

Agricultural Policies and Strategies in Ethiopia: A Review on Transformation Towards an Improved Agricultural Extension

Sura Degefu^{1*}, Gemechu Beri¹

¹Quality Assurance and Evaluation Research Directorate, Ethiopian Institute of Agricultural Research, Addis Ababa, Ethiopia

<p>Abstract: In Ethiopia, economic development policy has historically been dominated by subsistence agriculture, leading to unrealized agricultural potential characterized by low productivity and a focus on subsistence farming practices. This would necessitate giving agricultural policies top priority and launching an improved initiative to speed up the transition from traditional farming. To this end, this review was to summarize the strengths and drawbacks of Ethiopia's agricultural policies and strategies, as well as make recommendations for improved interventions and the potential for scaling them up. This may be very helpful in directing policymakers to introduce the valuable interventions and handle related issues. Since 1991, the government of Ethiopia has implemented various agricultural policies in order to boost agricultural productivity and production, which in turn reduces poverty and food insecurity. However, the results have been found to be unsatisfactory. This is mainly due to the poor performance of the agricultural extension system in terms of its coverage and quality of implementation. Thus, the review argues, addressing such challenges and commercializing the sector could lead Ethiopia to further exploit its agricultural potential. In this regard, the recently implemented cluster farming is the right way to overcome these problems and support subsistence farming by increasing smallholder farmers bargaining power, increasing the faster diffusion of research recommendations and extension packages, knowledge transfer, and market linkage. Therefore, the review recommends that policymakers and development organizations should consider cluster farming as a main farming strategy to increase smallholder farmer's productivity and support initiatives to attain the intended goals.</p>	<p>Review Paper</p>
	<p>*Corresponding Author: <i>Sura Degefu</i> Quality Assurance and Evaluation Research Directorate, Ethiopian Institute of Agricultural Research, Addis Ababa, Ethiopia</p>
	<p>How to cite this paper: Sura Degefu & Gemechu Beri (2024). Agricultural Policies and Strategies in Ethiopia: A Review on Transformation Towards an Improved Agricultural Extension. <i>Middle East Res J. Agri Food Sci.</i>, 4(5): 186-192.</p>
<p>Keywords: Agricultural Policies, Agricultural Strategies, Cluster farming, Transformation and Agricultural Extension.</p>	<p>Article History: Submit: 08.09.2024 Accepted: 07.10.2024 Published: 11.10.2024 </p>
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1. INTRODUCTION

Ethiopia's economic growth policy has historically been centered on subsistence agriculture (Mellor, 2014). Like other developing countries, agriculture in Ethiopia has been critical to the country's economic development and contributing to 32.4% of GDP (NBE, 2022) and 65% of employment (CSA, 2021a). Despite, increasing the agricultural sector's productivity and smallholder farmer's technical efficiency is seen as the main path out of poverty in the country; Ethiopia has not yet realized its full agricultural potential as farming practices are still subsistence-oriented with low level of productivity (Diao *et al.*, 2012; Dzanku *et al.*, 2015).

However, Ethiopian smallholder farmers have faced several challenges such as lack off financial services and market access, small land size, and limited access to resources like improved technology and agricultural inputs (Gebeyanesh *et al.*, 2021). Thus, in

order to enhance their productivity and technical efficiency, smallholder farmers need to have better access to technology, market and improve their bargaining power. In addition, although increasing agricultural production by increasing the area is still possible, current land availability has become quite limited due to the country's population growth and land shortage. Low productivity of agriculture in the country is partly because of the poor performance of agricultural extension system in terms of its coverage and quality of implementation (NPC, 2016).

Since 1991, Ethiopian government has put in place a number of agricultural policies aimed at increasing output as well as productivity in the sector, which will ultimately lower poverty and food insecurity. Among these the most noticeable medium-term plans and policies implemented in the country are "Agricultural Development Led Industrialization (ADLI) strategy, Sustainable Development and Poverty

Reduction Program (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP), Growth and Transformation Plan (GTP) I and II". Despite a number of interventions through agricultural development programs and initiatives, the results have been found to be unsatisfactory. Currently Ethiopia initiated 'Ten-Year Perspective Development Plan' (2021– 2030) and 'Home-grown Economic Reform (HGER)' agenda. Despite all of these policies have been implemented in order to boost agricultural productivity and production, which in turn reduce poverty and food insecurity, the results have been found to be unsatisfactory (ATA, 2021).

