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**FARM CHILDREN AND YOUTH IN NIGERIA'S AGRICULTURAL
TRANSFORMATION AGENDA
PROCEEDINGS OF THE 11th NATIONAL RESEARCH
CONFERENCE AND DEVELOPMENT NETWORK MEETING OF
CHILDREN AND YOUTH IN AGRICULTURE PROGRAMME
(CYIAP-NETWORK) IN NIGERIA**

(CYIAP – Network)

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**PROCEEDINGS OF THE 11th INTERNATIONAL RESEARCH
CONFERENCE AND NETWORK MEETING OF CHILDREN AND YOUTH IN
AGRICULTURE PROGRAMME IN NIGERIA (CYIAP) HELD AT OLABISI ONABANJO
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From Editor-in-Chief Office

Eulogy of CYIAP Pioneer President: Professor S. Fola Adedoyin (Aged 60 years)

The Network cannot forget urgently the commitment and contribution of the Pioneer President of the Network, Prof. S. F. Adedoyin who did not find it difficult to bring members together regularly at his own expense. He chartered the course for the network even when there seems to be none. A renowned Professor of Extension and Rural Sociology indeed. He was the Vice Chancellor of Samuel Adegnoyega University Ugwa until his demise. Adieu, Prof. S. F. Adedoyin



Dr. B. O. Adisa
Editor-in-Chief

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EMPOWERING YOUTH OF TODAY FOR BETTER NIGERIAN AGRICULTURE TOMORROW

DR (MRS) SODIYA, COMFORT IBIRONKE
DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT,
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KEY NOTE ADDRESS DELIVERED AT THE NATIONAL RESEARCH AND DEVELOPMENT NETWORK OF CHILDREN AND YOUTH IN AGRICULTURE PROGRAMME (CYIAP-NETWORK) IN NIGERIA, ON THE OCCASION OF THE 11TH NATIONAL CYIAP NETWORK CONFERENCE AND MEETING HELD AT THE OLABISI ONABANJO UNIVERSITY COLLEGE OF AGRICULTURAL SCIENCES, AIYETORO, OGUN STATE, NIGERIA.

October 21, 2014

PROTOCOLS

It is with gratitude to God that I welcome all of you to the 11th National CYIAP Network Conference and Meeting and sincerely thank God for granting us all journey mercies.

I give special greetings to my teachers here at the Olabisi Onabanjo University and also thank God for the opportunity given me to be able to stand before you this afternoon to deliver this lecture.

I also want to thank the Chairman and all members of LOC of the 11th National CYIAP Network Conference and Meeting for inviting me to this very auspicious event. When I received the invitation to this event, though, with a very short notice, I immediately agreed to come, despite several competing demands on my time.

INTRODUCTION

Agriculture is not glamorous and it suffers from entrenched negative perceptions. In the minds of many African youths, a farmer is someone like their parents, doing backbreaking labour in the fields and getting little to show for it. Nonetheless, agriculture is the engine driving many African economies. If agriculture were to get the same political support and financial investment as the mining sector, it would be capable of providing more decent jobs and filling the stomach of millions with nutritious meals. From the foregoing, agriculture remains fundamental to poverty reduction and economic growth in the 21st century (World Bank, 2008). The report further posits that 75% of the world's poor are from rural areas and most are involved in farming, an activity which requires sustenance especially by the youth who are the leaders of tomorrow.

Agriculture is an essential industry for many nations. In the western world, the share of agriculture in total Gross Domestic Product (GDP) is less than 4% but nearly 50% of the worldwide agricultural trade is conducted by these (developed) countries. This is amplified in the European Union's (EU's) low dependence on agriculture but with a large budget to subsidize agricultural products (Bertow and Schultheis, 2007). The reverse is true in developing countries where there is mostly high dependence on agriculture and a marginal budget that does not allow large spending. In the world, agriculture's share of contribution to employment is 35% compared to 86.8% in Africa according International Labour Organization (2010 cited in Wobst, 2011) and this makes agriculture the basic sector of Africa's economy on which majority of the people depends for their livelihood.



In Sub-Saharan Africa, the population is predominantly rural and agriculture remains the main occupation. Unfortunately, agricultural growth in sub-Saharan Africa still lags behind that of the population culminating in the continuous food importation. Thus, poverty and food insecurity remain widespread in Sub-Saharan Africa. Domestic food markets are not given the needed attention as a potential engine of agricultural growth. This is demonstrated in high national import dependence which is the major cause of food insecurity among farmers especially in Kenya and a low budget allocation as Ghana (Djurfeldt and Larsson, 2004). This high or total dependence on food import is very risky considering the increasingly volatile and uncertain global market as demonstrated in the food and financial crises in 2007 and 2008 (Spore, 2009).

According to International Monetary Fund country report (2006) on GPRS, the bulk of the poor, especially women and the youth (Naamwintome, 2008) have the potential of engaging in agriculture. The poverty profile of developing nations, therefore reflects a largely rural and agriculture-based economy and export agriculture has been sought with no attention paid to the small-scale farmers, even though agriculture is predominantly smallholder-based and core to rural development in a developing country like Nigeria. Development practitioners such as donors, Non-Governmental Organizations (NGOs), Ministry of Agriculture and the ADPs seek to improve the living conditions of the rural poor who are mostly farmers through farming with emphasis on development of a farming system which is both profitable and sustainable even though this support is fading (Spore, 2004).

About 80% of the poor and almost all those who suffer hard-core poverty, live in rural areas and it is expected that increased farm yield and improved access to marketing facilities, will result in increased farm incomes, which will not only contribute substantially to poverty reduction, but will also greatly help to remove the poor image of agriculture as a viable economic activity option for the more educated youths in Nigeria.

The high population growth rate and the low average growth in agricultural production have put pressure on the natural resource base namely the soil, vegetation cover and watersheds and hence the estimation of the environmental degradation cost to be around 4% of GDP of which agriculture alone is 69% and forestry 25.8% (GoG, 2006).

In view of the above, paying much more attention to agriculture is vital especially in a developing country like Nigeria. Endorsing agricultural development through the integration of youths into the agricultural sector is worthwhile.

Youth and agriculture

According to Nugent (2006), youths aged 10 to 24 years, are 27% of the world's population and 33% of the population in Africa. The United Nations Organisation and Commonwealth Secretariat defined "youth" as "persons within the age bracket of 15 and 35 years".

The efforts of Government and Non-Governmental Organizations (NGOs) in agricultural development are well marked in Nigeria. For instance, The Youth Collaborative Community Agriculture Programme (YOCCAP) of the Youth Initiative for Sustainable Agriculture (YISA) Nigeria, received a support from the Government of United States through the U.S. Ambassador's Self Help Project for a community empowerment scheme in Umoda- Oju Community of Benue State. The grant is a major boost to the Organization's commitment towards ensuring that unemployed community youths and women are given life inherent in socio-economic independence.

Youths are very important resources for every nation especially for sustaining agricultural productivity, an important sector for development. The youth is a stakeholder in the development process especially



in view of the great assets of youth, resilience, resourcefulness and perseverance. Unfortunately, this category of people are virtually left out in policies and programmes considerations even though this is a critical stage for this group of people since this is a period of transition into adulthood (FAO *et al.*, 2012). For instance, the unemployment rate of this group globally ranked 12.6% compared with 4.8% as the rate of the adults in 2013 according to United Nation (UN) (2011) and this has the potential of tempting most youth to embark on migration especially to urban centres and beyond since this act creates room for accessing job opportunities. This group of people is over 1.8 billion in the world today, 90% of whom live in developing countries, where they tend to make up a large proportion of the population and needs to be empowered since this is an important means of improving food security, youth livelihoods and employment.

There is insufficient youth participation in the agricultural sector (Mangal, 2009) even though this class of people are the most productive of any society as it contains people in the prime of their lives physically and mentally. Agriculture being one of the foundation pillars of any society can only function as such if this insufficient youth participation is reversed. For instance improving youth productivity in the agricultural sector and exploring effective livelihood diversification is imperative. Also, investing in the youth by promoting good habit is crucial if they are to realize their full potential. This is in view of the fact that the number and proportion of the older persons is growing faster than any other age group (UNFPA and HelpAge International, 2012). The youth with the dynamism and flexibility has the potential as an agent of positive change and this should be ensured by development programmes. In the most adverse and risky situations, young people have an extraordinary resilience and ability to cope, according to UNFPA (2006). As stakeholders, rural-based youth are actively engaged in family livelihood activities and play key support roles within their families and usually desire to be acknowledged, emotionally and financially, for such contributions and for the supporting role they played within their families, in addition to controlling the financial returns from their activities (PAFNET, 2010). Exposure of youths to modern cash economy and technologies that give them access to information from around the world are changing the perceived needs of young people, and this must be recognized especially by leaders, thus harnessing the opportunities and challenges thereof.

In Africa, 20% of the population aged between 15 and 24 years, comprising more than 20% of the population and a large majority lives in rural areas. Being 37% of the working-age population, rural youths who are attached to agriculture are disadvantaged and this is because consideration of the youths as future farmers in Africa has not received adequate attention. This category of people is the driving force behind economic prosperity in future decades, only if policies and programmes are in place to enhance their opportunities (Ashford, 2007).

According to Dr Namanga Ngogi, President of Alliance for a Green Revolution in Africa (AGRA), 60% of Africa's population resides in rural areas and the large majority of this population is made up of youths, and the poor participation of this group of young people in farming is a threat to the future of agriculture and rural economic transformation on the continent.

Available evidence in Africa suggests an ageing farming population and high unemployment rate of youths, with for instance an average age of 47 years and 75% respectively in Nigeria (Akpan, 2010). Involvement of youth in agricultural activities has the potential of reducing the problems of the ageing farm population and increasing youth unemployment and this calls for securing the interest and participation of young people in agriculture in the form of deliberate shift in policy, training and promotion that specially targets the youth. This category of people are not only the productive backbone of every society, the major source of ideas and innovation, but also the main market for food consumption and very often the leaders and drivers of public opinion, public policy and action. Youths are also considered to be valuable resource since this age group is the true wealth and future of the



nation (National Youth Policy, 2010) and ought to be harnessed in partnership with other stakeholders for appropriate interventions and services for national development. Ensuring youths' participation in agriculture is paramount as this mitigates:

- a) Ageing farmer population in the country which averages 55 years.
- b) Continuous rise of food import especially for rice, cooking oil, frozen chicken and meat).
- C) The poor image of persons involved in agriculture, especially in the rural communities.
- d) Youth unemployment particularly in the rural areas.

According to National Youth Policy (2010), not much has been done in this regard, and hence it is important to:

- i) Promote the participation of the youth in modern agriculture as a viable career opportunity for the youths and as an economic and business option.
- ii) Provide resources for the participation of the youths in modern agriculture. This position has been echoed by the Minister of Agriculture and Rural Development to turn around agriculture in Nigeria through the President Goodluck Ebele Jonathan's Transformation Agenda which has special packages for Youths and women especially the rural dwellers with little or no access to job opportunities to earn a livelihood. Government's engagement of youths in meaningful partnership for the development of appropriate interventions and services for their empowerment bordering on creating a conducive environment where the youth are equipped with knowledge, skills, attitudes, values, ethics and resources required to enable them contribute to the economic, social, and cultural advancement of themselves, their families, and the nation as a whole, is very vital. Preparing young people to meet the challenges of adolescence and adulthood through activities, and experiences, which help and motivate them to become socially, morally, emotionally, physically, economically independent, is essential. This has the potential of ensuring that the youth as a valuable resource for the advancement of the society is adhered to, and thus the fight against a large number of them being affected by such factors as poverty, social exclusion and economic marginalization will be won. Effective mobilization of the youth, the productive engagement of their talents and energies and the creation of an environment by stakeholders especially the government to enable the youth realize their full potential is paramount.

Way Forward

The poor state of youth participation in agricultural activities in Nigeria has been a matter of great concern among agriculturists, agricultural researchers as well as administrators. This is because the present poor state of decline in agricultural production has dimmed the hope of raising the level of agricultural production to ensure sustainable food security for the ever increasing population of Nigeria.

One of the major setbacks of agricultural development programmes is attributed to the inability of the federal government to integrate youths into the mainstream of the numerous agricultural development programmes implemented over the years (Ijere, 1992). For a country to attain economic stability the agricultural sector must be vibrant and the youths encouraged to imbibe farming as a noble profession (Ojediran, 1997).

Youths have the potential to overcome some of the major constraints in agriculture because they are often more open to new ideas and practices than adult farmers. They play an important role in awareness raising on different subjects (Ijere, 1992).

Mobilizing the youths for national development is a common phenomenon amongst the western and developing countries. In such countries as Great Britain, Netherlands, Denmark, Germany, the United States of America and Tanzania, the involvement of youths in agricultural production through youth



programmes had contributed significantly to agricultural development and empowering the citizenry and youths to always meet the full needs and deep seated aspiration to be self sufficient in food production (FAO, 1990). Indeed, since the youths are the future of any country, it is useful to develop them into patriotic citizens, future progressive farmers and better citizens. The youth clubs are the nurseries for them (Ajayi, 2006).

The poor state of agricultural productivity and low esteem of agriculture as manifested in rural-urban migration, youths' low interest in farming, lack of industrial firms to process agricultural products and skilled labour among others has led to worsening Nigerian food deficit (NDE, 2006). The realization of this situation led the federal government to embark on ways to revitalize the poor food situation by constructively involving youth in agriculture at secondary school level. This was through the national policy on education which made practical agriculture a core subject at the junior and secondary school level and agricultural science as a vocational subject (FMAWD, 1989).

CONCLUSION

Agriculture is not glamorous. It suffers from entrenched negative perceptions. In the minds of many African youths, a farmer is someone like their parents, doing backbreaking labour in the fields and getting little to show for it. Nonetheless, agriculture is the engine driving many African economies. If it were to get the same political support and financial investment as the mining sector, agriculture would be capable of providing more decent jobs and filling millions more stomachs with nutritious meals.

RECOMMENDATION

Drawing from the above, the youths desire for wealth calls for concerted efforts on the part of stakeholders for instance the parents, Non-Governmental Organizations (NGOs) and government. Stakeholders need to embark on education, provision of financial support and enforcement of regulations since these efforts will counter their strong desire for wealth which is not strategic compared to education.

Farm output is prestigious and is the aspiration of every farmer. This aspiration requires accessibility of productive resources such as land, labour and farm inputs to farmers from stakeholders such as parents and government. These acts have the potential of meeting this aspiration and thus mitigating migration or relocation of the youths to urban areas.

The acknowledgement of profitability in farming by the youth is a plus compared to their migration in avoidance to being bondage to cultural factors and for economic reasons. Parents need to acknowledge and recognize the perceived changed trends of needs of the youth dictated by globalization. Admission of these challenges and opportunities makes it imperative for parents and youth to dialogue for trade-offs since this will ensure that culture is not compromised as well as meeting the needs of the youth.

Furthermore youth should realize that the era of acquiring education mainly for the sake of seeking white collar job in public and private corporate enterprises is over. As such they should be made to develop self-esteem in agriculture as a viable income generating venture and not look down on it as it is currently the practice among the educated youth.

Finally, the extension services in the Nation should be overhauled. This is with the aim of enlisting the confidence of the participants on the usefulness of extension information.

