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MISSING ELEMENTS IN AGRICULTURAL TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING POLICY IMPLEMENTATIONS IN ETHIOPIA: EMPIRICAL EVIDENCES FROM ANGOLELA AND KUYU DISTRICTS

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Abstract

Ethiopia introduced a wide range of socioeconomic development strategies, programs and practices since 1991. One of these is Agricultural Technical and Vocational Education and Training (ATVET) program that aimed at producing technicians who are capable to contribute to sustainable agricultural development in Ethiopia. The objective of this study was, therefore, to assess the contribution of ATVET graduates in improving agricultural productivity and the farmers' livelihoods. A blend of qualitative and quantitative data collection and analytical techniques were employed in this research. The study findings indicate that the role of ATVET in technology transfer, productivity enhancement, agricultural commercialization, rural economic growth and environmental protection is vital. However, its realization has been constrained by several adverse factors such as graduates' lack of practical skills and the stamina to work in rural areas, farmers' attitude towards rural development agents (DAs), weak industry-ATVET college linkage, and poor administrative support to DAs. The study concludes that there is a need for tailored ATVET curriculum development and strong college-industry linkages to realize the immense role of ATVET program in Ethiopia.

Keywords: Technical And Vocational Education, Development Agent, Agriculture, Angolela, Kuyu.

INTRODUCTION

The National Technical and Vocational Education and Training (TVET) Strategy of Ethiopia attests that TVET programs seek to create competent and self-reliant citizens to contribute to the overall socioeconomic development of the country, thus improving the livelihoods of all Ethiopians and sustainably reducing poverty. The National TVET Qualification Framework (NTQF) also emphasizes the TVET program to be wage-and-self-employment-oriented, demand-driven and outcome based, and thus appropriate to address the sustainable development needs of the Ethiopian economy. The TVET program is targeting a paradigm change putting quality and relevance as its first priority. This is because, as indicated in NTQF (2010), an outcome-based TVET system creates ways for the fair recognition of the wide range of formal, non-formal and informal trainings and learning, hence opening access to qualifications for previously neglected target groups, such as smallholder farmers. TVET envisaged increasing chances of an occupational career, boosting productivity and creating options for further training and employment opportunity.

As a vital component of the general TVET program, Ethiopian Agricultural Technical and Vocational Education and Training (ATVET) targets to immensely contribute to the national mission of 'Creating a modern and a highly productive agricultural system that uses a more advanced technology which enables the society to get rid of poverty.' The ATVET system is geared towards improving the competitiveness and sustainable development of the agricultural sector through integrated demand-driven and competence based ATVET systems and producing qualified, competent and responsible workforce. The training program is aiming at producing rural-targeting personnel in animal science, plant science, animal health, natural resource management and cooperative promotion.

However, effective implementation of the ATVET strategy faced lots of problems which could be related to limited funding to provide quality training; lack of practical skill and experience and lack of stamina to work in rural areas among graduates; high turnover of graduates; weak industry-TVET college as well as stakeholders linkage; lack of startup capital to start own agribusinesses after graduation; low level acceptance of the graduates, (commonly known as development agents /DAs/) among smallholder farmers; and poor infrastructure in rural areas. These challenges, no doubt, blurred the high political commitment of the government to improve agricultural production and productivity. Hence, all the prevailing facts and the challenges to the ATVET program in Ethiopia call for a well-thought-out and well-advised implementation strategy so as to renovate the country's economic base from the existing resource-poor and rain-fed traditional smallholders agriculture to more productive agriculture in order to remedy the existing rural development challenges. In addition, the roles of concerned bodies that include the Government, civil society organizations (CSOs), non-governmental organizations (NGOs) and development partners working on ATVET and rural development in Ethiopia need to be assessed to enhance their roles in the enhancement of ATVET program in the country.

The overriding aim of this research was to carry out an assessment on the collaboration, engagement and contribution of ATVET graduates in the advancement of agricultural production systems and productivity thereby recommending solutions and directions on the possible roles and gaps of National ATVET program in Ethiopia. More specifically, the research aspires to assess the type of trainings provided in ATVET colleges; assess lessons learned from the past experiences and achievements of ATVET program in imparting practical skills and theoretical knowledge in agricultural practices; identify and describe strengths, weaknesses and challenges of ATVET graduates; and forward recommendations to strengthen the participation of ATVET graduates for the advancement of agricultural productivity.

METHODS AND MATERIALS

Cross-sectional design was mainly employed in this study as it is best suited to studies aimed at finding out the prevalence of a phenomenon or problem by taking a cross-section of the population at the time of the study. This study employed a hybrid of exploratory and concurrent triangulation mixed methods design. In a two phase mixed methods exploratory design, the results of the qualitative method were used in the development of a survey instrument with the view to explore the phenomenon in-depth and to identify important variables. In the validating quantitative data model of the triangulation variant mixed methods design, attempt was made to include open-ended qualitative questions with the quantitative survey instrument that was used to validate, expand, interpret and embellish the quantitative survey findings. The qualitative data were used to describe an aspect of the issues that cannot be easily quantified. The concurrent embedded model was also employed to study different sample groups such as the TVET graduates, beneficiary farmers and experts.

The study employed different sampling designs, both probability and non-probability, for a better understanding of the role of TVET on agricultural transformation in Ethiopia. The inclusion of the geographical area units of analysis (*weredas*) was purposive. Likewise, selection of respondents for the in-depth interview that is of qualitative nature was also purposive. On the other hand, the study made use of simple random sampling design to obtain survey data from the TVET graduates.

To meet the intended objectives, the researchers principally collected, reviewed, assessed and compiled reports/documents related to the educational system of Ethiopia especially on the TVET and of agricultural research outputs. Primary data were collected from the graduates, experts, officers and beneficiary farmers found in the selected two *woredas* (districts) in Oromia and Amhara regions.

