ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Assessment of Problems of Agricultural Extension Services in Ethiopia: The Case of Food Crop Extension Package in Guto Gida Woreda. East Wollega Zone, Oromia National Regional State

A Thesis Submitted To Addis Ababa University College of Development Studies in Partial Fulfilment of the Requirement for the Degree of Masters of Art in Development Studies (rural livelihood and development)

BY

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DEVELOPMENT STUDIES

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ACRONYMS

AAU	-Addis Ababa University
ADLI	-Agricultural Development-Led Industrialization
AEZ	-Agro-Ecological Zone
AISCO	-Agricultural Inputs Supply Company
ARD	-Agriculture and Rural Development
BC	-Before Christ
CADU	-Chilalo Agricultural Development Unit
CDP	-Community Development Program
CPP	-Comprehensive Package Program
CPSC	-Central Planning Supreme Council
CSA	-Central Statistics Authority
DA	-Development Agents
EC	-Ethiopian Calendar
EEA	-Ethiopian Economic Association
EEPRI	-Ethiopian Economic Policy Research Institute
EPRDF	-Ethiopian People Revolutionary Democratic Front
FAO	-Food and Agriculture Organization
FDRE	-Federal Democratic Republic of Ethiopia
FGD	-Focus Group Discussion
FHH	-Female Headed Household
GDP	-Gross Domestic Product
GMFC	-Growth More Food Campaign
HH	-Household
HYV	-High Yielding Variety
IAR	-Institute of Agricultural Research
IRDP	-Integrated Rural Development Program
KII	-Key Informant Interview

MHH	-Male Headed Household
MoA	-Ministry of Agriculture
MPP	-Minimum Package Program
NDRPE	-National Democratic Republic Program of Ethiopia
NGO	-Non-Governmental Organization
NEIP	-National Extension Intervention Program
NES	-National Extension System
OED	-Operations Evaluation Department
PADEP	-Peasant Agricultural Development and Extension Project
PADETES	-Participatory Demonstration and Training Extension System
PRA	-Participatory Rural Appraisal
SG-2000	-Sasakawa Global 2000
SIDA	-Swedish International Development Agency
SPSS	-Statistical Package for Social sciences
T&V	-Training and Visit
WADU	-Wolayita Agricultural Development Unit

ABSTRACT

This micro-level study is conducted in Guto Gida woreda, East Wollega zone of Oromia National Regional State. The study attempted to assess and identify the major problems of the ongoing agricultural extension services existing in the area in relation to crop extension package program. In conducting the study, both qualitative and quantitative data collection methods were employed to collect pertinent and relevant data from both primary and secondary sources. To analyze the collected data, descriptive statistical methods such as percentages, frequencies and tables were employed.

The study has shown that the farmers in the study area have been participating in crop extension package program since the early start of the program, 1994/95. They were trying to diversify their cropping systems and to adopt and apply different technologies of the program to meet the consumption needs of their families. However, most of the farmers could not meet this objective and the major objectives of the ongoing extension approach, PADETES, were not been fully realized. The study revealed that there are no demonstrations and training and also true participation of farmers in implementation process of the program. No crop extension trainings have been given to the farmers since long years. Except for fertilizer and improved seeds, no credit facilities are arranged for farmers. Prices of inputs are continuously increasing and becoming beyond the purchasing power of farmers. The technical support from the DAs is continuously decreasing due lack of interest of DAs. Nevertheless, the number of DAs is increasing since the last five years with a great change in their level of education. To the contrast, the span of service and the number of farmers getting service is decreasing. Thus, the findings of the study have shown that the ongoing agricultural extension program in the study area is not achieving its objectives and the life qualities of many farmers have not been improved.

Chapter one: Introduction

1.1 Background

Today, the issue of sustainability is more obvious and urgent than ever. Poverty, hunger, economic growth, food production, population growth, and natural resources degradation are all great challenges in today's world. Thus, ensuring a thriving agricultural economy is critical for reducing poverty, enabling food security, and managing natural resources in a sustainable fashion (Hailu, 2002:26).

In Sub-Saharan Africa (SSA), natural resources degradation is advancing at a startling rate, particularly in the form of desertification in dry land areas, soil erosion and deforestation on hillsides, biodiversity losses, increased siltation and flooding and loss of soil fertility in many cropped areas. Some estimates suggest that land degradation affects two third of the total crop land of Africa and one third of the pasture land. Much of this degradation is irreversible, or can be reversed only at very high cost (Rattan lal et al, 2002).

Ethiopia is one of the Sub Saharan African countries with devastating natural resources degradation and also with high population growth approaching 80 million people. The population has been increasing by about 2.9 percent per annual and this then doubles the population almost every quarter of a century. This is a primary challenge that needs to be properly addressed with equivalent economic growth (Awulachew, 2006). The main economy of the country depends on agriculture, which is mainly dependent on rain fed system, under highly variable rain fall conditions, with progressive degrading natural resources base.

Majority of the rural dwellers in the country are the ones who are the poorest, with limited access to agricultural technology, limited possibility to

diversify agricultural production, having underdeveloped rural infrastructure, and weak access (sometimes lack of access) to agricultural markets and to technological innovations. These issues combined with increasing degradation of the natural resource base, especially in highlands, aggravate the incidence of poverty and food insecurity in rural areas.

To reduce food security and poverty, the government of Ethiopia has launched sets of actions among which extension package program is one. The main objective of this program is to enable the subsistence farmers to produce sufficient food to satisfy their families' consumption requirements. To this end, different technologies and other essential services have been provided to farmers that could augment agricultural productivity which, in turn, contribute to attain household food security.

Results of the intervention would have been manifested on improvement of the food security status and income level of the beneficiaries. However, significant change has not been manifested in Ethiopia. Most rural households are still food insecure and this suggests that there is still some problem with the ongoing agricultural extension package approach. So, the identification of this problem and understanding of the program whether it is benefiting the target population or not requires the understanding of empirical research.

Guto Gida, the study area, is one of the Oromia National Regional State Woredas in which the program is under implementation since 1994/95 to attain the aforementioned objective However, as is the case in the country in general, many households face food shortage during certain months of the year, and the program is under question whether it is producing the intended objective or not. So, this requires the understanding of empirical research to identify the critical problems that are bottlenecks to the success of the program

1.2 Statement of the problem

Extension services have been carried out in Ethiopia since 1950s. Despite 50 years of extension services, in which successive government programs have employed scarce resources, food insecurity and rural poverty are more widespread than ever before (Abeje.2004). Abebe also substantiated this fact in 2006 in his research work. He noted that after long years of extension supports, many farmers are not able to produce enough food for them or not helped to improve their farming practices. The technical and financial supports and prescriptions of international institutions and bilateral donors could not take us long, and many farm households are still food insecure (Abebe, 2006).

This vulnerability to food insecurity, according to Abeje (2004), is closely related to the problems facing smallholder agriculture. This sector, the main stay of the country's economy, has suffered from periodic drought and famine compounded by lack of coherent farmer-oriented agricultural policy. Extension, as one of the tools of government policy intervention, has not been effective in tackling household food insecurity and poverty.

The present government extension system, Participatory Demonstration and Training Extension System (PADETES), has been launched in 1994/95 to tackle this problem. The basic objectives of this system include: improving the life quality of people through improving productivity, increasing the level of food self sufficiency, increasing the supply of industrial and export crops, credit supply, and bringing about voluntary behavioral change through participatory training and demonstration of improved agricultural production practices. The main components of the program were: persuasive demonstration of recommended technologies or farmer plots, physical availability of inputs, training and development of grass root level extension workers, and fostering research extension linkage (Abeje, 2004:4).

Unlike the other extension programs and projects which failed to make change in the production and productivity of the majority smallholder farmers, it has penetrated deep to the rural areas and to some extent succeeded to increase food production using some technologies, mainly improved seeds and fertilizer (Tsegu, 2006). However, the ongoing agricultural extension approach, PADETES, was not exempted from problems. The major problems experienced during the implementation of the program include: shortage of inputs, market problems, lack of sound credit system, involvement of extension agents in non-extension activities, poor research and extension linkages, dependence on high cost external inputs, blanket implementation of inputs, quota system targeting, and lack of real participation of farmers (Kiros, 2007:4).

Initially, PADETES was designed to improve agricultural extension by providing training, input and services including credit with the aim of transforming subsistence farmers into small-scales commercial farmers. In limited areas where rainfall and soils are favorable for the introduced technologies, it brought benefits to very few farmers. But in most parts of the country, the approach was not very effective. It put too much emphasis on quantitative achievements. Extension agents were expected to meet quotas in terms of the number of farmers they convinced to adopt technologies. It did not give adequate recognition to farmers' interest (Ejigu and Ann, 2005).

The Ethiopian farmer is not so far considered in the decision making processes of technology generation and transfer. The farmer is expected to accept and adopt whatever technologies are recommended by the research institutes through the extension agents of MoA (kiros, 2007: 27)

The DAs incentive system is built around the need to pursued farmers to adopt 'package', usually of improved seed and fertilizer. Their relatively meager pay can be supplemented with evidence of uptake of packages. They are therefore most likely to work with those voluntary farmers who show interest in such technologies. This is at odds with the notions that farmers should determine their own needs, and confirms a view that in fact the government knows best (Tenkir et al, 2004). The same study pointed out that the choice of packages available is not always appropriate to the particular agro-ecological and economic conditions of an area. In areas of greater rainfall variability and uncertainty, the risks for farmers are much greater.

The Ethiopian Economic Association carried out research on the impact of the ongoing agricultural extension system on production and productivity. The study concluded that the extension work in Ethiopia was non-participatory and coercive, giving little consideration to farmers' experience and knowledge (kiros, 2007:28).

According to the study report (2005), taking own produce and an average family size of six households. 57 percent of the farmers participated in the extension package program and 71 percent of the non-participant farmers were found food insecure. Thus, despite some improvements in the production and productivity with the extension package beneficiaries, food insecurity is still a major challenge for the Ethiopian farming households.

In the study area, this program is under implementation since 1994/95 crop year as a means to ensure food self-sufficiency and betterment in life quality of the people. However, according to Guto Gida Agriculture and Rural Development office, more than 10% and 30% of the participant farmers in the Woreda face food shortage for 6 months and 3 months respectively, and most of these people subsist on selling charcoal, fire wood,

timber and other forest products that enhance deforestation and natural resources degradation. This indicates that there is a good problem behind the ongoing agricultural extension services which obstacles the program not to achieve its objective of ensuring food security. So, the researcher believed that it is enough time to assess and identify the major problems constraining the program not to achieve its goals.

1.3 Research objectives and research questions

1.3.1 Research objectives

A. General Objectives

The general objective of this study is to assess and identify the critical problems underlying the ongoing agricultural extension services in the study area with particular emphasis on food crop extension package program.

B. Specific Objects

1. To assess and identify the major problems challenging the ongoing agricultural extension services in the study area using farmers' perceptions.

2. To assess whether the existing agricultural extension service in the study area is benefiting the target groups or not.

3. To examine whether the farmers in the study area are satisfied with the existing extension service delivery or not.

4. To suggest some possible solutions by which the problems could be minimized.

practitioners to take the necessary actions in making the extension service more fruitful and productive.

- It will contribute to research and academic institutions, extension service providers and users to look in to major challenges and possible solutions.

- The outcome of the research might help to make improvements and enrich the existing literature at different levels.

- It attempts to fill the research gap by analyzing the relationship between the on going agricultural extension program and the life standard of the woreda farmers.

1.5 Scope of the study

Agricultural extension approach comprises many programs like food crops production, coffee production, livestock production, natural resources management and the like. Studying the whys, the hows and the impacts of all these programs is a complex subject that goes far beyond the scope of the thesis. Therefore, this study is delimited to food crop package. It is conducted at the grass root (kebele) level and hence it does not claim to be comprehensive. It focuses on a micro-level engagements and assessments, and generates information about the problems of the current agricultural extension services at grass root level.

Chapter Two: Literature review

2.1 Basic concepts

2.1.1 Program

In generic sense, a program is a plan of intended action-oriented to achievement of designated objectives. According to Uhr and Mackay (1992, cited in Abeje, 2004:14):

> *The use of the term 'program' refers to the value now placed on the coherent organization of government activities into 'program' of closely related components of all of which are, ought to be, managed according to the policy priorities established under the formal authority of the program objectives.*

Bembridge (1991:196) defines extension programming as the planning of a strategy to facilitate change, designing and implementing efforts, evaluating outcomes of the effort implemented. Accordingly, the researcher used 'program' to refer to planned government action aimed at achieving officially set and determined objectives.

2.1.2 Policy

Policy is defined as authoritative decision process consisting of a set of principles and objectives. It refers to decision made by those in authority in response to public problems or to whatever governments choose to do or not do (Colebatch, 1993).

2.1.3 Agricultural Extension

Any kind of advice and assistance given to farmers in order to improve their methods of production is called agricultural extension. However, agricultural extension should not be considered only in the context of increasing agricultural production. Extension is one of the instruments used to achieve a balanced social and economic development of rural areas. This is significance to maintain the increase in productive capacity (Hailu, 2002:28).

Extensions approaches differ from country to country and sometimes even within countries. On the one hand, extension can be viewed broadly as a multipurpose, educational and technical advisory service designed to bring about broad-based agricultural and rural development. On the other hand, agricultural extension can be narrowly viewed as a technology transfer mechanism, sometimes dealing with only one commodity that is also involved in input supply credit and marketing services (Van den Ban and Hawkins, 1996).

Extension approaches in developing countries are frequently influenced by external agencies, and are some times dominated by government policies that favor urban consumers instead of assisting farm households to improve their productivity and standard of living. Extension, the concept, and its usage is unhandy, imprecise. A great many activities are covered by it and it has been given many different meanings. As a result, it has been defined in a great variety of ways by different scholars. Some consider it as a simple transfer of technology (TOT) while others regard it as an instrument, particularly policy instrument, geared towards achieving policy objectives.

More simply, Kumar and Hansra (2000) tried to explain extension as a process where by the extension worker tries to encourage or motivate the clients in order to solve their acute problems. Due to that, the clients would acquire a better understanding of their problems and also consider the alternative solution available. He also said that extension is a process of working with farmers to improve the productivity of their agriculture.

These all clearly show that it is not possible to have one and universally agreed definition of agricultural extension. However, it can have the following as a general framework of the definition of the term agricultural extension i.e. agricultural extension is a process which helps farmers to analyze their present and expected future situation, helps farmers to become aware of problems that arise in such analysis, increases knowledge and develops insight in to problems, and helps to structure farmers' existing knowledge, helps farmers acquire specific knowledge related to certain problem solutions and their consequences so they can act on possible alternatives, helps farmers to make a responsible choice which in their opinion is optimal for their situation, increases farmers motivation to implement their choices, and helps farmers to evaluate and improve their opinion-forming and decision making skills in their context (Singh A.K,2003)

Despite the many varied ways agricultural extension is defined, there are certain elements that are common to all the definitions. These are:

- Extension is an intervention
- Extension uses communication as its instrument to induce change.
- Extension focuses on a number of different target processes and outcomes which distinguish it from other communication interventions.
- Extension is deployed by an institution.

