National Strategy for Ethiopia's

Agricultural Extension System

Vision, Systemic Bottlenecks and Priority Interventions

Ethiopian ATA
Agricultural Transformation Agency
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Executive Summary

Overview of Ethiopia's agricultural extension system

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's extension system has great potential to help farmers throughout the country. With approximately 21 development agents (DAs) per 10,000 farmers, and even more in the high-potential areas, Ethiopia has one of the densest agricultural extension systems in the world. The Ethiopian extension system uses FTCs-based agricultural extension approach, coupled with farmer groups such as one-in-five and development units which are considered to be an entry point for the grass-roots extension services and for the bottom up extension approach. FTCs assisted by development agents and farmer groups are expected to give a wide range of agricultural extension services such as farmer training, demonstration of improved farming techniques, market information and advisory services to farmers in their vicinities. Currently the government has established close to 11,000 FTCs which are functionally different. Also established are 25 ATVETs to produce development agents in different fields of specializations.

Ethiopia has also been implementing a participatory extension system (PES) since 2010 (MoA, 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 PADETS 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.

A strategy for the system to reach its full potential

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.

Vision, mission and objective of the extension system

Vision for Ethiopia's extension system
To sustain a market-led and pluralistic extension system that improves the lives and livelihoods of Ethiopian smallholder farmers, agro-pastoralists and pastoralists.

Mission of Ethiopia's extension system

Contribute to Ethiopia's agricultural growth and poverty reduction by installing pluralistic extension system, ensuring a rapid transfer and continued adoption of improved technologies and good practices through farmer-focused, innovation-led, market-driven, efficient, and sustainable information service delivery mechanism to male, female and youth smallholder farmers, agro-pastoralists and pastoralists.

Goal of Ethiopia's extension system

Contribute significantly to the attainment of food security and poverty reduction in the country and ensure better rural life

Objectives of Ethiopia's extension system

To transform Ethiopia's agriculture through implementation of pluralistic extension system and by providing demand-driven and market-led extension services to male, female and youth farmers, pastoralists and agro pastoralists and contribute to the achievements of GTP-2 goals.

This strategy document integrates best practices and innovations for effective delivery of extension services to smallholder farmers. At the same time the strategy analyses the systemic bottlenecks that have to-date hindered the system from operating more effectively. A series of complementary and strategic interventions are proposed which, when applied across the system, will enable the extension system to achieve its vision, mission and objectives.

Strategy development approach

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 process involved six, but interrelated steps. It started with a consultative workshop of the policy makers drawn from the federal and regional governments. The policy makers provided a high level direction, which served as the basis for the development of the strategy document. This was followed by a consultative workshop of experts to develop a clear vision for the long-term transformational extension strategy. A field assessment to the four major regions was then conducted to learn more from successful extension examples that could guide the strategy development. A final synthesis workshop was held to develop the "cornerstones" of the strategy. The write up was done by experts from the MoA, Regional Bureaus of Agriculture, ATA, Oxfam America, SG 2000 and SNV. Validation for approval of the strategy was held in the presence of key policy makers', extension professionals, scientists, model farmers (including women and youth) and practitioners from different organizations working in agricultural development.

The key principles identified for the development of the strategy documents and its further implementation are: (1) ensuring market-led production system, (2) developing location-specific and agro-ecology-based interventions, (3) development of competent and skilled human power, (4) specialization and diversification, (5) maximizing the available potential, (6) maximum use of rain fed and irrigated agriculture, (7) deploying participatory extension methods and approaches, (8) gender mainstreaming, (9) NRM & environment mainstreaming, (10) value chain-based extension approach, (11) government-led pluralistic extension service provision, (12) promoting financial literacy and improved access to finance, and (13) scaling up of good practices.

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.

Cornerstone 1. Transformation of FTCs into farmer-owned, farmer-driven entities and enterprises: The Ethiopian agricultural extension system is heavily dependent on farmer training centers (FTCs) and trained DAs that give extension support to FTCs and farmers. FTCs serve as an entry point for providing effective and efficient extension services. FTCs should also serve as hubs for knowledge and information sharing and centers for developing best practices. At the same time, it is important that FTCs are self-sustaining, to ensure both commercial viability and a sense of community ownership. Successful FTCs should be focused on developing modern farmers who are able to harness positive changes in farming technology while also being able to cope with changing conditions and stresses.

To date 11, 000 FTCs have been established across the country and the government is progressing well in establishing a further 7,000 FTCs to meet the national target of 18,000 FTCs, meaning one FTC for every kebele and three DAs per Kebele. While this progress is encouraging, the established FTCs are at different levels of functionality and most are not meeting a minimum level of quality in the services provided to farmers.

The seven key bottlenecks leading to inadequate performance of FTCs are: (1) limited involvement of farmers in FTC management, (2) insufficient resources for FTCs, (3) few FTCs have long-term plans for sustainability, (4) inadequate support by the local governments, (5) inadequate incentives to motivate and retain DAs, (6) limited knowledge and skill of DAs, and (7) limited training to farmers. This strategy has developed seven corresponding systemic interventions to address these bottlenecks as illustrated in the main document.

Cornerstone 2. Farmer-based organizations and farmer-driven groups and networks as key instruments and platforms for extension services: The main consideration for undertaking the study titled "Strengthening Farmers' Organizations in Tanzania: A Case Study of Farmers' Group Organizations in Selected Districts" was to identify and promote appropriate strategies for organizing and empowering farmers' groups in order to determine their own destiny in the process of bettering their livelihoods and alleviation of poverty in Tanzania (OSSREA, 2015).

Farmers' groups can be used as platforms for the promotion of decentralized planning, implementation and monitoring of extension services. Extension delivery is easier when farmers are organized in groups, as this provides an opportunity for farmers to work together to resolve common problems and build confidence in changing their future for the better. When the capacity of such groups is strengthened and they are better able to access extensions services, technologies and the benefits of joint learning, the livelihoods of the individual group members and their families are positively impacted. Efforts are underway to provide extension services through group approaches such as farmer development groups, farmers' innovation groups, farmers' common interest groups, and farmers' research extension groups, with the basic principle of enhancing social networks and farmer learning in extension system.

Through effective peer-to-peer learning, farmers can develop a sense of cooperation and collaboration and a stronger willingness to be organized in primary cooperatives and unions. Such organized groups take advantage of economies of scale in making available resources such as credit, labor and information while also enabling farmers to collectively forge stable relationships with suppliers and reliable markets. This strategy focuses on establishing sustainable and financially viable farmer-based groups that can demand appropriate and effective extension services.

The two systemic bottlenecks preventing more effective use of farmers' groups are: (1) limited skills in common goal-based farmers' group establishment and (2) poor linkage among farmers' organizations. This strategy has developed four systemic interventions to address these issues.

Cornerstone 3. Making up-to-date agricultural information available and improving agricultural knowledge and innovation management systems: If properly managed, knowledge management enables useful information to

reach smallholder farmers and other practitioners in a timely manner, enhancing agricultural production and productivity and addressing food insecurity. Successful agricultural knowledge management requires adequate mechanisms to generate, capture, and disseminate knowledge and information, tailoring methods used to both institutional arrangements and on-the-ground circumstances.

The seven systemic bottlenecks undermining the effectiveness of Ethiopia's agricultural knowledge management system are: (1) poor access to diversified communication channels and use of ICT, (2) limited access to in-depth and various agricultural knowledge and information, (3) extension packages not sufficiently designed to meet diverse farmers' needs, (4) limited extension services on livestock, (5) poor technical know-how on the preparation of client-tailored extension messages and use of indigenous knowledge, (6) Poor involvement of farmers in research agenda setting and prioritization, and (7) Technologies not always optimized to meet farmers' needs. This strategy has developed eight systemic interventions to address these issues.

Cornerstone 4. Provision of technical advisory services and capacity for specific technical domain and innovative solutions: The way in which technical advisory services are delivered should be tailored to different social categories of farmers, including smallholder farmers using specific technical domains and innovative solutions to maximize benefits for farmers. Services provided under the current extension system often fail to be sufficiently diverse, client-oriented or market-led, although these are currently showing improvement.

The four systemic bottlenecks that appear to prevent a more farmer-oriented tailoring of service delivery are: (1) limited involvement of different stakeholders in the provision of advisory extension services, (2) low cooperation and collaboration between public and NGOs in extension services provision, (3) limited professional skills, especially practical skills development at HLIs and ATVETs, and (4) poor involvement of cooperatives and other types of private-sector in extension service delivery. This strategy has developed five systemic interventions to address the bottlenecks.

Cornerstone 5. Functioning value chains and innovation platforms provide effective integrated services for delivery of the extension services: A commodity-based and market-oriented extension services delivery approach will help transform subsistence smallholder farmers to commercial farmers. To date the extension service in Ethiopia has been mainly focused on the promotion of improved technologies and practices to increase production and productivity. However, increasing production does not necessarily reward farmers with better income unless it is sustainably linked to markets. One of the approaches to link smallholder farmers to markets is to engage in pro-poor value chain development. This type of value chain approach helps farmers respond to local, regional and international markets by linking production, processing and marketing activities to market demands.

The effort to link farmers to markets in Ethiopia through effective value chain development meets several bottlenecks that need to be effectively addressed. The five main bottlenecks are: (1) insufficient understanding of market-oriented production system (2) limited focus of value chain in extension services, (3) low value chain implementation capacity of the extension staff, (4) ineffective linkage among value chain actors, and (5) and limited access to market information by farmers. This strategy has developed five systemic interventions to address the bottlenecks.

Cornerstone 6. Addressing gender mainstreaming and environmental sustainability

Gender mainstreaming

Women in Ethiopia contribute up to 40-60% of labor in the production process. However, women face specific constraints that reduce their productivity and limit their contributions to agricultural production and productivity. It is reported that on average, female farmers produce 23% less per hectare than their male counterparts just because of the inability of women to access the necessary agricultural inputs and services (citation). This negatively impacts productivity, efficiency, effectiveness and overall economic progress of the country. The

government has recognized gender mainstreaming as an approach to be used in all agricultural development programs, however, to-date only limited progress has been made in this area.

This strategy recognizes the importance of gender mainstreaming as a key approach to ensuring equality between women and men, and through that increased agricultural production, productivity, leading to the wellbeing of women farmers. The six main bottlenecks to effective gender mainstreaming are: (1) low level awareness and poor gender mainstreaming in extension programs planning, implementation and monitoring, learning and evaluation (MLE), (2) shortage of financial resources to implement planned activities on gender, (3) lack of accountability and responsibility mechanism, (4) lack of gender Focal Persons, (5) lack of gender disaggregated data, and (6) socio- cultural constraints. This strategy has developed eight systemic interventions to address these issues.

Environment sustainability

Appropriate management of natural resources (land, soil, water and environment) and good agronomic practices are a powerful influence on environmental quality and sustainability and can lead to increased long term agricultural production and productivity. Farming practices such as intercropping, multiple cropping, minimum tillage, zero tillage, type and time of cultivation, agrochemical utilization, livestock management practices, bio-physical soil water conservation are proven methods of better managing land, soil and water.

In this sub-section, three extension-related bottlenecks to better resource management have been identified: (1) limited focus on NRM in extension services, (2) limited capacity and knowledge of NRM, and (3) drought/moisture stress. This strategy has developed 3 systemic interventions to address these bottlenecks.

Cornerstone 7. Enhancing the functions of the Agricultural Development Partners' Linkage Advisory Council at all levels: Addressing diverse and complex problems of agriculture requires the coordinated efforts of individuals, groups, institutions and organizations at various levels. Taking this principle into consideration, the government of Ethiopia established the Agricultural Development Partners' Linkage Advisory Council (ADPLAC) in 2008 to coordinate interactions at different levels, from the federal to the woreda levels. Since its formation, ADPLAC has helped bring together various actors by building new collaborations, encouraging a culture of working and developing together, encouraging a demand-driven agricultural research system for more impact and by helping shift the research agenda towards farmers' needs through joint identification of problems and development of innovations to solve them.

While ADPLAC has been successful in some areas, by and large it has failed to achieve its overarching mission of effectively linking actors in the research and extension sectors. This strategy identified four bottlenecks: (1) inconsistent performance of ADPLAC in linking research, extension, and other agricultural development partners, (2) lack of strong linkage and poor coordination to diversify the extension services, and (3) weak MLE and accountability system. This strategy has developed four systemic interventions to address the bottlenecks.

Cornerstone 8. Effective institutional arrangements for effective extension service delivery: The existing institutional arrangements within the Ministry of Agriculture have contributed to strengthening decentralized and famers-focused extension services compared with the previous centralized mode of extension operation and managements.

A decentralized extension service ensures active participation of local communities in development programs and empowers them for self-help support through enhancing their decision making powers and enabling them to be part of the development solutions. It also encourages and facilitates the development of localized and content-specific interventions for rapid rural transformation by enhancing the engagement of rural institutions through improving both vertical and horizontal linkages and communications. This eventually strengthens the extension system for the benefit of farmers.

Despite improvements, the effectiveness of existing institutions and extension management has considerable room for improvement. The three main bottlenecks to a more effective extension service delivery are: (1) poor perception of decentralization and weak vertical and horizontal linkages, (2) lack of clear line of command particularly at the Woreda level, and (3) limited capacity for effective budget utilization. This strategy has developed corresponding systemic interventions to address the bottlenecks.

Cornerstone 9. Rapid learning from successes and failures for continuous improvement of extension services delivery at all levels: Monitoring, learning and evaluation (MLE) is a key tool to measure progress and generate relevant and timely information to make right decisions and employ course correction. Decisions are actionable only when they are based on facts and the reality on the ground. Currently MoA has established an MLE case team under the Training and Advisory Services Directorate to further strengthen the MLE system with the aim of creating a performance–based work culture with strong responsibility and accountability mechanisms across all partners and levels.

To further strengthen the role of the MLE unit, four main bottlenecks need to be addressed: (1) weak monitoring, learning and evaluation system, (2) inadequate resources, 3) inadequate performance management process to initiate incentives for technical staff at various levels, and (4) lack of ICT-based service in the MLE process. This strategy has developed three systemic interventions to address these issues.

Cornerstone 10. Development and provision of coherent sets of guidelines (policies) and standards, regulations, and quality assurance for effective service delivery: Guidelines (policies) addressing all critical issues in the agricultural sector are important to ensure stakeholder coordination and alignment and facilitate implementation of the extension strategy. Although the GoE has formulated and successfully implemented several agricultural policies, strategies and guidelines (Rural Development Policy and Strategy, Agricultural Development Led Industrialization (ADLI), Agricultural Investment Policy, watershed development and natural resource development guidelines, food security policy etc.), currently there are many newly emerging issues within agricultural development (policy for ICT-led extension service, climate smart agriculture, integration of nutrition in agriculture and health etc..,) that merit further attention.

Currently areas requiring clearer guidelines include: (1) implementation of pluralistic extension services, (2) enhancing ICT-based extension services, (3) Shortage of personnel, and (4) poor availability of transportation means. This strategy has developed systemic interventions to address these issues.

Implementation Framework

Addressing the bottlenecks and ensuring the implementation of the strategic interventions outlined in this document will require a coordinated effort of all organizations and individuals engaged in agricultural development. This document has identified the key actors at all levels and suggested their roles and responsibilities.

Since all interventions cannot be implemented simultaneously, a phased approach for implementing interventions has been developed. In this phased approach, cornerstones and interventions that can serve as input for the achievement of other cornerstones have been prioritized. Prioritization and sequencing of interventions will be further refined based on the responsibility of each organization within their existing settings.

Acronyms and abbreviations

AED	Agricultural Extension Directorate
ADLI	Agricultural Development Led Industrialization
ADPLAC	Agriculture Development Partners Linkage Advisory Council
AGP	Agricultural Growth Program
ATA	Agricultural Transformation Agency
ATVET	Agricultural Technical and Vocational Education and Training
BMGF	Bill & Melinda Gates Foundation
CA	Conservation Agriculture
CAADP	Comprehensive African Agricultural Development Program
CCA	Climate Change Adaptation
CEC	Cation Exchange Capacity
CIGs	Common Interest Groups
DAs	Development Agents
DRM	Disaster Risk Management
EAAPP	East African Agriculture and production project
ECX	Ethiopian Commodity Exchange
EIAR	Ethiopian Institute for Agricultural Research
FBOs	Farmers Based Organizations
FLP	Farmers Learning Platform
F/PTCs	Farmers/Pastoralists Training Centers
FP	Focal Person
FREG	Farmers Research Extension Group
GDP	Growth Domestic Product
GIZ	German Development Cooperation
GoE	Government of Ethiopia
GOs	Government Organizations
HABP	Household Asset Building Program
HLIs	Higher Learning Institutions
IAR	Institute for Agricultural Research
ICT	Information and communication technology
IFPRI	International Food Policy Research Institute
IVR	Interactive Voice Response
MCs	Management Committees
MLE	Monitoring, learning and evaluation
MoA	Ministry of Agriculture
NGOs	Non-governmental Organizations
NRM	Natural Resources Management
OA	Oxfam America
PADETES	Participatory Demonstration and Training Extension System
PES	Participatory Extension System
PICO	People, Innovation and Change in Organization
PMAs	Producer Marketing Associations

R-BoA	Regional Bureau of Agriculture
RELC	Research & Extension Linkage Council
REFAC	Research Extension Farmers Advisory Council
SG	Sasakawa Global
SLM	Sustainable Land Management
SNNPR	Southern Nations, Nationalities, and Peoples Region
SNV	Netherlands Development Organization
TASD	Training and Advisory Service Directorate
UNDP	United Nation Development Program
VCD	Value Chain Development
VLDP	Village Level Development Promoter
WoADO	Woreda Agricultural Development Office
WUA	Water User Association

Section 1: Background

1.1. Introduction

Agriculture is a significant part of Ethiopia's economy. It accounts for 46.3% of the national Gross Domestic Product (GDP), more than 83% of employment, over 90% of the export market and 92% of the raw materials for the industry (IFPRI 2009, MoA 2010). In Addition to its central role in providing a livelihood to the vast majority of Ethiopians, agriculture also plays a considerable part in the development of other sectors such as industry, education, health, trade and market. Recognizing the vital importance of agriculture, the GoE has focused efforts on improving production and productivity in the agricultural sector. While these efforts have produced considerable progress, overall production and productivity remains below potential due to inadequate utilization of modern inputs, poor input- output market linkage, reduced soil fertility and organic matter, soil erosion, high dependence on rain-fed agriculture, frequent drought, climate change, increased pests and diseases and resource limitations.

Ethiopia's rural development policy and strategies prioritize the transformation of smallholder subsistence agriculture to market-orientated production. Accordingly, the government is investing heavily in agriculture with a focus on public extension services by deploying considerable human and financial resources. For instance, the Ethiopian government has allocated more than 16% of its annual budget to agricultural development and attained an annual mean agricultural growth rate of more than 8% for the last 8 years. This is significantly higher than the agreement among CAADP member countries to allocate 10% of their national budgets to the agricultural development and attain a mean annual agricultural growth rate of 6% (CAADP, 2009). To facilitate the transformation of Ethiopian agriculture, the government has established the Agricultural Transformation Agency (ATA) to support the Ministry of Agriculture (MoA) and other implementing partners to achieve national targets for poverty reduction, food security and growth by removing systemic bottlenecks in the sector.

An effective and efficient agricultural extension system can enhance the agricultural productivity and production of smallholders through the development of innovative, systematic, and farmer-owned agricultural extension. Agricultural extension may also be used as a policy instrument to mobilize communities for necessary behavioral and attitude changes (to create demands on improved technologies/innovations, actively participate in extension programs in FTCs and practice market-oriented production).

This strategy is developed as a key policy instrument designed to revitalize and strengthen the agriculture sector by improving access to quality extension services by smallholder farmers.

1.2. Purpose and scope of the strategy document

The purpose of this strategy is to develop a vision for a strong, well-functioning agricultural extension system. The strategy identifies the key bottlenecks to realizing this vision and proposes a series of interventions to address the bottlenecks. The scope of the strategy is the Ethiopian agricultural extension system and associated services.

While the strategy is long term, it envisages two implementation periods: a short-term timeframe of five years (coinciding with GTP-2) and a long-term timeframe of ten years during which time interventions may be further refined based on lessons learned and continuous farmer feedback.

1.3. Approach followed for the development of the extension strategy

The strategy was developed based on a consultative and iterative processes facilitated by MoA and ATA. As shown in Figure 1, the process involved six, but interrelated steps. It started with a consultative workshop of the policy makers drawn from federal and regional governments. The policy makers gave directions, which served as a basis for the development of the strategy document. Each step ensured the participation of relevant actors that

included professionals in agricultural research and extension from federal and regions, relevant NGOs, private actors and practitioners. Three of the six steps were facilitated by an international consultant known as PICO (Institute for People, Innovation, and Change in Organizations) while the rest were facilitated by MoA & ATA.

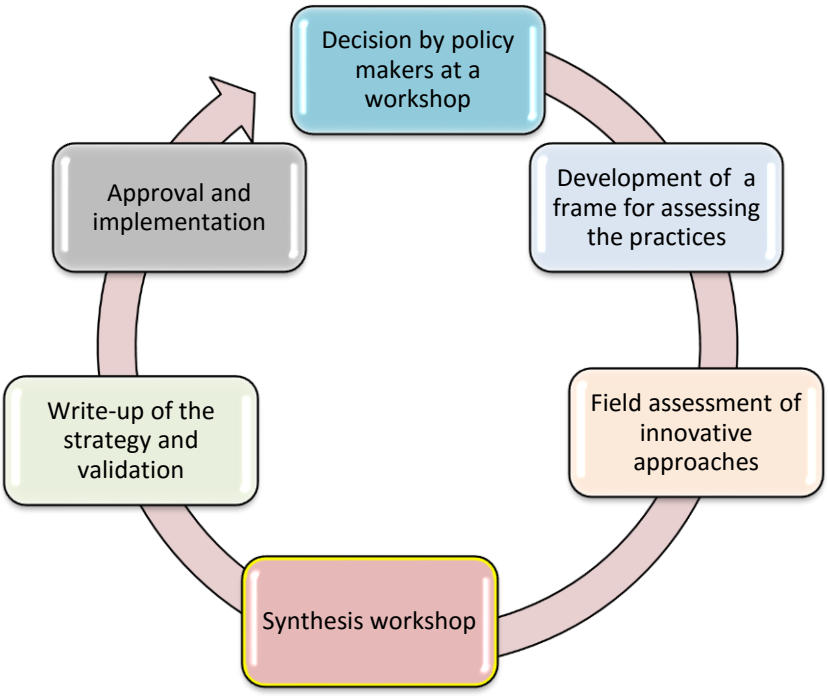


Figure 1: Steps for the preparation of the Extension Strategy

1.3.1. Policy makers' consultative workshop and directions given

The initial step for the preparation of the strategy document was a policy makers' workshop in December 2013, with the main objectives of: (1) identifying emerging needs and policy directions for Ethiopia's extension system, (2) identifying strategic priorities and providing policy context for overhauling the extension system, and (3) agreeing a roadmap and overall approach to developing the strategy. The Federal and Regional policy makers who participated in the workshop identified core thematic areas and provided a clear direction for the preparation of the strategy document. The core themes for the strategy agreed at the workshop were:

- Smallholder focused
- Build on existing extension system and strength
- Pluralistic extension service with government ownership and the government taking a leading role in quality control
- FTC- and DA-centered interventions
- Decentralized within the federal system
- Market-led, gender-based and environment friendly agricultural development.

