ENHANCING SUSTAINABLE FOOD SECURITY IN NIGERIA THROUGH TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

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Abstract

The sole importance of Technical and Vocational Education and Training Program is to avail citizens the opportunity to acquire relevant knowledge, practical skills and attitudes for employment in a chosen trade or occupation. This is aimed at addressing the challenges of unemployment and job creation by skills development and training and food security. Nigeria over the years has dwelled only on its huge crude oil deposit, proceeds from which are being mismanaged and controlled by just few of its citizens. From reviewed literatures, agriculture which possess as a better substitute to oil has also suffered from years of mismanagement, poorly coined and implemented government policies and lack of basic infrastructure, which has reduced its contribution to Gross Domestic Product (GDP) drastically. Similarly, the Nigerian meteorological agency hinted a remarkable change in the country’s weather pattern in the last six decades which also has a great influence on food production. As Nigeria population is expected to increase astronomically in the near future (about 262 million by 2030) there is prediction of looming hunger and food insecurity. Consequently, agricultural activities must be done sustainably to meet future food demands. TVET therefore provides the required skills for improving the quality and output of the agrarian people while reducing poverty and enhance their livelihood. The African Union has identified agriculture and rural development as key priority areas for which technical and vocational training and skills development are crucial for economic and social development. This paper explores ways TVET can enhance food security in Nigeria, challenges and solutions.

Keywords: Agriculture, Economy, Food security, Nigeria, TVET

Introduction

Technical and vocational education and training is an all encompassing word used to define educational process which includes, acquiring knowledge about; technologies and sciences, practical skills and attitudes relating to occupations in various sectors of economic and human life. (FRN, 2004).

Technical education and Vocational education though sometimes used interchangeably are not the same. Vocational educations are program designed for skills acquisition at lower level of education. It focuses on specific vocations for entry into defined workplace. While Technical education is not vocation based but provides general technical knowledge (Reko and Maxwell, 2016). Apugu & Andural (2007) and Momoh, (2012) defined vocational education as a form of education that prepares people for employment in recognized occupation. He further defines technical education as a post-secondary vocational training program which the major purpose is the production of technicians.

Technical and Vocational Education and Training (TVET) education has evolved over the years and it is thought to be as old as the formal education because they go side by side (Uwaifo, 2009). To reiterate the importance of Technical and Vocational Education and Training (TVET), The United Nations Economic Commission for Africa and UNESCO sponsored an Addis Ababa Conference of African States recommended that governments at all levels must ensure that adequate proportion of their populace receives technical skills required for economic development (Emmanuel, 2014).

Nigeria over the years has dwelled only on its huge crude oil deposit as the major source of revenue. Regrettably, the proceeds from the oil deposit are being mismanaged and a substantial part of it is controlled by just few of its citizens (Suberu, Ajala, Akande, & Olure-Bank, 2015).

Suberu et al. (2015) opined that agriculture which possess as a better substitute to oil has also suffered from years of mismanagement, poorly coined and implemented government policies and lack of basic infrastructure, this has
reduced its contribution to about 26.8% with reduction in exportation of cocoa, groundnuts (peanuts), rubber, and palm oil.

As Nigeria population is expected to increase astronomically in the near future (about 262 million by 2030), there is prediction of looming hunger and food insecurity. Consequently, agricultural activities must be done sustainably using TVET to meet future food demands (International Organization for Migration (IOM), 2014).

**TVET and Poverty Reduction**

TVET play a pivot role in poverty reduction, increased growth, productivity and innovation which primarily come from informal sector (Fluitman, 2002). TVET orchestrate the required skills for improving quality, output, occupational safety, and variety which helps to reduce poverty and enhance the livelihood of the agrarian people. TVET helps to strengthen the knowledge of the trainee about the agriculture sector, good governance and rural organizations. It also leads to increased productivity in agriculture-related sectors, links the poor rural population to profitable income generating activities, and attracts young people to agricultural and rural futures (Brooks *et al.*, 2013).

