



## The Ethiopian agriculture and extension advisory services: What is missing?

### Executive Summary

Evidences show that growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture (World Bank, 2008). Recognizing this fact, Ethiopia has been implementing agricultural development led industrialization as basis for socio-economic development. There is, however, lack of appropriate extension service delivery approaches constraining productivity revolution in smallholder farmers. This policy brief examines the current Ethiopian agriculture extension service delivery approaches with the aim to identify what is missing. Then, it provides several policy alternatives to address the identified gaps.

### Policy highlights on agriculture extension services

1. Farmers need to be equipped with not only agricultural skills of improving yields of nutritious crops, but also diverse business skills to cope with changing circumstances.
2. There is a need to allocate sufficient budget to strengthen farmer training centers (FTC) with the necessary equipments and infrastructures.
3. Farmers' networking system must be seen as a means to strengthen the human agency of farmers with the aim to promote their collective and collaborative decision making powers.
4. The government need to consider liberalizing the agricultural technology supply market so that farmers will have alternative sources to choose from.
5. The extension service provision must address peculiar challenges and opportunities of women in agriculture.

### Introduction

Agriculture is proven to be exceptionally powerful for poverty reduction. According to the World Bank report on agriculture (2008), GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture. The same source indicated that the role of agriculture in poverty reduction is more effective for agriculture based economies like Ethiopia than for transforming economies and urbanized countries (Box 1 shows the role of agriculture in China and Latin America).

#### Box 1: The role of Agriculture in Poverty reduction

Evidence shows that aggregated growth originating in agriculture is estimated to have been 3.5 times more effective in reducing poverty than growth outside agriculture for China and 2.7 times more for Latin America. China falls within transforming economies while Latin America represents urbanizing countries (World Banks, 2008).

This is because increased income in the agricultural sector increases the overall levels of economic activity in others areas. Recognizing this fact, the Ethiopian government has issued agricultural development led industrialization (ADLI) in 2002 and has been implementing it with series of economic policies since then. ADLI aims to accelerate agricultural development with the view to produce sufficient outputs required to feed the increasing population as well as to meet the raw materials requirement for the growth of domestic manufacturing industry.

However, using agriculture as the basis for economic growth requires a productivity revolution in smallholder farming (World Bank, 2008). This revolution may take different forms, of which improving agricultural extension service is the main one.



In this respect, the current Ethiopian extension system uses a number of extension service delivery approaches. However, despite consistent policy focus on agriculture, the role of agriculture in national GDP keeps declining over the last two decades. Even the modest gain in agricultural production (in absolute term) over the last two decades was largely attributable to agricultural land expansion rather than increase in the productivity of the sector (Donnenfeld, Porter, Cilliers, Moyer, & Aucoin, 2017).

## **The NutriHAF Africa project**

Land expansion as source of economic growth has little sustainability in the present economic and social environment of Ethiopia. The situation is more worrisome when it comes to the Yayu biosphere zone of Oromia region. At the moment, the average land holding size per household in the biosphere zone of Yayu is 0.36 hectares compared to the national average of 1.63 ha of cultivated land holding per household in Ethiopia.

Thus, it is now right time to consider improvement and transformation approaches as major sources of economic growth for such land shortage areas in particular. Recognizing this fact, NutriHAF Africa Project has been introducing vegetables production in multi-storey cropping systems and vegetable processing technologies to the Yayu biosphere zone of Oromia region since 2015.

## **NutriHAF Africa Project Approaches**

NutriHAF Africa Project has both research and capacity building components with the aims to: (1) introduce and intensify vegetable production in multi-storey cropping systems so as to improve human nutrition of smallholder farmers and increase land efficiency in areas where additional land for agricultural expansion is no more an option and, (2) improve conditions or remove the existing institutional constraints to increase outputs using the existing stock of knowledge and best practices.

To this end, a number of qualitative and quantitative researches have been conducted in the four intervention kebeles (box 2). Targeted capacity building trainings were also given to different stakeholders based on the research results identifying capacity gaps. Furthermore, many policy dialogues were held through targeted information and round-table forums at various government levels: kebele, districts, zones, regional and national levels. By doing so, concerned stakeholders at different levels were reached on consensus as to the limitations of the current agricultural extension service delivery approaches and the required measures to address the issues. Thus, this policy brief paper aims to disseminate the results of these discussion rounds and the alternative courses of actions required to address the extension service delivery systems.