Key individuals having special information about the issues under survey were also contacted. This focused on organizing formal interview with the aim to facilitate open interaction between the key informants and the researchers through inviting key figures in the respective institutions relevant for the issue under discussion to participate in open dialogue forum. The key informants were *woreda* administrators, heads of *woreda* agricultural bureaus, heads of *woreda* investment bureaus, heads of *woreda* education bureaus, TVET graduates, *kebele* development agents and the farmers. The researchers interviewed the respondents based on predesigned probing questions having communal interest of public concern in relation with the issue under survey. The interview was done face-to-face with the respondents.

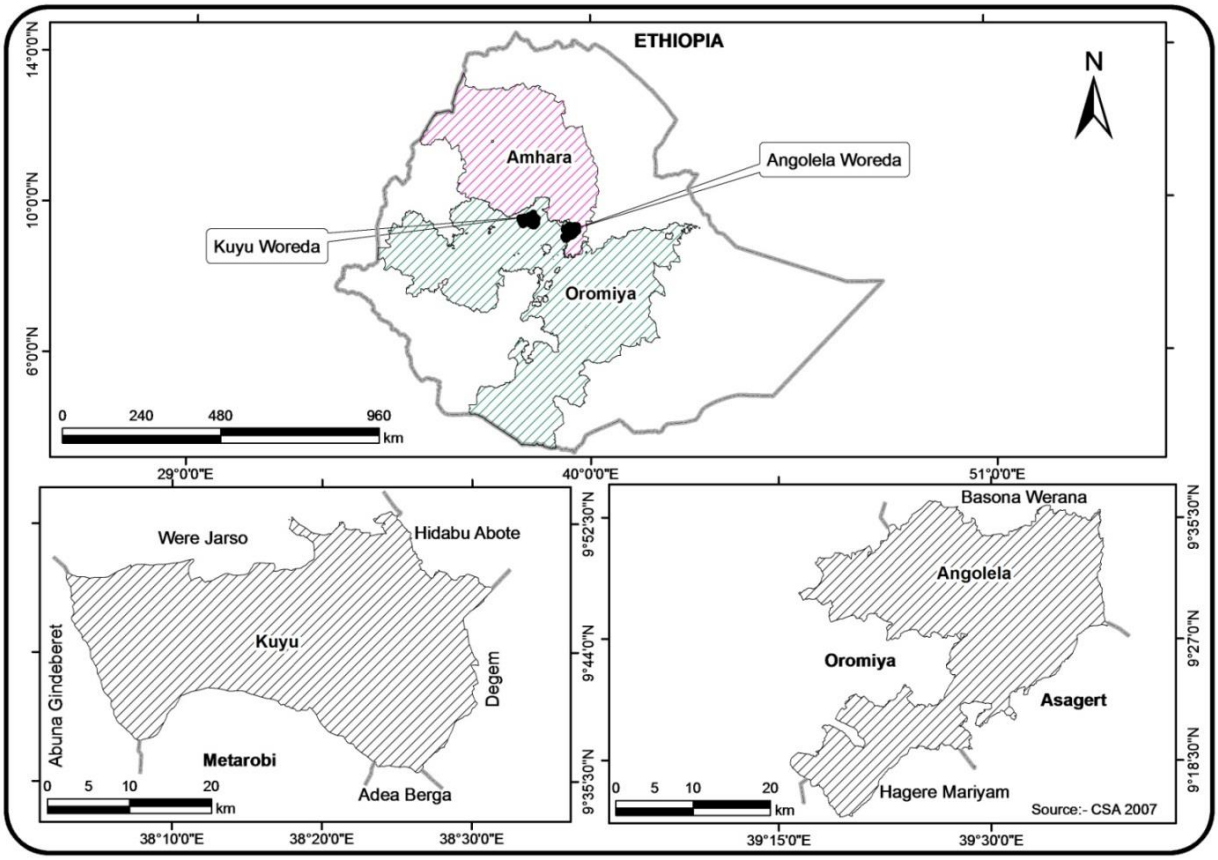

Figure 1: Study *woredas* in their national and regional settings

Fieldworks were carried out in two *woredas* selected from Oromia and Amhara regions. Kuyu *Woreda* of North Shewa, Oromia National Regional State, and Angolela *Woreda* of North Shewa, Amhara National Regional State were selected for this study (See Figure 1).

The data analysis has taken the form of interpretive and descriptive methods. This involved describing key findings and state of affairs uncovered from the data while interpretive analysis focused on providing meanings, explanations, perceptions or causal relationship from the findings. The quasi-quantitative data analysis involved statistical techniques in the form of descriptive analysis focusing on numbers, frequencies, averages, proportions and ratios.

THE ORIGIN, DEVELOPMENT AND CONTRIBUTION OF TVET IN ETHIOPIA

Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge and skills for the world of work. At different times, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Cooperative Training, Vocational Education, Technical Education, Technical-Vocational Education, Occupational Education, Vocational Education and Training, Professional and Vocational Education, Career and Technical Education, Workforce Education, and Workplace Education (http://www.unevoc.unesco.org). Technical and Vocational Education and Training is considered as an education process that involves the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge related to occupations in various sectors of economic and social life. It is supposed to prepare learners for jobs that are based on manual or practical activities related to specific occupation or vocation in which the learner participates (USAID, 2014)

TVET institutions are understood as instruments that accelerate the sustainable socioeconomic developmental endeavors of Ethiopia. The TVET colleges are supposed to capacitate the ability of micro and small enterprise (MSE), produce skilled man power on the developmental needs of the country, and produce and transfer technology to MSE in an attempt to substitute import and reduce expenditure of foreign currency. TVETs are also regarded as strategic institutions in the implementation of the country's employment policy and strategy by providing support for the private sector and MSEs.

In the light of the multidimensional roles of the TVETs, these-days the country has formulated clear objectives that are likely to be met. The general objective of the National TVET Strategy is to create a competent, motivated, adaptable and innovative workforce in Ethiopia contributing to poverty reduction and sustainable social and economic development through facilitating demand-driven, high quality technical and vocational education and training, relevant to all sectors of the economy, at all levels and to all people.

