

# MECHANISMS FOR ENSURING FOOD SECURITY AND SUSTAINABLE ENVIRONMENT THROUGH YOUTH'S PARTICIPATION IN AGRICULTURAL EDUCATION

## MECANISMOS PARA GARANTIZAR LA SEGURIDAD ALIMENTARIA Y EL MEDIO AMBIENTE SOSTENIBLE A TRAVÉS DE LA PARTICIPACIÓN DE LOS JÓVENES EN LA EDUCACIÓN AGRÍCOLA

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### ABSTRACT

Agricultural education play a central role in disseminating knowledge, skills and attitudes toward managing environmental resources which support food productivity. Its goals are basically achieved through formal education. Hitherto, youth have been involved in environmental stress mitigation efforts both at the school and community levels but are still short of adequate knowledge. Current trends of environmental stress and its associative impact on the food growing soils and space call for its integration into agricultural education programme. This paper identifies mechanisms for ensuring Food Security (FS) and Sustainable Environment (SE) through Youth's participation in Agricultural Education. First, the paper discussed the concepts of sustainability as it affects the environment and food security. It also discussed constraints of FS and SE. Mechanisms discussed includes: curriculum content review and update, adequate funding by government, training and retraining of manpower, and involvement of youth clubs and organizations. Furthermore, use of mass media; extension services; school farm; and organizing workshops, seminars; and integration of population studies in the curriculum were also considered. Finally, it was

suggested among others that government should review school curriculum and renew her commitment through designing and implementing policies and programmes aimed at ensuring FS and SE.

Keywords: Agricultural Education, Food Security, Mechanisms, Sustainable Environment, Youth.

## RESUMEN

La educación agrícola desempeña un papel central en la difusión de conocimientos, habilidades y actitudes hacia la gestión de los recursos ambientales que apoyan la productividad de los alimentos. Sus objetivos se logran básicamente a través de la educación formal. Hasta ahora, los jóvenes han estado involucrados en los esfuerzos de mitigación del estrés ambiental tanto a nivel escolar como comunitario, pero aún les falta el conocimiento adecuado. Las tendencias actuales de estrés ambiental y su impacto asociativo en los suelos y el espacio de cultivo de alimentos requieren su integración en el programa de educación agrícola. Este documento identifica mecanismos para garantizar la Seguridad Alimentaria (FS) y el Medio Ambiente Sostenible (SE) a través de la Educación Agrícola Juvenil. Primero, el documento discutió los conceptos de sostenibilidad ya que afecta el medio ambiente y la seguridad alimentaria. También discutió las limitaciones de FS y SE. Los mecanismos discutidos incluyen: revisión y actualización del contenido curricular, financiamiento adecuado por parte del gobierno, capacitación y reciclaje de personal, y participación de clubes y organizaciones juveniles. Además, el uso de los medios de comunicación; servicios de extensión; granja escolar; y organización de talleres, seminarios; y también se consideró la integración de los estudios de población en el plan de estudios. Finalmente, se sugirió, entre otros, que el gobierno debería revisar el currículo escolar y renovar su compromiso mediante el diseño y la implementación de políticas y programas destinados a garantizar la FS y la SE.

Palabras clave: Educación Agrícola, Seguridad Alimentaria, Mecanismos, Medio Ambiente Sostenible, Juventud.

## INTRODUCTION

Several human practices the world over, pose serious limitations to sustainability of the environment itself and food supply and availability for livelihood. Human activities such as bush fallowing, inappropriate use of technologies, transhumance, overgrazing, and deforestation without adequate reforestation and illegal exploitation of mineral resources, are often not in tune with proper environmental management practices. The obvious result of these activities has been increasing inability of the environment to cope with its expectations such as supporting crop and animal production leading to food scarcity. In recent times,

many developed nations such as America, China, France, Italy, Japan United Kingdom and the Soviet Union, are seriously encouraging the developing ones to take a leading role in assessing what needs to be done to fast-track solution to the constraints and challenges posed by environmental degradation and food insecurity. On the issue of sustainable environment, various views have been put forward. Thus, it was envisaged that human population must be given paramount attention (FAO 2009). Hence, it was stipulated that if we do not put the human population at the core of the sustainable development agenda, our efforts to improve human well-being and preserve the quality of the environment would fail. The Johannesburg Summit, it was stated must heed the first principle of the 1992 Rio Declaration – that “human beings are at the centre of concern for sustainable development” – by taking full account of how population and society interact with the natural environment (Lutz & Shah 2002).