1.3.2. Experts' Workshop

Based on these policy directions, a consultative workshop was held in March 2014 with the participation of experts in agricultural research and extension. At the workshop, a clear vision for a long-term transformational extension strategy was developed. As an entry point, field assessment to learn more from successful stories (best practices, approaches and innovations) within the country was held as recommended by the experts.

1.3.3. Field assessment of innovative approaches and good practices

Experts drawn from the federal and regional ministries of agriculture, ATA, Oxfam America, SG-2000 and Netherlands Development Organization (SNV) deployed to the field in three groups to assess successful stories and best practices in the four major regions (Amhara, Oromia, SNNPR and Tigray). A total of 17 best practices and approaches were identified. Lessons learned from these best practices were used in developing this strategy.

1.3.4. Synthesis workshop to develop the cornerstones of the strategy

The synthesis workshop was held in June 2014 with the dual purpose of sharing the lessons from the field assessments and identifying the key cornerstones on which the strategy document was built (Figure 2). In addition, during the workshop critical challenges, strategic/innovative approaches and relevant case studies from the field assessment for each cornerstone were identified. Benchmarked international best practices were also incorporated.

1.3.5. Preparation of the strategy document

A team of eight experts from organizations mentioned under 1.3.3 developed the draft strategy starting from August 2014, following the policy directions and the agreed-upon major cornerstones. A stakeholder validation workshop was held to obtain further feedback to refine and enrich the document. The final strategy document was produced and submitted to policy makers for approval and implementation. This strategy document should be considered organic in that it will be refined on a regular basis as lessons are drawn from ongoing implementation and circumstances change.

1.4. Brief overview of agricultural extension and its evolution in Ethiopia

The birth of an agricultural extension service in Ethiopia dates back to 1953 when the then Alemaya 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.

Over the years a number of reforms have taken place to address gaps in the various systems adopted, leading to the current system. In 1993, SG-2000 started to demonstrate agricultural technologies within the country as a pilot on major cereal crops. The approach was later used as a basis for the current extension package services. The demonstration conducted by SG-2000 clearly showed great successes and captured the attention of top level officials and development practitioners, encouraging them to replicate the experience of SG-2000 nationwide. In line with this, in 1995 the Government designed and implemented a Participatory Demonstration and Training Extension System (PADETES) as the core element of the extension system of the country. Its main objective was to improve participation of smallholder farmers and demonstrate improved agricultural technologies for improved productivity, incomes and livelihoods of the rural community.

The government established and operationalized 25 ATVETs in different parts of the country to produce skilled development agents (DAs), sought to establish a Farmer Training Centre (FTC) in each kebele and deployed three DAs with specializations in crop, livestock and natural resources to each FTC. To-date over 70,000 DAs have been trained and graduated, of whom about 45,000 are currently deployed in agricultural extension (Tesfaye Lemma *et al.*, 2010).

More than a decade has now passed since FTC-based agricultural extension system was introduced. FTCs have been established to serve as centers for information and knowledge sharing, training and demonstration of technologies and innovation close to farmers' residents. Currently the government has established close to 11,000 FTCs and will construct about 7,000 more to meet the national target of 18,000 FTCs. These FTCs are one of the key instruments for delivery of extension services moving forward and can serve as symbols for current successes that the country has achieved in agriculture.

The country has recently developed and deployed a Participatory Extension System (PES), a modified version of PADETES, although the approach is not yet fully implemented nationwide. PES was started in 2010, following the commencement of Growth and Transformation Plan (GTP)-1, as a means of strengthening participatory extension services. The major changes made in the approach were organization of farmers into development groups and social networks (development groups with 25-30 members on average and one in five group consisting one model farmer as a leader and 5 farmers as followers), FTC categorization into watershed management and full-package extension services provision.

To help improve the agricultural extension system of the country, the Bill and Melinda Gates Foundation (BMGF) supported a review of the Ethiopian agricultural extension program in partnership with the Government of Ethiopia in 2009 (IFPRI, 2009). The review identified the system's strengths and constraints with the aim of improving it and identifying ways in which such improvements might be scaled up in the future. The SWOT analysis below is based on the results from that study and other assessments conducted by different organizations.

1.5. Strengths, weaknesses, opportunities and threats (SWOT) analysis of the current extension system

Strengths	***Weaknesses***
• Decentralized and well-structured extension system that can be an example for many African countries. • The establishment of ATVET colleges to produce middle level skilled manpower. • Robust workforce of development agents (21 per 10,000 farmers, higher than any other country's ratio). • Establishment of FTCs at kebele-level, allowing for greater access to extension, training and demonstration. • Increased number of agricultural universities for skilled manpower development. • Codified national extension approach/strategy. • Strong social networks through farmer-group formation and peer-to-peer learning. • Increased demands by farmers for improved technologies.	• Limited consistency and quality of extension implementation. • Weak coordination between actors in research and extension. • Limited logistics and facilities for frontline extension workers. • Short-term focused campaigns divert attention from overall extension system responsibilities. • Poor extension services for pastoral community. • Low motivation leading to high turnover of extension staff, mainly DAs. • Limited use of communication media and use of ICTs. • Limited technology multiplication centers such as for livestock. • Minimum involvement of the private sector (limited capacity and inadequate support by government), including cooperatives in extension service delivery. • Limited capacity in gender mainstreaming and its application. • 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

Opportunities	***Threats***
• Conducive policy and strategy for agriculture sector (ADLI) and high commitment of government to transform agriculture. • Emerging agro-processing industries for value chain development and to provide embedded extension services. • Existence and growth of farmer cooperatives and unions to provide extension services. • Existence of ATVETs to train extension agents in agriculture. • Increased focus on value chain development and marketing. • Existence of special initiatives such as Agricultural Growth Program (AGP), Household Asset-Building Program (HABP) and East Africa Agricultural Productivity Project (EAAPP) which innovate with extension approaches. • High interest by donor and NGO's to support extension system and services. • The existence of reliable regional and international market opportunities for agricultural products. • Ongoing efforts to establish marketing information system (ECX) and information networking (MoA, ATA & EIAR). • Increased trained manpower in agriculture, as a result of increased tertiary-level education in agriculture.	• High turnover of experienced professionals in agricultural extension. • Price fluctuations on international markets for agricultural products. • Climate change and recurrent drought.

Section 2: Vision, Mission, Goal and Objective

2.1. Vision, Mission, Goal, Objective

Vision: Market-led and pluralistic extension system that improves the lives and livelihoods of Ethiopian smallholder farmers, agro-pastoralists and pastoralists.

Mission: Contribute to Ethiopia's agricultural growth and poverty reduction by installing pluralistic extension system, ensuring a rapid transfer and continued adoption of improved technologies and good practices through farmer-focused, innovation-led, market-driven, efficient, and sustainable information service delivery mechanism to male, female and youth smallholder farmers, agro-pastoralists and pastoralists.

Goal: Contribute significantly to the attainment of food security and poverty reduction in the country and ensure better rural life.

Objectives: To transform Ethiopia's agriculture through implementation of pluralistic extension system and by providing demand-driven and market-led extension services to male, female and youth farmers, pastoralists and agro pastoralists and contribute to the achievements of GTP-2 goals.

Specific objectives:

- Increase the number of extension service beneficiaries from the current 15,200,000 to18,237,000 by the end of GTP-2 with 4% annual increase.
- Strengthening P/FTCs through clustering into pre-basic, basic, intermediate & advanced functionality levels and accordingly provide all necessary materials and services with the major goal to make a source of knowledge and information centers for 18,000 F/PTCs by the end of GTP-2.
- Building the capacity of technical staff at various levels and farming communities (including women & youth groups) through the identification of critical capacity knowledge and skill gaps, and organizing training (short and long-term, exposure visits)to address these gaps.
- Enhancing the linkage between development actors through development of sustainable platforms for institutional collaboration among development partners (agricultural research & extension, Universities and Colleges, bilateral and multi-lateral organizations, NGO's, private sector and marketing institutions) with the major aim to improve extension service delivery to farmers/agro-pastoralists and pastoralists and attain food security in the country.
- Improve the accessibility of male, female and youth smallholder farmers to improved agricultural technologies and quality extension services through increased demand-driven and pluralistic extension system.
- Transform male, female and youth smallholder farmers from subsistence to commercial agriculture through delivery of market-oriented extension services delivery, behavioral changes and creating demands for improved agricultural technologies and farm management practices.
- Build farmers, women and youth resilience to cope with climate and drought changes through use of climate smart technologies and best practices.

2.2. Intended outcomes

Outcome 1: Farmers, agro- pastoralists and pastoralists including women and youth become stronger economic drivers who have access to and control over resources, extension and financial services and are active members of the rural economic organizations to ensure food and income security.

Outcome 2: Smallholder farmers, agro-pastoralists and pastoralists, and their organizations have improved income and food security through better access to production technologies and sustainable market systems, supported by appropriate commercial investment, public finance and the regulatory environment.

Outcome 3: Smallholder farmers, agro-pastoralists and pastoralists become more resilient to disasters and climate change effects and increase investments in disaster risk management (DRM) and climate smart agriculture (CSA).

Outcome 4: Poor people specifically pastoralists and women benefit better from the extension services and are able to use and manage land, water and other resources, supported by institutions and appropriate government legislations.

Outcome 5: Smallholder farmers, agro-pastoralists and pastoralists will have improved livelihoods through diversified and market-oriented advisory services at FTCs.

Outcome 6: Smallholder farmers will establish and operationalize their own self-help farmers groups to initiate farmer-to-farmer knowledge exchange and enhance local capacity, which will gradually grow to local level organizations and institutions.

2.3. Key guiding principles

Promote a market-led extension system: To increase farmers' incomes and improve their livelihoods, the extension system needs to provide market-demanded technologies, inputs and information on a regular basis to smallholder farmers and other private investors to encourage them to have better access to more reliable markets.

***Maintain a government-led pluralistic extension service*:** The government will maintain its lead role in the provision of extension services but will provide an environment that motivates and encourages the involvement of the private sector in extension services. A pluralistic approach is expected to maximize the reach of extension services into rural communities and provide a diverse range of extension services.

Promote participatory extension methods and approaches: In a democratic society the intended beneficiaries of a program have the right to participate in decision-making about the program's goals and scope. The extension system needs to be interactive and responsive to farmers' needs by encouraging active participation in problem identification, priority setting and planning, implementation as well as monitoring and evaluation. Organizing farmers into different development groups and one in five groups will help to facilitate this participatory approach, taking advantage of farmers' indigenous knowledge.

Mobilize communities and farmers' groups for better extension service delivery: Farmers and their groups will be motivated to be organized under different working groups on voluntary bases. This is primarily to enhance the provision of demand-driven, peer to peer learning and contextualized extension services targeting different categories of farmers (youth, women, rich, poor etc…).

Use a value chain based extension approach: Extension services should be provided along the entire value chain of a commodity, from input supplies, production to market actors, in order to strengthen market linkages among producers, agro-industries, processors and retailers.

Prioritize and promote gender mainstreaming: The extension system should give special attention and support to women by encouraging their participation in the extension system and ensuring services provided address their special needs. All projects and programs should target 40 to 50 per cent women & youth participation.

Prioritize and promote mainstreaming of sustainable environmental practices: Implementation of climate smart agriculture and application of climate friendly technologies and watershed development approaches should be prioritized by the extension system. Since women are more exposed to the negative impact of climatic change than men, gender and environment focused interventions will be conducted under different agricultural programs and projects to provide gender and environment friendly extension services.

Target interventions based on location and agro-ecology: The extension system shall adjust its service delivery in accordance with the different agro-ecologies and farming systems rather than follow a one-size fits all approach.
In this strategy, the role of research institutes both at federal and regional levels in generating new technologies /innovations; conducting on-farm verifications, pre-extension demonstrations, dissemination and studies on extension methods approach and system is highly recognized and appreciated. It is strongly believed that increased productivity of farmers achieved recently is as a result of improved adoption of the technologies generated from the research including HLIs. It is also believed that the current status of the research institutes and HLIs especially with regard to enhancing action and farmers-focused research need to be improved through establishing vibrant synergies and collaborations. This will help enhance adoption of technologies by farmers and put this strategy into practice.

Development of competent and skilled human power: Development of modernized agriculture and extension system requires competent, energetic and dynamic workforce on regular bases. In line with this, the role model

played in the past and the current ongoing progresses by HLIs and ATVETs in producing skilled human power for the agricultural development is highly recognized. Continued efforts in cultivating and producing competent skilled human power that could respond to the diverse needs of farmers and pro-actively move the agricultural development of the country forward is critically important. Thus, capacity building programs (short and long-term) by the HLIs targeting different actors' vis-à-vis developing competent and dynamic learning institutions are vital to put this strategy into practice.

Encourage specialization and diversification: Diversifying the agricultural products grown by a local community improves the resilience of farmers to natural calamities and helps conserve their existing natural resources. Specialization enables farmers to focus on profitable and marketable commodities based on the comparative advantages of the farmer.

Maximize the potential of livestock: Ethiopia ranks first in Africa in livestock numbers. However, the livestock productivity is poor when compared with other African countries. This is mainly due to deterioration of grazing lands, shortage of feeds, drought and poor extension services and may be breed types. In this strategy, however, attention will be given to maximize the potentials of livestock through improving extension services targeting cattle, beef, dairy, camel, small ruminants, poultry, and aquatic animals (fish) by using the current Livestock Master Plan (LMP) as a guiding reference .

Promote small-scale irrigated agriculture: 95% of Ethiopia's agriculture depends on rains regardless of the available potential for irrigated agriculture. Rains in many parts of Ethiopia are erratic, unevenly distributed and unreliable in amount and duration. On the other hand, the country has 3.7 million ha of irrigable land, of which currently less than 1 million ha is reportedly irrigated. This clearly shows the need to diversify the production system from rain-fed to irrigated agriculture to further maximize the productivity of smallholder farmers and minimize agricultural production risks.

Promote financial literacy and improved access to finance: Improving access to credit and rural savings services is critically important to strengthen the economic capacity of the nation in general, and farmers in particular. Women and youth groups in particular benefit from better access to financial services, enabling economic empowerment and control of potential resources. In line with this, the extension service will give maximum support to promote financial literacy and improved access to finance through establishing saving and credit groups and/or cooperatives in rural communities and linking with microfinance institutions.

Scaling up of good practices: Efforts should be continuously directed to identifying successful practices which can be scaled up where appropriate with the possibility of effecting massive changes in the livelihoods of farmers.

Section 3: Cornerstones, systemic bottlenecks & corresponding strategic interventions

This section outlines 10 key cornerstones on which this strategic document was developed. For each cornerstone, systemic bottlenecks have been identified and analyzed, and their corresponding strategic interventions proposed. Strategic interventions have the potential to transform the Ethiopian agriculture, leading to agricultural modernization and commercialization of the production system.

3.1 Cornerstone 1: Transformation of FTCs into farmer-owned/farmer-driven entities and enterprises

Objective
To make FTCs centers for knowledge and information sharing, for developing best practices and creating self-

sustaining FTC management systems that fully shift the ownership from government to farmers.

The Ethiopian agricultural extension system has a large network of farmer training centers (FTCs) and trained DAs. Currently, government is progressing well in its goal to establish one FTC in each Kebele: so far about 11, 000 FTCs have been established and regional governments are aggressively moving forward to establish the remaining FTCs to meet the national target of 18,000 FTCs. While it is widely agreed that FTCs serve as an entry point to bring about behavioral changes among farmers and lead them towards modern and commercial agriculture, FTCs already established are at varying levels of functionality and most are not capable of providing the expected services to farmers. The following bottlenecks are faced by FTCs:

Bottleneck 3.1.1: Limited involvement of farmers in FTCs management

Based on the developed FTC guidelines by MoA and OA, FTCs are the property of farmers and are expected to be managed by them. However, farmers perceive FTCs as government institutions rather than their own due to low level of awareness and lack of clarity on the basic advantages of FTCs. The problem is aggravated by the inadequate capacity and low efforts of DAs in bringing about changes in this mindset. As a result, many FTCs do not have farmer-led FTC-Management committees (MCs). In FTCs where MCs exist, they do not function to expectations. For example, in the intervention woredas of Oxfam America (OA) and Sasakawa Global (SG 2000), only 42% of FTCs reported to have MCs that are responsible for overall management and operations of the training centers. Of the total established MCs, only about 21% were operational in 2011 (OA, 2011).

Bottleneck 3.1.2: Insufficient resources for FTCs

One of the reasons for poor performance of FTCs is related to shortages of resources for operations and renovations. For instance, almost all FTCs (except for those supported by projects or NGOs) have inadequate funds for training, establishment of demonstration plots, and other basic infrastructure and facilities such as training furniture, farm implements, ICT (TV and DVD) and training materials. Most FTCs are not routinely maintained or repaired. Poor business plans in FTCs and wide skill gaps by FTC-MCs and DAs have exacerbated resource limitations.

Basically, FTCs were not meant to generate their own revenues. Those that generated revenues did not have the legal right to re-use the generated income, although recently some changes have been introduced in few regions that allow this to address the resource gap to some extent.

Bottleneck 3.1.3: Few FTCs have long-term plans for sustainability

Most FTCs lack a long-term vision and plans to sustain themselves and contribute to agricultural development. This is mainly due to low awareness of FTC-MCs and DAs on the long term benefit of the FTCs and limited capacity in business plan preparation and implementation. Limited guidance and practical support to FTCs by frontline extension workers has also contributed to the problem. In addition, inadequate follow up and monitoring system at all levels is also cited by stakeholders as another major problem.

Bottleneck 3.1.4: Inadequate support by the local government

Practical and genuine support to FTCs by the R-BoAs, especially at the Woreda level, is inadequate. Members of the FTCs management committees receive insufficient support from authorities. Support has been particularly inadequate in physical and financial resourcing, value-added management, technical advice and regular follow-up to make the FTCs function as desired. According to the information from DAs, management at woreda and kebele levels often blame DAs and farmers for poor functioning of the FTCs without playing their role and providing the necessary support to the FTCs and DAs.

Bottleneck 3.1.5: Inadequate incentives to motivate and retain DAs

Ethiopia has the highest DA-to-farmer ratio in the world. Government has trained about 70,000 DAs with specialization in plant sciences, animal sciences and natural resources management (NRM). However, according to recent assessments made by MoA and others, only about 45,000 trained DAs are deployed to FTCs. This indicates that either a number of graduated DAs are not interested in working in agricultural extension or there is a high turnover of DAs, potentially due to dissatisfaction in their jobs. The major factors appear to be poor working environment (inadequate housing, inadequate office facilities, limited mobility, etc.), inadequate incentives and an unattractive career path with big variability among the regions, heavy workload and lack of a clear line of command.

In a survey conducted by Oxfam America, DAs were asked to score their satisfaction, perception of future career prospects, and likelihood of staying in their jobs. While the average score was close to the medium level of satisfaction, 18% of the DAs were unhappy about the prospect of their positions. Further, only 9% of the respondents "strongly agreed" that they would stay in their current jobs, while about 18% "strongly disagreed" (OA, 2011). Poorly implemented DA incentives and overall low job satisfaction have prompted DAs to seek alternative career opportunities elsewhere, resulting in a high attrition rate that is critically challenging the extension system.

Bottleneck 3.1.6: Limited knowledge and skill of DAs

According to the study by IFPRI (2009), DAs have inadequate knowledge and skills to properly discharge their roles and responsibilities. The key gaps and limitations include communication and facilitation skills, participatory approach and rural problem analysis, business plan and value chain development and marketing, data collection, analysis and reporting. Similarly most DAs do not have sufficient technical knowledge and skills to provide hands-on training and demand-driven advisory services.

Bottleneck 3.1.7: Limited training to farmers

In most cases, training to farmers is mainly focused on crops with major emphasis on theoretical concepts, although recently changes are being realized both in terms of its scope and range of training services. The training also lacks necessary teaching aids, often one-way, poorly organized, not season-based and agro-ecology oriented. In addition, training impact assessments are not conducted to determine any changes realized and take corrective measures in cases where changes are not satisfactory.

Proposed key strategic interventions

Intervention 3.1.1: Increase sense of FTC ownership by farmers and improve FTC functioning and sustainability

FTCs cannot function effectively unless farmers take ownership and an effective management system is put in place. Increasing a sense of ownership may happen if farmers are convinced of the short and long term benefits of FTCs. Clear guidelines should be made available that describe roles and duties of farmers and other stakeholders. Based on such guidelines, farmer-led FTC-Management system should be established in each FTC with due consideration of women and youth representation. Following this, the capacity of FTC-management committees (MCs) needs to be built through different means such as organizing specific trainings on FTC management, intra and inter regional experience sharing visits and field days on a regular basis. While building the capacity of farmers, priority should be given to practical skills training that will increase the participation and ownership of the MCs, in particular, and the farming community, in general.

Intervention 3.1.2: Allocate sufficient resource to FTCs

FTCs need to be funded through a range of diversified sources. Government is expected to provide seed money for a fixed period of time, which has been already, outlined in the FTC guidelines. Communities should also be encouraged to contribute labor and locally available materials required by FTCs. Since FTCs are an entry point for extension services and a means for rural development; donors, NGOs and private actors should also be

encouraged to support FTCs through their programs and projects with regards to supply of basic resources, in addition to finances.

At the same time efforts must be focused on improving resource management and utilization. Clear guidelines on resource management and utilization should be made available by taking the government financial rules and regulations into consideration. FTCs should be encouraged to generate their own revenues while undertaking demonstrations to promote their operations in a sustainable manner – although revenue generation and profit making should not be taken as a major objective for FTCs, at least in the short term.

Intervention 3.1.3: Furnish and equip FTCs with basic infrastructure and facilities

FTCs need to have basic infrastructure and facilities for proper functioning. The full list of facilities required is outlined in the FTC guideline and include 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; meteorology center; and ICT facilities. FTCs with a good set of facilities will improve FTCs' performance and attract farmers. In addition to improving facilities, FTCs must be equipped to maintain such facilities to avoid waste, with adequate levels of accountability for the maintenance and safe-keeping of the facilities built into the system.

FTCs should be capacitated in accordance with FTC classification shown in Table 1. This classification will guide types of resources required to upgrade the FTCs to the next functionality level.

FTC classification: minimum criteria by functionality levels		
Basic	**Intermediate**	**Advanced**
	All basic criteria, plus:	*All basic and intermediate criteria, plus:*
• At least 3 DAs • Moderately furnished FTC building • Agro-ecology based standard* FTC demonstration plot • FTC training and demonstration plan • FTC management committee • FTC operational guideline available	• Active community management structure • Adequate level of facilities/equipment in place for FTC training and demonstrations • At least 3 FTC trainings and demonstrations • FTC trainings efficiently linked to demonstration • FTC training materials, manuals and guidelines available	• Revenue generation for self-sustainability • Active linkage with cooperatives, micro-finance institutions (MFIs), research centers, ATVETs and farmer innovation groups • Ability to handle higher level training (Level 3-4) • Availability of operational resource centres (internet connectivity)
* As per the FTC guideline		

Table 1: FTC classification criteria

Intervention 3.1.4: Improved support to FTCs by the local government

Extension management bodies at all levels need to emphasize the central role of FTCs in a successful extension system. Extension management bodies need to provide support with regard to human and physical resourcing, capacity building and coaching to ensure the success of FTCs. At the same time woreda level extension management must allow for and enhance decentralized decision-making and ownership at the FTC levels, while also ensuring proper feedback loops are in place. Support from extension management bodies should take the form of, among others, allocating adequate budget for the construction of FTCs where they are not established,

ensuring quality operations of the established FTCs, close monitoring of day-to-day performance, technical support and giving timely responses on issues raised by DAs and FTC MCs. The management team is also expected to establish a close link with FTC-MC and ensure that due recognition is given to high performing FTCs, FTC MCs and DAs.