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DETERMINATION OF FUEL USED FOR COOKING AND IT'S EFFECTS ON FOOD VENDORS' HEALTH AND ENVIRONMENT IN KWARA STATE UNIVERSITY COMMUNITY

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Abstract

This study investigates the use of fuel for cooking and its effects on food vendor's health and environment in Kwara State University (KWASU) community. Thirty (30) food vendors in Malete (20) and Elemere (10) villages were selected based on a pilot survey carried out to obtain the total number of food vendors within the community. Survey questionnaire was used for face to face interview to collect data. The data was analyzed using the SPSS statistical software and the results were presented in frequency counts and percentages. Pearson Moment Correlation Statistics (r) was used to test the hypothesis stated in the study. Eighty five percent (85%) of food vendors in Malete used firewood for cooking, 70% used Charcoal, 10% used piped natural gas and 5% used diesel; while in Elemere, 90% used Firewood and 50% used Charcoal for cooking. In Malete and Elemere, 70% and 80% of food vendors respectively had allergic reactions due to smoke produced from using firewood for cooking. Also in Malete 57% experienced eye irritation (watery eyes, reddish eye) and 43% experienced headache, while in Elemere 50% experienced eye irritation and 50% experienced headache that lasted for 30 minutes due to smoke from the firewood. Majority of the food vendors cooked on the average of twice a day (Malete 60% and Elemere 50%) and for 6 days a week (Malete 60% and Elemere 70%) indicating constant high rates of smokes emission to the atmosphere and exposure of food vendors to various health risks from hazardous gases. There was significant relationship between use of firewood and the number of food vendors that had allergic reactions from the smoke of the firewood ($r = -.615$ and $p > 0.035$ in Malete and $r = -.667$ and $p > 0.004$ in Elemere. It was recommended that there was need for further studies to analyze and identify specific health problems and specific hazardous gases emitted into the environment from using firewood for cooking; effects of traditional cooking stoves to local outdoor air pollution and health of the users; and awareness programs to point out the risks associated with using firewood and the need for using alternative clean fuels.

Key Words: Cooking, Environment, Food Vendor, Fuel Wood, Health

INTRODUCTION

From the Energy Commission of Nigeria (ECN) report, Lukman (2003) indicated that about 86% of rural households in Nigeria depend on firewood as their source of energy and firewood supply and demand imbalance in some parts of the country is now a real threat to the energy security of the rural communities. It was further indicated that the nation's 15 million hectares of forest and woodland reserves could be depleted within the next fifty years.

According to Sambo, (2009), sourcing fire wood for domestic and commercial uses is a major cause of desertification in the arid-zone states and erosion in the southern part of the country. He pointed out that these would result in negative

impacts on the environment, that is, soil erosion, desertification, loss of biodiversity, micro climatic change and flooding. He also pointed out that the consumption of firewood is worsened by the widespread use of inefficient cooking methods that are hazardous to human health especially to women and children who mostly do the cooking in homes. As indicated by Lukman (2003); Nabinta et al (2007); and Akin (2008) the use of fuel for cooking and its effects on health and environment of users cannot be over emphasized in rural communities. The rural populaces do not have access to sustainable energy and therefore depend on biomass such as twigs, branches, animal residues, crop residue, fuel wood, charcoal, wood shavings and sawdust.



which have inevitably led to the continuous emission of pollutants.

According to Nabinta et al., (2007), 86% of rural households are primarily dependent on biomass as their source of energy. About 90% of the total annual round wood products serve as fuel wood and 60% of this total is used for household consumption. This fuel wood supply and demand imbalance has led to a series of serious environmental problems, human being diseases, and loss of time for education, recreation, and farming. According to Smith et al., (2000), hydrocarbon emissions are highest from the burning of dung for fuel, while particulate emissions are highest from agricultural residues. Women and children suffer most from indoor air pollution. The World Health Organization (WHO 2000) estimates that 1.5 million premature deaths per year are directly attributable to indoor air pollution from the use of solid fuels. That is, more than 4 000 deaths per day and more than half of them are children under five years of age. It was also reported that more than 85% of these deaths (about 1.3 million people) are due to biomass use, the rest due to coal. This means that indoor air pollution associated with biomass use is directly responsible for more deaths than malaria. Fuel wood, roots, agricultural residues and animal dung that are traditionally used for cooking and other household chores produce smoke that affects users and pollute the environment.

Also according to WHO, (2000) and Bruce et al. (2002), there is good evidence that exposure to smoke increases the risk of acute lower respiratory infections in children, chronic obstructive pulmonary disease in adults, and lung cancer. It was also reported that each year, these diseases cause the death of more than 900,000 children under age five and more than 700,000 adults (WHO 2002). Indoor air pollution is a significant risk factor for acute respiratory infections (ARI), which account for a remarkable 7% of the global burden of disease. Although ARI is an important cause of death in the elderly, their largest impact is on young children, with 2 million deaths in children under five years of age attributable to ARI in the year 2000 (WHO, 2001).

According to WHO (2006) about 2.4 billion people burn biomass fuels on a daily basis to boil water and to cook food. As a result 2 million tonnes of biomass are going up in smoke every day. This may not pose a problem where the growth of new trees outpaces human demand. Yet, where wood is scarce and the population is dense, wood collection can put considerable pressure on forests; Particularly in arid and semiarid regions of the world, the need for fuel wood results in significant deforestation, with all its detrimental consequences. This fuel wood shortage does not just affect rural areas. In many developing nations, electricity services in urban areas are irregular and often do not reach poor sectors. Since many households cannot afford kerosene and liquefied petroleum gas (LPG), a substantial portion of the urban poor continue to rely on fuel wood and charcoal. Some have argued that urban fuel wood demand is more destructive of forests than rural needs, because of the intensity of cutting around cities, along roads and later from more distant sources. It is projected that in the Sahel, urban fuel wood use will soon exceed that of rural areas.

Kammen (2002) indicated that the biggest problem is when the supply of biomass to meet the demand for firewood declines, poor families returns to using agricultural residues and dung in place of wood fuel, thus reducing the supply of fodder for animals and for soil protection. In addition, the exorbitant consumption of bio-mass may even result in imbalance in biodiversity and hydrology, especially when there is a preference or planting of certain species of woods for energy use, instead of the natural forests and vegetation of the location.

The establishment of Kwara State University (KWASU) in year 2009 has called for various entrepreneurial ventures and food vending was one of them. Based on the background information, there is therefore the need to investigate the type of fuel used for cooking and its effect on the health and environment of food vendors around KWASU community.

Objectives of the Study

Based on the background information, the broad objective of this study was to investigate the use of fuel for cooking and the effects on food



vendors within KWASU community, while the specific objectives were to: Identify the fuel types used by the food vendors and determine the effects of fuel types on the food vendor's health and environment.

Research Questions

Based on the objective of this study, the following research questions were asked:

1. What were the various fuel types used by the food vendors for cooking?
2. What were the effects of fuel types used for cooking on the food vendor's health and environment?
3. **Null hypothesis:** Ho : The use of fuel type did not affect the health of the food vendors

Significance of the study

An investigation of the use of fuel for cooking was important in view of the effects on the health and environment of food vendors within KWASU community because the population of students and workers had been growing since year 2009 when KWASU was established. Also the health and the environment of KWASU populace were important as it was observed that both students and workers bought their meals from food vendors and kept them busy all day. It was also observed that these food vendors used various types of biomass for cooking. And according to both the World Health Organization (2002) and IEA (2007) reports, exposure to indoor pollution continues to contribute to the global burden of disease and also reliance on biomass as source of fuel could have very profound and long-lasting negative effect on forests and the environment. Therefore, this study was significant since the results would identify the types of fuel used for cooking and their effects on the food vendors' health and environment.

METHODOLOGY

The targeted population of Kwara State University community (KWASU) was used for this study based on the observed yearly increase in students and staff population; various business ventures including food vending; and increased activities of food vendors within the community.

Pilot survey questionnaire was used to identify the total number of food vendors within KWASU community. A total of 30 food vendors were located only in Malete (20) and Elemere (10) villages. Since the food vendors within KWASU community were located only in two villages, all the 30 food vendors in those villages were used as sample for this study.

A questionnaire designed by the researchers included section A that contained demographic information, such as gender, age, education, while the items in section B contained questions on the use of fuel for cooking, fuel use and health outcomes, and fuel use and the environment. Experts in the department of Agricultural Economic and Extension Services in Kwara State University, Malete were used to achieve content validity. Face to face interview of food vendors was conducted in order to collect the primary data while secondary data were obtained from related literatures like journals articles and project reports publications. Both descriptive (SPSS) and qualitative statistical (Pearson Moment Correlation Statistics - r) tools were used to analyze the collected data for this study.

RESULTS AND DISCUSSION

Research Question 1: What were the various fuel types used by the food vendors for cooking? Table 1 revealed that eighty five percent (85%) of food vendors in Malete used firewood for cooking, 70% used Charcoal, 10% used piped natural gas and 5% used diesel; while in Elemere, 90% used Firewood and 50% used Charcoal for cooking. This result showed that majority of the food vendors used firewood and charcoal .in both villages and this is similar to (Ministry of Energy, 2003) which stated that while the urban areas consume the bulk of charcoal produced, the rural areas are more dependent on firewood. Also according to Amissah-Athur and Amonoo (2004) findings, the overall family energy consumption in rural communities has a clear thermal component which is met by biomass. This study showed that firewood and charcoal accounted for an average of 72.5% of biomass consumption in both villages; which is more than the 63% energy consumed in Ghana, as reported by Ahiataku-Togobo (2008).



Research Question 2: What were the effects of fuel types on the food vendor's health and environment?

Table 2 revealed that 70% and 80% of food vendors in Malete and Elemere respectively had allergic reactions due to smoke produced in using firewood for cooking. Also in Malete fifty seven percent (57%) experienced eye irritation (watery eyes, reddish eye) and 43% experienced headache, while in Elemere 50% indicated that they experienced eye irritation and 50% experienced headache due to smoke from the firewood.

They all agreed that the allergic reactions didn't last the whole cooking session. Majority (average 71%) of the food vendors in both villages (79% in Malete and 63% in Elemere) indicated that the allergic reactions of watery and red eyes, and headache lasted for (20-30) minutes after cooking. The result indicated that food vendors went through some level of discomfort for about 30 minutes during the course of cooking.

Table 2 also shows that majority of the food vendors cooked on the average of twice a day (Malete 60% and Elemere 50%) and for 6 days a week (Malete 60% and Elemere 70%) indicating that high rates of smokes were constantly emitted to the atmosphere. If this continues over a long period of time, the smoke emitted to the atmosphere could contain hazardous gases that could in turn contribute to pollution of the environment. This is supported by Lukman (2003); Nabinta et al (2007); and Akin (2008), who pointed out that the use of biomass such as twigs, branches animal residues, crop residues, fuel wood, charcoal, wood shavings and sawdust have inevitably led to the continuous emission of pollutants. And these pollutants could have adverse effects on user's health and the environment.

As shown in Fig 1 and Fig 2, Food Vendor used Firewood for cooking which produced smoke that caused them to have allergic reactions of Eye irritation (tears in eyes) and Headache. Also, the smoke was released into the atmosphere that might have caused pollution in the environment.

Figure 2 also revealed that Food vendor cooking under the shed had the smoke confined, which might have caused the allergic reaction lasting for 30minutes as they indicated. More than half of the total number of vendors indicated that they cooked 6days a week and 2 times a day. This shows that the vendors were exposed to daily smoke which was also released to the environment. This result is supported by Mekonnen and Kohlin (2008) who pointed out that developing countries experience severe indoor air pollution which is directly attributable to the use of biomass fuels.

Null Hypothesis Testing: Hypothesis (Ho1): The use of fuel type did not have influence on health of food vendors.

Table 3, shows the result of the Pearson Moment Correlation Statistics used to test if use of firewood did not have influence on the health of food vendors. Majority of the food vendors (70% and 80% in Malete and Elemere respectively) had allergic reactions to the smoke from the use of firewood.

Also, the results obtained from testing the hypothesis indicated that there was significant relationship between use of firewood and the number of food vendors that had allergic reactions from the smoke of the firewood ($r = -.615$ and $p > 0.035$ in Malete and $r = -.667$ and $p > 0.004$ in Elemere). Thus, the null hypothesis was rejected. The food vendors further indicated that the allergic reaction of redness of eyes and headache due to the smoke from the use of firewood lasted for 30 minutes. Thus the results from this study showed that the choice of firewood used by the food vendors exposed them to various health risks.

Based on the pilot study report, most of the food vendors started the cooking business not long ago i.e. after the establishment of Kwara State University in 2009, so the effects of using firewood and charcoal on their health might not be visible yet. This is supported by Lukman (2003) who pointed out that rural women hardly visit the hospital, instead, they tends to take to herb. He further indicated that the use of the traditional energy types in an unsustainable way might cause eye irritation, running nose, skin



irritation, and difficulties in breathing, wheezing, chest pain, abortion and even death. The results of this study are further supported by many other scientists who pointed out that the effects of biomass burning in the traditional cooking stoves could cause blindness (Mishra et al., 1999a); asthma (Schirnding et al., 2000); acute respiratory infections (Smith et al., 2000); eye discomfort, headache, back pain (Ezzati and Kammen, 2002a); reduced birth weight and stillbirth (Mishra et al., 2005); and tuberculosis (Mishra et al., 1999b).

CONCLUSIONS

RECOMMENDATIONS

Majority of the food vendors used firewood for cooking because it was readily available. Although some used charcoal, the main fuel used still remained firewood

Eye irritation, mostly in the form of tearing while cooking and headaches that lasted for about 30 minutes after cooking were the most prevalent smoke related symptoms that they could do nothing about to reduce; they were used to; and they regarded as a normal cooking pain.

Majority of the food vendors cooked on the average of twice a day for 6 days a week indicating that high rates of smokes were

constantly emitted to the atmosphere which could pollute the environment.

There was significant relationship between use of firewood and the number of food vendors that had allergic reactions from the smoke of the firewood ($r = -.615$ and $p > 0.035$ in Malete and $r = -.667$ and $p > 0.004$ in Elemere. Thus, the null hypothesis was rejected.

There is the need for further studies to analyze and identify specific health problems and specific hazardous gases emitted into the environmental that are associated with using different biomass (especially firewood and charcoal) as fuel in cooking.

Most of the studies on the effects of the type of fuel used for cooking have focused on indoor air pollution; there is need to study the effects of traditional cooking stoves also and how they contribute significantly to local outdoor air pollution and health of the users in rural areas.

Awareness programs such as workshops, association meetings and field days need to be conducted in the rural communities to demonstrate and point out the risks associated with using firewood for cooking, especially in the areas of the health and the environment of the users.

Table 1: Fuel Used by Food Vendors for Cooking

Question	Malete		Elemere	
	Frequency	Percentage	Frequency	Percentage
Fire wood	17	85%	9	90%
Charcoal	14	70%	5	50%
Gas	2	10%		
Diesel	1	5%		

Source: Field Survey, 2014



Table 2: The Effects of Fuel Types on the Food Vendor's Health and Environment

S/N	Question	Villages		Elemere	
		Malete Frequency	Percentage	Frequency	Percentage
1.	Do you experience any allergy reaction due to smoke? Yes [1] No [0]	0=6	30%	0=2	20%
		1=14	70%	1=8	80%
2.	If yes, what type? 1=eye irritation 2=headache	1=8	57%	1=4	50%
		2=6	43%	2=4	50%
3.	When does it happen? [1]=Immediately the fire start burning [2]=Throughout the cooking session [3]=When additional fuel is added [4]=When the fire is put off [5]=After the cooking	1=3	21.43%	1=1	12.5%
		2=3	21.43%	2=3	37.5%
		4=1	7.14%	5=4	50%
		5=7	50%		
4.	Does it last throughout each of the cooking session? (duration = minutes)	20-30=11	78.57%	20=3	37.5%
		40-45=3	21.43%	30=5	62.5%
5.	How will you rate the problem? Very bad [1] Bad [2] Fair [3] Used to it [4] No effect [5]	3=1	7%	3=3	37%
		4=13	93%	4=5	63%
6.	How many days a week does the restaurant cook?	5=2	10%	6=7	70%
		6=12	60%	7=3	30%
7.	How many times a day does restaurant typically cook?	7=6	30%	1=5	50%
		1=3	15%	2=5	50%
		2=12	60%		
		3=3	15%		
		4=1	5%		
	5=1	5%			

Source: Field Survey, 2014



Figure 1: Food vendor cooking with Firewood that produced Smoke.