The concept of environment refers to the external factors influencing the life and activities of people, plants, and animals (Encarta Dictionary 2009). It encompasses all the biological and physical resources and factors that surround man. Agricultural activities take place on the land which hosts other components of the environment and it is one among factors of production, including capital, labour, and entrepreneurship. Agriculture practitioners require information on certain the myriad of agricultural activities that go on in the production process. Hence, the need for agricultural education. Agricultural education refers to the process of imparting knowledge, skills, values, and ideas in the learner, either in the agricultural field or in an academic institution to enable him or her earn a living as well as be able to transfer experiences to succeeding generations. Asuquo (2005) defines Agricultural education as a systematic program of instruction for public school enrollees, out of schools, post-high school youth and established farmers, organized for the purpose of improving methods of production and rural living. Agricultural education was also viewed as the type of education whereby learners are taught the virtues of desirable work habits and ethics in agriculture; competences and skills in agricultural occupations; leadership and entrepreneurial skills; and the relationship between agriculture and economic environment (Osinem 2008). Educating farmers, especially the youth and other members of the economic community means creating more awareness and liberating them from the negative impact of environmental factors. It would also enable them to be able to produce and adequately utilize the food they produce to ensure food security.

Food security implies the provision of safe, nutritious and quantitatively and qualitatively adequate food as well as access to it by all people (Fan 2010). Mohammed (2008) defines food security as access by all people at all times to sufficient food for a healthy and productive life. Food insecurity is a result of poverty, which is a limiting factor to access to capital, land, and agricultural inputs. Boon (2009) buttressed that food security could only be achieved through efficient use of resources, proper planning and

implementation frameworks, and good governance, adoption of appropriate technologies and good extension network among others. Food security therefore, connotes food availability, accessibility and or affordability of the food and dietary needs of the populace. Food security exists when all people have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life at all times (USDA 2002). It is worthy to note that food security can only be guaranteed when the supportive resources in the environment are effectively put to productive use. Besides, in a bid to making sure that the sustainable development goals 1, 2, 11 and 12 were attained as agreed, every government has decided to put some measures in place. Thus it is believed that strengthening global and local governance for food security is key to defeating hunger and malnutrition, as well as to promote development especially in rural settings (Africa Partnership Forum 2010).

For instance, in Nigeria, government had outlined a policy document on environment. Its objectives included: securing for all Nigerians a quality environment adequate for their health and well-being; conserving and using natural resources for the benefit of present and future generations; and restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity. Others are raising public awareness and promoting understanding of the essential linkage between environment and development; and cooperating with other countries and international agencies to achieve those objectives (Osinem, 2005). Agricultural education is one obvious avenue through which above objectives can be carefully pursued and achieved. It would be an understatement that the issue of Sustainable Environment cannot be pursued in isolation of food security.

In the light of the foregoing, Emenyonom, Okafor, Odii, Onyemauwa and Agu (2006) recommended the need for massive enlightenment campaign to educate households on the negative implication of having large family sizes that are mostly dependants; proper utilization of acquired lands; and the integration of household labour for farming operations. The report indicates that these variables were statistically significant in reducing the level of household food security. According to World Youth Report, WYR (2010), young people might be more effectively integrated as individual and collective agents of change through educating themselves and getting more actively involved in combating the threats of climate change leading to sustainability of the environment. Continued global population growth and changing demographic patterns, coupled with income growth will put increased pressure on food supplies and already scarce natural resources. By 2050, the world population is projected to reach 9 billion, with growth coming predominantly from urban areas and from developing countries (FAO, 2009). FAO added that the urban population is expected to grow even faster than the overall population and increase from 3.3 billion in 2007 to 6.4 billion in 2050.