In the following, we provide an overview of the common agriculture extension service delivery approaches being practiced and present evidence that there are limitations to be corrected so as to improve agricultural outputs and ultimately realize the desired rural development.

## **Extension approaches and their challenges**

### ***Development agents (DAs)***

DAs are supposed to be catalysts for agricultural transformation in Ethiopia. To this end, 25 agricultural technical and vocational education trainings (ATVETs) colleges were established in different parts of the country so as to produce DAs in different fields of specializations. Although about 83,000 DAs have been trained and graduated from the ATVETs, merely 56,000 DAs are actually working in agricultural extension as of 2017 while the rest have either promoted to other positions or quitted working as extension agents for some reasons. Furthermore, there are other limitations in the deployment of the right DAs to their right positions at the grass root level.

- Firstly, some DAs' positions were unfilled in every Kebele of NutriHAF Project interventions. Nearly 50 percent of DAs posts were vacant in both Yayu and Hurumu districts during 2017.
- Secondly, there has been a mismatch between the specializations of DAs and the positions to which they are assigned. Our evidences show that one in every two positions of DAs specializing in agronomy were filled by natural resources specialized DAs in both districts during 2017.
- Thirdly, most DAs lack the necessary skills to train the farmers. They seem to be merely equipped with some basic agricultural skills while soft and entrepreneurial skills are missing. This is because most ATVETs produce DAs with very limited field of specializations ignoring mix of different skills required to address multiple livelihood options of the rural households. Most agricultural DAs lack even basic knowledge about nutrition and rural enterprise development.
- Fourth, there are inadequate incentives to motivate and retain DAs. All DAs agree that their salary scale is too depressed to live on. As the result, most DAs are attending distance education in other disciplines not related to their own specialization with the aim to shift their occupation as they finish their degree in other more paying fields. A lack of motivation is being manifested in different ways.

Most agricultural DAs are working mainly with better off families thereby ignoring the poor farmers and most farmers who are far away from main road sides. They also very rarely provide house to house counselling even to the female headed households, who may not be able to attend the usual mass training given at Kebele level.

As the result, most farming households are dissatisfied with the extension service delivery of the DAs. According to our household survey result administered to 143 randomly selected households, 68% of them expressed deep dissatisfaction with the way DAs provide extension services. Gender disaggregated analysis shows that female headed households are more dissatisfied (82%) as compared to male headed households (64%). Lastly, the DAs also lack logistic supports. Most of them don't have motor bicycle, rain coats and boots to easily travel in the rural areas with rugged terrain and poor infrastructures.

### ***Skills for diverse economic activities***

Evidence shows that subsistence farmers in Ethiopia are more likely to follow strategies which reduce risk, even if these strategies result in less overall profit for those involved (Admassu, 2014). The smallholder farmers are using livelihood and income diversification as a traditional risk aversion strategy during extreme uncertainty. Thus, the divide between farm and non-farm income activities is artificial when it comes to the farming households of Ethiopia. Our current study also reveals that the farming households do not simply relay one occupational or income-generating activity. Instead, their employment portfolio is complex, and likely to be made up of more than three income generating activities pursued simultaneously. The evidence also shows that the compositions of such income generating activities changes at different times of the year depending on the level of perceived risks.

#### **Box 2: NutriHAF Africa project**

The Project aims to explore and integrate appropriate vegetable crops into multi-storey cropping systems so as to increase nutrition security, diversify and intensify agriculture and thus to reduce pressure on natural habitats in biodiversity hotspots. The project operates in Ethiopia and Madagascar. Specifically, the project operates in two districts of Ethiopia :Yayo district (Wabo Kebele and Bondo Mengela Kebele) and Hurumu district (Gaba Kebele and Wangegne Kebele). The project is funded by the German Federal Ministry of Food and Agriculture (BMEL).

Thus, in addition to mastering the agricultural skills required to improve yields, farmers need diverse business skills to cope with changing circumstances. Such diversified skills are important in creating alternative sources of income when agricultural output is unreliable in order to raise rural incomes. The implication is that ATVETs need to equip agricultural DAs with diverse skills, not just specialists in specific fields.

Furthermore, these extension services need to be place and situation specific. Where it is suitable, the extension advisory services need to emphasize on educating the farmers about production of diverse vegetables and fruits in multi-storey cropping systems so as to increase nutrition security, diversify and intensify agriculture. They need to also promote poultry farm, good apiculture practices, intercropping, production and trading of spices and medicinal crops.