2.2 Agricultural Extension in Ethiopia

Though agriculture has a long history in Ethiopia, agricultural extension service as a means for rural development, is a relatively recent phenomenon in Ethiopian agriculture (Baye, 2007:32).

Different agreements were signed between the Ethiopian government and foreign experts representing their country with an aim to improve the agricultural sector of the country. In 1943 and thereof, however, there were somehow organized and concerted efforts made as a result of which a number of demonstration sites were established throughout the country some of which include Sholla Poultry Demonstration Center, Andasa Adami Tulu, Intoto, Kundi, Kofele, Bale, Jijiga and Amed Guya sheep ranches for mutton production.

These demonstration sites were serving as improvement centers and demonstration centers that aid farmers to get understanding of improved production practices. During 1948, emphasis was given to animal health as a result of which an agreement was signed between FAO and the Ethiopian government to start vaccination program. Besides, for the first time in the history of Ethiopian agriculture, professionals were sent abroad for training particularly on animal health. Even though there existed the conceptualization and some efforts of improving the agricultural sector, there were lack of properly organized research centers, lack of adequately trained manpower, failure to assess farmers problems and situations as well as lack of responsible body to effectively carry out the extension service heavily constrained the extension activities (Baye,2007).

Generally, before 1953 the agricultural extension service was not properly organized as a result of which its objectives were not clearly defined. It was not clear which farmers' it is targeting, what extension method was followed,

how it was organized and its contents were not properly defined. Nevertheless, evidences showed that there was sort of extension type activity going on in the country before 1953. As a means to promote agricultural technology adoption, the extension system of the country involves training of farmers, demonstration of experiment plots and on farm trials. Development Agents (DAs) and researchers play key role in the process of demonstration and provision of extension advices (Chimdo, 2005).

2.3 Extension teaching methods

Extension work aims primarily to promote learning among a particular population. This requires skillful organized teaching methods. Teaching requires skills that include knowledge of technology or what to teach, and understanding of the educational process or how to teach, ability to work with village people, and skill of extension teaching methods (Ramiro F. Plppino, 1987, cited in Abebe, 2006:22).

A wide range of methods and techniques are commonly used in both developed and developing countries. The use of these methods, however, depends up on factors such as the purpose of the learning activity, the intended audience, existing conditions, and the availability of resources. According to Ramiro F.Plppino (1987), the different methods of extension widely practiced are: -

i) Individual method of extension (farm and home visits, office calls, letters, telephone calls, and informal discussions).

ii) Group method of extension (group meetings, method demonstration, result demonstration, field tours and field days).

iii) Other methods (campaigns, exhibits and display, popular theater, puppetry and mass media).

In Ethiopia, farmer organizations are pre-requisite to some extension organizations to implement their tasks and thus employ group approaches to extension: Others, advocate on the importance of reaching as many clients as possible through the use of mass methods. Some believe that the provision of information alone is insufficient to bring about social change, and hence, try to find ways and means by which their target clientele can acquire skills. These types of approaches to extension prefer the use of individual methods in extension. This last communication method is usually used by NGOs who have limited scope both in terms of area, content and type of clients. Government extension services try to employ a variety of methods consisting of individual, group and mass methods. It has also been seen in practice that the use of a variety of methods has a reinforcing effect to bring about a desired change.

In the first year of the package program, DAs in Amhara region exhausted their energy trying to convince farmers to join the program by the use of the individual extension method (face-to-face contact). Positive results, however, were achieved when they started a video-show program that dealt with the success story of the SG-2000 program in the southern and Oromia regions. After a year's experience, the effect of person-to-person communication through field days had resulted in the registration of thousands of farmers and DAs in some localities were unable to cope with the needs.

Local radio programs and newspapers have created a competitive spirit among farmers in Tigrai region and have helped to win the confidence of farmers to join the program. All these examples underline the importance of the use of various formal and informal methods of communication on top of the face to face communication method normally employed by development agents (Habtemariam, 1999:13).

2.4 The Role of Extension in Agricultural Development

Agricultural extension work is a significant social innovation, an important force in agricultural change, which has been created and recreated, adapted and developed over the centuries. Today, the organizations personnel engaged in agricultural extension encompass a diverse range of socially sanctioned and legitimate activities, which seek to enlarge and improve the abilities of farm people to adopt more appropriate and often new practices and to adjust to changing conditions and societal needs (Jones and Garforth, 1997). People engaged in agriculture need improved skills, information and ideas in order to develop agriculture that will meet complex demand patterns, reduce poverty and preserve or enhance ecological resources (Feder and Zijp, 1999).

Extension services are an important element within the array of market and non-market entities and agents that provide human capital-enhancing inputs, as well as flows of information that can improve farmers' and other rural people's welfare, an importance long recognized in development dialogue (Robert, 1989).

The goals of extension include the transferring of knowledge from researchers to farmers, advising farmers in their decision making and educating farmers on how to make better decisions, enabling farmers to clarify their own goals and possibilities, and stimulating desirable agricultural developments (Van den Ban and Hawkins, 1996).

Almost every country in the world today has an agriculture extension service of one kind or another. Most of them operate depending up on the basic principles of "extension work" (informal, out of school teaching) as originally developed in the United States of America. These ideas call for a program of informal adult education for rural populations, in agriculture,

animal husbandry, home economics and related subjects. For the reason that not any country can afford to neglect its rural population, agricultural extension work has been spread throughout the modern world. Without a productive and stable agricultural base, it is obvious that all other efforts of social and economic development will be severely limited. For many years, experiment stations and research institutions have been busy in accumulating the basic scientific knowledge that makes improvements possible. For the reason that the information about new agricultural technology does not reach to rural people, there are still great many of them in the world who cannot benefit from these ideas.

A major goal of the agricultural development policy in most countries is to increase food production at a similar rate to the rate at which the demand for food is increasing and at a cost, which is competitive on world markets. An effective agricultural extension organization is critically important in this situation, especially in less developed countries.

The major role of extension in many countries in the past was seen to be transfer of new technologies from researchers to the farmers. Now it is seen more as a process of helping farmers to make their own decisions by increasing the range of options from which they can choose and by helping them to develop insight in to the consequences of each option (Van den Ban and Hawkins, 1996).

Agricultural extension is a necessary pre-requisite to widespread and sustained agricultural development. Even in advanced countries, it is not possible to encourage farmers to adopt new technologies and practices based on continuously advancing research without farmers clearly understanding them. In order to bring research outcomes and other new agricultural techniques to farmers, any one need to teach farmers how these practices should be employed and adopted under their own conditions.

So an agricultural extension service is required to describe new technology to farmers and teach them how to adapt and adopt improved production practices goes to increase their production and income. Extension also has an important role in guarantying the agro-economic and social environment of farmers and the day-to-day production problems they face are appropriated by research. This feed back function of extension makes really simple the continuous reorientation of research towards the priority needs of farmers and the early resolution important technological constraints.

It is extension, however, that assists farmers take advantage of research findings and technological advances, quickly adjust to seasonal economic conditions, and effectively use support services to increase their production and income. Without extensions guidance, farmers often are unable completely to exploit the opportunities available to them (Benor,et al.1987).

Research findings do not immediately change themselves into agricultural practices; even in the best cases, there is usually a considerable time lag between the development of a new technique and its application. As farmers in developed countries differ from developing countries, the same is true for agricultural extension problems. In developed countries, the difficulty is how to communicate effectively the outcomes of research to a farmer who is mentally ready to accept new practices that will give him higher outcomes. Contrary to that, in the developing countries, the problem is not only how to communicate information but also how to initiate the farmer to accept technological changes (Arnon, 1998).

Researchers rarely have the time or opportunity to communicate directly with farmers. Even if they did, it is unlikely that the average farmer would understand their specialized language.

The main purpose of rural extension work is, therefore, to bridge this gap. That is, to bring up-to-date and reliable information about farming method, home economics, community development and related subject. Extension work is with people. Extension worker's job begins and ends with human beings. Thus extension work has frequently been described as "helping people to help themselves" (Ameur, 1994). Arnon (1998) also said, though much of the technological information required by farmers comes from the research organization, it is function of extension to select the appropriate ones.

Agricultural extension is being increasingly focused on women's needs, using women extension agents and contact points. The information needed for women and men often differ. This is due to the multiple roles of women in rural production and household maintenance systems and the consequent heavy demands on their time. Thus, women usually need advice focused on simple labor saving technology, food production as opposed to export crop messages, post harvest, food storage and processing messages. Simple labor saving devices for transport, water pumping, and crop husbandries are often popular with women because they save time. It is probably through agricultural extension that the special role and needs of rural women can best be addressed (World Bank, 1993).

Extension work has now become part and parcel of rural development strategy in most nations of the world. The World Bank has also contributed significantly of late, towards strengthening extension organizations in less developed nations. There is tremendous faith in extension's potentials to work with rural people. Like it is said that Rome was built in order, it was not mastered minded by one individual at a place rather it evolved through hard work of several people around the world for over more than a century now (Kumar and Hansra, 2000).

but can also be disseminator or utilize. Thus what needed is their synergistic or functioning of all relevant institutions or (articulated whole) in which the contributions of each actor adds to the contributions of the other. The formation of articulated whole (a system), however, demands effective linkage loops (Baye, 2007: 48).

Therefore, the issue of research extension linkage is germane to the problem of agricultural productivity. When the Institute of Agricultural Research (IAR) came in to being as important organ of the government in 1966, it was charged with mandates to formulate a national policy for agricultural research and to implement the policy through coordinated programs of research. However, no mention was made to technology transfer and linkage strategies as a result of which they were seldom considered. The tendency by then was to that technology transfer and linkage as only peripheral responsibilities to the given mandates of technology development and research coordination. From 1966-1972, IAR was operating under conventional wisdom of undertaking only research without having strong linkage with other institutions. As a result, though there were a number of research recommendations have been documented across the research centers, the contribution of IAR to the agricultural development of this country remain unrecognized owing to the weak linkage (Baye, 2007:49).

2.6 The Post 1991 Agricultural Extension Intervention in Ethiopia

In 1994/95, after the downfall of the Derg regime, the Transitional Government of Ethiopia (TGE) established a task force to draft the National Agricultural Extension System. Agricultural extension services that were operational in the country were critically evaluated in light of the basic philosophy of extension. After critically pinpointing the pros and cons of past extension programs, the task force went on evaluating the existing extension system by making a tour throughout the country discussing with regional officials, office heads in different bureaus and extension function

areas at different levels starting from region down to the level of grass roots (EEA/EEPRI, 2000 cited in Baye, 2007:45).

The experiences of other countries' agricultural extension system were also briefly looked in to through literature review and seminars presented by scholars of India, Thailand and some countries in Africa. The group borrowed the experience from SG-2000 (implementing agricultural extension in a number of developing countries like Tanzania). The country director of SG-2000 gave a brief explanation on the experience of SG-2000 enriching the task force members with new insights of the subject. In drafting the new extension system of the country, the task force heavily borrowed from the theories of extension. The Participatory Demonstration and Training Extension System (PADETES) was launched after assessing and evaluating the previous extension systems mainly T&V and by adopting some elements from SG-2000. SG-2000 started its operation in high potential areas of the country in 1995 by introducing extension management training plots in which packages of technologies are demonstrated on 0.5 hectare of plots on numerous farmers' fields (Baye, 2007:46). According to Baye and Kiros (2007), the main objectives of the existing agricultural extension approach (PADETES) include:

- Increasing crop and livestock productivity of small-scale farmers through research generated information and technologies.
- Increasing the level of food self-sufficiency.
- Increasing the supply of industrial and export crops.
- Empowering the rural poor to actively participate in agricultural development endeavors.
- Ensuring the rehabilitation and conservation of natural resource base of agriculture.

- Improving the standard of living of the people through improving productivity.
- Bringing about voluntary behavioral change through participatory training and demonstration of improved agricultural production processes.
- Encouraging farmers' organizations.
- Promoting technologies for women
- Developing packages for the different agro-ecologies.

So, unlike the previous extension systems (approaches), PADETES gave much consideration to formulating objectives from the stand point of farmers. It was not something that the government and planners sit down in their office and formulated objectives. It was rather a careful analysis of the prevailing circumstances on which the objectives were formulated. So, one can say that, more or less, the objectives of PADETES are in line with the objectives of farmers though not congruent (Baye, 2007:46).The targets of PADETES, in general, are small-scale and subsistence farmers that either exercise mixed farming or livestock rearing. Since it allows adaptation to local socio-economic and bio-physical situation, its target groups are also those farmers that constitute the majority of the farming population.

Initially, PADETES promoted cereal crops production package and the beneficiaries were mainly those farmers who live in high rainfall areas of the country. Over the years, however, the packages have been diversified to address the needs of farmers who live in different agro-ecological zones of the country (Kiros, 2007:23).

The new system follows also the package approach for the development of the agricultural sector. In this approach, all essential components, such as

information on agricultural technology, provision of inputs and credit, and communication methods are provided to farmers as a complete. The transfer of technology is done through demonstration on a realistic size for the various agricultural development activities and adopted on a cluster approach to transfer the knowledge through diffusion from farmers to farmer extension and organizing field days. The system also considers strong research-extension-farmers linkage, proper supervision and evaluation (Ebrahim, 2005).

Since the 1995/96 crop season, when PADETES became operational in all regional states and ecological zones of the country, the two main inputs (fertilizer and selected seeds) have witnessed increasing rate of adoption (Kiros, 2007:23). According to Tsegu (2006), the package program results increasing crop yield. For example, the yield of Maize, Wheat, Teff and Sorghum is two to four times greater than the conventional practice. The number of participating farmers and development agents also highly increased. The program has shown a marked expansion in its area coverage; previously neglected regions like the low land areas received more attention and the number and academic level of community level extension workers (DAs) increased (Abebe,2006:37). The value of credit rose from 8.1 million in 1995 to 150.2 million in 1999 (Tenkir et al, 2004 cited in Kiros, 2007:23).

PADETES has succeeded to penetrate deep to the rural areas and to some extent increased the production and productivity of the adopter farming households.

However, PADETES, too, was not exempted from problems. The problems experienced during the implementation of the program were: Shortage of transferable technology, shortage of inputs, market problem, lack of sound credit system, involvement of extension staffs in non-extension activities, blanket recommendation of inputs such as fertilizer and improved seeds, rising cost of fertilizer, lack of adequate follow up and technical support due

to extraordinary expansion of the program both in coverage and types of packages (Abebe, 2006:38). Limited amount and types of technologies generated to limited agro-ecological zones, focusing on cereal based extension, limited number of research centers as compared to the need to generate technologies to wide ranging agro-ecological variations, absence of link among peasants, extension service providers, and research institutions (Abebe, 2006).