This would necessitate giving agricultural policies on top priority and launching an improved initiative to fasten transition from traditional farming. In this regard, cluster farming (CF) is practiced in the country more recently as an effort to change subsistence farming, improve productivity and technical efficiency by transforming subsistence farming to market oriented farming through collective action group. From the standpoint of a smallholder farmer, cluster farming offers great benefits. Farm scale is reached within the CF by grouping farmers in one cluster, where group of farmers gather on adjacent land to farm as one and adopt the recent full-package farm recommendations which in turn improve their productivity and technical efficiency (ATA, 2021).

Therefore, the purpose of this article was to review the strengths and drawbacks of Ethiopia's agricultural policies and strategies as well as to make recommendations for the improved interventions and the potential for scaling them up. The Ethiopian extension system has been reviewed and recommended previously (eg. Abate, 2007; EEA/EEPRI, 2006; Kelemework, 2007), and this study expands on those findings by focusing on the current farming initiatives, cluster farming.

2. LITERATURE REVIEW

This section provides details on the history of agricultural extension in Ethiopia and the current extension system. Key lessons from alternative extension approaches are shared that inform the overall study.

1.1 Agricultural Policies and Strategies in Ethiopia

Since 1991, Ethiopia's government has undertaken a various agricultural policy to increase production and productivity, including Agricultural-Led Industrialization, Sustainable Development and Poverty Reduction Program, Participatory and Accelerated Sustainable Development to Eradicate Poverty, and successive Growth and Transformation Plans (GTP) I and II. Despite all of these policies have been implemented in order to boost agricultural productivity and production, which in turn reduce poverty and food insecurity, the results have been found to be unsatisfactory (ATA, 2021).

The Agriculture Development Led Industrialization (ADLI) strategy was developed in the mid-1990s to serve as a roadmap to transform smallholder agriculture. The 1960s development theories served as the framework for ADLI, which holds that in order to support demand for industrial goods and industrialization's inputs, agriculture (smallholder) must first be developed (WB, 2016). Objective of ADLI is to strengthen the linkages between agriculture and industry by increasing the productivity of small-scale farmers, expanding large scale private commercial farms, and by reconstructing the manufacturing sector in such a way that it can use the country's human and natural resources. By utilizing the country's massive labor force, abundant agricultural lands, a variety of agro-climatic zones, and abundant water supplies in rural areas, the government will prioritize developing the capacities of small-scale farmers as a primary aim in the implementation process (Lulit *et al.*, 2010). The function of ADLI in enhancing agricultural output and reducing poverty in rural regions has been identified as a success. However, it has not led to agriculture-based industrialization as had been expected, and the average agricultural production is insufficient to offset rapid population growth (Diao, 2010).

Sustainable Development and Poverty Reduction (SDPRP) Program was launched and implemented from 2002/03 to 2005/06 with the goal of achieving sustainable development in rural areas by increasing farm productivity (yield), reducing poverty, improving food security, increasing the volume and variety of industrial raw materials (primary products), and producing for the export market (Kassa, 2003). It was the first comprehensive Poverty Reduction Strategy Paper (PRSP) developed and put into practice by the government to improve agricultural extension services by training extension agents and farmers, water harvesting and irrigation, better marketing opportunities, reorganizing peasant cooperatives, and supporting microfinance institutions (MoFED, 2002). However, the agricultural sector's high reliance on rainfall amount and timing causes production to vary constantly. As a result, the productivity of the agricultural sector has not improved significantly (Diao, 2010).

Participatory and Accelerated Sustainable Development to Eradicate Poverty (PASDEP) launched and implemented from 2005/06 to 2009/10. PASDEP made major improvements to SDPRP by extending the policy's focus beyond smallholder agriculture to other sectors, particularly the industrial sector and the urban sector. Understanding the crucial role that agriculture plays in economic development, the plan placed more of an emphasis on commercializing and intensifying agriculture to link up farmers with markets, both locally and internationally (MoFED, 2005). Ethiopia achieved significant growth during the PASDEP period, which can be attributed to government-led development investment, global commodity demand, and incentives

for specific export industries (e.g., floriculture). After initially being driven by agriculture growth has broadened, with mining, services, and manufacturing sectors. Although the economic performance has been positive, the PASDEP's core macro-objectives (including exports and government revenues) were not attained, and over the time, policy changes were needed as a result of a spike in inflation and the creation of external imbalances (IDA and IMF, 2011)

Growth and Transformation Plan (GTP I), was launched from 2009/10 to 2014/15 in order to achieve larger scale development in a sustainable way. In GTP I, it was clearly indicated that the agricultural sector would continue to be the main source of economic growth. The GTP-I goal was to significantly increase the share of industry in the economy while also increasing agricultural production, strengthen the agricultural extension system, use improved agricultural technologies, scale up the best results of smallholder farmers, pay close attention to research-extension linkages, and transform the agricultural sector (MoFED, 2010). During the period of the plan's implementation, there is an improvement in real agricultural GDP growth rate of 6.6% percent annually. Smallholder farmers are encouraged to switch from subsistence to high-value agricultural production and productivity of smallholder farmers were increased. Despite the attempts to commercialize and shift agriculture from the subsistence production to the production of high-value crops, due to the country's weak extension system the performance has been not satisfactory as expected (NPC, 2016).