There is an urgent need for deliberate actions to free humankind from hunger and ensure food security. An urgent priority issue is to adopt an inclusive approach, which will involve all relevant stakeholders at all levels. Accordingly, effective food security actions must be coupled with adaptation and mitigation measures in relation to climate change, sustainable management of water, land, soil and other natural resources (African Partnership Forum 2010). Unfortunately, Youth involved in agriculture, as low as 37% of the total population (Adesugba & Mavrotas 2016) do not seem to be sufficiently aware of their roles in ensuring sustainable national food security. Those who were privileged to attend school were probably not taught the appropriate practices to be adopted in promoting sustainable crops and animal productivity.

Several challenges bedevil the process and hence, through agricultural education, these youth are expected to be well informed. Essentially, as a result of the inadequacy of knowledge, despite the immense effort by various government and non-governmental institutions including parents, several constraints stand in way of progress in the quest for attaining FS and SE. It is probably true to believe that with technological advancements in agriculture in recent times, food production could have increased but it may be characterized by high-level ignorance. Besides, most farmers are predominantly found in areas mostly deprived of social infrastructures such as schools. Farmers often adopt some unfriendly production practices such as excessive use of chemicals for pests, weeds, and disease control; and mechanical land preparation practices. By virtue of the fact that youth are the reliable source of labour for agriculture and could be relied upon for sustainable food production, there was need for them to be adequately educated. This would enable them participate more effectively and efficiently towards the ultimate goals of FS and SE.

The World Bank in 2014 attributed the hindrance to youth involvement in agriculture to lack of national efforts to make agriculture attractive to them (Njeru 2017). Agriculture has no doubt taken a relative deviation because of environmental resource degradation. No wonder, Blackie et al. as cited in Paisley (2014) averred that the skills and competencies of graduate are hardly in tune with trends in today's agriculture where new set of skills are also needed to address the new challenges. Paisley remarked that as we exit from business as usual approach, there was need for education policy to be more proactive and integrate new way of thinking into educational institutions and the agricultural sector.

In the light of the foregoing, this paper sought to discuss the mechanisms for ensuring FS and SE through youth's participation in agricultural education in Nigeria. Specifically, the paper discussed the concepts of FS and SE, constraints of FS and SE; explained the roles of youth in achieving FS and SE. Finally, the paper recommended among others that government should ensure inclusion of the concepts of FS and SE in the curriculum of schools across all levels.

#### CONCEPTS OF SUSTAINABLE ENVIRONMENT AND FOOD SECURITY.

In the view of Jimme et al. (2010), environment is the aspects of the nature of living space, chemical constituents and physical properties of the living space, and the assortment of other organisms present. In a sustainable environment thus, refers to that which inherent resources remain available an accessible for utilization and continuous benefits of successive generations. In buttressing this assertion, Hill in USDA (2009), outlined the meaning of a sustainable environment in terms of meeting the basic needs of all peoples; keeping regional population densities, if possible, below the carrying capacity; and adjusting consumption patterns while avoiding waste; and designing management systems to permit the renewal of renewable resources of the environment. This includes soil, water and nutrients. Others features outlined were conserving, recycling, establishing priorities for use of non-renewable energy resources; and keeping environmental impact below levels required to allow affected systems recover and continue to evolve. A critical look at agriculture with the attendant global emphasis by several nations confirm that it seeks to simultaneously help in meeting the triple objective of poverty reduction, food security and environmental sustainability. Most of the land suitable for agriculture is already in production. Therefore, meeting the current and future requirement implies rapid increase in productivity of this multi-important natural resource thus, validating the clarion call for careful exploitation.

The concept of Food Security emerged at the World Food conference of United Nations Food and Agriculture Organization (UN-FAO), held in 1974. It centered around two sub-concepts; food availability and food entitlement. Food availability means the supply of food and its, availability both at local, national and international levels. However, food entitlement refers to the capability of individuals and households to obtain food for consumption, which could be, linked to affordability as well (FAO 2002). United States Department of Agriculture, USDA (2009) in a separate document stated that Food Security for a household means access by all members at all times to enough food for an active, healthy life. This includes the ready availability of nutritionally adequate and safe foods; and an assured ability to acquire food in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing).