Owing to the nature and limitations of the existing agricultural extension package program, some critics (e.g. Belay, 2000) have questioned its effectiveness and sustainability. The shortcomings of the program include dependence on high cost external inputs, excessive reliance on a narrow genetic base, inadequate availability of inputs in the required quantity and quality for various socio-economic categories of farmers, and the consequences of continuous use of chemicals. Above all, it is argued that the excessive focus on the introduction of external technologies has contributed much to the neglect and erosion of local genetic resources and farmers' indigenous knowledge systems (Negussie,2002 cited in Kiros,2007:25).

Taking the ongoing agricultural extension package program, this thesis tries to explore the subsistence rural households perspectives on problems and constraints of the program and tries to suggest ways of making future extension programs farmer-oriented and more effective.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Methods of data collection

Data collection was carried out during the months of February and March 2008. A total of ten well oriented enumerators, who were selected from respective kebeles and knowledgeable of the community members, localities, language, and traditions, were deployed to respective kebeles to collect the data. Prior to the actual data collection; one day training on the objective of the research and how to fill the questionnaire was arranged and carried out. The actual data of the households was collected at the houses of the sample households. Supervisors closely assisted the enumerators to facilitate the data collection process.

3.1.1 Qualitative Data Collection

In order to study the perception of farmers about the ongoing agricultural extension package program and its problems, information was gathered through: Extensive focus groups discussions, Key informants interviews, and direct observations.

These methods helped the researcher to assess the extent of change brought about by the program in improving the living standard of the farmers in the area.

A. Focus Groups Discussions (FGDs)

A total of thirty (nine female and twenty one male) households from the three kebeles were selected by respective kebele administration leaders, and discussion was held at each kebeles on the basis of pre-prepared checklists.

Group members were randomly selected from different villages of their respective kebeles. The discussion helped the researcher to properly identify the major problems that prohibited the farmers not to be fully benefited from the existing agricultural extension services.

B. Discussion with Agricultural Development staff members

Discussion was conducted with Guto Gida Woreda Agriculture and Rural development office staff members (with those working in crop development section as team leaders and experts), cooperative office, and also with extension agents working in respective kebeles where the research has been conducted. The discussion was conducted to mutually identify the major constraints and problems of the ongoing agricultural extension services in the area. In addition, the potentials and possible solutions to overcome the problems were also assessed. The discussion was carried out on the basis of pre-prepared (guiding) checklists. A total of ten (three female and seven male) staff members participated the discussion. In addition, discussion was carried out with nine (one female and eight male) rural extension agents at their respective kebeles to mutually identify the major constraints of the program.

C. Key Informants Interview (KII)

Key informants are those people considered to have particular opinion about the topic under study. They were selected from respective kebeles as elders and models by their activity, broad social and economic involvement and knowledge of socio-economic conditions of the local communities. A total of seventeen (seven female and ten male) locally known individuals were identified by their respective kebele administration leaders, and discussions and interviews were conducted at each kebeles based on the pre-prepared checklists. Table 3:1 summarizes the distribution of the informants.

Table 3:1 Distribution of informants by kebeles/ offices

Kebele/ office	Focus groups			Key informants			Woreda staffs			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
Abdeta	8	4	12	4	4	8	-	-	-	12	8	20
Dune kane	6	2	8	2	1	3	-	-	-	8	3	11
Negasa	7	3	10	3	2	5	-	-	-	10	5	15
ARD office	-	-	-	1	-	1	4	2	6	5	2	7
Coop. office	-	-	-	-	-	-	3	1	4	3	1	4
Rural DAs	-	-	-	-	-	-	8	1	9	8	1	9
Total	21	9	30	10	7	17	15	4	19	46	20	66

Source: Own summary

Note: M=Male F=Female T=Total

3.1.2 Quantitative Data Collection

Quantitative data was collected through household survey and document review at different levels. Structured questionnaire was administered to collect the data related to family size, livestock and farm land holding, educational status, age of the household, input supply, credit services, and the like.

3.2 Sources of data

The data used for this study was collected from both primary and secondary data sources.

3.2.1 Primary data sources

Primary data sources are the sample households, Development Agents, Key informants, Woreda experts and various group discussions.

3.2.2 Secondary data sources

Secondary data sources include journal articles, unpublished study documents, CSA reports, and other official reports of relevant Woreda offices. Published literatures, and archives and libraries of concerned organizations were also used as secondary data sources.

3.3 Sampling Procedure

3.3.1 Selection of the study Woreda

The study woreda was purposively selected because of work exposure and also easy access of the researcher to the area. In addition, the Woreda is more relevant in the zone to this study since it is the first Woreda to begin extension package program in 1994 according to the information obtained from the zone office of agriculture.

3.3.2 Selection of sample rural kebeles

For the purpose of this research, the researcher purposively selected only three kebeles. Among the twenty one rural kebeles of the woreda, only ten kebeles were participating in crop extension package program, and 3(30%) of them were included in the sample. The researcher and the woreda agricultural development office purposively selected three kebeles namely Abdeta, Dune Kane and Negasa to be included in the sample.

The criteria used to select the three kebeles include: accessibility to all weather roads, year of participation, and size of participant farmers to the program.

All the ten kebeles participating in the program were homogeneous in terms of agro-ecology, farming practices, language, ethnicity, culture, and other socio-economic characteristics of the area.

3.3.3 Selection of Sample Households

Household was the unit of analysis in this study, in which, household heads were contacted for interview. The sampling frame, the total list of farmers participating in agricultural extension package program, was obtained from the respective kebele administrations and DA offices.

Out of the total sampling frame (1021housholds), 102 (10%) were included in the study. The sample households were drawn using simple random sampling technique. Simple random sampling was chosen here; because it provides all the households with an equal chance of being included in the sample. The sample households were taken from the continuous participants of the program from 1994/95 and represent the participating households. The sample size was limited to 102 households as the secured financial resource for the research was limited and cannot finance more sample size. Furthermore, though the sample size seems small, it was expected to represent the population it was drawn from as the kebeles from which the samples were drawn are homogeneous in many regards.

Table 3:2 Distribution of sample Households by kebeles

Kebele	Total number of HHs living in the kebele	Number of HHs participating in crop extension package program	Number of HHs interviewed (Sample size)	Sampling weight
Abdeta	1006	510	34	6.7
Dune kane	590	170	34	20.0
Negasa	608	341	34	10.0
Total	2204	1021	102	10.0

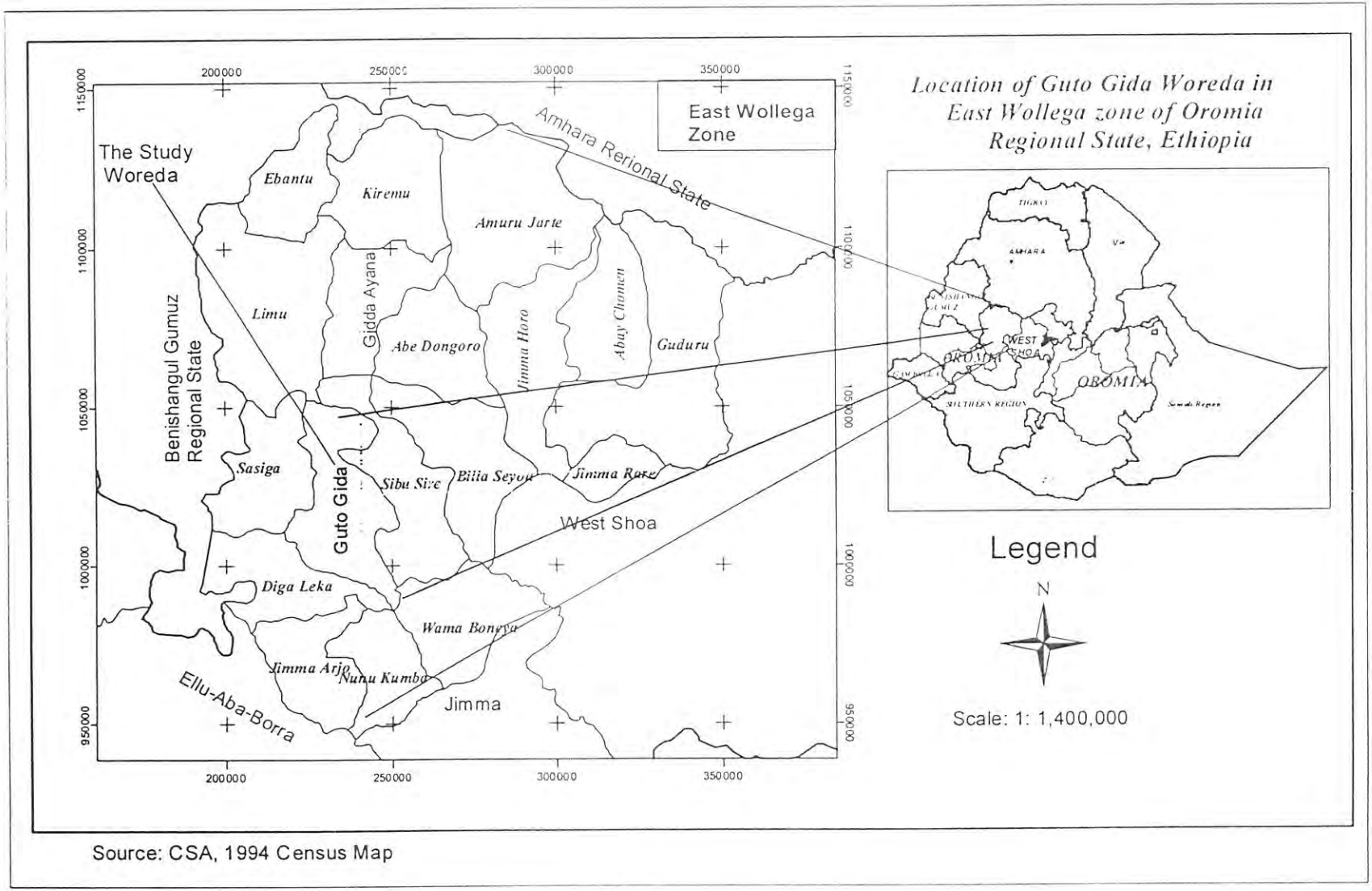
Source: Household survey HH=Households

NB *The data on 'Total № of HHs living in the kebele' is obtained from Woreda finance and economic development office, and they are the ones who pay land taxes.*

3.4 Methods of Data analysis

Qualitative data was analyzed by systematically organizing the information and giving attention to the opinions, ideas, and perceptions of the program.

Quantitative analysis was carried out using simple and relevant statistical tools such as frequencies, ratios, percentages and tabulations.



Source: CSA, 1994 Census Map

Chapter Four: Research Findings and Discussions

4.1 Description of the study area

4.1.1 Physical Conditions

Location

The study area (Guto Gida woreda) is located in east wollega zone in Western part of Oromia National Regional State. The capital of the woreda, Nekemte town, is located at 331 kilometers to the west of Addis Ababa, the capital city of the country, Ethiopia.

The area lies roughly between 9° 04' N latitudes and 36° 30' E longitudes and has an altitude ranging from 1300-2300 meters above sea level (m.a.sl)

The woreda is surrounded by Wayu Tuka and Gudeya Bila woredas in the east, Diga and Sasiga woredas in the west, Gida Kiramu and Abe Dongoro woredas in the north and Leka Dulecha woreda in the south.

Climate

The area receives an annual average rainfall of 1500-2200mm. Temperature, which is one of the elements of climate, decreases from the North to the South (from low land to mid altitude of the woreda). Thus the mean annual temperature of the area ranges from 14-20 degree Celsius (Guto Gida woreda ARD office, 2008).

Land Size

The size of the woreda is estimated to be 723.7 square kilometers with total population of about 96,180. The average population density of the woreda is 133 Person/km^2 in 2008 (Guto Gida woreda ARD office, 2008).

Administration

The woreda is administratively sub-divided in to twenty one rural and one urban kebeles.

Agro-ecology

According to Guto Gida woreda Agriculture and Rural development office, the woreda has two agro-ecological zones: Woyina Dega (mid altitude) and Kolla (low land) which represent 64.39 percent and 35.61 percent respectively. Out of the total kebeles existing in the woreda, 12 (54.5%) are located in the low land (kolla) and the balance (45.5%) are located in the mid-altitude (Woyina Dega).

Table 4.1 Agro-ecological zones of the Woreda.

Agro-ecology	Altitude	Area covered in percent	Climatic condition
Kolla	500-1500	35.61	Hot
Woina Dega	1500-2500	64.39	Warm
Total		100.00	

Source: Guto Gida Woreda ARD office

The livelihood of the people is based on agriculture, predominantly on crop production and livestock rearing. Major types of crops grown in the area include (according to coverage) Maize, Sorghum, *Teff*, Millet, Pulses, oil crops and Vegetables. Among these, Maize is the most dominant crop covering the largest area of the woreda (Guto Gida woreda ARD office).

The major constraints to crop production of the area include low soil fertility, high prices of inputs, and limited agricultural extension services.

Farm manure and other household organic products as well as compost are sources of nutrient used by the household.

Topography

The topography of the woreda is characterized by hills and low land plains with warm and hot climate which are suitable for mid altitude and low land crops, and also for rearing livestock (Cattle, Sheep, Goat, Equines and Poultry).

Land use

According to Guto Gida woreda Agriculture and Rural development office, the present land use of the woreda is dominated by cultivation 83% followed by pasture land 6% and bush and forest cover 3 % and others 8%. The potential for small scale irrigation is also very high as there are 27 perennial rivers (Guto Gida Woreda ARD Office, 2008).

Table 4:2 Types of land use/land cover of the woreda

Land use/cover	Area	
	Hectare	Percent
Cultivated land	60067.1	83
Grazing land	4342.2	6
Forest, bushes and shrubs	2171.1	3
Others	5789.6	8
Total	72370.0	100

Source: Guto Gida Woreda ARD office

4.1.2 Socio-economic conditions.

Population and composition

According to Guto Gida Woreda Finance and Economic Development (FED) office, the total population size of the woreda is estimated to be 96,180. Out of this, 51220 (53.25 %) are males and the rest 44960 (46.75%) are females. The woreda has slightly more males than females. About 44% of the population is children (less than 15years), about 51 % are strong work force and the remaining 5% are old age groups (65 and above).

Table 4:3 Total Population of the Woreda (2008).

Total Population			Rural			Urban		
Male	Female	Total	Male	Female	Total	Male	Female	Total
51220	44960	96180	49409	42997	92406	1811	1963	3774
53.25%	46.75%	100%	53.47%	46.53%	100%	47.99%	52.01%	100%

Source: Guto Gida Woreda FED Office, 2008.

Ethnicity and Language.