The TVET strategy outlines prominent guiding principles which include the consideration of responding to the competence needs and qualification requirements in the labour market; striving for the highest quality and relevance of TVET provisions; increasing access to learning opportunities for all target groups while ensuring quality; creating the possibilities of career progression and continuation of learners; responding to the changing occupational requirement and accommodating different demands of various groups; lifelong learning that extends opportunities for all-time learning; providing access to females to all TVET programs; and contributing to environmental protection. The FDRE has produced a basic legal document laying down ground rules for the provision of TVET services in Proclamation No. 391/2004. A TVET proclamation was promulgated in 2004 aimed at establishing a uniform system for the determination of levels of competence and accreditation of training institutions and for the certification of trainees.

With the implementation of the National TVET Strategy of 2008, occupational standards were developed in consultation with stakeholders and competence tests have been given for graduates so that they can engage in the industry or continue their study to a higher level if they successfully pass the test. Technical and Vocational Education and Training Agency was established in 2011to provide leadership and to prescribe standards as regards TVET nationally. According to the Education and Training

Policy (ETP), the formal TVET system of the country requires completion of a tenth-grade education to obtain certificate, diploma and advanced diploma upon completion of the levels 10+1, 10+2 or 10+3 of the TVT program. Despite the enormous expansion of formal TVET program, it only caters for less than 3% of the relevant age group. Enrolment figures in formal TVET programmes show that girls are over proportionately represented in commerce and typical female occupations such as textiles and hospitality, and underrepresented in traditional technical occupations.

Junior technical and vocational training aims towards training the youth who have completed primary education and it consist of 80 percent of practical and 20 percent of theoretical training to prepare middle-level skilled manpower in various professions. Admission for middle-level training requires completion of general secondary education and willingness and inclination to be trained. Similarly, middle-level technical and vocational education is designed to be 70 percent practical and 30 percent theoretical where the language used for this level of training should be English.

Agriculture is the dominant sector to support economic growth and poverty alleviation in Ethiopia. Sustainable development, therefore, has to involve the transformation of the traditional and subsistence agriculture to one that is modern and market-oriented. Modernizing agriculture calls for technical and vocational colleges or institutes that produce skilled personnel who can manage farms and production units, run processing enterprises, service market chains, manage and repair farm and processing machinery, monitor food quality and safety issues, and support farmers in assessing the suitability of a particular innovation. The necessary skills include veterinary training, business and cooperative services, knowledge of post-harvest techniques, as well as more general soil and water conservation.

The Federal Ministry of Agriculture and Natural Resources (MoANR) runs 5 ATVET colleges (Agarfa, Alage, Ardaita, Gewane and Mizan) while many other TVETs are managed by the regional agricultural bureaus. MoANR enrolled over 3,000 trainees in 2015/16 at federal level. The major trainings areas are animal science, plant science, natural resources management, animal health and co-operatives. In addition, agricultural technical-vocational education and training institutions are also entrusted with the responsibility of imparting behavioral skills such as teamwork, diligence, creativity and entrepreneurship. In fact, public and private entities in agriculture also require the service of educated and trained technicians to undertake agribusiness and the adaptation of advanced technology for producing, processing, and distributing agricultural goods and services and form links in the value chain. Theses technicians have hands-on skills and capabilities that farmers value most.

ATVET programs can reach populations that do have little access to the formal education system especially in the rural areas where levels of primary education are lower than in urban areas, and is also important for women (FAO, 2010 in Jones, 2014). Such colleges are often located close to the smallholder farming areas where rural youth and women tend to be an overlooked and underemployed human resource. The ATVETs were established primarily for a large scale training of rural development agents (DAs).

As indicated hereinbefore, Ethiopia's development strategy focuses on modernizing and commercializing the agricultural sector. Modern agriculture emphasizes on productivity, value chain and agribusiness which is geared to the ever increasing urban populations or, in the case of high-value crops, for the international markets. An increase in productivity demands intensive farming and sustainability in production that should be assisted with knowledgeable and skilled agricultural personnel as the modern agricultural sector is quite knowledge intensive. Skilled agricultural technical, vocational education and training graduates are also presumed to have the potential to be self-employed entrepreneurs who, in turn, create rural employment and serve as role models for farmers and the rural youth.

Researchers argue that skills development agenda in rural areas need to go beyond agriculture and incorporate a range of life and vocational skills related to off-farm employment. Likewise, farming has to be more productive, profitable, sustainable and resilient to sustainable agricultural intensification. Farmers need to develop an understanding of how agro-ecological processes work in producing a range of different crops and livestock; strengthen their capacity to draw on scientific principles and synthesize these with their own traditional knowledge for sustainable intensification (Heinemann, 2011).

In many developing countries, such as Ethiopia, educational syllabuses used to be urban-based. Nevertheless, if farming is to be a modern, potentially profitable venture, it has to be given prime importance and addressed in the educational system so that it also addresses issues of environmental management and climate change. Agriculture should not be considered an occupation of last choice practiced only when all other opportunities have been exhausted (Heinemann, 2011).

The implementation of the TVET is encountering some difficulties partly due to lack of cooperation/integration between the ministries of Agriculture and Education, federal and regional governments, regional and local government offices, and the farming community and/or the local needs. The private sector has little incentive to engage in ATVET programs. According to USAID (2014), other principal challenges of TVET programs include under-funding, shortage of sufficient TVET instructors, inefficiency and ineffectiveness reflected in graduates unemployment and wastage of resources due to underutilization of equipment, and unsuccessful attachment period mainly due to lack of cooperation from employers.

International Labor Organization (ILO) study cited in FDRE (2014) pointed out that although linkages exist between TVET institutions and the industries they are supposed to serve and collaborate with, the full potential has not yet been utilized, and that trainees occasionally face limited cooperative training conditions. Moreover, trainees in some TVET institutions tend to encounter poor quality and inadequate capacity of trainers in the TVET institutions, who often lack experience and practical know-how and are unfamiliar with new technologies and equipment. There has also been limited knowledge in the TVET institutions on how to link with industries in order to find out their competent labor demands, where the future market trends will be, and what basic competencies are required in order to avoid mismatch of competencies.