According to Oyeshola et al. (2009), the basis for the quest for Food Security originated from the long history of the Universal Declaration of Human Rights in 1948, which proclaims that everyone has the right to a standard of living, adequate for health and well-being of himself and his family including the elimination of hunger. Akinyele (1993) reiterated that food security would be achieved when the poor and vulnerable, particularly women, children, and other marginalized groups have easy access to the food they want, and are thus guaranteeing the daily bread which they need to live a healthy and productive life. One obvious and inevitable fact that must be borne in mind is that due to the uncertainties of natural and man-made influences in the social and economic environment, several challenges

abounds. This paper attempted to identify those challenges and necessary suggestions were advanced for actions.

#### CONSTRAINTS OF FS AND SE

FS and SE are both determined by some influencing factors which includes: population growth and demographic changes; high and volatile food prices; availability of land, water and biodiversity; climatic changes; poor infrastructural facilities due to poor funding and financing; and undeveloped and unstable market systems. Most of the land suitable for agriculture is already in production. Therefore, meeting current and future food requirements will require rapid increases in productivity; otherwise, an undesirable expansion onto fragile and marginal lands will result. There is widespread concern that deforestation and land degradation are severely diminishing the potential of ecosystems. Climate change tends to compound the challenges confronting agriculture. The sector is dependent on the natural resource base and thus faces risks such as desertification, rising temperatures, changing rainfall patterns and sea level rise, leading to degrading agriculture. In that light, Olufemi (2005) advanced that an obvious look at the environment manifests different types and proportions of environmental deterioration as exemplified by persistent problems of land and soil degradation, pollution, deforestation and desertification, loss of wildlife species and reduced biodiversity.

Really, many nations especially, developing ones are facing a looming food security crisis with an ever increasing population which dependents largely on imported food. The growth of a country's population is accompanied by food security challenges which also grow along with it. This is because environmental resources must be over tapped to meet up with needs of the population. Increased constraints in terms of natural resources indeed put severe pressure on agricultural sustainability and food security. Besides, Climate change threatens agricultural production through higher and more variable temperatures, changes in precipitation patterns, and increased occurrences of extreme events such as droughts and floods (Nelson, Rosegrant, Koo, Robertson, Sulser, et al., 2009). Ogiji (2007) revealed other constraints of agricultural productivity to include poor conceptualization and inefficient implementation of policies and programmes, early cessation of rainfall after several interruptions during the season causes significant crop losses. Poor rural roads leads to attendant high transportation cost, the increasing unattractiveness of the agricultural and rural sector to the youth who rather flock to cities for "white collar jobs and the continued dependence on subsistence farming.

Youth make up a growing share of every nation's population. Moreover, youth are the bulk of urban migrants and are thus unavailable for agricultural vocations especially in the rural settings. This results in gross inadequacy of labour and human resource supply. Aside

from that, the unhealthy struggle for survival and get rich quick thrives much especially among the young people and thus constitute major cause of environment degradation which have put the survival of natural resources at stake. The rural people mainly, out of school youth are semi-illiterate and have limited access to information environmental sustainability, which need to be daily tools in their lives if they must enjoy sustainable future livelihoods. Universally, remarkable emphasis has been made on the role of youth in environmental conservation and most programs that have been outlined appear to be neutral and friendly but are never followed religiously. This has led to "youth blindness" thus, resulting in more havoc on the future livelihoods of the populace particularly, in the rural settings.

#### ROLE OF YOUTH AGRICULTURAL EDUCATION ON FS AND SE

Youth are the most potent and latent resources and it is necessary to organize them and channel their energies towards desirable goals in the interest of national development (Agbulu & Wever 2011). Through education, the individual would be prepared to adjust to varying situations with other members of the society in the exchange of goods and service, allocation of scarce resources and wise use of his potentials, adjust to, and adopt technological and scientific changes in finding solutions to societal problems in our ever changing environment (Egun 2010). Therefore, youth needs to be educated to enable them play roles such as teaching through demonstration of acceptable and environment-friendly practices. These practices include zero or minimum tillage, application of organic manures, control of erosion, soil mulching and practicing crop rotation among others. Those practices would ensure preservation of arable lands while producing sufficient and accessible food in their communities. The youth could also serve as extension agents who would interpret extension research results to other farmers in their communities and families; become teachers and instructors in schools and colleges where they would teach principles and pedagogies of environmental resource utilization and management. They would also impact skills, attitudes and knowledge to other younger generations and their older cohorts either in the elementary, secondary, tertiary and university levels. The youth would also be involved in the decision making process regarding the exploitation and utilization of environmental resources. WYR (2010) stated that youth have long being involved in environmental protection and food production both in schools and community levels and the time has come for them to participate more actively in shaping global decisions relating to climate change to ensure sustainable environment.