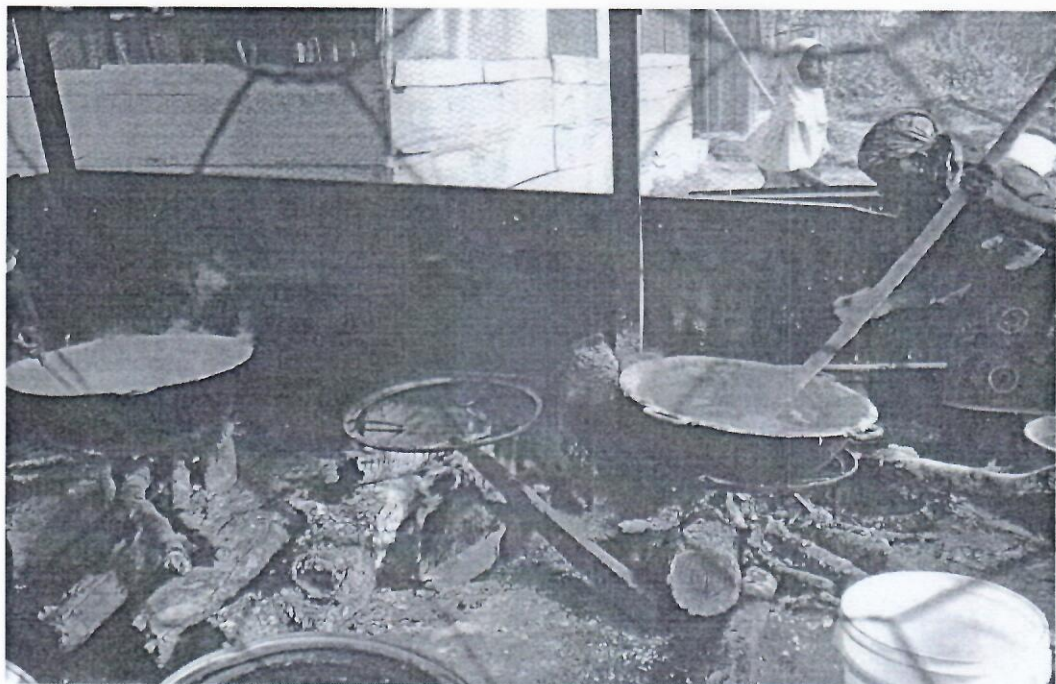


Figure 2: Food vendor cooking with Firewood in a confined shed



Table 3: Relationship between Fuel Used and Food Vendors Health

Variable	r-value	p-value	Remark	Decision
Firewood (M)	-0.667	0.035	Significant	Reject
Firewood (E)	-0.615	0.004	Significant	Reject

Source: Field Study, 2014

M =Malete; E =Elemere; Variables = [1] Firewood [2] Allergic reaction from smoke
Correlation is significant at 0.05 and 0.01 levels in Malete and Elemere respectively.

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YOUTH ENTREPRENEURIAL SKILLS FOR SELF RELIANCE IN AGRICULTURE

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ABSTRACT

Nigerian agricultural sectors will survive if only the youth who are leaders of tomorrow accept to play their role in agricultural development and production. Notwithstanding, youth entrepreneurial skills in agriculture can be developed if proper training programmes and academic programmes are introduced to youth in their various citadel of learning. Major constraints faced by youth on the area of entrepreneurialship were identified to be socio-economic pressures, peer influences, political actions, technological advancement and regulatory status. The study recommended that youth in different categories should be encouraged to join various agricultural clubs, associations, attend training programmes and academic programmes that can boost their entrepreneurial skills as well as being granted loans with little or no interest by agricultural banks, loans settlement Schemes, and non-governmental agencies.

INTRODUCTION

Youth empowerment in agriculture entails given the opportunity or power to the youth to make money by engaging in one agricultural activity or the other so as to earn a living. However, Awogbenle and Iwuamadi (2010) observed from the excerpts of statistics obtained from the National Manpower Board and Federal Bureau of Statistics showed that Nigeria has a youth population of eighty (80) million representing 60 percent of the total population of the country. Sixty four (64) million of them are unemployed while one million six hundred thousand (1.6 million) are underemployed. Given the right combination of motivation, ideas and opportunities, young people are more than able to establish and sustain productive and creative businesses. Engaging in entrepreneurship shifts young people from being "Job seekers" to "job creators" and also from social dependence to self-sufficiency. Amadi and Emeruwa (1989) Reported that they were packaged to inculcate in the youth, requisite vocational and entrepreneurial skills and appropriate work habits in preparation for a successful entry into the world of work. Many self-employed youth also contribute to the upkeep of their family, sometimes playing a leading role in the absence of parents. Despite these potential benefits, the

majority of youth continue to look up to the government for employment rather than creating their own jobs and employing others. The failure of young people to engage in entrepreneurship has also been attributed to a range of factors: socio-cultural attitudes towards youth entrepreneurship, lack of entrepreneurial training in the school curricular, incomplete market information, absence of business support and physical infrastructure, regulatory framework conditions, and in particular poor access to finance. At a global youth dialogue held in 2004, participants strongly acknowledged their involvement in small business development as an important vehicle for national development. They cited lack of financial resources as a major constraint for youth entrepreneurship and business development. Owing to the lack of collateral and business experience, young people are considered a very high risk by lenders. The limited number of micro-finance institutions that target young people in business continues to constrain the development of youth entrepreneurship.

Who is an Entrepreneur in Agriculture?

According to the Business dictionary, entrepreneurship is the capacity and willingness to undertake conception, organization and management of a productive venture with all



attendant risks, while seeking profit as a reward. The entrepreneurship spirit is characterized by innovation and risk-taking, and it is an essential component of a nation's ability to succeed in an ever-changing and more competitive global market place.

Nelson (1981) stated entrepreneurship in light of a wide social, cultural and economic context as being innovative at home work, school or leisure. He further states that it involves life attitudes, including the readiness and the courage to act within the prevailing social, cultural and economic contexts. These qualities which is also referred to as occupational skills.

Entrepreneurship is more than simply starting a business. It is a process through which individuals identify opportunities, allocate resources and create values. This creation of value is often through the identification of opportunities for change. An entrepreneur is one who fulfils the aforementioned criteria. Entrepreneurs see "problems" as "opportunities" then take action to identify the solutions to these problems and the customers who will pay to have those problems solved. Some characteristics found in successful entrepreneurs show they are prepared to take risks, driven by achievement not put off by failure, self-motivated and determined to stay ahead of the competition.

PROBLEM STATEMENT

The problem focus of this study is to discuss the attitude of youth towards agriculture. Attitude of individual is known to have direct influence performance on any given job. Most of the youth like to be professional Lawyer, Doctor, Engineers, Managers etc. Most of them believe that those who work on the field never become rich and that farming works involves lots of stress. The study is to reveal different skills that can be acquiring that will change the negative notion of the youth concerning agriculture.

STATEMENT OF PURPOSE

Most businesses originate from the ideas of a person or group of persons. Anyone can have an idea, but what makes an entrepreneur is the

implementation of the idea for successful achievement of one's pursuit. An idea becomes a business opportunity when it has commercial potential, in other words, when you can make money by selling your products or have patriotic customers that are dependable. The consumers of your products or services would only pay for what you offer them. If only they would derive satisfaction from it. OECD (1999).

The purpose of this study is not only to create interest in youths in pursuing agriculture as a career but also to encourage everyone (both old and young, men and women) to engage in agricultural business ventures such as:

- i. Marketing management of horticultural produce.
- ii. Poultry farming
- iii. Fruit preservation
- iv. Technology in milk production
- v. Dairy farming
- vi. Water harvesting
- vii. Vermicomposting
- viii. Pickle and jam making

A statement of fact, imperative at this juncture is that "One must not necessarily own a farm to be involved in agriculture as an entrepreneur". The study is therefore aimed to achieve the following specific objectives"

- i. Discuss entrepreneurial skills which youth can acquire to be successful in agricultural business ventures.
- ii. Mention the processes of imparting such entrepreneurial qualities.
- iii. Identifying agricultural enterprises opportunities that can be benefit the youth.
- iv. Identifying the target classes of youth who would profit by the programme.
- v. Introducing youth to "Youth Financing Assistance Programme" especially youth studying agriculture or related courses at the tertiary level. (Didiza, 1998).

Agricultural Entrepreneurial skills for youth.



The entrepreneurial skills or qualities according to Nelson (1979) is referred to as an “Occupational survival skill” and it include special attitudes, knowledge and skills relating to decision making, problem solving, trouble shooting, human relations and business communications. Youth can acquire various skills in agricultural academic programmes or training programmes, Crop production or livestock husbandry.

The Academic programme skills for youth are:

- Academic programme
- Agricultural Extension
- Plantation management Food Safety and Quality management
- Value added products from fruits and vegetables.
- Dairy technology
- Meat technology
- Products from cereals, pulses and oil seeds.
- Organic farming
- Sericultural
- Dairy farming for moral farmers (An awareness programme).

Training programmes

- Marketing management in Horticultural produce
- Watershed management
- Hygienic meat production and processing.
- Fruit preservation
- Pig rearing.
- Vermicomposting

Hodget (1982) added to the list of the skills the following: Sound mental ability, high achievement drive, competence in technical work, resourcefulness and creativity.

Process of imparting entrepreneurial qualities in youth.

Youth should be involved in the following activities so as to impart in them the entrepreneurial skills or qualities:-

- Training programmes
- Practical counseling by experts especially the agricultural extensionist

- Collaboration with the non-governmental organizations (NGO’S), Agricultural universities and Research centres.
- Hands –on – training through lectures by experts,
- Field visits
- Through the e-learning portal
- Video studios and call centre systems
- Academic programmes in agriculture.

IDENTIFYING ENTREPRENEURIAL OPPORTUNITIES IN AGRICULTURE

The key to distinguishing a real opportunity is to recognize product or service that people lack and are willing to purchase, not one that you just want to sell because you like it.

Here are three ways to identify opportunities

1. **Observing trends:** Economic factors, social factors, political action, regulatory status and technology advances are the most important trends to watch. You can follow and study them closely on your own or you can access publication, online and offline where independent research findings have been made documented. Observing happenings in your immediate environment can also help you discover who has money to spend.
2. **Solving a problem:** In the quest to recognize entrepreneurial opportunities, one must find a problem and solve it. You can find these problems through observing challenges people encounter in their everyday lives.
3. **Gaps in the market place:** This involves the ability to recognize a need that is not being met in a customer’s life. These gaps can be hard to identify, but can be potentially very rewarding.

WAYS OF EMPOWERING YOUTH THROUGH AGRICULTURE

Youth can develop the attitude, knowledge and skills that enable or empower them to pursue active functions in the society and collaborate with adults to assess critical issues and react



favourably to finding solutions to their needs and problems (Gobel: 2004). Youth can be empowered in the following area of agriculture:

- i. Livestock production - This involves the rearing of animals for milk, meat and eggs. Animals kept may include cattle, sheep, goats, pigs, rabbits, poultry or snails.
- ii. Crop production – involves the cultivation of land to plant different crops for food and other purposes.
- iii. Youth play significant and crucial role in agricultural development and production and can therefore be empowered by:
- iv. Rendering financial assistance in form of loans through agricultural loan settlement schemes, governmental financial aids to interested youth in agriculture.
- v. Creation of agricultural training programmes and more academic programmes for school leavers and undergraduates.
- vi. Provision of more programmes through various communication networks by clubs or associations to ginger tremendous involvement of youth in agricultural activities as a driving force for community development.
- vii. Youth should be encouraged to engage in both agricultural activities to generate income to facilitate the growth of their entities.
- viii. There should be agricultural input subsidy on all agricultural inputs like machines or tools, chemicals like pesticides, herbicides, seeds and seedlings etc.

Agricultural Entrepreneurship Initiative for the Youth

Entrepreneurship in agriculture is a serious concern affecting agriculture which inadvertently call for a critical assessment of roles youth can play as potential future leaders. Increase in youth migration from the rural farming communities is exacerbated by the

concurrent ageing of the peasant's farmers and the agricultural production (Amadi, 2001)

The youth agricultural entrepreneurship initiatives can take any form and be targeted at a specific youth-group which may be at primary level, secondary level, and tertiary level.

Primary level (Childhood stage: from age 6 – 12 years)

Schools (Teachers and administrators) should mount awareness programmes aimed at conscientizing children about agriculture as a profitable career option, (Organization for Economic Cooperation and Development, (OECD, 1999). The primary school curriculum should be reviewed to make agriculture a core programme of study. Hence to facilitate it as a profession but not only as a course.

Secondary level (Teenagers from age 13 – 19 years)

National Policy on Education classifies secondary agriculture as pre- and vocational subject at the secondary level. However, the need for attitudinal change toward agriculture is necessary to correct the wrong perceptions of the youth who see working on farmlands as signs of social and economic poverty. The curriculum should stress enterprise education even at the fundamental level. Entrepreneurship and business concepts can be taught through team-based experiential / work-based learning. Entrepreneurship and enterprise development can be integrated throughout the curriculum as an optional subject or an after-school activity.

Tertiary (Undergrads) Level (Teenagers to adolescent)

The Unified University Curriculum in Nigeria can be tap into for developing entrepreneurial skills in the youth. The one-year National Youth Service could be used to achieve internship with graduates farmed out to reputable agricultural establishments. The curriculum should emphasize entrepreneurship education through Cooperative Occupational Experience Programme (COEP).



Post Tertiary Youth (Adulthood stage)

Graduates of agricultural programmes have suffered from unemployment as a result of low or non-mobilization of investment resources thereby ending up in endless search of nonexistent jobs. Unemployment census should be undertaken to identify such graduates for the purpose of retraining them for entrepreneurship development and business start-ups. Constraints to effective youth entrepreneurial skills in agriculture are multidimensional (Ugochukwu, 2012).

Constraints faced by youth in implementing effective agricultural entrepreneurial skills

- and due to their parents participation in politics or societal development.
- Political actions
- Technology advancement
- Regulatory status
- Peer influence.

CONCLUSIONS

AND

RECOMMENDATIONS

Although some suggestions have been proffered alongside target initiatives, it would be proper to once more articulate an assemblage of the strategies. These include initiating:

- 3) Instructional materials and training packages relevant for entrepreneurship development should be made accessible to institutions of learning running agricultural programmes.
- 4) The government (local, state and national) should form genuine alliances with agencies that possess comparative advantage in various aspects of training provisions with special interest in agriculture entrepreneurship.
- 5) Establishment of farm schools aimed at production intermediate school-based community Partnership – could help to strengthen curriculum areas through the engagement of mentors from the local business community.

Constraints faced by youth in implementing effective agricultural entrepreneurial skills and empowerment are multidimensional and are based on different factors, which include:

- Economic factors (talking in terms of available liability of capital to invest in agricultural activities)

Most of the youth are not entitled to loan because of collateral demanded for by banks and loan settlement schemes.

- Social factors – Those that are given assistance by clubs and associations because of their influence in the society

- 1) Programmes aim at enterprise creation should be design by authorities (non-governmental and governmental organizations) for youth and active participation or involvement of the at primary, secondary and tertiary level of institutions.
- 2) Teachers and vocational instructors' programmes should emphasize enterprise education. Entrepreneurship should also form integral part of both primary and secondary school curricular.
- 6) Skilled farm manpower development scheme akin to the farm settlement scheme of the old whose curriculum will emphasize both vocational and entrepreneurial skills acquisition should be introduced.
- 7) Establishment of Pilot farms (at local and state levels) with commercial orientation for the training and induction of youths through excursion and fieldtrips.
- 8) Institution of Youth Revolving Loans Scheme which will target the financing of youth agricultural enterprises at a highly subsidized interest rate.



