IJCRSSL International Journal of Current Researches in Sciences, Social Sciences and Languages

Volume: 01 | Issue: 01 | 2020 | Open Access | Impact Factor: 4.625

# Relevance and Effectiveness of Farmer Training Centre's (Ftcs) Based Training in Gurewa District, East Hararghe Zone, Oromia Regional State, Ethiopia

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**Abstract:** Agriculture is the backbone of our country economic development strategy and the main source of livelihood in terms of employment, generating foreign currency and raw materials for industries. Farmer Training Centers (FTCs) was established as a means to develop human resource and enhance innovation needed to transform the sector to productive and market oriented system. The main purpose of this study was to analyze the relevance and effectiveness of FTCs in Gurawa woreda in terms of changes in knowledge, attitude and practical levels, and explore institutional linkages with of the FTCs. This study used cross-sectional survey method to obtain the necessary data in 2018/19 production season. The data was obtained from 120 (60 trained and 60 untrained) randomly selected respondents from 4 kebeles using probability proportion to size sampling method. In addition, KII, FGD, and review of available record at FTCs were used for data collection. For data analysis a combination of quantitative and qualitative methods were employed by using descriptive and inferential statistics to analysis the status, relevance, effectiveness, and linkage mechanisms of FTCs based trainings. As a key findings of the study, currently, 42 FTCs are found in Gurawa woreda, from these the proportion of fully functional, partially functional and non-functional types of FTCs for training was 8, 11 and 23 respectively. The current status of all sampled FTCs were show a discrepancy among themselves according to their availability of infrastructure facilities, human resource with experiences and management of FTCs for training. Relevance of FTCs were obtained based on the identifications of farmers' needs and constraints, content of training, training delivery methods, selection criteria of trainees and appropriateness of period, duration and schedules of trainings were vary among the sampled in the area. Effectiveness of FTCs were identified based on the obtained result of knowledge, attitude and practical assessment of trained and untrained farmers, their mean difference of trained farmers towards the given technologies and commodities were significantly higher than untrained farmers at 1%, 1%, and 5% (p=0.01,0.01 and 0.05) of probability level respectively. According to the linkage mechanisms, the public, private and NGOs was identified as a key actors for institutional linkages which are weak in the functioning of FTCs based training and also they are performing different from one FTCs to others. As a conclusion, the current status and performance of all sampled FTCs in Gurawa woreda was different when compared to each other's based on their actual results they achieved. So far no one of sampled FTCs has been conducted post evaluation to assess the feedback of the implemented activities on the situation of trained and untrained target groups of farmers. As a recommendation, the practical measures that can be taken at woreda level in particular to make the FTCs fully function and enhance their performance was to increase the relevance of the FTCs, the trainers will have to give more emphasis for proper training needs assessment, increases females participations, focus on practice based training rather than theoretical, selecting relevant content of training, make uses of indigenous knowledge, regular follow up and sharing of experience among the selected FTCs. To increase the effectiveness of FTCs and reducing the existences of disparities between trained and untrained farmers towards their knowledge, attitude and practical change of farmer's, the government should have to done a joint follow-up and regular evaluation of activity. For better functioning of FTCs, the linkage mechanisms should be strengthen with different institutional actors. Lastly, beside this, policies and strategies of the government should give due emphasis for improving the status and potential of selected FTCs in the area.

**Keywords:** FTCs, Status, Relevance, Effectiveness, Institutions, Linkage.

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## INTRODUCTION

As agriculture is the backbone of the Ethiopian economy, Agricultural Development Led Industrialization (ADLI) strategy has been devised by the Federal Democratic Republic of Ethiopia based on which, the resources required for the expansion of the industry and other development sectors of the country can be obtained when agriculture's output and productivity reliably grow. To this end, the governments is implementing a development strategy with the aim of changing the backward farm practices of the majority of small farmers and improve their living standards by boosting farm outputs and productivity as well as to bring a sustainable economic growth in the country. One of the directions in the implementation of the development strategy is the establishment of agricultural technical and vocational training colleges that train and provide skilled professionals who are assigned to work closely with farmers. The second direction of the development strategy is the establishment and organization of farmers' training centers to provide training to farmers by the professionals that graduate from the colleges (MoARD, 2009). The main reason for establishing FTCs is to produce skilled farmers that can transform the country's agricultural production from subsistence to market oriented production system, bring a sustainable economic growth by raising the sector's output and productivity. Thus, the main duty of FTCs is to deliver extension service and provide training which is not only limited training on transfer of knowledge, insufficient resources for FTCs but also making the farmer market oriented and there by produce better quantity and quality, i.e., to develop market-driven production system. The training should be based on the need and priorities of the rural community. It should be provided during the slack period of the year and in the farmers' village, provided based on convenient time and place selected by the farmer capable of providing the farmer with the relevant agricultural skill/ knowledge (MoA, 2017).According to the study of Wuletaw (2014), the training programs must be shaped to meet the needs of the farmers. Identifying and meeting the needs of the particular community requires trainers familiar with and acceptable to the people among whom they work. Among the reasons for the rural households to live in poverty is lack of knowledge and skill on improved farming and poor utilization of new technologies, and there by lack of improvement in agricultural production and productivity. Therefore, agricultural change and development require the mobilization of human resources through means such as education and technical training. Agricultural education and training are key elements in the whole process of agricultural change and the achievement of rising levels of rural prosperity. It can function effectively only if the national system of education as a whole is geared effectively to the needs of development. Agricultural education and training can succeed in their objectives only when integrated into an overall development programs (Seyoum, 2013). In Ethiopia, there is limited access to modern agricultural knowledge and information by research, private sectors to farmers and other stakeholders. This has resulted to low use of improved technologies and information by end-users, which contributed to low agricultural production and productivity nationwide. Even if technologies are generated, they are often not available to most farmers due to lack of systematic, centralized technology development and dissemination mechanism. Inadequate consideration to farmers needs in research agenda setting and extension package development. As a result of this, there is complaint that technologies by research do not adequately consider farmers' demands in various locations and agro-ecologies (MOA, 2017).

The FTCs was expected to serve as hubs for playing an active role in linking farmers with other institutional support services such as input supply, credit, co-operative promotion, and agricultural produce marketing. To bring realistic transformation in agricultural extension service, farmers must be trained to improve their knowledge, attitude and practice change towards deciding in their own affairs, access to information about agricultural production technology, exposure to improved farming and living practices (Birhanu et al., 2006). Farmers are more likely to adopt new technologies and become more productive with the help of basic education and extension services. They will be better equipped to make more informed decisions for their lives and to be active participants in improving economic, social and political dimension of development. In particular, it is paramount important to reach rural youth who are

the farmers of the future and most of them start farming at a very early age. In rural areas, especially poor farmers, access to education is still much lower and the quality of non-formal education is poorer and often irrelevant to their lives (St. Mary, 2016).

Farmers training centers means a training and information institution that serve as focal point for agricultural development activities within a certain rural kebele administration and that provide various training to farmers (FAO, 2011). Training has also been defined as "a planned process to modify attitude, knowledge or skill behavior through learning experience to achieve effective performance in an activity or range of activities. Training need analysis can be done through various methods like surveys, questionnaires, observations. Effectiveness refers to a measure of the extent to which a training activity achieves its objectives, whether the intended changes in knowledge, skills and attitudes happened, whereas, relevance is concerned with the degree to which the rationale, objectives, and expected impact of a training activity are, or remain pertinent, valid and significant with regard to long-range objectives or identified priority needs and concerns (FAO, 2011).In the study of Raab et al., (2007), they define the training evaluation as "a systematic process of collecting information for and about a training activity which can then be used for guiding decision making and for assessing the relevance and effectiveness of various training components." This will lead to make improvements during designing future training efforts.Towards this end formal training was provided to farmers, based on a number of crops, livestock and natural resource management to increase their production and productivity. And thus, the government has launched potential development goals including modular training, extension and information service at FTC. Many efforts have been made by different organization to strengthen this program such as the training of extension agents, newly established and building FTCs (MoARD, 2008).In addition, in the study of Caffarela, (2002) the systematic processes of farmers training must include; selection of participants, training need assessment, goal and objective setting, organizing training techniques and exercises, and monitoring and evaluation. Although time has elapsed since the government launched FTC-based farmers training, assessment of the relevance and effectiveness of the training and explore the current state of institutional linkages and organizational aspects of FTCs in a specific context is rare. Hence, this study contributes towards addressing such a knowledge gap.

## LITERATURE REVIEW

## BASIC CONCEPT AND DEFINITION OF TRAINING

According to Burton (2000), training was defined as the process of providing knowledge, skills and bringing about desired changes in attitudes in order to improve the competence of people being trained. Van Dersal (2002) also defined training as the process of teaching, informing, or educating people so that (1) they may become as well qualified as possible to do their job, and (2) they become qualified to perform in positions of greater difficulty and responsibility. Training is a type of learning intervention that can improve workplace performance and facilitate the introduction of new job responsibilities by improving workers' knowledge, practical skills and attitudinal behaviors. Training is appropriate only when a performance gap is due to a lack of knowledge and skills. Because performance gaps often have multiple causes, the situation may require several integrated interventions. Farmers' participation on various areas of human resource development is a crucial tool to bring voluntary behavioral change (change in knowledge, attitude and practice). However, literature review indicated that majority of the farmers in rural area have not participated in most of useful trainings (Seyoum, 2013).Usually an organization facilitates the employees' learning through training so that their modified behavior contributes to the attainment of the organization's goals and objectives. Human Resource Development (HRD) is one of the many strategies in achieving the vision for development in any country. Training can be one of the best ways to develop human resources. It aims to develop people's potential and enable them to use this potential towards the achievement of their vision of self–reliance and self-sufficiency. It covers the development of peoples' knowledge, skill and attitude as they deal with their day-to-day life situation

(IIRR, 1997; Marissa, 1998).Farmer training is a type of an education that most often takes place outside formal learning institutions. It differs from education in schools because it is geared towards adult learning. Mature adults are self-directed and sufficient in most aspects of their lives. Adults tend to resent educators that fail to take this fact into account. They do not appreciate being talked down to or having their autonomy restricted in ways that show a lack of respect (Hassen and Amdissa, 1993).Filippo (1961) as cited in Burton et al., 2000) differentiated between educations and training, locating these at the two ends of a continuum of personnel development ranging from a general education to specific training. While training is concerned with those activities which are designed to improve human performance on the job that employees are at present doing or are being hired to do, education is concerned with increasing general knowledge and understanding of the total environment.

Education is the development of the human mind and it increases the powers of observation, analysis, integration, understanding, decision making, and adjustment to new situations. The goal of training is to improve behavioral change/ performance. Education also provides knowledge and skills and brings about changes in attitudes. However, training differs from education in a number of ways. Training is short term, narrowly focused and specific, usually designed to meet a specific needs and has immediate application. Whereas education is long term, broadly focused, and usually aimed at preparing people for the future (Youdeowei and Kwarteng, (1995).In addition, extension education is generally the main, if not the only means for farmers' education in developing countries and is a specialized form of the broader concept of adult education (Arnon, 1981 cited in Wuletaw M., 2014). Training is a prerequisite to decrease the complexity of the technology and used to disseminate knowledge and skill to the farming community. Moreover, field visit, tour and demonstration upgrade farmers' knowledge and skill.According to Seyoum, (2013) the basic philosophy of extension education is directed towards changing the outlook of man by educating him. Its primary aim is, therefore, to transform people by bringing about desired changes in their knowledge, attitudes and skills. Besides formal training, non-formal and informal learning opportunities are important in enhancing the capacity of farmers. Formal training is defined as any form of training for which the content and learning aims have been defined. This usually means training is based on well-defined curricula, either within or without an institution, with or without guidance from a teacher or trainer. On the other hand, informal training is any form of training for which the content and the learning aims are not defined. Hence, this encompasses on the job-training, traditional apprenticeships as well as self-organized learning. It includes any form of learning that happens "on the side", i.e. through activities whose primary aim is not learning (Wuletaw, 2014).The effect of formal (any form of training for which the content and learning aims have been defined) and informal training (any form of training for which the content and learning aims have not been defined) on farmers income levels have long been analyzed in economics literature. Specifically, Anderson (1997) suggests that education and training are essential for managing and promoting the changes that farmers are to be sustainable. Similarly, Kilpatrick (1997) showed that farm businesses with managers who had participated in more education and training is more profitable. Similarly awareness of possible innovations through mass media and contacts with expert advisers is proved to be leading superior outcomes (Tesfaye, 2006).The basic definition of evaluation is a process to determine the relevance, effectiveness and impact of activities in light of their objectives (Raab et al 1987 cited in Wuletaw, 2014). And also they defined the term of training evaluation as " a systematic process of collecting information for and about a training activity, which can then be used for guiding decision making and for assessing the relevance and effectiveness of various training components". Evaluation is about assessing the effectiveness of the various aspects of training. It is an interactive and systematic process of investigating the value and quality of a program in which various stages of training are appraised from the viewpoint of their adequacy and contribution to achieve the training objectives. To make the training process effective, the stages and the sub- stages of the cycle of training should be treated in the way that makes them productive and fruitful. Analysis of the various aspects of training should be undertaken by organizations, stakeholders, and beneficiaries.

Thus, deciding on what and how to evaluate and by who are critical parts of the evaluation process (Gboku and Lekoko, 2007).According to the study of Luchia, (2015) most of the training was highly theoretical and lecture type of methodology. Hence, redirecting in mixing both theory and practice with the help of audio visual aids and different demonstration methods should be future assignment as most of the farmers of our country are illiterates.