The native ethnic population in the area is Oromo and the official language is Afan Oromo.

Land tenure

According to the constitution of Federal Democratic Republic of Ethiopia, land is owned by the state and farmers are entitled only with the right to use it. Accordingly, in the study area, the land is owned by the state and the farmers are given the right to use it and also to inherit to their children according to the current land certification policy of the regional state.

4.2 Socio-economic characteristics of the sample households

i. Educational Status

Educational status of the household is generally low. More than 44% of the sample households are illiterate. 46.1% of them are between 1st and 8th grade. Only 9.8 % of them are above 9th grade. This indicates that most of the farmers are non-literate and this might be one of the challenges that constrain the success of the program, because illiterate people may not easily adopt new technologies.

Table 4:4 Education levels of the sample households.

Level of education	*Frequency*	*Percent*
Illiterate	45	44.1
1-4	19	18.6
5-8	28	27.5
9-12	10	9.8
Total	102	100.0

Source: Household Survey.

ii. Land, livestock and other assets holdings of the household

Table 4:5 Land holding

Land size in ha.	Frequency	Percent
Less than 0.5	16	15.7
0.5-1.0	38	37.3
1.0-1.5	13	12.7
1.5-2.0	22	21.6
More than 2.0	13	12.7
Total	102	100.00

Source: Household Survey

As indicated in table 4.5, the land holding of the household in the study area is generally low. This is because of shortage of farm land in the area. As a result, most farmers share their land to their children and remain with limited plots. It can be said that more than 15% of them do not have land because they are holding less than 0.5 hectare which is insignificant for a farmer whose agriculture is the only livelihood activity. Again, more than 37% of them hold less than 1.0 and 12.7 % of them less than 1.5 hectare. Only 34.3 % of them hold more than 1.5 hectare. This indicates that the size of land holding is one of the constraints that limited the farmers of the area not to be benefited from the program.

Table 4:6 Livestock holding of the households.

HHs with	Ox/Oxen		Cow/cows		Sheep		Goat/Goats		Chicken	
	HH	%	HH	%	HH	%	HH	%	HH	%
0	3	2.94	11	10.80	79	77.45	79	77.45	42	41.88
1	20	19.60	30	29.40	7	6.86	12	11.76	6	5.88
2	68	66.70	33	32.35	10	9.81	5	4.91	26	25.49
3	7	6.86	19	18.63	3	2.94	3	2.94	14	13.73
4	4	3.90	4	3.92	1	0.98	1	0.98	6	5.88
>4	-	-	5	4.90	2	1.96	2	1.96	8	7.84
Total	102	100	102	100	102	100	102	100	102	100

Source: Household Survey

As the farmers of the area are major producers of cereal crops, livestock are raised for the purpose of manure and also for plowing their crop fields. In addition to this, livestock are raised for the purpose of food and income. However, as indicated in table 4.6, the livestock holding of the households in the study area is generally poor.

When we see in terms of oxen, the oxen holding of the household is generally low. 2.9 % of them do not have oxen, 19 .6% do have only one, and 66.7% have a pair of oxen. Only 10.76% of them have more than a pair. Though oxen

are the critical tool, for small-holder farmers, in promoting small holder agriculture, and though the farmers of the area are highly demanding credit for farm oxen, there is no credit system arranged for this purpose through the government.

In bitterly explaining the issue, one of my informants said: *Liqii sangaa gaafannaan mootummaan nu dide, utuu liqii sangaa argannee jabaannee hojjennee rakkina keessaa baana turre. Mootummaanis isa sooressa malee isa hiyyeessa hin beeku. Xaa'oo kan argatu isa sooressa, sanyii filatamaa kan argatu isa sooressa, meerreree hiyyeessi kan yaadatamte?* (Literally, " we asked the government to get credit for farm oxen, but the government denied to give us credit for this purpose, had we get credit, we would have get out of poverty by working hard. But the government is always favoring the rich not the poor, it is the rich who gets fertilizer and improved seeds, where is the government considering the poor?"). This expression is used to indicate that the poor farmers have dissatisfactions on the government with regard to oxen credit. Majority of the farmers do not have the capacity to purchase oxen as the prices of oxen are extremely increasing these days. According to focus groups discussion, the average price of one farm ox at local market is not less than 3,000 Ethiopian Birr. So, the key informants and focus groups strengthened the idea that argues the reason why many farmers lack farm oxen is due to their prices.

Out of the 102 sample households interviewed, 99(97.1 %) of them replied that the reason for lack of farm oxen is associated with price. According to them, all the production that they produce annually is not more than their families' consumption need in order to buy farm oxen, i.e. all produce is consumed and no surplus is left for other investments. Due to lack of farm oxen, there is no opportunity to fully utilize their crop land, and as a result, they sharecrop out their land for those who have oxen, or they are obliged to work for those people who have oxen in order to get them. This indicates that, according to them,

though it started long years ago, the existing agricultural extension program could not brought much change on their life.

Concerning cows, they are predominantly raised for the purpose of four things: manure, food, income and sustaining generation. However, the number of cows in the area is again small. Out of the 102 sample households, only 5 (4.9 %) of them have more than 4 cows, 4 (3.92%) have 4 and 93 (91.18%) have below 4 cows. This indicates that the cows holding of the farmers in the study area is very low. According to the focus groups, the number of cows in the study area is not enough to provide the above mentioned purposes. As a result the farmers of the area are not much benefiting from cows to manure their crop land, to get income, and to get new offspring from the cows, and they are also obliged either to use modern inputs or to ignore inputs due to the fear of its price.

In terms of small ruminants, again, this group of animals is very low in the area. More than 77% of the households do not have these animals. 6.86% and 11.76 % of them have only one each sheep and Goat respectively. Only 1.96 % of them own more than 4 of them. According to the focus groups, these animals are raised for the purpose of income and food. However, the number of these animals is very small. The farmers do not have income to purchase more number of them.

In general, the livestock holding of the farmers in the area is very poor, indicating that they are not so much benefiting from having them.

In the area, having large number of livestock is considered as a sign of wealth. Those farmers having more than two pairs of oxen, more than five cows and heifers, more than ten sheep and goats, and more than five donkeys, and more than ten chickens are termed as rich.

Nevertheless, majority of the sample farmers interviewed do not deserve these criteria. None of them own more than two pairs of oxen, only 4.9% of them own more than 4 cows, only 1.96% own more than 4 sheep and goats, and only 7.84% own more than 4 chickens. Therefore, one can conclude from this that majority of the farmers in the study area are not rich.

- **House holding of the sample farmers**

Table 4.7 Type of houses of the sample household

Type of houses	*Frequency*	*Percent*
Corrugated	34	33.3
Non-Corrugated	68	66.7
Total	102	100

Source: Household Survey.

As indicated in table 4.7, out of the total 102 sample households, only 34 (33.3%) of them own corrugated house, and the rest, 68 (66.7%) own non-corrugated one. In terms of the type of household, out of the 93 male headed HH, only 33 (35.4%) of them live in corrugated while the rest 60 (64.6%) of them live in non-corrugated one. In similar way, out of the 9 female headed household, only 1(11%) own corrugated house while the rest 8(89%) live in non-corrugated one. Almost all of the female headed and more than 65% of the male headed households do not have corrugated houses. This, in the context of the study area, disproved the argument of the woreda officials that says participant farmers have changed their houses from grass to corrugated iron sheet roof. Though they are participating to the program since many years, the life standard of the majority of the farmers in the area is not improved. Hence, they hardly participate to the existing agricultural extension package program

on credit basis and repay the loans by selling their labor or those few ruminants they have.

iii. Households and Age composition

Out of the total (102) sample households, 9(8.8%) of them are female headed and the rest are male headed. The study has shown that more than 27.5 % of the sample households are classified as strong working force (18-49), 52.9 % are middle aged (50-64), and the rest 19.6 % are old ages (65 and above years).

Table 4:8 Age of households

Age group of the household	Frequency	Percent
18-49	28	27.5
50-64	54	52.9
65 & above	20	19.6
Total	102	100.00

Source: Household Survey

vi. Religion

From the total household interviewed, 57.8 % of them are followers of protestant religion, 3.9% are Catholic, 32.4 % are orthodox, and 5.9 % are Muslims. This indicates that most of the farmers in the study area are followers of Christian religion.

Table 4:9 Religion of sample Households.

Religion	Frequency	Percent
Protestant	59	57.8
Catholic	4	3.9
Orthodox	33	32.4
Muslim	6	5.9
Total	102	100.00

Source: Household Survey

vii. Marital Status.

Out of the total sample households interviewed, 7(6.9 %) are single (un-married), 86 (84.3 %) are living in marriage, and 9 (8.8 %) are widowed. The following table illustrates this.

Table 4:10 Marital statuses of the sample households.

Type	Frequency	Percent
Single	7	6.9
Married	86	84.3
Widowed	9	8.8
Total	102	100.00

Source: Household Survey.

viii. Main Occupation.

The main occupation of all the sample households interviewed is farming, and they are those who participated and still participating in the ongoing agricultural extension program. All of them have adequate knowledge about their farming system and manage them properly.

4.3 Major Agricultural Extension Approach followed in the study area.

Currently, the ongoing agricultural extension package program is promoting packages on cereal crops in the study area particularly on Maize, *Teff* and other crops. Farmers in the area, who are able to participate and have interest, are participating to the program getting credit on collateral basis.

Though their technical support is at minimal, three Development Agents (one in plant science, one in animal science, and the other in natural resource field) are assigned at kebele level in order to give technical assistance to farmers in their respective fields. The major extension approach they are following in giving advice to farmers is mainly the mix of the individual and group extension approach. DAs contact farmers mostly during the public meeting days and in some cases they contact farmers individually up on the request from the farmers. According to the focus groups, the DAs appear only during the public meeting days because they are not living in their sites as they prefer to live in towns than in their respective kebeles. According to the group members, initially the DAs were not selected from rural areas. Instead, most of them were selected from Nekemte town and sent to colleges, and that is why they prefer to live with their families living in the towns.

4.4 Major problems to the ongoing Agricultural Extension services in the study area (as identified by farmers, Woreda staffs and DAs)

According to the households' survey and discussion conducted with the focus groups, Woreda staffs, key informants, and DAs, the challenges to the ongoing agricultural extension services are tremendous. The major ones are associated with the issue of input supply, inadequate services of extension agents, inadequate credit services, shortage of farm land, limited training and demonstration, poor research-extension-farmers linkage, poor soil

fertility, and shortage of farm labor. Each of these constraints will be discussed in short in the following subsections.

4.4.1 Problems associated with inputs supply

Regarding the problems associated with inputs supply, all the respondents reported multiple problems. Almost all of the households reported that the problems are high prices of inputs, delaying of input supply from the appropriate cropping seasons, insufficient supply and lower quality of seeds, and lack of competitive suppliers.

A. High prices of inputs

One of the major problems challenging the ongoing agricultural extension services in the study area is the ever increasing prices of inputs beyond the financial capacity of the majority of the farm households. When the researcher conducted focus groups discussion and key informants interview, all of them identified that all constraints and problems of the existing agricultural extension approach revolve around the degree of inputs price affordability.

Out of the total sample households interviewed, 102 (100%) of them reported that the critical problem hindering them not to use fertilizer and improved seeds these days is their prices. According to them, particularly the price of these two important inputs is going beyond their purchasing capacity and hence compelling them to withdraw from participating to the program.

Though there is a credit particularly for these two inputs, the existing 10 percent interest rate is becoming unaffordable for the majority of smallholder farmers and hence many of them are rejecting the use of these inputs because of their prices and also shortage (particularly improved seed).

With regard to this, the researcher tried to collect a time series data for further understanding of the issue and presented in the following table.

Table 4.11: Prices of inputs per quintal at local level

Crop Year	Prices of Fertilizer (in Eth. Birr)		Price of improved seed of maize (in Eth. Birr)
	DAP	UREA	
1994/95	236.00	220.00	N.A
1995/96	241.00	224.00	525
1996/97	255.41	240.75	497
1997/98	253.41	196.17	547
1998/99	247.80	163.34	547
1999/00	274.75	171.30	578
2000/01	280.10	208.75	578
2001/02	251.90	194.70	560
2002/03	251.55	197.95	578
2003/04	309.55	275.85	578
2004/05	363.40	326.50	578
2005/06	378.70	324.50	650
2006/07	429.30	378.00	720
2007/08	*872.00*	*580.00*	*850*

Source: Nekemte branch AISCO and Improved Seed Enterprise

Note: N.A= Not Available

Price of DAP in quintal at the early beginning of the program (1994/95) was birr 236.00. But in 2007/08, it increased by birr 636 per quintal and

reached birr 872.00. Price of UREA was birr 220.00 and reached birr 580 showing an increment of birr 360 per quintal. Like wise, price of improved seed of maize increased from birr 525.00 in 1994/95 to birr 850.00 in 2007/08 showing an increment of birr 325 per quintal. Though the price of production is increasing, the increase in price of input is highly exceeding the market price of the production and this is highly discouraging the farmers. According to them, the benefit they earn from the yield cannot compensate the cost they expend for production process. Thus, it is compelling them to withdraw from the program.

To shed more light on this issue, case study is conducted with one of the Negasa Kebele farmers and documented as follows.

Case One

*My name is Dugasa Mulisa *, I am 60 years old. I was born and grew up here in Negasa Kebele. I used to use fertilizer before some years. I have a lot to say about the current use of fertilizer. But better I keep quite because I see nothing improved; rather things are getting worst than ever. Any how, let me say a few. We always report the problem to everybody coming from the government. But nothing is improved concerning the prices of fertilizers. All of them come to get promotion by reporting unrealistic evidences. What I want to remind you is " if you are really from the side of this poor people, please, from the bottom of your heart, report our problem to the government, alike the previous interviewers, don't do things for the sake of getting promotion. After saying this, the old man continued his explanation and said the following. "These days, we have so many problems including the problem of fertilizer price. Our critical problem, today, is lack of capacity to purchase inputs. Our farm land is demanding more fertilizer than ever. In parallel, price of fertilizer is highly escalating than ever. We don't have surplus to invest. What we produce is no more than our consumption to sell in order to purchase inputs. The government kept quite not to do something. Ten years back, I remember, I used to pay down payment of only 75 Birr and a total of about 300 Birr to get fertilizer for 1ha. But these days, I have to pay more than 700 Birr for 1ha.In those days; we used to get fertilizer on*

credit with low interest rate, these days, interest rate is also increasing. We used to get professional advices from extension agents on how to apply fertilizer, how to plant in rows and the like. But these days, no fertilizer no technical support and hence no yield. On the one hand, the government is urging us to produce more, on the other hand, no inputs because of its price. The government is doing contradictory things. We have no resource to purchase inputs. The yield we get annually is not beyond our consumption. Those who have small ruminants sell them in order to pay loans and send their children to schools. Most of us have no such opportunity. For example, I sold them to send my children to school, now I have nothing to buy fertilizer. So, how can I produce more? Please! Please! If you are really born from poor community like us, and if you are really conducting this study for the benefit of the farmers, tell the government the real condition in which we are now. Tell the government that the mass of the farmers are severely suffering from such problems and that the government has to reduce prices of fertilizers. Unless the government do this, life becomes worst than ever.