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TOWARDS MOTIVATING THE YOUTH IN TAKING CAREER IN AGRICULTURE

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Abstract

The paper discussed various ways by which Nigerian youths could be encouraged to take Agricultural practices as career. Nigerians depended primarily on Agriculture for their livelihood before the advent of colonial masters and Western education. By 1960, Agricultural proceeds fell from 60% to 31% in 1980s, due to demand for white collar jobs among the youths. This trend continued unabated till today; hence Agriculture which is supposed to be vital for sustainable development, poverty reduction and food security has been neglected and left in the hands of aged farmers. In lieu of this, Nigeria that was a major Agricultural net exporter in 1960's and largely self-sufficient in food production has become a net importer of Agricultural commodities. The paper presumed that only the youths can change this trend positively if motivated. Youths made the bulk of the population in the country and they possess latent energy, capacity to produce, and they are rich source of innovative ideas. Based on this, series of suggestions and recommendations were made in order to motivate the youths to have interest in agricultural practices so as to take the Nation to a greater height among the Nations of the world.

Keywords: motivations, youth, agriculture

INTRODUCTION

Agriculture is the deliberate efforts to modify a portion of earth surface through the cultivation of crops and the raising of livestock for sustenance or economic gain (Rubenstein (2003). Without missing words, agriculture is the traditional job of the black people in general and Nigeria in particular. Our life before colonial era was glorious and highly prosperous; the secret behind our success was our involvement in agricultural practices. Majority lived in the rural setting and they were entirely engaged in farming; planting food and cash crops, rearing of animals such as goat, sheep, cows, rabbit, fowls among others. During this period, the family setting was a unit of production and consumption. This no doubt added blissfulness to our life in general. With the advent of the colonial masters and the independence. Agricultural proceeds fell from 60% of the Nation's Gross Domestic production (GDP) in the 60s to 30% by the early 80s. Production declined because of unexpected imports and heavy demand for

construction labor which encouraged migration of farm workers to town and cities. The Nation that was major agricultural net exporter in 1960 and largely self-sufficient in food, became a net importer of agricultural commodities- a disease regarded as "Dutch disease" (Canagarajah Ngwafon (1997) What a sad situation?.

Reasons for the downward participation in agricultural practice in Nigeria.

Agriculture which was supposed to remain vital for sustenance development, poverty reduction and food security become abandoned career due to the following challenges:

Ageing farmers:- Those that are currently into agricultural practice are old people of 50years and above. Life expectancy in the Nation is below 65-70 years. Consequently if young farmers do not replace the ageing producers, the production of foods within the Nation can be seriously compromised in the next 20 to 15years.

Negative attitude of the people to Agricultural practice: The citizens especially young people have negative attitude to farming. Many opined

that it is a poor man business; it is too difficult and highly unprofitable. Due to all these, they migrate to the cities to find white collar jobs.



Problem of poor image/identity: Many run away from agricultural practices because the society used to look down upon the farmers. The need to regard those that are farmers will encourage the youths in taking career in farming. Young people are the catalyst capable of making the job a lucrative one, if they are regarded and respected they can generate new ideas, concepts which are critical to changing the way agriculture is practiced and perceived.

The needs for motivating the youths in agricultural practices.

Africa has the largest number of youths in the whole world, over 200 million people are between ages of 15 and 24 years and the African Economic outlooks expect this number to double by 2045. For Africa to be able to feed itself, Agriculture needs to become a more attractive option for the youths otherwise the current trend of young people migrating out of the rural agricultural areas and into cities in search of bigger and better job will leave Africa with a shortage of farmers (Waldorf 2013)

Also increased employment particularly rural employment is required as youths unemployed is 40-60% in the country. Given the many opportunities available in food production, agricultural practices can play a significant role in impacting youths unemployment and by extension, unemployment generally in the Nation. Further still, increased productivity in the Agricultural section will surely depend on youth who comprise 20 - 30% of the population in the country. The energy that the youth possess and the fact that their numbers are significant regard to the Nation population provide tremendous opportunities for increasing agricultural productivity.

Also, youths have latent energy, capacity and ability to produce, not only this they are sources of excellent ideas and innovation, the idea of encouraging them to take career in Agriculture section will be a blessing to the Nation and the Citizens.

Agriculture as a career choice

Agriculture as a career choice is burdened with misperception and a lack information and awareness. This is mostly due to uncompetitive

wages, the physical aspect associated with work in the sector and lack of awareness of what careers in the Agric sector have to offer. Also poor enrolment in post-primary and tertiary institutions is hampering the career choice of youths in Agriculture.

In recent years, evidence abound that many students are not choosing agricultural science as subject to be pursued after secondary education, many choose it because they are unable to attain the required grade in the examination in order to-qualify for their deprived courses, in lieu of this they use it as a make-up subject (Waldorf 2013)

Further still, enrolment at University level is lower compared with other subjects or courses. Data from twenty-three countries shows that on average, one out of twenty students in tertiary institutions choose the bulk field of Agriculture. Women are under-represented in all areas of Agricultural Education and research, whether as students, instructors, extension agents and researchers (World Bank 2007).

In order to ensure that youth take career in Agriculture, efforts must be intensified to make the section attractive and school counselors should create awareness on areas of career available in Agriculture such as:

- i. Industry Sector: Agric business, Food processing, Production/farming
- ii. Industry type: Animal health Animal production/ beef/ diary/poultry/swine/ Agriculture- fish:- sea food
Chemical - Pesticide and fertilizer
Crop production- Education and

Extension

Energy : bio fuel and alternative energy.
Equipment- manufacturing and technical

Feed nutrition

Food and beverage products and processing
Agriculture/turf, viticulture and ornaments/Natural resources/Environmental/Mining/Forestry/
Pests management Plant and soil sciences/seed and bio-chemistry.



Ways of Motivating the youths.

The Nation needs to undergo youth mindset transformation in order to change their negative perception towards agriculture in a bid to attract them into agribusiness undertakings. This move will curb the current unemployment challenges.

Also, the youths need to be in group (cooperatives) which will make them have an easy access to important services like financial assistance from both public and private entity such as forming farmers graduates association or collaborate with entrepreneurship bodies.

Further still, policy makers should have sufficient control over the food production in order to make it profitable.

Governments should also provide productive alternatives for the engagement of youths in agribusiness to reduce crime and other social problems. The availability of income generating options in agriculture can rehabilitate the youths whose alternative options are not socially acceptable.

we need to diversify our economy by developing our agricultural sectors. The involvement of the youths can only perform this magic. Based on this, the following recommendations are made:

- i. There must be an improved access to training and capacity development.
- ii. There must be an improved training at the primary and secondary school levels.
- iii. There is a need to link school e.g cultural operation with the Nations general Curriculum.
- iv. There must be opportunities for on farm training for youths.
- v. There should be an improved and easier access to resources like land, capital, modern technology and information.
- vi. Rural areas should be provided with social amenities like electricity, water, good roads, recreation facilities etc.
- vii. Government should develop a database of agencies that can provide access to youths on information in agriculture.
- viii. There is a need to provide targeted marketing opportunities for primary and value added

This can be done through the provision of education to youth's entrepreneurship initiatives through training, workshops, media and making easy access to capital through the provision of loan with lower interest rates and grants to attract their effective involvement in the available agribusiness.

CONCLUSION AND RECOMMENDATIONS

Youths have the greatest potentials of changing agricultural business landscape, not only at National but also at global level, they only need courage, determination and positive attitude towards embracing agricultural sector (Chan, 2013). Their involvement will no doubt enhance the Nation's economic and Social development likewise they too can live productive life if well motivated.

The need to step Nigeria forward in areas of economic development is long overdue, Nigeria cannot survive under the present mono economic system- depending on oil only,

agricultural products produced by young farmers via special arrangement with schools, hotels etc.

- ix. Provision of motivation and improving the image of agricultural practices.
- x. Effort should be made-to facilitate networking among youths.
- xi. The use of ICT based agricultural training can be put in place. This can offer young farmers a range of opportunities, socialization and network buildings, employments and research.

All these recommendations if taken to can enhance the participation of the youths in agricultural sector, thereby moving the Nation forward.

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ADAPTATION STRATEGIES EMPLOYED BY ADOLESCENT GIRLS IN COPING WITH CLIMATE CHANGE IN SUB-HARAN AFRICA

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Abstract

This work examined the involvement of adolescent girls with regards to the various adaptation strategies employed in coping with climate change effects. While this work did not underplay the identification of children and women by most researchers as the most affected categories in any case of climate disaster, this study argued that adolescent girls, in fact, suffered as much as these categories, if not more. This study, through academic review exercise, identified the various effects of climate change on the general livelihood of adolescent girls, and thereafter proffered solutions regarding the empowerment of the girls. The solutions were viewed from political, social, educational and economic supports lenses. In this light, the study concluded that, given all these supports, adolescent girls are better positioned to cope with the debilitating effects of climate change, and they are better equipped to enhancing general wellbeing for their families and societies at large.

Key words: Adolescent girls, Adaptation, Climate change, Empowerment

INTRODUCTION

The issue of climate change is a global concern which has generated research responses from academics of various disciplines (Church and White, 2006; Peterson *et al.*, 2009; Levitus *et al.*, 2001; and Polyak *et al.*, 2009). The Intergovernmental Panel on Climate Change (IPCC) (2007) noted that the range of published works indicate that the net damage cost of climate change is likely to be significantly increased over time. In fact, considering the various publications so far, one can hypothesize that climate change is easily affecting the achievability of the set Millennium Development Goals (MDGs). According to the report of the UN High Level Plenary Meeting on the MDGs, it was recognized that climate change poses a serious threat and challenge to all countries, particularly the developing nations. The report further recognizes that addressing climate change will be fundamental to safeguarding and advancing progress towards the MDGs.

Considering the seriousness of the effects climate change is creating, agencies, governments and other stakeholders have risen

up to adaptation strategies and mitigation responses. However, Swarup *et al.* (2011:3) warns that “we will not achieve any form of climate justice unless we address the needs and rights of all the different groups of people affected by climate change”. It is also stated that adolescent girls should be allowed to effectively contribute to decision making in National Adaptation Programme for Action. Further, Swarup *et al.* noted that a duo factor of gender and age has been largely under-researched simultaneously when considering the vulnerable or victims in any case of climate change effects. Soumya (2011), supporting the claim of Swarup *et al.* (2011), asserts that recent research showed that women and children deserved special attention in climate change legislation but girls often fallout between both camps. In the light of all these, this study has identified that girl children of age range between 13-18 years- henceforth referred to as adolescent girls- have barely been recognized among the affected groups in cases of climate change effects. Unfortunately, this group falls at the inter-section of the two



regularly recognized vulnerable groups- children and women-. This study argues that adolescent girls are as vulnerable, if not more, as the children and women. In fact, Sounya (2011) identified this group as bearing the biggest burden of climate change. With this, this paper identifies the effects climate change has on adolescent girls, their roles in climate change adaptation strategies and, basing on these, finally justifies the necessity for their inclusion in any decision- making or action plans on climate change adaptation strategies.

Effects of climate change on adolescent girl

Adolescence is a period of key transitions from girlhood to womanhood, from primary to secondary, and from education to work and family (Soumya, 2011). Due to gender and age, adolescent girls are the ones mostly of help to their mothers at home. Mothers are known as home keepers; as part of their responsibilities, they devote their utmost energies into training their girl children to be responsible as themselves when they grow up. Unfortunately, most cultures do not recognize and accord due respect to the status of females generally, as they do for the male counterpart. This situation is confirmed by skinner (2011) and Neumayer and Plumper (2007) who note that women and girls are particularly vulnerable as a result of the cultural norms and the lower socio-economic status they attain in most societies around the world. This condition places females generally, and adolescent girls particularly, at higher receiving ends and riskier situation than the male counterparts in any climate change disaster. This claim is confirmed by Olsson (2014), who says that climate change increases the work load of women and girls at home, thereby resulting in feminization of responsibilities. And due to the increased work load, girls particularly drop out of schools (Aboud, 2011). United Nations Environment Programme (2007) also emphasized that women and girls face more serious risk with the onslaught of climate induced disasters like organized trafficking. The body further reiterates that girl children are sold out more than their male counterparts.

In the same vein, Lane *et al.* (2009) points out that women and girls in developed and developing countries are at higher risk of sexual abuse during and after natural disaster than before its occurrence. This could be argued as should be affecting adolescent girls at the most as girls in this category are in the prime of their youth and would be more sexually attractive to men than the young children and the aged women. This thinking is confirmed by a 16-year old Ethiopian girl in who was interviewed by the Thomson Reuters Foundation (2011) that she knows of many girls of her age who have been raped on their ways to fetching water from far distances in times of drought. The submission by the World Health Organisation (2009) also alludes to this when it states that 25.3% of girls globally experience sexual violence. Equally, the UNICEF confirms that 12 – 54% of women and children trafficked during disastrous climate change contracted HIV/AIDS and they are averagely aged between 16- 22 years.

On another note, adolescent girls also face the challenge forced and early marriages due to climate change effects (Swarup et al, 2011). This is further confirmed by Donahe(2011) that a growing number of girls are being sold to their future husbands in a means to tackling climate change-induced poverty; these girls are termed “famine bride” (Soumya, 2011) . This mostly takes place in the interest of their parents who see their adolescent girl children as nothing but naturally designed sexual agents meant to satisfy the lust of men in a bid to provide income for the impoverished families. UNICEF (2011) states that one in every three girls in the developing world is married out by age 18 years. It is similarly noted that 1 out of every 7 girls, in the developing countries marries before the age of 15years (Levine *et al.* 2009). In addition, 47% of women are married before they are 18 (UNICEF, 2008). Early marriage which results to early pregnancy is also the leading cause of death among 15-19 years old girls (Reproductive right article and).The UNFPA (2010) also reports that 76% of young people- aged between 15 – 24 years living with HIV/AIDS in the sub-Saharan African are females.



Additionally, Masuka *et al.* (2003) says that girls are often taken out of school to deal with increased burden during serious climatic change. The UNESCO (2011) pointed out that 75 million girls of primary and lower secondary age group drop out of schools in 2008. This may be as a result that, during changing climate patterns, girls are sent out of their homes to work as domestic servants or as laborers in agricultural farms and textile industries to raise income for their families. Boys, on the other hand, are mostly kept in schools in anticipation that they are the ones to become the family bread winners in the future (Plan, 2008).

According to PLAN 2013, boys are more exposed to information in general, as they have more leisure time to listen to radio and watch television, interact frequently with teachers at schools and adults at home and in the communities. All these predispose adolescent girls to climate change-related disasters than boys. In addition, Iked (1995) noted that, women and girls are mostly killed during any climate-induced disaster due to poor information about climate change.

Apart from inadequate information for girls, adolescent girls are most often sharing the responsibility of home keeping with their mothers. This positions these girls at higher risks in any incidence of climate change disaster. Sultan Mahamud (a local government chairman in Bangladesh) in *Weathering the Storm* (2011) affirms that girls won't leave their homes during times of crisis and disaster. He further says that, it is also difficult for rescue teams to find girls, and they also leave home later than boys during cyclone since they are primarily responsible for livestock and the household. It was also pointed out by the same man that in the mass tomb of victim of cyclone Sidr majority are women and girls. Women Environment and Development Organisation (WEDO, 2008) also noted that chances of survival are lower for girls as compared to boys during climate-induced disasters. Further, Iked argued that women and girls were recorded as constituting not less than 90% of the people who died during the 1991 cyclone in Bangladesh (Iked, 1995). As well, not less than 80% women lost their lives in the Asian

Tsunami (APWLI, 2005). And after the unfortunate incidences of climate change-related disasters, women face the risk of falling or remaining sick as they are discriminated against when distributing resources like medicine (GTZ, 2010) Unfortunately, it is also the adolescent girls that often eat the least or less in their households during the periods of food shortages (Neumayer et al, 2007).

Climate change adaptation strategy and the risk encountered by a girl child

This study identified some various ways by which adolescent girls were involve in climate change adaptation processes. At the same time, these involvements are not without their accompanying challenges. In this light, this work presents in Table 1 below the various means of involvement of adolescent girls in adaptation strategies regarding climate change disasters and the corresponding challenges.