Intervention 3.1.5: Improved DA career-path and better incentives for DAs

Motivating and retaining frontline extension workers needs to be considered a high priority. At minimum, basic facilities such as housing, transport, uniforms, office materials must be provided to maintain decent working conditions for DAs. Providing DAs some land for them to engage in agriculture using improved technologies will also enable them to generate income, introduce new innovations and good practices to the local communities, enhancing adoption. In addition to this, incentive packages should be developed linked to measurable performance. National performance evaluation criteria for DAs should be developed and adhered to across all regions. Incentives for good performance may include materials, cash bonus, education, exposure visits and public recognition.

Intervention 3.1.6: Build DAs knowledge and skill

DAs are among the main actors of the extension system and work with farmers on a daily basis. The role of DAs is critical in providing quality and demand-oriented advisory services to farmers and creating modern farming communities. However, gaps in the skills and knowledge of DAs hinder their ability to provide quality extension services. To address these gaps the following interventions are proposed:

- Understand where the gaps are: Conduct an assessment of existing skill and knowledge gaps (technical, social and behavioral) in current DAs and develop specific training modules to target those gaps.
- Update curriculum: Strengthen DAs training on market-oriented extension and comprehensive practical skills that need to be included in the curricula of ATVETs & HLIs.
- Recognize learning as a continuous and dynamic process: Provide regular in-service training to DAs on new technologies, emerging needs, soft skills and new priorities of farmers and government.
- Make sure trainings are effective: Monitor effectiveness of training through feedback and written exams (before and after trainings) as well as assessment of DAs in the work place to see if skills and knowledge gained through trainings have translated into tangible outputs.
- Develop practical trainings: Care should be exercised to make trainings practical, outcome-based, and focused on problem-solving as clearly described in the recently revised TVET training strategy of the country (citation needed).
- Produce better training materials: Strengthen the capacity of federal AED and regional R-BoA in establishing and managing their own modern printing machines/equipment to produce high quality training materials, including posters, flipcharts, picture-books and others.

Intervention 3.1.7: Improving training to farmers

Farmer training should focus on the priority needs and existing gaps as identified by farmers as well as emerging needs of the government. The method of farmer training must also be adapted. In most cases, farmers learn more when the training is provided in a two-way learning method, supported with relevant audio-visuals and farmers' indigenous knowledge and when experiences are shared among the participants (Berga Lemaga *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 and female farmers, seasonal activity and specific agro-ecologies.
- Use quality trainers: 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.

Box 1: Success of a farmer-led FTC in Arsi Negele, Oromia Region

Arsi Negele provides a good example of a successful farmer-led FTC. To address the issue of limited farmer awareness of the benefits of FTCs, the woreda ran a series of well-planned events aimed at increasing local farmers' appreciation of the relevance of a well-functioning FTC

Following this, gender sensitive and farmer-led FTC management committees were established in a participatory and interactive manner following guidelines that clearly stated the roles and duties expected from every member of the management committee. This approach led to a number of improvements: establishment of responsive framer-led FTC management, development of weekly FTC action plans, introduction of context specific revenue generating schemes through sustainable loan granting system, practical trainings (at least two hours per week) on demo plots, and continuous progress tracking, monitoring and evaluation systems. As a result of this, FTCs in Arsi Negle Woreda that are supported by the Gates Foundation project and implemented in partnership by MoA, SG-2000 and OA were found to be a model for adopting new technologies and best practices. The projects benefited about 19,000 farmers. A significant number of visitors from within and other neighboring regions, including top officials have visited these FTCs for experience sharing.

The success was achieved because of good leadership of the woreda administration, able facilitation of the staff of the woreda and capacity building by OA and SG-2000.

3.2 Cornerstone 2: Farmer-based organizations and groups, networks and organizations as key instruments and platforms for delivering extension services

Objective
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

Farmers' groups can be used as platforms for promotion of decentralized planning, implementation and monitoring of extension services. Extension delivery will be easier when farmers are organized in groups, as it provides an opportunity for farmers to work together to resolve their common problems and build their confidence in changing their future for the better. While the capacity of the groups is strengthened, it has an impact on the livelihood of individual members and their families through accessing better extension services, technologies and harnessing joint learning. Efforts are underway to provide extension services through group approaches such as farmer development groups, farmers' innovation groups, farmers' common interest groups, farmers' research extension groups, with the basic principle of enhancing social networks and farmer learning in extension system.

Through effective peer to peer learning and social networking, farmers can gradually develop a sense of cooperation and collaboration to be organized into primary cooperatives and unions. Farmers' groups are also valuable institutions to access resources such as credit, labor and information because of economies of scale, and enable farmers to forge stable relationships with suppliers and reliable markets.

Bottleneck 3.2.1: Limited skill in common-goal-based farmers' group establishment

Informal farmers groups have a short history in the Ethiopian context. Communities have limited experience in mobilizing themselves through self- initiation and support. Government and other organizations provided little institutional support in awareness creation or facilitating the formation of such groups. Farmers groups are not considered as important platforms for extension services delivery and their roles in providing economies of scale for the system are not well recognized.

Other critical challenges to be addressed include: lack of mechanisms to build trust and ensure commitment and group ownership; inadequate knowledge and skill for establishing a voluntary and common-goal-based group; ineffective farmer mobilization mechanisms; lack of mechanism to bring a change in mindset; lack of skill to manage heterogeneity in group formation; and poor participation among the group members.

Bottleneck 3.2.2: Poor linkage among farmers' organizations and groups

Farmers' organizations and groups in Ethiopia are facing numerous challenges in terms of acquiring adequate input and output marketing services. The most critical challenges to be considered include: lack of clear guidelines for group formation and group management; limited capacity of the extension staff on group formation and management; poor access to financial services, technologies and markets; persistent external interference and inadequate linkage among the groups.

Proposed key strategic interventions

Intervention 3.2.1.: Strengthening the existing Farmers Development Groups

The current extension system is relying, among others, on farmers' development groups and social networks. In addressing the challenges farmers' development groups are facing, it is imperative to put in place appropriate farmer mobilization mechanisms that could bring further changes in the development of different working groups to get maximum benefits from the extension services. To materialize this, awareness creation on importance of groups and capacity building training on critical knowledge gaps like group formation, group dynamics, business plan development, participatory approaches, leadership and conflict management are essential.

Existing groups need to be strengthened by building the capacity of group leaders and members, continuous follow up and technical support, and linking the groups to research and extension.

To achieve this, one or more of the following approaches should be adopted (depending on the objective):

Strengthening Farmers Learning Platforms: Farmers Learning Platform (FLP) is a platform that brings a group of farmers who have a common interest in agricultural development and share their knowledge, information, insight, experience in continual process through facilitation of extension workers. In other words, FLPs stimulate farmer learning; encourage farmers to diagnose their own problems, solicit local level solutions using their indigenous knowledge and use of new technologies from research institutes and Universities.

In this strategy, FLPs consist of three main elements: (1) capacity development of the FLPs and extension agents; (2) field demonstrations of improved technologies and technical support; and (3) timely monitoring & evaluation of shortcomings. In the FLPs operational process, special attention should be given to women farmers, who are disadvantaged in terms of access to land, extension services and means of production.

a) ***Initiating village level development promoters (VLDP):*** Under this approach, farmers who can read and write, are considered innovative, and are respected by local communities can be selected as a VLDP. VLDPs are organized at the village level with a dual purpose: (1) to enhance farmer-to-farmer learning and (2) to assist DAs in providing extension services. The approach was started in Amhara Region and is considered to be one mechanism that may sustainably build village-level capacity while mitigating the impact of high turnover of DAs.

   The role of VLDP needs to be voluntary: Clear selection criteria for VLDPs needs to be developed and framework agreements established between VLDPs and kebeles. Creating effective VLDPs requires special

support and capacity building to ***Level-2*** (insert citation) ATVET new training curriculum. Appropriate incentives for VLDPs need to be put in place to compensate them for their time and effort. These incentives should be based on clear guidelines to ensure transparent, consistent and sustainable implementation across regions.

b) Strengthening Farmer Research and Extension Groups (FREG): FREGs are groups of 15-20 interested farmers working in collaboration with research and extension in the process of technology generation, verification and adoption. FREGs were established and are being used as one of the platforms in the extension system, as well as in research institutes, universities and colleges. This approach has helped minimize the gap between research, extension and farmers. To strengthen the FREG approach emphasis should be placed on identifying and addressing challenges of the existing FREGs and establishing new ones to accelerate technology dissemination and adoption nationwide.

c) Supporting the catchment group approach: The catchment approach is one of the group approaches where all farmers within a micro-watershed area (ranging from 200 to 400 ha) are organized, mobilized and trained to conserve soil, water and other important local level natural resources. Mobilization and establishment of the community for watershed management activities should take into consideration the existing extension development groups. A catchment committee consisting of, and elected by, the local farmers can assist extension staff in awareness creation, layout of physical structures, implementation, protection of area closure and continuous follow-ups. Such groups (whether old or new) are expected to be strengthened through linking them to extension and by giving focused training on NRM and rehabilitation.

d) Establish and strengthen school clubs: Schools (primary and secondary) are the best instruments to interest a new generation in agriculture. This practice is widely used in the developed world and in some developing countries and has been found to be an important means especially for encouraging students to develop a passion for agriculture and national development.

Schools clubs should be established and information on agricultural practices should be made available through lectures, demonstration plots. Similarly, dialogue and plenary discussions on agriculture and food security should be organized during parents' days and special school events to increase awareness.

School clubs may be used as an important channel for reaching the community to influence behavioral and attitudinal changes. Club members can also be used to trigger discussion among themselves, the school communities and their families. The clubs can be supported through information sharing using different methods such as leaflets, experience sharing visits to relevant organizations, inviting experts and prominent professionals to schools to speak on agriculture and nutrition.

e) Establish and strengthen Water Users Associations: Water Users Association (WUA) is a voluntary group of water users organized to manage water resources. The WUA pool their knowledge, financial, material and human resources to efficiently manage, operate and maintain the local water system. The association elects leaders who can facilitate a joint plan for equitable, efficient and effective distribution and use of water, handle disputes internally, collect fees, and conduct regular maintenance by mobilizing the resources of the local community.

Intervention 3.2.2a. Enhance linkage among farmers' groups

Strong linkages among farmers' organizations and groups are critically important to strengthen their power, unity and group learning through organizing experience and knowledge sharing platforms among themselves. The existing farmers' groups can be enhanced by developing clear guidelines for group formation and management

and to be effective and efficient in their strategic objectives. Moreover, regular problem-solving capacity building programs need to be organized to enable groups to become self-sustainable. Similarly, training curricula at ATVETs should also consider the importance of farmers' groups and their contribution to the development of the country.

Capacity building and awareness creation for extension staff on improving services and satisfy their customers is essential. Above all, the extension workers need to learn the principles of community group management through equipping themselves with important skills and knowledge on group formation and management. In addition, proper facilitations and group orientations by frontline workers would help especially the poor and marginalized groups to organize themselves for a sustainable development.

Intervention 3.2.2b: Strengthen linkage between farmers groups and service providers

Smooth institutional linkages between farmers' groups and relevant actors (public and private) are vital. For instance, when farmers are linked to different service providers, their access to various extension services such as training, improved inputs, better input-output market linkages and overall extension support will be broadened. Besides, such motivates quality extension services through fostering linkages with public extension services and creating collaboration and competition. Such linkages will also enhance interdisciplinary and holistic approach both horizontally and vertically by creating strong bonds and connections for sustainable development. In view of this, it is recommended to strengthen and/or create close collaborations between research institutions, extension agencies, private extension providers, agro processors, markets and NGOs for the development of a nation.

Box 2: Success Story: Formation of commodity-based group association in Tigray Region

Deharo Milk Producers Association was established in Wukro Woreda of Tigray with 29 individuals interested in dairy production in 2006. The Woreda Agriculture Office organized interested individuals and provided access to credit on favourable terms. The extension team of the Woreda Agriculture Office provided comprehensive training, advice, and continuous follow-up support. As a result, the association has operated like a marketing cooperative and benefited from economies of scale. At the beginning the association used to supply only 50-60 liters of milk/day. However, currently it is supplying 400 to 450 liters per day. The association owns fixed assets worth ETB 400,000 and a cash capital of ETB 60,000 and the members' livelihood has dramatically improved. The experience of Deharo Milk Production Association is a good indicator of how communities may benefit from being organized in common interest groups.

3.3 Cornerstone 3: Making agricultural knowledge and information available by improving access to agricultural knowledge and innovation management systems

Objective
To use effective and diversified communication channels, including ICT-led extension service delivery, to enhance knowledge and information exchange among beneficiaries.

Effective knowledge management enables appropriate knowledge and information to reach smallholder farmers and other practitioners at the right time, in the right order and in the right place. An effective system will generate, capture, and disseminate knowledge and information using means and institutional arrangements most suited to the objective and circumstances (Figure 2).

Bottleneck 3.3.1: Poor access to diversified communication channels

Use of ICT in agriculture remains low in Ethiopia by sub-Saharan African standards. For instance, in a number of Sub-Saharan African countries such as Kenya, smallholder farmers get technology-related advice as well as location-specific market information on inputs and outputs through ICT kiosks. This convenient access to information empowers farmers and creates sustainable linkages to networks of service providers for improved services, capacity building and financial resources.

Bottleneck 3.3.2: Limited access to different agricultural knowledge and information

In Ethiopia, there is limited access to modern agricultural knowledge and information by research and HLIs resulting in insufficiently designed extension packages to meet current diverse farmers' needs. Agricultural knowledge exists with specific stakeholders and there is need to make it available centrally. However, there is loose engagement among these stakeholders which has hindered centralized knowledge management, dissemination and utilization.

According to OA's agricultural extension project baseline report (OA, 2012), poor information management systems has been one of the challenges preventing higher-level extension support organizations from facilitating learning and information sharing. As a result, there is no systematic capturing of demonstrated practices and lessons learned to develop replicable and scalable extension models (both within individual levels of the extension system and in developing a system-wide strategy).

Bottleneck 3.3.3: ***Extension packages not sufficiently designed to meet diverse farmers' needs***

Farmers needs vary widely by agro-ecological zones, education level, sex, age, socioeconomic status, and type of farming. While the extension service is decentralized, higher-level extension support organizations (Federal and Regional levels) have limited capacity to align extension packages with farmers needs in the different regions to offer custom-tailored packages. Extension package development at the higher-level extension support organization takes broader agro-ecological and socioeconomic categories into consideration. But the adaptation of extension packages to specific farmer conditions could be further facilitated if extension packages at the higher-level are more customized to local level conditions. Recently, extension packages have been developed for women and youth groups. However, the unique needs of model farmers and out-growers remain unaddressed.

Bottleneck 3.3.4: Limited extension services on livestock

Although, currently significant improvements are being realized, the extension service is still biased towards the crop sub-sector at the expense of the livestock sub-sector. This emanated from insufficient understanding at all levels about the importance of the livestock sector both in economic development and food security of the country. High investment, poor linkage between the sectors (crop, livestock and NRM), limited availability of technologies (breeds, feeds, livestock health equipment, drugs) and the mobile nature of pastoral system exacerbated the problems. The vast majority of the farmers in Ethiopia, regardless of their being pastoralists, agro-pastoralists or sedentary, are involved in livestock production. Livestock influences the livelihood of farmers directly as draught animals and source of products such as milk, meat and other products; and byproducts such as hides and skin as well indirectly as manure for better crop production. Despite all these, there is limited activity focused on livestock extension and the different value chains within the livestock subsector.

Bottleneck 3.3.5: Poor technical knowledge on the preparation of client tailored extension messages and use of indigenous knowledge

Low use of modern agricultural knowledge and information is one reason why smallholders may be trapped in low productivity, food insecurity and poverty. Extension packages are most successful when the material deals with the pressing problems farmers are currently facing and if the message is clear and focuses on the potential benefits. Messages delivered by frontline extension workers are often not tailored to different audiences and not presented in an easily understood manner. These problems mainly arise as a result of poor technical knowledge and experience on the preparation of farmers-tailored extension messages by frontline extension workers.

Bottleneck 3.3.6: Poor involvement of farmers in research agenda setting and prioritization

Although recently much has improved, the process for the technology generation and research agenda setting is done with a limited participation of farmers and with little/no consideration of farmers existing problems and priority interests. As a result of this, often the research findings are complained not appropriate to farmers' demands in various locations and agro-ecologies. The research findings are often verified on 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, leading to little or no adoption. The poor linkage between research, universities and farmers has exacerbated the problems.

Bottleneck 3.3.7: Technologies and services are not always available to farmers

Even if technologies in mechanization or inputs are developed for farmers, they are often not available to most farmers due to a lack of systematic, centralized technology release, registry, and dissemination mechanism (Stakeholder consultation, May 2012). In particular, strategies and mechanisms to release non-crop technologies (livestock, mechanization and NRM) are lacking, limiting potential advancements in livestock, mechanization and NRM. The supply of improved technologies does not meet farmers' high demands (e.g., vegetable seeds, mechanization and livestock technologies). The participation of the private sector, farmer organizations, in multiplication and dissemination of improved inputs is very limited. Innovative farmers also multiply seeds; however, the technology system does not adequately promote demonstrated farmer innovations.

One of the other challenges facing farmers is inability to obtain the necessary credit both for input and output financing. This limits farmers' capacity, including adoption of new technologies. The majority of smallholder farmers do not have access to financial services due to lack of financial services infrastructure and high degree of risks attached to the sector. Smallholder farmers are often excluded from finance due to the difficulty in meeting strict criteria such us collateral or documentation.

Key proposed strategic interventions

Intervention 3.3.1: Use of diversified communication channels

Having the right message, the right audience, and the right products may not achieve the intended results unless they are delivered through appropriate channels. In Ethiopia information reaches farmers mainly through indirect (radio & TV) and direct verbal communication channels which include training, meetings, conferences and social gatherings, followed by learning through direct observation. The effectiveness of these channels can be enhanced by enabling farmers to have access to new information and communication technologies (ICTs). ICTs are an efficient and scalable way of getting information to farmers in an engaging form – for example, "Digital Green" is a technology platform where farmers themselves demonstrate best agricultural practices to their fellow farmers through video and respond to each other's questions.

The following interventions will help to diversify the extension message communication channels to effectively reach farmers in diverse social classes (gender, wealth, age, etc.) and agro-ecologies.

- Establish ICT-kiosks. Improve technology-related advice, as well as location-specific market information on inputs and outputs through ICT kiosks linking Federal systems down to Kebeles/FTCs.
- Establish data and performance management system through online and offline application using the ICT tools to easily connect and facilitate collaboration among the various agricultural development actors.
- Use mobile-based applications. Integrate the use of mobile-based application in extension services to deliver agricultural information. The possibility of mobile phones for extension service delivery can extend the reach of existing information and can be used to overcome the social and institutional barriers that currently limit women farmers' access to information.

- Use radios. Integrate and increase agriculture radio programs for extension, using stations most preferred by farmers and via community radios that broadcast in local languages.
- Resource centers. Establish resource centers at the woreda level to offer up-to-date information for extension workers, subject matter specialists (SMSs) and farmers. Specific recommendations on this can be expected after the on-going study on communication channels has been completed.
- Use social networks. Leverage peer to peer learning to enhance experience sharing and increase farmers' access and flow of information.

As demonstrated in Figure 2, knowledge is created through scientific (universities, research institutes, and others) and indigenous knowledge (farmers, farmers groups, local institutions) stored through written documents/publications and electronic media such as computer, website and audio-video and is disseminated to wider audiences through radios, TVs, publications, exhibitions, mobile phones etc.

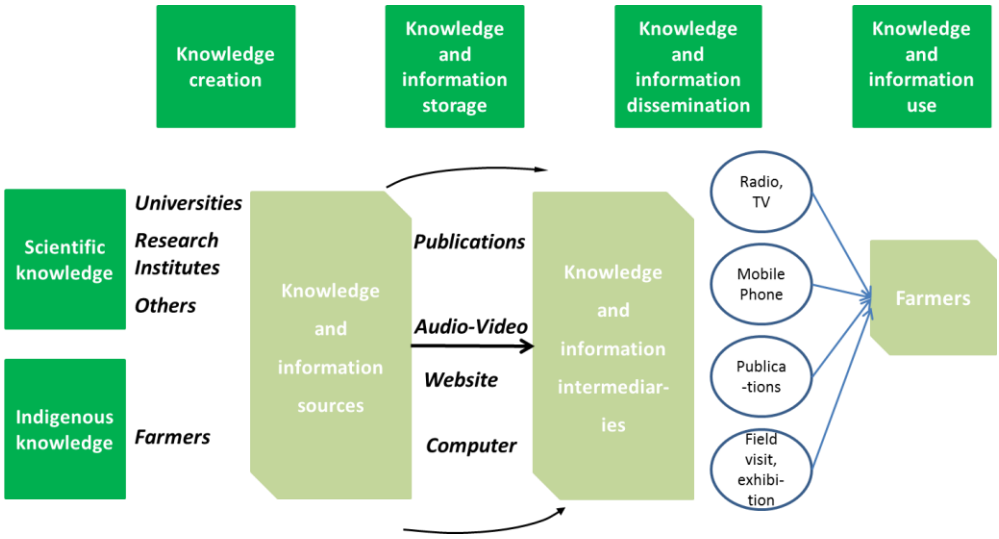


Figure 2: Creation, accumulation and dissemination of agricultural knowledge using different methods (adopted from UNDP, 2012)

Intervention 3.3.2: Strengthen agricultural knowledge management within the extension system at various levels

As illustrated in Figure 3, knowledge management is a process that includes knowledge creation, identification, and utilization, storage, sharing and learning. Knowledge is developed through experimentation, adaptation, confrontation and other learning settings which result in knowledge products. In knowledge management, farmers, researchers, extension agents, policy makers, and others are considered key actors in influencing the knowledge process and its ultimate utilization. For the circular flow of knowledge management to happen, both knowledge that is sufficiently better than the existing knowledge and means for transmitting it must be available. In knowledge management, the synchronization of scientific knowledge with indigenous knowledge is critical for reinforcing and developing applicable and re-refined knowledge.