Note: To protect the anonymity of the informant, pseudonym rather than real name is used in the discussion of the case.*

B. Input supply delay

Though the prices of inputs are continuously increasing, farmers are demanding inputs on credit bases. However, inputs are not being delivered within the appropriate cropping season. Out of the total sample households, 101(99.02%) of them reported that they do not get inputs in time because of its delayed distribution program.

According to the focus groups discussion, input delivery is strictly correlated with loan repayment. Farmers are required to repay all the previous credit for the eligibility to obtain the credit of current season. If the farmers fail to repay their loans in time, the likely hood of getting inputs is very rare. Input delivery is made after it is fully realized that all farmers repaid their loans or after it is agreed that they can no more repay it i.e. after the planting time of early crops like maize and sorghum is passed, or after special directives

from the regional government is issued. This delay in inputs delivery program is often resulting in delays of cropping time, which leads to crop failure.

On top of this, farmers reported that after going long distances to get inputs, they return back with their empty hands due to the problems related with arrangements in input delivery program. The inefficient bureaucratic process and underdeveloped office capacities cause unnecessary loss of farmer's working days during the distribution period of inputs.

The other problem related with input supply is place and time of input delivery. The groups reported that farmers at the extreme side of the kebeles should have to go long distances (about 4-5 hours) to get inputs when inputs are delivered at the center of the woreda. 29 (28.4 %) of them reported that they have to walk more than 4 hours to get seeds when it is delivered at woreda level. With regard to this, the woreda cooperative office confirmed that there is a problem when inputs are dumped at Woreda level due lack of report from primary cooperatives on demand of inputs.

C. Insufficient supply

In addition to delay in inputs supply program, there is also a problem of limited supply of inputs (particularly of improved seeds). Farmers reported that in most cases, they are obliged to use their own local seeds because there is always shortage of supply of improved seeds.

Out of the 102 sample households interviewed, 101(99.02%) of them reported that there is a serious problem of seed shortage and 28 (27.45 %) of them reported that they do not use improved seeds due to lack of it. Farmers are demanding improved seed, despite of its price, because of their recognition that improved seeds increase production and productivity.

However, the supply of improved seed by concerned agencies (Ethiopian Seed Enterprise) is very limited. According to Nekemte branch Ethiopian seed enterprises; though the full production capacity of Ethiopian Seed Enterprise is up to 500,000 quintals per year, due to limitation of land, it is not producing more than 300,000 quintals per annum which is very small when compared to the annual demand of the farmers. The researcher tried to collect data of 5 consecutive years to illustrate this in the following table.

Table 4:12 Demand and supply of improved seed of maize in quintals.

Crop	Zone			Study Worcda		
Year	Requested	Received	%	Requested	Received	%
2003/04	4824.3125	2668.25	55.3	206.0	110.0	53.39
2004/05	2327.625	1685.1875	72.4	157.25	78.625	50.0
2005/06	8522.075	1693.75	20.0	224.75	43.50	28.79
2006/07	4567.25	2075.5	45.4	65.0	21.875	33.65
2007/08	6120.5	1059.0	17.3	63. 25	10.625	16.79

Source: East Wollega ARD and Guto Gida co-operative office

To shed more light on the shortage of improved seeds, a case study was conducted and presented as follows.

Case two

My name is Dubeta Duga. I am 55 years old; I was born and grew up here in Abdeta kebele. I live on farming. I am participating in the current agricultural extension package program. In the early days of the program, I used to use improved seeds. But these days, I am rarely using it because I am not getting it due to its shortage. In fact its price is also extremely high. However, not its price but its shortage limited me not to use it. I am using the local seed by preserving it. But the yield is not equivalent to that of the improved one. Sometimes, it is attacked by recurring worms. When I

compare the yield of local seed with that of the improved one, the yield of improved seed is much better. That is why I need to use it. But because of the reason unclear for me, the government decreased the supply. The fertility of the soil is highly decreasing. It is demanding high rate of fertilizer and improved seed. But, to the contrast, the price of these inputs is continuously increasing. Lack of fertilizer, together with shortage of improved seed, decreased my production and productivity. What is the reason the government could not multiply seed in large quantity? When we hear, it is said that fertilizer is imported from abroad, and that is why its price is increased and also shortage is seen. But in case of seed, we hear that it is produced within the country, if so, why not produced in large quantity? On one hand, the government is urging us to produce more, to increase production; on the other hand, there is no supply of inputs. Is this not a contradicting issue? The government couldn't give us solution, and this strongly discouraging us.

The current government policy is encouraging the farmers to produce more. Whenever we attend trainings on good governance and democracy, the cadres always tell us to increase our production and productivity. But they do not tell us how to get inputs. So, in absence of inputs, how can we increase production? " kan kaadireen nutti himanii fi kan godhamaa jiru tokko miti. Callaa guddistuun utuu hin jiraatin callaa guddisuun attamitti danda'am? Mootummaan cimsee itti yaaduu qaba. (Literally- what the cadres tell us and what we practically observe in the real world is completely different from each other, how can we increase production without the supply of inputs? the government should have to think seriously over this issue).

Note: To protect the anonymity of the informant, pseudonym rather than real name, is used in the discussion of the case.*

D. Lack of competitive suppliers

In the study area, cooperative offices (farmers union) are the only sources of supply of modern inputs like fertilizer and improved seeds. There is no any single private institution that supports the supply of those modern inputs directly to the farmers. This created high prices of inputs and shortage of supply and this is also the main problems of farmers of the study area. Out

of the total sample households interviewed, 97 (95.1%) reported that one of the major problems of the program is lack of competitive suppliers. According to them, had there are numerous suppliers, the prices would have been decreased.

E. Lower quality of seeds

According to the focus groups and key informants, in addition to its shortage, low quality of the seed is another problem that constrains the program. The farmers reported that they sometimes receive seeds that are broken and cannot germinate when sown. Out of the total sample households, 67(65.69%) of them reported that one of the major problems of the existing agricultural extension services is low quality of improved seeds.

Table 4:13 Distribution of HHs according to the reported problems associated with inputs supply.

Reported problems	Proportion of households reported	
	frequency	percent
High prices of inputs	102	100.00
Delaying of inputs	101	99.02
Insufficient supply	101	99.02
Lack of competitive suppliers	97	95.10
Lower quality of seeds	67	65.69

Source: Household survey, 2008.

4.4.2 Problems associated with inadequate services of extension agents

A. Lack of commitment of extension agents to live in rural areas

In principle, development agents are at kebele level (development site) to help farmers, to discuss with them about their problems, to train and demonstrate them with new techniques, help them to get inputs and listen them to solve their problems. But in the study area, according to the focus groups, key informants, and woreda staffs, DAs have no interest to live in rural kebeles. The reasons include:

- Initially, most of the DAs were recruited and sent to colleges from Nekemte town, and as a result, they prefer to live with their parents living in the mentioned town.
- Due to the fact that they became college diploma holder, they are complaining to be the members of the Woreda staff (Woreda Cabinet).
- Because of their strong desire to further improve their educational standards, they prefer to live in town as it is the ideal place to continue their evening (extension) education.
- According to the DAs themselves, kebele administration leaders were given an irrelevant power (authority) to the extent that they can control DAs. This created inferiority complex in DAs and disappointed them to the extent that they hate (leave) their jobs.

Due to these reasons, majority of them are living in town and they often appear and simply pass directives to farmers only during kebele level public meeting days. Out of the 73 DAs existing in the Woreda during the survey time, only 17(23%) of them were living in their sites in rural kebeles, and the rest (77%) of them were living in capital town of the Woreda, Nekemte town, walking, on average, 4-5 hours each day to go to their sites and return back

to their homes. Because of the DAs refusal to live in their sites in DA houses, the DA houses built in different kebeles of the woreda are deteriorating and getting too old to provide service. There are 16 DA houses in the woreda built at different years in different kebeles. Out of these DA houses, only 6 (37.5%) of them were giving service during the survey, and the rest (62.5%) of them were standing empty, and these houses are becoming too old and going to fall as they have no regular and timely maintenance and repair.

Table 4.14: Number of DA houses by their year of construction.

Year of construction	№ of DA houses	Number of Houses		Current condition of the off-service houses
		on-service	off-service	
1993/94	2	1	1	too old to give service
1995/96	2	1	1	" " " "
1996/97	6	3	3	" " " "
1997/98	3	1	2	" " " "
1998/99	1	-	1	" " " "
2000/01	1	-	1	" " " "
2001/02	1	-	1	looks well
Total	16	6	10	
%	100	37.5	62.5	

Source: Woreda ARD office.

B. Lack of transportation facilities

None of the DAs were given any type of transportation facilities and they often walk on their foot all the day. Though some of them use their own bicycles, the bicycles are too old to give the required service and do not have

timely maintenance and repair on time of breakage. This highly consumes their valuable time and strongly affects the technical assistance to farmers.

C. Involvement of extension agents in non-extension activities

Most of the extension agents in the Woreda are involving in non-extension activities. They are involving in administrative works and political engagements being a cabinet member. For instance, during survey time, the researcher practically observed that the DAs are participating in election activities acting as chairman of election committee. They also participate in loan repayment collection because they strongly believe that they have to act on whatever assignments given from the woreda administration office whether it is administrative, political or extension services.

In addition, DAs with long years of work experience and matured enough to influence farmers are placed in non-extension activities and in non-agricultural offices, working out of their profession as political leaders, mail persons, facilitators and guest receivers in different woreda offices.

During the survey, the researcher practically observed that many of the well experienced and mature enough DAs are involving in such activities as mail persons, guest receivers and rather than technically supporting farmers by the profession they have trained and qualified to do so. The following table illustrates the number of DAs involving in non-extension activities.

Table 4:15 DAs assigned in non-extensional and non agricultural activities.

DA's code	sex	Age	Field of study	Service year	Current office	Current position
001	M	29	Pl.Sc	11	Woreda Party	Head, woreda office
002	M	28	An.Sc	11	Woreda Party	Finance head
003	M	30	An.Sc	14	" Finance	Guest receiver
004	M	30	Na.Re	12	" "	Facilitator
005	M	36	Na.Re	14	Women's office	Guest receiver
006	M	32	An.Sc	14	Agriculture	Guest Receiver
007	M	33	Pl.Sc	14	"	Facilitator
008	F	24	Pl.Sc	04	Women's office	Vice Chairman
009	M	29	Pl.Sc	11	Administration	Guest Receiver
010	M	45	Na.Re	14	ARD office	Vice, woreda head

Source: Own Survey.

According to table 4.14, ten of the well educated and well experienced DAs are assigned out of their profession and performing activities what they are not trained for. During the survey, when the researcher conducted an informal discussion with some of them, though it is for the sake of their benefit in the form of promotion, most of them are not happy for being out of their profession. According to them, rather than being out of their initial office and out of their profession, it would have been good had it been in line with their profession and up-ward within their initial organization. But this was over-looked by the woreda officials and by-passed as if it is just for seeking further benefits. In general, DAs are not fully committed to heartily help farmers in order to realize the current food self sufficiency policy.

To shed more light on this issue, a case study was conducted and documented as follows.

Case three

My name is Jaleta Tolera. I am 50 years old. I was born and grew up here in Abdeta kebele. I am participating in the ongoing agricultural extension program. During the early days of the program, kebele level extension agents and woreda agricultural staff members frequently come and visit us. Specially the kebele extension agents daily come and visit us. They used to show us how to plant in raws, how to apply fertilizers, and how to spray chemicals. But these days, where are DAs? No body come and visits us. No body shows us any modern practices. " Bara jalqabaa DAn halkanii guyyaa nu tajaajilu turan. Nuti akka ijoollee keenyaatti malee akka ormatti isaan hin ilaallu ture. Ganna rooba utuu hin jedhin, bona awwaara utuu hin jedhin nu tajaajilu turan.Akka itti toora baasan,sanyii facaasan,xaa'oo buusan nutti agarsiisu turan.Nu wajjin oolanii bulu. Har'a garuu sun hunduu hafeera, warri ammaa dhoqqeen akka itti hin buune baqatu, magaalaa jiraatu,guyyaa walga'ii qofa akka keessummaa dhufanii nutti mul'atanii deebi'u, mootummaan maaliif cal-jedhee isaan ilaalaa?".(this literally means " in the early days,DAs used to serve us day & night, we used to treat them as our children,not as an externals, they used to serve us walking on muddy grounds in wet season and on dusty grounds in dry season. By practically working with us, they show us how to plant seeds and how to apply fertilizers. They work all the day and pass overnight with us. But these days, they are considering the farmers as if all are graduated in all matters of modern practices. They do not want the mud touch their shoes (i.e. they want to keep their shoes clean) and want to appear only on the public meeting days, we see them only occasionally. I don't know why the government sees them simply". Unlike the early days, there is no support from extension professionals. They abandon us considering as if we became self reliant. But we still demand supports from DAs. They are simply getting salary without any contribution to the people. The government has to seek the way by which they could be managed. Otherwise it is a loss rather than gain to all.*

*Note *: To protect the anonymity of the informant, pseudonym rather than real name is used in the discussion of the case.*

Table 4.16: Number of DAs by their field of study in the Woreda

Field of study	2003/04	2004/05	2005/06	2006/07	2007/08
Plant Science	-	-	11	27	23
Animal Science	-	-	14	26	22
Natural Resources	-	-	12	27	23
Animal Health	-	-	-	4	4
Co-operative	-	-	1	1	1
Certificate	30	26	2	-	-
Total	30	26	40	85	73

Source: Woreda ARD office.

4.4.3 Problems associated with credit services

A. Inadequate Credit Services

One of the major constraints to the existing agricultural extension services is the absence of rural credit institutions, which could be more accessible to farmers. The regional government makes a credit agreement with commercial bank by the collateral of the regional annual budget. In this case, there is only a single source of loan and the loan is available only for chemical fertilizers and improved seeds. According to focus groups and key informants, farmers demand credit for other farm implements like farm oxen and motor pumps for irrigation schemes and also for fruits and vegetables that can strengthen the ongoing agricultural extension packages. But there is no credit system arranged for these purpose through the government.

The woreda Agriculture and Rural Development and co-operative offices recognize this problem. But they claimed that they can do nothing to solve the problem at woreda level unless facilitated at the regional level.