Some argue that ATVETs tend to narrowly focus on technical skills (with limited emphasis to psycho-social setting) indicating that employers expect not only technical skills but also general foundation from which employees can learn on the job and

make connections to other related fields. Likewise, there is a tendency to take an overly narrow view of agricultural jobs and focus only on training in agricultural production, rather than situating agriculture in the broader context of rural development and agricultural systems (Vandenbosch, 2006 in Jones, 2014).

There are instances where ATVETs lack of internal dynamism or response to changing rural and agricultural realities perhaps associated with the priority on science-based agricultural development over skills-based training, lead to increasingly irrelevant curricula (Atchoarena and Gasperini, 2003 in Jones, 2014). Others point out that there still is simply not enough jobs to absorb the number of people with access to ATVET (Vandenbosch, 2006 in Jones, 2014)

Migration is also presented as a challenge of ATVETs. Trainers come and go as better job opportunities avail elsewhere, leaving little continuity in programs (World Bank, 2012). Trainees have also the orientation toward labor markets outside of agriculture. ATVET will have to compete for students and future educators with urban employment opportunities (AfDB, 2002 in Jones, 2014). In both developed and developing countries there is general stigma associated with vocational education and non-traditional certification. ATVEs tend to be a less-desirable educational option than more traditional post-secondary programs (Chamel and Hartl, 2011 in Jones, 2014).

Currently there is very little reliable data on TVET graduates other than the inconsistent enrolment data from Ministry of Education (MoE) and Federal TVET Agency. Reliable data is unavailable even at the study *woredas*. There has been a general lack of tracking the trainees as they leave both government and private TVET institutions, and no real data exist to follow the paths of employment, self-employment or unemployment. The Federal TVET Agency (FTA) doesn't have documented data about where the certified trainees are or what their employability status is like. According to FDRE (2014), there have been attempts at performing smaller tracer studies by individual TVET institutions. Training-to-work transition services, such as job counseling, orientations on job search, referrals or job placements, while planned to be included in TVET services for their certified trainees, are currently not functioning. There is a need for information on the whereabouts of the TVET graduates in terms of their current work place against their trainings, and the link between the TVET institutions and the world of work by policy makers, planners, employers, and the research community. This similar source, indicate that the Federal TVET Agency enrolled trainees in 2014 reached 401,041, of which 49.8% were females. Enrollment has experienced an average annual growth rate of 25-30% since 2007/8, except in 2010/11 where there was a decline by 14%.

Although the Ethiopian government has been focusing on labor intensive production and service activities, and it has been attempting to attract prospective investors in these sectors, the much awaited for employment opportunities are distant. There is also poor implementation of linking TVET institutions with different industries around their economic corridor in jointly planning, implementing and evaluating a joint action plan with the respective industries. Similarly, the capacity of the Ethiopian economy is limited to absorb the growing labour force entering the market at various levels of the system thereby adversely affecting the TVET graduates.

RESULTS AND DISCUSSIONS

Perception of the farmers towards ATVET graduates

In this study, attempts were made to look into the perception of rural farming households towards their children who attended formal education and/or graduated with a degree/diploma, perhaps in agriculture, and decide to get back to farming business. As a result, questions were asked for the farmers to investigate what they do feel when their graduate child comeback to farming livelihoods and attempt to modernize/improve the farming systems. Most farmers responded that it is a waste of time to train a person who ends up in farming. Most of them agree that farming does not need training. They do not want to see their educated children to go back to farming. They rather want them to go to urban areas and engage in other urban-based activities such as office works and commerce. One key respondent, for example, exclaimed 'I want my child to be a judge or a medical doctor, not farm worker; knuckling down in the soil should end at me'.

Conversely, the agricultural and education policy of the country gives emphasis in bringing structural transformation of the economy by modernizing agriculture. However, this research revealed that the policy is not deeply entrenched in the farming communities thereby calling for intensive advocacy work.

In Kuyu *Woreda*, ten beneficiary farmers were contacted to look into their views towards the role of TVET graduates in rural areas. All of them were mixed subsistence farmers in that they produce both crops and animals only to satisfy the immediate needs of their family. Though many youngsters have gone to TVET schools, almost all the respondent farmers in the area use traditional farming methods and tools. Oxen are the single most important traction power in the area. Most farmers produce cereals (like *teff*, sorghum, wheat, maize and barley). They also raise livestock (cattle, sheep & goat) and beast of burden (such as donkey, mule and horse). In fact, a few of the farmers in the area (those who don't have oxen) practice hoeing to prepare their farmland.

All the contacted farmers in Kuyu *Woreda* lived in the area for more than 15 years, and they have access to DA service in their farming livelihoods. They are also unhappy towards rural development agents (DAs). All the respondents complain that DAs are not adequately supporting them. DAs do not want to come to their farms frequently. They rather prefer to stay in the town and try to get them on market-days only to order them to buy fertilizers, collect land taxes, etc. In most cases the DAs are working more as political cadres, rather than agricultural development agents according to the respondents. They are more active in preaching politics than agricultural practices. A case in point is the words of one of the key informant farmers in Kuyu *Woreda*:

> *...some DAs '...do not want to take off their shoes and engage in demonstrating practical farming activities. They even do not want to come to our farm fields during rainy seasons when the ground becomes muddy, the time that we badly need their support. They really lack the determination to do so. They are always gabbling in the town with their*

friends in other profession, such as teachers, rather than staying with farmers toiling in rural areas. At the end of the day they produce fake reports to woreda sector offices. …'

The farmers both in Kuyu and Angolela *Woredas* were not happy in the services rendered to them from DAs. According to the respondents, most DAs have no stamina to bring about changes in agricultural activities. They lack passion in farming. Some of them are grown up in urban areas and have no interest in rural issues. They are no better than the local farmers in practical knowledge. Some of them even try to force the farmers to implement inharmonious and out of place farming activities as a result of which conflicts arise between DAs and the local farmers. Minor disagreements occur always on issues related to ways and time of sowing, field draining, quantity of seeds and fertilizers per unit of farmland, etc. Generally, the farmers argue that DAs lack local knowledge in farming. The farmers strongly comment that potential DAs should be selected from the local community, the training must integrate local/ indigenous and scientific knowledge, and DAs must be well aware of the fact that local knowledge is also vital to enhance agricultural productivity in the area.