In general the absence of any attempt made by the training organizations to practice training needs assessment on a regular and continuous basis, aimed at extending the beneficiaries active participation. Training need assessment is one of the crucial steps towards identifying the area of farmers' interest, design and develop curriculum that can best suit to the existing real conditions of farmers. It is important to remember that participation and involvement of the trainee is an essential part, whatever the method or combination of methods chosen (Biruk, 2010). In Ethiopia a range of extension approaches have been used. Even though, the first Ethiopian extension approaches was started in the 1950s as the agricultural extension services and since then various agricultural extension approaches have been promoted and implemented in various parts of the country. The country has recently devised a new Agricultural Extension Strategy (2017) consisting of nine pillars. These are: strengthening FTCs through active participation of community and capacity building; enhancing agricultural knowledge and information systems; enhancing client-oriented and multi-actor's advisory extension services; facilitating market linkages and enhancing value chain development; mainstreaming gender, youth, and nutrition; enhancing environmental management and sustainability; enhancing institutional arrangements, coordination and linkages among key agricultural development partners; developing and utilizing human resources for effective extension service delivery; and establishing strong and dynamic result-based monitoring, evaluation, and learning for continuous improvement of extension service delivery (MoA, 2017).

## THE RELEVANCE OF FARMER TRAINING CENTERS (FTCS)–BASED TRAINING

Relevance is a concern with the degree to which the rationale, objectives and expected impact of a training activity are achieved or remain pertinent, valid and significant with regard to long-range objectives or identified priority needs and concerns (FAO, 2014; Bekelech, 2014).

Miller and Osinski (2002) defined relevance, in adult training context, as identifying and understanding the training content to be relevance-oriented in a sense that, the theories and concepts must be related to a setting familiar to training participants. Learners must see a reason for learning something. Learning has to be applicable to their work or other responsibilities to be of value to them. Relevance is closely related to the problem being addressed and target group under consideration. And also relevance is primarily assessed through peer or expert review and beneficiary assessment.The relevance of FTC-based training to the needs and constraints of farm households with different capabilities, resource endowment and with male-headship and female-headship can be assessed from different dimensions. In the first place, whether or not the training needs of farm households with different capabilities, resources headship and livelihood options was properly conducted determine the extent to which farmers' training addresses diversified needs. Secondly, the relevance of farmers training can be seen in terms of location, method of delivery and the availability of appropriate audiovisual\non-audio-visual aids, infrastructure and facilities for practical learning. Monitoring and evaluation processes are important to ensure the relevance of training along with appropriate section of trainees (Luchia, 2015).The first most essential component of the process in developing relevant farmer training program is finding out about the people to be trained and the type of training they need. The issue of developing appropriate content is critical to extension process; the performance of extension systems depends, in large part, on the appropriateness of its message (Campbell and Barker, 1997; as cited in Tsion, 2010). According to the study of Kefyalew

(2006), training is needed to be essential components of designed interventions; a uniform system of research is to explain how training is made active and to indicate how resources for training should be organized. This section aimed at examining farmers' assessment of the relevance of FTC-based training in terms of attributes that are theoretically known to be determinants of the relevance of not just the content but also the process of training.On the other hand, indicators of the relevance of farmer training can be categorized here under, which includes; schedule and timing issues- Timeliness of training, suitability of the timing and the schedule of the training, for trainees. physical environment of the training- Training environment and teaching aids\methods at FTC, adequacy and quality of training facilities, suitability of the venue and the place where sessions were conducted. Learning objectives of the training in addressing farmers felt need- Practices to farmers pressing problems and needs, the extent to which the learning experience reflected and rooted in the local context and indigenous knowledge. Trainer's ability– Trainers' (DAs) knowledge, practical skills and communication skill of trainers.

## THE EFFECTIVENESS OF FARMER TRAINING CENTERS (FTCS)-BASED TRAINING

## FTCS- BASED TRAINING PURPOSE AND OPERATION

The first Farmers Multipurpose Training Center (FMPTC) of the country was established in the year 1980 at Agarfa in Bale, Oromia Region. Its main objective was the quick transfer of technology to the rural population so as to raise the quality of agricultural production, the living condition of the rural community and the country as a whole. Realizing the situation, the government had started FTCs programs, and planned to establish about 18 thousand FTCs throughout the country to enhance the knowledge base of farmers and to provide the institutional framework for increasing the efficiency and effectiveness of agricultural advisory services. Almost every woreda in the country has been constructing FTCs; and some woredas have already constructed the required number of FTCs. FTC were expected to serve as centers of extension service and information, places where modular training to farmers from three up to six months to be given, and also serve as sources of advice on projects. Local communities are expected to gradually takeover ownership and management responsibility for the functioning of the FTCs (MoARD, 2005; Birhanu et al., 2006).

The FTCs was expected to play an active role in linking farmers with other institutional support services such as input supply, credit, co-operative promotion, and agricultural produce marketing. To bring transformation in agricultural extension service, farmers must be trained to improve their knowledge, skill and attitude towards deciding in their own affairs, access to information, exposure to improved farming and living practices (Birhanu et al., 2006). According to Wuletaw, (2014) report indicates that private and public sector should be reconfigured into training policy analysis so as to participate and make integration. For instance, FTCs can be run by state universities, colleges, bilateral and multilateral NGOs, and industries. FTCs also should be conceived as rural vocational training centers to impact knowledge and skills to farmers so that they could increase their productivity and efficiency. Towards this end formal training was provided to farmers, based on a number of crops, livestock and natural resource management to increase their production and productivity.Formal and non-formal trainings are equally important. But farmers need to have an opportunity to learn non-formal training at their farming community through different training programs. And thus, the government has launched potential development goals including modular training, extension training and information service at FTC. Many efforts have been made by different organization to strengthen this program such as the training of extension agents, newly established and building FTCs (MoARD, 2008).According to farmer instructional development in the Netherlands Ministry of Foreign Affairs defines Institutional development as a process that involves creating people's awareness in activities they are involved. Farmer institutional development will be the core component of intervention in terms of the trainings. The FTCs are expected to serve as hubs for farmers to receive advisory services, knowledge and information, training, and

demonstrations on improved and sustainable farm management practices (Gebremedhin et al., 2006; Mogues et al., 2009; IFPRI, 2010).According to Ethiopian Ministry of Agriculture operational manual/procedures, the training at the FTC will focus on two major categories: modular training and farmers training on agricultural extension packages.

[1]. Extension package training: Training on agricultural extension package is short-term training provided to all farmers for mass mobilization in the area of agricultural extension package programs. The training is prepared to minimum and family package users, and is planned to cover both theoretical and practical aspects of the sector's activity. It is delivered to farmers by development workers on the demonstration trial of the training center and on the fields of model farmers. The period of the training usually ranges from 3-15 days, though it may sometimes be relaxed to 20 days depending on the existing situation of the locality, and 15-20 trainees will take part in one round (MoA, 2009). Awareness creation of farmers can be created through agricultural package training at FTCs level. Orientation about a given technologies, skill trainings and other types of meetings can be delivered in FTCs.

[2]. Modular training: - modular training is specialized training for farmers starting from grade four working in agriculture who owns farm land in which all agricultural extension activities will give due emphasis to gender integration. In modular training, the duration of training provided for each profession will be 3-6 months. Depending on the type of profession or module, 2 training periods/ semesters will be arranged each year. A class room is arranged to accommodate only 20-30 trainees. The number is limited, because an increase in the number of trainees/ participants above the maximum has an adverse effect on the effectiveness of the training. Strengthen need based and practical training to farmers (MoA, 2009). Farmer training in FTCs should focus on the priority needs and existing gaps as identified together with farmers as well as by taking into consideration emerging needs of the government, agro-processing and investors. Farmers' training by DAs must also adapt to adult and experiential learning methodologies. In most cases, farmers learn more when the training is provided in a two-way learning method, supported with relevant audio-visuals and consider farmers' indigenous knowledge and when their experiences are shared among the participants (Berga et al., 2013).

The following principles should guide development and delivery of training: emphasize practical skill trainings should be 70% practical and 30% theory, adapt to circumstances organize trainings based on convenient timing to male, female and youth farmers, seasonal activity and specific agro-ecologies, use well-qualified and experienced trainers who build farmer's interest in FTCs. Evaluate regularly conduct training method and relevance assessment during and after the training (MoANR, 2017).

According to the study of Luchia, (2015) it indicated that FTC based training is relevant in terms of timeliness and scheduling specially for male farmers, teaching aids, location of training, the communication and practical skills of the trainers were also relevant to the farmers. However, FTC based training lacked training need assessment, less in adequacy and quality of training facilities and being more theoretical and lecture type in methodology, limited use of' indigenous knowledge, less female participation and follow up after the training were the major deficiencies. Therefore, it is recommended that policy aimed at FTC based training in the area could be successful if there is proper training need assessment, increases females participations, gives due focus on practice based training, make uses of indigenous knowledge, regular follow up mechanism and the result of this study are taken in to consideration and they can experience sharing mechanisms among FTCs so as to cross fertilize the successful results throughout the study area and lesson are developed and institutionalized (Luchia, 2015).

According to Seyoum (2013), training need assessment (TNA) is a pre-request for successful and outcome oriented training program. Trainers should aim at extending the people's active participation in need assessment method through discussions, surveys, questionnaires, and interviews. By involving the people in the process of development rather than just the end product, their critical awareness and their ability to solve problems will be mobilized. This means that there must be a training need assessment. (Seyoum, 2013).

FTCs need to have basic infrastructure and facilities for proper functioning. The full list of facilities required is outlined in the FTC guideline. DA housing and offices; classrooms with appropriate training materials and furniture; farm implements for crops and livestock production; tools required to properly manage NRM; workshops, a permanent exhibition center; demonstration plots; meteorological information center; and ICT facilities are among the major ones. FTCs with a good set of facilities will improve FTCs' performance and attract farmers. FTCs should be capacitated in accordance with FTC classification shown Table 1 will guide the types of resources required to upgrade the FTCs to the next functionality level (MoANR, 2017).

## EFFECTIVENESS OF FARMER TRAINING AT FTCS

Effectiveness of a program or service is a measure of how well the outputs of a program or service achieve the stated objectives (desired outcomes) of that program or service. Effectiveness refers to the intervention's ability to do more good than harm for the target population in a real world setting. In general, effectiveness is the extent to which stated objectives are met the policy achieves what it intended to achieve. The goal can be as broad or as narrow as is deemed appropriate a continuum exists, ranging from achieving very specific outputs (such as 'increasing the number of solar heating panels installed in new houses') to very general outcomes (such as 'improving the environment' or even 'improving community living standards or wellbeing') (Bradbury,2013).

Effectiveness refers to a measure of the extent to which a training activity achieves its objectives. Objective is a goal or end which describes what is to be accomplished if the training activity is to be effective (FAO, 2014; Bekelech, 2014).Kirkpatrick, (2006) suggests such thought and emphasis need to be given in designing trainings to make sure that the programs are effective and relevant. An effective training need to be problem oriented, need based, with measurable and achievable learning objectives that show changes in knowledge, skill and attitudes, changes in job performance and outcomes within given time; implemented in conducive adult learning requirements (methods and materials), with continuous follow-up where activities and results are monitored, reviewed and evaluated for further improvement of the whole system.In converting needs into objectives, three areas of performance may be identified; skills, knowledge and attitude. Skills-related objectives indicate what the trainee can do, demonstrate or perform as result of the training. Knowledge-related objectives refer to the participants' ability to identify, define or describe given concepts as a result of the training. Attitude- objectives are less easy to measure although it may be useful to make explicit the desired attitudinal change. The trainer and the trainees should understand and agree on the objectives of the training course. It is a useful technique for the trainer to refer to the course objectives at key times in the course to ensure that the trainees recognize how the training is progressing towards achieving the objectives. When participants know what is expected of them they can organize their efforts more effectively (Swanson et al., 1997).Effectiveness of FTC based training on agricultural technology adoption and practice change is operationalized as the application of knowledge acquired from the training. It is the transfer of learning. Practices of farmers were evaluated based on their responses on the application of recommended technologies (Luchia, 2015).According to Norman, (1986), training programs are designed to change trainee knowledge, attitudes and skills. In terminal evaluation want to see if our training has accomplished this goal and to what degree. The most common method used in a terminal evaluation is to

test trainee knowledge, attitudes and skills. Each of the three kinds of learning can be measured through some form of testing.

Test results are then compared either with pre-determined standards (as specified in objectives), with entry level knowledge (as measured by a pre-test), or through certification tests where standards are set by someone else.The common procedures in terminal evaluation are; (I) develop or adapt existing data collection questionnaire, decide what type of test items should be included; (II) Administer the instruments, the way in which these instruments are administered varies with many factors, such as audience characteristics (age, sex, education level etc.), objectives being assessed, and type of assessment instrument; (II) Interpret the results. Anthony (1983) outlined commonly used Teacher-Made Test items to measure knowledge, attitude and practice levels. Teacher-Made Test for measuring knowledge, Likert type of attitude scale and practice test for measuring practice level of sample households was adopted.

## INSTITUTIONAL LINKAGE MECHANISMS FOR FTCS FUNCTIONING

Institutions are, whether organizations or not, complex of norms, rules of conduct and behaviors that persist over time by serving collectively valued purposes. Institutions mediate the rural poor access to knowledge service, market, employment, strategy and livelihood assets. For instance, Debo, Wonfel, Senbete, Mahber, Idir (funeral groups), Jigie (work or labor saving groups), Iquob (saving and loan type of groups), water user associations and other traditional and cultural institutions and informal organizations that help to disseminate and gathering information (Wuletaw M., 2014).Institutions and organizations are NGOs, public and private institutions and /or organizations that help to arrange, communicate, support and share knowledge, information and materials to the internal system of trainings through appropriate policy and strategies.

