

# **Agricultural Extension Service Approach in Ethiopia from where to where? A Review**

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## **Abstract**

Since research-based agricultural extension services started to be provided to the surrounding farming communities by the then Alemaya College of Agriculture (currently Haramya University of Agriculture) in 1953, the country has implemented several agricultural extension systems at different times aimed at supporting rural communities. Under Ethiopia's current Agriculture Development-Led Industrialization (ADLI) strategy, the extension system remains a critical tool. The government of Ethiopia firmly believes that an effective and efficient extension system must play an important role in bringing about agricultural growth and transformation by facilitating adoption and utilization of yield- and quality-increasing agricultural technologies. Ethiopia has also been implementing a participatory extension system (PES) since 2010 following the commencement of the first Growth and Transformation Plan. The PES is a modified version of Participatory Demonstration and Training Extension System (PADETES) with PES having a better potential to strengthen participatory extension services. The major changes made in PES as compared to PADETES were organization of farmers in development groups and social networks (one in five farmers groups, development units), FTC categorization into watershed management and full-package extension service provision. Despite such efforts to make the extension system effective and efficient, the system is not producing the desired results. Many yield- and quality-improving technologies have been generated in the agricultural sector, but they are not reaching smallholder farmers. Equally the agricultural sector is not reaching its full potential in terms of attaining food self-sufficiency and reducing poverty. The failure could be attributed, among others, to poor implementation and insufficient strategic interventions to overcome system-wide bottlenecks. The development of this strategy - the first of its kind focusing on agricultural extension - is premised on a belief that an effective and efficient agricultural extension system can play a vital role to enhance the agricultural productivity and production of smallholders through the development of innovative, systematic, and farmer- owned agriculture extension services. Agricultural extension may also be used as a policy instrument to mobilize the communities for necessary behavioral changes and creating demands on the national development programs.

**Key Words:** Agriculture, Agricultural extension, Approach

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## **I. Introduction**

Agricultural extension services are the bedrock of agricultural development; however, the development of the sector cannot be achieved without an efficient and effective extension system. Thus, there is a need for a well-articulated and comprehensive agricultural extension policy, which depends on decentralization and pluralism to develop agricultural extension systems.[1]

In Ethiopia, agricultural extension is playing a crucial role in agricultural development and rural transformation. "Extension is understood as a policy instrument and legitimate tool for a government to bring about desired changes in political, socio-economic, cultural and environmental aspects" [1]. The evident goal of agricultural extension is to help farmers to overcome agriculture-related constraints by persuading them to adopt/adapt and use innovations. Behavioral change can be achieved either through coercion or voluntarily. According to [2], extension can be more effective when it operates by inducing voluntary change and satisfying customer goals.

In Ethiopia, agriculture is the main source of livelihood and the basis of the national economy, accounting for 41% of the country's gross domestic product. Approximately 85% of the population lives in rural areas, relying on subsistence farming with <1 ha available for cultivation while accounting for 95% of the country's agricultural production.[3,4] The major food crops grown are cereals, which constitute the primary diet for most of the population.[4] Livestock further plays an important role since Ethiopia holds the largest livestock population in Africa and the majority of smallholder farmers depend on animals for cultivation,

draught power, and transportation of goods.[5] However, agricultural production and productivity from smallholder farming have been very low and inadequate to feed the growing population in the country, which has been constantly struggling with problems of food and nutrition security. Majority of Ethiopian farmers have been using the traditional way of agricultural practices.

The recent food crisis has further underlined the urgency of supporting agricultural development. Providing economic services, such as agricultural extension, is essential in using agriculture for development. Agricultural extension service approach plays a great role since it contributes to make extension services clear for the development of the skill and knowledge of farmers to adopt new and improved technologies (seed varieties and animal breeds, implements, chemicals, and practices) and the approaches and processes with which the skill development and access to information are realized.