According to the respondents, it is of little use to train DAs. Some kind of change in policy and practice must be in place in order to enhance the role of DAs in agricultural activities. 'Currently, DAs are not significantly contributing to agricultural productively. Rather they are wasting our times nagging us about politics (issue like terrorism, religious tolerance, developmental state, etc). They do this repeatedly, day-to-day… These things, no doubt, have little to do with farming…' says a key informant farmer from Angolela *Woreda'*.

Most of the farmers in both *woredas* argue that the traditional farming that they have at hand does not need any training. The farmers argue that they know it more than anybody can do. What they want is how to modernize their farming systems and increase productivity, not theoretically but practically being in their farm field. What the DAs are doing now is more of theoretical and even nagging.

Generally, the rural families in both *woredas* do not want to see their educated children to be engaged in farming. They rather encourage their children to move to urban areas and engage in non-agricultural pursuits. One key respondent, for example, exclaimed 'I want my child to be a judge or doctor, not farmworker. I don't want him to toil with the earth; nor to share the miniscule land plots that I have. This miserable rural life has to end at me.'

All the respondents in both *woredas* assent that the role of TVET is vital for their agricultural activities, if it has been implemented as it was talked/planned. A case in point is an argument of a key informant interview at Kuyu *Woreda* indicates that the farmers need an agro-technologist who can improve their ploughshares, sickles, axes, and other farm tools. They need a clued-up person who can provide them with drought resistant and fast-maturing species (both crops and animals). Generally, they need someone who can unburden them from their backbreaking, but nonpaying, farming activities. Not someone who spends their time nagging us trivially.

Views of the woreda level experts and administrators towards TVET graduates

Five experts and/or administers were interviewed in Kuyu *Woreda*. Most of them were selected from agricultural bureaus. These were productive safety net program (PSNP) public officer; agricultural extension works process owner, natural resource management process owner, human resource development process owner and food security process owner. In case of Angolela, four concerned government offices were contacted for interview to look into the contribution of TVET graduates for advancement of agricultural productivity in Angolela *Woreda*. Hence, experts and heads of bureaus of micro and small enterprises, Chacha Town Administration, Education Bureau, and Bureau of Agricultural were interviewed.

All the experts and heads of bureaus are of the same mind in that TVET graduates can play vital roles in economic transformation in our country in general and in the selected *woredas* in particular. According to these informants, TVET graduates can contribute greatly to the overall sustainable economic development of the *woredas* and to agricultural enhancement in particular. But they are not contributing as per the expectation of the government owing to several factors such as lack of production materials, startup capital, and diminishing size of farmland. There is also no adequate support to the graduates from the government side. No one is tracking the performances of the graduates. Some graduates also lack stamina to bring about changes to the livelihoods of the farming community. They do not want to start from the bottom. Rather they want to join the bureaucratic system of the government observing that the livelihoods of their classmates who joined the bureaucracy is changing swiftly may be because of the existing high level bureaucratic corruption at present.

> Sometimes the graduates cannot get job as soon as they graduate as a result of which they may put out of their mind what they have learnt in TVET Colleges. The difference in machineries they used in training centers and in the market may also cause challenges to the graduates. According to these respondents, sector offices in the *woredas* try to support the graduates to stay in their family's business particularly in rural areas. But graduates from agricultural TVETs have no interest in this regard. They rather want to abandon rural areas and search jobs in urban areas; be it professional or not. Even the sector offices encourage them to enhance the existing small-scale irrigation systems on their family's farmland. 'We want them to improve the traditional farm utensils like ploughshare, sickle, knife, axe, butcher knife, and machete. But a few of them are interested in doing so' says a key informant form one of the sector offices in Angolela *Woreda*.

The data obtained from Kuyu *Woreda* Agricultural Office indicates that there are about 71 DAs in the *woreda* at present. This means about 4 DAs are there in each *kebele,* as the *woreda* has 23 rural *kebeles*. However, the respondents point out that there is no TVET graduate who attempted to establish/create his/her business in rural areas related to his/her trainings. No one wants to go back to its family's farming business. They believe that farming for an educated fellow is a humiliating job. So the contribution of TVET graduates in this regard is very negligible. The causes may be graduates' lack of interest, scarcity of land, lack of basic facilities in rural areas, and the undesirable socio-psychological setup of the graduates towards rural life.

The interviewed officials and experts in each *woreda*, however, are of the opinion that TVET has the potential to improve the agricultural practices and productivity of the farmers. It can play a lot in technology transfer related to farmland preparation, sowing/seeding, draining, harvesting, and post-harvest management. The problem is when it comes to practice. For one thing, the government should work intensively on attitude of the potential DA trainers. They should be aware that rural areas are sources of economic development and rural business is lucrative. If rural areas are developed, no doubt, productivity will boost, and food insecurity will be history. Secondly, farmers must be well aware of the importance of modern farming practices insustainable agricultural productivity enhancement, and this can be done if and only if they are supported by well-trained experts, DAs, so that they can integrate their indigenous knowledge with the improved technology to bring about better changes in their agricultural practices.

All the interviewed experts are of the same mind in that the existing situation is not encouraging for TVET graduates to start their business related to what they have gained in TVET center. Some of the challenges for the graduates are lack of startup capital, production sheds, market, raw materials and farmland. As a result, TVET graduates are not contributing as per the expectation of the government. There is also no adequate support to the graduates from the government side. No one is tracking the performances of the graduates. Similar to what the respondents said in Angolela, some graduates also lack stamina to bring about changes to their livelihoods in Kuyu *Woreda*. They want to join the bureaucratic system of the government with the 'get-rich-quick' mindset.