Accordingly, Habte Mariam (2013) also reported that in most cases, poor linkages between extension, research, and farmers have been singled out as the major reason for lower performance of the extension and research organizations in many developing countries like Ethiopia. However, in most of the cases the arrangements failed to work satisfactorily due to various reasons, such as frequent restructuring of organizations, poor farmers' representation, high staff turnover, budgetary limitations, lack of commitment, and in some cases rivalry of institutions as if they were competing each other rather than complementing to attain a common development goal.For extension to succeed, it must enhance its linkages and networks with research, farmers, and among extension providers at FTC level. This way the competence of extension to transfer agricultural technology to farmers will be improved. Joint planning and review process, collaborative of professional activities, resource allocation procedures and communication device are types of linkage mechanisms. Innovation developed without the involvement of farmer has little chance to achieve the actual needs of farmers. Since, 1980s onwards rural development program, farmers participatory research, participatory learning action, participatory technology development, participatory rural appraisal, rapid rural appraisal and recently client oriented research, farmer research groups, farmer field school and farmer extension group are used (BoARD and SWHISA, 2006).Institutional linkage between FTCs, farmers or groups and different institutions in agricultural sector including rural micro-finance credit institutions, cooperatives, research centers, health clinics, schools, private traders, and entrepreneurs can contribute to give technical, financial and institutional assistances. Institutions have important roles for farming communities. They deliver rules and regulations that can understand the cultural set up of people and strengthen community-based organizations. Institutions can have roles in quality control, pollution regulation, influence human behavior, reduce risk and uncertainty by establishing stable structure and build resilience to shocks that minimize transaction costs and addressing externalities (Wuletaw, 2014).

## ROLES OF ACTORS AND STAKEHOLDERS FOR LINKAGE MECHANISMS

Actor is a role that a system in the environment plays during an interaction with in our system (David, 2005). Actors are all those people who have a stake or share in a particular issue or system. Actors can be at any level or position in a society from the international to the national, regional, household or intra-household level. Actors include all those who affect and are affected by policies, decisions or actions within a particular system (Eshetu, 2008).Stakeholder is a person, group, organization, or a system that affects or can be affected by an organizational action (Cameron et al., 2010). Stakeholders are persons or groups who holds the stake or stakes in a bet. It is any group or individual, who can affect, or it is affected by, the achievement of a corporation purpose or a project as well as those who may have interests in a project and/or the ability to influence its outcome either positively or negatively. These may include individuals, communities, formal and informal representatives, authorities, politicians, religious leaders, civil society organizations and others (Ramirez, 2001).

## KNOWLEDGE AND INFORMATION SHARING DURING LINKAGE MECHANISMS

Knowledge is defined as the combination of data and information to which is added expert opinion, skills and experiences. Knowledge sharing is the process of an activity through which knowledge (i.e. information, skill or experience) is exchanged among people, friends or members of a family, a community or an organization. Their activities are supported by knowledge management systems. If knowledge is not shared, negative consequences such as isolation and resistance to ideas occur (Gruber, 2004).

There are four knowledge types; Embrained knowledge; It is Conceptual skills and cognitive abilities. It is also practical and high level type of knowledge. The second type of knowledge is Embodied knowledge. It is an action oriented and consists of contextual practices, social acquisitions and non-explicit type of knowledge. The third type of knowledge is Encultured knowledge. It is the process of achieving shared understandings through socialization and acculturation. The fourth knowledge type is Encoded knowledge. Information is conveyed in signs and symbols and de-contextualized into codes of practice. It deals more with transmission, storage and integration of knowledge. Knowledge can be transfer from one part to another part(s) of an individual or organization (Ermias, 2006).Information sharing is a fact or understood data while knowledge is flexible and adaptable skills, a person's unique ability to apply it. Knowledge is tacit and personal, the knowledge one person has difficulty to quantify, store, and retrieve for someone else to use. Specifically, for knowledge to be made explicit, it must be translated into information. Hence, information sharing referred to one-to-one exchange of data between a sender and receiver. There are four information sharing design patterns, one-to-one, one-to-many, many to many and many-to-one. Formal sources of information are extension workers, NGOs, communications (meeting, interpersonal discussions), radio and the like (Gruber, 2004).

## EMPIRICAL REVIEW ON RELEVANCE AND EFFECTIVENESS OF FTCS BASED TRAINING

Training cycle is the process of need assessment on training to set objectives and design training curriculum. Systematic training needs assessment is a comprehensive process involving; deciding the target population; defining and identifying needs; measuring competency short comings; prioritizing; and setting training objectives in the light of assessment findings. This helps better designing of relevant and need-based training and implementation which will result in better outcome (Biruk, 2010 and Wuletaw, 2014).There is no blue print as to how best to develop functional FTCs that are able to make a difference to productivity, profitability and sustainability in smallholder agriculture. The periodic systematic assessment and learning to make continuous improvement will be needed for human resource development for agricultural commercialization and rural transformation, particularly to enhance the knowledge, skills and attitude of producers through FTCs. Hence, to create relevant, responsive, practical and impact-oriented FTCs, any agricultural development activities that the government has to launch

must be greatly considered from the farmers' point of view in terms of extension services and training activities (Terrefe, 1992).Kefyalew (2006) reported that farmers training programs undertaken in Ethiopia are with a number of problems. Some of the serious shortcoming of the trainings are that there is no clear training policy that guides the involved actors, the presence of which may clear those confusions of lack of uniformity in participation of the farmers, duration of the training, absence of curriculum or guidelines to make it at least uniform but flexible.

According to the study of Merihun and Endrias, (2017), indicated that the skill and knowledge gained through training was not sufficiently backed by provision of inputs and services especially, for the poor farmers, because of inability of paying down payment. On the other hand, the key issue of training which could help to solve a number of problems, i.e. the training needs assessment was neglected. These could clearly indicate that at the verge of the declared campaign in the country to open hundreds of farmers training centers.According to Ousman (2007) the trainings offered to farmers were not responsive to farmers' needs and all elements of the training process or cycle are defective and deficient. In both cases, majority of the farmers applied the learning by modifying according to their situation. For example, lodging of teff because of urea application, high costs of fertilizers and herbicides, difficulty to plough the soil horizontally to the slope, losses during threshing, climatic conditions, lack of credit and confidence because of insufficiency of the physical and socio-economic environment were not considered. The training methodology that suggested by farmers were practice and practical demonstration were the most important and appropriate for training. The centers were highly participating on the farmers to share their experience. Less emphasis was given on the uses of variety of methods, locally available materials and aids that facilitate effective maximum learning through observations, interactions and practice. However, the trainings that will be provided in FTCs, based on the household and minimum package activities, are expected to be participative and experiential. Because of lack of effective joint follow-up and evaluation activities, through participation of all concerned stakeholders, measurements of participant's reactions, learning, changes in on the job performances and outcomes of trainings have not been undertaken systematically. Thus, trainings were not based on supportive and/or corrective feed backs, in which learners take time and reflect back upon the experiences gained and draw a conclusions that the trainings are not as effective as required, as far as all the above mentioned conditions calls for improvement (Ousman, 2007).

Tsion (2010) also concluded that there was no need assessment done in all research centers. The content of training were relevant with the need and farm operation. The survey results clearly indicate that, the research centers give training for less than one week. The training time was not sufficient to cover the content of training.

According to Biruk, (2010) the report that revealed training needs assessment was not conducted in the study area before the training. However, the content of training topics was relevant, need-based &harmonious with the farming practices. And also institutional support service, such as inputs supply, credit, product marketing and cooperatives are poorly functioning. Moreover, poor communication and weak linkages exist between relevant institutions presumed to work with Farmers' Training Centers at local level. The basic philosophy of extension education is directed towards changing the outlook of person by educating him. Its primary aim is, therefore, to transform people by bringing about desired changes in their knowledge, practice, attitudes and skills. And also linkage with other development institutions; these institutions include local, nongovernmental organization and governmental institutions such as credit, input supply, research centers and others. FTCs which have linkage or connection with different institutions will have better capability to run their functions and have high status in input and output. The linkage is measured in ordinal scale as excellent, very good, good, poor, no linkage (Seyoum E., 2013).As indicated on the extension strategy (MoANR, 2017), extension messages should be developed on the bases on the needs and priorities of target groups as identified and developed based on participatory

approaches. However, the approach virtually followed in designing and development of FTC-based training is of traditional and academic model, where, training staff of the Federal and regional level bureaus design the objectives, contents, teaching techniques, aids and evaluation mechanisms without involvement of target people the grassroots level. However, education in general, and training in particular, are expensive undertakings involving the use of scarce resources.Training policies and programs should therefore meet the three criteria of relevance, effectiveness and efficiency. By relevance mean the fit between training objectives and national economic and social needs. The yardstick of the effectiveness of training is whether training objectives are met, i.e. whether the training system is willing and able to produce the intended quantity and quality of skills and competencies. Finally, we define efficiency as producing skills without wasting resources (Torkel and Theo, 1997), cited in Biruk, 2010).

## DESIGNING OF TRAINING PROGRAM

Training is a circular process that begins with needs identification and after a number of steps ends with evaluation of the training activity. A change or deficiency in any step of the training process affects the whole system. Design a training and development program involves a sequence of steps that can be grouped into five phases: needs assessment, instructional objectives, design, implementation and evaluation. To be effective and efficient, all training programs must start with a needs assessment (Wentling, 1992).

## TRAINING NEEDS ASSESSMENT (TNA)

It is one of the crucial steps towards identifying the area of farmers' interest, design and development of curriculum that can best suit to the existing real conditions of farmers. Pholonngoe and Richard (1995), cited in Biruk, (2010) underscored the necessity of need assessment stating that: If non-formal education trainers hope to foster meaningful development, they should bear in mind that the needs of adults constantly change. Thus, training assessment has to be carried to design relevant and need-based training program that can accommodate changes over time. Barbazett (2006), also noted that, long before any actual training occurs, the training institution must determine who, what, when, where, why and how of training. Some changes are achievable using a training intervention, others are not. Some changes are more critical than others. Training needs assessment process helps determine the priority of changes in knowledge, skill, attitude and behavior that will provide the greatest impact on achieving organizational or individual goals.

According to the Caffarela (2002) noted that, a systematic process of farmers' training must include; needs assessment, goal and objectives setting, organizing instructional methods and techniques, monitoring and evaluation. In some cases, however, we lack the knowledge, skills, or tools to conduct an effective assessment or are confused about which approach to use, given the wide array of choices. How often the needs assessment process should be repeated is a difficult question to answer. Conducting training needs assessments is an exhaustive, time - consuming, and expensive process that yields tremendously important data.

Training needs identification is possible through different analytical procedures. For instance, individual analysis aims at identifying specific training needs for an individual or group of people so that training can be tailored to their needs. This analysis centers on individuals and their specific needs concerning the skills, knowledge, or attitudes they must develop to perform their assigned tasks. The possible methods or techniques for individual analysis include performance appraisal, interviews, questionnaires, tests, analysis of behavior, informal talks, checklist, counseling, critical incidents, recording, surveys, and observations (Edralin, 2004).

## TRAINING CONTENT AND RELEVANCE

Once training needs have been identified and training activities have been decided as part of the solution, a needs analysis should be done to determine knowledge, skills, and attitude requirements and performance deficiencies. The needs analysis procedure involves breaking down the "training problem" into its basic parts in different successive phases to identify and understand the important components in each phase. Ultimately it leads to identifying and understanding the training content to relevant and need based. This means, that theories and concepts must be related to a setting familiar to participants (Barbazett, 2006).

According to the study of Miller and Osinski, (2002), this need can be fulfilled by letting participants choose learning projects that reflect their own interests. Curriculum development is the most important part in a training program after a need for training has been identified. The curriculum specifies what will be taught and how it will be taught. It provides the framework and foundation of training or training content

## LEARNING OBJECTIVES OF TRAINING

A learning objectives of training description must embody perceptible testable behavior. The best way of selecting this activity is by identifying what is to be able to do once the lesson is finished. The learning material must be defined as concretely as possible. The objectives should clearly define the applicability of the learning material. The minimum performance must be defined. The learning objective must give some indication of the standard of performance so the students can be sure about how the task must be performed. Specify the frequency, quality and accuracy under which the desired behavior must be defined and their standards should be fulfilled (Bekkering, 1992) cited in Biruk, 2010).

In Romiszowski's taxonomy (Bekkering, 1992) a distinction is made between knowledge and skills that trainers should bear in mind while setting training objectives. Knowledge is acquired facts and information that are available for recall and an understanding of the meaning of facts and that information. Knowledge is divided into; facts (details concerning concrete events, situations, people or matters), procedures (assignments that consist of a step plan), concepts (definitions of abstract matters, for example, freedom, and intelligence) and principles. The transfer of skills is much more important to Romiszowski than just the transfer of knowledge.

Standaert and Troch, (1987) cited in Biruk T., (2010), Attained information must be put into practice in an effective and efficient manner. In other words, it must be expressed in skills. Romiszowski subdivides skills into: cognitive skills, such as decision-making, problem-solving, logical thinking; psychomotor skills, such as the performance of actions and techniques (practice); reactive skills, such as being conscious of and acting in accordance with a value system, interactive skills in the fields of social intercourse, communication and leadership. In this study, of the various skill categories discussed above, psychomotor skills, such as the performance of actions and techniques related to improved technologies treated in the farmers training offered were measured by employing a practice test designed based on objectives of training courses.

According to Tesfaye (2003), Attitude is the degree of favorableness' and unfavorable towards an object, idea or stimulus. On the other hand, it can be defined as, the positive or negative outlook towards a given spur. Attitude is the disposition to respond favorably or unfavorably to an object, person or institution. He adds that the characteristics of attribute are its evaluation that reflects a positive or negative evaluation of the attributed object. Attitude is non-overt and can only be inferred from verbal or non-verbal responses.

## METHODS OF TRAINING DELIVERY TO FARMERS

A training method is a strategy or tactic that a trainer uses to deliver the content so that the trainees achieve the objective. Selecting an appropriate training method is perhaps the most important step in

training activity once the training contents are identified. A training program has a better chance of success when its training methods are carefully selected. Four major factors are considered when selecting a training method: the learning objective, the content, the trainees, and the practical requirements (Wentling, 1992).

However, Zeleke (2000) noted that, all training methods in developing countries are based on common principles. Although, training methods differ from one place to another. Some instructional methods may be theory-oriented, and others may be practical-oriented. Thus, training methods have to selected based on training needs of specific target population.

