

SELECTED UNIVERSITIES AGRICULTURAL EXPERTS' VIEW  
ON THE ADOPTION OF SOILLESS MEDIUM AS AGRICULTURAL STRATEGY FOR  
STEMMING URBAN YOUTH EMPLOYMENT PROBLEMS IN NIGERIA

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**Abstract**

The problem of hunger and poverty in urban areas due to inadequate land for agricultural practices and unemployment among youths may be partially solved if the practice of soilless agriculture or farming is adopted in Nigerian urban areas. This study sought to obtain experts' views on the possibility or practicability of using soilless agriculture to curb urban-youth unemployment problem. Four research questions and corresponding hypotheses guided the study. The study is a descriptive survey research method adopting questionnaire as research instrument to obtain the opinions of agricultural experts. The population and respondents for the study were drawn from lecturers and researchers in the faculty of agriculture in three universities in Nigeria. The sample for the study consisted of thirty-two lecturers from various departments in the faculty of agriculture from which twenty-two were completed the questionnaire items successfully. Descriptive statistics of mean, standard deviation and inferential statistics of t-test were used for data analysis. Findings from the study indicated that the experts opined that soilless agriculture could be used to solve urban-youth unemployment problem although it could not be used massively. Also, the constraining problems to the use of soilless agriculture to tackle youth unemployment were identified. It was therefore recommended that governments and NGOs should procure equipment for distribution to youths who have love for soilless farming among others.

**Keywords:** Soilless, urbanization, strategy, youth employment

## INTRODUCTION

The need to feed the rapidly growing population has called for the involvement of more people in the field of agriculture. To achieve this, vibrant youths have to be lured into agricultural production. Agriculture according to Science Daily (2019) is the process of producing food, feed, fiber as well as other desired products through the cultivation of certain plants and the raising of domesticated animals. Agriculture has always involved the rearing of animals and tilling of the soil to produce crops. By this definition, the desired food, fiber and other products are met by rearing of animals and cultivation of crops by tilling the soil.

Soil is known to be the medium of plant growth and under the Nigerian agricultural system, crop production is rarely carried without the use of soil except on few occasions where plants are potted in water in science laboratories. Soil covers the land surface. Victorian Government (2021) defined soil as the loose surface material that covers most land. Hence, cultivation is always carried out on the soil and without soil there will be no crop production. Soil is usually defined as the upper layer of earth surface on which crops are grown and animals are reared. Sposito (2021) defined soil as the biologically active, porous medium that has developed in the uppermost layer of the earth crust. The composition of the soil and the functions it serves in plant development makes it an important resource for crop production and other agricultural practices. Soil consists of inorganic particles and organic matter. Victorian Government (2021) noted that soil provides the structural support to plants used in agriculture and is also their source of water and nutrients. Sposito (2021) also affirmed that soil serves as a reservoir of water and nutrients, and it is one of the principal substrata of life on earth. Soil is also referred to as the medium that anchors plant roots and provides the required nutrient for plant growth. The place of soil in the production of food for human consumption is so germane that it is a major resource for farmers and the quality of available soil is a vital consideration in farming communities or rural dwellers

Rural dwellers have always been adjudged to be the people to be concerned with farming since agricultural land is known to be abundant in rural areas. Thus, agriculture has normally been regarded as the exclusive occupation of the rural dwellers where enough land is available for cultivation. Meanwhile, the migration of agile youths who are supposed to remain in rural areas to cities in search of better

living standard has led to spike in urban population and dwindling productive force in the rural areas with resultant national scarcity of food and hunger (Sanyé, 2015). The stark reality of food shortages and food insecurity in the country has revealed the need for urban dwellers especially youths to be involved in agricultural production. This needed increase in people required in agricultural production would definitely translate to the use of more land for crop cultivation and animal rearing. It was observed by Saha, Monroe and Day (2016) that with a rapidly growing global population, the demand for soil and land for crop and animal production is likely to increase. This need is however constrained by shortage of land due to the developmental activities taking place in the urban areas.

Urban areas are areas where the majority of a country's population resides. National Geographic (2019) defined urban areas as places with high human population density and structures such as houses, commercial buildings, roads, bridges, and railways. Urban areas are usually referred to as towns, cities and regions surrounding a city. In urban-centers, agricultural or farming practices have been difficult due to the problem of urbanization. Foremost, inhabitants of urban areas engage in non-agricultural jobs implying that the competing need for land for various developmental processes taking place in the urban areas makes it difficult to get land for farming purposes. In addition, the presence of manufacturing industries and other services in the city has made most urban center employment to be in the non-agricultural sector as well as contaminated most urban soils thereby making it unfit for cultivation of crops. In view of the above, the food need of the urban dwellers is usually met by the rural dwellers who engage in the production of various agricultural produce for sale to the urban centers.

Many of the urban youths do not want to go back to the rural areas to farm but they may prefer to farm where land is available in the urban centers. This situation poses the need to create an avenue through which urban dwellers could engage in farming within the urban area to meet their food need amidst the scarce land or soil resources. Saha, Monroe and Day, (2016) advised that earth arable land is finite and challenges like urbanization need to be addressed by developing new and modified agricultural systems to ensure continuity of crop production at any place and anytime, hence, the need for soilless agriculture or farming.