The FTCs (Farmers Training Centers) were found to be underequipped and inadequately staffed. Had it been, the graduates could have joined the sector soon before they forget what they have learnt in the TVET centers. The machineries they have been using during their trainings are virtually nonexistent to work with in both study areas: Kuyu and Angolela.

The respondent experts and officials in both *woredas* raise a critical question that some instructors in TVET colleges have no adequate practical knowledge as they do in theoretical aspects. This is reflected in the performances of the graduates in that their knowledge in practical aspect is trivial as compared to what the farmers do by their intelligence obtained through long-term experiences. This discourages the farmers to approach DAs and gain information and practical skills from the DAs. The graduates also develop fear to start their own business owing to fear of failures. They may not be competent in market if the training lacks quality. A key informant interviewee from Kuyu *Woreda* argues 'Graduates inform us that some trainers in TVET College have no adequate practical knowledge; rather they tend towards theoretical aspects. As a result the trainees grasp inconsequential knowledge about the field of study they are specializing. Hence, graduates may have certificates; but no adequate practical knowledge.' This stands in sharp contrast to the TVET curriculum where graduates are supposed to have more practical skills than the theoretical knowledge component.

Woreda level experts and officials in both Angolela and Kuyu strongly recommend rural electrification, small town development and industrialization as a key input for rural economic transformation and sustainable development. Similarly, a key informant that the research team contacted at Kuyu *Woreda* also strongly recommended rural electrification as a vital input

to enhance the role of TVET graduates in rural areas. He argues that rural areas should be adequately provided with electric power, if the government needs to keep the TVET graduates in their family's business. The problem now is '*keferesu gariwu kedeme'(a cart being ahead of a horse'*). The respondents argue that, as it is clearly indicated in the TVET policy directive, the main target of TVET is to help the industrialization attempts of the country both in urban and rural areas. But now, there is no electric supply in rural areas. So how do graduates of metal fabrication, for example, improve their family's traditional ploughshare where there is no power supply to forge the metal? So how can the graduates operate in rural areas where there are no such facilities? Again manufacturing industries should be located in rural areas and in small towns, too, not in large urban areas alone. If industries are located in rural areas, it may have double roles. On the one hand it helps the TVET graduates stay in rural areas and support their family's business in close proximity. On the other hand the industrial technologies may trickle down to the rural traditional practices. This will in turn have a multiplier effect on the rural economy.

By and large, the interviewed experts and heads of bureaus at *woreda* level recommended improved trainings at TVET colleges so as to enhance the role of TVET graduates to the rural economy and of sustainable socioeconomic development. Accordingly, demand driven or need-based trainings, continuous follow up to graduates of TVET, provision of adequate startup capital, awareness creation endeavors to the graduates and to the farming community, need-based and contextualized training manuals in the TVET colleges and local based trainings are instrumental for the success of TVET programs and of the graduates in the future.

Joblessness among TVET graduates

Jobless graduates of TVET were interviewed in both study areas: eight in Angolela *Woreda* and ten in Kuyu. They are graduates of Basic Surveying, Electrical Electronics Level 3, General Metal Fabrication (GMF), Furniture Making, Building and Electrical Installation (BEI), Bar Bending and Concreting (BBC), Garment, Information Technology (IT), Woodwork, and Natural Resources Management.

Most jobless graduates of TVET agree that TVET as a program is very necessary for sustainable development of Ethiopia. The problem lies in the proper implementation of the program. It has several problems from the very beginning of the recruitment of potential trainees to employment of the graduates. TVET by its very nature requires inborn quality. One has to be born to live in rural areas or appreciate arts, architecture, farming, herding and other technical pursuits. One has to have the dexterity and passion in bundling, designing, welding, and construction. So care should be taken in recruitment stage. Similarly, training needs care. At this stage, more attention should have been given to practical sessions. Adequate practical attachment should be given. Instructors must be passionate in technical aspects and need to have adequate and excellent knowledge in practical know-how.

In addition to these, the TVET jobless graduates argue that courses related to entrepreneurship, rural society, psychology and sociology could have been given adequately so as to enable the trainees understand rural life in depth. 'We graduated without

adequate knowledge and target…' says one of the jobless interviewees. The researchers have tried to look into the course catalog of TVET College and confirmed that the argument of the jobless graduates is justifiable. One should be well aware of the psychosocial setups and political economy of the rural society in not less than the technicalities of planting crops or herding animals or running machines of any kind.

All the jobless key informants from Angolela were grown-up in rural *kebeles* of the *woreda*. They responded that their aim was to live in urban areas, as the life in rural areas is 'boring and uninteresting.' When they were at elementary and high schools they were always thinking of urban life. They were bored of the poor facilities (such as lack of electricity, television, cinema, potable water, hotels and cafeterias, road, etc) in rural areas. A case in point is what one of the respondents said: 'Life in rural areas is boring and mind-numbing experience. It is better to be a shoe-shiner in Addis Ababa, rather than becoming a rich farmer in rural areas'.

In addition to the uninteresting living condition in rural areas, the scarcity of basic resources (such as land, livestock and water for irrigation) has forced the TVET graduates not to think back to rural life. Related to this, the words of one of the key informants have been translated as follows:

> *'My father has 6 children, a few cattle, and less than 1 hectare of farmland. Imagine what will happen if he tries to share out 1 hectare to six of us. In addition to scarcity, rural land in our area is extremely degraded. Even the nature of the rainfall is not reliable. So how can I think back to rural life amidst the scarcity of land there? Rather I am currently thinking of how I can move to any country better than Ethiopia, if there is any'*

Another key informant who was seeking job in the town of Garba Guracha argues:

> *'I know that the government wants us to go back to our family and enhance and modernize the rural economic system. But I do not have land. My family is very poor. The bureaucracy in rural areas is not welcoming. The society is also expecting me to work in urban-based business like bank, schools,…. Truly speaking it is also not of interest to live and work in rural areas. I think rural life and of farming is waste of time….'*

Relevance and quality of education in TVETs is also not to the standard according to the jobless graduates. Trainers may teach foreign-based theoretical concepts rather than local-based practical applications. Sometimes even the trainers may not know in practice what they theoretically teach. Sometimes they themselves may be confused and complicate things. So the trainees may graduate without adequate knowledge in some practical applications.