**Sustainable Agriculture**

Sustainable farming is the farming system that is closest to natural process, minimizes waste, does less damage to the environment and yet it’s still profitable (Than, 2017). When a farm system is sustainable, the product of the farm will be nutritious, and not contaminated by substance that maybe unsafe for humans to consume. These systems are made to be friendly to our environment and ecosystem. An eco-friendly environment is achieved by avoiding the use of dangerous pesticides i.e. organophosphates, synthetic compound fertilizers and additive to farm animal feeds (Than, 2017).

In developed climes for example Europe and America political leaders, farmers, consumers and consvationist are also interested in sustainable farm practices. Because it helps to produce food that is health risk free (Benbrook, 1991).

In Nigeria, agricultural sector comprises of crop, forestry, livestock and fishing. Unite State Department of State (2014), reported that agriculture sector contributed 22% and 24.18% of Nigeria’s GDP in 2013 and 2016 respectively. This implies that there is need to optimize and improve the way agriculture is being practiced at the present so as to revive the Nigeria economy as well as improve the living standard of the people.

**Sustainability Problems in Nigeria**

Developmental Issues: Lack of development is affecting the sustainability of agriculture in Nigeria, notably are; Marketing: involves the conveying of agricultural product from farmers to consumers. Some of the problems of marketing affecting the Nigeria agricultural system include poor transportation means, poor packaging and poor quality. If you have poor packaging system (making product look good and attractive to customers) and your competitor have a better packaging system than you, then customers are more likely to buy from your competitor even if the qualities are the same (Oni, 2013).

Storage and Processing: The lack of storage and processing facilities affect both national food security and household food security. Even when there is a lot of harvest and the production of farm product seem enough, because of lack of good storage, it will still lead to food scarcity as the food will not be available or be in a good condition when it’s time for consumption (Oni, 2013).

Lack of Infrastructure: In this case, infrastructure will include physical structure, such as health and educational facilities, social services (stable electricity and safe water) and effective communication system. Agriculture in Nigeria suffers greatly because of the lack of developed infrastructure. For example in the rural area where most of the farmers operate without good infrastructure in place, is a major problem, as it affect investment, trade, and agricultural production (Oni, 2013).

**Population**

The Nigeria Population in 2011 was about 162 million, at present about 190 million and it is estimated to be about 230 and 430 million people in 2050, and as of 2015 52.2% of the population lived in the rural area while 47.8% lived in the urban area (Fao.org, 2015). As Nigeria population increases, so does the food security challenges, and this will grow with its population. At the current rate in which Nigeria population grows, Nigeria remains unable to feed its
population. Due to over population, the traditional method of fallowing is shorten and there is not enough time for the soil to regenerate its properties, putting pressure on the land.

Environment

The most common forms of agricultural environmental degradation in Nigeria are soil erosion and deforestation. Soil erosion is caused by a poor farming system, which includes improper road constructions and poor and unsustainable maintenance system. In many places deforestation has been used as the solution for lack of land for farming, a means of getting materials for building, collecting of timber and non-timber products, all of which is sometime done in an unsustainable manner. Some of the impact of environmental degradation includes loss of flora and fauna, food security, and the decline of underground and surface water (Medugu, 2006). The same thing applies to livestock and crop production. For a livestock and crop production to be successful, element such as water, sunshine, soil nutrient and adequate plant nutrient are present in the fertilizer been used in the right quality and quantity. The absence of good and adequate policy has an undesirable effect on the environment and therefore the quality of the agricultural and rural sector. As stated earlier, one area where the environment is suffering is the short fallowing period which leads to over grazing, erosion due to over cropping, and as a result environmental degradation and quality reduction. The Sahara desert for over five decades has invaded one million square kilometer of land and is rolling southward toward Nigeria at a rate of six kilometers per year (NAP, 2002).