## SUSTAINABILITY OF TRAINING PROGRAMS

Continuity in training is a three-stage process of learning, practicing and reviewing performance. For most training programs this process is possible only if there are further targets to aim for such goals might include reaching out to other groups in areas where training is needed or updating skills and knowledge. These targets must reflect 'real' needs and must be based on realistic levels of expectation rather than aiming for further training activities per se. To put in positive terms continuity and sustainability of training depends on: commitment to the idea, wide net of support, good leadership, continuity of financial and political support, collaboration amongst various institution, experienced training staff indigenous resource people, improved performance due to training, success stories that can be publicized and duplicated, tangible results, proved need for training (Ranjan, 2008).

The continuity of training programs depends upon rapid institutionalization of training. There can be different homes for training. The appropriate option will vary from country to country, organization to organization, depending upon the existing organizational structure of disaster management, availability of resources etc. (Ranjan, 2008).

For measuring effectiveness of training various approaches are suggested in literature. For instance, Mohan (2000) gives an update on one of the most popular techniques, the Donald Kirkpatrick model, which is one of the most popular methodologies, suggested four criteria to evaluate training programs: (1) reaction, (2) learning, (3) behavior, and (4) results. Each criterion is used to measure the different aspects of a training program. Reaction measures how the trainees liked the program in terms of content, methods, duration, trainers, facilities, and management. Learning measures the trainees' skills and knowledge which they were able to absorb at the time of training. Behavior is concerned with the extent to which the trainees were able to apply their knowledge to real field situations. Results are concerned with the tangible impact of the training program on individuals, their job environment, or the organization as a whole.

John (1998),cited in Biruk (2010) outlined variety of ways to measure training effectiveness including, prior to training, at the end of training, delayed impact (non-job), on the job behavior change, on the job performance change.

Crabtree and Miller (1992), cited in Biruk, 2010) also suggested two approaches to training intervention effectiveness research to uncover results without committing extraordinary resources. One approach employs triangulation (use of multiple data sources and methods) to gather data from prospective end users and combine qualitative data (e.g., from focus groups, interviews, and observations) with various forms of quantitative data (e.g., those from controlled study situations). Data are then used to assemble a valid argument for the interpretation of results.

The other approach to effectiveness research explores cause-and-effect relationships that are pertinent to the learning process and have been established through years of training research, including meta-analyses. For the purpose of training assessment, the cause-and-effect relationships of interest are those

between the process, outcomes, and impacts of training. In these relationships, the process variables (e.g., training methods and mediums used) are indicators of the outcomes (e.g., knowledge gained among trainees) (Borich 1998) cited in Biruk T., (2010).

To identify the elements of training that are critical to increased effectiveness, the Education and Information Division (EID) of the National Institute for Occupational Safety and Health (NIOSH, 1999) of USA has developed a research guide known as the training intervention effectiveness research model (TIER model).

The TIER model is designed to (1) take into account the challenges of identifying factors that make the training-learning-action continuum successful, (2) logically match research efforts with the nature of the question(s) at hand, (3) minimize training and curriculum development risks, and (4) concentrate research resources. The TIER model is applicable to training interventions on a variety of topics (Gagni, 1985) cited in Wuletaw, (2014).

Stage 1: Formative Research; training efforts are conceived, reviewed, and structured. This stage helps researchers understand the population to be served, its needs, and the aims of instruction.

Stage 2: Process Research; draft training materials, proposed instructional approaches, and research instruments are field tested in pilot sites. The qualitative and quantitative information that is collected from the field testing leads to the modification of materials and increased confidence in the approaches taken.

Stage 3: Outcome research: involves a controlled evaluation study. The results of the training effort are documented. These data provide the researcher with improved understanding of the various training approaches that can be applied to (1) the population trained, (2) the subject matter addressed, and (3) the instructional methods us.

Stage 4: Impact Assessment; longitudinal studies are conducted. This stage will also examine the impact of study related materials (e.g., model curricula, published reports) as they are applied to practice. Overall, the training intervention effectiveness research model, a research project can systematically work through all stages the training before and during training.

According to the study of Loos (1995) as cited in Biruk T. (2010), alternatively, research can begin or occur at any stage or subset of stages of the model, depending on the state of the training materials and the nature of the research questions. The objective of reviewing and presentation of this model is to offer clue of related literature relevant to measuring effectiveness of training programs in a given context. However, this model, as the name indicates is intervention research (field' based action research), and hence, doesn't have any link with the current thesis research as the objective is to measure effectiveness of the farmer training after a few years of implementation.

In the study of FAO (1991) cited in Biruk, (2010) on the other hand, defined evaluation of training as a process which attempts to determine as systematically and objectively as possible the relevance, effectiveness and impact of training activities in the light of their objectives set forth. Evaluation can be done during each development phase of training and even at each step during the delivery of the training activity.

The major types of training evaluation consist of: evaluation for planning (TNA), methods materials (evaluation for training methodologies), process evaluation (during training to make adjustments), and terminal evaluation (after the end of training) and follow-up evaluation (impact assessment). In this approach, effectiveness of training is measured in terminal evaluation. Terminal evaluation is used to determine the effectiveness of a training activity after it has been completed (FAO, 1991) cited in Biruk,

(2010).It is a method for collecting information on trainee and training activity achievement. The primary objective of terminal evaluation is to determine the degree to which the intended training objectives and goals have been met and to relate these findings to evaluation information collected earlier in the training process. It also includes interpretation of the outcome.

The main focuses of terminal evaluation are; learner performance: - by comparing pre-training versus post-training measurements. (Learning gains), norm-referenced method: - by comparing what we intended the trainee to learn (objectives) against what has actually been learned (performance/competence) criterion referenced evaluation. Organization, facilities, and resources during the training, trainees overall impression: competency of trainees, communication, facilitation, approach and trainees reaction to training/instruction such as, relevance of contents, methodologies, duration etc. This kind of evaluation information gives some idea as to the possible reasons for success or failure in achieving training goals (Biruk, 2010). Overall, in order to fulfil the objectives of the study, after an in-depth review of the different approaches to measurement of training effectiveness, the terminal evaluation approach suggested by FAO (1991) cited in Biruk, 2010) was considered very relevant to measure effectiveness of the farmers training offered in the study area. The poor linkage between FTCs and research institutions, extension and farmers has impaired the problems. Therefore, the linkage of FTCs shall be strengthen with different stakeholders for improving the status and potential of FTCs training implementation and enhancing the capability of the DAs as well as farmers at least through experience sharing from within and at most through creating suitable network with different institutions to each FTC (MOA, 2017).However, training offered in the past will not be evaluated to determine relevance to needs and priorities of farmers and effectiveness in terms of changes in farmers' knowledge, attitude and practice levels for enhancing performance.

Thus, it will not be known how the designing training need assessment and development processes of training will be carrying out on a very limited farmers' plots without demonstrating them in wider agro-ecologies and socio-economic structures. When such types of technologies are introduced over wide areas with diversified, complex and risks situations, the technologies become unsuitable and leading to little or no adoption (FAO (1991) cited in Biruk, 2010).

## CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of this study illustrates that how different elements in the given environments were expected to influence the relevance and effectiveness of FTC-based farmers training in the study area and also analyzing the relationship between the current status of FTCs based training, factors affecting relevance of training, elements of effective training, institutional linkages of FTCs functioning and at the end resulted to be achieving effective training for the improvement of the farmers' knowledge, attitude, and practice change (utilization of new knowledge, skills and methods/techniques in production, marketing, and/or postharvest management) as indicators of effectiveness. Generally, the whole elements can be influenced by different processes which can be framed the research objectives into major areas where the researcher needs to focus on the research questions. Hence, this conceptual frame work presented in the following manners.

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Volume: 01 | Issue: 01 | 2020 | Open Access | Impact Factor: 4.625

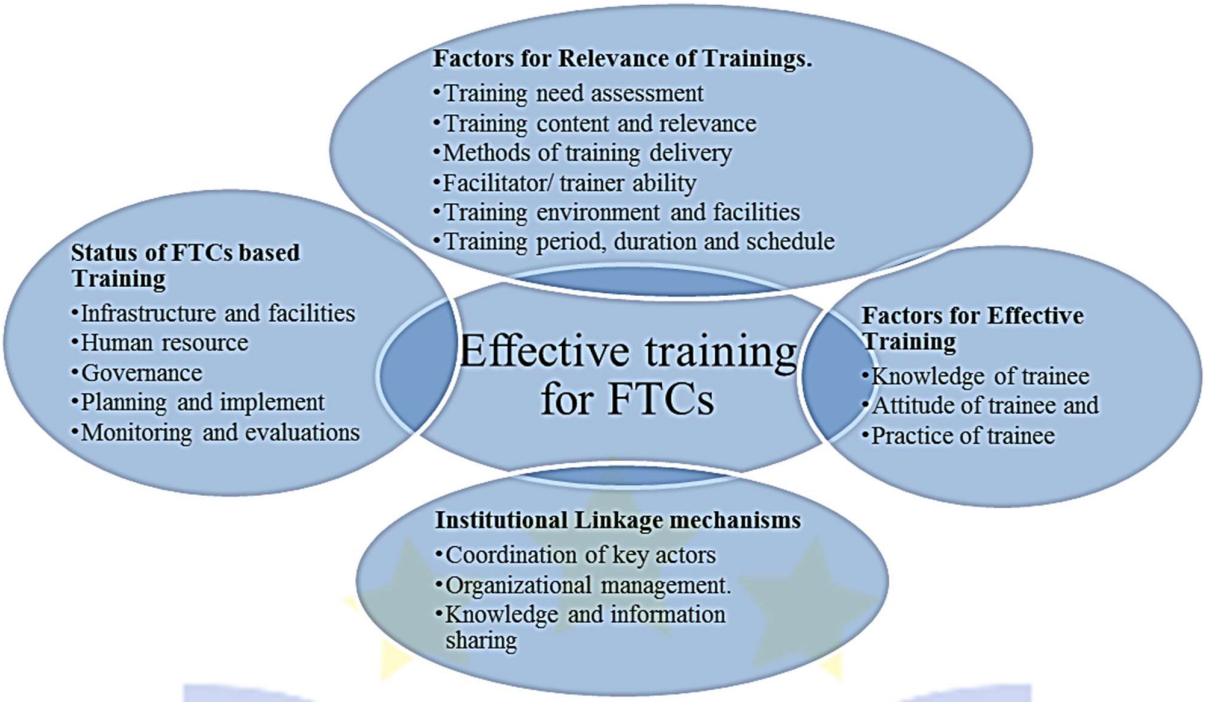


**Figure 1: Conceptual framework of the Study (Source: Adopted by Researcher, 2019)**

## RESULTS AND DISCUSSION

The main focus of this part is to present the results and discussion on the relevance and effectiveness of FTC-based farmer training in terms of improvements in knowledge, attitude and practice change by comparing between trained and untrained sample respondents. It also discusses about institutional, organizational dimensions of FTCs, coordination and linkage mechanisms currently existing among the relevant actors expected to work with FTCs at grassroots level.

## BACKGROUND OF THE SAMPLED RESPONDENTS

This sub-section provides a summary of socio-economic profile of the sampled respondents. Sex, age, marital status, family size, educational level and income of respondents are summarized as indicated in Table.

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| Characteristics | Category | Trained | | Untrained | | Total | |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % |
| Sex | Male | 50 | 83.3 | 46 | 76.7 | 96 | 80.0 |
| | Female | 10 | 16.7 | 14 | 23.3 | 24 | 20.0 |
| Age | 20-45 years | 42 | 70.0 | 34 | 56.7 | 76 | 63.3 |
| | 46-60 years | 14 | 23.3 | 20 | 33.3 | 34 | 28.3 |
| | > 61 years | 4 | 6.70 | 6 | 10.0 | 10 | 8.40 |
| Marital status | Single | 5 | 8.30 | 10 | 16.7 | 15 | 12.5 |
| | Married | 45 | 75.0 | 30 | 50.0 | 75 | 62.5 |
| | Divorced | 7 | 11.7 | 13 | 21.7 | 20 | 16.7 |
| | Widowed | 3 | 5.0 | 7 | 11.6 | 10 | 8.30 |
| Family size | 1-3 family | 20 | 33.3 | 25 | 41.7 | 45 | 37.5 |
| | 4-6 family | 30 | 50.0 | 20 | 33.3 | 50 | 41.7 |
| | >7 family | 10 | 16.7 | 15 | 25.0 | 25 | 20.8 |
| Educational level | Illiterate | 3 | 5.0 | 15 | 25.0 | 18 | 15.0 |
| | Able to read and write | 16 | 26.7 | 21 | 35.0 | 37 | 30.9 |
| | Grade 1-8 | 12 | 20.0 | 13 | 21.7 | 25 | 20.8 |
| | Grade 9-12 | 22 | 36.7 | 9 | 15.0 | 31 | 25.8 |
| | Certificate holders | 7 | 11.6 | 2 | 3.30 | 9 | 7.50 |
| Income per year | <10,000 Birr | 10 | 16.7 | 12 | 20.0 | 22 | 18.3 |
| | 10,001-20,000 Birr | 20 | 33.3 | 21 | 35.0 | 41 | 34.2 |
| | >20,001 Birr | 30 | 50.0 | 27 | 45.0 | 57 | 47.5 |

To summarize the obtained surveyed data of the respondents such as the sex, age, marital status, family size, educational levels and incomes of the interviewer has varied for different reasons. The occurrence of differences may be due to the purposes of the study, the ways of taking samples and methods of assessments. As indicated in table 5, from the sampled interviewer in the selected kebeles, very few numbers which are 10 and 14 of females has categorized under the trained and non-trained members of the surveyed respondent respectively. According to this survey, the participation of females were low when compared to the males participators'.