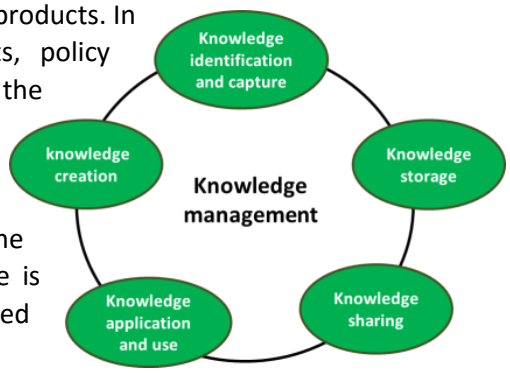


Figure 3: Knowledge management process (adopted from Cong et al., 2007)

To improve the effectiveness of agricultural knowledge, it is essential to develop a mechanism that generates captures and disseminates knowledge and information through the use of effective processes and institutional arrangements, as well as, effective utilization of information and communication technology (ICT). Hence, the following key interventions are proposed. This strategy intends to enable the integration of traditional or tacit knowledge of farmers with modern knowledge (generated from research, universities and extension), and to further enhance the utilization of knowledge disseminated to smallholder farmers.

- Strengthen/establish vibrant synergies for knowledge management and networking among key development actors.
- Use information and communication technology (ICT) to facilitate rapid, efficient and cost effective knowledge management. The experiences of most countries indicate that rapid development of ICT, which facilitates the flow of data and information, has tremendously enhanced the knowledge management practice in agriculture (e.g. eChoupal and M-Krishi initiatives in India, M-Farm limited in Kenya, etc.).
- Strengthen and better network FTCs to be used as a source of agricultural knowledge and information exchange among researchers, extension workers, and farmers and also as an input for policy.
- Establish working online and offline platforms using the ICT tools to easily connect and facilitate collaboration among the various agricultural development actors (including extension workers, researchers, etc.).
- Involve male and female farmers in the knowledge management process and generate knowledge in a participatory process to increase the chances of its adoption. This also enables the integration of indigenous knowledge of farmers with recent research findings and further enhances the utilization of knowledge disseminated to smallholder farmers.

Intervention 3.3.3: Provide diverse and quality of extension messages (client-tailored extension messages)

Every successful forms of communication should follow **seven basic principles,** often referred to as the ***Seven Cs of Effective Communication*****: "Completeness"** contains all facts, **"Conciseness"** saying what you want to say in the fewest possible words, **"Consideration"** preparing every message with the receivers mind by putting yourself at a place, **"Concreteness"** being specific, definite and vivid rather than vague and general, **"Clarity"** use simple language and easy sentence structure, **"Courtesy"** doing well with good intention and **"Correctness"** sentences ought to be proper grammatical, punctuation and well spell (Sweety Gupta, 2013: *www.adweek.com/...**7-principles-of-effective-communications**.../91468*).

In order to provide diverse and quality extension message, the following interventions are proposed.

- Identify and map target audiences and their specific demands and market needs.
- Identify the available technologies with regard to crops, livestock, NRM and other cross-cutting issues and make sure that the technologies are up-to-date and demanded by farmers.
- Develop the content of the message through participatory and interactive approaches with model farmers and professionals and ensure that quality assurance procedures are strictly followed. Content can be delivered in audio, visual and written formats to reach farmers with varying levels of education and literacy.
- Prepare extension messages and necessary guidelines looking through the gender lenses to incorporate relevant messages in a clear language. Consulting with male, female and youth farmers are strongly recommended.
- Select appropriate channels with due consideration of audiences and messages to be addressed.
- Build the capacity of farmers and frontline workers with clear training framework in consultation with farmers. The training must be mostly practical accompanied by field visits and excursions.

- Conduct an assessment on relevance of training and technologies on a regular basis and improve accordingly.

Interventions: 3.3.5: Improve livestock extension services

In order to improve the livestock production and productivity, the extension services for livestock should be given equally attention to that of crops. As pointed out under bottleneck 3.3.4, even if the sector has been less emphasized by the extension system and research institutions in the past, the demand for extension services for livestock production is growing from time to time because of engagement of large proportion of the population in livestock production and the contribution of the sector, including for improving crop productivity. Hence, bottlenecks related to livestock production and its extension service can be addressed through the following approach:

- Keep the necessary balance in extension service between crops and livestock by among others, allocation of adequate resources.
- Support research institutes to generate necessary technologies for livestock related problems,
- Enhance effective collaboration between AED and livestock sector through the establishment of functional linkages down the ladder
- Promote intensification in agro-pastoral and pastoral areas and crop-livestock integration in highland areas for sedentary farmers).
- Increase commercialization of livestock production in urban and rural areas by engaging women and youths.
- Develop livestock extension packages and its dissemination with special focus on production, reproduction (AI), health, forage development and nutrition using the LMP document as a resource.

Intervention 3.3.5: Build the capacity of higher level extension staff (SMS) for improved technical knowledge and preparation of client-tailored extension messages

Most extension workers lack the required technical skill for the preparation of extension messages that are tailored to farmers. Strengthening the ability to tailor extension packages requires:

- Technical capacity improvement. Building the technical capacity of frontline extension workers on extension message planning and content development with a focus on thematic areas of crop, livestock, postharvest and agro-processing, cooperatives, marketing, gender and environment.
- Better use of technology. Facilitating access to improved technologies and best practices on different commodities through both soft and hard ware combinations.
- Install infrastructure and audio-visual facilities: It is necessary to install infrastructure and audio-visual facilities at resource centers at federal, regional, and woreda levels. These will include audio-visual facilities, computers, projectors, TVs and related.

Intervention 3.3.6: Enhance participatory technology development, verification and dissemination

Low farmers participation in technology development, and the notion that “experts know best” for farmers, has resulted in low adoption of new technologies. Increasing participation may be achieved by:

- Farmer-focused research agenda to have demand-driven research. Adapting the research agenda to reflect farmers’ needs through improving their participation from problem identification up to planning to monitoring and evaluation. This can be affected through developing farmers, voices diagnostic feedback tools and technology tracking tools that clearly show the pros and cons of each specific technology under farmers’ conditions.
- Promote active participation. Build the capacity of farmers on concept of participatory technology development verification, and dissemination in collaboration with research, extension and other actors.
- Establish working and sustainable platforms among key actors. Establish and strengthen annual platforms to debate the benefits and challenges of improved technologies taking farmers, women and youth into consideration.

- Promote agro-ecology and cluster-based technology development and dissemination: New technologies/innovations should be promoted and disseminated within different agro-ecologies and farming conditions to enhance their adoption. Technologies should be integrated with the existing indigenous knowledge and farming practices through on-farm trails and demonstrations to be more innovative. Farmers need to be convinced about the effectiveness of new agricultural technologies if they are to make use of them (Berga et al., 2013).

Intervention 3.4.7: Improve the availability of technologies and services to farmers through ICTs

As mentioned under bottlenecks 3.4.7, the availability of demand technologies becomes a major challenge to farmers. This is mainly due to lack effective information and communication mechanisms at various levels. To mitigate the problem, the following strategies are proposed.

- Establish a vibrant link between technology generation and dissemination (research, universities, colleges and extension).
- Establish Woreda level Information Centers and Electronic Libraries to offer frontline extension workers up-to-date information by linking with research and universities.
- Promote ICT-based technology promotion and dissemination through using different ICTs like; mobile phones, IVR-8028, Digital Green, farm radio, TVs etc. Build institutional capacity of agricultural extension providers in ICT application, including processing farmers' demands and managing contents to suit specific farmer needs and demands that can be provided through, for example Woredanet, schoolnet, agrinet, Digital Green, smart phones, etc..
- Conduct regular field level assessment to identify farmers' technology demands, availability, supply gaps and inform concerned authorities and institutions to address the gaps.
- Map the available technologies from the view point of agro-ecology and priorities to farmers and national economic growth and develop clear packages of information to farmers in local languages. These should be available at FTCs to maximize their availability and utilization.
- Build online extension portal to link education, research, and extension organizations and ensure availability of up-to-date information to extension workers/SMSs

Box 3: Success story on IVR and 8028

The IVR and 8028 hotline service was created by the Ethiopian Agricultural Transformation Agency (ATA) in collaboration with MoA to place the extension information on a technology platform that can be accessed at any time. The hotline began its services in the four major regions (in their respective regional languages) in mid-2014. Within a few months the hotline received 1.5 million phone calls from 300,000 registered callers, providing them with information on high value crops and agricultural activities. This example demonstrates the need for improved, technology-based information channels by farmers.

3.4 Cornerstone 4: Provision of technical advisory services and capacity for specific technical domain and innovative solutions

Objective
To make the extension services diverse, client-oriented and market-led through developing a range of technologies (crop, livestock and NRM) and advisory services.

Use of different extension methods and approaches helps to maximize the provision of a range of services to different social categories and addressing of specific technical domains and innovative solutions. Nevertheless, extension services provided often failed to address diverse, client-oriented and market-led extension services due to various reasons, of which varying agro-ecologies, variable needs from different social classes, limited knowledge of market-oriented agricultural production, limited involvement of service providers, limited finances and technical support by frontline extension workers are the major ones.

Thus, the main objective of this sub-section is to discuss the existing bottlenecks with regards to the provision of extension services by different service providers and the corresponding interventions to mitigate the challenges.

Bottleneck 3.4.1: Limited involvement of different stakeholders in the provision of extension advisory services and capacity for specific technical domain and innovative solutions

Ethiopia is a country with a wide range of agro-ecologies, extending from Wurch (mostly higher than 3700 masl) to Bereha (less than 500 masl). Recently, 33 agro-ecologies have been identified in the country. The farming communities within these agro-ecologies can be categorized as farmers, agro-pastoralists and pastoralists with variable capacities, needs and priority interests. Hence, the extension services to be provided to these local communities should not be one and the same. Farmers also vary with the farming system, socio-economic setups, opportunities and challenges facing agricultural development in their respective locations. These call for an array of actors to address specific requirements.

In spite of its great importance, effective implementation of pluralistic extension approach in Ethiopia, however, is at its infant stage largely because of limited capacity and knowledge of the service providers, more skewed desire to profit making than to quality services, poor affordability by farmers for private extension services, limited space and support by the government and poor communication and coordination among the public and private extension service providers.

Bottleneck 3.4.2: Low cooperation and collaboration between public and NGOs in extension services provision

The contributions of NGOs to agricultural extension are well recognized and appreciated. Many NGOs have been engaged in conducting different programs and projects in different parts of the country to support the ongoing public extension services including, for example, SG-2000, OA, SNV, ASE, iDE, CARE-Ethiopia, Save the Children, World Vision, Farm-Africa, MEDA, Menschen for Menschen and CCRDA.

At the same time, scope exists for improving collaboration and cooperation among the many NGOs working in agricultural extension and development. Some key reasons for this include:

- MoA not playing coordinating role including in updating NGOs on new and standing government policies and strategies of agriculture, in general and extension services, in particular.
- Limited openness and transparency by NGOs in terms of their strategies, approaches, and budget utilization and low interest to work within the government structure with unsustainable outcomes.
- Lack of involvement of NGOs in the process of agricultural policy and strategy development.
- Inadequate/monitoring of NGO programs at the grassroots levels and less recognition by extension coordination agencies on the contribution of the NGOs.
- Limited opportunity for experience sharing between government, private sectors and other actors leading to high duplication of efforts between public and non-public extension service providers.

Bottleneck 3.4.3: Limited professional skills development at HLIs and ATVETs

The contribution of HLIs & ATVETs in producing skilled manpower is important for creating strong extension organizations. Currently the number of HLIs dealing with the provision of agriculture-related training in different parts of the country is increasing.

At the same time, communication between the agricultural sector and HLIs is poor. This is due to lack of coordination and joint planning both during the identification of human resources required for the agriculture sector and curriculum development. As result, there is a mismatch between demand and supply in skilled manpower development. The curriculum is also sometimes seen from the academic point of view rather than equally considering the current gaps and demands in the agriculture sector

In many cases the trained human power has inadequate knowledge and technical skills. In most cases, the training offered was not outcome-based nor does it address the workplace requirement in different organizations. At ATVETs, even though the curriculum was designed to encompass 70% practical and skill training and the remaining 30% theory, this has not been fully implemented. As a result, most graduates, especially DAs, lack practical skills to guide farmers in improving practices on the ground.

Bottleneck 3.4.4: Poor involvement of cooperatives and other private-sectors in extension service delivery

The objective of agricultural cooperatives in Ethiopia is to distribute seed and fertilizers to farmers, seed multiplication, purchase agricultural products both from local and international markets, facilitate credit services, deliver market information, provide machinery services and facilitate some social services. In Ethiopia, about 40,000 farmers' cooperatives have been established, out of which 25% are agricultural cooperatives (ATA, Agricultural Cooperative Strategy, 2012).

To overcome these bottlenecks and get appropriate extension advisory services through the involvement of diversified actors, the following interventions are proposed that are expected to be implemented in an integrated and holistic manner.

Key proposed strategic interventions

Intervention 3.4.1: Strengthening pluralistic agricultural extension advisory services

In the past, several initiatives have been taken by the government, development partners, and civil societies to diversify extension services and increase the coverage and quality of the services. However, the development of pluralistic agricultural extension remains in its infancy. To strengthen pluralistic extension services, the following actions are suggested.

- Motivate and support private extension providers: Private extension providers can play an important role in addressing gaps in demand for extension services. Priority should be given to analyzing the challenges faced by the private sectors in agricultural extension services delivery and their current contributions in the Ethiopian context. At the same time, it is important to ensure services remain affordable, noting that a significant number of poor farmers may not be able to pay for private extension services.
- Develop an enabling environment: Where farmers do use private extension providers, the public sector will need to play only a regulatory role, by developing a framework for the private provision of services. The private sector requires clear policy guidelines and overall direction, credit facilities and support in the development of necessary infrastructure.
- Identify extension services for out-sourcing: Government should design an appropriate mechanism and strategy to outsource the collection and compilation of best practices and successful stories in private extension and use these as a model for scaling up for a wider use.
- Ensure quality of extension services: Promoting pluralistic extension services requires putting appropriate institutions in place to coordinate the provision of extension services, among others, to ensure quality. In addition, it is also necessary to provide capacity building to pluralistic extension service providers and other relevant institutions on policy guidelines, strategies and the provision of quality services through clientele organizations and other grassroots institutions. Clear guidelines for the implementation and maintaining the quality of pluralistic extension services should be prepared.

- Create alignment between public and private sectors: synergy between public and private sector is critical due to the fact that change is a result of concerted efforts and collaborations through ensuring quality of the extension services. Such synergy will improve the coverage of the extension services and maximize the extension provision on different topics. In addition, it helps to avoid unnecessary duplication of efforts and wastage of resources.
- Strengthen cooperatives role in extension: A study conducted by Quinones (2010) clearly indicated the importance of cooperative-based extension service provision. Cooperative unions should take up the responsibility to host and manage DAs and FTCs; the government can continue covering the full salaries of DAs for the first two or three years (payments to be done through the coop administration system, not directly to DAs). After that, the government's contribution to DAs salaries can be reduced by 50% for another two years, and thereafter contribution phases out. However, the administrative and operational cost to run the FTCs should be borne by the cooperative union administration from day one.
- Create alignment with NGOs working in agricultural extension: Creating alignment with potential NGO's working in agricultural extension offers an opportunity for collective learning, improved performance and stimulate development of the extension system. Such alignment can be created through establishing annual joint planning and evaluation workshop, field visit and experience sharing, and reports sharing.
- Create an enabling environment for universities to increase their extension services: Agricultural universities were established to do teaching, research and extension, following the Land Grant approach. However, the extension role of universities has declined with time mainly because the responsibility was shifted to the MoA and RBoA. It is, nonetheless vital to increase the involvement of the agricultural universities in extension services delivery, especially to communities in their respective surroundings. Federal and regional governments should create an enabling environment for these institutions to meet, plan and execute together.

Intervention 3.4.2: Strengthening public extension services

To further strengthen the extension system, the following interventions have been proposed.

- Capacity of the frontline extension workers needs to be built on a regular basis by taking into consideration the critical gaps and limitations on the ground, government's new plans and needs, staff turnover and current growing demands for agricultural extension services.
- Create fertile grounds for the involvement of various extension service providers to manage the demands arising from different social classes within different agro-ecologies and farming systems.
- Install effective regulatory system and strategic framework for pluralistic extension services through developing extension governance structure (capacity building, involving them in policy and strategy development, tax exemption, and creating favorable conditions).
- Establish performance-based working culture and incentive mechanism for extension staff. According to the recent assessment under field conditions, poor work performance and high staff turnover at all levels are frustrating. To enhance accountability at various levels, establishing a strong MLE system through assessing the existing system gaps for improved agricultural extension performance management and developing appropriate tools to improve the system are extremely important.

Intervention 3.4.3: Improve professional skills development at HLIs, ATVETs and AED

To better integrate HLIs and ATVETs with the extension and research system and ensure the training provided is outcome based and has practical application the following interventions are recommended:

- Improve the relationship between HLIs, ATVETs and AED: The training and human resources development by the HLIs and ATVETs should be based on emerging development demands in each sector and in relation to dynamic changes taking place within the agriculture development. This requires a well-articulated curriculum development and capacity building plan in consultation with all concerned actors and the leadership of the national extension system.

- Implement outcome-based training system: HLIs and ATVETs should adopt outcome-based approaches and regularly assess the professional competency of its graduates through external reviews.
- Improve communication and working relationship: Communications and work relations can be improved through joint problem identification, planning, and implementation. Establishing a network through web-based system such as agricultural portal to exchange up-to-date information, establishing tracking system for trained staff, establishing annual platforms for experience sharing and inviting the agriculture sector for policy briefs to the HLIs are some of the proposed actions to improve communication and working relationships in agricultural extension between HLIs, ATVETs and AED.
- On the-job-training**:** Trainee extension workers should obtain relevant knowledge and skills through in-service and on-the-job training. To facilitate this, a collaborative framework needs to be established between the nation's extension system and HLIs and ATVETs.

Intervention 3.4.4a: Enhancing cooperative-based extension advisory services

According to the national strategy document of the cooperative agency, only very limited agricultural cooperatives in the country serve their members by providing extension services and their services are mostly limited to input distribution and market services.

In addition to their other roles, cooperatives can provide specialized extension services by employing extension agents and/or contracting extension service providers to maximize their expected outputs to their members both in terms of improving the quantity and quality of their produce/products.

Taking this into consideration, cooperatives in Ethiopia should be strengthened and be on-board to provide specialized extension services to their members & non-members for improved livelihoods. To play this role effectively, cooperatives need to get the necessary capacity building support in all aspects including governance, leadership and value chain development.

Intervention 3.4.4b: Improving the role of agro-processing companies in extension services

Ethiopia has tremendous potential for investment in agro-processing. Currently there are around 455 agro-processing companies (http://www.ethiopianchamber.com/Data/Sites/1/downloadables/lm-scale-agro-processing-manufacturing-industries-in-ethiopia.pdf) in Ethiopia engaged in processing agricultural products such as coffee, livestock products (skins and hides, leather, live animals and meat), oil seeds, pulses, fruits, vegetables and flowers, textiles, natural gum, spices and mineral products that are traded in national and international markets (http://www.ethiopia.gov.et/investmentopportunities). These companies are primarily dependent on local raw materials.

Smallholder farmers can play a vital role in producing agricultural raw materials, creating an incentive for agro-processors to strengthen links with smallholder farmers. Part of this link can be the provision of extension services related to the production of raw materials required by the agro-processor, benefiting both parties through improved quality and consistency of supply.

Box 4.: Success Story on value chain development

Meki-Batu Vegetables & Fruits Growers' Cooperative Union was established with the participation of 12 primary irrigation water users' associations in May 1994 with an initial capital of around ETB 600,000. The main purpose was to have a collective force in the production and distribution of major horticultural crops and meet their common economic and social needs. The union has institutionalized its operations and relations with development partners, research centers, Oromia Seed Enterprise, Agricultural Office, Cooperatives and Trade Offices at all levels. The number of member primary cooperatives has increased from 12 to 150 and total irrigable land expanded from 400 ha to 3000 ha.

The association currently has a capital of around ETB 50m. Members have invested in various equipment and tools such as irrigation motor pumps, constructed bio-gas structures and are involved in different investment activities. The union constructed two stores and a packing house for the international market (Europe, Saudi Arabia and Djibouti). Members have privileged access to credit, input and training services.

3.5 Cornerstone 5: Functioning value chains and innovation platforms provide effective integrated services for delivery of extension services

Objective
To transform subsistence smallholder farming to commercialized farming system through the implementation of commodity-based extension approach and market-oriented extension services.

Extension services typically focus on promotion of improved technologies and practices to increase production, and productivity of farmers. However, increasing production does not necessarily reward farmers with better income unless it is sustainably linked to markets. One of the approaches to link smallholder farmers to markets is following a pro-poor value chain development. A value chain can be defined as the full range of activities that are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services); delivery to final customers; and final disposal after use (Kaplinsky R. and M. Morris, 2002). A value chain is an alliance of enterprises collaborating vertically to achieve a more rewarding position in the market. Vertically aligned means that companies are connected on one end to the primary production process (e.g., farmer's field) and on the other end to the final market where consumers purchase a finished product, through processing (Box 5). Value chains allow businesses to respond to the market place by linking production, processing and marketing activities to market demands. In addition, agricultural value chain provides a comprehensive framework for developing market-oriented commodity. The agricultural value chain framework is increasingly used by development projects and/or programs that intend to engage smallholders individually or collectively in the production of high value commodities (Berhanu Gebremedhin, *et al.* 2012). Promotion of value chain-based extension services has faced several bottlenecks in Ethiopia:

Bottleneck 3.5.1: Insufficient understanding of market-oriented production system

Market-oriented production system has its own unique activities, which need to be known and well implemented by all technical staff and other development actors at various levels for the provision effective market-oriented extension services. The concept of market-oriented production system has been introduced to the Ethiopian agricultural extension system since a long time ago. However, its practical implementation has been challenged by the limited capacity of technical staff, unfavorable attitude of the extension staff towards market-oriented extension services, insufficient awareness on market oriented extension services at various levels, and poor infrastructure for the provision of effective market information.

Bottleneck 3.5.2: Limited focus on strategic commodities in advisory extension services

Farmers need various advisory and extension services related to crops, livestock, natural resources, nutrition, gender, and others. The extension system has tried its best to address these diversified needs. However, except for the recent attempt made by ATA & MoA, extension lacks focus and capacity to provide a comprehensive advisory support to farmers on strategic commodities (for instance, industrial & high value crops) that have a better market access and bring greater impacts on food security and poverty reduction through linking production to local and international markets.

Bottleneck 3.5.3: Low implementation capacity of the extension staff

Frontline extension staff usually focus on promoting the use of improved technologies and practices to increase production and productivity through various extension communication methods like demonstrations, field days, group meetings and through on farm and home visits. This is partly due to their training orientation to pushing technologies than being market-oriented. In addition, they have very limited knowledge and skills on concepts of value chain development, marketing and marketing functions and facilitation skills to build businesses and create business relations among the marketing actors. Because of this gap, the provision of extension service remains production focused.

Bottleneck 3.5.4: Ineffective linkage among value chain actors

Poor linkages and lack of trust among value-chain actors including input suppliers, producers, processing firms and exporters and other supporters undermine development of a value chain approach. Agricultural Development Partners' Linkage Advisory Councils (ADPLAC) was established to improve the linkage and collaborations among the stakeholders in the extension service, in particular, and the agricultural development, in general. However, it is observed that this approach has not been functioning well and has not focused on specific value chain commodities as a means of solving strategic problems along the value chain, from input supply to consumption. This has been in part driven by poor participation of private actors in the ADPLAC forum.