Girl child empowerment

Brian *et al.* (2010) noted researchers to have found that a huge number of weather-related tragedies could have been averted if most developing countries had focused on progressive and feasible female education policies. The experience of CARE (2010) in reducing poverty have also proven that girls and women are central to lasting solution of the effect of climate change. It has also been found out that women are more willing to change their strategies in response to new information (Patt et al., 2010). Studies from the World Bank and the Centre for Global Development State (2010) conclude that in the developing world neutralizing effect of climate change in the coming decade will require educating adolescent girls and they will in turn increase their countries future resilience. Recent studies from the World Bank and the Centre for Global Development also states that educating girls and women is one of the best ways of ensuring that communities are better able to adapt and thus be less vulnerable to extreme weather events and climate change The cost effectiveness of the education of girls and women for climate change adaptation has been affirmed (World Bank, 2010). There are over



500 million girls (aged 10 – 11) in the developing world (WHO 2009). When girls are recognized by their culture and norms, allowed to participate in decision-making policies about climate change, educated, and also funded, they are capable of identifying and taking actions that will help their communities and also protect themselves. Empowering them means reducing vulnerability and, at the same time, equipping them to have more adaptability.

Societies should also restructure their cultures and norms to favour the rights of adolescent girls. By culture and norms, we mean acceptable belief and behavior in the society. In most developing nations, due to culture and norms, the rights of girl children are under recognized. For this reason their voices are not heard. Climate- related disasters cannot be treated in isolation of cultural factors. Swarup *et al*, 2011). Therefore, communities and human rights bodies in the society need to come together to promote the right and need of adolescent girls *vis-a-vis* right to education, health facilities and other related rights. By doing this they will be empowered to do all that they know to do best.

At the same time, families also need to treat their male and female children equally. If quality education is also given to a girl child, it will reduce the risk of early and forced marriages. This is confirmed by a study conducted by the World Bank that states that “in the developing world, neutralizing the impact of worsen weather over the coming decade will require educating a large new number of young women as this will enhance country future resilience. Also, the cost effectiveness of educating girls and women for climate change adaptation has been affirmed by World Bank” (2015). The families should also protect their adolescent girls against sexual violence by allowing the male child (ren) to escort them in cases where they have to travel distances to fetch water.

Governments should strictly fight and stop human trafficking by inflicting heavy penalty and punishment on human traffickers. Law enforcement agents should be empowered to work tirelessly during climate induced disaster

to protect girls and prosecute rapists. They should also provide special funds to educate girl children and punish parents who refuse to allow their girl children to attend schools.

Agencies, such as developmental and environmental, which work with communities should endeavor to create special forums to meet with adolescent girls, provide for their special needs, give them necessary information and technical training to cope during and after climate change disasters.

Policy makers should also involve adolescent girl during decision making stage and international bodies to allocate special fund for adolescent girls so as to equip them better during and after climate induced disaster.

CONCLUSION AND RECOMMENDATIONS

Adolescent girl children, as argued in this work, are by no means exempted from the effects of climate change; rather they are essentially at the worst receiving ends compared to other victim categories. Apart from this, their central positions within households and societies positions them to be active agents in mitigating and adapting to climate change incidences. Therefore, recognizing their voices and investing in them is a key to effective climate change mitigation and adaptation. As stated by Swarup *et al* (2011), that effective action on climate change requires clear analysis of who is being affected and why and also investing on safe-guarding the right of those most at risk. By doing these, this work proposes, all the set goals of the Millennium Development will be easily achieved.

The following are hereby recommended:

- Policy makers determining local, national and international policy should ensure that adolescent girls’ voices are heard and they are allowed to contribute to decision-making on adaptation strategy and National Adaptation Program of Action (NADAS) project at local and National levels.
- Adolescent girls should be empowered by giving them quality education, information and training on climate change adaptation, so that they can effectively perform their roles.



- International bodies should promote the role of adolescent girls by funding programmes that will address their needs.
- Local, national and international government should establish an environment for girl child development and protection

Table 1: Table showing adaptation strategies carried out by adolescent girls and the risk they encounter

Hazard/effect of climate change	Adaptation strategy	Risk associated with roles
1. Lack of water/drought	Trekking distances in search of water	Susceptibility to being raped or not being able to attend school diligently
2. Storm/cyclone	Rebuild damaged house	Truancy in schools
3. Destruction of farm products/ source of livelihood	Early and forced marriage and/or working as house maids to generate income for the family.	Dropping out of school and/or early pregnancy and/or contracting HIV/AIDS Gender inequalities
4. Incidence of disease outbreak	Staying at home to look after sick members of the family	Not able to go to school
5. Lack of firewood	Trekking long distances in search of firewood	Exposure to sexual violence/rape
6. Food shortage	Giving preference to male children to eat large portions of food	Malnutrition and lower immunity against preventable diseases
7. Flood incidence – lack of clean water	Trekking distances in search of clean water	Poor sanitation/ disease outbreak/ chance of being raped.

Source: Awoyemi, Apata and Abdu-Raheem, (2015).

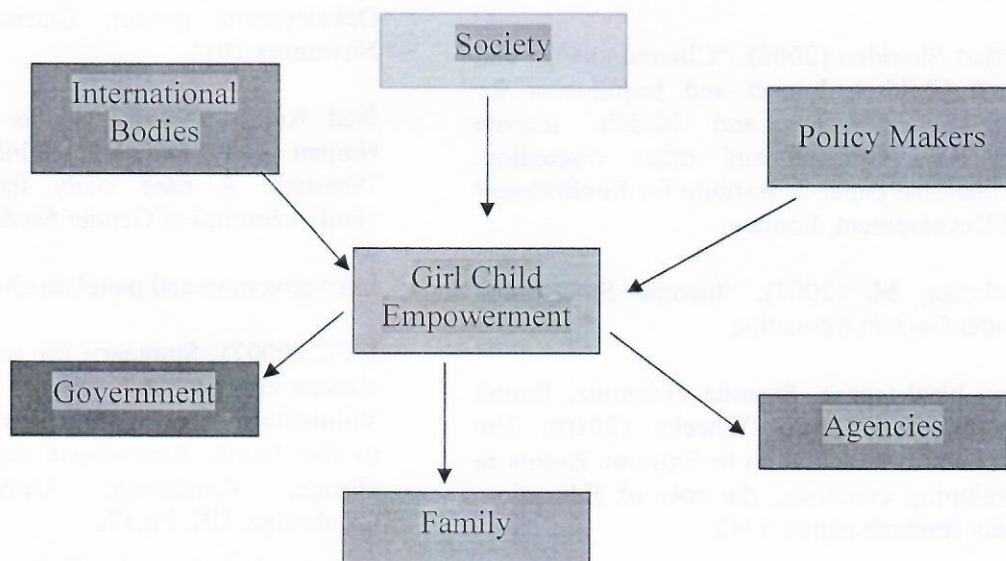


Fig 1: Model showing support needs of adolescent girl



Source: Awoyemi, Apata and Abdu-Raheem, (2015)

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THE EFFECT OF AGRICULTURAL EXTENSION SERVICES ON FARM PRODUCTION IN LAGOS STATE: CASE OF YOUTH FARMERS

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Abstract

The paper examines the effects of the provision of agricultural extension services on farm output of youth farmers in Lagos State. The survey include information about education, agricultural inputs, crop selection, agricultural extension services and access to markets among other factors that are relevant to farming. A Cobb-Douglass regression model was used for the analysis. After controlling for productivity characteristics and farmer ability, variables such as education, family labour, fertilizer, agro-chemicals, improved seeds and land area cultivated are positive and significant. The estimate for extension visits / participation is also positive and significant. Although the magnitude of the extension visits/participation coefficient (0.015) is fairly small, it has a significant impact on the value of production particularly if considered from the angle of the scale of production.

Key words: Effects, extension services, farm production, youth farmers

INTRODUCTION

Subsistence and traditional agriculture managed by the old and the aged is a basic characteristic of Nigerian agriculture. For any meaningful progress to take place under his system. There is a need for change particularly through practical and functional education. The responsibilities for bringing about this change rest on the shoulders of extension workers through the introduction and operation of virile extension services (Adams 1989). Impartation of skill and knowledge, influencing a change of behaviour by replacing an existing method with a new and improved one is the hallmark of extension services.

When farmers become aware of the availability of a new technology, they make inaccurate perception of the related costs and benefits as information availability may be limited. As farmers decision is based on their perceptions, if for instance perception do not coincide with the correct attributes of the technology, farmers resource allocation and technology choice will deviate from the social optimum (Birkhaeuser, et al 1991). To this end, farmers need the functional education to be able to make the right decision. Education is a process of training the mind and to give instructions, especially for young people and

children in schools, colleges. It is designed to give knowledge and skills.

Agricultural extension is the application of scientific research and new knowledge to agricultural practices through education. It is the organized exchange of information and the deliberate transfer of skills. It is a voluntary out of school educational programme for clientele, consisting of the relevant contents, principles and procedures. It also involves dissemination of information on innovation or new technology to the clientele.

Agricultural extension involves the change agent (extension workers) attempting to work on the clientele psychology through the use of effective teaching methods to improve the knowledge and develop skills of the clientele, as he requires knowledge on improved practices to enhance its production and marketing activities.

Extension agents interact with the farmers, providing information and aiding in developing their managerial skills (Birkhaeuser *et al*, 1991). In addition, extension agents disseminate information on crops and livestock practices, optimal input use, and consult



directly with farmers on specific production problems, thus facilitating a shift to a more efficient methods of production. That is agricultural extension not only accelerates the diffusion process and the adoption of new varieties and technologies, but also improves the managerial ability of farmers and effect the efficient utilisation of existing technologies by improving farmers know-how.

The literature dealing with the impact of extension on the performance of farms has followed two different directions. In the first place, several studies for example Mook, 1981; Pudasaini, 1983; Owens et al, 2003, have been based on the estimation of a production function in which extension is considered as a separate input. This production - based approach assumes that farms are operating at full technical efficiency level and thus do not purposely waste resources. Within this approach, the impact of extension on farms performance is evaluated through its marginal product and, in a sense captures its direct effect on output. On the other hand, as the assumption of farms technical efficiency is relaxed, extension has been used as a factor explaining the differences in the individual technical efficiency levels rather than as an input in the production function e.g. Bravo-Ureta and Evenson, 1994; Seyoum et al., 1998; Young and Deng, 1999. That is, extension has been included along with other socioeconomic and demographic variables in the inefficiency effect function as a factor influencing technical efficiency. As such, the impact of extension on farm production is indirect and may be evaluated through the potential output gain due to the elimination of technical inefficiency. This study attempt to consider extension as a separate input. In performance evaluation, it is assumed that all farms in the sample have access to the same production technology but some are more successful than others in terms of efficient usage. Despite farm - specific factors (socioeconomic, demographic, etc.) that may account for such differences, some of the inputs

used in the production process may also be responsible. This may occur when either farmers have acquired more information, knowledge and experience with respect to one input productivity than another, or some inputs affect the productivity of other inputs indirectly. In either case, extension may be a potential input that fulfils both of these requirements. In that respect, it is hypothesised in this study that the number of extension visits to advise on different methods of input application may result in different levels of output, causing diversity in the efficient use of inputs and thus, differences in input productivity.

Any particular extension system can be described in terms of how communication takes place and why it takes place. According to NAFES (2005), there are four possible combinations, each of which represents a different extension paradigm.

i. Technology Transfer (Persuasive + Paternalistic). Technology transfer involves a top-down approach that delivers specific recommendations to farmers about the practices they should adopt.

ii. Advisory Work (Persuasive + Participatory). This is a situation where government institutions or private consulting companies respond to farmers enquiries with technical prescriptions. It also takes the form of projects managed by donor agencies and NGOs that use participatory approaches to promote pre-determined packages of technology.

iii. Human Resource Development (Education + Paternalistic). Top - down teaching

methods are employed, but students are expected to make their own decisions about how to use the knowledge they acquired.

iv Facilitation for empowerment (Education + Participatory) - This involves methods such as experimental learning and farmer - to - farmer exchanges. Knowledge is gained through interactive processes and the



participants are encouraged to make their own decisions.

Several studies have investigated the relationship between agricultural extension and productivity with varying results. Birkhaeuser, Evenson and Feder (1991) review 26 studies that used linear regression to determine the relationship between extension contact and farm productivity. The result of eleven of these works were statistically significant at the 90% level. Evenson (1997), pointed out that because of large variations in programme design and field workers skill, it is not feasible to make broad generalisations about the economic contributions of extension.

Robert Evenson, 1997, Michael Betz, 2009 both stressed that at the individual farm level measure of extension impact, results may be affected by two basic estimation problems. The first is the problem statistical endogeneity in extension - farmer interactions. Trying to measure the impact of agricultural extension by designating extension contact as a variable of interest often treated the extension contact as being unrelated to the farmers actions and characteristics. It could be that one of the characteristics of more productive farmers is the desire to acquire information about changing farm conditions or new technologies. Such farmers may be inclined to attend more demonstration days, read more literatures and seek extension contacts simultaneously. Likewise, extension agents themselves may also seek contacts with better farmers who would be good performer even in the absence of extension contacts. In such cases, the extension contact variable is endogenous, and the estimates of extension impact on farmers are likely to be biased upward because some of the better performances credited to the extension contact are the result of the superior attributes of the group which interacts with extension agents. This problem can be handled econometrically through simultaneous equation approaches. The second source of potential bias is the problem of indirect or secondary information flows where knowledge

which originates from extension contacts is passed on to other farmers (information spill over) who do not directly interact with extension personnel. This creates some difficulty in measuring the effect of extension on output. A farmer who did not receive an extension visit will have access to the same information just like farmers who did receive extension visits through the transformation of information between neighbouring farmers. In such cases, there may be little difference in performance between farmers interacting directly with extension and other farmers. Such an estimate of extension impact would erroneously indicate zero extension effect, which no doubt is an understatement. This problem is usually controlled for by administering a quiz to assess the farmers ability and knowledge of specific agricultural practices.

Youth and Agriculture

The importance of the agricultural sector is more pronounced in the developing countries including Nigerians where it used to be the main thrust of national survival, employment, etc. Doreo Partners (2012) reported that about 76% of Nigerian population lives in the rural areas and about 90% of the rural dwellers are engaged in agricultural production. Irrespective of these, the goal of self-sufficiency in food production in Nigeria remains an elusive target. One of the problems is that the younger generations are not interested in farming. The age and the low level of education of an average Nigerian farmer correlate with their aversion to risks associated with the adoption of new innovations. In addition, agricultural production is still being carried out using physical strength which declines with age. Consequently, their productive capacity remains very low.

In Nigeria, the age range of 15-36 years is taken as representing the category of youth (NYAC, 1987). Lahiri A.K. 1989, used the term students youth as those persons between the age of 16 and 25 years who are actively involved in the world around them. Where they exist and function, youth programmes play an important role in building life skills of individual young



people; strengthening families and communities and working towards sustainable agricultural and rural development. Youth programmes actively promote the application of appropriate technology to improve agricultural production on a sustainable level. Youth work often tends to have a low priority and low status, which in turn makes it difficult to attract qualified and competent individuals. While the contribution of the youths towards attaining food security cannot be underestimated, agriculture is often not an area of interest for many young people. Their apparent lukewarm attitude towards agriculture is a source of concern and challenge to the development of agricultural extension. Owing to the fact that traditional agriculture is based on hoe and cutlass, subsistence agriculture holds no interest or appeal for young people. Worst still, the numerous agricultural development programmes implemented over the years by the different levels of government in the country did not integrate youths into the mainstream (Dauda et al, 2009). Extension service providers concentrate their efforts mainly on the ageing farmers leaving out the youths probably deliberate.

With fewer youth in agriculture, the long term future of the agricultural sector is in question. This is because a larger population of youths represents the link between the present and the future, as well as a reservoir of labour. The question therefore is how impactful has the extension agents and services in assisting the very few youths that are currently in agriculture to better their livelihood through increase in production output?