The government emphasis on commercialization of the agricultural sector has implications for the organization, staffing, and operation of the agricultural extension service. The role of appropriate extension service approach is more critical for commercial oriented farmers than subsistence farmers. Extension services in Ethiopia until about 2002 were focused on increasing production and productivity in view of achieving food security.[6]

According to Van den Ban,[7] an agricultural extension service approach system should incorporate five goals: Transferring knowledge from researchers to farmers, advising farmers in their decision-making, educating farmers to be able to make similar decisions in the future, enabling farmers to clarify their own goals and possibilities, and stimulating desirable agricultural development. An extension approach influences the choice of the target audience, the resource requirements and the allocation, their methodologies employed, and the results and impacts of the extension efforts. This helps extension agent or any experts to understand the fundamentals, concepts, and functional methods of extension adopted to fulfill its aims, especially in the planning phase. The objective of this paper is to review on the Historical Evolution of Agricultural Extension Service Approach in Ethiopia.

## **II. Methodology**

The paper used document analysis as its main method of data collection and analysis. Relevant facts on the historical evolution of agricultural extension service approach in Ethiopia were analyzed. It was undertaken using some review of related literature from different sources. Published articles and books were also explored to organize the document related to Ethiopian agricultural extension service approaches.

## **III. Literature Review**

### **Concept of extension and extension service approach**

Van den Ban (1996) defined extension in more comprehensive way and paying attention on the process of helping farmers to make their own decision. Today's understanding of extension goes beyond technology transfer and training to learning. It includes assisting farmer groups to form, dealing with marketing issues, and partnering with a broad range of service providers and other agencies. As a system, extension facilitates the access of farmers, their organizations, and other market actors with knowledge, information, and technologies; facilitates their interaction with partners in research, education, agribusiness, and other relevant institutions; and assists them to develop their own technical, organizational, and managerial skills and practices.[8]

The agricultural extension can be defined as the entire set of organizations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies to improve their livelihoods and well-being. Moris [9] defined extension as the mechanism for information and technology delivery to farmers. This conceptualization of the extension service has been the basis for the transfer of technology (TOT) extension model. A more comprehensive definition of extension service is given by the World Bank as a "process that helps farmers become aware of improved technologies and adopt them to improve their efficiency, income, and welfare."

According to Axinn,[10] the approach is the style of action within system. It is like the drummer which sets the pace for all activity of the system. Extension approach refers to the doctrine for an organization, which informs, stimulates and guides such aspects of the organization as its structure, mission, vision, leadership, its programs, strategies, its resources, and linkages. The approach is like a doctrine for the system, which informs, stimulates, and guides the system as its structure, leadership, program, resources, and its linkages. It consists of a series of procedures for planning, organizing, and managing the extension institution as well as for implementing practical extension work by staff with technical and methodological qualification and using the necessary and appropriately adapted means.

### **The role of extension service in Agriculture**

Agricultural extension programs have been one of the main conduits of addressing rural poverty and food insecurity. This is because, it has the means to transfer technology, support rural adult learning, assist

farmers in problem-solving and getting farmers actively involved in the agricultural knowledge and information system [11]. Extension is defined by FAO [12] as; “systems that should facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agribusiness, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices”. By this definition, an extension is deemed as a primary tool for making agriculture, its related activities as well as other economic activities more effective and efficient to meet the needs of the people. It is, therefore, regarded as a policy tool for promoting the safety and quality of agricultural products. Agricultural extension is aimed primarily at improving the knowledge of farmers for rural development; as such, it has been recognized as a critical component for technology transfer. Thus, agricultural extension is a major component to facilitate development since it plays a starring role in agricultural and rural development efforts [13].

Bonye et al. [13] argued that extension provides a source of information on new technologies for farming communities which when adopted can improve production, incomes and standards of living. Extension service providers make an innovation known to farm households, act as a catalyst to speed up adoption rate and also control change and attempt to prevent some individuals in the system from discontinuing the diffusion process [14]. In reaching farmers, extension officers demonstrate a technology to farmers but with much concentration on early adopters since the laggards would learn later from the early adopting farmers. Through extension services, farmers’ problems are identified for further investigation and policy direction. Swanson [15] argued that extension service goes beyond technology transfer to general community development through human and social capital development, improving skills and knowledge for production and processing, facilitating access to markets and trade, organizing farmers and producer groups, and working with farmers towards sustainable natural resource management. Where market failures such as limited access to credit and non-competitive market structures that provide a disincentive to farmers to produce exist, extension services tend to provide solutions.