Bottleneck 3.5.5: Limited access to market information by farmers

Farmers need different kinds of information to make informed decisions on their agricultural activities and product types. Farmers have information on increasing the quantity of a product, but not on the quality requirements of consumers, processing firms and export markets, which is mainly caused a result of inadequate value chain approach. There is also poor coordination among the concerned institutions and offices in the provision of market information. This leads to the production of low quality products and low prices, and hence low benefits to farmers.

Key proposed strategic interventions

Intervention: 3.5.1: Build the capacity of the technical staff at various levels to provide market-oriented extension services

To implement effective market-oriented extension services in a successful way, it is important for the technical staff at various levels to have basic knowledge and know the basic principles of agricultural market, marketing and agribusiness, among others. This will enable the extension personnel to effectively discharge their responsibilities to deliver and promote market-oriented agricultural extension services. It is therefore imperative to organize and implement national level market oriented extension capacity building programs for technical staff at various levels. This needs to be augmented by regular market-oriented workshops at various levels to create the necessary awareness about market-oriented production system among the key agricultural extension stakeholders. Creating an enabling environment such as basic infrastructure, for example, for ICT and incentive mechanisms is crucial in making the effort a success.

Intervention: 3.5.2: Promote Value Chain-Based Extension Services

To move from production focus to market-oriented extension services, a value chain/commodity-based extension approach should be adopted as policy. Establishing effective and efficient value chain-wide collaborations, with key actors involved in the process through demarcating roles and duties and placing accountability mechanisms at various levels in the extension service is the key principle to be followed under this strategy.

Intervention: 3.5.3: Select appropriate commodities to focus value-chain approach

Value chain commodities could be identified in different ways such as: on the basis of the importance to the economy in addressing food security and poverty reduction, competitiveness, etc. Thus, in value chain development approach, extension staffs are expected to play the following roles and responsibilities.

- Provide specialized and focused training and advisory services on selected agricultural commodities/value chains, including pre- and post- harvest handling and market access to DAs and other extension workers working on value chain.
- Assist farmers to access market information including prices, quality requirements of markets, etc. This will be achieved through motivating and supporting the private agro-processing industries and input suppliers to work with the public extension.
- Facilitate formation of farmers groups and development on the basis of value chains for group learning, value addition and collective marketing. The commodity based farmers groups will be linked

to cooperatives, processing enterprises and agro dealers to access inputs, information on quality requirements, advisory and training services. The details are indicated under section 3.4.

- Facilitate linkages among the various operators and other stakeholders who are involved in selected value chains.
- Provide advisory services and trainings to smallholder farmers to become value chain and business-oriented.
- Ensure enabling environment for market actors to develop concrete business-to-business relationships.

Box 5: Success story on Private processer as extension service provider

Previous reviews have shown that there were few extension experiences made to link producers to processing firms. As indicated in the extension assessment report of SNV (SNV, 2013), Dashen Malt Factory located in Gondar town has started working with the public extension staff to promote malt barely production in woredas that have good potential for its production. The factory participated in extension services through the provision of trainings and information to farmers and extension workers on quality standards and requirements of the factory and the necessary packages to be followed. In addition, the factory has assisted farmers to access improved quality seed and to facilitate collective marketing by creating linkages with farmers' cooperatives and unions.

Intervention: 3.5.4: Enhancing Capacity Development of the actors

Adopting a value chain development approach requires a shift from production focus to value-chain focus through changing the orientation and capacity of the extension staff at all levels. Some of the capacity building interventions to be considered are:

- Revisiting the institutional arrangement and gaps of the public extension and research institutions to be able to provide a coordinated support to selected value chain commodities.
- Inclusion of value chain development and agricultural marketing subjects in the curricula of ATVETs and HLIs.
- Provision of in-service practical training to all extension workers to develop their capacity and skills on marketing and value chain in the areas of:
    - Concepts of value chain development, selection process of value chain commodities, value chain analysis, value chain actors mapping, value chain upgrading strategies, value chain governance, gender mainstreaming in value chains, among others.
    - Gathering and analysis of market data to investigate marketing opportunities, product development strategies, facilitation of market linkages, business plan development including profit and loss statement.
    - Marketing and business-to-business linkage facilitation.
    - Enterprise development including investment decisions and running competitive crop and livestock enterprises.
    - Organizational and leadership skills needed to support the formation and functioning of self-help small farmer groups and producers marketing associations.
- Strengthening the private sector and cooperatives and unions to sustain market linkages with smallholder farmers in terms of input and output marketing.
- Developing the capacities of sector/value chain commodity associations for them to be able to provide services to members in a sustainable way and be recognized by other stakeholders.

Intervention: 3.5.5: Promoting value chain-based linkage development

The basic characteristic of a value chain development is market-focused collaboration for different business enterprises to work together to produce and market products and services in an effective and efficient way. Thus, creation of linkage platforms on the basis of a particular value chain commodity like honey platforms, dairy Platforms, wheat platforms, etc. Such specific platforms are vital to promote dialogue, enhance learning, decision making and collective action and to develop partnerships and strengthen relationships among the actors. These actors can be sub-divided into value chain actors and value chain supporters.

Value chain actors are those who take ownership of a product through the exchange of money or equivalent goods or services during the transaction process as the product moves from conception to end users. On the other hand, individuals, institutions or firms providing a service without taking ownership of the product are classified as service providers or value chain supporters. Value chain supporters are essential for value chain development and they include providers of sector-specific input and equipment, financial services, business management services, and market information and technology, advisory services, and others.
Thus, members of the value chain commodity platforms include.

- ✓ Input suppliers and agro dealers
- ✓ Farmers groups, cooperatives and unions
- ✓ Processers and exporters
- ✓ Retail and wholesale traders
- ✓ Extension service providers and research institutions
- ✓ Other service providers like MFIs, business management service providers, professional associations.
- ✓ Regulatory Institutions

Value chain-based platforms can be organized at national and regional levels. Formation of regional level platforms will be carried out depending upon the production potential of the regions. Government will take the lead role for the coordination of the platforms. However, there is also a possibility to give the coordination responsibilities to leading processing and export companies and sector associations. For instance, beekeeping association is currently organizing Multi stakeholder platforms for honey value chain at national and regional levels with support of projects.

Specific functions of the extension interventions include:

- ✓ Bringing effective coordination, collaboration and trust among the VC actors.
- ✓ Improving coordination of value chain activities with a focus on a particular product. These include, among others, input supply, access to finance, extension and research support, marketing, value additions.
- ✓ Identification of bottlenecks, strategic issues and requirements for the development of the value chains.
- ✓ Facilitation of information sharing and collective learning.
- ✓ Improving efficiency and competitiveness in different value chain segments and functions.
- ✓ Helping stakeholders to share responsibilities to sustain the development of the value chains.
- ✓ Creation of business to business relationships between actors of the value chains.
- ✓ Promoting quality-based payment system to encourage farmers to meet market standards.
- ✓ Working to ensure that tangible benefits are fairly distributed to all actors mainly smallholder farmers.

Interventions: 3.5.6: Improving Access to Market Information by Farmers

Provision of market information at the right time to the right people in the right way is critical to strengthen the partnership among the value chains to make decisions. Market information includes, type and quality of products, their reliable sources and prices, inputs and their prices, quality and quantity requirements of agro-processing industries and consumers, demand and supply trends, and weather forecast. Thus, there is a need to implement a well-organized and consistent marketing information supply system to smallholder farmers.

3.6 Cornerstone 6: Gender and youth mainstreaming and empowerment and environmental sustainability

Objective
To mainstream gender issues in the broader agricultural extension programs and ensure women and youth have equal access to agricultural extension programs and sustain the environment.

3.6.1 ***Gender mainstreaming and empowerment***

Women in Ethiopia contribute between 40-60% of labor to agricultural production. Despite this, women face unique constraints that reduce their productivity potential: on average female Ethiopian farmers produce 23% less per hectare than their male counterparts. The productivity gap can in large part be attributed to the inability of women to access necessary agricultural training, inputs and services.

To increase agricultural productivity and efficiency, a gender-sensitive approach is needed in the provision of extension services. The government has recognized gender mainstreaming as an approach to be used in all agricultural development programs. Unfortunately in many cases the policy commitment has not been reflected on practice.

Bottleneck 3.6.1.1: Low level awareness and poor gender mainstreaming in extension programs planning, implementation and monitoring, learning and evaluation (MLE)

Gender mainstreaming suffers from a crude understanding of the policy and its objectives. Frequently generic rather than context-specific interventions to address gender issues are identified for implementation. Extension personnel do not always have a clear understanding of the challenges and opportunities unique to women, leading to difficulty in measuring progress in addressing gender equality. Despite the contribution of women to agricultural development, they are underrepresented in planning and implementing agricultural programs.

A recent gender audit of the Regional Bureaus of Agriculture suggests that trainings focused on gender have done little to address the problem. The problem has been further aggravated by non-utilization of gender mainstreaming guidelines to support day-to-- day operations. The extent gender mainstreaming is taken into account in developed plans in the agriculture sector is usually limited to the simplistic level of counting number of male and female farmers without clearly articulating the objectives for addressing gender issues and how the objectives can be achieved through detailed activities. Without the articulation of detailed activities to address gender issues, gender issues are typically unaddressed or not given due attention in monitoring, learning and evaluation.

***Bottleneck 3.6.1.2: Shortage of financial resources to implement planned activities on gender*:**

Anecdotal evidence from the field suggests that regions hav*e* little or no earmarked budget to implement gender-related activities. In most cases, budget for gender is allocated under cross-cutting budget line items that in addition to gender include natural resource management, environment, and HIV/AIDs with no clear operational guidelines and information on the amount of budget allocated to each. In view of the field level experts interviewed for this strategy, budget for gender is usually allocated just for the sake of doing it and often not sufficient to address deep-rooted cultural and economic barriers.

Bottleneck 3.6.1.3: Lack of accountability and responsibility mechanism:

MoA bears the responsibility to ensure that women and youth benefit from the initiatives undertaken in the sector. In order to achieve its commitment, it has set up the Women's Affairs Directorate with the mandate to mainstream gender within the ministry. However, in most cases, accountability and responsibility structures are not in place, especially within the Agricultural Extension Directorate. For instance, within the MoA, there are Women Affairs Directorate and Agricultural Extension Directorate working on gender, but both are poorly aligned with none or limited joint planning and information sharing. Moreover, gender programs or activities are not as such included in agricultural extension programs. Limited space for gender and lack of accountability and responsibility has exacerbated the problems. For instance, in most cases gender activities are not included in the job performance evaluation of each expert as well as higher level management officials. When included, it is less likely that the staff are evaluated against these tasks.

Bottleneck 3.6.1.4: Lack of gender Focal Persons (FP):

Gender FPs are responsible for providing technical backstopping and coordinate gender related works. However, in most cases gender FPs are not assigned at zonal, woreda and kebele levels where gender-related problems and initiatives to address those problems typically occur. Where gender FPs are assigned, they are often not clear about their jobs and responsibilities, making the position less effective than envisioned. On the other hand, though it might be preferable to assign female gender FPs in most cases, males are often assigned without any support to them in understanding the gender issues and how to address them. This gap created by not having women in the system is mostly felt at woreda and kebele levels. Based on discussions with women farmers, e.g. in Arsi Negele of the Oromia region, women farmers indicated that they preferred female extension agents to male for reasons of trust, ease of communication and other social factors. However, the shortage of female specialists operating at that level makes reaching female farmers with extension services a big challenge. Most of the DAs who graduate from ATVETs are male and are not well trained to consider gender and cultural issues despite the provision of a gender-focused course in the curriculum.

Bottleneck 3.6.1.5: Shortage of gender disaggregated data

Shortage of data broken down by sex and age undermines the ability to specifically identify gender-related problems and solutions. Similarly, women as well as youth are often not used as key informants during qualitative studies and problem identifications, although some recent improvements have been noted in this area.

Bottleneck 3.6.1.6: Socio-cultural constraints:

A great majority of women do not participate in decision making or express their needs during meetings because of prevailing socio-cultural barriers which elevate the role of males in such forums. For instance, in most cases, women and youth are not invited to attend meetings and social discussions that concern women and youth with assumptions that men can convey the message to them. Since the messages are not conveyed as desired due to information distortion, often women and youth do not know what is happening related to gender both at woreda and kebele levels. Even though the message is thought to be conveyed through male farmers, information is not consistently communicated to all women farmers due to the perception women are not farmers, hence the massage is not important for them.

Low levels of literacy and limited exposure of women to information and support by development practitioners also contribute to the problem. Women and youth are unable to exercise their rights during program designs and agricultural development planning and implementations which in turn result in methodological biases and gap in content design.

Key proposed strategic interventions

Intervention 3.6.1.1a: Enhance the level of awareness on gender at all levels

The current low level of awareness about gender needs to change at all levels. The importance of gender in development must be seen as a top priority in Ethiopia's move to modernization. The following interventions are suggested to enhance the level of awareness at all levels:

For service provider

- National focus and continued support to improve awareness levels of top level officials, experts, and DAs on gender mainstreaming via different means, among others, through organizing monthly gender debates in each organization, special gender mainstreaming training for the staff and FP, gender clubs, annual retreat, and preparing newsletters and leaflets using different languages. Trainings should be conducted to achieve specific results, but not training for the sake of training. Planners and all agricultural extension staff need to ensure mainstreaming of gender thereby setting clear targets vis a vis national targets for married women as well as female heads of households. The non-achievement of targets should be monitored and evaluated by the highest authority in at least 30-40% programs and projects. Individuals and practitioners who fail to materialize this in their day-to-day jobs should be unfavourably evaluated.

Community

- Improve women and youth participation among the rural communities through awareness creation and providing important information on social and economic issues. Moreover, there is a need to increase the number of female and youth farmers in agricultural programs by ensuring equal access to agricultural extension services and benefits.
- Increase awareness on women's rights and abuses that can lead to other social problems (HIV/AIDS, female genital mutilation, abduction etc.) via training and campaign in ATVETs, FTCs and schools.

Intervention 3.6.1.1b: Strengthen gender mainstreaming actions

Gender mainstreaming actions may be strengthened through the following methods and approaches:

Ensure women, men & youth have equal access to agricultural extension services and inputs: Under the Agricultural Extension Directorate, there are diverse programs and projects aimed at improving production, productivity and income of smallholder farmers. Hence, in all cases make sure that the national and regional extension package programs are designed to meet the practical and strategic gender needs without discrimination and bias. The following are steps to attain gender equality.

- Engage gender experts/gender focal persons in the program management cycle (from planning to evaluation stages).
- Ensure gender analysis is done to address context-specific challenges to women and men in engaging and benefiting from agricultural extension services.
- Set clear activities, targets, and indicators to measure gender outcomes and outputs.
- Familiarize experts in the use of the agriculture gender mainstreaming guidelines and promote the use of it.
- Ensure gender issues are included in the balance score card (BSC) to enhance accountability for results.
- Support and promote gender responsive extension system in all regions. Ensure that women, men and youth have equal access to agricultural inputs, credit, technologies, training and advisory services.
- Conduct strong consultation with women, women's organizations and youth on gender related research agenda identification, prioritization and technology generation.
- Plan for a balanced placement of male and female extension workers and assign at least one female gender & extension worker at the kebele level. In connection with this, putting in place mechanisms and strategies to increase female gender specialists and female trainees in ATVET is strongly recommended.
- Ensure that gender sensitivity among all staff is working at all levels and that trainings are tailored to adequately address gender issues so that they will enhance the technical capacity of all relevant stakeholders in the programs.
- Support & promote gender-sensitive policies and undertake initiatives that address gender issues and proactively work to preventing discrimination and acts of violence on the basis of gender at all levels.

Establish cross-sectoral synergy between agriculture, women affairs sector and health extension on gender: Ethiopia has a well-organized and established system for improved advisory services and information communication at the community levels both in agriculture and health extension systems. In addition Women's Affairs is mandated to lay the ground for enhanced participation and benefit of women from economic, social and political fields through brining attitudinal change. However, poor collaboration and alignment between the three sectors and systems inhibits synchronized agri-health services and also bring about the required attitudinal and behavioral changes. For example, much focus in agricultural extension services is geared towards production of staple food crops than the production and utilization of also nutritionally valuable crops such as vegetables and

fruits. The prevalence of child malnutrition is extremely high in Ethiopia accounting for 44% stunted, 28% underweight and 9.7% wasted (EDHS 2010). Equally, availability of clean environment, access to health services and adequate food storage and preparation are all important aspects of food and nutrition security. Existing poor trend in addressing women farmers within inequitable socio cultural practices, reflect women's lower position and status, and also constrains delivery of need-based services. Women are chronically affected and yet play a major role in solving the problem through engaging in nutrient rich food production, preparation, processing and marketing which in turn will help the communities improve their household food and nutrition security and income generation.

Enhance women's socio-economic empowerment:
Effective economic empowerment for women occurs when women enjoy their rights to control and benefit from resources, assets, income and their own time and have the right to manage risk and improve their economic status and wellbeing. In connection with this, much is expected from all practitioners to aggressively and proactively help women's lives to transform from a situation where they have limited power to a situation where their power is equal to that of men. In short, women's economic empowerment can be enhanced through the following means and methods.

a. Map out key activities for economic empowerment of women and youths.
b. Initiate and promote both on-farm and off-farm income generating micro-enterprises, for example, women economic empowerment via vegetable production, sheep and goats fattening, poultry production, beekeeping, raising seedlings, handicraft making, processing of dairy products, trading, and environment friendly technologies (energy savings, water points availability etc.).
c. Establish gender working groups. Priority should be given to those individuals who come together voluntarily since they will have then a greater chance of working together in groups and support each other in the process of implementing the designed activities.

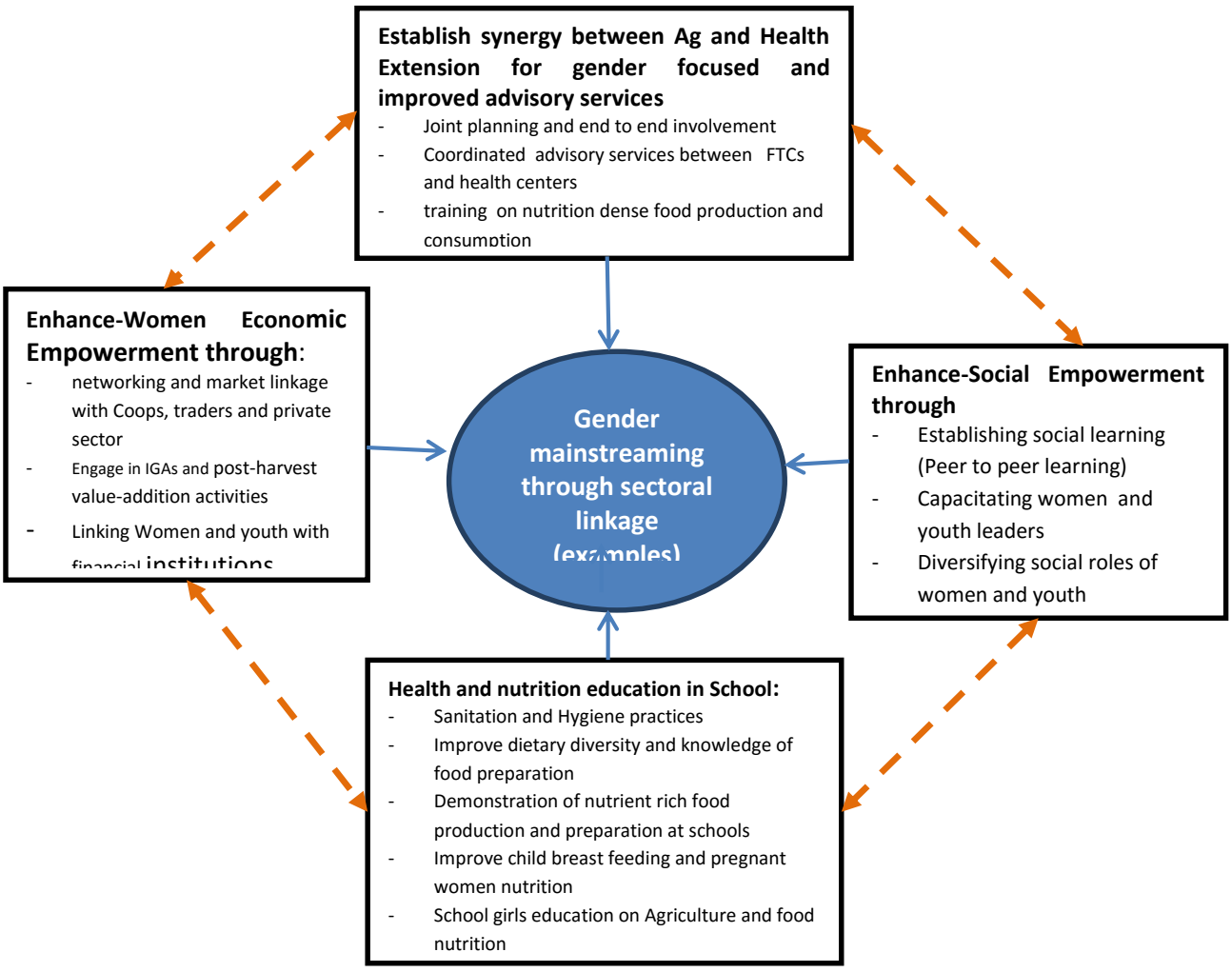


Figure 4: Example for cross sectorial synergy for gender mainstreaming

Interventions 3.6.1.1c: Improve participation of women and youth in agricultural extension:
The majority of women and youth in Ethiopia do not have sufficient information on agricultural technologies relevant to them. This is as result of two major problems, first, DAs have limited capacity to mobilize and harness the participation of women and youth and second, rural women have no access to extension services unlike men. Such obstacles must be eliminated through improving the participation of women and youth in agricultural programs and other social issues on a continuous basis. When people participate in meetings or discussions, they usually feel a sense of ownership and develop interest to seek more information and support.

Intervention 3.6.1.1d: Capacity Building for extension staff and rural communities:
Assigning FPs is not an end by itself unless it yields tangible outputs. Since gender issues are dynamic and interconnected with social, cultural, political and economic situations, FPs with high capacity and analytical power on gender are essential for bringing changes through capacity building. In general, there must be well designed women and youth targeted capacity building programs to address gender issues and bring wider impacts along the line. In connection with this, the following interventions are therefore proposed.

- Design appropriate trainings that help improve the technical capacity and managerial skills of the staff on gender on a regular basis after assessing the gaps and limitations. Based on the observed gaps, provide trainings through variable means and methods (on-the-job training, exposure visit, and case studies). However, it is important to first prepare training modules, manuals and guidelines.
- Establish proper linkage and collaboration with ATVETs and FTCs to address socioeconomic-related topics in their curricula. In addition, the curricula should be relevant to women's roles and contributions to agriculture, agribusiness development, and women and youth empowerment.
- Assess the impact of training (pre and post) and actual practices in every program and project intervention and accordingly make necessary adjustments. Assessments must be conducted pre and post training.

Intervention 3.6.1.2: Improve employment opportunity for women DAs
This can be improved by increasing employment opportunity for women as DAs. The conditions for female DAs need to be friendly to retain them for a long time. It is important to have in place a gender sensitive DA career path and incentive structure. To effect this, increased number of educated women through HLIs, ATVETs and other colleges is critical.