For a nation to attain economic stability the agricultural sector must be vibrant and the youths encouraged imbibing farming as a noble profession. Youths have the potential to overcome the major constraints to expanding agricultural production. They are often more open to new ideas and practices than adult farmers. They play an important role in creating awareness on different subject areas. Indeed

since the youths hold the future of any country, it is quite necessary to develop them into future progressive farmers and better citizens. This study therefore is an attempt to estimate the impact of extension on the value of crop production among youths in the study area.

METHODOLOGY

This study was carried out in Ikorodu Local Government area of Lagos State. Ikorodu is one of the agriculturally active local government areas in Lagos State next to Epe. The vegetation, soil condition, temperature and the structure of rainfall supports an all year round farming activity. The people also are farmers particularly in the rural villages. Essentially, they grow crops like cassava, maize, vegetables and plantain.

The data for this paper was basically primary, generated between the months of May and September 2011 from a sample of farmer youths in different villages and among secondary school students in the local government using a two-staged sampling design. The local government was considered on the basis of geographical delineation; North, South, East and West. Ten villages were purposively selected. Three from the South and West respectively, while two each from the North and East. Four secondary schools also selected on the basis of one school from each geographical division. Twelve youth farmers were randomly selected from each of the ten villages through contact farmers and five students selected from each school among those students participating in the school farm programme. Interview sessions were equally granted by some of the subject teachers in these schools. In all 140 respondents were involved.

The survey includes information about agricultural inputs, crop selection, agricultural extension and access to market among other factors that are relevant to farming. One big problem in estimating agricultural production functions is controlling for heterogeneity that exists across farms as a result of individual respondent's ability and knowledge. To this effect,



a quiz was administered to the farmers to assess their knowledge of specific agricultural practices. This exercise (quiz) provides an opportunity to control for respondents ability and knowledge, which would have been a possible source of error. Data was analyzed using both descriptive and inferential statistics. The socio-economic features of the respondents were descriptively presented. Multiple regression analysis was used to estimate the effects of other relevant variables including extension services on the yield level of the respondents. The model used is a Cobb-Douglas production function of the form:

$$Y = ALoK^\beta \dots\dots\dots (1)$$

where Y is the value of agricultural production, K is the farms capital inputs L is the farms labour inputs. A is the total factor of productivity, otherwise known as technology, which increases the effects of both capital and labour simultaneously. All observable characteristics of the respondents are included in A . α and β represents the output elasticity's of capital and labour respectively. After the heterogeneity of fanners ability or knowledge has been controlled for by including a variable in the model that represents farmers knowledge of specific farming practices, and another variable recording whether or not each farmer had received any information on improved inputs or techniques from other farmer was included in the regression equation, the estimation equation becomes;

$$y_i = \alpha k_i + \beta l_i + \gamma a_i + \mu_i$$

where the dependent variable y_i is the log of the total value of the individual fanners output. K_i , L_i and a_i are the log values of farmer i 's capital, labour and technology, respectively. Capital includes the farmers land and agricultural assets, while the labour variable includes both family and hired labour. Technology includes variables like the farmers education, quantity of fertilizer applied, land area under improved technique, and μ_i is a stochastic error term with a mean of zero.

RESULT AND DISCUSSION

Characteristics of the Respondents

Some characteristics may influence farmers' production decisions as well as their overall efficiency in production. The essence of this subsection, therefore, is to discuss the findings of this research with reference to those characteristics that affect production decisions.

The average values of variables of interest are as shown in Table 1. The average age of this group of farmers is 26 years. At this age, the people have the physical strength and energy required for functional agricultural activities. The sex of an individual can influence the type and quality of work done by that individual. About 77% are male. Specifically, all of those that are not in school are male. This is most likely to be due to the fact that men are capable of doing more tedious work which is associated with farming than the females. Educationally, many are secondary school graduates, while a significant proportion are still in their different levels in the secondary school. The cultivated land area is about 3.2 acres divided among the two major crops (cassava and maize) planted. In traditional agricultural production, family labour plays a significant role in farm labour supply. The average farmer first exhausts all sources of labour in his family before hiring any in order to reduce the cost of production. Rationally therefore, these youths rely more on themselves and some members of their family for labour. They seldom go for hired labour except if it becomes very necessary. The average value of their farm assets is about Ten Thousand (N 10,000) Naira. Considering all these characteristics, the farmers are best classified as being small scaled. The extension workers made about two visits to these farmers in every twelve months. The farmers under investigation have three main sources of information - the extension workers, mass media and other farmers. The extension workers however, represent their main source of information

Table 3 below presents the regression results of the Cobb-Douglas production model. Most of the important variables are significant and are of



the expected signs. Variables such as age, use of fertilizer, days of family labour, improved seed and cultivated land area are all positive and significant.

The number of extension visits and participation is of most interest to this study. Extension visits and participation are positive and significant. Although the magnitude of the coefficient is fairly small, it has a significant impact on the value of production particularly if viewed from the angle of the scale of production and available opportunities. Also important is the fact that extension visits and participation has a lasting effect. Knowledge is retained from season to season; it is likely therefore that each growing season will experience an increase in output as well.

These farmers are small scaled, with no money to throw around so they devoted all their efforts at maximizing the gains that could come from the information made available to them by the extension workers. A typical extension visit consists of the extension worker examining the crops, farming techniques and other aspects of cultivation that farmers are currently applying. Recommendations are made for improvement. These changes often time do not require investments or accumulated capital, but are rather changes in methods. Any information that will improve output will be helpful to this category of farmers. This group of farmers cannot save much from one season to another; as a result, they cannot afford productive inputs that require an initial monetary investment. For these farmers therefore marginal increases in output come more from more and better

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knowledge concerning virtually all aspects of production. Information transfer can have a good effect over time, because broad agricultural knowledge does not depreciate from one season to another, so improving the quality and availability of information available to farmers will have a cumulative effect and raise output ultimately.

CONCLUSION

This study estimated the effects of agricultural extension services on the output of youth farmers after controlling for farmer's ability and knowledge spillovers, using Cobb-Douglas production function. The analysis gives a positive relationship between agricultural extension visits / participation and value of output of farmers, although the estimate is fairly small. This result is in agreement with many findings of previous work. The effect is so minimal, as such, it may not be strong enough to motivate the energetic youths into farming. There is the need to stimulate the youth interest in agriculture through effective rural youth agricultural extension programmes. Rural youth programme should become a part of comprehensive strategies of national agricultural extension services that target rural families.

According to Ovwigho and Ife (2009), supporting and empowering the youths will enhance their access to agricultural innovations, extension services, training, inputs, credits and marketing (both regional and international), and motivate them to remain in farming.

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Table 1: Mean values of respondents characteristics

Basic characteristics

Age (Years)	12
Education	Secondary school and below
Gender - Male	77%
Female	23%

Agricultural inputs

Size of cultivated land in acres	3.2
Family labour (man days)	93
Hired labour (man days) for private youths	27
Value of agricultural assets (in N)	10,000
Value of fertilizer applied (in N)	45,000
Value of pesticides, herbicides and fungicides applied (in N)	4,000

Farm and farmer characteristic

Land devoted to cassava (in acres)	2.2
Land devoted to maize (in acres)	1.0
Score of the farmer knowledge quiz (out of 7)	3.7
Extension visits in the last one year	2
Value of output (in N,000)	195

Source: Field data

Table 2: Farmers' different sources of information about improved inputs/methods

Extension agent	107	71.3
Mass media	5	3.3
Others farmers	38	25.3

Source: Field data

Table 3: Cobb-Douglas Model Regression Results

<i>Parameter</i>	<i>Estimate</i>
Log of farmers age	0.032
Log of farmers education	0.013***
Log of total land area planted	0.211***
Log of family labour	0.312***
Log of hired labour	0.028



Log of agricultural asset value	0.019
Log of value of fertilizer applied	0.018***
Log of value of agro-chemicals applied	0.014***
Log of improved seeds	0.012**
Log of land devoted for cassava	0.007*
Log of land devoted to maize	0.004
Log of farmers quiz score	0.038**
Knowledge received from other farmers dummy	0.034
Log of the number of extension visits and participation	0.015**
Constant	11.18***

R²(R squared) = 0.317
 P < .05; p < .01; and p < .001
Source: Calculated from Field data



LONGITUDINAL/SURVEY OF STUDENTS' PERFORMANCE IN AGRICULTURAL SCIENCE IN WAEC AND NECO EXAMINATIONS IN LAGOS STATE (2005 - 2009)

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Abstract

This study reviewed students' performance in Agricultural Science in WAEC and NECO examinations in Ikorodu and Epe Local Government Areas of Lagos State, Nigeria. Data were obtained from thirty-five schools selected through purposive sampling techniques from reviewed of secondary data. Frequency distribution, trend analysis percentages and histogram were used to analyze paper objectives using Statistical Packages for Social Sciences. Results showed distinction was at lowest point on the graph from 2005 - 2009. In 2009, 82.5% of students of Private Schools scored at least a credit pass, while few of the students scored below credit. Students of Public schools had 5.0% with distinction, 15.6% scored credit grade and majority (78.6%) of the students scored below credit. Thus, the general performance of student in Agricultural science was below average in public school compared to private schools. Also, the percentage of students that scored distinction or credit in Agricultural science is closely related to the percentage of students that also sat for Biology. While in Physics and Chemistry their performance was almost the same. Therefore, the study recommends that public perception needs to be changed as regards agricultural education from secondary schools and re-orientation about career direction to stimulate performance in agricultural science in public secondary schools.

Key-words: Longitudinal survey, students' performance, agricultural science

INTRODUCTION

Agriculture is the key sector of the economy which provides food, creates jobs and opens-up closed communities, improves the environment, provides raw materials and develops latent resources and potentials (Imagwe, 2013). Ogbalubi and Wokocha (2013) opined that agriculture is considered a catalyst for the overall development of any nation. They exposed that it is thus, a critical sector that drives the economic development and industrialization of the developing nation, and also holds the ace for reducing unemployment. It was in realization of this that the Nigerian governments (present and past) have encourage the teaching of agriculture in primary and secondary schools to give a good practical and theoretical background, that will equip the youth to become interested in agriculture as a source of livelihood (Olowa, 2009).

Formal agricultural education in Nigeria started with such school as St. Josephs

Agricultural School in Topo, the Wesleyan high school (established in 1843) and the Hope Waddle Institute (1859), having some forms of agricultural education on the curriculum during this period was grossly restricted to the production of crops sufficient to feed the teacher and the pupils; and there were no incentives capable of motivating anybody to take up agriculture as mean of livelihood. Olowa (2009) further revealed that increasing awareness of the importance of agriculture education has driven various regime in government and educator to embark in several review of agricultural curriculum at both secondary and tertiary institution and as well as provided policy and incentives towards motivating young ones to study and engage in agricultural practices. In spite of various efforts by the government and other stakeholders, it has been widely reported that agriculture in schools had been a failure (Fadairo *et. al.* 2014; Olowa, 2009).



Education in agriculture is not totally new to Nigerian culture and the age group now in our secondary schools (ages 11-17 years). It was an accepted part of the culture to have a child follows the parents to farm even as early as six years of age. Even at the time when the missionaries introduced formal education, it was still expected that a child goes to work at his father's farm after school hours and at weekends. The child thus obtained an informal education in agriculture through a system of apprenticeship (Fadairo, Olatunji and Akwiwu, (2014). However, they further exposed that secondary education during the colonial era was fashioned along the line of grammar schools in Britain; the introduction of a vocational subject such as agricultural science was not deemed necessary. The consequence therefore was the production of school leavers who at best saw agriculture as a part time hobby and not a source of livelihood. Thus, few secondary school leavers therefore opted for higher education in agriculture.

Agricultural science was introduced into secondary school curriculum so as to enable school leavers appreciate the dignity of labour and teach them to be self-reliant and productive. The performance of student can therefore be evaluated through a unified examination process. Hence, the introduction of agricultural science subject into West African Examination Council (WAEC). Educational institution usually requires evaluation data (examination) to demonstrate effectiveness of learning process. Examination could be internal or external conduct of learning evaluation. Internal examination are developed and administered by school using teacher-made tests. School-based examinations are conducted either weekly, or at the end of the school year. On the other hand, external examination are developed and administered by public examinations bodies' like the West African Examination Council (WAEC), Joint Admission and Matriculation Board (JAMB), National Examinations Councils (NECO), the National Business and Technical Examination Board (NABTEB) and the National Teacher Institute (NTI).

The likely problem based on the longitudinal survey of student performance towards agricultural science examination rests on motivation of the student offering the subject in secondary schools. Motivational problems can be extrinsic problems that are not within the student themselves. They are factors that can drive or encourage them to learn and perform better in their examinations. These factors include parental support, provision of learning material in various schools and good environment. However, there is doubt as to extent to which this motivational problem can influence academic performance of student in both internal and external examination. There are a lot of problems affecting student's performance in agriculture and these problems have contributed to the failure of agriculture in secondary schools as enunciated by Olowa, 2009. These identified problems include; few qualified teachers, non availability of instructional materials, use of practical work as a means of punishing students, minimal administrative supervision, poor funding, and perception of the age categories of people engaging in agriculture. There should be a need to replace them with youths who are knowledgeable in the art of science and agriculture and who have been given good groundings and motivation to continue in the field. Also some problems are associated with agriculture syllabus been perceived as inferior compare to other science subject.

To this end, this research work made attempt to proffer solutions to the following research questions: What are the trends of students' performance in agricultural science in WAEC and NECO between 2005 through 2009, what are the trends of student's performance in other in science subjects in WAEC and NECO between 2005 through 2009, what are the performances of students in public secondary school and private secondary school in agricultural science in WAEC and NECO between 2005 through 2009 and what are the performances of students in WAEC and NECO examination in agricultural science between 2005 through 2009?



OBJECTIVES

The general objective of this study was the longitudinal survey of students' performance in agricultural science examination in WAEC and NECO (2005 through 2009) Lagos State. Specifically:

1. To determine the trend of performance in agricultural science subject by secondary students in WAEC and NECO
2. To compare performance of students in agricultural science with their performances in other selected subjects.
3. To determine the performance of students in agricultural science in private secondary schools and public secondary schools in WAEC and NECO examination.
4. To compare the performance of students in agricultural science WAEC and NECO conducted examination.

METHODOLOGY

Epe and Ikorodu Local Government Areas of Lagos State, Nigeria were used as the study area. Ikorodu covers 100sqkm and has a population of 527,917. Epe Local Government area with a population of 181,734 is also located in the same zone as Ikorodu. It is bordered on the West by the Ikorodu Local Government Area and also share border with the Eti-Osa Local Government Area on the West and the Lagos Lagoon on the South. Occupations of the people is similar in both areas, these include fishing, farming and so on (Balogun, Odumosu and Ojo 1999).

Purposive sampling technique was used in selecting samples for the study. However, nineteen and sixteen schools from Epe and Ikorodu respectively to total thirty-five schools

(sample size) were randomly selected. The data used for this study were from secondary sources. The data used were results of science subjects like Physics, Chemistry, Biology and Agricultural Sciences from the selected schools. The results were in two parts, West African Examination Council and National Examination Council, Senior Secondary Certificate Examinations. Descriptive analysis such as frequency distribution, trend analysis percentages and histogram was used to analyze the objectives and present the results from the finding with the aid of Statistical Packages for Social Sciences. The collected results were coded as follows:

RESULTS AND DISCUSSION

The results in Figures 1 and 2 revealed that the highest X_2 level was in 2009 where an average of 38 students had X_2 grade. Also, on the graph the peak point was X_{v4} grade in 2007. During 2006 and 2008 the peak point for X_2 grade were 32 and 30 students respectively. However, in 2009 majority of the students had X_3 grade than other grades. The lowest point on the graph is the X_1 grade while the peak point was in 2009 (14 students). In 2005, an average of 38 students scored minimum of X_2 grade and 74 scored below X_2 that is, X_3 . In 2006 the total of 44 students scored X_2 and 110 students scored below X_2 . However, in 2007 an average of 45 students scored at least X_2 grade while an average of 205 students scored below X_2 . In 2008, 48 students were able to made X_2 grades while 54 had X_3 and an average of 88 students failed. In 2009 total of 38 students scored minimum of X_2 and 14 had X_1 while 39 students scored below X_2 .