Field evidence shows that, while extension agents with clear extension service approaches have a high immediate influence on productivity, farmer-to-farmer learning is more enduring. Improvement in general agricultural production, productivity, and sustainability will depend on farmers’ willingness and access to new technology. Agricultural extension and advisory service approaches play an important role in addressing this challenge. It gives contribution by ensuring that the farmers have access to improved and proven technologies and that their concerns and needs are properly addressed by relevant service providers.[16]

When new agricultural technologies are generated by research institutions (universities and private companies) and by the farmers, agricultural extension services are expected to disseminate these technologies among their clients. Extension services are organized and delivered in a variety of forms, with the ultimate aim of increasing farmers’ productivity and income. The question is how farmers can gain access to knowledge, information to adopt, increase yield, and income. In this context, agricultural extension approach provides to set clear methods to implement the extension objective. The success of extension in achieving this will, however, depends on the extension service approach that is being used to reach or communicate to farmers. It contributes by improving the welfare of farmers and other people living in rural areas.[17]

### **Evolution of Ethiopia agricultural extension service approach**

According to Belay,[18] The birth of an agricultural extension service in Ethiopia dates back to 1953 when the then Alemaya College of Agriculture started to provide research-based extension services to the surrounding communities based on the agreement made between the Ethiopian and US governments, following the Land Grant University approach. Since then, the country has been engaged in implementing different types of agricultural extension systems.

Ethiopian agriculture still plays a pivotal role in the overall GDP as well as employment opportunity to the majority of the population. However, the low productivity of the agricultural sector has made it difficult to attain food self-sufficiency at a national level. The first comprehensive package project approach, the Chillalo Agricultural Development Unit (CADU), was established as an autonomous entity in the Arsi region, south of Addis Ababa, in September 1967 and was financially backed by the Swedish International Agency for Development Authority (SIDA) [18] .

The extension method employed by CADU was the “Model farmer” approach until 1975. However, the model farmer’s approach to the extension was criticized both from outside and within CADU itself. Empirical studies concluded that the approach was only partly successful and that it was not the most efficient way of disseminating knowledge. According to Mengisteab,[17] the CADU approaches emphasized on the overall socioeconomic development in the pilot area and designed to give service for other/scaling out to other parts of the country and scaling up to higher administrative bodies. The package incorporates crop and livestock production, credit and marketing services, research and training, rural infrastructure development (roads, water, etc.), input supply (seeds and fertilizer), and home economics.

Since all of these programs and projects were operational in only small areas, the vast majority of the country was out of their reach. Evaluation of the comprehensive package approach led to the conclusion that the approach did not benefit smallholders and was too expensive to scale out and up both financially and in terms of manpower requirements. The second comprehensive package project was initiated in Wallayita province in 1970 under the Wallayita Agricultural Development Unit (WADU). Understanding the weakness of CADU's model farmer approach, WADU avoided the "model farmers" approach and instead demonstrated technologies on peasants' farms that were relatively resourced poor. Technology transfer under WADU's approach has been found to be more effective than that of CADU.

As early as the 1970s, it was apparent that it would not be feasible to implement the comprehensive package projects through the whole country. Hence, the minimum package program (MPP) was initiated in Ethiopia with a claim to address the problems of the lower income bracket farmers and also with greater reliance on people's participation designed to cover large areas with input supply, credit provision, and marketing services. MPP-I adopted CADU's grain technology and also applied its extension methodology.[19]

In 1980, the Minimum Package Project II was developed with funding from the World Bank, IFAD, and SIDA with the main objective to improve crop and livestock productivity, increase the production of agricultural raw materials for domestic use and for export, enhance soil and water conservation activities, establish various farmer organizations, and construct rural roads, grain stores, and agricultural offices. The MPP-II also failed to achieve its objectives due to the shortage of extension personnel and burdening extension agents with activities such as tax collection and organization of cooperatives. Finally, the MPP-II phased out in 1985.[18]

The Sasakawa Global 2000 (SG 2000) extension strategy was initiated in Ethiopia in 1993 by the Sasakawa Africa Association and Global 2000 of the Carter Centre with the objective to assist Ethiopia's efforts to increase agricultural production through an aggressive technology transfer program that disseminated improved production technologies to small-scale farmers through the extension service by invigorate the linkages between research and extension [20]. In this approach, the extension agents play a facilitating role in the management of the plots. In 1995, good weather conditions, coupled with the material and technical support that participating farmers received from SG 2000, resulted in substantial yield increments. This helps Ethiopian government that self-sufficiency in food production could be achieved by adopting the SG 2000 extension approach.