Soilless agriculture is a method of farming that excludes the use of soil as a medium of crop production. Maximum yield.com (2019) defined soilless agriculture as a subset of hydro-culture which involves growing trees, vegetables and flowers as well as other plants without the use of soil. Davis (n.d) defined soilless agriculture

as an artificial method of providing plants with a reservoir for water and nutrients as well as support. Soilless farming according to this definition is the process of finding alternative ways of providing the support and store of nutrients and water for plants other than the use of soil. Ujkert.szie (2019) explained soilless agriculture as a culture or any system isolated from the soil artificially to provide plants with support as well as used as a reservoir for nutrients and water. Greentumble (2016) noted that soilless agriculture is plant growing system that helps avoid some issues that can lead to unfavorable conditions such as the unavailability of nutrients in the soil or other stress to plants. According to Asaduzzaman, Saifullah, SalimMollick, Hossain, Halim and Asao (2015), Soilless culture is the modern system of cultivating crops using inert organic or inorganic substrate to nourish plants with nutrient solution. Therefore, soilless agriculture can be explained as the practice of raising plants in other mediums other than soil which still provide them with needed support and stored required nutrients as well as prevent the plant from pathogens which are usually associated with soil.

Among the benefits derivable from soilless agriculture is that the system is shielded from the adverse weather conditions that affect field crops. Soilless agriculture minimizes or optimizes the use of inputs such as fertilizers, insecticides and other materials. Ujkert.szie.hu (2019) submitted that in soilless farming, precise application of nutrients and irrigation control is done thereby reducing wastage of inputs. Soilless agriculture is also believed to be free from diseases or other soil-borne pathogens that affect crops grown under conventional soil culture. Ujkert.szie.hu (2019) noted that independence from soil and soil-related (biological, chemical, physical) problems thus guarantee the possibility of continual cultivation. Olfati (2015) remarked that hydroponic systems in controlled environments can produce quality plants free from accidental adulteration by weeds, soil and environmental toxins such as heavy metals in soils.

Going by the comparative advantages that soilless agriculture has over conventional farming, in addition to the paucity of land in urban centers; it is thought that soilless farming could be a good source of engaging jobless youths gainfully in urban areas thereby using soilless farming to stem urban youth unemployment. Stemming can be described as the process of using a method or an activity to reduce a nagging problem to a minimum level. Target (2018) described stemming as the process of reducing a word to its word stem that affixes to suffixes and prefixes or to the roots of words known as a lemma. Stemming is derived from the word that deals with the reduction of word to its root before any suffix, pre-fix is

added to it. Therefore, stemming unemployment involves reducing unemployment to its previous status where most people are employed before the word “un” that is lack of it arise. Therefore, stemming urban youth unemployment with soilless farming or agriculture involves the use of soilless farming to reduce the unemployment problems youths are facing in urban centers. This will entails training and facilitating youths’ engagement in soilless farming system thereby reducing the number of youths who are unemployed. However, before this can be done the views of experts in such areas should be sought so as not to engage in wild ventures that have no practicability hence the study.

### **Problem Statement**

Farming land is a scarce commodity in the urban centers thereby making crop production difficult in such areas. Soilless system is a system that excludes the use of soil and which can be practiced with little space to grow different types of crops and even raise some aquatic animals like fish, crayfish among others. Therefore, introducing soilless farming practices to urban youths could be a good way of providing for the food need of the urban areas.

In recent times, the huge migration of jobless youth from the rural areas to urban centers in search of non-existing jobs has made the urban centers to be highly populated with jobless youths who roam the city streets without hope of getting employed in the short time possible. These jobless youths constitute a menace and nuisance to the cities perpetrating lots of vices and heightening the insecurity status of the nation. Ige, Busari and Ojo (2016) stated that presently in Africa, most families reside in urban, suburban cities and communities which have made most youths to be removed from farms and agriculture in general. The most worrisome aspect of the problem is that most of these youths are not ready to move back to the rural areas to take up agriculture in spite of the hard realities of unemployment that confront them in the cities. Most of the youths prefer to remain in these cities to do menial jobs that could not sustain them, while others merely engage in crimes and fraud to survive.

At most times, the major issue preventing these youths from going back to the rural areas to embark on farming is the lack of social amenities which they are enjoying in the cities and which do not exist in the rural areas. Some of these youths would like to engage in farming or other agricultural activities provided they can have access to land or other means of practicing agriculture in the cities. For these categories of youths, exposing them to soilless farming where they could grow fruits and vegetables through soilless means while still residing in the cities could be a good way of providing them with stable employment and means of sustenance.

The practicability of soilless farming in the urban centers also has a lot of implications for teaching agriculture in schools. Most of the youths that leave rural areas in search of white-collar job are mostly graduates of one level of education or the other. If there is practicability of these youths practicing soilless farming, the process or skills required can be incorporated into the curriculum right from secondary school level or as part of the entrepreneurship courses at the tertiary levels for them to be fully skilled in the practice. Therefore, after graduation, the youths can see crop production as a viable means of sustenance while in the urban areas. An assurance of the possibility that youths will be able to be trained in soilless farming skills could also lead to the development of modules and competencies for trainings at the secondary or tertiary levels.