#### ***Farmers Training Centers (FTCs)***

Farmers Training Centers (FTCs) are also used as one form of agricultural extension service delivery approach. They are supposed to be places where new technologies are created and best agricultural practices are demonstrated to the farming households. Accordingly, close to 13,000 FTCs were established throughout the country as of 2017. It is also planned to increase FTCs to 18,000 by the end of 2021.

The smallholder farmers are supposed to attend some theoretical explanation and then demonstrate the knowledge they gained on the FTC experimental plots of each Kebele. After successful completion of the training, the trainees are supposed to be awarded a green certificate as proof for completion of the training curricula. Accordingly, it was expected that on average 60 farmers will receive intensive theoretical and practical training at their respective Kebele FTC with two rounds of training per year.

However, although one FTC was established within each Kebele of NutriHAF project intervention areas and aged 5 years, none of them are currently functional. They merely have physical existence without the necessary equipments and infrastructures required to start their functions.

Although some of the FTCs were equipped with some small agricultural tools, these materials were stolen before giving any services as the centers are neither fenced nor guarded.

On top of this, the agricultural DAs working within each Kebele lack motivation to show practical exercises to the farmers on the demonstration site of the FTCs. The DAs themselves agree that they lack the required practical skills to transfer to the smallholder farmers as they were merely oriented with theoretical explanations while they were attending their college education. Eventually, the FTCs became the breeding places for small wild animals like rodents and rats damaging the crops of the surrounding farmers on the field. The farmers living within the vicinity of FTCs are bitterly expressing their disappointments with the way the FTCs are handled and became the harboring places of such wild animals rather than technology transfer centers. As the result, the farmers don't seem to have positive attitude towards the FTCs within their Kebele.

#### ***Farmers' cooperative unions***

Farmers' cooperative unions are supposed to be vehicles through which agricultural inputs are distributed to the farmers. They are also supposed to empower the farmers by increasing their bargaining power in the output markets. However, our evidences show that the cooperative unions, which are the monopoly suppliers of agricultural technology inputs in Ethiopia, are incapable of delivering the right inputs at the right time and right prices. Most farmers have reported that they usually purchase untreated seeds from private unlicensed traders as the cooperative unions fail to supply such inputs. Specifically, the cooperative unions have never supplied seeds and seedlings for the production of vegetables and fruits. We have also learnt that their role in creating markets for the farmers' agricultural outputs are very limited. On top of this, as the managements of most farmers' cooperative unions are politically assigned persons rather than professionals, the farmers believe that they are inefficient and reported to misuse public money because of their rent seeking behaviors.

### **Farmers' networking system**

Farmers' networking system in which the farmers were administratively assigned to "one-in-five" teams is supposed to be the cheapest and fastest means of information sharing among the farming households in Ethiopia. In essence, the networking system is considered as an integral part of farmer field school (FFS) extension delivery approach. However, our evidence shows that the networking system and FFS approach is not as effective as expected because of the following reasons.

- Firstly, given the fact that the system was designed in the form of a top-down old fashioned approach, the farmers were not teamed with peers of their own choice and hence less likely share important information within the team because of lack of trust among the team members.
- Secondly, the so called 'model farmers' who were supposed to lead the one-in-five network were not actually model in terms of their agricultural practices; in most cases, they were elected mainly because of being the ruling political party member. As the result, the system was more active when it comes to politics than developmental activities.
- Thirdly, the "model" farmers were assigned as farmer-to-farmer facilitators without any form of additional facilitation skill training. As the result, it seems that farmers' networking system have been used as instruments to weaken "human agency" of the rural producers thereby enhancing the power of state over them rather than promoting collective and collaborative decision making power of the farmers.

### **The extension system lack integration**

Responsibilities for food production and consumption are the other sides of the same coin. Thus, the challenges and opportunities of each side need to be solved in the form of simultaneous equation (Fanzo et al., 2013). This calls for integration of agricultural extension services and nutrition education.

This may imply either the agricultural DAs need to be versed with necessary knowledge and skills from seed (production) to consumption or they should work in close collaboration with nutritionists. However, in Ethiopia, the responsibility for food production and food consumption are given to different ministries and there is weak integration of activities of these ministries. While ministry of agriculture is responsible for production and hence food availability, ministry of health is responsible for training on diets, food preparation, preservation, and hygiene related activities. Following this demarcation, the DAs extension advisory services focus on crops production, and to a certain extent on livestock and natural resources management.