Finally, the youth could also play their role as change agents. Agbulu and Wever (2011) agreed that youth may form about 40% of a community, their higher standard of education and scientific knowledge acquired in school would aid them in forming various agricultural clubs, and hence, adoption of improved (better) farming practices. Chakeredza et al., (2010) also revealed a strong positive correlation between educational attainment and

socioeconomic development of any country. According to Chakeredza et al., (2010) if education is to make impact on the current challenges then, there should be institutional innovations and changes to ensure that tertiary institutions' graduates of agriculture are abreast with issues relating to the environment. The authors added that the curricular content, teaching methods and materials, including the delivery patterns should be designed in such a manner as to tackle global environmental sustainability and food security challenges. Agricultural education in the 21<sup>st</sup> century should therefore, produce a critical mass of dedicated, well-trained men and women who are committed to achieving socio-economic development through improved and effective teaching research and extension (Anugwa 2006)

#### PROMOTING FOOD SECURITY AND SUSTAINABLE ENVIRONMENT THROUGH AGRICULTURAL EDUCATION CURRICULUM REVIEW AND UPDATE

Agricultural Education Curricula in general focus narrowly on farm production rather than encompassing markets, agri-business, and processing. Thus, it should be modernized by emphasizing analytical skills, and including new topics such as agri-business entrepreneurship, rural finance, food processing and marketing, post-harvest technologies, and sustainable use and conservation of natural resources (Squire 2003). According to Boon (2009), agricultural education curriculum should reflect the study of critical food security factors that need urgent analysis backed up by effective management mechanisms. Agricultural education should be practical and production-oriented where it is removed from the confines of the classroom and laboratories into farms, gardens, markets, industries and rural communities (Egbule 2002). Maredia (2011) said agricultural education curriculum should incorporate new skills such as environmental economics and environmental impact assessment and it should emphasize participatory approach in its teaching and learning. Paisley (2014) concurred that the educational sector must establish stronger ties between youth in schools with major employers. This is with a view to ensuring that the institutions make the curricula relevant to a changing sector.

Moreover, there was an outcry in a recent study by the UNICEF that youth in most developing countries of Asia and Africa not only lack access but also, the education in rural areas is often less qualitative and not relevant to rural lives (Njeru 2017). Njeru further mentioned that the curricula in most of Asian and African countries are outdated and inadequate. Updating of curriculum is thus, a promoting agent through the formal education at the different levels. A review and update of the present school curriculum could renew the interest of the youth.

#### ADEQUATE FUNDING AND EFFICIENT FINANCING

Funding of agricultural training schools, programmes and research institute is quite expensive and requires technical aids and materials, as well as adequately equipped training and experimental farms. To maintain the existing ones tends beyond the present resource base of many institutions. Therefore, a review and reform is the only sure way of bringing sanity to the system. Youth in the training institution eagerly await such an encouragement to boost their enthusiasm hence, promote their intellectual and vocational skills. However, Egbule (2002) lamented that there is dwindling emphasis on the funding of agricultural education training and programme. Thus, the dearth of investment capital, the prevalent risks and uncertainties and low commodity prices associated with agriculture, are major problem areas that needs to be addressed so as to attract more youth into self-employment in agriculture (Egun 2009). Of course, youth needs training on more sustainable techniques of production which, upon graduation from school, would bring up their wealth of skills to bear on the field. Therefore, as a major fund provider, at the global level, government should allocate higher budgets for agricultural education in Schools, Colleges and Universities.