This result agreed with the idea of Seyoum et al. (2014) who has stated that female farmers were not in a position of participating in educational institutions due to marriage, abduction, workload, and cultural settings of communities. The guideline of training has stated that educational level of trainees should be grade 4 and above. As a matter-of-fact, trained farmers vary in their educational level. About 18(15%) were unable to read and write; and as result it may create difficulty to easily deliver the content of FTC based trainings for farmers in the study area.

## DESCRIPTION OF MAJOR FINDING OF THE STUDY

## THE CURRENT STATUS OF SAMPLED FARMERS' TRAINING CENTERS (FTCS)

According to the data obtained from the KII, all the entire sampled FTCs have almost the same objectives-conducting training, demonstration, providing advisory and other services and also compared their status to others FTCs based on the actual performance they achieved in the study area.

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## INFRASTRUCTURE AND FACILITIES IN FTCS

The infrastructure and facilities availability is different among the 4 sampled FTCs in the study area. All the sampled FTCs have buildings with slight variability in internal facilities. With regards to workshop and residences buildings, Birbirsa and Geru gemachu were among the better equipped FTCs of the woreda. In terms of physical materials such as chair, table and shelves all FTCs are similar. In addition to this, Birbirsa, Lafto and Resa jennata FTCs also have modern electronic materials like telephone and DVD for functioning of training. The sample FTCs also have enough facilities for demonstration of crop production, post-harvest and cultivation materials.

However, facilities for demonstration such as livestock production, post-harvest handling and processing such as beef, dairy and beekeeping are very limited. The all surveyed FTCs also lacks different reference material used for FTCs based training in the study area. Summary of infrastructure and facilities at selected FTCs

| Type of infrastructure | FTCs of kebeles | | | |
|---|---|---|---|---|
| | Birbirsa | Lafto | Resa jennata | Geru gemachu |
| Residence for DA | 2 | 1 | 1 | 2 |
| Office and workshop | 4 | 1 | 2 | 3 |
| Set for trainer | 82 | 75 | 63 | 78 |
| Table | 3 | 4 | 3 | 3 |
| Chair and Shelf for DA | 5 | 3 | 3 | 4 |
| Class room | 1 | 1 | 1 | 1 |
| Telephone and DVD | 1 | 1 | 1 | - |
| Black board and white board | 3 | 4 | 3 | 2 |
| Information board | - | 1 | 1 | - |
| Rain gauge | 1 | 1 | - | 1 |
| Total | 102 | 92 | 78 | 94 |

Source: Field survey, 2019

## HUMAN RESOURCE IN FTCS

The numbers of development agents in the selected kebeles were varies from FTCs to FTCs; in FTCs like Lafto and Birbirsa, there is an access to irrigation, because of this they have 5 DAs staff members which are working on the areas of irrigation, natural resource management, crop, cooperative and livestock. While in Resa jennata and Geru gemachu only 3 DAs are available working in the areas of agronomy (crop), natural resource management and livestock production.

Table 7: Summary of human resources with work experience at FTCs

| Name of FTCs | Number of DAs | | Work experience of DAs in year | |
|---|---|---|---|---|
| | | Minimum (years) | Maximum(years) | Average |
| Birbirsa | 5 | 4 | 7 | 5.5 |
| Lafto | 5 | 6 | 10 | 8.0 |
| Resa jennata | 3 | 7 | 12 | 9.5 |
| Geru gemachu | 3 | 2 | 8 | 5.0 |
| Total | 16 | 19 | 37 | 28 |

Source: Field survey, 2019

Work experiences of development agents were also vary with the farmers training centers holding central place to area. From the sampled FTCs like Resa jennata which is 5 km far away from Gurawa town, the average experience of DAs was 9.5 years. While in distant FTCs like Geru gemachu (15km away from the town) the average working experience of DAs was 5 years. As it known experience is a critical factor for successful knowledge and information flow between DAs and local farmers. Hence, alternative incentive arrangement mechanisms need to be developed for DAs who are worked on remote areas so as to benefit the whole farming households equally. Beside to this, the criteria for recruitment on the position of head of DAs are age, experience and skill while promotion is a function of grade point average, performance, efficiency and experiences. With regards to financial management of the FTCs, they don't have any financial matter to run except the DAs salary which is monitored by the woreda agriculture office.

## MANAGEMENT OF FARMERS' TRAINING CENTERS (FTCS)

According to the obtained data all management side of FTCs in woreda level is under the responsibilities of woreda office of Agriculture and Natural Resource in the research extension core process. The management team of FTCs are includes rural kebele chairman, manager, 3 DAs, representatives of women, youth and other two model farmers, which formed extension unit at kebele level. While they were governed by kebele chairperson with the help of head of the DAs and others key actors who have direct contact with the issues of FTCs training and agriculture related activities. For the accomplishment of the FTCs training, all of resources were managed by kebele committee headed by chairperson and also FTCs based training is mainly led by head of DAs in that kebele. The other finding result of this study, it showed that during the discussions with KII and FGDs were held with FTC management members, they indicated that, at this time the FTCs management have their own strengths and weaknesses side toward the accomplishment of the farmers training at FTCs, firstly, the strength side of this members were in all of kebeles there was a team of management members which was known to each other's, there is a plan for what they operated in the kebele, they coordinate and facilitates various field level activities relating to farmers training for their farmers communities, they can mobilize their communities towards the extension activities, organization of farmers and during the delivery of different agricultural inputs in the study area.Secondly, the main weakness of management level of FTCs team, it was evident that FTCs, they doesn't have clearly defined mandate given from government to effectively authorizing its mandate to carry out the perceived responsibilities at FTCs level, they had no clearly stated formal record that reveals task and performance of management, they works with no or insufficient capacity they had because of they don't have budget for their salary of month. As it is known, management members working at FTCs have their own skills, motivation, and the opportunity to make the best contribution to the organization. They also need to be organized and relate to each other in the ways that achieved best productive outcomes. However, at present, the FTCs management among the four sampled FTCs kebeles have a different ability to lead their task towards the functioning of the FTCs based training for farmers and also toward giving the extension service to the extent possible with their own initiations to the local communities of the area.

## PLANNING AND IMPLEMENTATION OF ACTIVITIES AT FTCS

According to the survey result obtained from all interviewers are responded that 100% of them are said that training of farmer at FTCs was planned by woreda extension expert, DAs of kebele and other stakeholders including head of kebele and local communities of the area. During the planning stage, the farmer identification for training in FTCs is basically based on the DAs pre-consumed knowledge of the commodity to be trained. The major objectives set during the training are improvement of skills, increasing the production and productivity of crops, and technology transfer among the farmers'. According to the respondent results for fixing the exact day of training practice in FTCs was determined

based on the day out of cropping season, religious and cultural holly days in the study area. This training duration was designed by DAs and office of Agriculture and Natural Resource of the district by considering cropping seasons and other technical and agro- ecological situations. Most of the trainings were delivered two days per week and for 2 to 4 hrs daily and also it was commenced during Saturday and Sunday so as to accommodate most of the farming community need and to use the days which are not allowed to do other farming activities.As per the data gathered from sample respondents, training sessions were conducted for different durations as short as 8 days to 30 days. For instance, Birbirsa FTC had conducted training from April to June 2019, Resa jennata FTC has conducted for one month of training in February, Geru gemmachu FTC has delivered the training from April to May 2019 and Lafto has been trained only in month of April. To confirm the result of the study with the training guideline, the training was allowed to be conducted two times per year as per the preferences of trainees for months. The slack periods of production system in Gurawa are around October and February. Generally, from the finding survey result of this study it implies that there is not a regular schedule for farmers' training in the area, this can reduce the effectiveness of training to learn different type of technologies from the area and also they hadn't a plan of training based on the length and styles of the trainings given in line with the interest of majority of the local farmers.

## MONITORING AND EVALUATION OF TRAINING AT FTCS

According to the data obtained from FGDs in all of sampled FTCs for farmers training, they explained that the purpose of monitoring and evaluation is to improve and achieve efficient and effective program implementation performance by providing feedback to the organization at all levels of implementation processes of a training program. Therefore, monitoring and evaluation of farmers training was the duty of DAs and woreda expert, who are responsible for the training implementation at every level of the training program.

The main finding result of this study was, so far head of DAs and concerned woreda experts were not conducted an assessment during and immediately after training/ex-post evaluation in any one of the selected sample of FTCs to assess the positive or negative feedback of the sampled respondents on the situation of farmers' training in the study area. In the end of the training sessions this type of analysis may help the evaluators (woreda expert and DAs) to assess the overall achievement of a given trainers farmers and to draw lessons for future planning of the training.

## THE RELEVANCE OF FARMERS' TRAINING AT FTCS

According to this study the relevance of FTCs-based training was analyzed based on the identifications of farmers' needs and constraints, content of training and their relevance, methods of training delivery, selection criteria and their process, their period, duration and their schedules and their environmental facilities. The selected FTCs can be assessed from these different dimensions.

## TRAINING NEEDS ASSESSMENT (TNA) AT FTCS

As per the evidence obtained from focused group discussions with development agents, there was an attempt made by DAs and woreda experts to conduct training need assessment, but it lacks participation of different stakeholders and direct beneficiaries or trainees before organizing farmers' training. Emphasis was not given for the needs of farmers before the delivery of the training. What they did was, selecting farmers who were presumed to be or was progressive farmers or team leaders of development activities and training was conducted based on the issues what they have in the texts obtained from top levels rather than focused on local farmers' interest.Training needs assessment can be conducted through direct observation, questionnaire, consultation, FGDs, review of documents on the locality, tests, records, and work samples. On contrary, modular training has got deficiency in almost all of these mentioned techniques. Hence, this result agreed with the findings of Kefyalew (2010) who stated that, there was no

effort made to ask farmers' needs before, during and after the training. Tsion (2008) also explained that there was no as such an organized need assessment even in research centers, but it was organized based on the needs of development agents and woreda experts.

## CONTENT OF TRAINING RELEVANCE AT FTCS

According to the evidence obtained from focused group discussions of the respondents' content of the training is one of the important aspect to be considered in the process of human resource development. The training contents should connected with training needs of the farmers, plan or curriculum and training programs which correspond with the relevance content of the training.The finding result of this study showed that in all of the selected FTCs the durations of the training varies based on the content and complexity of the topic to be trained. According to the response of the interviewers, the FTCs trainings were providing on different contents of activities, the major areas of the contents were soil and water conservation, household package, compost preparation method, livestock fattening, use of credit, fertilizer usage, agronomic practices such as row planting, irrigation and livestock feed managements etc. In general, even though all contents of trainings were different from one area to another's, the target beneficiaries of the trainings also vary from one FTCs to other FTCs as well.Based on the survey data gathered from interview schedules, 50(83.3 %) respondents explained that the training content was relevant in terms of fulfilling the interest of farmers' communities; whereas the left 10(16.7 %) of respondents explained that the training content was not relevant.

To summarize this result, it was confirmed that as indicated by Fisseha (2009), all conducted training was curriculum based and relevant to the farming system, but it doesn't mean that only training contents can achieve the stated objectives for successful training results. Because of the training guideline was developed by higher experts at Federal level and interpreted to the local language at regional level, where the training manuals were prepared to train farmers based on their tasks and duties without involving them directly while the contents of training modules were produced.Most of the time, the given decision on the content of the training relevance is highly attached to the needs and problems, and inclusiveness of farmers' indigenous knowledge in the study area. On the other hand it means that knowing the components on which the farmers are willing to be trained and practices their experiences in the demonstration site was very important.

Table 8: Relevance of contents issues in FTC based training

| No | Training content relevance | Very good | Good | Fair | Poor | Total |
|---|---|---|---|---|---|---|
| 1 | Practices to farmer assured problems and needs | 9.1% | 25.9% | 40.3% | 24.7% | 100 |
| 2 | Incorporation of farmers indigenous knowledge (IK) | 13.4% | 30.6% | 41.2% | 14.8% | 100 |

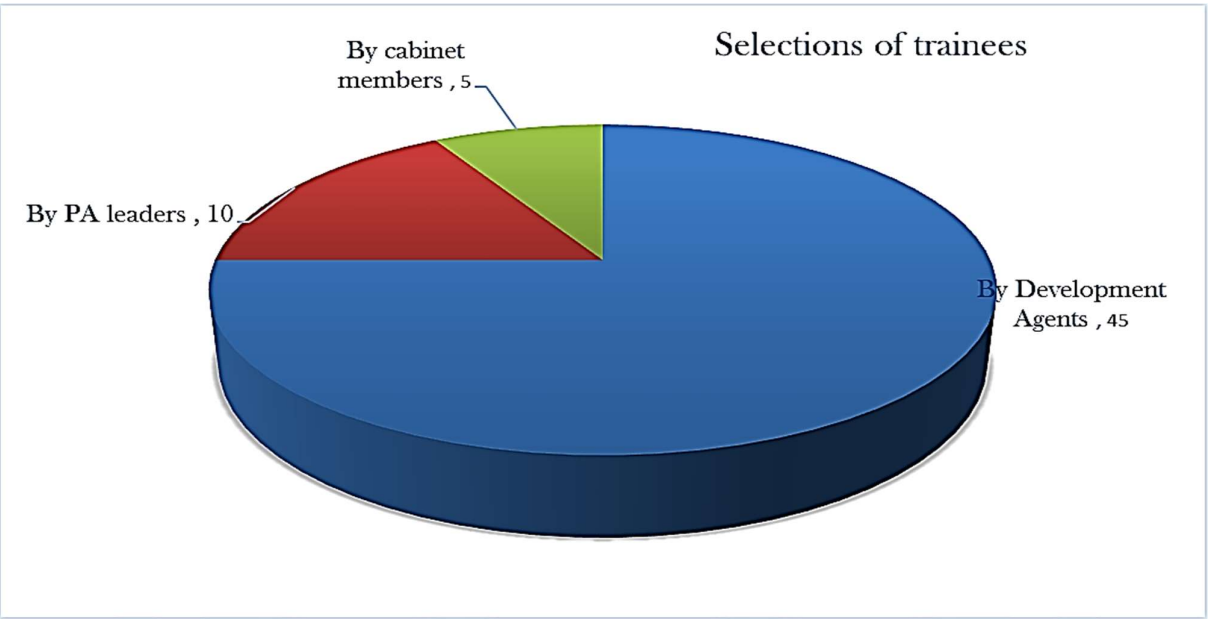
Source: Field survey, 2019.