Intervention 3.6.1.3: Adequate resources to gender related activities
Limited resources or budget for gender is reported to be one of the constraints in the successful implementation of gender programs or gender-related interventions. The following interventions are proposed.

- Identify specific activities that will address the constraints women have in accessing agricultural inputs and services (for female heads as well as married women who equally contribute to increase production and productivity in the agriculture sector).
- Involve gender experts and focal persons when allocating budget that matches planned activities.
- During budget preparation and overall planning, involve key representatives' gender focal/gender experts including women, men and youth in equitable representation.
- Provide training on overall budgeting process, gender budgeting, management (including monitoring utilization) and build in transparency.
- Inform concerned individuals on the amount of budget allocated to each activity
- Prepare monitoring and tracking system for efficient and intended utilization of the allocated budget.

Intervention 3.6.1.3: Put in place an accountability and responsibility mechanism: Establishing functional accountability and responsibility mechanisms for gender-related work is critical and mandatory. One of the mechanisms is in assigning a dedicated focal person (FP) and sharing roles and responsibilities with the system. The FP will have mandates to coordinate gender responsive programs, provide technical backstopping, and monitor that gender issues are well incorporated in every program and project. The following are strongly suggested.

- Establish gender accountably mechanisms within the Ag Extension Directorate and other partners through assigning FP and sharing roles and duties, and aligning gender issues with BSC of the institutions,
- Include gender activities in monthly reports and annual performance appraisals.
- Establish performance based MLE system within the agricultural extension, including setting of gender disaggregated performance target and tracking system.
- Design reward or incentive mechanisms for individuals who meet the targets and show tangible change and performance in gender mainstreaming.

When FPs are assigned, the following points need to be taken into consideration.

- A gender FP is expected to be professional, pragmatic, gender sensitive and always at forefront in bringing gender issues, in general and women and youth issues, in particular into a development agenda.
- S(he) is expected to enable the anticipated programs to benefit women, men and youth equally. For this, the higher level organizations and management are expected to develop responsibility mechanisms and indicators or checklists that help track and clearly show women and youth are benefiting from the interventions, and
- Female FPs are preferred, as they are more likely to have in-depth discussion on social issues and personal matters with women and girls than their male counterparts.

Intervention 3.6.1.4: Strengthen the link between Women Affairs and Agricultural Extension Directorates and ATA:

The link and integration between Women Affairs Directorate, Agricultural Extension Directorate within the MoA and ATA needs to be strengthened for complementary effects, and for strengthening accountability mechanisms. The convergence generally helps develop common vision, goals, and successful implementation of priority activities in gender. Among others, the synergy can be strengthened through the following methods.

- Joint problem identification, priority setting and implementation.
- Shared resources and skills.
- Establishing gender debate on a monthly or a quarterly basis.
- Exchange of reports and information.
- Include gender impact assessment within the directorates in MoA for approval of programs and projects.
- Put in place a joint MLE system and accountability and responsibility mechanisms.

Intervention 3.6.1.1.5: Strengthen collaborations and networking among other actors:

Women and youth need a broader set of demand-led supports and services in addition to technical information. There is a strong need for integration, coordination and convergence of efforts of the different stakeholders/line ministries within the sector & other GOs, NGOs, associations, donors, unions, women and youth groups at all levels. This will enhance the provision of technical, managerial, organizational and entrepreneurial and social support to women, men and youth.

Intervention 3.6.1.1.6: Enhance effective monitoring and evaluation:

Key interventions proposed are*:*

- Set clear goals/objectives and outcomes for gender related results with indicators and targets that contribute towards the sector's objective as well as national objectives.
- Establish/strengthen gender core process under the Agricultural Extension Directorate.

- Ensure data are collected at household and intra-household levels to determine effectiveness of interventions from gender and agriculture perspectives.
- Increase involvement of women and youth in the formulation of kebele plans, budgeting and monitoring.
- Put in place a gender responsive MLE and accountability mechanisms in order to ensure that every technical person is responsible for the implementation of the gender dimension along with the agricultural extension programs.
- Make sure that the planning, implementation, monitoring and evaluation phases of extension programs are gender responsive and sex and gender disaggregated data are collected.
- The gender disaggregation should go beyond male and female headed households to reflect disaggregation within households.
- Develop feedback that could amplify their needs, concerns and voices
- Analyze whether or not the reports from each organization reflect gender specific results.

3.6.2 Ensuring environmental management and sustainability

Appropriate natural resources management (land, soil, water and environment) and good agronomic practices are a powerful influence on environmental quality and sustainability as well as on increased agricultural production and productivity. Types of farming practices such as intercropping, multiple cropping, minimum tillage, zero tillage, type and time of cultivation, agrochemical utilization, livestock management practices, bio-physical soil water conservation (SWC) affect the environment and other natural resources in many variable ways.

Inappropriate utilization of natural resources leads to severe moisture loss, continuous degradation of fertile soil, loss of vegetative cover and biodiversity and subsequently to a decline in agricultural production and productivity. Moreover, rapid rural population growth and its resultant land expansion for agriculture and increased utilization of other resources cause a serious environmental deterioration. In this strategy the following major environmental sustainability bottlenecks have been identified and key interventions proposed.

Bottleneck 3.6.2.1: Limited NRM extension services

The effort made so far with sustainable land management is mainly dependent on SWC and less attention was given to its integration with improved technologies for increasing crop production and diversification as well as livestock productivity was limited. In addition, the effort made to address SWC (both in its physical and biological terms) through extension package of the extension system of the country is said to be insignificant.

Moreover, although ATA is working on a value chain approach for some selected commodities, integration of SWC-related issues is not sufficient. In general, agricultural activities to ensure effective SWC in Ethiopian farming system are not well coordinated. There is poor coordination between the Agricultural Extension Directorate and the Natural Resources Management Directorate (NRMD) Farmers lack detail perception about the importance and advantage of biological conservation measures, as a result majority of farmers have been giving less attention to post-plant management.

Bottleneck 3.6.2.2: Limited capacity and know-how on NRM

NRM needs specialized knowledge and expertise at all levels. However, from grassroots level evidence and continued deterioration of NR, one can suggest that there is a limited capacity and know-how on NRM by development practitioners working in the sectors in particular by change agents such as DAs and farmers. Much of the trainings implemented by NRM focus on the technical content of the NRM and they lack extension methodologies and approaches to bring necessary behavioral changes of the farming communities. Moreover much of the trainings is not cascaded to the community to bring the intended changes in a sustainable way. Good practices developed through the SLM project couldn't be scaled out/up to large number of households to contribute to Soil and water conservation to ensure sustainability.

Bottleneck 3.6.2.3: Drought and moisture stress

Drought usually occurs as a result of climate change, which in turn is caused as a result of limited attention at national and global levels, negatively impacting crop and livestock production. For instance, when drought is followed by heavy rains, soil erosion and land degradation are aggravated, significantly reducing water availability. Unavailability of water in the soil reduces the performance of crops and fertilizer efficacy, impacting negatively on productivity.

Key proposed strategic interventions

Interventions: 3.6.2.1: Improve NRM extension services

In order to improve the NRM and minimize the current threat, the recent attention given by the government in extension services must be continued in well-coordinated and system-based approach. Among others, the following need key attention in extension services.

- Enhance physical conservation on natural resources through improving advisory services by implementing soil bunds, stone-faced soil bund, fanyaa juu, terracing, gully control and rehabilitation etc… ,
- Promote biological conservation measures by improving agronomic practices, stabilization of the physical structure, minimum tillage, agro-forestry etc.
- Promote push–pull technology using locally available plants as perennial intercrops and trap crops in a mixed cropping system to manage insect pests such as stalk borers and parasitic weeds such as striga, particularly in maize and sorghum-based agriculture. The plants used for the "push" are nutritious fodders for livestock from which households generate a lot of income and nutritious food. Both push and pull plants are perennial in nature and hence protect the soil from erosion and evapotranspiration and help ameliorate the farm environment to crop growth.

The activities mentioned above should be done in collaboration with local communities and development practitioners (NGOs). The AED and NRM Team should also mainstream NRM in their broader national and regional plans.

Intervention 3.6.2.2: Improve capacity and know how on NRM

- Improve NRM knowledge and skill of extension workers and farmers. This can be done through organizing short and long-term training programs specific to natural resource management. Such training must be organized and given by professionals who have rich experiences in the subject through linking with universities, ATVETs and colleges.
- Prepare NRM-based extension guidelines, brochures and leaflets in different local languages that clearly demonstrate the benefits as well as all necessary practices for proper natural resources management.
- As part of capacity building and motivation, provide recognition and awards for key players on NRM for their outstanding performance and visible contributions

Interventions: 3.6.2.3a: Drought mitigation and moisture conservation

- Promote regular crop rotation, crop residue management, crop associations and double cropping that have the potential to replenish nutrients, reduce plant diseases and insect pests without necessarily reducing crop yields.
- Apply inorganic fertilizers as recommended by research institutions in an environment responsive manner to contribute to longer-term sustainability of agricultural productivity.
- Always, take into consideration the development of climate smart agriculture (CSA) practices (evergreen agriculture, agroforestry, sustainable intensification, water use efficiency, crop insurances, energy efficiency in the agriculture sector, etc.). The blending of indigenous knowledge with modern conservation agriculture (CA) is advised and be a guiding principle to improve agricultural production and productivity.

- Enhance watershed management practices through mobilizing farming communities, development actors and partners (research, extension, HLIs, colleges, NGO's).

Intervention 3.6.2.2b: Promotion of good irrigation practices and maintenance of natural vegetation

The government has ambitious plans to increase land under irrigation. In line with this objective, more needs to be done to share and promote best irrigation practices to users. The following specific interventions are proposed.

- In the furrow irrigation system which is the most widely used practice, much water is wasted. It will be important to determine best irrigation practices through research. The MoA in collaboration with the research institutes should develop a comprehensive irrigation agronomy that, among others, improves water use efficiency.
- An extension package for irrigated agriculture has to be developed and disseminated to users using the different extension service delivery approaches.
- Elsewhere it was mentioned that heavy rains after a prolonged drought period erode a lot of top, fertile soil. The loss, however, can be reduced by maintaining vegetation, especially on slopes. A policy on maintenance of natural vegetation and planting of slopes with grasses has to be developed and promoted through the extension system.

Use of moisture stress tolerant crops, introduction of new crops, use of water harvest techniques, rehabilitation of terraces, improved irrigation techniques, improved water points in pastoral areas etc. and building the capacity of frontline extension workers, farmers and pastoralists are important

- Use of Irrigation. The livelihoods of the large majority of small-scale farm families are dependent on rain-fed agriculture. Their options to diversify into irrigated-agriculture are constrained by lack of appropriate and affordable irrigation technologies. Irrigation is critical to the rural economy as it generates additional source of income for farmers. Improving irrigation allows farmers to water crops regularly, diversify the types of crops they grow, produce a more reliable harvest, and grow two to three crops a year, thereby improving their diets and increasing their incomes.

  iDE designs and develops water technologies that enable smallholder farmers access both surface and shallow groundwater resources for productive and domestic uses. These technologies are used friendly as shown in Box 8a.

Box 8a: Advantages of Household Irrigation Technologies developed by iDE

Advantages of iDE Household Irrigation Technologies:

- Locally made and supplied by private enterprises
- Manually powered (no fuel cost)
- Paid for by the famer (no handout)
- Owned & managed by individual households
- Low-cost : affordable to poor households
- Easy to operate and simple to maintain/repair
- Used for multiple purposes, i.e., for agriculture & domestic (drinking, cooking, washing…) uses
- Employment creation for local people (manufacturers, retailers, drillers, installers, village mechanics)
- Sustainable -environmentally, economically, socially and in terms of continuous availability of pumps and spare parts on the local market.

Source: iDE (Jan.,2015)

3.7 Cornerstone 7: Enhancing the Functions of the Agricultural Development Partners' Linkage Advisory Council

Objective
To strengthen/establish ADPLAC to effect strong collaborations among all key development partners for effective and better extension services.

Building a sustainable framework for networking and for strong working relations in agricultural development is critical. With this principle, (ADPLAC) was established in 2008 operating at various levels from the federal to the woreda levels.

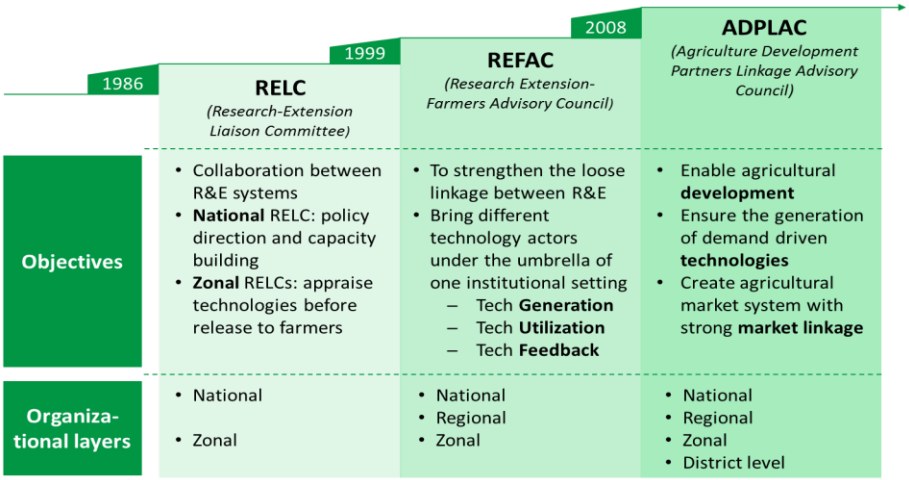


Figure 5: Evolution of ADPLAC (Source: Team Analysis)

The overall objective is to harness effective linkages between farmers-extension- research-development partners and other actors to accelerate agricultural development through enhancing the technology generation, dissemination and adoption processes.

ADPLAC has made significant efforts in bringing all actors working on agricultural development to one platform and building new collaborations, enhancing new culture of working and developing, encouraging demand- driven agricultural research system for more impact. In this process, ADPLAC has also contributed in shifting the research agenda towards a farmers' frame of reference through joint identification of systemic problems that hinder agricultural development. The decision made by ADPLAC at various meetings has generally contributed to harnessing effective involvement of key actors and addressing some of the issues that had not been well addressed before. For instance, through ADPLAC a renewed focus has been placed on livestock, NRM, market, seed system and agro-industry.

At the same time ADPLAC has faced several challenges and its performance has weakened over time, due to the following systemic bottlenecks:

Bottleneck 3.7.1: Inconsistent performance of ADPLAC in linking research, extension, and other agricultural development partners

From the field observations in different regions and discussions during the ADPLAC meetings, inconsistent performance of the ADPLAC was mentioned as a major bottleneck. This is partly attributed to the failure to integrate ADPLAC-related activities in the regular development program of the government, leading to a lack of coordination and alignment. Likewise, limited budget ring-fenced for ADPLAC and inefficiency in using the available budget appropriately have contributed to the inconsistent performance of ADPLAC in forging linkages between research-extension-farmers and other stakeholders. According to Demekech et al. (2010), out of the expected agricultural development linkages in the Amhara region, only 36% existed then and of those, only 42% of were considered "strong" linkages.

Bottleneck 3.7.2: Lack of vibrant linkage and poor coordination

Despite many attempts made to create strong linkages between the research and extension in the past many years, effective linkage and coordination have been lacking at all levels of the technology generation and adoption

continuum. Many technologies that were developed were not optimally designed towards the actual needs of farmers (Tsedeke et al., 2011).

Bottleneck 3.7.3: Weak MLE and accountability system

Except for planning meetings held every year, in most cases the supervision and monitoring of ADPLAC has been weak. This is largely a result of poor commitment by relevant actors and lack of dedicated focal persons for ADPLAC within organizations. In areas where focal persons are assigned, they are neither empowered nor are they sufficiently familiar with their responsibilities.

Key proposed strategic intervention

Intervention 3.7.1a: Revitalizing the institutional arrangements of ADPLAC

The current arrangement of the ADPLAC needs to be re-organized in a way that makes the system function properly and efficiently. MoA should gradually handover the management of the ADPLAC to an independent secretariat governed by a general assembly of stakeholders. It should be registered as a society where government, private and non-government organizations can be represented. The secretariat can be financed in various ways, including through raising funds, membership fees, contributions and members financing own participation. The secretariat will perform innovative activities that foster interaction among members but at the same time generate resources to finance forum activities, such as organizing technology fairs, offering specialized trainings, knowledge management functions, agricultural publications, organizing conferences and policy dialogues.

Intervention 3.7.1b: Creating awareness and shared vision of ADPLAC among development partners

Based on the current performance of ADPLAC, improving the awareness levels of stakeholders on the advantages of ADPLAC and overall contribution in agricultural development is important. Awareness and interest can be raised by revitalizing the system, restructuring the system to a manageable size, and making the system focus on specific rather than general issues. Developing promotional materials on the general contribution and roles of ADPLAC and sharing them with all actors is urgently needed. Focused discussions through mass media regarding ADPLAC can help create awareness. This will lead to a shared vision and common understanding on the working modality of ADPLAC.

Intervention 3.7.2: Strengthening stakeholders' collaboration and networking

Partnership, collaboration and networking among the extension service providers, clientele and other stakeholders needs to be strengthened through the establishment and harmonization of the stakeholder collaboratively working at all levels for joint program planning and implementation, information sharing, participatory M&E and impact assessment.

Another important coordination strategy is the setting up of coordination office whose role is to facilitate the establishment, maintenance and strengthening of linkages among various actors in the agricultural extension system. Such platforms can be designed to analyze the existing extension system through setting priorities for extension intervention and facilitating the implementation of joint extension programs by involving several service providers.

Intervention 3.7.4: Strengthening MLE

The MLE system of ADAPLAC is generally weak, failing to provide an effective tracking system on its performance.

The key interventions to improve the MLE system of ADPLAC include:-

- Review and updating ADPLAC working guidelines in accordance with existing situations and demands from Africa Forum for Agricultural Advisory Services-Country Forum (AFAAS-CF) to strengthen and improve its financial capacity.

- Assign dedicated focal persons and case teams at various levels and empower and institutionalize the existing ADPLAC as a platform at all levels to follow up the day-to-day ADPLAC activities implementation and to facilitate the linkage among the different partners. Focal persons would be charged with ensuring that coordination meetings take place and address ad-hoc requests to the right departments.
- Promote ADPLACs as an extension regular platform. It is advisable to focus on the assessment of achievements of the goals of ADPLAC during its meetings.
- Build capacities of various experts working on ADPLAC-related activities by focusing on facilitation and communication skills.
- Create sub-platforms in a particular commodity value chain to promote dialogue, learning, decision making and collective action. For this, developing partnerships and strengthening relationships among the actors is vital.

Box 7: Success story on the introduction and adoption of haricot beans and onion seed multiplication and utilization by ADPLAC

Ethiopia is known to have a high potential for growing different pulses such as haricot beans and vegetable crops such as onions. In order to improve the productivity and production of haricot beans, Melkasa Agricultural Research Centre (MARC), as a national coordinator for haricot beans research, has released a number of improved haricot bean varieties. However, farmers did not adopt the improved varieties due to lack of awareness or linkage to an attractive market. Soon after the establishment of a Zonal level ADPLAC, farmers started to see the benefits of a complete platform established along the value chains linking producers to local and international markets. Community seed multiplication groups have been established and have become a source of improved seed for farmers. As a result, haricot bean improved varieties gained popularity in most parts of the Rift valley and other parts of the country. Since then, the production of beans has become a remarkable source of income for farmers, traders and contributed to the growth of the country's economy earning it the nickname 'white gold'.

In a similar story, shortage of onion seed had been identified as an important problem in the country. There were no private and public sector multipliers of onion seed. As a result, bulk onion seed was imported from outside at high prices, putting a high demand on foreign currency. MARC, as a national coordinator for onion research, had developed onion varieties but they were not disseminated to farmers due to shortage of onion seeds. Meanwhile ADPLAC came into the picture to multiply and disseminate onion seed. Similar to haricot beans, community based onion seed production has been established and linked to market since then.

In general, ADPLAC has gained great success in the promotion, dissemination and adoption of haricot beans and onions because of the following factors:

- High level motivation and commitment of the Council in that area.
- Presence of agricultural research centers and farmers representatives in the Council.
- Inclusion of key development partners and continuous follow-up to ensure their contributions.
- Recognizing members' contribution on the Council's meeting.
- Monitoring and close follow-up of decisions made by ADPLAC.
- Regular communication between concerned bodies.

3.8 Cornerstone 8: Effective institutional arrangements from Federal to Kebele for improved extension service delivery

Objective
To strengthen existing extension institutions at different levels for diverse, demand-driven and market-led extension services through installing effective institutional arrangements

This existing institutional arrangement within the MoA have contributed to strengthening decentralized and framers-focused extension services compared with previous centralized mode of extension operation and management.

There remains, however, a number of bottlenecks to further improving institutionalization of the extension system:

Bottleneck 3.8.1: Poor perception of decentralization and weak vertical and horizontal linkages

Decentralized extension services help facilitate the development and implementation of demand-driven interventions. For some time now, regions and woredas implemented decentralized extension services enabling them to prepare their own physical and financial plans and implement, monitor and evaluate the progress of their development in their respective areas. However, as a result of poor perception of decentralization and little understanding of its contribution to sustainable development, there have been misinterpretations of decentralization. This has resulted in improper implementation of the decentralized extension system in parts of the country. The poor flow of communication from federal to kebele levels has adversely affected joint planning, timely reporting and feedback systems. Moreover, the scope of the implementation of the decentralized system has not been implemented as expected, especially beyond the woreda level. This has resulted from limited participation of the local communities in the development programs by the government and allocation of budget for each activity.

Bottleneck 3.8.2: Limited capacity for effective budget utilization

Although the finance management system allows for preparation of physical and financial budgets and their utilization at the woreda level, there has been a problem of underutilization as well as use of budget for unintended purposes due to limited capacity. On the other hand, since the budget at the woreda level is deposited in a pool system, it is unclear how much budget is allocated to each activity and how it should be utilized. Limited capacity of the woreda staff has critically affected the timely utilization of the available budget for the intended agricultural extension activities. As a result, in most cases the planned activities of the agricultural extension are not fully implemented.

Bottleneck 3.8.3: Lack of clear line of command particularly at the woreda level

Based on information collected from woredas, there is not a well-defined line of command, leading to a lack of accountability. For example, DAs are accountable to both Woreda Administration and the Woreda Agricultural Development Organization (WoADO). Being accountable to multiple institutions makes it difficult for DAs to prioritize tasks and may lead to over-stretching and under-performance. At the same time, it is unlikely the DA is meeting the requirements of either institution.

Key proposed strategic intervention

Intervention 3.8.1: Create a clearer understanding of the concept of decentralization and strong vertical and horizontal linkages

To create a clearer understanding of the benefits of decentralized governance the system should:

- Create awareness and build capacity on decentralization and its contribution to sustainable development at different levels for different target audiences.
- Extend the implementation of decentralized development approach down to kebele level to empower the local communities to prioritize and set their own development agenda, planning, implementation and control their resources through proper M&E.
- Create strong accountability and performance management system at various levels to ensure timely information exchange including planning, feedback on ongoing activities.

