessatti guyyaa meeqaf sagantaa leenjii q/bulaa hirmaattan?
1. tobanitti 2-3 2.torbanitti 3-4 3. Torbanitti guyyaa 4 ol 4. Hin beekamu
6.2 Maatii keessaa eenyutu leenjicha hordofaa?
1. Abbaa manaa 2. Haadha manaa 3. Lameenuu 4. Maatii keessaa nama tokko 5. Maatii hunda 6.dabareedhan
6.3. Ji'a keessatti yeroo hangamiif leenjii kana hordoftanii?
1. Ji'attii torbee tokko 2. Ji'attii torbee lama 3. Ji'attii torbee sadii 4. Kanaa ol
6.4. Yeroo hangamiif sagantaa lenjii q/bulaa hordoftanii?
1.waggaa kudhanii 2. Waggaa 7 3. Waggaa 5 4. Waggaa2 5. Waggaa1 gadi
6.5. Mala ekisteenshinii qonnaa keessaa kam filattuu?
1. Ayyan q/bulaa 2. Leenjii fi daawwannaa 3. Muuxannoo wal jijjiirraa 4. Kan biro
6.6. Kenninsa haala dheerina yeroo, bakka leenjii, fayyadama teekinolojii fi muuxannoo leenjii misooma midhaaniitti quuftanii? 1. Eeyyee 2. Lakki
6.7. 6.6. Irratti deebin keessan eeyyen yoo ta'e, sadarkaan itti quufinsa keessanii maalii?

1. Baay'ee itti quufe 2. Itti quufe 3. Itti hin quufne 4. Baay'ee itti hin quufne 5. Ani hin beeku
6.8. Kenninsa haala dheerina, bakka, fayyadama teekinolojii fi muuxannoo leenjii qabeeya uumamatti quuftanii? 1. Eeyyee 2. Lakki
6.9. lakk. 6.8. Irratti deebin keessan eeyyen yoo ta'e, sadarkaan itti quufinsa keessanii maalii?
Baay'ee itti quufe 2. Itti quufe 3. Itti hin quufne 4. Baay'ee itti hin quufne 5. Ani hin beeku
6.10. Kenninsa haala dheerina, bakka, fayyadama teekinolojii fi muuxannoo leenjii qabeeya beeladaatti quuftanii? 1. Eeyyee 2. Lakki
6.11. lakk. 6.10. Irratti deebin keessan eeyyen yoo ta'e, sadarkaan itti quufinsa keessanii maalii?
Baay'ee itti quufe 2. Itti quufe 3. Itti hin quufne 4. Baay'ee itti hin quufne 5. Ani hin beeku
6.12. Leenjin argattan fedhii keessan waliin wal simee jiraa? 1. Eeyyee 2. Lakki
6.13 Bara 2008 ekisteenshinii qonnaa irraatti tajaajila gorsaa argattanii jirtuu? 1. Eeyyee 2. Lakki
6.14. Yoo eeyyen ta'e gorsa haala kamiin isiniif laatamee?
1. Dhaabbata mootummaarraa 2. Garee misoomaarraa 3. Dhaabbata mit-mootummaa irraa 4. Daldaaltotarraa 5. Kan biro (yaa ibsamu)
6.15. Ogummaa kam irratti gorsi isiniif kenna mee?
1. Horsiisa midhaanii 2. Omisha heddummineessuu 3. Horsiisa beelladaa 4. Daldala 5. Jal'isii 6. Sassabbii omisha boodaa
6.16 gorsa yeroo hangamiif argattaa? 1. Torbanitti al tokko. 2. Guyyota 15nan hunda 3. Ji'atti yeroo tokko 4. Kurmaanatti yeroo tokko 5. Ji'a ja'atti al tokko.
6.17 Tajaajilli ekisteenshinii fi leenjii argattan omisha keessan fooyyesseraa?
6.18 .lakk.6.17 Yoo eeyyen ta'e jiruu fi jireenya keessan akkamiin jijjiree? ----------
6.19 .Dhiyeessa leenjii ekisteenshinii akka ffooyya'uuf gorsa maalii laattuu? ----------
**6.20.** Hojii wirtuu Qonnan bulaa ganda keessaniitti hirmachuun akkamitti jiruuf jireenya keessan irraatti jijjiirama fidee? Filannoo heddu kaa'uun ni danda'ama.
1.miseensa waldaa ta'uun/iqqubii/gareen walgargaaruu 2. Lakk. Qusannaa herrega baankii banachuuf 3. Beekumsa hojii qonnaa fi kununsa naannoo irratti naaf dabale 4. Caalmatti omishaa, galteewwanii fi bu'aa omishaa kiyyaaf gabaatti akkan fayyadamu na gargaarera. 5. Bu'aan biroos yoo jiraate yaa ibsamu
……
……