The second growth and transformation plan (GTP II) were developed and implemented from 2015/16 to 2020/21 based on the success and the lessons drawn from the first plan. Agriculture, and in particular smallholder agriculture, will continue to be the key driver of economic growth during the GTP II period. High-value crops and livestock are prioritized in this strategy. The agricultural transformation agenda in the second phase of the GTP plan is a combination of initiatives that address the agricultural sector's difficulties and help it shift from subsistence-oriented, low-output smallholder farming to a high-performing sector (NPC, 2016). Despite the increase in productivity, agricultural extension faces challenges such as; subsistence farming leaves little marketable surplus; the majority of farmers are smallholders with low input, low output, traditional and outdated farming techniques, heavy reliance on unreliable rainfall, and limited mechanization (ATA, 2015).

To sum up, the main problem of agricultural strategies in the country was the poor performance of agricultural extension system in terms of its coverage and quality of implementation including limited technology adoptions, difficulty in prioritization of commodities, unclear institutional arrangements, poor alignment and integration with other programs and activities,

insufficient financial resources, major infrastructure gaps, poor market linkages, sub-optimal agronomic practices constrain the ability of farmers to improve yields, and highly dependent on rain-fed farming, making the sector highly vulnerable to challenging pest and weather patterns (ATA, 2015; ATA, 2021).

Thus, Ethiopia's ambition to become a middle-income economy and deliver shared and sustained prosperity is also driven by the current government's 'Ten-Year Perspective Development Plan' (2021 – 2030), which supplements the existing vision for a 'Home-grown Economic Reform (HGER)' agenda. The primary objective of the HGER is to increase the overall economy's productivity and competitiveness and then gradually shifting growth from being driven by the public to the private sectors. According to this viewpoint, the HGER agricultural sector reform aims to enhance the role and involvement of the private sector, expand small-to large-scale irrigation development, enhance supply of inputs and finance, increase livestock productivity, safeguard the environment and natural resources, advance agricultural production strategies, reduce post-harvest loss, promote research-based food security systems, and encourage import substitution for major crop products. Raising export of agricultural output and import substitution through contract farming, cluster farming approach and land consolidation is considered as one of the focus areas of agricultural sector under the current development plan of the country (PDC, 2020).

2.2. Agricultural Transformation Agenda in Ethiopia

Despite government took a number of interventions through agricultural development programs and initiatives, the results have been found to be unsatisfactory. In 2009, Ethiopia was in the final year of PASDEP and beginning to design its next five-year GTP. The primary barriers to agricultural growth at the time were described by several stakeholders as "Narrow approach to sectoral change" (the plan concentrates on selected parts of the sector leading to disconnected interventions) and lack of implementation capacity. As a result, the Agricultural Transformation Agency was founded in 2010 by Regulation 198/2010, as an autonomous federal entity with its own legal personality (ATI, 2022). The two founding aims of ATA are to: 1) identify systemic barriers to agricultural development; and 2) enable successful agricultural development activities by assisting in the establishment of strong institutional links (ATA, 2015; ATA, 2021).

The Transformation Agenda was launched in 2013 during the country's first Growth and Transformation Plan (GTP I), by the Ministry of Agriculture (MOA) in collaboration with other stakeholders. "The agricultural transformation agenda consists of a package of interventions that free up systemic bottlenecks in the agricultural sector in order to accelerate the transition from a low-performing, and subsistence-oriented sector to a high-performing one that

is fully incorporated into the national economy while also being environmentally sustainable and inclusive” (ATA, 2015). Following that, ACC initiative, which is primarily owned by regional governments and regional bureaus of agriculture (RBoAs), was established in collaboration with ATA and MOA with the goal of commercializing smallholder farmers in strategic commodities and high-potential geographies across the country (ATA, 2015; ATA, 2019).