Intervention 3.8.2: Build the capacity of finance staff on budget planning and utilization

The capacity of the local staff on finance management and overall business plan needs to be strengthened through developing clear implementation guidelines and in-service training. In addition, it is also important to make close supervision on a regular basis before further problems such as use of budget for untended purposes and over and/or underutilization occurs. Such close supervision must be conducted by experienced individuals, and a feedback system.

Intervention 3.8.3: Put in place a clear line of command and accountability mechanism

A system that does not have a well-defined structure and line of command is ineffective and unsustainable. Therefore, clarity on line of reporting and feedback system should be maintained.

3.9 Cornerstone 9: Rapid learning from successes and failures for continuous improvement of extension services delivery at all levels

Objective
To create a strong monitoring, learning and evaluation system through performance–based work culture with a strong responsibility and accountability mechanism across all partners and levels

Monitoring, learning and evaluation (MLE) is a key tool to measure the progress and generate relevant and timely information to make decisions. Decisions are changed into actions when they are based on facts and real situations on the ground. Currently MoA has established an MLE case team under the Training and Advisory Services Directorate (TASD) to further strengthen the MLE system. However, the following bottlenecks prevent the MLE unit from functioning effectively:

Bottleneck 3.9.1: Weak monitoring, learning and evaluation system

There is no consistent, organized and strong MLE system within the agricultural extension. In most cases, the system is criticized for focusing on what has been achieved rather than on how and when things are done. Similarly, it focuses on collecting a bulk of information, mostly quantitative, with no automated centralized data management system. This has contributed to inefficient and ineffective data collection, analysis and feedback system. Moreover, the MLE system collects information related to impacts and outcomes, with limited or no feedback system. When feedback is given it is mostly one way, not immediate, and based on paper work which consumes time, energy and lacks consistency. Generally, the MLE process has not adequately incorporated farmer feedback in agricultural extension.

Bottleneck 3.9.2: Inadequate resources

MLE is partly affected by inadequate budget as well as shortage of skilled human power. Because of resource and technical knowledge limitations, it has been difficult to put in place infrastructure and facilities for improved monitoring and evaluation.

Bottleneck 3.9.3: Inadequate performance management process to initiate incentives for technical staff at various levels

The current MLE system does not encourage collecting feedback on the things that have the potential to motivate frontline workers to perform well and increase their job satisfaction. Similarly, there are no tools that help to collect farmers' feedback on the Kebele-level extension services provision to farmers in an open and transparent way to create fair competition system among staff to encourage them for better performance. Hence, a robust performance management system and incentive structure for frontline extension workers and model farmers is highly needed.

Bottleneck 3.9.4: Lack of ICT-based service in the MLE process

An ICT-based approach to MLE is quick, scalable, cost effective and efficient, and allows data to be easily managed and tracked. However, because of inadequate ICT equipment and poor infrastructure, the extension system has been unable to make use of ICT, though promising progress has been observed recently.

Key proposed strategic interventions

Intervention 3.9.1: Install an effective and efficient MLE system

To radically improve the MLE system, the following interventions are required:

- Review the current MLE system's strengths, limitations and challenges.
- Based on the outcome of the review, develop effective and efficient MLE system through participation of key stakeholders at all levels.
- Develop MLE guidelines with clear roles, duties and accountability mechanisms.
- Build the capacity of extension workers focusing on MLE and its implementation guidelines.
- Develop a tracking system for improved performance and feedback mechanism.
- Assign dedicated and professional staff especially at the woreda level, where currently shortage of experts is most felt.

Intervention 3.9.2: Develop performance-based monitoring and evaluation system

To improve the performance of the agricultural extension system, development of appropriate tools or mechanisms is critically important. Such tools include farmers' voice diagnostic feedback tools, DAs and SMSs satisfaction measurement tools, technology tracker tools and micro-survey tools as explained in Box 8. Other tools can be investigated or developed as needed. This performance management tools are found to be relevant after piloting in few areas of the country by MoA and OA. In advance, capacity building for the staff and integration of the tools in the broader extension system through automation is suggested.

Intervention 3.9.3: Allocate adequate resources and enhance ICT-based MLE system

Improvement of the MLE system requires earmarked budget and adequate resourcing. The MLE system can be improved, if ear-marked budget and other resources for proper implementation of MLE are allocated and utilization of resources improved. The recommendation given above under intervention 3.4.7 will be applicable for this intervention also.

Box 8: Success story on effective implementation of MLE

The Agricultural Extension Performance Management System (AEPMS) being developed by OA and MoA is intended to improve the performance of the system. It is a means for decision-makers to listen to and work with farmers and front-line extension workers by putting their voices upfront. AEPMS ensures that the system is more responsive and accountable to farmers by producing high quality 'real-time' data on 'why and how' the current system operates and its performance is measured and sustained if found to be good. Uniquely, it proposes a systemic, democratic and context-sensitive approach for a continuous knowledge creation, management and action rather than simply generating data and analyzing feedback. Moreover, it relies on principles of cost-effectiveness, timeliness, and ease of use; and it also produces data for comparative performance analysis between different administration levels. AEPMS has enabled a feedback system that provides perceptive inputs on the current system in six pilot woredas.

AEPMS represents a radical departure from existing M&E and performance management practices in agricultural extension. Traditional approaches to doing M&E in agriculture extension have focused on activities, outputs and to limited extent higher level outcomes. Moreover, data focuses on 'what has happened,' not 'why and how is it happening' mostly without a methodical approach that orients learning. This, however, provides limited insights into why things are working or not working and does not help decision-makers find solutions to the problems they face. Farmers and front-line extension workers, (groups who directly experience the practical challenges of turning targets and objectives into reality) can provide vital evidence that can help highlight key problems and their solutions.

The AEPMS is not just a once-off method for collecting and analyzing survey data, but open and closed perceptual feedback data are collected periodically from farmers and front-line extension workers on key aspects of performance of the extension system using:

1. **Farmers' voice diagnostic feedback tool:** To capture framers feedback on overall kebele level extension system (range of tech, quality of services, priority issues, roles played by keble level actors, challenges, etc.).
2. **DAs and SMS satisfaction tool:** To collect feedback on things that enables them to perform well and increase their satisfaction, enabling work environment, capacity self-assessment, major obstacles.
3. **Technology tracker tool**: How individual farmers are experiencing one or more technologies (stage of adoption, benefit they get from the technology introduced, challenges to adoption, rating tech against seven performance dimensions).
4. **Micro survey tool:** To provide independent feedback from the recipient of the training, services, quality of service delivery, etc.

Hence, AEPMS is a fully integrated cyclical method that includes innovations in collecting, analyzing and reporting, collective sense-making of the data and mutual commitments for learning and improving.

3.10 Cornerstone 10: Development and provision of coherent sets of guidelines (policies) and standards, regulations, and quality assurance for effective service delivery

Objective
To create a set of policies, standards and regulations that enable a diversified, demand-driven and market-oriented set of quality advisory services.

Although, the GoE has formulated and implemented several agricultural policies and strategies that have proven to be successful and productive, there are still some gaps that need to be bridged to deliver a quality extension system.

Bottleneck 3.10.1: Lack of clear guidelines for effective implementation of pluralistic extension services

The intention of this strategy to develop strong public and private extension services to provide diversified, demand-driven and market-oriented extension for different social classes in different agro-ecologies. The public extension services should play a dominant role in providing extension services for non-cash crops and disadvantaged communities through offering fully or partially subsidized extension service provision. Currently, there is some involvement of private extension service providers. However, there are no clear guidelines to follow and ensure the quality of the extension services given by the private extension service providers, making it difficult to control and regulate the quality of such extension services

Bottleneck 3.10.2: Lack of ICT-based extension services

The efforts to reach smallholder farmers through ICT services in Ethiopia are only limited to the conventional channels such as TV, radio and printed matter. In many African countries, different ICT methods such as ***mFarm & iCow, Esoko, Farmerline*** are in use to support the provision of necessary, timely and relevant information to their local communities. Currently Ethiopia lags behind other African countries with regard to using ICT for extension services (UNDP, 2012).

Bottleneck 3.10.3: Insufficient staffing

The current extension services at various levels are challenged with shortage of staff. The workload has increased to meet the development goal and enhance agricultural transformation, but the number of skilled human power has not increased correspondingly. As a result, inadequate staff at various levels is reportedly one of the critical problems affecting the quality of the extension services. High staff turnover and limited budget exacerbate the problem.

Bottleneck 3.10.4: Inadequate & poor quality of transportation

In general, the extension institutions have poor transportation facilities, which limit the overall provision of services, particularly in remote areas. Vehicles used by extension staff tend to be old with insufficient maintenance budgets, workshops, spare parts and skilled mechanics. As a result, the staff and frontline extension workers are sometimes forced to travel by public transport or on foot, which reduces the time available to deliver extension services.

Key proposed strategic interventions

Intervention 3.10.1: Developing clear guideline to foster the effective implementation of public-private extension services

The public extension system should play a dominant role in providing extension services for non-cash crop producers and disadvantaged communities by offering free or partially subsidized extension services. In some areas where services can be fully subsidized, public extension is expected to play a role by outsourcing the services to the private sector and/or higher learning and/or research institutes. In this sense, the public extension system should develop guidelines for contracting extension services between private and public sector service providers and decentralizing the services for easy access at different levels and locations. In addition, it is expected to carry out intensive capacity building of the extension service providers, extension clientele and relevant institutions to promote and implement an effective decentralized extension service provision. To properly implement this, the following interventions are required:

- **Shift in the role of the public extension service:** With the involvement of different actors in the provision of extension services, government needs to play a service provision and regulatory role. Government is expected to continue with the provision of extension services for resource poor and marginalized farming communities and plays a regulatory role to ensure the quality of extension services provided by the private sector and NGOs. Thus, public sector should take the responsibility of coordination, technical supervision and quality control in such a way that the demand required is adequately addressed, service providers are accountable, quality is maintained, and lessons are learned among the service providers. The process should also facilitate the engagement of target communities as full partners in the development process.

- **Gradual shift in the operation costs of the extension services to cooperatives:** Future Ethiopian extension services should focus on cooperatives and private sectors to be its frontline institutions to guide FTCs to give effective extension services to their members at a fee. In addition, the establishment of Commodity Based Common Interest Groups, their management and promoting primary cooperatives and cooperative unions, and promoting linkages to the private sector need to be clearly outlined.

Intervention 3.10.2: Enhance ICT-based services in the MLE process

Furthermore, the entire extension organization, from the MoA down to the FTC level, must foster a learning and communication culture by documenting processes, capturing lessons, developing pilots, and scaling up good practices. The experience from Digital Green (DG) initiative can be effectively leveraged to document and scale up best practices by encouraging farmer-to-farmer video-based experience sharing. These lessons and practices should be translated into regular on-the-job training to be developed jointly by ATVETs and the Extension Directorate at MoA.

To complement training, there should be an effective communication and information sharing system, which will have the potential to improve extension planning and implementation. Feedback from implementation is critical to address problems and emerging issues in subsequent planning activities. Similarly, sharing of good practices, successful approaches, and challenges can help steer implementation of extension programs, reporting relationships between extension workers and supervisors, and enhance learning and problem-solving efforts.

Application of ICT tools (such as Digital Green) will offer huge opportunities to improve development agents' access to up-to-date information and interaction with scientific knowledge resources such as researchers, ATVETs, etc. The use of interactive communication tools will also improve reporting and feedback system. Development agents could use participatory videos and mobile phones to foster sharing and learning among farmer groups to have wider demonstration effects. They can also use ICT to access a broader variety of agricultural media developed not just by the public sector extension system, but also by different private and NGO actors.

Intervention 3.10.3: Enhancing staff motivation and retention

This strategy has realized the existence of a serious shortage of staff at all levels for effective implementation of activities outlined in the document. Lack of qualified and inadequate staff also has a negative impact on quality of the extension services. Thus, MoA needs to identify the critical professional gaps within extension institutions at various levels and strive to fill them. Besides, it is strongly suggested to put in place motivation mechanisms by developing an attractive incentive structure to ensure staff retention at all levels.

Intervention 3.10.4: Ensure improved transportation

Extension institutions are characterized by limited transportation means at all levels. Moreover, the existing vehicles are too old, making their maintenance very expensive that depletes the limited budget. Unavailability of spare parts has added to the complexity of the problems. It is strongly recommended to avail transportation such as motor bike and field level vehicles, especially at woreda and kebele levels to meet the basic need.

4 Section 4: Implementation Framework

Addressing the bottlenecks and ensuring the implementation of strategic interventions outlined in the strategy document require synergistic and integrated approaches among organizations engaged in agricultural development. Also important is the commitment and willingness of each stakeholder at various levels. The implementation of each intervention in the strategy and the activities thereof should be undertaken at various levels from federal to Kebele as suggested below.

4.1 Federal level

Ministry of Agriculture (MoA): The ministry is responsible for developing and refining the overall agricultural development strategies and policies for the country, with input from the regions and other stakeholders. Similarly, MoA is mandated to develop the national agricultural extension strategy through the provision of policy direction, financial support, technical backstopping and M & E.

Agricultural Extension Directorate (AED): According to recent restructuring, AED comprises five Directorates namely, Crop Production; Agricultural Farm Mechanization; Advisory and Training Services; Coffee, Tea and Spices; and Smallholder Farmers' Horticulture Development. With its particular emphasis on agricultural extension services, AED has the key roles to lead and guide the national extension system by ensuring appropriate linkages among partners, establishing effective synergies and working relationships within the Directorate and across departments, ministries and other relevant NGOs for successful implementation of the key activities. Also, AED is expected to develop implementation guidelines and extension packages specific to each cornerstone vis-a-vis building the capacity of frontline extension workers on a regular basis.

4.2 Regional level

The **Bureau of Agriculture Development (BoAD): The BoAD** oversees the integration and harmonization of activities outlined in the strategy document with other development activities within the regions. Regional Bureaus of Agriculture (BoA) develop and/or adopt packages and provide support to woreda offices of agriculture in delivering extension services. They also facilitate coordination and alignment across development partners at regional levels so that coordinated agricultural development services are delivered at the woreda level. In some regions, Zonal Agricultural Offices are also expected to provide coordination and technical support for Woreda Offices of Agriculture. There are nine regional administrations and 69 zones, in the country.

The **Regional Cabinet in each region** is responsible for the review and approval of Agricultural Extension Services, annual plans and budgets submitted by woredas through the BoA. The BoA also reviews the biannual and annual progress reports on implementation of the regional Agricultural Extension Services and budget utilization. The Regional Cabinets ensure that Regional Councils will be regularly informed on the implementation of agricultural extension services as a whole and that the Regional Council's decisions with regard to broader regional development are reflected on the agricultural extension services and are well addressed.

The **Regional Agricultural Extension Core Process Owner** is the Agricultural Extension Services Manager, accountable to BoAD Head, and leading the coordination of other agencies through the regional ADPLAC forum. In this coordination and leading role, the process owner is responsible for: a) informing and mobilizing the Woreda Agricultural Development Offices (WoADO) about appropriate planning of activities contained in the strategy document, b) developing and consolidating annual implementation plans and budgets for further implementation, c) ensuring close collaboration and coordination between implementing agencies both within agriculture and outside the agricultural development sector; d) ensuring that plans of extension-based NGOs will fit in the overall objectives of the agricultural extension, and e) ensuring appropriate integration of the agricultural extension plans and activities with those of the overall development programs and particularly the strategy document.

Moreover, the Regional AED is directly responsible for implementing the envisaged demand-driven extension services to households in each region. In broad terms, it will re-orient its system and staff towards a demand-driven extension approach; lead the special multi-agencies and ADPLACs to support the scale up of improved technologies and best practices in the regions.

4.3 At Woreda level

The woreda is the level of government that determines needs of the communities, undertakes integrated planning and implements activities outlined in the strategy document. It ensures that agricultural extension activities are in line with the woreda development agenda and the woreda integrated plan.

The **Woreda Agriculture and Rural Development:** The WoARD is the administrative level in the woredas where extension services are designed, financed and delivered. Including Addis Ababa, the country has a total of 740 administrative woredas that can serve as a nodule where regional and local level planning is harmonized. In most cases the Woreda Agricultural Development Office (WoAO) is staffed with different technical experts having various expertise to give training and technical supports to DAs on implementation of the required extension services. In addition, some institutions such as farmers' cooperatives for input supply or marketing, community-based organizations, NGOs, and private firms are supporting the WoAO to provide effective and efficient extension services to the local communities. Cooperatives and unions also provide a wide variety of services, including input supply management, grain marketing, and the supply of consumer goods to members. The Woreda Administration Council is responsible for the overall coordination of these institutions at the Woreda Level. It is responsible to institutionalize bottom up service delivery. It will ensure that the woreda extension unit/experts and extension workers work together to ensure effective extension services delivery.

Within the WoARD, the **extension unit** is the manager of the agricultural extension services and is expected to play the leading and coordinating role in all technical support to the FTCs and/or Kebele administration. The extension unit manages the DAs and as such it is the prime entity that is responsible for making them adopt the new demand-driven and market-oriented approach, supporting the agricultural extension services. It is also responsible for establishing close links with other agricultural extension providers, units and teams in other GOs and/or NGOs to coordinate the services that must be extended to extension workers.

4.4 At Farmers Training Centers

Farmer Training Centers are identified to be the entry point for the provision of effective extension services. As clearly mentioned in FTC guidelines (MoA, 2009), FTCs have been established to perform tasks such as conducting certificate and non-certificate farmer training, promotion of the use of improved technologies and practices, gathering, organizing and disseminating information relating to market, weather, etc. and help in solving individual farm-management problems, and addressing other community concerns like natural resources management. Besides, FTCs are a reliable way to ensuring bottom-up extension service delivery through their efforts to create and facilitate dialogue with farmers. In general, FTCs are expected to ensure the implementation

of effective extension services at household levels through their effort to address male, female and youth farmers. However, public extension and the FTCs are often known for their lack of adequate basic infrastructure and facilities, skills, budget for operations, appropriate approaches and tools, and linkages for accessing knowledge and information (Tesfaye Lemma *et al.*, 2010).

Recognizing the importance of FTCs, currently some regions, for example, Amhara, Oromia, Tigray, and SNNPR have started to promote FTCs to FTC-Offices by assigning dedicated staff as FTC-Managers, mainly to coordinate kebele/FTC level planning, implementation and monitoring of extension services. To improve the quality of the extension services and to ensure the accountability of DAs, it was agreed to divide the FTCs into three sub-zones with one DA assigned as a responsible person to follow up and coordinate the extension services within that particular sub-zone. This does not mean that s(he) is going to replace the other two DAs; rather s(he) will coordinate and invite other DAs to his/her assigned sub-zone based on demands by farmers. Every DA also has the professional responsibility to give their professional assistance to other DAs. To give all rounded agricultural services the DAs have to get further knowledge in general agriculture.

4.5 Coordinating planning

An integrated planning for the agricultural extension services requires continuous consultation and effective participation of local communities to identify their problems and prioritize their needs. Thus, timely community based extension program planning is assumed to be on the shoulders of woreda level technical committees (with members from woreda-level key stakeholders). The technical committees can be supported by the woreda level ADPLAC, which is responsible to ensure that the prepared plan is in accordance with the demands of the communities. The plan should ensure and strengthen the synergy between activities indicated in the strategy document and other development programs. The technical committee is responsible to provide the necessary capacity building and technical supports for DAs within the woreda to enable them to prepare their respective annual work plans in consultation with the local communities. The technical committees also collect FTC level annual work plans and produce aggregated woreda level plan by incorporating additional woreda level plans. The aggregated woreda level plan is sent to RBoA on time. The RBoA compiles the Woredas' plans (including its own specific plan) and sends it to AED for the planning and delivery of the necessary support on time. Any changes that crop up during the process need to be immediately communicated back to the concerned body on time. The agreed-upon plans at various levels should be detailed into tasks, activities and action plans for their effective implementation. There should be a continuous progress evaluation (including the end users) to take the necessary remedial actions on time. The plan should include both financial and physical plans.

4.6 Staffing

Availability of adequate staff at all levels is a determinant factor for effective implementation of activities contained in the strategy document to improve the quality of the extension services in the future. As far as the staff issue is concerned, there is a serious problem at all levels with the severity of the problem most felt at the federal level. Quality service delivery should not be expected in the absence of adequate and qualified staff. Therefore, the system should critically consider improving the staffing situation to improve the quality of its services country-wide.

4.7 Prioritization and Sequencing of Interventions

The implementation of the strategic interventions outlined in the document requires a long term timeframe of at least 15 years that can be divided into 3 phases. The 1st phase covers the implementation period from 2014-2018. Within this timeframe, the implementation of all cornerstones and their strategic interventions mentioned under section 3 may not be expected to take place all at the same time because of limitations in capacity, resource availability, national and regional priorities. It is important to prioritize and sequence the strategic interventions to achieve the overall goal of the extension system. Cornerstones and interventions that can serve as input for the achievement of other cornerstones should be given the first priority. Such strategic interventions include transformation of FTCs into farmer-owned, farmer-driven entities and enterprises, strengthening Agricultural Development Partners' Linkage Advisory Council at all levels, effective institutional arrangements from federal to

kebele levels for effective extension service and development and provision of coherent sets of guidelines (policies) and standards. These are important to lay the foundation for the implementation of other interventions.

In addition, farmer-based organizations and their networks and addressing cross-cutting issues should be emphasized to support the implementation of the above mentioned activities. Besides, gradual implementation of the remaining activities can successfully contribute to achieving the vision of the extension system.

For smooth implementation, it is also important to create adequate awareness by all important stakeholders about the strategy and implementation mechanisms through enhancing participation and bringing all on board. Strategic interventions indicated in this document under section 3 are expected to be implemented within the timeframe as shown in Table 3. Existing government structures from federal to Kebele are accountable and responsible for its implementation. Further prioritizations and sequencing interventions will be refined based on the responsibility of each organization within their existing settings.

In general, to address the bottlenecks in a successful manner, it needs to cluster the intervention into different categories as follow.

Table 1: Proposed intervention by category (1/2)

Category	Intervention
1 Policies, Strategies & Regulations	a) Develop a long term strategy to finance and deliver extension services that takes into account innovation, market orientation, and sustainability b) Design clear guidelines to address emerging issues and foster effective implementation of public-private extension services c) Improve and implement strategies (eg. clear career tracks, improved salary structure and working facilities) to increase staff retention
2 Institutional / industry structure	a) Facilitate private-sector involvement in providing extension system services to farmers b) Enhance the level of awareness about gender needs at all levels of the extension system (from service providers all the way to service-recipient communities)
3 Business processes and systems	a) Enhance ICT-based services for efficient feedback mechanisms in response to farmers' extension needs b) Develop an MLE system that allows effective monitoring of extension staff's performance

Table 2: Proposed intervention by category (2/2)

Category	Intervention
4 Resources and capacity	a) Organize trainings on FTC management and stakeholder roles to increase farmers' sense of ownership b) Strengthen existing farmers organizations and learning platforms c) Develop commercial skill-base of DA staff to improve revenue generation
5 Data and information	a) Utilize multiple communication channels (e.g. ICT-based, farmer group based platforms) to dispense services and information b) Develop a knowledge management system to create effective linkage between research and extension and to provide timely agricultural information c) Develop services that address extension needs of specific target groups (eg. women and youth)
6 Actor / stakeholder coordination	a) Involve farmers in content development and implementation of extension programs through FTC management committees and farmer development groups b) Promote value chain-based linkage development among all stakeholders c) Develop a knowledge management system for effective linkage between research and extension content development

Interventions can be prioritized according to expected impact and cost / difficulty of implementing indicated below.