TVET and Agriculture

The African Union has identified agriculture and rural development as key priority areas for which technical and vocational training and skills development are crucial for economic and social development (African Union 2007). But it is notable that agriculture inclusion in TVET will be faced with challenges such as:

Institutional Capacity Deficit

Agriculture has been widely neglected in TVET systems across the Globe. One implication of this historical neglect is that when countries do make the decision to prioritize agricultural TVET, they often find themselves with no foundation to build from. There is little or no existing institutional capacity to provide agricultural TVET. This is so because, there are few, if any, training centers for agriculture. Agricultural TVET often needs specialized training centers, due to the requirement of having sufficient land to conduct field demonstrations and practical classes. Establishing new centers is costly, especially given challenges of finding appropriately endowed sites for their construction. Second, even when there are training centers, there is often inadequate funding for them to function effectively (Gomes and Câmara, 2004). Third, and most critically, there is a lack of suitably trained staff to deliver agricultural TVET, trainers should have; knowledge of agricultural science, relevant work experience within the agricultural sector and training in vocational pedagogies.

Lack of Interest in Agriculture

Agriculture is often marked by high levels of insecurity, making it an undesirable profession, especially for young people. Rural youth often aspire to find job opportunities in other sectors (Baird and Harrelson, 2004). But studies have shown that even in such circumstances, most youth will not see agriculture as an area in which they want to develop further skills, they prefer to concentrate on skills that can open up opportunities in urban areas (Robinson-Pant, 2016).

Time Constraint for Training

The core beneficiaries of agricultural TVET programs are members of the farming community, yet a challenge faced in reaching them is that most of those involved in agriculture lack time to dedicate to training. Farming is a demanding profession and for the many farmers who live at or below the poverty line, time spent on training represents an opportunity cost that they cannot afford. This poses a particular challenge to the development of longer-term training programs. Those developing training programs need to engage in a balancing act. On the one hand, training needs to be sufficiently all-encompassing as to allow for comprehensive skill development, but on the other hand, must be of a duration and intensity that is compatible with farmers’ busy schedules.

Technological and Environmental Change

FAO, (2017) projected a number of major challenges facing agricultural systems in the decades ahead. Population growth, especially in Africa, combined with rising income levels, will lead to increased global demand for food. At
the same time, the natural resource base on which agriculture depends is likely to diminish particularly in relation to water while climate change and other forms of environmental disruption pose significant risks to yields and are likely to make farming a more uncertain and precarious venture.

**Possible Solutions**

TVET systems will need to make two complementary changes in order to help address these challenges. Such training would include improving farmers’ knowledge of the kind of environmental change that is projected and imparting the necessary skills to plan, adapt, and be versatile in response to unpredictable conditions.

The use of agricultural extension services for the delivery of agricultural skill development programs is certainly an efficient response to a lack of institutional capacity. It does not require the same substantial investment as establishing entirely new institutions or departments for administering agricultural TVET and the time required to build an adequate base of qualified trainers.

To make agriculture aspirational, it is necessary to challenge its long-term association with rural poverty and underdevelopment. Agriculture needs to be re-cast as a profession within which there is scope for innovation and applications of new technology. There is evidence that if agriculture can be represented as a site of innovation, it may become far more attractive to youth, including youth with high levels of formal education (Mwaura, 2017).

Most common way of dealing with the challenge of potential beneficiaries’ time constraints is to allow options for flexible delivery of agricultural TVET programs. These include options for modular programs, delivery of programs at slower periods in agricultural seasons, and at times of day that work with farmers’ schedules. This often involves community consultation during the planning phases of developing agricultural TVET programs.

**Conclusion**

Inclusion of agriculture in TVET programs will undoubtedly enhance sustainability of agricultural practices and increase agricultural output thereby reducing food insecurity and poverty.

**Recommendations**

- General awareness campaigns should occur alongside recruitment drives for agricultural TVET programs, to make people more aware of the potential to improve livelihoods prospects through agricultural skill development.

- Information and Communication Technology (ICT) based delivery of theoretical content should also be developed for to make agricultural TVET more accessible to those with little time or those living in remote locations. However, this should only be a complement to face-to-face classes, rather than a replacement.

**References**