A case in point is the argument of a jobless key informant from Angolela:

> *'…most TVET trainings are meant for urban areas; not suitable for rural community. For example, look trainings like surveying, electricity, metal fabrication, furniture making, building, bar bending and concreting, garmenting and IT. What do the graduates of these trainings do in rural areas? So government must revise the curriculums of TVET and introduce*

those trainings that best fit to the current rural needs. I had the interest to live and work in rural areas. I graduated in bar bending and concerting. So what do I do in rural area? My field of study pushed me to Chacha town. Here I am a jobless searching for a job related to my training and experience. But you see there is no related job in this town. I am waiting for a good response from my uncle living in Addis Ababa to get me job there. If not I am planning to trek South Sudan. Who knows I may also turn out delinquent, if life continued unchanged…'

Similarly, one of the key respondents from Kuyu argues:

'I am unable to get job in fields related to my study. I failed to do so mainly because there is no vacancy in my field of study in this area. I studied surveying and no one needs it at this time in this area. It is impossible to start my own business in this field of study. What own business to start in surveying? I am very much confused and I am on a cross-road. I will keep on searching for job in government offices for sometimes. I do not have any option as I have no money, no well-off relative...'

Another key informant recounts his desperation as:

'I had good knowledge of bar bending. But now I put it out of my mind because I failed to get job though I tried many times. I tried to start a small business, but I couldn't get finance. Construction is not adequately available in our area...'

The words of another jobless key informant are:

'I graduated in natural resources management from ATVET College. My target was to be employed as a DA. But there is no vacancy in this woreda. I even tried to get job out of this woreda, but failed. I am thinking of starting my own agri-business, be it fattening or dairy or apiculture. How and where am I supposed to get a plot of land and finance? The situation in our woreda is not encouraging. There is no credit service. I even asked banks operating in this woreda for a loan. But they asked me collateral ..... Where to get it? So I am unable to practically show what I have learnt in the college. I could have been excellent beekeeper, but. ……'

Another key informant said:

'My dream to become a doctor or engineer or a university teacher was shattered when I failed the exam at grade 10. I graduate from TVET (Level 4) in agricultural related discipline. I have no interest to live and work in rural areas. I know that TVET program is vital to transform the country. But nothing is adequate in the college that I learned. Food is insufficient, practical attachment lacks proper coordination, some teachers lack practice and know-how….Generally, TVET program is good in principle, but the government should rework on it and care should be taken during selection, training, job assignment as well as provision of startup capital for the graduates…'

Yet, the key informants are of the same mind in that TVET is vital for those who have the interest and the startup capital. It is a good idea to alleviate poverty, transform the country from subsistence to commercialized agriculture, build an industrialized

country and sustain development. But TVET should take in to account the interest of the trainees. A kind of revolving fund should also be in place to enable the graduates of TVET engage in their own business.

TVET graduates engaged in their own/family agribusiness

The national TVET strategy clearly recognizes self-employment representing an important route into the labor market, especially in peri-urban and rural areas. The general objective of the National TVET Strategy is to create a competent, motivated, adaptable and innovative workforce in Ethiopia contributing to poverty reduction and sustainable social and economic development through facilitating demand-driven, high quality technical and vocational education and training, relevant to all sectors of the economy, at all levels and to all people. In line with this, for self-employed graduates to be successful, they need to be technically competent in their occupational fields, have basic business management skills, be entrepreneurs that are self-confident, and creative, who can do a genuine assessment of the market opportunities and of risks.

Against this background, however, the researchers found only five TVET graduates engaged in their own businesses: Two of them were found in Kuyu and other three in Angolela. They are graduates in Natural Resources Management, Construction Technology and Surveying.

Two of them were found engaged in agriculture in their family's land in rural areas. They did it only because they couldn't find employment opportunity. They are still ready to abandon their farming activities whenever they get another employment opportunity in urban areas. One of the respondents told the interviewers that the cereal they are producing is meant entirely for household consumption indicating that they are still engaged in subsistence farming.

The farmland management practices of TVET graduate farmers and their productivity is better as compared to other farmers in the area. This is because, says, one of the interviewees, 'The training we had in the TVET College helped us directly or indirectly to manage our farmlands and produce more than what the untrained farmers do in the area. Our performances are not the same by any means' said a TVET graduate in natural resource management. However, scarcity of farmland and water for irrigation, variability of rainfall, degraded farmland, lack of startup capital, and other socioeconomic drawbacks have been adversely affecting their endeavors.

The researchers tried to divulge why TVET graduates are not interested in starting their own business. The respondents underscored that the root causes are multiple and varied among areas. But psychological setup of the graduates and socioeconomic factors are found to be most determining factors. Graduates are not psychologically ready to go back to rural-based businesses as frequently described hereinbefore.

A TVET graduate working on his family's plot of land says:

'I am supporting my family in many ways to improve their farming systems and productivity. These include preparation of compost; proper use of farm inputs; ditch preparation and irrigation activities; post-harvest management; application of agrochemicals; natural resources management; saving and credit; biogas development and use; … However, my family is still not self-sufficient in food because of scarcity of land, rainfall variability, input scarcity, degraded land….'.

Like those of the agricultural bureau officials and experts, the entrepreneur respondents agree that in principle TVET program is vital to agricultural transformation in the area. If properly implemented, the program has the potential to augment and transform the rural economy on a sustainable basis. But in order to make it more contributive much more should be done starting from curriculum formulation and recruitment of the potential trainees.