Based on table 8 result of data about 35% (very good and good) of the trained respondents appreciate the practices that includes problems and needs of households. Whereas about 65% (fair and poor) respondent of them were not appreciate or fell unsatisfactory on the content relevance issues. This result showed that most of the training offered at farmers training centers were not appreciate the problems and needs of the households. On the inclusiveness of farmers' indigenous knowledge to the relevance content of training, 44% (very good and good) of them appreciated; while 56 %(fair and poor) were unsatisfactory on the training content relevance issues of indigenous knowledge of farmers. Generally, the result of this study was confirmed with the study of Kolawole, (2001) which implies that incorporation of practices that pressing problems/needs of farmers' and indigenous knowledge to the training was very important for the

achievement of the relevance of trainings to ensuring new knowledge, experiences, concepts and skills of farmers.

## TRAINEES ACTOR AND SELECTION CRITERIA FOR FARMERS AT FTCS

During the focus group discussion and interviewer of the selected respondents in the study area, different actors were involved in assessing methods and approaches of how the trainees' selection process can be implemented. For the accomplishment of stated objectives of the FTCs based training of farmers, the major actors who involve in trainees selection was identified by different actors of trainee in all of the sampled FTCs by selected interviewer were gave their responses on selection processes of trainees undertaken through development agents, kebele leaders and cabinet members of Gurawa woreda as it described in the figure 3.



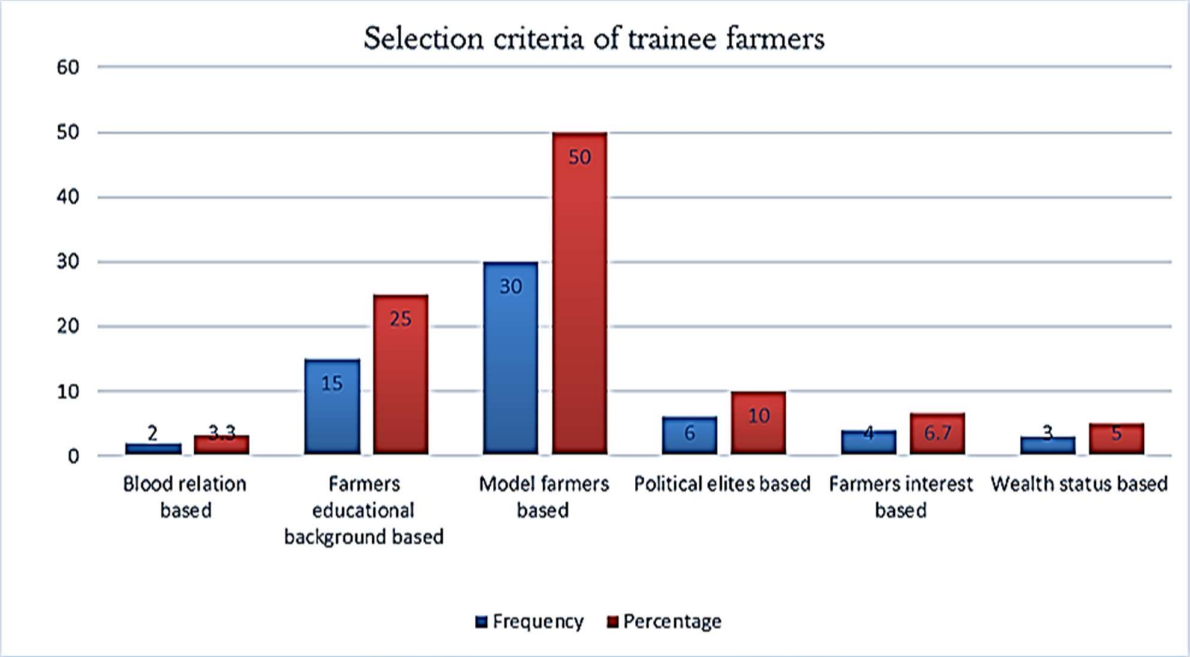

According to the result data in figure 3 revealed that, there are different actors who were involved in farmers' FTCs training. About 45(75%), 10(16.7%) and 5(8.3%) of the trainees were selected by development agents, kebele leaders and woreda cabinet members respectively selected by the sampled respondents in the study area.

To summarize the above ideas in shortly, The finding result of this study was confirmed with the study of Adebabay et al., (2008), they explained that, for achieving the relevance of FTCs based training according to the data of their study implied that, the selection of trainees' were employed by three common actors, they are DAs, kebele leader and cabinet members of middle level.

The other important issue for the relevance of FTCs based training was the selection criteria of the trainees' farmers. As it illustrated in figure 4, the result of data showed that most of the trained farmers who participate in FTCs based training responded that, the selection criteria of the farmer trainees were based on 30(50%) model farmers', followed by 15(25%) farmers' educational background and 6(10%) political affiliation, respectively, while about 4(6.7%) and 2(3.3%) of them reacted that the selection criteria of the farmer trainees were farmers' willingness and blood relation based respectively. However, 3(5%) of the respondents point out that wealth status based criteria. Generally, the result of this study shows that, most of respondents which are 45(75%) of them were based on model farmers and educated farmer selection criteria used in the study area.

Figure 4: Criteria for trainee farmers' selection process

IJCRSSSL
International Journal of Current Researches in Sciences, Social Sciences and Languages
Volume: 01 | Issue: 01 | 2020 | Open Access | Impact Factor: 4.625




**Source: field survey, 2019**

The new finding of the researcher was tried to report here is, the result of this study was not confirmed with the study of Adebabay et al., (2008), they explained that the main criteria used to select the farmers that are underlined by the guideline of FTCs training were innovative, creative, interested and voluntary youth who have been withdrawn from schools and involved in agricultural activities, those who engaged in agricultural activities, model and exemplary farmers, age of 18 and above, both male and female farmers, grade four and above and ability to share knowledge obtained to their colleagues. However, based on the obtained result of data from the selected respondents of the study was explained that, the selection criteria for the trainees farmers were based on different criteria such as blood relation, educational background of farmers, model farmers', political elites, farmers interest and wealth status based.

## TRAINING PERIOD, DURATION, AND SCHEDULE AT FTCS

According to the result obtained from the interviewed sample of the respondents, they described that relevance of the training can be affected by many aspects such as period, duration, and schedule dimension of farmers training in FTCs. As it indicted in table 9, the farmers for whom the training programs prepared was bounded by a number of responsibilities, among the important points were the convenience of the selected time, duration and schedule were variables that signifies the uniqueness of training on the front line for the selected respondents of farmer's households in the study area.

Table 9: Relevance of time, duration and schedule of FTC based training.

| No | Relevance of training issues | Very good | Good | Fair | Poor | Total |
|---|---|---|---|---|---|---|
| 1 | Timeliness of training | 37.6% | 42.4% | 16.2% | 3.80% | 100 |
| 2 | Duration of training | 28.4% | 12.3% | 20.7% | 38.6% | 100 |
| 3 | Schedule of training | 13.1% | 40.8% | 32.9% | 13.2% | 100 |

**Source: Field survey, 2019**

Based on the result of table 9, it showed that from the existing timeliness of trainings delivery about 37.6% and 42.4% of them were responded that very good and good appreciated respectively. About of 16.2% of them also respond that fairly on the timelines of the training. Despite of this about 3.8% of them feel disappointed on the timeliness of the training delivery. This implies that at least to a considerable occasion, the trainings are being conducted in inappropriate times.

Duration of training can be affect the relevance of the training in many aspects and also setting the appropriate length of the training period is sufficient condition for successful training session. Based on the result of table 9, it showed that the length of the training period was about 28.4%, 12.3%, 20.7% and 38.6% of the respondents were very good, good, fair, and poor respectively appreciated the duration of training for which they are satisfied on the training program. This obviously shows that the duration of training was not in line with the interest of the farmers but to the interest and provisions of the training resource persons.

Schedule of the training is an instrument used to measure the relevance of farmers training. Based on the result of table 9, it showed that the schedule of the training was about 13.1%, 40.8%, 32.9% and 13.2% of the respondents were very good, good, fair and poor respectively satisfied on the training program convenience of the selected season of the year at which the FTCs based training was conducted for farmers in the study area.

To conclude the assumptions of time frame, duration and schedule of training issues which are important for the selected respondent farmer's. Out of the total sample respondents 80 % of them respond that the existing training was timeliness in terms of delivery with respect to farming activities and rainfall patterns. In regard to the duration of training about 59.3% of the respondents who have participated in FTCs training also perceive irrelevance of duration as compared to what they have been exposed in other training environment. In regards to suitability of schedule of the training about 53.9% of the respondent who join in the FTCs training were appreciated while about 46.1% of the trained farmers have negatively respond on the suitability of schedule of the training.

Generally, the result of this study was confirmed with the study of CTA working document (2000), they categorically suggested that the aim of farmers training is not just to convey knowledge and skills in one-short intensive training courses, but also to involve rural people in the development activities through a continuous process of learning week after week. When the training is imparted on daily life related critical activities, it should be continuous and completely well connected to the activities which undertaken for the farmers beneficiaries.

## TRAINING ENVIRONMENT AND FACILITATORS' ABILITY AT FTCS

The basic requirements for the relevance of FTCs-based training for farmers were achieved through the fulfilment of an appropriate training material/aids, venue and facilities for demonstration site was tried to describe in table 10.

Table 10: Relevance of training environmental facilities at FTCs

| No | Relevance of training environment | Very good | Good | Fair | Poor | Total |
|---|---|---|---|---|---|---|
| 1 | Training environment and teaching aids | 13.1% | 40.4% | 30.8% | 15.7% | 100 |
| 2 | Suitability of the venue/place of training | 65.4% | 25.3% | 6.60% | 2.70% | 100 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | Appropriateness and quality of training facilities | 22.5% | 18.7% | 26.3% | 32.5% | 100 |

**Source: Field survey, 2019**

As it was depicted in table 10, based on the result of environmental facilities issue, about 13.1%, 40.1%, 30.8% and 15.7% of the respondents were responded very good, good, fair and poor respectively. It conclude that most of them 53.5% the respondents appreciated the training materials used at FTCs in transferring the planned training objectives. While a few of them 46.5% felt that the materials/aids used at FTCs training was not relevant during the training sessions to deliver the desired knowledge to the trainers farmers in the area.

Based on the result of suitability of the venue and place of training issue, about 65.4%, 25.3%, 6.60% and 2.70% of the respondents were responded very good, good, fair and poor respectively. Generally, 90.7% of the farmers response was appreciated, feel relevant or convenient and the rest 9.3% of them were disappointed with the venue where the training is delivered.

Based on the result of adequacy and quality of training facilities, about 22.5%, 18.7%, 26.3% and 32.5% of the respondents were responded very good, good, fair and poor respectively. Generally, regarding the adequacy and quality issue, 41.2% of the respondent has positive response, on the other hand where as a majority 58.8% of the respondents were reflected negative response on the adequacy and quality of training facilities.

The result of this study was confirmed with the study of Swanson et al. (1998), explained that training materials, venue or place trainings and adequacy and quality of training facilities are essential for farmers training activity once the training contents are identified. It is also good to use a variety of training materials and methods throughout a training to maintain the interest of the trainees.

According to the result achieved from the FGDs interview in the study area, the relevance of facilitator's ability on FTCs-based training was delivered by local administrator, development agent, woreda and zonal experts.

The relevance of FTCs based training for farmers were achieved through increasing the abilities of trainers' through their knowledge, practical farming skills, communication skills and follow up and regular evaluation of the trainers were described in table 11.

Table 11: Relevance of facilitators' ability on FTCs based training

| No | Relevance of facilitators ability | Very good | Good | Fair | Poor | Total |
|---|---|---|---|---|---|---|
| 1 | Knowledge of the trainers (DAs) | 39.8% | 33.2% | 19.7% | 7.30% | 100 |
| 2 | Practical farming skills of the trainers | 24.5% | 35.5% | 33.6% | 6.40% | 100 |
| 3 | Communication skill of the trainers | 35.4% | 40.6% | 19.7% | 4.30% | 100 |
| 4 | Follow-up and regular evaluation | 7.60% | 9.50% | 22.8% | 60.1% | 100 |

**Source: Field survey, 2019**

Based on the result of knowledge of trainers, about 39.8%, 33.2%, 19.7% and 7.30% of the respondents were responded very good, good, fair and poor respectively. Generally concerning the knowledge issue

about 73% of the trained farmers have positive response on the knowledge of trainers, but 27% of the farmers who participated in FTC training did not appreciate the knowledge of trainers.

In this study, the results of practical farming skill of trainers and their interaction with the farmer trainees was also investigated. Regarding this issue, about 24.5%, 35.5%, 33.6% and 6.40% of the respondents were responded very good, good, fair and poor respectively. Generally, about 60% of the respondent have positive reaction, while 40 % of the trained farmers have not appreciated the practical farming skill of the trainer.

Regarding the result of communication skill of trainers about 35.4%, 40.6%, 19.7% and 4.30% of the respondents were responded very good, good, fair and poor respectively. Generally, among the total trained farmers 76% was appreciated and the rest about 24% trained farmers were not appreciate the communication skill of the resource persons for training at FTCs.

According to the result of the follow up and regular evaluation of trainers about 7.60%, 9.50%, 22.8% and 60.1% of the respondents were responded very good, good, fair and poor respectively. In these regard the finding of this result showed that about 17.1% of the trained farmers responded positively, while 82.9% were negatively reflected on follow up after the training. Unfortunately, the general discussions made with trained farmers they indicated that there were no exposure of regular follow-up and evaluation of activities after training was undertaken in the area.