On the other hand, responsibilities for malnutrition screening or treatments for these activities are basically considered as the domains for health extension agents working under the ministry of health. Unfortunately, health extension agents are preoccupied with such advisory services as family planning, personal and environmental sanitation with very scanty attentions to nutrition education. Furthermore, our evidence also show that these health extension agents are characterized by limited knowledge in the nutrition concept, absence of decision making power; lack of clear working guidelines; and serious funding constraints to undertake their activities. There is also very weak integrated activities between the agricultural DAs and health extension agents. Eventually, approaches and messages to improve the nutritional quality of food production, as well as nutrition education and awareness messages regarding dietary diversification become no one's responsibility in the rural Ethiopia.

## The extension system lack gender sensitivity

Current evidence shows that although female contribute 40-60% of agricultural labour in Ethiopian, they produce 23% less per hectare than their male counterparts (ATA, 2016). The same source attributes the productivity gap to the inability of women to access the necessary agricultural training, inputs, and services. This calls for gender sensitive extension approach in Ethiopia. Gender sensitive extension approach acknowledges the numerous obstacles to women's participation in identifying the problem, defining and implementing the potential solution and sets up mechanisms for lifting those obstacles. House to house extension service provision could be one form of such mechanisms. The approach also requires involvement of female extension agents who can better understand the genuine obstacles of the female headed households than the male extension agents. However, our result shows that house to house extension service is rarely provided in Yayo and Hurumu districts. If ever, the house to house extension service is given to those better off families and to some extent to those households who reside closer to accessible roads. The very poor, who are usually female headed households residing in remote areas, are systematically excluded from house to house extension services. The agricultural DAs are also the domains of male while health extension agents are reserved for females only.

## Policy Recommendations

### ***The need for diverse business skills***

Because the smallholder farmers are pursuing diverse income generating activities as traditional risk diversification strategy during extreme uncertainty, they need to be equipped with diverse business skills. Agriculture should be considered as one pathway out of poverty; but not as the only one. Thus, ATVETs need to equip agricultural DAs with diverse skills, not just specialists in specific field of a study. There is urgent need to train and deploy generalist DAs with diverse skills to pass over to the smallholder farmers. Thus, ATVETs have to train a mix of different skills needed to address multiple livelihood options.

### ***Deployment of development agents (DAs)***

Each positions for DAs need to be immediately filled when someone is promoted or leave the post for any reasons. Furthermore, there has to be a results based evaluation and reward system so as to motivate and retain the DAs. The government ought to consider training and deploying of both male and female DAs; not just only the males.

### ***Upgrade Farmers Training centers (FTC)***

Government need to allocate sufficient budget to strengthen FTCs with the necessary equipments and infrastructures. Moreover, DAs with diverse practical and soft skills need to be deployed at each FTC. There has to be a results based monitoring and evaluation system at each FTC so as to reward best performing employees.

## Policy Recommendations

### **Farmers' networking system**

The government ought not use farmers networking system as means for political ends. The networking system need to be established based on the principle of bottom up in which the farmers will select their own team mates without any political interference. And the system must be seen as means to strengthen the human agency of farmers with the aim to promote their collective and collaborative decision making powers. Furthermore, the model farmers need to be selected based on results and the selection criteria has to be clear and transparent.

### **Farmers' cooperative unions**

The farmers' cooperative unions has never provided the right technologies at the right time and price. Thus, the government need to consider liberalizing the agricultural technology supplies so that farmers will have alternative sources to choose from. This will also create competition among different technology suppliers. The more competition, the more the unions will be responsive for the farmers genuine needs. The farmers' cooperatives unions need to be led by professionals rather than political nominees. Then, the farmers' cooperatives unions must compete with other suppliers to supply right technological packages at right prices and right time, including technologies required for the production of vegetables and fruits.

### **Make agriculture gender sensitive**

The DAs need to consider house to house extension services provision at least to women headed households and some people with disabilities. The extension service provision must address peculiar challenges and opportunities of women in agriculture. Government has to also consider training and deploying of female agricultural DAs.

## Further reading

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FGG This policy brief was prepared by Dr Admassu Tesso Huluka; Addis Ababa, Ethiopia and Dr Gudrun Keding ; NutriHAF c/o ZEF, Genscherallee. 3, 53113 Bonn, Germany [www.zef.de/project/NutriHAF-Africa](http://www.zef.de/project/NutriHAF-Africa)

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