TREND OF PERFORMANCE OF STUDENTS IN AGRICULTURAL SCIENCE FROM 2005 – 2009 (NECO)

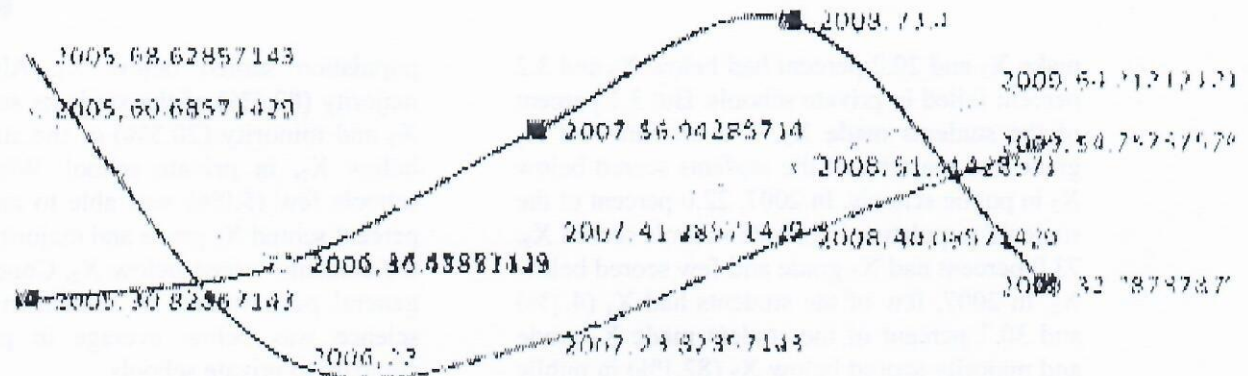


Figure 1: The trend of performance of students in agric science from 2005 — 2009 NECO conducted examination from the graph.

Source: Field survey, 2013

TREND OF PERFORMANCE OF STUDENTS IN AGRICULTURAL SCIENCE FROM 2005 – 2009 (WAEC)

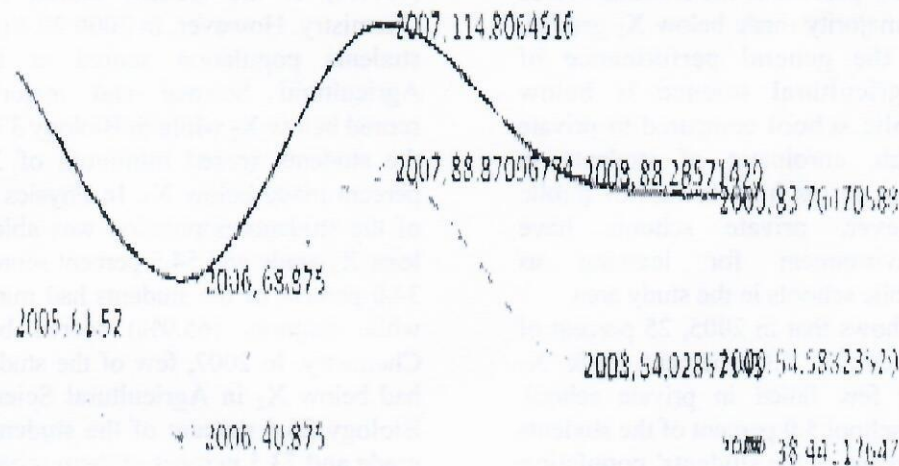


Fig. 2: The trend of performance of student in agric science from 2005 - 2009 WAEC conducted examination from the graph.

Source: Field survey, 2013

Table 2 below shows that in 2005, a total of 78.3 percent of the students' population had at least X₂ grade in Agricultural Science (WAEC) from private schools and only 24.1 percent of the students' population in public

schools had minimum of X₂ grade. 21.7 percent of the students had below X₂ in private school and 7.0% had below X₂ in public schools. In 2006, 23.4% of the students had X₁ in Agricultural Science, 56.4 percent were able to



make X_2 and 20.2 percent had below X_2 and 3.2 percent failed in private schools. But 3.1 percent of the students made X_2 , 27.6 percent had X_2 grade and majority of the students scored below X_2 in public schools. In 2007, 22.0 percent of the students' population in private schools scored X_2 , 73.0 percent had X_2 grade and few scored below X_2 . In 2007, few of the students had X_1 (4.1%) and 30.7 percent of the student made X_2 grade and majority scored below X_2 (82.1%) in public school. It was deduced that in 2008 majority of the students' population scored at least X_2 (97.8%) and only few failed in private schools. While in public school 41.8 percent of the students scored minimum of X_2 , 32.3 percent had X_3 grade and 26.0 percent of the students failed. Also in 2009, 46.7 percent of the student population in private schools scored minimum of X_2 , 53.2 percent scored below X_2 while in public school 25.7 percent of the students scored at least X_2 and majority made below X_2 grades. Conclusively, the general performance of student in Agricultural science is below average in public school compared to private schools. Though, enrolment of students in private school is not as high to that of public schools. However, private schools have conducive environment for learning as compared to public schools in the study area.

Table 3 below shows that in 2005, 25 percent of the students made X_1 , 53.2 percent made X_2 grade and only few failed in private school. While in public school 5.0 percent of the students had X_1 , 17.0 percent of the students' population made X_2 and majority scored below X_2 grade. In 2006, 70.1 percent of the students in private schools scored had X_2 , 19.5 percent had X_2 grade and few failed (5.2%). In public 7.0 percent had X_2 , 17.0 percent scored percent and majority scored below X_2 . In 2007, private schools had 65.6 percent of the students' population scored percent, 13.0 percent scored X_2 percent and only few (22.8%) scored below X_2 . While 18.0 percent of the students scored minimum of X_2 and majority scored below X_2 in public schools. In 2008, 82.0 percent of the students scored at least X_2 and 12.8 percent scored below X_2 in private school. While in public school 8.0 percent of the students made X_1 , 14.0 percent scored X_2 grade and majority of the student's

population scored below X_2 . Also, in 200 majority (82.5%) of the students scored at least X_2 and minority (20.5%) of the student score below X_2 , in private school. While in public schools few (5.0%) was able to make X_2 , 15 percent scored X_2 grade and majority (78.6%) the students scored below X_2 . Conclusively, the general performance of student in Agricultural science was below average in public school compare to private schools.

Table 4 shows that in 2005, 17.6 percent of the students scored minimum of X_2 , 82.4 percent scored below X_2 in Agricultural Science. 23 percent scored at least X_2 grade and 76 percent scored below X_2 in Biology. 8.1 percent made X_1 , 16.6 percent had X_2 grade and majority had X_2 in physics and few (7.0%) scored X_1 , 13.5 percent scored X_2 and majority (79.4%) of the student scored below X_2 in Chemistry. However, in 2006 29.4 percent of the students population scored at least X_1 in Agricultural Science and majority (70.6%) scored below X_2 while in Biology 37.0 percent of the students scored minimum of X_2 and 62 percent made below X_2 . In Physics 45.6 percent of the students population was able to make at least X_2 grade and 54.5 percent scored below X_2 . 34.0 percent of the students had minimum of X_2 while majority (65.9%) scored below X_2 in Chemistry. In 2007, few of the students (18.9%) had below X_2 in Agricultural Science while in Biology 26.4 percent of the students scored X_2 grade and 73.5 percent of them scored below X_2 in Physics 6.0 percent of the students made X_2 and 10.2 percent made X_2 grade while majority (73.8%) scored below X_2 , in Chemistry 24 percent scored at least X_2 and 75.2 percent scored below X_2 . In 2008, few of the student made X_1 and X_2 (80.1%, 19.0%) while majority (72.8%) scored below X_2 in Agricultural Science. 7.1 percent was able to make X_2 grade and 22.9 percent had X_3 grade while 70 percent of the students failed Biology in 2009. More so, 35.6 percent of the students scored at least X_2 and 64.3 percent scored below X_2 in Physics. Where 16.6 percent scored below X_2 and majority (83.3%) scored below X_2 in Chemistry. In 2009, 27.5 percent of the student scored at least X_2 and 72.5 percent scored below



X₂ in Agricultural Science. In Biology 37.8 percent of the student scored at X₂ and 62.1 percent of them scored below X₂ also in Chemistry 32.4 percent of the students scored minimum of X₂ and 67.5 percent scored below X₂ while in Physics 39.7 percent was able to make X₂ and 60.2 percent scored below X₂ grade. In conclusion, the percentage of students that scored X₁ or X₂ in Agricultural science is closely related to the percentage of students that also sat for Biology. While in Physics and Chemistry their performance was almost the same. So it can be said that the percentage of student that made X₁ or X₂ in Agricultural science is equivalent to their percentage in Biology. And the same thing was applicable to Physics and Chemistry for WAEC conducted examination.

Table 5 depicts students' performance in NECO examination. In 2005, students' performance in Agricultural science was 20.5 percent in X₂ grade and majority (79.5%) had below X₂. in Biology. Only few of them made X₁ and X₂ (8.0% and 16.6%) and majority (75.4%) scored below X₂. In Physics 33.4 percent scored at least X₂ and 66.5 percent scored below X₂ while in Chemistry 33.1 percent made X₂ and 66.0 percent scored below X₂. In 2006, 39.2 percent of the students had at least X₂ and 60.8 percent had below X₂ in Agricultural science. Majority 57.5 percent of the students scored minimum of X₂ and 42.4 percent had below X₂ in Biology, 36.3 percent had X₂ grade in Chemistry. In 2007, 51.8 percent of the students made below X₂ and 48.1 percent scored at least X₂ grade in Agricultural Science, also 51.2 percent of the students scored minimum X₂ and 48.7 percent scored below X₂ in Biology. In Physics 62.1 percent of the students scored below X₂ and 37.8 percent of the student scored at least X₂. While in Chemistry 51.9 percent of the students scored minimum of X₂ and 48.9 percent scored at least X₂. In 2008, 54.8 percent of the student population was able to scored below X₂ and 45.1 percent scored at least X₂ grade in Agricultural Science, 47.8 percent scored at least X₂ and 52.1 percent scored below X₂ in Biology. In Physics 38.8 percent of the students scored minimum of X₂ and majority (61.1%) scored below X₂ while

36.0 percent had X₂ grade and 63.9 percent made below X₂ in Chemistry. In 2009, majority (77.6%) of the students scored below X₂ while 22.3 percent had at least X₂ in Agricultural Science. Also in Biology 24.5 percent scored at least X₂ and majority (75.4%) scored below X₂ grade. However, in Physics 24.0 percent of the students scored at least X₂ and majority (75.9%) of the student scored below X₂ while in Chemistry 23.0% of the students had minimum of X₂ and 76.9% scored below X₂. Thus, the general performance of students was below average in Agricultural Science.

Table 6 shows that in 2005, the majority of the students in both NECO and WAEC performed below average with almost 80.0 percent of them had grade below X₂. While only 20.0% had at least X₂ in Agricultural Science in both examinations. In 2006, there was a slight difference in the performance of the students in the two examinations, as only 60.0 percent had below X₂ grade in NECO, 70.0 percent had grade between D₇ and F₉. Only 39.2 percent and 29.4 percent of the students had at least C₆ in NECO and WAEC respectively. In 2007, 52.0 percent of the students had below X₂ in NECO examination but 82.0 percent had below X₂ in WAEC examination. 48.0 percent had at least X₂ in NECO examination and only 18.0 percent had minimum of X₂ in WAEC examination. In 2008, 55.0 percent of the students had below X₂ in NECO and more than 70.0 percent had below X₂ in WAEC. However, in 2009, over 70.0 percent had below X₂ in both WAEC and NECO examinations. But, slightly over 20.0 percent had either X₂ or X₁ in both examinations. Hence, the general performance of students in Agricultural Science was below average.

CONCLUSION AND RECOMMENDATION

This study determined the trend of performance of students in Agricultural Science from 2005 to 2009. NECO performance showed that more students failed the subject in 2005 while the lowest number of students that scored below X₂ was recorded in 2006. Year 2008 had the highest number of students (more than 25) with at least X₂. The trend of performance of students in Agricultural Science in WAEC showed that



in 2007, most students failed the subject more than in any year under review. The highest numbers of students that have at least X_2 in Agricultural Science were recorded in 2009 with just over 50 students.

Private schools peak performance was recorded in 2008 with over 99.0 percent of students scored at least X_2 in Agriculture while the public school peak performance was recorded in 2008 and 2009 with over 40.0 percent of students scored at least X_2 . However, in 2009, at least 50.0 percent of students in private schools either failed Agriculture or had X_2 in Agriculture while students in public schools failed Agricultural Science in 2005 (78.0%) than in any other year. Performance in NECO also showed that, private schools have at least 70.0 percent of the students with minimum of X_2 grade while 25.0 percent had X_2 at maximum in public schools. When Agricultural Science was compared with other pure science subject; more students pass Physics than other pure science subjects while the maximum percentage number of students that have at least X_2 in Agricultural Science were 29.4 percent in 2006.

To this end, the performance of the students in public schools can be improved upon if desirable change is required for sustainable agricultural production. It should be noted that this can only

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be attained if students' orientation and other stated recommendations below are adhered to strictly. As well, the students must be encouraged to show desire to learn agricultural science, and the teachers and parents play the role with almost humility and diligence, then the nation can expect growth in Agriculture.

Therefore, the study recommended that the following be done to improve the performance of students in the examinations:

1. The teachers need to be well equipped both logistically and intellectually to cope with the modern teaching practices.
2. Adequate and modern facilities should be provided in most public schools because they are lacking.
3. Re-orientation is needed by the students to stimulate the many advantages of agriculture.
4. Young Farmers club need to be re-introduced and adequately monitored to aid the effectiveness and efficient output of the subject.
5. The parents need to encourage their children to take agriculture as a career.
6. The public perception needs to be changed, they should see agriculture as a tool for nation building and a 'money spinner' sector of the economy.

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Table 1: Coding systems of students' result

S/N	GRADES	CODE
1	Distinction (A ₁ , B ₂ and B ₃)	X ₁
2	Credit (C ₄ , C ₅ and C ₆)	X ₂
3	Pass (D ₇ and E ₈)	X ₃
4	Fail (F ₉)	X ₄

This coding procedure was adopted for all the four science subjects.