Assessment of the role of DAs in the study areas

About 71 DAs are found working in the 23 rural *kebeles* in Kuyu *Woreda*. Twenty-one (16 males) of them were selected for questionnaire survey for this study. All the selected respondents properly filled and returned the questionnaire. They were found to be graduates of health extension, plant science, animal science and natural resources management. The average age of the respondents was 30 years. Fourteen (66.7%) of the respondents were married during the fieldwork. Their average year of service as a rural development agent (DA) is only 8 years, the maximum service being 16 years, and minimum service is 1 year.

The total number of DAs operating in Angolela is not clearly known. A questionnaire was distributed to 30 DAs. Twenty-six of the selected respondents properly filled and returned the questionnaire. They were found to be graduates of plant science (6), animal science (14) and natural resources management (6). The average age of the respondents is 29.5 years. Eleven (43.2%) of the respondents were married during the fieldwork. Their average year of service as a rural development agent (DA) is only 4 years, the maximum service being 8 years, and minimum service is 3 months. This indicates that the turnover is very high as compared to the case in Kuyu. Key informants from sector offices also confirm the fact that many DAs leave their jobs and join other urban-based businesses. Most of them are attending distance education classes in business fields (such as accounting, management and economics) or teaching stream with the major goal of abandoning their jobs and rural areas. Likewise, TVET was planned to be gender-sensitive and that all TVET opportunities will be equally accessible to females (MoE, 2008), though most of the respondents in this study appear to be males.

All the surveyed DAs in both *woredas* responded that they have never attempted to start their own business related to their trainings. Although 96.2% of them are originally from rural (agricultural) family, none of them have reported to have thought about either initiating their own businesses or enhancing their parents' agriculture. They rather preferred to attend distance education courses in non-agricultural fields aiming at urban-based occupations. In fact, many DAs leave their jobs and join other urban-based businesses.

Most respondents in both study areas said that the time spent on practical attachments was small. Most of them replied that the practical attachment was less than 30% of the total time allotted for training. The supervision was only superficial. In fact, most respondents (85.7%) from Kuyu and Angolela (88.5%) replied that they had access to adequate and up-to-date reading materials related to their fields of study. Similarly, most respondents (88.5%) from Angolela responded that they had access to sufficient and recent farm and practical materials to work with during their trainings at TVET College. About 96.2% of the respondents in Angolela responded that their instructors had no adequate practical and theoretical knowledge to impart practical knowledge while they were in the training institutes. Unlike the case in Angolela, only 2 (9.5%) of the surveyed DAs in Kuyu responded that they had access to sufficient and recent farm and practical materials to work with during their trainings at TVET College. About 42.9% DAs in Kuyu responded that their instructors had adequate knowledge to impart practical knowledge while they were in the training institutes. All the respondents from both study areas agree that they have not acquired all the necessary knowledge and skill in the TVET Colleges to contribute successfully to the intended target.

About 9.5% of the respondents in Kuyu replied that they are not satisfied with their profession as rural development agent. About 52.3% of them do not want to stay in rural areas as development agents as it is tiresome, distressing, degrading and nonpaying job. They consider working as a development agent is very challenging and prohibits them from personal development. The low salary and the poor working and living conditions in rural areas coupled with the social disrespect and political interference are some of the sources of their dissatisfaction

In case of Angolela, about 27% of the respondents replied that they are not satisfied with their profession as rural development agent. About 42.3% of them do not want to stay in rural areas as development agents. They consider working as a development agent is very challenging and prohibits from personal development. The major causes of their dissatisfaction are poor salary, daily travel throughout the rural *kebele*, insecure rural conditions, social disrespect, political interference, and inconsequential outputs in agricultural productivity.

CONCLUDING REMARKS AND THE WAY FORWARD

Ethiopia is a low-income, landlocked economy and has the second largest population in Africa; and yet it is also one of the few developing countries to record rapid economic growth in the early 21st century. Hence, as noted in Arkebe (2015), the high cost of acquiring new skills and the hesitation by industrialists in the face of perceived risk makes state promotion of infant industry an absolute necessity so that the structural transformation plays its utmost role in poverty reduction, technology transfer and sustainable economic growth and development. In fact, the selection of industries should be based on their contribution to the nation's economic interests and technological considerations as a result of which ATVET graduates could play an immense role in the process of agricultural transformation.

This research has briefly examined the contribution of ATVET graduates for advancement of agricultural productivity in Ethiopia with particular reference to two selected *woredas* in Oromia and Amhara Regional sates. The study has shed light on

the contribution of ATVET to agricultural enhancement and the existing challenges in the sector. The study shows that the role of TVET to structural transformation from agriculture to industrial sector is immense, and that it can play a great role in employment creation, technology transfer, poverty reduction and rural economic growth. As structural transformation requires a systematic leveraging of technologies and approaches as well as clear goals and vision so as to guide selection of technology, interventions and solutions, the role of ATVET graduates would be vital. By and large the research underscored that the contribution TVET in principle is considerable to the ongoing structural transformation from agriculture to industrial sector in Ethiopia. Its contribution to agricultural transformation and poverty reduction and sustainable development is found to be vital.

Therefore, policy makers and NGOs/CSOs are required to play vital roles in various ways so as to enable the ATVET program in Ethiopia to exceedingly contribute to the agricultural transformation process and sustainable economic growth of the country. It is highly recommendable to give superior attention to the program starting from curriculum development which should be more tailored and realistic. The trainings should be delivered through strengthening linkage between ATVET centres/colleges and local industries and farming companies. Recruitment and deployment of trainers could be another key area of concern so as to produce technicians who have full interest and the stamina to work in rural Ethiopia. In attempts of strengthening self-employment, problems like lack of sheds/farmyard and seed money need to be carefully handled. Above all, more should be done on scaling up best practices of the graduates; encouraging DAs to attend self-sponsored distance higher education and augment their knowledge levels; continuous and frequent on-job practical trainings to DAs; better rural electrification and road networking; adequate loan provision with minimum interest to TVET graduates; prevention of political interference in professional procedures; rewarding mechanisms for best achievers and/or model TVET graduates; and enhanced social acceptance and respect to agricultural TVET graduates.

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