## APPEENDIKSII 2: PIROTOKOOLI GAAFI FI DEEBII

### I. Gaafif Deebii HMH

1. Hojiin ijoon WLQB akka gand kanaatti maali?
2. Hanga ammaatti Q/bulaa meeqa leenjistanii? Dhaabbiin kan hordofan jiru moo ni jijjiiramu?
3. Mata duree leenjii Q/ bulaaf akkamiin filattuu?
4. Yeroon murtaa'an leenjin itti kennamu yoomii? Yeroon olka'u yoomii? (hirmaannan)
5. Sababin hirmaannaa Q/B ol ka'uu fi gadi bu'uu maalii?
6. Dhiibbaa WLQB wabii nyaataa fi jiruuf jireenya Q/B irratti fidu maalii?
7. Raawwii WLQB irratti agarsiistuu wayii qabduu?
8. Rakkoolen hojii WLQB tin wal qabatee jiru maalii?
9. Mormiin hirmaatttota isin mudate maali fa'aa?
10. Hojiiwwan kooriniyaa giddu-galeessa godhatan WLQB keessatti ademsifamaa jiruu? Maal fa'i?
11. Akka ilaalcha keessaniitti WLQB ce'umsa qonnaatif gahee qaba jettanii yaadduu? Akkamitti?
12. Akka ilaalcha keessaniittiWLQB tajaajilamtootaf bu'aa qaba jettanii yaadduu( wabii nyaataa fi jiruuf jireenya isaanii mirkaneessuuf)? Karaa kamiin?

## II. Gaafif Deebii I/Gaafatama Waajjira Qonnaa Aanaa

1. Hojiin ijoo waajjira keessanii aanaa kanaaf maalii?
2. Hojiin Qonnaa Wabii nyaataa akkasumas jiruuf jireenya haala kamiin dhiibbaa uuma jettanii madaaltuu?
3. Rakkoolen ijoon akka aanaatti wiirtuu leenjii qonnan bulaa irratti mul'tan maal fa'i?
4. Tajaajilli ekstenshinii isin kennaa jirtan korniyaa giddu galeessa godhatee jiraa? Yoo eeyyen haala kamiin?
5. Haala qabatamaa jiruun WLQB ce'umsa qonnaatif bu'aa qaba jettanii yaadduu? Yoo eeyyen haala kamiin?

**APPEENDIKSII 3: PIROTOKOOLII QAJEELCHA MARII GAREE XIYYEEFFANNAA (Dubartoota fi Dargaggootaa)**

1. Qabeenyi ijoon jiruu fi jireenyaa ummataaf barbaachisaan isaan kamii? Land, water, vegetation?
2. Yeroo ammaa kanatti rakkoo cimaan jiruu fi jireenya ummataa qoraa jiru maalii?
3. Wiirtuu leenjii qonnaan bulaa dura ummatni beekumsa aadaa haala kamiin ittin of jijjiiraa turee?
4. Gaheen wiirtuu leenjii qonnaan bulaa jirenyaa hawwaasaa jijjiiruu irratti taphate maali fa'aa?
5. (Fk.raayyaa misoomaa cimsuu, odeeffannoo garagaraa wali jijjiiruu, kununsa naannoo eeguu fi k.k.f.)
6. Hojiiwwan jiruu fi jireenyaa gurguddoon WLQ/Btin jijjiiraman maali fa'ii? Haala kamiin?
7. Uummata hangamiitu hojiiwwan jiruu fi jireenya isaanii jijjiiru (misooma midhaanii, horsiisa beelladaa, qurxummii fi k.k.f.) irratti hirmaatee?
8. Uummanni naannoo WLQ/B haala kamiin aadaa fi haawwaasummaa keessa galchanii ilaaluu?
9. WLQ/B beekumsa aadaatif faayidaa kennaa?
10. Uummanni naannoo kana WLQ/B jiruu fi jireenya keenya ni jijjjiira jedhanii yaaduu?
11. WLQ/B haala gaarin ummataa akka hojjatuuf maaltu jijjiramuu qabaa?