Table 2: Percentage of students' performances in WAEC

Years	Private school		Public school	
	Distinction & Credit	Pass & Fail (%)	Distinction & Credit	Pass & Fail (%)
2005	78.3	21.7	24.0	78.0
2006	79.7	20.3	31.5	68.5
2007	90.3	9.7	34.1	95.9
2008	99.9	0	41.8	58.2
2009	46.7	53.3	41.8	50.2

Source: Field Survey, 2013

Table 3: Percentage of students performance in NECO

Years	Private school		Public school	
	Distinction & Credit	Pass & Fail (%)	Distinction & Credit (%)	1 Pass & Fail
2005	77.9	22.1	21.6	78.4
2006	84.8	15.2	23.3	76.7
2007	91.3	8.7	20.6	79.4
2008	83.8	16.2	25.6	74.4
2009	72.3	27.7	20.5	79.5

Source: Field survey, 2013



Table 4: Percentage of students' performance in agric science vs. other science subjects i.e. biology, chemistry & physics in WAEC

Years	Agric. Science		Biology		Chemistry		Physics	
	X ₁ & X ₂ (%)	X ₃ & X ₄ (%)	X ₁ & X ₂ (%)	X ₃ & X ₄ (%)	X ₁ & X ₂ (%)	X ₃ & X ₄ (%)	X ₁ & X ₂ (%)	X ₃ & X ₄ (%)
2005	17.6	82.6	23.7	76.5	20.6	79.3	24.7	75.2
2006	29.4	70.5	37.0	62.9	34.0	65.9	45.5	54.4
2007	18.1	81.8	26.4	73.5	24.7	75.2	26.1	73.8
2008	27.1	72.8	7.1	92.8	16.6	83.3	35.6	64.3
2009	27.5	72.4	37.8	62.1	32.4	67.5	39.8	60.2

Source: Field survey, 2013

Table 5: Percentage of students' performance in agric science vs. other science subjects i.e. biology, chemistry & physics in NECO

Years	Agric Science		Biology		Chemistry		Physics	
	X ₁ & X ₂	X ₃ & X ₄	X ₁ & X ₂	X ₃ & X ₄	X ₁ & X ₂	X ₃ & X ₄	X ₁ & X ₂	X ₃ & X ₄
2005	20.5	79.5	24.6	75.4	33.1	66.9	33.4	66.6
2006	39.2	60.8	57.5	42.5	36.3	63.7	28.6	63.4
2007	48.1	51.9	48.8	51.2	48.9	51.9	37.8	62.1
2008	45.1	54.8	47.8	52.1	36.0	63.9	38.8	61.1
2009	22.3	77.6	24.5	75.5	23.0	76.9	24.0	75.9

Source: Field survey, 2013

Table 6: comparison of performance of students in agricultural science in WAEC and NECO

Years	NECO		WEAC	
	Distinction & Credit (%)	Pass & Fail (%)	Distinction & Credit (%)	Pass & Fail (%)
2005	20.5	79.5	17.6	82.3
2006	39.2	60.8	29.4	70.6
2007	48.1	51.8	18.1	81.8
2008	45.2	54.8	27.1	72.8
2009	32.3	77.7	27.5	72.4

Source: Field survey, 2013



FACTORS CONSTRAINING EFFECTIVE YOUTH PARTICIPATION IN FARMING IN ANYIGBA AGRICULTURAL ZONE, KOGI STATE, NIGERIA

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Abstract

The study was carried out in Anyigba Agricultural Zone of Kogi, Nigeria. The zone is made up of four blocks and/or Local Government Areas (Ankpa, Bassa, Dekina and Omalla). From each of the four blocks three farm communities were randomly selected, and from each of these farm communities, ten youths were randomly selected to make a total of one hundred and twenty respondents for the study. Structured interview scheduled was designed based on the set objectives and administered to the selected respondents for data collection. Data collected was analysed using descriptive statistics such as frequency distribution, percentage and mean score from Likert-type scale. The results show that majority (74.2%) of the youths were males with a mean age of 17 years. The results further revealed that most (43.3%) of the youths had secondary education having a mean farm size of 2.5 hectares and a mean annual income of ₦65,641.67. The major constraining factors to youth participation in farming in Anyigba Agricultural Zone include: poor state of rural infrastructure and land tenure (M=2.9 respectively), quest for white collar jobs (M=2.8), lack of fund (M=2.7) and lack of access to farm inputs (M=2.6) among others. And aggressive rural community development (81.7%) and adequate funding of agricultural sector (80.8%) were some of the policies/programmes identified to facilitate youth participation in farm operations. It was recommended that government and private individuals should intervene in rural development drive to make Nigerian-rural more habitable or attractive to youths. And rural farmers especially youths should be encouraged to organize themselves into cooperative societies and institute thrift and loan scheme to help cushion their financial difficulties.

Keywords: Rural youth, agricultural productivity and rural infrastructure.

INTRODUCTION

Agriculture contributes to Nigerian economy as it engages about 70% of the labour force and contributes over 40% of the Gross Domestic Product (GDP) (Federal Ministry of Agriculture and Rural Development FMARD, 2000 in Jamilu, Haruna, Abdullah! and Baba, 2014). Agriculture currently plays major role in the lives of many young people especially in rural areas of developing countries and it is projected to remain so even in the next few decades (Food and Agriculture Organization FAO, 2010). With improved agricultural productivity, - more

and better jobs are likely to be created (World Bank, 2008). Not only does a modern and productive agricultural sector have the potential to overcome food insecurity, it can offer employment opportunities to young people. Though (Abubakar, 2011) opined that, in Nigeria, the agricultural output comes from small-scale farmers who dwell in rural areas adopting traditional method of production rather than large scale farmers. Most of these small-scale farmers have limited access to farm inputs, credit, labour among others. There is a consensus among Nigerian



polycymakers, her development partners, and experts in Nigerian agriculture that the wealth of the country can be substantially derived from agricultural production. And it is generally believed that the small-scale farmers hold the key to the realization of this possibility (Olaunmi, 2007). However, the average Nigerian small-scale farmer is poor, illiterate and lacks access to most basic social infrastructure as well as improved farm inputs. The consequence of these has been low production and productivity, hence, the current food insecurity in Nigeria. Yet, the agricultural sector accounts for 41.5% of the nation's gross domestic products (GDP) (Olaunmi, 2007).

In spite of the contributions of the agricultural sector to human livelihood, the profession is left in the hands of aged peasant farmers who employ traditional implements for most of their farm operations. People tend to ascribe poverty, and drudgery to farming, especially the young educated and energetic youths who prefer white collar jobs in urban centers. According to Adekojo (1998), the perception of most Nigerians is that, anyone who engages in agriculture/farming is wretched and poverty-ridden. This perception towards agriculture is upheld by majority of Nigerian youth and this has led to the out-migration of young vibrant people; especially agricultural graduates who are supposed to constitute major stakeholders in farm business. Youth account for a large percentage of Nigeria's population figures, representing an important and dynamic force in the supply of labour, production and productivity in the society. Nigeria is estimated to have a youth population of about 67 million (18-35 years), out of which about 42.2% were unemployed as at the end of 2011 (Adegoke, 2013). Available evidence from ongoing IFAD

interventions in Nigeria has indicated that unless agriculture is seen and handled as business by government and development partners, youth will ever refuse to engage in farming (Jamilu, *et al*; 2014; Federal Ministry of Youth Development FMYD, 2011).

The poor state of youths' participation in agricultural activities in Nigeria has been a major concern among stakeholders in agriculture. This is because the present low agricultural productivity has dimmed the hope of raising the level of agricultural production for sustainable food security for Nigerian over 160 million people (Ijere, 1992; Ojediran, 1997). One of the major setbacks of agricultural development programmes in Nigeria is the inability of the federal government to integrate youths in the mainstream of the numerous agricultural development programmes implemented over the years. For a nation to attain economic stability the agricultural sector must be vibrant and the youths encouraged embracing farming as a noble profession (Ojediran, 1997).

It is in view of the need to co-opt youths into full-fledge food production process and close the gap between food needs of people and the production level that arose the need to look into the constraining factors to effective youth participation in farming in Anyigba Agricultural Zone, Kogi State, Nigeria. Specifically, the study sought to: ascertain the socio-economic variables of the youths; identify factors that constrained their effective participation in farm activities and identify policies/programmes that facilitate youth involvement in farm operations.



METHODOLOGY

The study was carried¹ out in Anyigba Agricultural Zone of Kogi State, Nigeria. The zone is located in the eastern part of Kogi State, and is inhabited by the Igala and Bassa speaking extracts of the State. Majority of the people are farmers growing both food and cash crops such as yams,- beans, maize, cassava, melon, guinea corn and cashew, citrus, oil palm, plantains among others. Fish farming is carried out among the Bassa people who dwell along River Benue. The zone experience two climatic seasons; the rainy season which starts late March and terminates in October while the dry season begins in November and stops early March. The area has an average temperature of 22.8 C and an annual rainfall of between 1,016 mm and 1,524 mm (Kogi State Agricultural Development Project KSADP, 2014b).

In order to collect the necessary data, the entire 4 local government areas (LGAs) were purposively used for the study. This is because farming is the major occupation of the people. From each LGA/block, 3 farm communities were randomly selected thereby making a total of 12 farm communities. And from each of these sampled communities, 10 youths were randomly selected hence making a total of 120 respondents for the study. Structured interview schedule was designed taking into cognizance the delineated' objectives and administered to the selected youth for data generation. Data collected was analysed and presented- using descriptive statistics (frequency distribution and percentage) and mean scores from Likert-type scale.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

Table 1 presents the socio-economic variables of the youth in the study area. Most (74.2%) of these youths were males with mean age of 17 years. About 81% of the youth were learned though majority (43.3%) of them had secondary education. The findings implied that most of these youth are young and energetic for farm work if really they are ready to accept farming as a noble venture. According to Abdullahi, Banta and Illiyasu (2014), investment in education benefits individual, society and the world at large, broad-based creative education of good quality is among the most powerful instrument known to reduce poverty and inequality, with proven benefits for personal health. Education is the instrument by which the society is able to reproduce itself ideologically, socially and culturally (Okwadiba, 2001). Collier (1998) asserted that farm work requires a lot of energy especially during¹land clearing and cultivation. Oyesola and Oladeji (2008) reported that education is very important in farming as it facilitate adoption of farm innovation. Table 1 further revealed that, these youths had a mean household size of 2 persons and a mean farm size and farm experience of 2.5 hectares and 15.3 years respectively. The findings indicate that the respondents have low household size and cultivate small landholding. This will equally translate to low productivity and food insecurity. Low family size reduces labour hands for massive food production. The reason for the low family size of these youths could probably be due to the fact that most of them are still depending on their parents for their needs.



Table 1 also indicated that majority (60.8%) of the youth earned between ₦50,000- ₦100,000, only about 13% of them earned between ₦151,000 – ₦200,000. The mean annual income was ₦65,641.67. This implies that the respondents earn little from their farm business, and meeting family and educational needs will be an uphill task.

Constraining Factors to effective participation of youths in farming

Table 2 shows the various constraining factors to youth involvement in farming in Anyigba Agricultural Zone of Kogi State and by implication, Nigeria and other developing countries at large. Some of these factors are poor state of rural infrastructure and problem of land tenure (M=2.9 respectively), quest for white collar jobs (M=2.8), lack of fund (M=2.7), lack of access to farm inputs and poor technical skills (M=2.6 respectively) and poor access to agro-information (M=2.5), among others. Unavailability of farm labour during critical periods (M=0.8), peer influence (M=1.2), pests and diseases (M=1.0) and lack of viable markets (M=1.2) were not seen as serious constraints. The findings reveal that rural infrastructure is critical to agricultural productivity. Nigeria needs about 128 trillion US Dollars for its infrastructural development to bring her to the level of other developing countries in the world (Vanguard Newspapers, Jan. 20, 2015). Yuguda (2015) asserted that, the current infrastructure stock as percentage of GDP of 35% ought to be raised to 70 percent in the next 30 years. The author further stated that, the current total infrastructure stock as at 2012 gave Nigeria 35-40% of GDP compared to Brazil, India and South Africa which were at 47 percent, 58 percent and 87 percent respectively. If the rural areas are made habitable Nigerian youth will stay and participate in farm operations

and there will be a drastic reduction in rural-urban upsurge.

According to Ogunnowo and Oderinde (2010), the task of transforming rural-Nigeria has remained the focus of successive government in recent years. Rural transformation in Nigeria has become imperative in view of the fact that rural-Nigeria constitutes the larger percentage of Nigerian society, the most depressed and the potential reservoir of national foodstuffs, wealth and energy. It is saddening that these reservoir of foodstuffs and wealth lack life-enhancement facilities like good road networks, electricity, healthcare facilities, schools, telecommunication among others. These facilities facilitate agricultural productivity and if they are not available our youths may find it difficult to remain in their rural abodes but move out to cities where these facilities abound. Adequate information is one of the major pre-requisites for widespread acceptance of agricultural technology (Tsado, Olayele, Ajayi, Umar and Ndatsu, 2014). In their study carried out in north central Nigeria, Tsado, *et al.* (2014) reported that, all (100%) of rice farmers sought their agro-information from USAID/Market Field Officers. It is crystal clear that youths in the study area lack credit for their farm operations or to start farm business. Money is needed to buy farm inputs, farm labour, hire implements, payment of other farm and home transactions. Edoke (2014) in his study of farm labour groups in Igala and Ebira ethnic groups of Kogi State reported that, majority (62.9%) of rural farmers in Kogi State earned annual income of between ₦80,000 - ₦180,000 from their farm business south-east Nigeria. Poor extension visits could stem from poor funding of extension service and/or lack of qualified extension personnel (Egbule, 2013). According to Oni, Obi, Okorie and Jordan (2002), extension services help farmers to reinforce the message and



enhance the accuracy of recommended implementations of technologies.

According to Adedoyin (2011), rural youth and children programme is cardinal of comprehensive strategy for sustainable development in developing countries like Nigeria. And programmes/policies aimed at maximizing youth potentials should be designed to offer educational experiences to youth in a variety of settings. If the necessary agricultural policies and programmes are in place for youth, their vital energy wasted on social vices will be channeled to productive ventures like farming. Gobeli in Adedoyin (2011) corroborated that, too often, the missing ingredient in strategies to address severe problems facing rural communities or urban centres is the non-involvement and engagement of young people in problem-solving, leadership, advocacy and direct service. Our youth must be involved in decisions that affect them, it is them that they will feel the sense of belonging.

CONCLUSION AND RECOMMENDATIONS

It is a known fact that agriculture is the fulcrum of most developing economies in the world. And smallholder farmers constitute the major stakeholders in national development. Regrettably, this noble enterprise is now left to the aged who can not produce enough to meet the food need of people. It is therefore, necessary to co-opt the younger generation who are more energetic to take farm business to the next frontiers. But there is a lack-lustre attitude of these youth to farming, alluding that, farming is not lucrative enough to sustain them. And more importantly, rural-Nigeria where farming is done is neglected, and lack live-enhancement facilities: the most reason for

rural-urban upsurge. Based on the findings, the following recommendations are made.

- * Government should come out with an edict banning land tenure system to enable intending youth and prospective large scale farmers have access to land.
- * Rural youth should be encouraged to constitute themselves into cooperative societies to attract support from government and non-governmental organizations (NGOs).
- * Nigerian government and other private individuals should vigorously partake in rural community development as this serves as catalyst to agricultural productivity and food security.

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Table 1: Distribution of respondents by their socio-economic variables (n=120)

Sex			
Male	89	74.2	
Female	31	25.8	
Age (Years)	18	15.8	17
21-25	32	26.7	
26-30	56	46.6	
30 and above	14	11.7	
Educational level			
No formal education	23	19.2	
Primary education	38	31.7	
Secondary education	52	43.3	5.8
Tertiary education	7	5.8	
Household size			
1-3	116	96.7	2
4-6	4	3.3	
6 and above	0	0.0	63.3
Farm size (Hectares)			2.5
3-4	31	25.8	
5-6	11	9.2	
6 and above	2	1.7	
Farming experience (Years)	78		
10-15	26	65.0	15.3
16-20	11	9.2	21.6
26-30	5	4.2	
30 and above	0	0.0	
Estimate annual income (N)			
N50,000-N100,000	73	60.8	N65.6
N101,000-N150,000	31	25.8	41.67
	160	133	0.0

Source: Field Survey, 2015



Table 3: Distribution of respondents by policies/programmes that facilitate youth participation in agriculture (n=120)

Policy/Programme	Frequency	Percentage
Formation of cooperative societies	92	76.7
Aggressive devt. of rural areas	98	81.7
Govt. policy that enforces; interest-free	76	63.3
Loans from commercial banks.	92	76.7
Strengthening govt. & private extension outfits	58	48.3
Training/counseling of youth to take agriculture as a career.	61	50.8
Subsidization of farm inputs by govt.	97	80.8
Adequate funding of the Agricultural sector	46	38.3
Mechanization of agriculture	88	73.3
Award of scholarship to youths in agriculture	34	28.3
Establishment of Marketing Board.	83	69.1
Involvement of youths in policy-making		

Source: Field survey, 2015

Multiple responses

Proceedings of the 11th National Research Conference and Network Meetings of CYIAP held in Olabisi Onabanjo University, College of Agricultural Sciences, Ayetoro, Ogun State, Nigeria. October 20th – 24th, 2014



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