2.3. Cluster Farming in Ethiopia

The scope and orientation of Transformation Agendas were broadened in the GTP II, and the focus switched from just improving output and productivity to enhancing the downstream or market components of agricultural and livestock value chains. In 2014, the government of Ethiopia introduced the new concepts of ACC, in order to integrate Transformation Agenda initiatives along specific value chains for a small number of priority (or high-value) products in high-potential regions (known as geographic clusters or economic corridors) throughout the country. Regional governments and Regional Bureaus of Agriculture are the primary owners and implementers of the ACC program (ATA, 2019). This spatially oriented strategy is based on the successful experiences of Asian, Latin American, and African nations in the agricultural transformation and rural industrialization process (Gálvez-Nogales, 2010).

Under the concept of ACC a lot of efforts were done by the government of Ethiopia by identifying clearly defined geographic clusters specializing in priority commodities across different woredas in Amhara, Tigray, SNNPR and Oromia regions of the country. The ACC initiative focuses on ten targeted commodities in these clusters: wheat, maize, sesame, malt barley, teff, tomato, onion, banana, mango, and avocado. The intention of the identified ACC woredas was to act as a center of Excellence (CoE), where the regions were supported to maximize production and productivity by integrating commercialization activities. These clusters are therefore meant to serve as models for learning as Ethiopia intensifies the ACC approach and scale up best practice across the county (Louhichi *et al.*, 2019). Increasing agricultural production and productivity, through several policy interventions including import substitution and increasing export commodities, have got the main concern under both the current Ethiopian 'Ten-Year Perspective Development Plan' (2021–2030) and 'Home-grown Economic Reform (HGER)' agenda (PDC, 2020).

Among these efforts, under ACC, cluster farming (CF) is practiced more recently as an effort to change and improve productivity of smallholder farmers and transforming the country's agricultural sector by changing the traditional way of farming. In the context of farming in Ethiopia, cluster farming is a modern agricultural production strategy that uses spatially

interconnected farms or plots of land for selected crops with the goal of addressing common challenges and pursuing shared opportunities (Dejene, 2019) where farmers in the group recommended to adopt full packages of extension services including fertilizer, chemical and seeds (ATA, 2021). In Ethiopia, cluster farming engages approximately 30–200 smallholder farmers whose adjacent farm plots are pooled voluntarily to leverage targeted government assistance and benefit from economic agglomeration within the cluster (ATA, 2021; Tabe-Ojong and Dureti, 2022). Farm households participating in the clusters are required to contribute at least 0.25 ha of land, and the cumulative land per cluster must be at least 15 ha to harness the full benefits of participation. In these clusters, farmers commit to cultivating cluster priority crops and adhere to the best farm agronomic recommendations. Beyond farmers, this approach involves many stakeholders directly or indirectly at each stage along the cluster crop value chain (research, inputs, production, transportation, storage, marketing, and consumption) and fosters backward and forward-linkages (ATA, 2019). Cluster households are expected to benefit from economies of scale such as greater affordability of modern technology (e.g., sharing the overhead costs of purchasing tractors), stronger bargaining power (e.g., negotiating favorable prices for their products), and stronger market linkages to serve bulk buyers or a large-scale buyer (e.g., contract farming with large processors) (Louhichi *et al.*, 2019; ATA, 2019).

2.4. Successes from Cluster Farming and Opportunities to Consider Cluster Farming as Improved Extension Strategies in Ethiopia

Clusters Farming in the country is still in their infancy. However, it achieves the great role in increasing agricultural production and productivity which in turn improves farmers welfare, strengthen the agricultural extension system, use improved agricultural technologies, scale up the best results of smallholder farmers, pay close attention to research-extension linkages, and transform the agricultural sector. Large-scale national field days, in which the prime minister and other senior government officials participated, were recently held in several regions, including Oromia around Arsi on wheat and barley, the Amhara region around Debre Birhan, and West Gojjam on maize and wheat. These events attracted media attention and confirmed an extensive dedication to cluster farming.

Furthermore, different studies found a positive performance of cluster farming initiatives in the country. For instance, Anduamlak *et al.*, (2022) found that, Largescale demonstration of kora variety teff through a cluster approach was impressive and important for the transfer of skills and knowledge of technology and production management practices between peer groups of smallholder farmers in the area.

Gashaw *et al.*, (2018) evaluated the impact of the Wheat Initiative on yields among a promotional group of Ethiopian farmers who received agronomic practices training, certified wheat seed on credit, urea fertilizer, gypsum (as an in-kind per diem for participating in the training), and marketing assistance after harvest to a treatment group who only received marketing assistance. They found that the total package resulted in a 14 percent greater yield on average, but the marketing assurance had no effect on yields.