B. Problems of credit repayment

During the survey, it was found that 99% of the households procure inputs on credit whereas 1% procures on cash. All the respondents receiving the input on credit reported that the interest rate is steadily increasing these days and the current 10 percent interest rate is unaffordable. All the respondents using credit reported multiple problems associated with the credit repayment. Non-flexible schedule of repayment at leaner season, unaffordability, and lack of finance were reported as major problems by 97% of the respondents. To enforce credit repayment, one commonly applied measure is to require all members to repay all previous loans for the current to be approved. Unless all loans are repaid, input delivery may be suspended even when the number of defaulters is small and when the reasons for default are legitimate (e.g. crop failure).

Table 4:17 Distribution of HHs according to the reported problem associated with credit repayment.

Problems reported	Households reported	
	frequency	percent
Non-flexible schedule of repayment	102	100
Unaffordability	102	100
Lack of finance	100	98

Source: household survey

As to the HH means of credit repayment in case of crop failure, most of the HHs reported selling of livestock. 63% of the respondents reported selling of small ruminants while 28% reported selling of cattle. 3.92 % of them get from renting their land while 1.96% gets from informal lenders.

Table 4:18 Source of finance for farmers.

Source of finance/credit other than government.	Number of farmers	Percent
No source	1	0.98
Friends	1	0.98
Informal lenders	2	1.96
Land rent	4	3.92
Selling cattle	29	28.43
Selling small ruminants	65	63.73
Total	102	100.00

Source: Household survey

4.4.4 Shortage of farm land

Shortage of farm land is one of the major constraints challenging the ongoing agricultural extension program in the study area. A good majority of farm households do not have even a land size equivalent to half hectare.

As indicated in table 4:3 of this paper, 15.7% of the sample households posses land size of less than half, 37.3% holds less than one, and 12.7% of them hold less than 1.5 hectare. This indicates that there is a serious shortage of farm land in the area. Shortage of farm land is caused by continuous redistribution of farm land between and within the farm households and land fragmentation as a result of high population growth rate.

Farmers who participate with less than the required plot size (0.5 hectare) could gain no economic benefit rather than the technical knowledge from the program.

According to focus groups and key informants, farmers in the study area are sharing their limited lands they inherited from their parents to their children who are becoming independent households.

As a result, majority of the farmers in the area are still demanding to own more land to increase their production and food self sufficiency, and hence to attain their families consumption requirements. During the discussion, all the group members expressed their needs to have additional lands in order to increase their production. They reported that they have raised this question to their respective kebeles some years back. But the kebeles replied that there is no unoccupied land in the kebele, and they asked the farmers to move to resettlement area to other woredas or zones (low land areas) where there are unoccupied lands in order to have additional one. Since then, the farmers do not have raised such questions and preferred to remain in their original places. As a result, young farmers who are becoming independent of their families are suffering a lot with lack of farm land and are involving in non-farm activities like digging and selling stones. As a result, only aged and old people (who are traditional bound and very reluctant to accept new technologies) remained in the farming sector.

4.4.5 Limited training and Demonstration

Very limited training has been given to farmers by woreda Agriculture and Rural Development office. Only 16.6 % of the sample households have attended formal crop extension training in the last three years.

According to focus group, only DAs deliver short advices and messages at kebele level public meetings for farmers to apply whatever extension technologies and practices useful to them. For instance, they tell farmers during the meeting days to use irrigation schemes to harvest two times a year to ensure food self sufficiency.

Farmers indicated that the advices and messages given by the DAs are not supported with demonstration and formal training. Households' survey results correspond with that of the focus group discussion in this regard. The survey result showed that demonstration and trainings given to households and the participation of farmers in the application of technologies is low. This implies that the ongoing agricultural extension approach, PADETES, is not achieving its objectives.

According to focus groups and key informants discussion, demonstration has not been carried out since the last three years except for few cases such as demonstration for compost preparation. In very few cases, DAs show farmers how to prepare compost whenever the farmers ask the DAs to do so. Except in such cases, farmer's demonstration sessions have not been carried out in the study kebeles the mentioned year. Before three years, the DAs used to show farmers how to prepare a pit for coffee seedlings and how to cut the old coffee trees. But these days, totally there is no demonstration session on cereal crop production and other improved agricultural practices.

Table4.19: Households participated in crop extension training.

Duration	Type of Training				Total	Percent
	Input use	Savings & credit	Storage	Irrigation		
<1Week	14	1	1	-	16	15.68
One week	-	-	-	1	1	0.92
Total	14	1	1	1	17	16.6

Source: Household Survey, 2008

4.4.6 Absence of research-extension-farmers linkage

Although there are institutions like Bako Agricultural Research center, Nekemte soil laboratory center, and Nekemte branch Ethiopian Seed

Enterprises at near distances from the survey woreda, the farmers in the study area are still far from participating in the process of technology generation. Even, the extension system is not linked to the research system. Out of the total sample household's, none of them reported that they have participated in planning and design of technology generation.

4.4.7 Poor Soil Fertility

Most of crop lands in the study area have seriously lost their fertility to the extent that they cannot produce any crop yield. This is because, according to Nekemte soil laboratory center, the fertility status of the western zone in general is becoming low due to the high rainfall of the area, and also for being continuously cultivated for several years. According to them, the macro nutrients essential for plant growth are leaching down beyond the root zone and not accessible to the plants. Thus, the soil acidity problem in the area is becoming high and it needs soil reclamation. Due to this problem, they confirmed, the soil in the study area is demanding high fertilizer rate and strengthened what the farmers raised in this regard.

Soil fertility status of the sample households is presented in table 4.20, and it is shown that 57.8% of the farm plots of the sample households are infertile and 29.4% of them are medium according to the respondents of the household survey.

During the panel discussion, experts from woreda office of agriculture pointed out that continuous cultivation coupled with high intensity rainfall and over grazing of the grasslands aggravated soil erosion and land degradation. Thus, most of the extensively cultivated areas, which were once fertile and highly productive, are becoming unproductive. These experts have also pointed out that the trend of this process is very alarming and there should be intensive effort to reverse the situation and save the productive soils before land degradation become more severe and resulting in production decline and serious food insecurity.

As discussed above, the soil fertility problem is becoming more serious in the sample kebeles than ever. For instance, in Dune Kane kebele, 24(70.6%), in Negasa kebele,18(52.9%) and in Abdeta kebele, 17(50%) of the sample households reported that the fertility status of their farm land is poor.

Though the amount is small, farmers are trying to apply fertilizer to improve the fertility status of their farm plots. However, farmers are not applying the recommended rate. The reasons for not applying the recommended rate include: high fertilizer price, high interest rate, lack of finance and fear of indebtedness. From the respondents of the household survey, 59 (57.8%) of them described poor soil fertility as the major constraints of the existing agricultural extension program.

Table 4:20 Fertility status of farm plots by sample households

Fertility status of farm plot	Abdeta		Dune Kane		Negasa		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Fertile	5	14.7	3	8.8	5	14.7	13	12.8
Medium	12	35.3	7	20.6	11	32.4	30	29.4
Poor	17	50.0	24	70.6	18	52.9	59	57.8
Total	34	100	34	100	34	100	102	100

Source: household survey, 2008

4.4.8 Shortage of farm labor

According to the discussion made with focus groups and key informants, households who are engaged in agricultural activities are mainly the elders and the olds. This is because young farmers are involving in non-farm activities like stone mining and selling, petty trading and the like due to the lack of land and farm oxen. Based on the current policy of the government, all the workless (unemployed) young farmers in the kebeles were grouped

and organized to involve in activities other than farming. The following table illustrates this.

Table 4.21 Yong farmers in non-farm activities in the study area.

№	Kebele	Total Number of young farmers	Activities in which they are currently involving															
			Digging& selling stones			Crushing & selling stones			Petty trading			loading unloading			Total			%
			M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
1	Abdeta	405	150	36	186	-	-	-	18	20	38	-	-	-	168	56	224	55.3
2	D/Kane	350	155	38	193	29	5	34	16	33	49	46	-	46	246	76	322	92.0
3	Negasa	290	-	-	-	33	-	33	46	14	60	-	-	-	79	14	93	32.0
	Total	1045	305	74	379	62	5	67	80	67	127	46	-	46	493	146	639	61.1

Source: G/Gida Woreda workers and social affairs office

NB: the figure 1045 includes not only those of the sample farmers, but also all young farmers living in the study area.

As indicated in table 4.17, out of the total young farmers living in the study area, 639 (61.1%) of them are involving in activities other than farming due to lack of farm land. These people were a strong productive work force had they been supplied with enough farm lands.

With regard to the family members of the sample households, only 45.3% of the male headed and 49% of the female headed family members are participating in farming. In sum, out of the total family members of the sample households, only 45.57 % of them are participating in the main occupation of the household (i.e. farming). Others are either in school or in other activities other than the main occupation. Table 4:19 illustrates this fact.

Table 4.22: Family members participating in farming

Type of household	*Total Family Members*			*Family members participating in farming activities*			
	M	F	T	M	F	T	%
Male headed	327	333	660	151	148	299	45.3
Female headed	24	27	51	11	14	25	49.0
Total	351	360	711	162	162	324	45.57

Source: Household Survey.

4.4.9 Lack of participation of farmers

In principle, one of the basic objectives of the ongoing agricultural extension approach (PADETES) is true participation of farmers in planning, monitoring and evaluation, and in other activities related to the program.

In the study area, farmers reported that they have never participated in any type of extension related activities. Out of the total sample households interviewed, none of them reported that they have participated in designing, planning, monitoring and evaluation of extension related activities. The farmers are not so far considered in the decision making process of technology generation and transfer. As mentioned in the problem statement of this paper, the farmers are expected to accept and adopt whatever technologies generated and recommended by the research institutions. None of them have invited to attend any type of program session in order to express their needs and interests, and this indicates that there is a problem with the program in relation to farmers' participation.

All these problems are affecting the performance of the ongoing agricultural extension services and limiting the farmers not to be properly benefited from the program.

Discussion with key informants, focus groups, agricultural development staffs, farmers and DAs helped the researcher to identify many other constraints. Accordingly, the major constraints are presented as follows.

Box 4.1 Major problems identified by focus groups and farmers

1. Input price- The prices of fertilizer and improved seeds are extremely going beyond the purchasing capacity of farmers.

2. Low commitment of DAs- Development Agents are lacking motivation to support farmers.They are claiming to be woreda staffs and they commonly appear on public meetings and pass messages as guest. Instead of working closely with farmers and giving advices and technical supports, they instruct farmers to apply and follow their rules.

3. Decrease in soil fertility –Crop lands in the study area are not producing even the optimum yield. Though inputs are added, they are not producing the required amount.

4. Low quality of inputs- Improved seeds (especially maize) are broken and not properly germinate. If they germinate, they do not produce good yield.

5. Shortage of inputs- Supply of improved seeds is very limited. Though prices are high, farmers are demanding seeds, but they do not get them on time and in a required amount. Seeds are low both in quality and quantity.

6. Lack of training to farmers- Farmers are not getting technical training to improve their skills and to increase their productivity Rather, all the training being given to farmers revolve around political issues like good governance and democracy.

7. Change in weather condition- The current weather condition is different from the very beginning of the program. The rain starts very late and stops very early. Whenever there is a loss due to weather condition, farmers are forced to pay their loans without considering the loss.

8. Discrimination between farmers- The better-off farmers are targeted in extension services, the poor, women, and the youth are not considered.

9. Shortage of farm land- Many of the farmers do not have farm land as they are sharing it with their family members. There is high population density in the study area because the area is at the vicinity of big town, Nekemte, and there is high expansion of private investment activities.
10. Lack of credit- farmers are demanding credit for farm oxen. But no credit system was arranged for this purpose.

Table 4:23 Constraints against respondents matrix.

Issues	Focus Groups	Key informants	ARD office staffs	Household survey
Prices of Inputs	Price of fertilizer is going beyond our capacity. Why the government kept silent not to do something?	It is really amazing; we don't know why the government kept silent not to solve the problem. This is a serious issue.	The problem is really serious. It is pushing the farmers to withdraw from the Program.	Because of price of inputs, we are going to stop participating to the program.
Commitment of DAs to support farmers.	We see DAs only on public meeting days. No support of DAs as that of the early days.	DAs are simply eating Government's salary. They are not properly serving the farmers.	Because they improved their educational standard, DAs are complaining to become members of woreda staff. We are trying to solve the problem.	We see DAs only during public meeting days. During the early days, DAs were serving us passing overnight with us. we never see them as externals.
Shortage of inputs.	Due to lack of Improved seeds, we are using local seeds. The government has to think over it.	Why is the government unable to multiply improved seeds in a large quantity?	The problem is obvious, we asked zonal office so many times, the problem still not solved, it is with government.	Without supply of Improved seeds, how can we increase production? Where is the goverment supplying us with seeds.
Lack of demonstration and training	No demonstration and training since long years All the training focus on other issues these days.	No crop development training since 3 years, now days, all trainings revolve around political issues.	No crop development training for both farmers and DAs, we are giving training on policies and strategies of the gov't .	No crop development training & demonstration session since 3 years, they left us as if we are graduated in all matters.

Lack of credit service	We need credit for many purposes, but no credit these days.	Except for fertilizer and improved seed, no credit at all for other purposes.	Farmers are demanding credit for many purposes, but this is beyond our mandate.	We are demanding credit for farm oxen, but the government denied not to give us such credit
Size of land holding.	Our land holding size is very small. We asked the government before 3 years, but we are told that there is no land.	The land holding of our farmers is very small. They are sharing it to their children. We asked the government, but there was no positive response	Yes, we know that there is shortage of land. There is no extra land at highlands. No body is voluntary to go to the low land area.	We can say we have no land at all, we are sharing it for our children, some years ago, we asked the government and we are asked to go to the low land.
Soil fertility	Our land is becoming less fertile than ever. Professionals could not give solution, they are advising more input.	The soil is becoming less fertile than ever, farmers are asking solutions, except recommending fertilizer, there was no solution so far.	The land is becoming less fertile due to high rainfall of the woreda, we are trying to reclaim it with lime.	Our farm land is becoming less and less fertile, it is demanding high fertilizer rate. but we have no capacity to add more.
Shortage of labor	Most of the work force is either in school or in non-productive sector. Only the old people were left in farming.	The millennium work force is the old one. Many young farmers are participating in instant income generating activities seeking daily income.	Due to large investment of the day, many of the young farmers are seeking employment. Others are organized on micro activities based on the policy of the government.	As we are at the vicinity of big town, most of the young farmers are going to areas where they get daily work to get daily income. Others are in school and others are in off farm work.

Chapter five: Conclusion and recommendation

5.1 Conclusion

This micro level study tried to investigate the determinants of the ongoing agricultural extension services in Guto Gida woreda. The study attempted to identify major constraints and problems of the existing agricultural extension services in relation to crop extension package program.

Different extension approaches employed in this country since the imperial period. Yet none of the approaches have been exempted from problems. The existing agricultural extension system is also facing similar problems. It does not give much attention to the local problems of farmers except advocating the use of modern technologies and practices.