The MPP-II was phased out in 1985 and replaced by another strategy called the Peasant Agriculture Development Extension Program. It promotes packages on cereals, livestock (dairy, fattening, and poultry), high economic value crops (oil crops, pulses, vegetables, and spices), improved post-harvest technologies (handling, transport, and storage), agroforestry, soil and water conservation, and beekeeping developed for different agro-ecological zones such as highland mixed farming system, highland-degraded and low moisture, lowland agro pastoralist, and lowland pastoralist zones.[18] However, the majority of contact farmers had not participated either in Participatory Demonstration and Training Extension System (PADETS) or Sasakawa Global 2000 (SG 2000); due its non-participatory nature, and the participants were selected by officials.

In Ethiopia, the farmer field school (FFS) approaches are also implemented since it introduced in 1999 by Save the Children UK (a British NGO) and limited only to few organizations with area-based development program in Northern Ethiopia. The FFS approach represents a paradigm shift in agricultural extension: The training program uses participatory methods "to help farmers develop their analytical skills, critical thinking, and creativity and help them learn to make better decisions." FFS is a method to train adult farmers in an informal setting within their own environment. It is often described as a "school without walls." [21]

FFS is a practical approach to training, which empowers farmers to be their own technical experts on major aspects of localized farming systems. It assumes that farmers already have a wealth of knowledge. Therefore, field schools are oriented to provide the knowledge and management skills in a participatory manner so that the farmers' experience is integrated into the program. FFS are platforms and "schools without walls" for improving decision-making capacity of farming communities and stimulating local innovation for sustainable agriculture.[21]

FFS offers community-based, non-formal education to groups of 20–25 farmers through self-discovery and participatory learning principles. The overall objectives of FFS are to bring farmers together to carry out collective and collaborative inquiry with the purpose of initiating community action and solving community problems.[22] The foundation of FFS method is "farmers first" philosophy, which is in direct contrast to the TOT approach. "Farmers first" concept is essential to empower farmers to learn experimentation and technology generation and decision-making.

FFS approach is increased farmers' capacity for research, innovation, and decision-making. In this approach extension agent work as facilitator and farmers actively participate in learning processes that increased responsiveness to farmer-clients demands and needs by organizations in national research, extension, and development systems.[18] In Ethiopia in different times, the government used different agricultural extension

approaches to bring agricultural transformation. These each approaches implement based on their guiding principle. There are eight different approaches to extension in developing country that used primarily for agriculture.[23] Furthermore, those extension service approaches implement in Ethiopia on agricultural extension service to facilitate and improve farmer's income in the rural areas.

#### ***The general agricultural extension approach***

The general agricultural extension approaches are usually fairly centralized and government-controlled and implement the top-down planning. Planning is done on a national basis by the central government "which knows better than farmers." The agricultural extension service is under the Ministry of Agriculture and governed by the higher body. This helps the central government to control and provide rapid communication from high level to rural people. However, this approach is one-way communication, and field staffs are not accountable to the rural people; they may ignore the priorities of local people while trying to satisfy supervisory personnel. It is expensive and inefficient since messages are inappropriate, the impact is low, and the cost of personnel is very high.[18,24]

#### ***The commodity specialized approach***

The commodity specialized approach is emphasis to increased production extension, research, input supply, marketing and prices under one administration. Extension is fairly centralized and is oriented toward one commodity or crop, and the agent has many functions. Techniques recommended must produce financial benefits for farmers and be demonstrable on farmers' own fields. New inputs must be accessible, a credit scheme was established, and the ratio between farm-gate inputs and commodity prices was considered. Technology tends to be appropriate and distributed in a timely manner because it focuses on a narrow range of technical concerns.[18,24]

As this approach being smaller and more focused, extension worker monitor and evaluate a fewer farmers. However, these approaches give less priority to farmers' interest, do not provide advisory service to other aspects of farming in the case of farmers who produce more than one commodity, and have narrow focus (environmental factors may be ignored) and lack of agricultural diversification concepts.[18,24]