Generally, the finding of this study was confirmed with the study of Kefyalew, (2006) Ousman, (2007) and Tsion, (2008), the training organizers might not consider the value of regular follow-up and evaluation of activities in completing the training process and end up the training.

| Items of delivery dimension | Categories | Trained farmers | |
|---|---|---|---|
| | | Frequency | Percent |
| Length of trainings | Sufficient | 52 | 86.7 |
| | Not sufficient | 8 | 13.3 |
| Style of trainings | With interval | 48 | 80 |
| | Continuous | 12 | 20 |
| Training delivery methods | Theoretical | 45 | 75 |
| | Practical | 10 | 16.7 |
| | Balanced | 5 | 8.3 |

According to the survey data gathered from respondent farmers through interview schedules the time allowed to take length of time was sufficient as 52(86.7%) of sample respondents' and 8(13.3%) was not sufficient according to respondents. Styles of the training are also essential aspects towards farmers' day-to-day activities and continuous practices in rural areas. Hence, 48(80%) of respondents were preferred with-interval style of the training due to farming practices need continuous follow up while 12(20%) of the responses indicated continuous ways of training. The other finding result of this study was about 45(75%), 10(16.7%) and 5(8.3%) of the trainees indicated that trainings were carried out more on theoretical, practical and mixed type of parts respectively responded by the interviewer on the content of training in the study area.

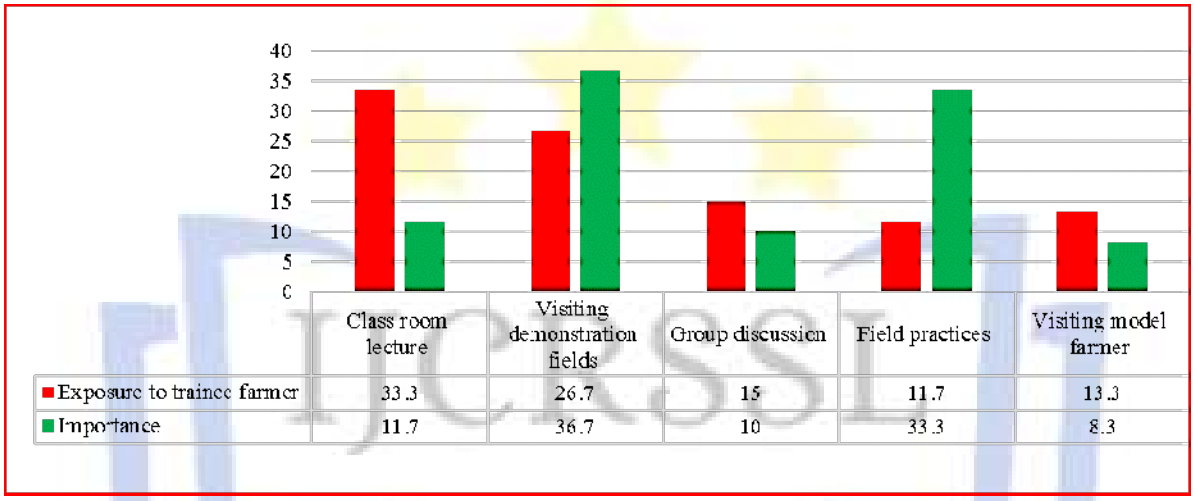
The results of this study was not supported by the study of Adebaby et al., (2007), they explained that the most challenging issues in FTCs based training was methods of training and proportions of training methodology. The syllabus of farmers training has been designed to be 80% practical and 20% theoretical

oriented. Training materials, skills of trainees, interest of trainees and trainers, demonstration sites, etc. were supposed to be convenient for the delivery of the training but practically it did not happen.

On the other hand, the results achieved from the key informants and FGDs, the main limitations/challenge of training delivery methods/systems were observed in the areas. Some of them was mismanagement of time, mostly depend on theoretical, disorganized delivery of the training and absence of fully participatory on training with absence of commitment and interest in the selected FTCs of Birbirsa, Resa jennata, Giru gemmachu and Lafto FTCs in the study area.

In the methods of training delivery and their importance in FTCs choosing the proper teaching methods are paramount important. A training plan has a better chance of success when its training methods are carefully selected. There are a variety of methods and techniques for conveying information to trainees, but not all of these are equally suitable as it described in figure 5.

Figure 5: Training delivery methods and their importance at FTCs




**Source: Field survey, 2019**

As it indicated in the figure 5, it describes that farmers' responses on teaching methodologies used during training session. In this regard class room lecture, visiting demonstration fields, group discussion, field practices and visiting model/exemplary farmers field are the major methods used in the study area.

From the total trained farmers' most of them 33.3% and 26.7% were responded class room lecture and visiting demonstration fields respectively, are the first and second dominant training methods in the study area. Others 15.0% and 13.3% respondents were responded group discussion and visiting model farmers were also used the third and fourth teaching methods respectively. Only 11.7% of the respondents point out, field practice was the fifth means of teaching methods.

With regards to their importance, respondents indicated that the class room lecture 11.7%, field practices 33.3%, and visiting demonstration fields 36.7%, and others 10.0% and 8.3% respondents are group discussion and visiting model farmers respectively, are all important at varying degree, although some difference was observed, most of the respondents appreciated visiting demonstration fields and field practices, respectively as the most suitable methods in addressing the outcomes of the training.

In generally, the finding results of this study was agreed with the findings of Seyoum (20016), who reported that training method is a strategy or tactic that a trainer uses to deliver the content so that the trainees were used to achieve the objectives of a particular training. In addition to this, skill orientation of the training process is an instrument used to measure the relevance of training methods. In this case,

combination of theory and practice in training is essential to better improvement. In general most of the training was highly theoretical and lecture type of methodology hence, redirecting in mixing both theory and practice should be future assignment.

## THE EFFECTIVENESS OF FARMERS TRAINING IN TERMS OF KNOWLEDGE, ATTITUDE AND PRACTICE

To measure the effectiveness of farmers training, they can be evaluated by taking various parameters such as improving farmers' knowledge, attitude and practice of beef cattle, dairy and soil and water conservation management practices. The sample respondents were 60 trained and 60 untrained farmers.

In this study, assessment in knowledge, attitude and practice in promoting those commodities was performed using descriptive statistics such as frequency, percentage and statistical tests. The difference between trained and untrained farmers was compared by using independent sample t-test. The frequencies and percentages of respondents were ranged as low, medium and high categories in order to understand distributions of each group of farmers.

## INSTITUTIONAL LINKAGES MECHANISMS OF FTCS WITH DIFFERENT ACTORS

In this section the researcher was tried to discuss briefly about the institutional, organizational management and linkage mechanisms with which FTCs are functioning under their current circumstances. Provision of training alone cannot bring about the required improvement without linkages with other institutions for the success of FTCs based training for farmers. All of the selected FTCs have served for different purposes such as giving skill training, extension services, meetings and various community development activities in the study area.

## LINKAGE OF KEY ACTORS AND THEIR ROLE IN RELATION TO FARMER TRAINING

According to the study of Ananda jaya sekeram et al., (2008), linkage mechanism is the concept, procedures, arrangements, devices or channels that bridges the gap between components of the system and allows communication between them. The purpose of this section is to list actors, who were involved for farmers' trainings, and looking in to the roles of actors, and how the linkage system is functioning. For the undertaking of any project intervention, the first step is to identify the key actors who bring about or prevent change in an innovation system. For the achievement of the stated objectives of this study, the researcher was discussed through FGDs, KII and site observations. The main stakeholders which included in the functioning of the FTCs based training participants such as farmers, DAs, kebele supervisors, woreda experts, zone officer, researchers and relevant institutions were consulted.

The main actors of linkage involved in the FTCs based training for farmers, were categorized in to public sectors include: DAs, administrators, cooperatives, primary schools, Oromia Credit and Saving Share Company (OCSSC), Bureau of Agriculture and Rural Development (BoARD), Woreda of Agriculture and Rural Development Office (WoARD), ATVETs, Ministry of Agriculture and Rural Development (MoARD), Haramaya University and other organs.

Private actors and NGOs were also identified as key actors with regard to the FTCs based training for farmers, these actors were farmers themselves and Integrated Seed Sector Development (ISSD) project. Thus, a total of 12 actors were identified who are involved in training of the farmers' in the study area (See Appendix Table 1). There are other actors, which could have contributed for FTCs related to farmer trainings. Some of missed actors that identified based on KIIs and FGDs are Care project, investors and regional research center.

The other main finding result of this study achieved during the researcher was discussed through FGDs, KII and site observations in the study area, the linkages of potential actors had many opportunities such as to develop trust and confidence among partners of development, it enables sharing of roles and responsibilities to foster an interdisciplinary and holistic approach, upgrading of the potentials of DAs in their professional career. This opportunity can be addressed to farmers in advising, close extension service and it enables to share knowledge and information, enhancing the chance for employment and job creation in addition to the farming activities in the area. and linkages had also some challenges such as roles and responsibilities of DAs and supervisors are not clearly defined towards training, lack of continuity of training for farmers, presence of high turnover of DAs, since many of them are learning at degree level in other subjects, presence of duplication of work, inadequate skills and knowledge of training facilitators at kebeles and woreda level, and formation of high communication barriers between farmers, researchers, and NGOs as they work together.

In general, presence of weak linkage between the potential actors were disrupts the knowledge flow processes, lowers adoption rate, increase time lag between developments, reduce efficiency in the use of resources, unnecessary completion and duplication of efforts, and make confusion among farmers regarding to which institutions they form linkage.

This study was agreed with the study of Tesfaye (2009), it describes that any research centers institution can play their own contributions in terms of promoting different varieties of crops and other commercialized commodities and others facilities like preparing a demonstrations field, giving training of farmers and development agents. There are various non-governmental organizations that have been implementing for the achievements activities of FTCs functionality. If institutional innovation and linkage mechanisms improved, FTCs can have better performances.

## ORGANIZATIONAL MANAGEMENT ASPECTS OF FTCS BASED TRAINING

For the fulfilment of the FTCs based training for farmer in the area, organizational development intervention aims was to promote and assist local institutions to become more effective, viable, autonomous and legitimate to make decisions on local affairs. In this study, assessment of management aspects of FTCs was carried out to see the actual setting by which FTCs operate currently.

To put it in a nut shell, from the selected FTCs which had basic materials and facilities, like class rooms, offices, residence, exhibition center, workshops, electricity, telecommunication and water would perform better training in the area. During this interview, they stated that there were no formal financial systems and procedures to be administered at FTCs level. However, it was observed that, there are no enough residence houses for DAs in both lafto and Giru gemachu FTCs. The DAs need to travel daily on average an hour to reach the FTCs from their residence in Gurawa towns. This can affected effective use of working hours of the day since the DAs are required to spend two hours a day to travel on foot.

Regarding the finding of the result obtained from survey data through FGDs, KII and site observations showed that, the main strengths for the intervention to enhance management of FTCs in the study area was, establishment of FTCs in 42 kebeles in the center of area, there was community participation at the time of construction mostly in Birbirsa and Resa jennata FTCs kebeles and a few farmers have better devotions and commitments towards training, so that they could scale up best practices they have to others kebele farmers.

The main weaknesses for the intervention to reduce the management of FTCs in the study area was lack of active participation of rural households in the regular training programme, lack of coordination between farmers, research, agricultural extension office, NGO and other relevant institutions, lack of demonstration areas for FTCs and the lands were not substituted for owners of the tenures, lack of transport facilities, there is no clear training policy documents at hand how to integrate stakeholders

towards training, there was a problem of handling system of farm equipment's and offered teaching aids, and there was no monitoring, evaluation, follow up and feedback on training implementations in the study area.

This study was confirmed in line with the findings of Habte Mariam (2007) also noted that, to provide skills training along with the required information, the DAs needs to be equipped with the necessary facilities such as, the seed, fertilizer, planting material, chicken hay box, energy saving stove etc., because of those material presence they cannot quit the training up on completion of the theoretical part. Regardless of financial resources obtained at FTCs, such as, revenue from income generating activities of own compound are informally administered by FTCs management for such purposes as, monthly payment for security service, purchase of seeds and other inputs for the next cropping season, etc.

## KNOWLEDGE AND INFORMATION SHARING IN RELATION TO FARMER TRAINING

Linkage mechanisms for communication enable to generate transfer, share, and use knowledge and information that available when it is required. There are different ways of knowledge and information sharing techniques. The focus of this part is to assess knowledge and information sharing services. Knowledge can be transferred and shared through delivery of various sources such as training, field days, demonstrations, experience sharing, market, mass media, formal and informal meetings and discussions.

The DAs stationed at FTCs besides conducting farmers training and technology demonstration, they facilitate various field level activities relating to extension, on-farm research, mobilization, organization of farmers, input delivery, services provision by various state and non-state actors. DAs are supported by both public and non-governmental organization in different areas of their daily activities, they supported FTCs training primarily based on information collected during the appraisal with DAs and the FTCs management bodies.

The public actors such as regional, zonal and woreda bureaus of agriculture and rural development, Fedis agricultural research center, Gurewa ATVET and Haramaya University research affairs office are the important sources of knowledge and information of the FTCs.

At FTCs level, kebeles administration is an important key actor in mobilizing farmers for collective actions like natural resource rehabilitation and management, encouraging farmers' participation in extension packages, organizing and supporting cooperatives. Beside, farmers' organizations like Gurewa farmers' cooperative and privet firms are also important actors in supporting the FTCs.

Generally, in this study, assessment of management aspects of FTCs focused on formal and informal institutions available for functioning of FTCs management committee at farmers' level. Resa jennata FTC has a better linkage followed by birbirsa FTCs and lafto, with different sources of finance, information, knowledge and technologies (See Appendix Table of 2).

This study was confirmed in line with the findings of Kefyalew (2006), they showed that the undergoing training by formal and informal institutions such as community skill training centers, research centers, farmer field schools, NGOs and exposing ones to scientific information help individuals to think rationally and logically in all aspects of the life.