Among the many challenges and constraints, high prices of technologies, low motivation and commitment of development agents, limited and delayed supply of inputs, shortage and low productivity of farm lands, absence of training for both extension personnel and farmers, involvement of extension agents in non-extensional activities, poor soil fertility, lack of credit, and shortage of farm labor were identified as the major constraints challenging the existing agricultural extension approach in the study area.

Besides, farmers do not get a strong support that enhances their active involvement in activities related to field visits, demonstrations and group discussions. There is also no linkage and joint monitoring and evaluation works among research institutions, extension service providers and users in order to solve the problems of farmers.

Prices of inputs are highly escalating to the extent that farmers could not purchase them. To the contrast, fertility of the soil in the study area is highly depleting to the extent that it cannot produce any yield. As a

result, the farmers are suffering a lot to reconcile these contradicting issues.

Extension agents, who were trained with scarce resources of the country and placed in rural areas to support farmers, are not properly supporting them in all matters of extension activities. Rather they prefer to involve in non- extensional activities like political and administrative issues that lowers their trust and involvement in extension services. Except few, majority of the development agents assigned in the woreda to live in rural kebeles (development sites) are not living in their sites. Rather they are living in towns forgetting the objectives for which they were trained for, and the promise they entered to support the farming community by living in between them. They have no commitment; they have no on job training, and they have no demonstration materials to demonstrate new practices to farmers. They have no transportation facilities. They always walk on foot to go to their sites and back to their home. This is adversely affecting the effective technical service delivery of DAs.

More over, one of the means by which service is ought to be delivered to rural people is construction of DA houses in rural settings. The objective is to help farmers get technical supports and advice in nearby distances. Based on this objective, sixteen DA houses were built in the woreda by the scarce budget the government allotted to serve the purpose. However, as indicated in chapter four of this paper, 62.5% of the DA houses are not giving service and standing empty getting too old as they have no regular service and maintenance. As a result, farmers are not properly getting the desired professional and technical supports from the extension agents assigned in the area.

The existing agricultural extension approach is being constrained with various factors. Absence of extension support, high prices of technologies, provision of limited types of technologies, shortage of land

size and low productivity, low commitment of DAs, absence of demonstration and insignificant training activities coupled with weather change are the major factors that challenge the performance of the current agricultural extension approach in the study area.

Farmers are strongly demanding different credit facilities like credit for farm oxen and other farm implements. But the credit facilities available these days are only for fertilizer and improved seeds. Though that is true, the prices of fertilizer and improved seeds are still becoming unaffordable for the farmers.

Training and demonstrations, the strategies considered to be the basic principles of the ongoing agricultural extension approach, do not exist in the study area and this clearly indicates that the objectives of the program were not achieved and the system is not well understood and contextualized by the development agents as well as the woreda ARD office staffs. Thus, the study revealed that PADETES could not achieve its objectives in the study area and hence the overall performance of the existing agricultural extension approach is not better than the conventional one.

In conclusion, in order to overcome the major implementation problems and to attain the food self sufficiency objective, and hence, to improve the life quality of the people, the following recommendations should be taken into account by implementing agencies.

5.2 Recommendations

In order to strengthen the overall performance of the ongoing agricultural extension services of the study area, the following are recommended based up on the major findings of this particular study.

A. Working on Inputs supply

Predominant inputs distributed on credit under the existing agricultural extension approach, PADETES, in the area are chemical fertilizers and improved seed varieties of major cereal crops. In order to raise crop productivity, policy makers and implementing agencies should take the following into account:

- Fertilizer marketing should be open for different wholesalers. The regional government should invite different importers and distributors of fertilizers instead of giving a monopoly to cooperative unions.
- To improve the distribution systems, small local traders should be given access to credit and should be involved in the retailing of fertilizer.
- Shortage of seeds should be alleviated by encouraging private producers and distributors instead of depending on Ethiopian Seed Enterprise as the only source of seed supply.

B. Working on Input prices

One of the major challenges to the ongoing agricultural extension approach is related to prices of inputs. Farmers are using below the recommended rate because of inputs prices. Prices are going beyond the capacity of smallholder farmers to the extent that they could not purchase them. This implies that it has a potential danger for farmers not to use them totally and also impose them to exclude themselves from

participating to the programs, and hence to return back to the traditional way of farming which has a serious negative impact on the basic objectives of PADETES, i.e. food self sufficiency and betterment in life quality of the people. To alleviate this problem, the government has to take the following into consideration.

- Since a good majority of smallholder farmers could not afford the current prices of fertilizers, the government should arrange mechanisms to solve the problem in order to encourage farmers' participation in the PADETES.
- It should have to give top priority and due attention to support farmers in a form of subsidy or other forms.
- Though there is an initiation to use natural fertilizer (compost), the technology is not yet well adopted by all farmers as it is new to them. Hence, the government has to strengthen the already initiated use of natural fertilizer and promote this technology to a large scale as it is very friendly to the soil and to the environment.

C. Working on Input credit

The problems related to credit services include limited availability of credit to be extended to farmers, rigged repayment schedule, high interest rate, and none-conducive administrative enforcements. Improvements that should be made on these issues are:

- Input credit sales should be available for a number of agents who can supply with possible least price.
- Repayment schedule should be relaxed to allow farmers to sell their products at relatively better prices to be able to repay the credit and remain with some benefits driven from the PADETES.
- The present 10% interest rate is not easily affordable by majority of the farmers. Thus conducive loaning system should be developed and institutions like rural banks and service cooperatives should be

restructured, strengthened and expanded with objective of involving in the provision of input loans with reasonable interest rate for the poor majority of farmers.

- Suspending of the input credit for the current crop season, which is widely used in the area as an administrative enforcement against delaying repayments, has greatly affected the participation of farmers in the PADETES. In order to encourage farmers' participation and attain sustainable increase in production, it is advisable that input credit should be allowed based on the willingness of farmers to incur additional interest without requiring repayment of all the previous credit.

D. Working on Extension personnel

The most popular extension personnel in the face to face communication with farmers are the DAs. The problems associated with the extension services of DAs emanates from the lack of interest and motivation. To improve the overall services of extension personnel, the following consideration should be taken into account.

- At the initial recruitment of extension agents, priority should be given to those competitors coming from the rural areas as much as possible.
- The initial recruitment should be based on academic criteria and merit system, not on ideological and political orientations.
- DAs should work hard to bring desirable behavioral changes among target groups. They must also be capable of giving farmers practical field demonstrations of appropriate improved practices and advise them on the sources of credit.
- Short term trainings and other refreshment courses should be given to DAs to upgrade their present skills, to develop practical knowledge on agricultural technologies, extension methods, ethics, and good

behavior and attitude, and communication skills to work with farmers. These could be fulfilled through organizing and facilitating on job training, exposure visits within and outside the woreda, and fulfilling demonstration materials.

- DAs should be provided with incentives such as housing facilities, transportation facilities, and other allowances.
- Giving unnecessary power to kebele administration leaders to the extent that they can control DAs is disappointing the DAs and creating a conflict between them. Therefore, the concerned woreda officials have to try to resolve this problem and create a means by which these two groups smoothly work together.
- The placement of DAs in non-agricultural offices and the involvement of extension workers in non-extensional activities negatively affect the service to be given to the rural farming communities. So there should be discrimination between extension work and any other type of work. Extension work should not be mixed up with any political or administrative activities.
- If there is a need to upgrade DAs based on their work performance (technical efficiencies), they should have to be upgraded in line with their profession and upward within their initial organization.
- The strategy of placing 3 DAs (from different disciplines) in each kebele is in effect in the study area in many kebeles, and it should be strengthened. However, there are no DAs with profession in animal health, but the farmers are demanding animal health technicians. So, the government has to divert its attention toward this profession and expand the number of these professionals in order to satisfy the need of the farmers.

E. Working on the linkage between Research-Extension and farmers

Available technologies are selected at a national level to be transferred to the users. These practices promote the top-down approach which opposes the basic principles of PADETES. For the effective technology dissemination process, the real participation of farmers should be considered. Farmers' participation and recommendation should be taken into account in research and extension. Extension work should be supported by research and should accommodate farmers' preferences.

F. Strengthening Farmer's Demonstrations, Training, and education

Among the major objectives of PADETES, demonstration and training are the strategies believed to be the basic tenets. Nevertheless, there were no organized demonstration sessions in the study area since long. Thus, the role that demonstration and training can play should be recognized by and shared among stakeholders of the program. Demonstrations and training should be conducted on best local practices and technologies to further promote the understanding of farmers. It should also be participative to include women, youth and poor farmers.

Through education and training, farmers can be introduced to new ideas and innovations about the different farming methods. Extension, being a process of developing farmers' problem solving capacity, can be effective if accommodated by education and training programs that will help address people's felt-needs. So, education and training should be given to farmers in order to play that role.

Currently, there is a plan by the government to train all farmers to create an educated one that adopts technologies easily. Based on this objective, six Farmers Training Centers (FTCs) were constructed in the area to serve the purpose. However, during the survey time, none of these

centers were giving services. According to the DAs, there are no training and demonstration materials in the center to begin with. So, the government should fill the necessary materials, equipments and budget through the government in order to realize this objective.

G. Diversifying Credit Services

Tying credit to fertilizer packages undermines farmers' ability to prioritize their needs. Farmers need credit to rent land, to buy farm oxen, to hire labor for weeding and harvesting, to buy seeds, etc. Farmers can effectively use the fertilizer credit if they have access to land, oxen, or labor. Therefore, a more flexible credit system is needed to meet the multi-faceted problems farmers are facing. Government credit alone will not be enough to address the growing credit needs of the rural people. The participation of the private sector and other NGOs is also essential. Government actions focusing on rural banks, cooperatives and credit and saving institutions can increase farmers' access to a need-based credit rather than the current restrictive input-based credit arrangement.

Different options and opportunities should be assessed in this regard. For example, registered service co-operatives and co-operative unions should provide such credit schemes for their members.

E. Working on young farmers

About 61% of young farmers living in the study area are grouped and organized to work on non-agricultural activities. Many of them are organized on digging and selling stones. But these resources may be exhausted (depleted) at one point in time. So, agencies working on this area should take this reality into account and organize them on sustainable activities such as agriculture (e.g. rearing small ruminants).

The implementation process of the program in the area could be enhanced if the recommended measures are taken into account. The success of the program in turn will increase food productivity leading to better life quality of the people.

F. True participation of farmers

Coming to the extent of farmers' participation, there are still a lot to be done. Each farmer needs to be encouraged and fully supported to involve in the planning and implementation process of the program. They should be asked to participate in the evaluation of the strengths and weakness of the program. They should have to involve in planning and evaluation and also given a full right to voice out their needs, wants, interests and problems.

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Annexes

Annex-1 Household Questionnaire

Instructions for enumerators

- Great farmers who you meet in the local way
- Pass words of thanks for their coming
- Make brief introduction about your self to each farmer before starting the interviews, and get his or her name.
- Tell them the purpose and objective of your study clearly.
- Try to avoid any expectations.
- Ask each question so clearly and patiently until the farmer understands.
- Fill up the schedule according to the farmers' reply (don't put your own opinion)
- Do not try to use technical terms while discussing with farmers.
- Pass your appreciation and thanks at the end of the interview for the relevant information they have delivered and the time they spent with you.
- Circle the appropriate number for all alternative answers on filling the questionnaire.
- Fill the blank spaces with appropriate number (value).
- Use only pencil to fill the questionnair

Household Questionnaire

This questionnaire is designed to collect data for the study titled " Performance of the current agricultural extension services in food crop packages. The case of Guto Gida woreda.

Good morning/afternoon. My name is ____ I am working in a research team conducted by _____ and we are now conducting a survey in selected kebeles of Guto Gida woreda to assess the current agricultural extension services. You have been chosen to participate in this study because you are participating in the program since many years, and you will help us by answering the questions we ask you. We assure that whatever answers you give us are kept strictly secret. The interview may take approximately_____ minutes. If you have question you can ask me. Thank you.

Kebele: _____Village name _____ Household Identification number _____ Date of interview _____ Name of enumerator _____ Signature _____

Name of supervisor _____ Signature _____

Part One: Basic Information

The main objective of this part is to look into the demographic and social characteristics of the household (01-09).

01. Name of the household head (including grand father) _____

02. Sex: 1.Male 2.Female 03. Age_____

04. Religion: 1.Protestant 2.Catholic 3. Orthodox 4.Muslim 5.Others (specify)

05. Marital status: 1.Single 2.Married 3.Divorced 4. Widowed.

06. Total household size: Male_____ Female _____ Total _____

07. Education level: **1**. Illiterate **2**.Read and write **3**.1-4 **4**. 5-8 **5**.9-12

08. Type of house: 1. Corrugated 2. Non-corrugated.

09. Number of family members participating on farming: M F T

Part Two: Household Assets (10-12)

Objective - to look at the land holding, livestock holding and other farming characteristics of the HH.

10. Land holding in hectare: Total size_____ Cultivated _____

11. Major Crops and land allocated to them in the year 1999/2000EC.

Major Crops										
Land Size(ha)										

12. Indicate which of the following assets you have.

12.1 Livestock

L.S	Ox	Cow	Bull	Heifer	Calves	Sheep	Goat	Mule	Horse	Donkey	Chicken		Bee hives	
											Imp	Loc	Trad	Mod
№														

12.2 Furniture and household goods

Furniture	Bed	Mattress	Chairs	Shelf	Table	Buffet	Others(Specify)
Number							

12.3 Other durable goods

Goods	Jewellery	Radio	Tape	Television	Hand Watch	Others(Specify)
Number						

12.4 Farm Implements

Implements	Mofer	Kenber	Maresha	Doma	Akafa	Metrebia	Gejera	Machid
Number								

Part Three: General information about agricultural extension services.

Objective - to look at the performance of the current agricultural extension services. (13-36)

13. When did you started to participate in extension package program? _____ E.C.
14. Who informed you about the program? 1. My neighbor 2. Development agent
    3. Kebele Administration 4. Woreda Administration 5. Woreda Agricultural office
    6. Others (specify)
15. What was your feeling in the very beginning of the program?
    1. I didn't give any attention to the program.
    2. I was very much eager to be the primary user of the program.
    3. I was decided to be neutral till I see the impact of the program on others.
    4. Others (specify).
16. By what type of crop did you started the program? 1. Maize 2.Sorghum 3.Teff
    4. Others (specify)
17. How much land (in ha) did you used at the very beginning? 1. Quarter 2. Half
    3. One 4. One and a half 5. Two 6. More than two.
18. What type of inputs in kg (for maize plot) did you used at the beginning?
    Seed _____ DAP_____ UREA _____ Pesticide ____ Herbicide (lit)
19. What was the recommended rate of inputs per hectare (for maize) during that time?
    1. Fertilizer: DAP___kg UREA___kg. 2. Improved seed___kg 3. Pesticide_ kg.
    4. Herbicide_ __lit.
20. How much yield of maize did you get from a heerare?_____ kg.
21. Are there DAs in your village in those days? 1. Yes 2. No
22. If yes, how was their technical assistance that day? 1. Good 2. Not good.
23. If not good, who assisted you in adopting technologies? 1. Neighbor 2. Kebele
    Administrators 3. Woreda agricultural office 4. Others
24. How was the technical assistance of Woreda agricultural staff members? 1. Good
    2. Not Good.