#### ADEQUATE TRAINING AND RE-TRAINING OF TEACHERS AND EXTENSION PERSONNEL

All nations especially those noted to have significant food security challenges, especially developing nations, require appropriate and up-to-date technologies. Anugwa (2006) contended the need for a critical review of the subject matter content and judicious review of personnel roles at all levels of education and endeavours. In fact, to address the problems and issues of sustainable agricultural production and rural development, government needs to pursue a policy of development in agriculture. This could be ensured through dissemination of new agricultural technologies that are economically relevant to the needs of the average youth in the agricultural education and training institutions (Vandenbosch 2009). Vandenbosch further believed that this approach will directly contribute to the improvement of rural livelihood, land use management and environmental conservation, while bringing direct benefits to all learners, their families and communities.

#### EFFECTIVE USE OF SCHOOL FARM OR LAND LABORATORY

The school farm is place where youth who are in school learn practical skills. The current emphasis on functional education programmes makes it mandatory that schools and colleges should maintain a school farm (Egbule 2002). Egbule further stated that school farms are geared towards helping students acquire necessary farming skills and ensuring that classroom theories are backed up by facts and practice. On the school farm, practical demonstration and results of experiments on the adoption of soil replenishing and degradable practices are observed by the students on the yields so obtained and the implications explained thereof.

Land Laboratory is another term used to mean School farm. According to Agbulu and Agbulu (2008), Land laboratory is a portion of land earmarked for practical acquisition of saleable skills and knowledge geared towards a provision of agricultural produce and products. Thus, in the school it could be used to change the youth's orientation on how to utilize environmental resources such as land, which supports food supply for security of lives. At the end of the day, the youth would extend knowledge gained on the school farm to their parents, thus acting as extension agents for change.

#### USE OF MASS MEDIA AND MODERN INFORMATION AND COMMUNICATION TECHNOLOGY

Mass media is increasingly becoming a veritable instrument for transforming agriculture through which people (especially the youth) derive pleasure from learning the best but simple ways food they eat daily, is produced. They could even be encouraged to develop interest in growing some food themselves (Egbule 2002) by reading and appreciating articles through the mass media. In addition, Egbule said in order to ensure that the youth make positive choices, there is an urgent need to create massive awareness on environmental development issues. Thus, if environmental development issues are to be properly and effectively tackled, then, it is critical to have an adequately informed youth who would strongly adopt the various developmental initiatives. Apart from radios, televisions, newspapers, magazines and journals, most recent is the Internet.

This media would be used to regularly reproduce environmental issues broadcasted through various Languages and Vernacular on National and International channels; newspaper publication of environmental resource materials for use by government, non-governmental organizations and other institutions. All these would increase awareness among literate and illiterate youth population, the world over both in the urban and rural areas on environmental issues.

#### ORGANIZING OF WORKSHOPS, SEMINARS, CONFERENCES AND AGRICULTURAL SHOWS AND DEMONSTRATION

This approach could be used to preach and advocate the use of environment friendly farming practices both within the formal and non-formal education and training forums. For instance, such practices as Organic farming: biodynamic farming, nature farming, regeneration agriculture, permaculture. These practices help build on nature's own inherent capacity to cope with pests, enhance soil fertility and increase productivity. It implies a continuous ability to re-create the resources that the system requires, thus, achieving a sustained yield through greater emphasis in cultural practices, integrated pest management and utilization of on-farm resources and management (Osinem 2005). In such forums, experts are invited to deliver talks on the benefits of such practices explained earlier. Hence,

they would be made to realize that those practices are more environmentally sustainable and would ensure food security than the excessive use of modern equipment and chemicals.

#### USE OF EXTENSION AS AN ADULT EDUCATION MECHANISM

Agricultural extension is defined as the entire set of organization that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills and technologies to improve their livelihood and well-being (Akinagbe & Ajayi 2010). Originally, extension was conceived as a service to extend research based knowledge to the rural sector to improve life of farmers. Extension therefore serves as a non-formal means through which the teaming youth could be educated on how to increase their productivity and preserve natural resources. Thus, youth, especially those who have been trained in higher schools should be able to practice their fundamental roles in their farming communities. There, they would effectively accomplish their roles by transferring skills and knowledge gained in the empowerment process. That is, they could help other farmers in their communities to organize themselves and take charge of their development efforts. Furthermore, youth and village extension workers may learn the principles of community organizing and group management skills then, help the community organize itself for sustainable development, ensure food security and poverty alleviation.