Figure 1: Prioritization of the interventions can be made by impact and feasibility

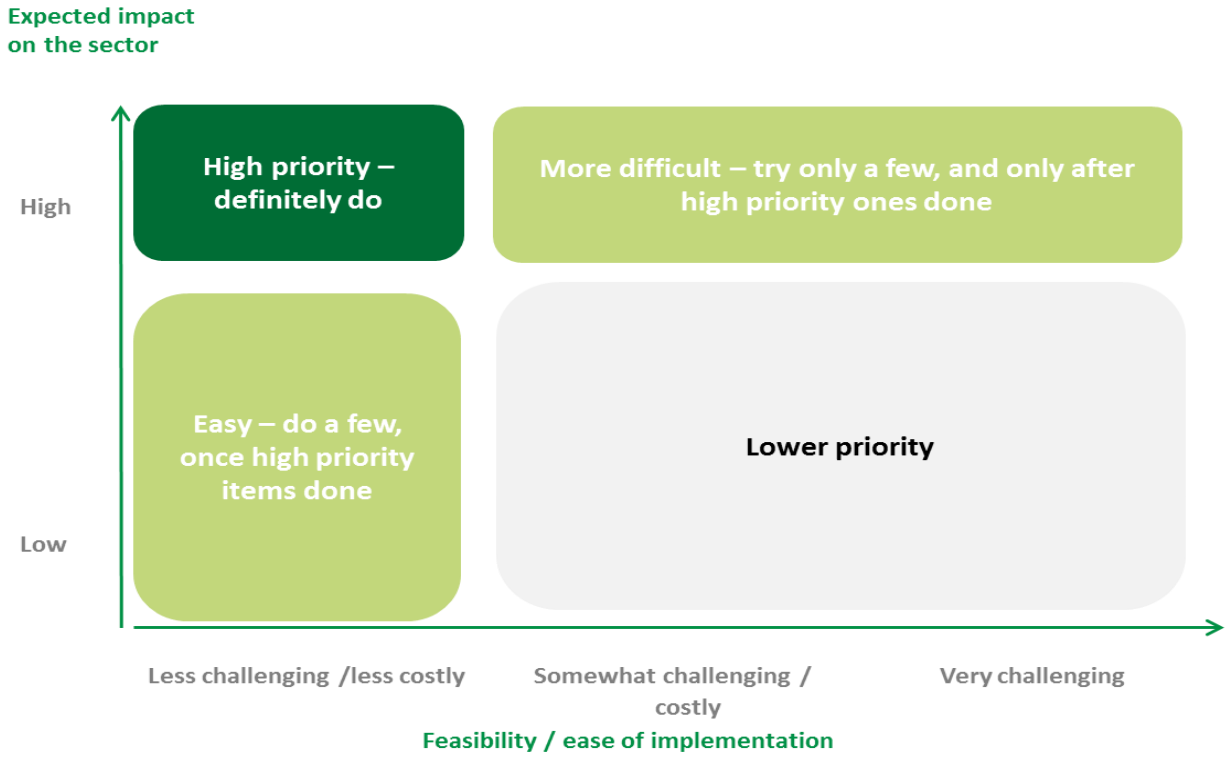
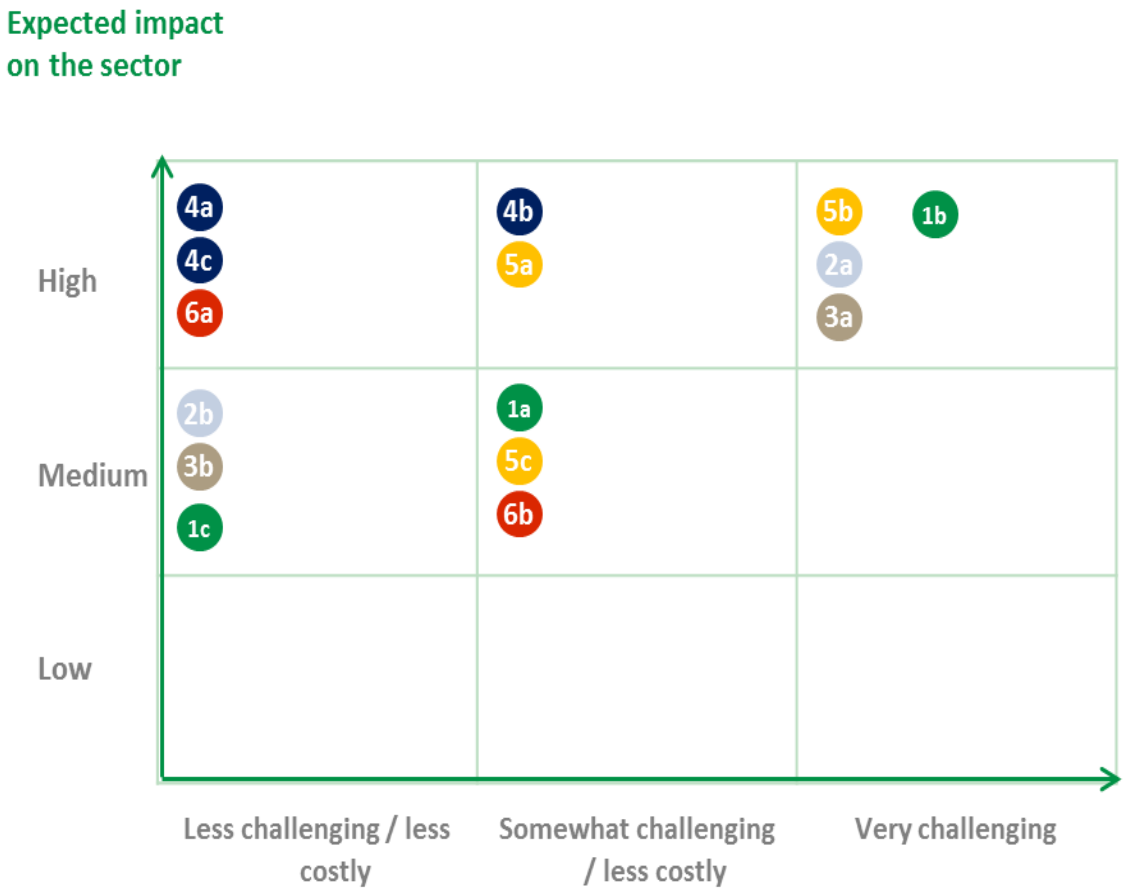


Figure 2: Summary of prioritized interventions



Key:

- 1a Develop a long term strategy to finance and deliver extension services
- 1b Design guidelines to address emerging issues and foster public-private extension services
- 1c Improve and implement strategies for staff retention
- 2a Facilitate private-sector involvement
- 2b Enhance gender awareness about at all levels
- 3a Enhance ICT-based services for efficient feedback mechanisms in response to farmers' extension needs
- 3b Develop an MLE system that allows effective monitoring of extension staff's performance
- 4a Organize trainings on FTC management
- 4b Strengthen existing farmers organizations and platforms
- 4c Develop commercial skill-base of DA staff to improve FTCs revenue generation
- 5a Utilize multiple communication channels
- 5b Develop a knowledge management system to create effective linkage with research and other stakeholders
- 5c Develop services that address extension needs of specific target groups
- 6a Involve farmers in content development and implementation of extension programs through FTC management committees and farmer development groups
- 6b Promote value chain-based linkage development among all stakeholders

Table 3: Cornerstones, major objectives and strategic interventions and their prioritization

No	Cornerstones	Objectives	Strategic intervention	Prioritization of the interventions			Phase 1 implementation/2014-2018				
				1^0	2^0	3^0	2015	2016	2017	2018	2019
1	Transformation of FTCs into farmer owned/farmer driven entities and enterprises	To make FTCs centres for knowledge and information sharing, developing best practices and creating self-sustaining FTC management systems that fully shift the ownership from government to farmers.	Increase sense of FTC ownership by farmers and improve FTC functioning and sustainability	✓							
			Allocate sufficient resource to FTCs	✓							
			Furnish and equip FTCs with basic infrastructures	✓							
			Improved support to FTCs by the local government		✓						
			Implementation of DAs career and incentive mechanism	✓							
			Build DAs knowledge and skill	✓							
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	Strengthening existing cooperatives		✓						
			Enhance linkage among farmers' groups		✓						
			Strengthen linkage between farmers groups and service providers		✓						
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	Use of diversified communication channels		✓						
			Strengthen agricultural knowledge management within the extension system at various levels								
			Provide diverse and quality of extension messages (client-tailored extension messages)	✓	✓						
			Improve extension services on livestock		✓						
			Build the capacity of higher level extension staff (SMS) for improved technical knowledge and preparation of client-tailored extension messages		✓						
			Improve the availability of technologies and services to farmers through ICTs								
			Build the capacity frontline extension workers for improved technical knowhow and preparation of client tailored extension messages								
			Enhance participatory technology development								

No	Cornerstones	Objectives	Strategic intervention	Prioritization of the interventions			Phase 1 implementation/2014-2018				
				1^0	2^0	3^0	2015	2016	2017	2018	2019
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.	Strengthening pluralistic agricultural extension advisory services			✓					
			Strengthening public extension service		✓						
			Improve professional skills development at HLIs and ATVETs			✓					
			Enhancing cooperative based extension advisory service		✓						
			Improving the role of agro-processing companies in extension 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	Build the capacity of the technical staff at various levels to provide to provide market-oriented extension services	✓							
			Promote Value Chain based Extension Service			✓					
			Select appropriate commodities to focus value-chain approach			✓					
			Enhancing Capacity Development of the actors		✓						
			Promoting value chain based linkage development		✓						
			Improving Access to Market Information by Farmers		✓						
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	a. Gender mainstreaming and empowerment								
			Enhance level of awareness on gender at all levels		✓						
			Strengthen gender mainstreaming actions			✓					
			Improve participation of women and youth in agricultural extension		✓						
			Capacity Building for extension staff and rural communities			✓					
			Improve employment opportunity for women DAs			✓					
			Adequate resources to gender related activities		✓						
			Put in place accountability and responsibility mechanism		✓						
			Strengthen the link between women affairs and agricultural extension directorates and ATA	✓							
			Strengthening collaborations and networking among other actors		✓						
			Enhance effective monitoring and evaluation		✓						
			b. Environmental sustainability								
			Improve extension services on NRM		✓						

No	Cornerstones	Objectives	Strategic intervention	Prioritization of the interventions			Phase 1 implementation/2014-2018				
				1^0	2^0	3^0	2015	2016	2017	2018	2019
			Enhancing effective capacity building at various levels		✓						
			Drought mitigation and moisture conservation		✓						
			Promotion of good irrigation practices and maintenance of natural vegetation								
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.	Revitalizing institutional arrangement of ADPLAC		✓						
			Creating awareness and shared vision of ADPLAC among development partners	✓							
			Strengthening stakeholders' collaboration and networking	✓							
			Strengthening MLE	✓							
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	Create clear perception of decentralization and to create strong vertical and horizontal linkages	✓							
			Put in place a clear line of command and accountability mechanism	✓							
			Build the capacity of finance staff on budget utilization	✓							
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	Install effective and efficient MLE system		✓						
			Develop performance based and feedback system		✓						
			Allocate adequate resource and enhance ICT-based MLE system		✓						
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.	Developing clear guideline to foster the effective implementation of public-private extension service	✓							
			Enhance ICT-based service in the MLE process	✓							
			Enhancing staff motivation	✓							
			Ensuring the availability of transportation	✓							

5 Section 5: Monitoring, Learning and Evaluation

A monitoring, learning and evaluation (MLE) framework for this strategy depends on results framework to ensure whether or not the activities on the ground are on track to meeting the planned objectives. The results framework consists of outputs, outcomes and impact, each of which has a set of indicators. The outputs can be achieved directly by implementing the interventions outlined in the document, whose achievement can be measured through various indicators. The successful realization of these outputs will enhance the effectiveness and efficiency of the extension system, which is the anticipated outcome.

Table 1: Impact, Outcome and Outputs

Impact	Impact indicators for 1st phase (2014-18) of the strategic intervention
Increased productivity and incomes by smallholder farmers	% smallholder farmers (male and female) responding positively to the increment of their productivity and incomes
Outcome	Outcome indicators for 1st phase (2014-18) of the strategic intervention
Extension system provides services more effectively and efficiently to more smal-holder farmers in a wider geographic area	% of female and male farmers and youth receiving extension services (e.g., GTP-2 intervention plan % increase in farmers that use improved technologies and practices % decrease in average financial support from government required per FTC,
Outputs	Output indicators for 1st phase (2014-18) of the strategic intervention
Transform FTCs into farmer owned/farmer driven entities and enterprises that are platforms and networks for knowledge sharing, demand creation, innovation and organizing economies of scale	• % of DAs receiving in-service training from ATVETs • % of farmers engaged in group-based learning and sharing • % increase in FTCs organizing field days and experience sharing events • % of pre-basic FTCs will be capacitated to "Basic" FTC level • % of basic FTCs will be capacitated to "Intermediate" FTC level • % of "Intermediate" FTCs will be capacitated to "Advanced" FTCs level • %of FTCs engage themselves revenue-generating FTCs and cover annual budget and part of their operational costs from the revenue generated • % of FTCs establish there management committee members, • % of the trained farmers who are female • % increase in female DAs, • % of FTC- MCs established/strengthened • % of Woredas implementing DA career path • % of DAs participated in various training sessions (soft skills and technical/practical training)
Improving AKIS and networks of specialized technical advisory services	• # of extension packages developed for different social classes, including women and youth groups • % of farmers (male and female) apply for technology utilization on a sustainable base, • % of new farmers demanding new technologies,
Strengthening networks for specialized technical advisory among different actors	• # of guidelines developed, • # of FTCs and Woredas strengthened, • # of workshops conducted between public & private extension providers, • # of agro-processing companies and private extension services participated in the provision of extension services • # of FTCs and Woredas covered by pluralistic agricultural extension advisory services, • # of meetings conducted between AED and HLIs and specific topics identified for training Extension workers, • # of cooperatives involved in extension advisory service and number of target groups covered by the service,

Improved linkages and coordination across development actors and throughout the extension system	• % new zones that have established ADPLACs • % of woredas with newly established ADPLACs • Federal ADPLAC meets at least 2 times per year and has a secretariat • Joint action plans developed and achievements reviewed by all regional and zonal ADPLACs and • 80% of those Woredas that established ADPLACs will mainstream ADPLAC in their regular activity and conduct their regular meeting • % of ATVETs making at least annual visits to FTCs
Effective functioning value chains and innovation platforms	• # technical commodities based value chain sub-platforms established • # of workshops conducted between value chain actors • # technical staff and community members participated in value chain development trainings • # of specific value chains developed
Rapid MLE learning from successes and failures for continuous improvement of extension services	• # of monitoring, learning and evaluations conducted per year, • # problems and solutions given to the problems identified • # of Woredas and FTCs covered by the MLE tracking mechanism • # of farmers involved in the evaluation performance (including DAs evaluation) • # of DAs benefited by standardized performance evaluation criteria and reward system • # of DAs benefited from incentives, salary, and career path to increase their motivation and retention • # Woredas and FTCs exercising high-performance culture through investment in management structure and capabilities • # Woredas and FTCs implementing ICT-based extension services
Effective institutional arrangements from Federal to Kebele for improved extension service delivery	• # workshop and/or awareness creation, • # of staff to be trained on financial management, • # of FTCs, Woredas and Regions submitted their plan and report on time,
Strengthening policies for standards, regulations, and quality assurance	• # of working guidelines develop • # of FTCs & Woredas installed ICTs to improve the extension services, • #of staff motivated annually, • # of Woredas and FTCs get the chance of transportation availability,

Each implementation area should have a detailed work plan with detailed activities and timeframes. The institutional owners should ensure that the activities are aligned with the above results framework. The results framework should be accompanied by a performance measurement plan, which will enable the concerned institutions to collect the appropriate data and report. These data will be reviewed and evaluated at regular meetings of the National Steering Committee. While ensuring focus on the vision and effectiveness of interventions, the national and regional steering committee should be flexible to respond to the emerging needs and challenges.

In conclusion, the strategy takes a long term perspective and appreciates the dynamic nature of the extension system in Ethiopia. As the country is heading to transition to middle-income level by 2025, the agriculture sector will have to accommodate a market-led transformation. By providing an overall framework to strengthen the extension system, this strategy will enable the extension system to play a critical role in agricultural transformation. It is expected that this strategy will be reviewed and revised to incorporate new thinking and new implementation tactics based on lessons learned and emerging realities.

6 Section 7: References

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ANNEX1

Key Cornerstone	Objectives	Bottlenecks	Interventions
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.	*Limited involvement of farmers in FTC management*	*Increase sense of FTC ownership by farmers and improve FTC functioning and sustainability*
		Insufficient resources for FTCs	*Allocate sufficient resource to FTCs*
		Few FTCs have long-term plans for sustainability	*Furnish and equip FTCs with basic infrastructures*
		Inadequate support by the local government	*Improved support to FTCs by the local government*
		Inadequate incentives to motivate and retain DAs	*Implementation of DAs career and incentive mechanism*
		Limited knowledge and skill of DAs	*Build DAs knowledge and skill*
		Limited training to farmers	*Improving training to farmers*
Farmer-based organizations and groups, networks and organizations as key instruments and platforms for delivering extension services	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	*Limited skill in common goal based farmers' group establishment*	*Strengthening the existing Farmers Development Groups*
		Poor linkage among farmers' organizations and groups	*Strengthening existing cooperatives*
			Enhance linkage among farmers' groups
			Strengthen linkage between farmers groups and service providers
Making agricultural knowledge and information available by improving access to 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	*Poor access to diversified communication channels*	*Use of diversified communication channels*
		Limited access to different agricultural knowledge and information	*Strengthen agricultural knowledge management within the extension system at various levels*
		Extension packages not sufficiently designed to meet diverse farmer needs	*Provide diverse and quality of extension messages (client-tailored extension messages)*
		Limited extension services on livestock	*Improve extension services on livestock*
		Poor technical knowhow on the preparation of client tailored extension messages and use of indigenous knowledge	*Build the capacity of higher level extension staff (SMS) for improved technical knowledge and preparation of client-tailored extension messages*
		Poor involvement of farmers in research agenda setting and prioritization	*Improve the availability of technologies and services to farmers through ICTs*
		Technologies not always optimized to meet farmers' needs	*Build the capacity frontline extension workers fo improved technical knowhow and preparation of clien tailored extension messages*
			Enhance participatory technology development
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.*	*Limited involvement of different stakeholders in the provision of extension advisory services and capacity for specific technical domain and innovative solutions*	*Strengthening pluralistic agricultural extension advisory services*
		Low cooperation and collaboration between public and NGOs in extension services provision	*Strengthening public extension service*
		Limited professional skills development at HLIs and ATVETs	*Improve professional skills development at HLIs and ATVETs*
		Poor involvement of cooperatives and other private-sector in	*Enhancing cooperative based extension advisory*

Key Cornerstone	Objectives	Bottlenecks	Interventions
		extension service delivery	*service*
			Improving the role of agro-processing companies in extension services
Functioning value chains and innovation platforms provide effective integrated services for delivery of extension services	*To transform subsistence smallholder farming to commercialized farming system through the implementation of commodity based extension approach and market-oriented extension services*	Insufficient understanding of market-oriented production system	Build the capacity of the technical staff at various levels to provide to provide market-oriented extension services
		Limited focus on strategic commodities in advisory extension services	*Promote Value Chain based Extension Service*
			Select appropriate commodities to focus value-chain approach
		Low implementation capacity of the extension staffs	*Enhancing Capacity Development of the actors*
		Ineffective linkage among value chain actors	*Promoting value chain based linkage development*
		Limited access to marketing information to Farmers	*Improving Access to Market Information by Farmers*
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	a. Gender mainstreaming and empowerment	
		Low level awareness and poor gender mainstreaming in extension programs planning, implementation and M&E	*a) Enhance level of awareness on gender at all levels*
			b) Strengthen gender mainstreaming actions
			c) Improve participation of women and youth in agricultural extension
			d) Capacity Building for extension staff and rural communities
			e)Improve employment opportunity for women DAs
		Shortage of resources to implement planned activities of gender	*Adequate resources to gender related activities*
		Lack of accountability and responsibility mechanism	*Put in place accountability and responsibility mechanism*
		Lack of gender Focal Person (FP)	*Strengthen the link between women affairs and agricultural extension directorates and ATA*
		Lack of gender disaggregated data	*Strengthening collaborations and networking among other actors*
		Socio-cultural constraints	*Enhance effective monitoring and evaluation*
		b. *Ensuring environmental management and sustainability*	
		Limited extension services NRM	*Improve extension services on NRM*
		Limited capacity and know how on NRM	*Enhancing effective capacity building at various levels*
		Drought and moisture stress	*Drought mitigation and moisture conservation*
			Promotion of good irrigation practices and maintenance of natural vegetation
Enhancing the Functions of the Agricultural Development Partners' Linkage Advisory Council	*To strengthen/establish ADPLAC to effect strong collaborations among all key development partners for effective and better extension services.*	*Inconsistent performance of ADPLAC in linking research, extension, and other agricultural development partners*	*Revitalizing the institutional arrangements of ADPLAC*
			Creating awareness and shared vision of ADPLAC among development partners
		Lack of vibrant linkage and poor coordination	*Strengthening stakeholders' collaboration and networking*
		Weak MLE and accountability system	*Strengthening MLE*
Effective institutional	*To strengthen existing extension*	*Poor perception of decentralization and weak vertical and*	*Create a clearer understanding of the concept of*

Key Cornerstone	Objectives	Bottlenecks	Interventions
arrangements from Federal to Kebele for improved extension service delivery	*institutions at different levels for diverse, demand-driven and market-led extension services through installing effective institutional arrangements*	*horizontal linkages*	*decentralization and strong vertical and horizontal linkages*
		Lack of clear command particularly at Woreda level	*Put in place a clear line of command and accountability mechanism*
		Limited capacity for effective budget utilization	*Build the capacity of finance staff on budget planning and utilization*
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*	*Weak monitoring, evaluation and learning system*	*Install effective and efficient MEL system*
		Inadequate resources	*Develop performance based and feedback system*
		Inadequate performance management process to initiate incentives for technical staff at various levels	*Allocate adequate resource and enhance ICT-based MEL system*
Development and provision of coherent sets of guidelines (policies) and standards, regulations, and quality assurance for effective service delivery	*To create suitable enabling environment to provide diversified, demand-driven and market-oriented advisory services.*	*Lack of clear guideline for effective implementation of pluralistic extension service*	*Developing clear guideline to foster the effective implementation of public-private extension service*
		Lack of ICT-based extension service	*Enhance ICT-based service in the MLE process*
		Lack of adequate staffing	*Enhancing staff motivation*
		Inadequate & poor quality of transportation	*Ensuring the availability of transportation*