#### ***The T and V approach***

T and V is one of the approaches, which was adopted by all of the East African countries to support the development of state extension services during the early 1990s. The T and V system was operated in >40 developing countries. The purpose of this approach is to induce farmers to increase the production of specified crops. It provides continuous feedback from farmers to extension agents and research staff; it allows for continuous adjustment to the farmers' needs. It has spread rapidly around the world because it is seen as an effective means of increasing farm production and a flexible tool at all levels of any agricultural ministry's operation.[18,24]

This fairly centralized approach is based on a rigorously planned schedule of visits to farmers and training of agents and subject matter specialists. Under T and V, the extension system changed its way of reaching out to farmers using agents who focused mainly on technology diffusion.[25] Close links are maintained between research and extension. As the T and V is top-down approach, agents are only involved in technology transfer. The emphasis is on disseminating simple, low-cost improved practices, and teaching farmers to make the best use of available resources. Success is measured in terms of production increases of the particular crops covered by the program. This builds on a combination of the individual and group approaches.

In Ethiopia in 1991, the T and V extension approach was adopted as a national extension system until its replacement by the participatory demonstration and training extension system in 1995. The approach puts pressure on government as well as officers to get out of their offices and meet the farmer. This help farmers to get up-to-date information and it provides closer technical supervision and logistic support. But, this training and visit approach is lacking actual two-way communication, demand driven and flexibility. T and V cannot increase production unless the contemporary parts of the small farmer development package such as input supply and credit, market mechanisms, and price incentives are in place.

#### ***The farming system development approach***

This approach assumes that technology which fits the needs of farmers, particularly small-scale farmers, is not available and needs to be generated locally. A key characteristic of this type of extension is its systems or holistic approach at the local level. Planning evolves slowly and may be different for each agro climatic farm ecosystem. This approach is implemented through a partnership of research and extension personnel using a systems approach. Close ties with research are required, and technology for local needs is developed locally through an iterative process involving local people. Analyses and field trials are carried out on

farmers' fields and in homes. The measure of success is the extent to which farm people adopt technologies developed by the program and continue to use them over time.[18,24]

According to Norman,[26] "farming system approach is characterized by: A holistic approach viewing the farm as a whole, involvement of farmers and their priorities, research reflecting the various subsystems' interactions and linkages, and reliance on informal surveys or "rapid rural appraisal." It gives good emphasis on the needs of resource-poor farmers, gender equity, and the value of indigenous knowledge systems. Diversity is heavily encouraged in this type of system, and linkages are numerous and diverse. Advantages of this system include strong linkages between extension and research personnel and the commitment of farmers to using technologies they helped to develop. Costs can be high, and the results can be slow in coming.

### ***The participatory agricultural extension approach***

This approach assumes that farmers are skilled in food production from their land, but their levels of living could be improved by additional knowledge. Much of the work is through group meetings, demonstrations, individual and group travel, and local sharing of appropriate technologies. This approach often focuses on the expressed needs of farmers' groups, and its goal is increased production and improved quality of rural life. Implementation is often decentralized and flexible. Success is measured through number of farmers actively participating and the continuity of the program. There is much to be gained by combining indigenous knowledge with science. The system requires that extension workers, who are also animators and catalysts, stimulate farmers to organize for group efforts. Local people evaluate their own programs and play a role in establishing research agendas.[18,24]

The country adopted a PADETES in 1995, which was eventually replaced with the PES in 2010.[27,28] The PES intends to increase the coverage of the agricultural extension service, focus on natural resource management, involve the disadvantaged groups of the society, and increase farmers' participation in introducing new technologies or best practices. As it is participatory, it minimizes cost, increased confidence to implement any development activities and help to understand farmers need. However, it is more work for extension agents to organize and motivate farmers. It requires agents to live and to socialize with 206 farmers. Hence, it is difficult to manage the whole situation.