#### USE OF YOUTH ORGANIZATIONS

Youth organizations are formed with various aims and objectives and among which is agricultural development. Osinem (2008) stated that the purpose of these associations is to make youth participate actively in agricultural development practices. Osinem further mentioned that youth organizations are meant for young children in the primary, secondary and teachers' colleges where they are given integral part of instruction in it as essential in the training of future agricultural leaders. Adebo (2009) contributed that the mission statement of these youth organization include, to enhance agricultural production and productivity through dissemination of innovations to the rural dwellers and to control environmental hazards. These associations may include; Young Farmers Club, Future Farmers Association such as in the United States of America, Youth in Agriculture Programme, Youth in Food Production, Young Foresters Club, Youth Help Alliance, and the 4-H Club.

Finally, these youth organizations would help young boys and girls to develop ideas for better farming, home making and rural community development, and give informal training in agriculture.

### ENLIGHTENMENT ON POPULATION CONTROL

The basic goal of population education in agriculture is to increase the student's knowledge on the consequences of population growth on the nation's economy as it relates to agriculture other resources' exploitation. Osinem (2008) viewed population education in the agricultural development context as a learning process aimed at developing awareness and understanding of the nature, causes and implication of population growth and distribution as they influence agricultural productivity and rural development, and how these issues affects farmers, their families and society as a whole. Youth, most of who are not yet married requires information on population control as a necessary impetus to resource utilization and sustainability in our environment. This is because most of these resources would be over tapped for increased utilization. According to Osinem population education can be integrated in agricultural education and it could be done through three approaches: Creating a separate population education course; introducing it as modules in the existing course; or integrating population education issues and content in relevant topics in courses of study within existing school curriculum.

### HARMONIZING FOOD SECURITY AND SUSTAINABILITY POLICY

Since the competition for natural resources continues due to pressure and demand for livelihood by the teaming population, consequential depletion and degradation of environmental resources in many developing countries, there is need for the harmonization of food security and sustainability policies (Fan 2010). For instance, geneticists and biotechnologists can collaborate to develop stress tolerant materials to address water scarcity, salinization, and groundwater contamination (Rosegrant 2009). Innovative research and development in agricultural technologies which addresses those challenges and pressures on the food systems should be put in place.

### CONCLUSION

As a foremost national issue, government should explore effective strategies to bring community and institutions concerned into policies for attaining food security. Based on that, curriculum planners could integrate population education into training modules so that citizens would understand its relationship to resource scarcity, distribution and utilization thus; understanding the relationship between rapid population growth, food security, land use and environmental degradation. Youth need to be taught the dynamic interrelationship between food, population, environment and socio-economic development because many graduate to become farm managers, agricultural programme planners, and policy makers. Hence, the ultimate need for institutional reorientation and attitudinal change involving these youth. Extension agents through as a non-formal educational structure could contribute to youth's training and involvement in sustainable environment practices.

Schools could through work jointly with groups and commit associations to implement policies and projects to enhance sound agricultural and environmental practices. Over and above all, a holistic approach and participatory decision-making process involving the youth should be adopted because it is a key issue in developmental efforts of government in every nation.

As recommendations, it suggest: 1) Curriculum development organ of the federal ministry of education should ensure the incorporation of sustainable agricultural practices in the school syllabus. 2) Educational institutions should collaborate with the ministries of agriculture, environment, and its allied agencies to emphasize establishment of sustainable environment and agricultural-related clubs and societies. This helps mobilize and encourage youth to be involved in the national food security project. 3) Government as well as Civil society organizations and NGO's should support youth through providing scholarship and study grants to undertake training programmes related to sustainable environment and sustainable agricultural production practices. 4) Media houses such radio, televisions, and the World Wide Web (internet) and other social media should be adopted to increase awareness campaigns on environment conservation through music, drama and the media should be intensified by both government and non-governmental institutions. 5) Government should train and post sufficient extension workers to the rural farming communities to teach the young farmers sustainable food security and environmental protection practices. 6) Agriculture teachers in collaboration with school management should emphasize establishment and maintenance of school farms (Land Laboratories) where such practical skills could be inculcated on the youth.

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