25. Are there DA houses in your village in those days? 1. Yes 2. No

26. If no, where did they used to live? 1. Renting from individuals in the Kebele 2. Renting from Kebele Administration 3. Provided free by Kebeles(cooperatives) 4. In their own houses constructed 5. With their parents in the Kebele6. In nearby towns and frequently coming (visiting) 7. Other places

27. If yes, how is the today's service delivery of DAs as compared to that of the early days? 1. Very Good 2. Good 3. Poor 4. Very Poor

28. What features of the program strongly attracted your attention? 1. Increase in Output 2. High quality/ taste of product 3. Integrated supply of Inputs 4.Easy management or practices 5.Others

29. If the service of today is not good, what do you think is the reason?
1. Lack of commitment of DAs. 2. Change of government policy. 3. Absence of strong supervision for DAs. 4. Others (specify)

30. Are there DAs in your locality today? 1. Yes 2. No

31. If yes, in what way do you contact with them?
1. Through Social meeting. 2. Through farm visit. 3. Field days and demonstrations 4. Formally organized extension meeting 5. Home visit 6. Others (specify).

32. How do you see the today's extension services? 1. Good 2. Bad 3. Indifferent

33. Are there DA houses in your locality today? 1. Yes 2. No

34. If yes, are DAs living in the house today? 1. Yes 2. No

35. If no, where do they live? 1. Renting from individuals in the Kebele 2. Renting from Kebele Administration 3. Provided free by Kebeles 4. In their own houses constructed 5. With their parents in the Kebele 6. In nearby towns and frequently coming 7. Other places (specify)

36. If they are not living in DA houses, what do you think is the reason behind?
1. It is too old to give service today 2. DAs are not willing to live in the house.
3. The house is not constructed in the middle of the kebele.

Part Four: Productivity of the current extension program. (37-47)

The main objective of this part is to see how far the current extension package program is productive

37. What about the yield of maize you obtained last year (1999 EC)?

Crop	Area in ha.	Inputs Used (If not used write 0)						Yield in kg
		Fertilizer (kg)		Seeds (kg)		Chemicals (lit)		
		DAP	UREA	Improved	Local	Pesticides	Herbicides	

38. Is there any change in output as compared to the early beginning of the program?
    1. Yes 2. No
39. If yes, how is the change? 1. Very high 2. Very low 3. Slightly higher 4.Slightly lower 5. Others (specify)
40. If the productivity was higher during the early days than the current days, what were the good conditions in those days?
    1. Technical assistance of DAs was very good. 2. Supply of inputs and services was very good 3. Credit availability was very good.4. Rate of application of inputs wa very good. 5. Prices of inputs were good. 6. Others (specify)
41. If the change is higher during the current years than the early days, what are the good conditions today?
    1. Technical assistance of DAs was very good. 2. Supply of inputs and services was very good 3. Credit availability was very good. 4. Rate of application of inputs was very good. 5. Prices of inputs were good. 6. Others (specify)
42. How many times did the DAs visit you during the last six months?
43. Who frequently comes and discuss with you about the current extension program?
    1. My neighbor 2. DAs 3. Kebele Administrators 4.Woreda agricultural office staffs 5. Woreda administrators. 6. Others (specify).
44. What are the most important activities of extension workers of this area? 1.Introduction of modern inputs. 2. Introduction of new practices. 3. Organize farmers for credit access 4. Organize farmers for public work 5. Assist in credit repayment 6. Assist in tax collection.
45. If the current extension program continues, would you like to participate? 1.Yes2.No
46. If yes, what would be your reasons according to importance? 1. To get fertilizer at right time 2. To get fertilizer at lower price 3. To get improved seeds 4. To learn about new technologies
47. If no, what would be your reasons? 1. Can not afford the cash for down payment 2. Don't believe the package is profitable 3. No appropriate land for the package 4. No enough land for the package 5. Others (specify)

Part Five: Input Use

Objective - to look at the supply and use of modern agricultural inputs. (48-70)

48. What are the sources of inputs in your locality? 1. Agricultural Offices 2. Farmers' Cooperatives 3.Dealers owned by regional governments 4. Private dealers 5. Dealers owned by central governments 6.others (specify)

49. Who/what influenced your decision to use modern inputs? 1. Encouraged by DAs 2. Encouraged by friends/neighbors/relatives 3.Observing earlier adopters 4. Price of outputs at the market 5. NGOs 6.Media (Radio) 7. Participation of other farmers 8. Other reasons (specify

50. Who taught you the skills needed to use modern inputs? 1. Parents Relatives/Friends 2. Development Agents 3. Observing Others 4. Learnt at school 5.Training courses 6. Trader explained how to use 7. No skill needed8.Others (specify)

51. Which input would you like to continue to use, if you have to buy every thing on a cash basis? 1. Fertilizer 2. Improved Seeds 3. Local Seeds 4. Pesticides 5. Herbicides

52. If you are using fertilizer, what is the reason to use it? 1. Forced by government 2. It increases production 4. Others (specify)

53. How much fertilizer do you use for 1 ha of land for maize crop? DAP_ kg UREA KG

54. What are the reasons not to use it based on the recommended rate? 1. Lack of capacity to purchase 2. Limited supply 3. Delayance 4. Use of large quantities decrease production

55. If you are not using fertilizer, what are the reasons? 1. No profitability 2. Too expensive 3. Lack of cash 4. High payment rate 5. Not available 6. Not suitable for the environment.

56. Do you think that your crop production and productivity increase by application of fertilizer? 1. Yes 2. No

57. If yes, to what extent your Maize production increased after the introduction of fertilizer? 1. With fertilizer __kg 2. Without fertilizer kg.

58. Have you used improved seeds in the past three years? 1. Yes 2. No

59. If yes, what are the sources of seed? 1. Own seed. 2. Purchased seeds. 3.Others.

60. What are the reasons to use improved seeds? 1. Obliged by government.2. Gives more production. 3. Others (specify).

61. How much improved seed of maize do use for 1 ha of land? kg.

62. What are the reasons not to use based on the recommended rate? 1. Lack of capacity to Purchase 2. Limited supply 3. Delayance 4. Use of large quantities decrease production 5. Others

63. What kinds of seeds mostly used? 1. Improved. 2. Local seeds. 3. Mix of local and improved seeds.
64. If you are not using improved seeds, what are the reasons?
    1. No difference from local variety. 2. Poor quality. 3. High price.
    4. Vulnerable to disease. 5. The climate is not suitable. 6. Others (Specify).
65. Do you think that the supplies of improved seeds are adequate? 1. Yes 2. No.
66. If no, what are the major reasons? ----------
67. Do you think that your crop production and productivity increase by application of improved seeds? 1. Yes 2. No
68. If yes, to what extent your maize production increased after the introduction of improved seeds? 1. with improved seeds_____kg. 2. without improved seed____ kg.
69. In general, have you ever faced problems associated with input supply? 1. Yes 2. No
70. If yes, what are the major problems? 1.Late arrival, 2.Poor quality, 3.Under weight, 4.Shortage of supply, 5.High price. 6.Lack of credit. 7.Others (Specify)

Part six: Participation of farmers

Objective -to asses the overall efforts of farmers on the planning and implementation process of the current Extension program. (71-78)

71. Are you invited to different occasions like meeting, field visit and demonstration?
    1. Yes 2.No
72. In those different occasions, have you got a chance to express your views about the program? 1. Yes 2. No
73. If yes, have you expressed your idea? 1. Yes 2. No
74. If no, what is the reason? 1. I am not always encouraged to express my view.
    2. Assuming that expressing my idea can not bring any change.
    3. The chairman was not willing to express my view.4. Others (specify).
75. Have you participated in the planning process of the current extension program?
    1. Yes 2. No
76. If yes, what was your role during this time?
    1. I was asked to explain my real problems, needs and interests of crop production. 2. I was one of the committee members. 3. Others (specify).

77. How do you evaluate your participation and support given to you on the following activities? 1. Very strong 2.Strong 3.Medium 4.Weak 5.others (specify)

78. What about the extent of your participation to decide up on the selection of technologies? 1. Very High 2.High 3.Medium 4. Poor 5.others (specify)

Part Seven: Training Objective - to asses how far the current extension program gives emphasis for farmers training.(79-83)

79. Have you received any crop development extension training during the last 3 years?

1. Yes 2. No

80. If yes, how long it was? 1. Less than one week. 2. One week. 3. Two weeks. 4. One month. 5. Three months. 6. Others (specify)

81. Who facilitated the training for you? 1. Agricultural office. 2. NGO 3. Others (specify)

82. If you were trained, indicate the type of training. 1. Fertilizer application 2.Chemicals application 3.Credit and saving 4. Farmers' cooperative 5. Storage 6. Harvesting 7. Transportation of crops 8. Weeding 9. Planting 10. Irrigation 11. Others (specify)

83. How did you get the training? 1. Good 2. No difference 3. Not important

Part eight: Credit Services

Objective- To see how far the farmers are beneficiaries of credit services (84-95).

84. Have you received credit for the last three years? 1. Yes 2. No

85. If yes, indicate the amount by the purpose and source.

Type of Credit	Amount	Source
1. Fertilizer		
2. Improved seed		
3. Pesticide		
4. Herbicide		
5. Others Specify)		

86. If you are getting agricultural inputs on credit, what is the condition of interest rate during the past three years? 1.Very high 2.High. 3.Moderate. 4. Low. 5. Very low

87. If it is very high, what is your alternative source of credit?

1. Borrowing from relatives/friends.2. Borrowing from informal money lenders.
3. Renting out land. 4. Selling Cattle. 5. Selling Small Ruminants.

88. Have you ever faced problems associated with credit repayment? 1. Yes 2. No

89. If yes, what are the major problems? 1. Crop failure 2. Low price of agricultural products. 3. No flexible schedule of repayment.4. Others (specify).

90. What are the sources of repayment of your loans? 1. from non farm income. 2.selling grains. 3. Selling Cattle. 4. Selling small ruminants. 5. Others (specify).

91. If you are not repaying your loan on time for any reason, what measures taken by the credit institution? 1. Repayment collection by coercive measures. 2. Suspending the credit for the next crop season. 3. Taking to courts. 4. Others (Specify).

92. If you are not repaid your loans, what are the reasons?

1. Low output price. 2. The money spent for unproductive purpose.
3. Crop failure/livestock loss due to natural calamities. 4. Others (specify).

93. If you are not using credit, what is the reason?

1. Sufficient own fund. 2. High interest rate. 3. Unable to get.
4. Fear of repayment. 5. Tedious process. 6. Others (specify).

94. What alternative methods do you have for credit repayment in case of crop failure or market problems? 1. Borrowing from relatives/friends. 2. Borrowing from informal money lenders. 3. Renting out land. 4. Others (specify).

95. In general, do you think that the current agricultural extension service is effective as desired? 1. Yes 2.No.

THANK YOU!

GOD BLESSES YOU!

Annex-2 Check Lists

I. Points of discussion with ARD staff members and key informants

1. When did agricultural extension package started in this woreda and what were the objectives?
2. What are the major weaknesses and strengths of the program?
3. How did participant farmers selected?
4. Who are the major actors in the process of implementation of the extension program?
5. What are the basic techniques used for teaching farmers about the program?
6. What could be done in promoting and strengthening the participation of farmers?
7. Do agricultural office staffs know which information that the farmers raise can be useful for planning, implementation and evaluation of extension services?
8. What type of technologies appropriate to this area? Why?
8. What should be done to strengthen the participation of the woreda farmers?
9. Discuss the status of extension agent and farmers relation?
10. What are the major problems for the success of extension services?
11. What are the major problems that influence the adoption of technology?
12. Did farmers use inputs based on the recommended rate? If not, why?
13. Describe the main sources of inputs in this area.
14. What criteria are needed to get these inputs?
15. Describe the type of action taken on farmers that could not repay the loans either due to crop failure or due to any other problem?

II. Focus Group discussion

1. How do you see the overall performance of the ongoing agricultural extensio services?
2. What are the main internal and external problems that are challenging the ongoing agriculture extension services?
3. What are the basic changes observed in life of farmers after the implementation of the program?

4. Is there a climate that stimulates farmers to raise their ideas about the existing agricultural extension services, and perhaps to disagree with extension agents and others when this is in the best interest of successful agricultural development?
5. Do participant farmers are really benefiting from the program in relation to:
   A. Quality and Quantity of their feeding habits? B. Types of their houses (Corrugated, Cemented, Plastered, etc) C. Dressing styles (shoes, hand watches and other urban styles of dressing)?
6. How do you see the living conditions of participant farmers as compared to non-participants?
7. Are there problems of communication with farmers of the area in relation to the implementation of the program?
8. What are the major constraints of the ongoing extension services with particular emphasis to crop extension package services? The constraints could be in relation to labour, credit facilities, demonstrations, educational status of the farmer, readiness and knowledge of DAs, technologies etc.
9. What possible solutions can be taken to minimize these constraints?
10. Do you have any thing to suggest or comment on the overall performance of the existing extension services of the woreda?

III. Points of discussion with Peasant Association leaders.

1. Are the available technologies profitable in your locality?
2. Do you believe that farmers are actually participating in this package program?
3. To what extent farmers in this area involving in the agricultural extension package?
4. Did extension program contributed in alleviating the household food insecurity? How?
5. What are the major problems associated with adoption of technology?
4. How do you see the profitability of extension package program?
5. What intervention measures do you recommend to enhance the adoption of technology?

IV. Points of discussion with Extension agents

1. How long have you been working as agricultural extension agent?
2. What level of education do you have?
3. What are the sources of training and updating of technical skills?
4. What are the common tools of communication with farmers? Why?
5. Are you satisfied with your work?
6. How do you evaluate your performance? Do you think the performance measure increase your efficiency?
7. Describe the problems that undermine your performance, from your experience, in undertaking the program?
8. What do you think the perception of farmers about the extension program?
9. What are the contributions of extension program in alleviating the household food insufficiency?

V. Points of discussion with farmers.

1. How do you communicate with extension agents?
2. Do you believe that agricultural technologies increase production? How?
3. Did you take credit for purchasing agricultural inputs? How was the repayment and interest rate?
4. What are your sources of repayment? How do you repay when crop failure occurs?
5. How do you see the success of the following? Fertilizer, Improved seeds and Credit?

I, the undersigned, declare that the thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have be duly acknowledged.

Declared by:

Tesfa Chali

Candidate

Confirmed by:

Getnet Alemu

Advisor