Using the farm household model FSSIM-Dev, Louhichi *et al.*, (2019) conducted a detailed study to assess the impact of scaling up the ACC initiative on smallholder performance in Ethiopia. Their findings confirm the hypothesis that the ACC initiative has a positive impact on staple crop productivity and production, as well as improving farm performance and livelihood. But their findings were considered with the strict assumption of their simulation method of exogenously given output price and all farmers assumed to adopt cluster farming in their study area.

Emnet and Worku (2019) used descriptive technique analysis to investigate the impact of Agricultural Commercialization Clusters (ACCs) interventions on malt barley small holder farmers in Arsi Zone, Oromia Region, Ethiopia. According to the results of this study, more than half of the participants saw a change in their livelihood after participating in the ACCs. The influence on crop quality, production quantity, productivity, cost of production, and investment was investigated. As a result, the most significant improvement was seen in the quantity and quality of the crop produced. This means there will be enough commercial items to sell on the market.

Solomon and Belayneh (2021) have evaluated the impact of cluster farming on maize productivity and commercialization in Dera woreda of South Gondar Zone of Amhara National Regional state by using logit model, PSM and IPWRA estimation methods. According to the findings, cluster farm participants generate more yields. The results suggest that cluster farming is on the right path in transforming subsistence smallholder production farming to market oriented farming.

Getachew *et al.*, (2023) employed PSM to evaluate impact of CF on the smallholder farmer's asset building in Ethiopia. The results of the study show that smallholder wheat farmers who participate in wheat cluster farming have better asset building status, as measured in Ethiopian Birr, which is worth ETB 8374.29 (about 155.37 dollars). Therefore, it was determined that cluster farming has a favorable and significant effect on wheat production, which helps smallholder farmers in the study area to build their assets.

According to Tabe-Ojong and Dureti (2022), involvement in agro-clusters boosts income and lowers poverty. They argue, because agro-industrial parks have the potential to open up long-term market prospects for agro-clusters, it will be crucial for policy to take into account how to connect these agro-clusters with other development initiatives.

Further, the primary opportunity to consider cluster farming as the most viable extension strategy is the national agriculture and rural development policies focused on the commercialization of certain commodities for domestic as well as export markets. Another major opportunity for cluster farming is the growth of agro-processing companies across the country, which needs a huge quantity of agricultural products as raw materials. In some agro-ecological zones, a novel clustering approach is encouraging farmers to move from fragmented small plots to large-scale farms and has prompted them to join together to buy massive production machinery. This all brings opportunity to consider cluster farming as the better extension strategy and the initiatives that fasten transformation of agricultural sector from subsistence farming in the country.

3. CONCLUSION AND RECOMMENDATIONS

Subsistence agriculture has continuously dominated economic development policy in Ethiopia. However, Ethiopia has not yet realized its full agricultural potential as farming practices are still subsistence-oriented with low level of productivity. This would call for structural change in the agriculture and an initiative that improves transformation from traditional farming is in needed.

The purpose of this study was to review the strengths and drawbacks of Ethiopia's agricultural policies and strategies as well as to make recommendations for the improved interventions and the potential for scaling them up. Since 1991, the government of Ethiopia has implemented various agricultural policies, in order to boost agricultural productivity and production, which in turn reduce poverty and food insecurity, however, the results have been found to be unsatisfactory. The primary reason behind this situation is attributed to the inadequate performance of the agricultural extension system, marked by limited coverage and subpar implementation quality. This includes challenges such as restricted adoption of technology, difficulty in prioritizing commodities, unclear institutional structures, insufficient alignment with other programs, and a lack of financial resources. Additionally, there are significant infrastructure gaps, weak market connections, and suboptimal agronomic practices hindering farmers' capacity to enhance yields. Moreover, heavy reliance on rain-fed farming exacerbates the sector's vulnerability to adverse weather conditions and pest outbreaks (ATA, 2015; ATA, 2021). Therefore, addressing these

challenges and promoting commercialization within the sector could enable Ethiopia to fully tap into its agricultural potential.

Therefore, the recently introduced cluster farming approach holds promise in mitigating these issues. By promoting faster dissemination of research findings, it facilitates the adoption of improved farming techniques and enhances access to input finance through economies of scale, thereby boosting the production of marketable surplus. Furthermore, it renders modern technologies, such as machinery, more accessible and empowers farmers with stronger bargaining positions, while also fostering stronger market connections, as clusters can collectively cater to large buyers. This, in turn, enhances profitability through intensified commercialization efforts (ATA, 2021). Thus, the review recommends, policymakers and development organizations should consider cluster farming as a main strategy to increase smallholder farmer's productivity and support the initiatives to attain the intended goals.

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