This approach integrates community mobilization for planning and action with rural development, agricultural extension, and research; it is based on an equal partnership between farmers, researchers, and extension agents who can all learn from each other and contribute their knowledge and skills; it aims to strengthen rural people's problem-solving, planning, and management abilities; it promotes farmers' capacity to adopt and develop new and appropriate technologies/ innovations; it encourages farmers to learn through experimentation, building on their own knowledge and practices.[27]

### ***The project approach***

This approach concentrates efforts on a particular location, for a specific time period, often with outside resources. Part of its purpose is often to demonstrate techniques and methods that could be extended and sustained after the project period. It uses large infusions of outside resources for a few years to demonstrate the potential of new technologies. Control is at the central government level, and there are often considerable financial and technical inputs from an international development agency. Short-term change is the measure of success, and it gives quick results. Under this approach, novel techniques and methods can be tested and experimented. But, to evaluate with the immediate results leading to fictitious reporting and a tendency to consume a large proportion of resources on baseline surveys and the establishment of a temporary logistic base.[18]

Starting from past to now, different projects involve in agriculture to enhance the rural the life rural farmers and urban peoples. Especially, during 1967, different projects were implemented for a specific period of time. Currently, the Ethiopian government made effort to develop collaboration with different organizations that facilitate projects that help the local community. For example, the Agricultural Growth Program (AGP) is a clear example of this collaborative effort. It is a multifaceted investment program supporting agricultural productivity and commercialization smallholder farmers in the specific area. AGP II will also give attention to the increased participation of women and youth and it contributes to the higher level goal of sustainable food security and agricultural transformation. The project is evaluated in five years interval. Its sustainability is depend on the result of the last five years effort in the project areas before start to the next phase. In the implementation area, if the project show a significance difference in the people's livelihood, it allow to continue until the donor provide resource. Still, the government encourages different projects that help the agricultural extension system and the rural farmers. Still, the government encourages different projects that may help the agricultural extension system and the rural farmers.

### ***The cost-sharing approach***

This approach is based on local people sharing part of the cost of the extension program. Its purpose is to provide advice and information to facilitate farmers' self-improvement. It assumes that cost-sharing with local people (who do not have the means to pay the full cost) will promote a program that is more likely to meet local situations and where extension agents are more accountable to local interests. Control and planning are shared by various entities and are responsive to local interests. Success is measured by farmers' willingness and ability to provide some share of the cost, be it individually or through local government units. This approach increases the relevance of the program content and methods to the needs and interests of clientele. This increases the adoption rate of any technology. If any intervention is not relay on the real life problem, it difficult to get recognition and provision from farmers. These approaches help the central government in lowering cost in extension system [24].

Currently, in Ethiopian agricultural extension system, farmers highly participate from planning to implement phase. In addition to this, they provide resources, especially, to established Farm Training Center around their farms. For any agricultural technology evaluation, especially for the crop, they may give land without compensation and they actively do each activity with stakeholders throughout the project life. This reduces the labor cost of the projects. However, still, farmers are not well recognized at all areas in the same way. The farmer's capacity to cost sharing in agricultural extension depends on interest of farmers, nature of technology (consistency with the current production problem, easy to implement, and cost-effectiveness), and ability to experts convince the farmer's.

### ***The educational institution approach***

This approach uses educational institutions which have the technical knowledge and some research ability to provide extension services for rural people. Planning is controlled by those determining the curriculum of the educational institution. Implementation is through non-formal instruction in groups or individuals through a college or university. Ideally, researchers learn from extension personnel who, in turn, learn from farmers. The advantage of this approach is the relationship between specialized scientists and field extension personnel.[18,24]

In the current Ethiopian agricultural research context, farmers participate in any research output technology evaluation with the full participation of them. Each research topic was derived from the farmers' need based on the current problem that challenges in the particular area. For technology evaluation, farmers organized as farmer's research extension group and fully participate on the evaluation of any technology. This helps farmers to learn from the farmers as well as to know the relevance of the technology. This implies that all technology dissemination rates depend on the farmer's feedback based on their evaluation criteria methods.

Overall, beyond training extension personnel in higher institution, this approach is not widely implement as government level. However, currently, the higher institution conducted many research activities and try to put at the farmer level. In this situation, any experts that work with the farmers stay in the university or college. This helps to know farmer's opinion and feedback and give opportunity to communicate with specialized person.

Still the current approaches have some weaknesses: Limited consistency and quality of extension implementation, weak coordination between actors in research and extension, inadequate logistics and facilities for extension workers, poor extension services for pastoral community, low motivation leading to high turnover of extension staff, mainly DAs, limited use of communication media (ICTs) and technology multiplication centers, minimum involvement of the private sector, lack of clear line of command for the extension management, particularly at woreda and kebele levels, weak planning, monitoring, learning, and evaluation and feedback systems. Under this extension current approach, high turnover of experienced professionals in agricultural extension, price fluctuations on international markets for agricultural products, climate change and recurrent drought are some threats that hinder the extension system delivery in the country.