## CONCLUSION

This study was attempt to assess the relevance and effectiveness of FTCs-based farmer training in terms of knowledge, attitude and practice change by comparing between trained and untrained farmers and exploring institutional linkage at FTCs in Gurawa district.

The current status of all sampled FTCs were compared to each other's based on the actual performance they achieved such as availability of infrastructure facilities, human resource and their work experiences, management aspects of FTCs were vary among the sampled in the area. With regards to infrastructure facilities, Birbirsa and Geru gemachu were among the better equipped FTCs of the woreda. The numbers and work experiences of DAs were varies from one FTCs to others FTCs in order to carry out the perceived responsibilities at FTCs level. The FTCs management have their own strengths side likes coordinate and facilitate various field level activities relating to farmers training and weaknesses side likes absence of a clearly defined mandate given from government to effectively authorizing its mandate to carry out FTC based training.

All planning and implementations activities at FTCs was conducted by woreda extension expert, DAs of kebele and other stakeholders including head of kebele and local communities of the area. So far no one of sampled FTCs has been conducted post evaluation to assess the positive or negative feedback of the implemented activities on the situation of trained and untrained target groups of sampled farmers. This type of evaluation may help the evaluators (woreda expert and DAs) to assess the overall achievement of a given trainers farmers and to draw lessons for future planning of the training.

The relevance of FTCs based training was analyzed based on the identifications of farmers' needs and constraints, content of training, training delivery methods, selection criteria of trainees and appropriateness of period, duration and schedules of training facilities. For this reasons, the training needs assessment was undertaken by DAs and woreda experts but it lacks participation of direct beneficiaries or trainees and different stakeholders before organizing training.

Even though, the content of training relevance is highly attached to the needs/problems of farmers and inclusiveness of farmers' indigenous knowledge, in most of the training offered at FTCs were not appreciate the problems and needs of the farmers before the delivery of the training in the area.This study conclude that training delivery methods are essential for better improvement of the capability of individual trainees, during the interview of these participants most of the trained farmers responded that the training which offered at FTCs was highly theoretical oriented rather than practical session in the area. In addition to this, the major actors which involves in trainee selection are DAs, head of kebele leaders and woreda cabinets.

To create a conducive training delivery systems in the area the selection of trainee farmers were based on different criteria such as blood relation, farmers' educational background, model farmers', political elites, farmers' interest and wealth status based in the study area.The study has revealed that FTCs based farmer training was relevant in most of the offered training components in the area of crop, livestock, natural resource etc. and the durations of the training varies from one FTCs to others based on their content and complexity of the topic to be trained during 2011/2012 production season in the study area. And also the timeliness and schedules of training was not in line with the full commitment and interest of the farmers rather than it is based on the interest and provisions of the training resource persons.

As a general most of the trained farmers respond that the training which offered at FTCs based couldn't achieve its objectives to address the required level of knowledge sharing experiences to the sampled respondents without solving mismanagement of time, absence of a systematic needs assessment, highly theoretical rather than practical, absence of participatory method of training, and disorganized delivery of the training without lesson plan of cropping seasons, absence of clear linkage mechanisms to integrate with other FTCs, technical and other agro ecological situations.

The effectiveness of FTCs based farmer training in the study area was evaluated using Likert scale categories, t-test and teacher made test to measure the knowledge, attitudes and practice change of

trained and untrained farmers respectively. Hence the result of knowledge indicated that there was significance difference mean between trained and untrained farmers at 1% probability level.

Attitude scale was also administered and the result showed that trained farmers have more favorable attitude towards the given technologies and commodities than untrained farmers at 1% probability level. Based on the practice assessment of trained and untrained farmers, the mean difference of practice of trained farmers were significantly higher than untrained farmers at 5% probability level.

According to the survey result of this study, the functional linkages mechanisms' between actors were performing different from one FTCs to others. Different key actors were identified such as public, private, NGOs and others missed actors such as investors, research center that were involved for various types of roles in FTCs based training activities and their functioning.

For instance, the perception of the main actors revealed that there was an existence of poor coordination among participants which makes them as responsible for poor performance and structural missing link between actors. Their linkage management aspects of FTCs were focused on formal and informal institutions which can available to generate transfer, share, and use knowledge and information that available when it is required for the functioning of FTCs at farmers' level. But there was no formally established mechanisms to coordinate tasks between actors in the study area.

## REFERENCES

[1]. Anteneh Girma, 2008. Dairy services delivery in Debre Zeit milk shed of Ada'a district.Analyzing options to develop pluralistic service delivery in the dairy sector. An MSc Thesis presented to School of Graduate Studies of Haramaya University, Ethiopia: pp. 55 56.

[2]. ATA (Agricultural Transformations Agency) and MoANR (Ministry of Agriculture and natural resources), 2017. Ethiopia's Agricultural Extension Strategy. Addis Ababa.

[3]. Barbazette, J., 2006. Training Needs Assessment, Methods, Tools, and Techniques. Published by Pfeiffer,San Francisco, USA.

[4]. Bekelech Tesfaye, 2014. The Effectiveness of Farmer Training Centers in the Economic Life of Rural Adults: The case of Oromia National Regional States of South West Shoa Zone Wonchi Woreda. An MSc Thesis presented to School of Graduate Studies of Addis Ababa University, Ethiopia.

[5]. BergaLemaga, D. Borus, R. Kakuhenzire, G. Woldegiorgis, D. Tibanyendera, J. Nshimiyimana, , E.Schulte-Geldermann, and I. Barker, (2013). Capacity building: A basis for Technology adoption and sustainable potato production in Eastern Africa. Act Hort. (ISHS) 1007:649-655. http://www.actahort.org/books/1007/1007_75.htm.

[6]. Birhanu Gebramedhin, Hoekstra D. and Azage Tegegne 2006. Commercialization of Ethiopian agriculture: Extension Service from input supplier to knowledge broker and facilitator. IPMS of Ethiopian Farmers Project Working paper ILRI, Nairobi. 33pp.

[7]. Biruk T., 2010. Effectiveness of Modular Training at Farmers Training Centers: The Case of Mi'eso Woreda, Oromia Region. An MSc Thesis presented to School of Graduate Studies of Haramaya University, Ethiopia.

[8]. BoARD (Bureau of Agriculture and Rural Development), 2012, 2014. Annual report. Girawa district East Hararghe Zone.

[9]. Bradbury, Productivity Commission May 2013. On efficiency and effectiveness: some definitions, Staff Research Note, Canberra, Common wealth of Australia.

[10]. Caffarela, R.S., 2002. Planning Programs for Adult Learners. A practical guide for educators, trainers and staff developers.(Second edition).John Wiley & Sons, Inc. San Francisco.

[11]. CSA, 2006.Agricultural sample survey 2005/2006 (1998 E.C.) (September 2005–February 2006). Volume I: Report on area and production of crops (private peasant holdings, meher season). Statistical Bulletin 361, July 2006, Addis Ababa.
[12]. Eshetu Tefera, 2008. The role of dairy cooperative in stimulating innovation and market oriented small holder development: The case of Ada'a Dairy cooperative. A M.Sc. thesis presented to the School of Graduate Studies of Haramaya University.
[13]. Feder, G., R. Birner, and J. Anderson. (2011). "The Private Sector's Role in Agricultural Extension Systems: Potential and Limitations." Journal of Agribusiness in Developing and Emerging Economies 1(1): 31-54. doi:10.1108/20440831111131505
[14]. Gebremedhin B., Jemaneh S., Hoekstra, D., Anandajayasekeram, P. (2012). A guide to market oriented extension services with special references to Ethiopia. IPMS (Improving Productivity and Market Success) of Ethiopian Farmers Project. Nairobi. ILRI. Pp 101.
[15]. Habtemariam Abate. (2013). Habtemariam Abate (2007). Review of Extension Systems Applied in Ethiopia with Special emphasis to the Participatory Demonstration and Training Extension System. Addis Ababa, Ethiopia.
[16]. Hassen Hakimian and Amdisa Teshome, 1993. Trainers Guide: Concepts, Principles, and Methods of Training, With Special Reference to Agricultural Development. FAO, Rome.407p.
[17]. International Institute for Rural Reconstruction (IIRR), 1997. Manual for Training of Trainers for Sustainable Agriculture Course. Philippines.
[18]. IRRI. 1990. Training and technology transfer course performance objectives manual. Manila: International Rice Research Institute.
[19]. IFPRI (2010). In-Depth Assessment of the Public Agricultural Extension System of Ethiopia and Recommendations for Improvement, Addis Ababa
[20]. Kamariah Dola, 2011. Investigating Training Impact on Farmers' Perception and Performance. International Journal of Humanities and Social Science Vol. 1 No. 6
[21]. Kilpatrick S., 1997. Education and Training: Impacts on profitability in agriculture. In New Zealand, Journal of vocational Education Research. 5, 2, pp. 11-36.
[22]. Kirkpatrick, D. L., 2006. Evaluating Training Programs. Berrett-Koehler Publishers, Inc. USA.
[23]. Kefyalew Worku, 2006. Evaluation of farmers' Training programs: the Case of Eastern Harerghe (Babile and Hudane woredas). A M.Sc. Thesis Presented to the School of Graduate Studies of Haramaya University. 74p.
[24]. Lemma, T. Sehai, E. and Hoekstra, D. (2010). Status and capacity of FTCs in improving productivity and Market Success Pilot Learning woredas. ILRI, Addis Ababa
[25]. Luchia Tekle, 2015. Analysis of Positive Deviance Farmer Training Centers in Northern Ethiopia. American Journal of Rural Development, vol. 3, no. 1 (2015): 10-14. doi: 10.12691/ajrd-3-1-3.
[26]. Marissa, B., 1998. Espeneli for the Training of Trainers for Sustainable Agriculture Course. IIRR Headquarters, Silang, Cavite, Philippines.
[27]. Mellor, J. W. (2014). High rural population density Africa – What are the growth requirements and who participates? Food Policy DOI: 10.1016/j.foodpol.2014.03.002
[28]. Merihun Fikru Meja and Endrias Geta, 2017.Analyzing Farmers' Training Centers through Integrated Innovative Capacity Building and Technologies Transfer; a Case Study of Damot Gale District Woliata Zone, Ethiopia. International Journal of Environmental Sciences. Vol. 6 No. 4. 2017. Pp. 94-100
[29]. Miller J. A, and Osinsiki D. M., 2002.Training Needs Assessment. SHRM Training and Development Committee, SPHR Press, UK. Society for Human Resource Management (SHRM).
[30]. MoARD, 2005.Working Guide line of Farmers Training Centers, Addis Abeba.
[31]. MoARD (Ministry of Agriculture and Rural development), 2008.Guideline on scale up and scale out of agricultural technologies. Addis Ababa, Ethiopia.

[32]. MoA, 1980a. Southern zone farmer's multi-purpose Training Center Project Proposal. Vol.1, MoA Publication, Addis Ababa, Ethiopia.
[33]. MoA, 2000. Farmers Training Centers project Proposal. MOA publication, Addis Ababa,Ethiopia.
[34]. MoA Rural Capacity Building Project (2012b). Performance of Agricultural Development Partners' Linkage Advisory Councils. Haromaya University, Dire Dawa.
[35]. MoA Rural Capacity Building Project (2012c) Work Motivation and Job Performance of Development Agents. Haromaya University, Dire Dawa.
[36]. MoANR (Ministry of Agriculture and Natural Resource), 2017. Ethiopia's Agricultural Extension Strategy, Addis Ababa.
[37]. Murshed-E-Jahan and Pemsl, 2011. The impact of integrated aquaculture–agriculture on small-scale farm sustainability and farmers livelihoods: Experience from Bangladesh.Agricultural Systems.
[38]. Oreszczyn, S., Lane, A. Carr, S. (2010). The role of networks of practice and webs of influencers on farmers' engagement with and learning about agricultural innovations. Journal of Rural Studies 26(2010) 404-417.
[39]. Ousman Surur, 2007. Effectiveness of Agricultural Training Development Program: the case of teff and livestock farmers of Alaba woreda. A M.Sc. Thesis Presented to the School of Graduate Studies of Haramaya University. 139p.
[40]. Raab, R.T., Swanson, B.E., Wentling, T.L. and dark, C.D., 1987. A trainer's guide to evaluation. Rome: FAO.
[41]. Rama, B.R., Etling, A.W. and Bowen, B.E., 1993. Training of Farmers and Extension Personnel. In R.K. Samanta (Ed.), Extension Strategy for Agricultural Development in 21st Century. Mattila Publications. New Delhi.
[42]. Saint W., 2004. Higher education in Ethiopia: The vision and its challenges. Journal of Higher Education in Africa 2 (3): 83–113.
[43]. St. Marry, University College, 2006. Human Development Report, Introduction to development perspective UNDP.
[44]. Seyoum E., (2013). Performance of Farmers Training Centers in South Wollo Zone: with Special Reference to Kalu Woreda, Amhara Regional State. An M.Sc thesis presented to Indira Gandhi National Open University (IGNOU).
[45]. Tefera, T. L., Sehai, E., & Hoekstra, D.(2011).Status and Capacity of Farmer Training Centers (FTCs) in the Improving Productivity and Market Success (IPMS) Pilot Learning woredas (PLWs).ILRI, Addis Ababa, Ethiopia.
[46]. Tsion Tesfaye, 2010. Effectiveness of farmers training offered by Ethiopian Institute of Agricultural Research to farmers: the case of Holeta, Melkassa and Deber Ziet agricultural Research Centers. An MSc Thesis Presented to the School of Graduate Studies of Haramaya University.76p.
[47]. Wuletaw Mekuria, 2014. "Effectiveness of Modular Training at Farmers' Training Center: Evidence from Fogera District, South Gondar Zone, Ethiopia." American Journal of Rural Development, vol. 2, no. 3 (2014): 46-52. doi: 10.12691/ajrd-2-3-2.
[48]. Zeleke, W.M., 2000. Study on Functional Literacy Program for Agricultural and Rural Development in Ethiopia, Addis Ababa.