The strategy was developed based on consultative and iterative processes facilitated by the Ministry of Agriculture (MoA) and the Ethiopian Agricultural Transformation Agency (ATA). The strategy benefitted from input by experts from the MoA, Regional Bureaus of Agriculture, ATA, Oxfam America, SG 2000 and SNV. The strategy has been built around the ten cornerstones. During the synthesis, major systemic bottlenecks in each cornerstone were thoroughly analyzed and systemic interventions proposed to be implemented over a long period of time based on set priorities.

**Table 1: Cornerstones and objectives of Ethiopian Agricultural extension system**

No.	Cornerstones	Objectives
1	Transformation of FTCs into farmer owned/farmer driven entities and enterprises	To make FTCs centers for knowledge and information sharing developing best practices and creating self-sustaining FTC management systems that fully shift the Ownership from government to farmers.
2	Farmer based organizations and driven groups, networks organization as a key instrument and platforms for extension service	To establish sustainable and financially viable farmer-based groups that can demand appropriate and effective extension services through enhanced participation, peer to peer learning and social networking
3	Making agricultural knowledge and information available and improving agricultural knowledge and innovation management systems	To use effective and diversified communication channels, including ICT-led extension service delivery, to enhance knowledge and information exchange among beneficiaries
4	Provision of technical advisory services and capacity for specific technical domain and innovative solutions	To make the extension service diverse, client-oriented and market-led through developing a range of technologies (crop, livestock and NRM) and advisory services.
5	Functioning value chains and innovation platforms provide effective integrated services for delivery of the outcomes	To transform subsistence smallholder farming to commercialized farming system through the implementation of commodity based extension approach and market-oriented extension services
6	Addressing gender mainstreaming and environmental sustainability	To mainstream gender issues in the broader agricultural extension programs and ensure women and youth have equal access to agricultural extension programs and in sustaining the environment
7	Enhancing for effective function of Agricultural Development Partners' Linkage Advisory Council at all levels	To strengthen/establish ADPLAC to effect strong collaborations among all key development partners for effective and better extension services.
8	Effective institutional arrangements from Federal to Kebele for improved extension service delivery	Extension institutions at different levels for diverse, demand-driven and market-led extension services through installing effective institutional arrangements
9	Rapid learning from success and failures for continuous improvement of extension service delivery at all levels	To create strong monitoring, learning and evaluation system through performance-based working culture
10	Development and provision of coherent sets of guidelines (policies)	To create suitable enabling environment to provide diversified, demand-driven and market-oriented advisory services.

Source: National Strategy for Ethiopia's Agricultural Extension System, December 2014

#### IV. Conclusion

A common feature of the most successful extension service approach has been farmers taking the lead or sharing control in all parts of the effort. Close collaboration between research institutions, extension agencies, nongovernmental organizations, the private sector, and farmers has also been an important factor of successful extension service approach delivery. The review result shows that, at different times, the existing government formulates different extension service approach to bring agricultural development. These Approaches guides the overall extension programs implementations to facilitate agricultural production and productivity. As documents indicate that the current extension service approach facilitates farmers, research institute, extension, NGOs, and other stakeholder linkage to reinforce the rural farmers on the ability to solving their problem. The effectiveness and efficiency of extension service approaches are depending on the overall policy environment for agricultural development. Based on the reviewed data, this paper concludes that participatory extension approaches have flexibility and give room for implementing integrated approaches to alleviating most of the generic problems of the farmers. However, it faces many problems and always limited to fanatical crises as well as lack of effective monitoring and evaluation programs in the country.

In overall, this reviews various extension approaches completed successfully by giving satisfactory results in the past to improve the farmers' knowledge regarding newly developed agricultural technologies. Some of them are continuously running in present along with newly developed extension approaches and require little modifications in future to increase the agricultural potential of the country. Hence, any interested researcher should be done a critical way evaluation with farmers on the existing current agricultural extension service approach in the country. The result of evaluation will give direction for the government to overcome the constraint that hinders the effectiveness of the agricultural extension approach for advance agricultural productivity and improves the benefit of farmers.



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