Another important factor that necessitates the practice of soilless agriculture in the urban areas is the staleness of most fresh vegetables and fruits before it is transported to the cities due to far distance of most rural areas from cities and poor transportation system (Grewal & Grewal, 2011). Some agricultural crops like fruits and vegetables are more palatable and more nutritious if they are consumed fresh. Therefore, for the urban dwellers to always have continuous supply of fresh agricultural fruits and vegetables, it will require that those fruits and vegetables be grown in the cities. And since there are limited lands in the cities for farming, soilless agriculture may be the option.

Soilless agriculture or farming is an innovative way of farming (Asaduzzaman, Saifullah, Mollick, Hossain, Halim, & Asao, 2015). Although, soilless agriculture has a long-standing history of existence (e.g. hydroponic 1627, aquaponics 5AD and aeroponics 1983, Wikipedia, 2018), however, the current practice of soilless agriculture has been improved due to lots of researches in the field of agriculture. The modern method of soilless farming evolved from a series of experiments from the expertise or specialization of crops and other agricultural scientists. The practice of soilless farming involves some scientific and technological manipulations as well as set-up which may be difficult for anyone who is not an agricultural scientist to undertake. Therefore, it is expected that crop scientists or agricultural experts would be in the best position to give expert and reliable information about the practicability of using soilless agriculture or farming to curb urban youth unemployment as well as meet the food need of the urban areas. Although soilless farming falls under the specialization of crop scientists, it is expected that experts in other specializations of agriculture could also have adequate knowledge on the possibility of stemming urban youth unemployment with soilless

farming since they are all exposed to general agricultural training in the university before they specialize at the final year or postgraduate level, hence the need for this study to explore the experts' view on the possibilities of stemming urban youth unemployment with soilless agriculture.

The specific objectives of the study are to;

- i. find out the views of agricultural experts about the practicability of stemming urban youth employment with soilless agriculture.
- ii. examine the issues that could hinder the use of soilless agriculture to stem urban youth unemployment
- iii. compare and contrast the views of crop scientists and other agriculturists on the practicability of stemming urban youth employment with soilless agriculture.
- iv. compare and contrast the views of crop scientists and other agriculturists on the issues that could hinder the use of soilless agriculture to stem urban youth unemployment

### **Research Questions**

The research questions guiding this study are:

- i. What are the views of agricultural experts about the practicability of stemming urban youth employment with soilless agriculture?
- ii. What are the issues that could hinder the use of soilless agriculture to stem urban youth unemployment?
- iii. What are the differences or similarities in the views of crop scientists and other agriculturists on the practicability of stemming urban youth employment with soilless agriculture?
- iv. What are the differences or similarities in the views of crop scientists and other agriculturists on the issues that could hinder the use of soilless agriculture to stem urban youth unemployment?

### **Hypotheses**

Ho 1. There is no significant difference in the views of crop scientists and other agriculturists on the practicability of stemming urban youth employment with soilless agriculture.

Ho 2. There is no significant difference in the opinion of crop scientists and other agriculturists on the issues that could hinder the practicability of using soilless agriculture to stem urban youth unemployment.

### **Methodology**

The study adopted descriptive research of the survey method. The population for the study is agricultural scientists or lecturers in the faculty of agriculture in three

universities in Nigeria namely: University of Ilorin, University of Nigeria, Nsukka and Landmark university Omu-Aran Kwara state. These categories of respondents were considered appropriate for the study because they are specialists and researchers in various aspects of agriculture. Therefore, they are knowledgeable enough to determine the possibilities of using soilless farming to reduce youth unemployment. The sample for the study is randomly selected agricultural lecturers in different departments in three purposively selected universities in Nigeria. The instrument for the study was a questionnaire designed by the researcher entitled exploration of possibilities of stemming urban youth unemployment with soilless agriculture questionnaire. Thirty-two lecturers accepted to participate in the study due to their busy schedule. Thus, these thirty-two were involved in the study and were given the research instrument however six respondents could not complete the questionnaire due to their busy schedule while four questionnaires were incompletely filled, thus reducing the valid instrument to twenty-two which formed the sample for the study. Out of this, 10 copies came from University of Nigeria, Nsukka, 5 from Landmark University, Omu-Aran, Kwara state while the remaining 7 were from University of Ilorin, Kwara State. This comprises those lecturers that specializes in the area of crop science and those that major in other fields of agriculture. Eight of the respondents majored in crop science while the remaining 14 specializes in other fields of agriculture. The data analysis was done using descriptive statistics of frequency, mean and standard deviation for the research questions while t-test statistic was used to test the hypothesis at 0.05 level of significance.

## Results

### Distribution of Respondents

**Table 1**

*Frequency and Percentage of Categories of Agricultural Experts*

S/No	Agricultural experts	Frequency	%
	Crop Science Expert	8	36.4%
	Other Agricultural Expert	14	63.4%
	<b>Total</b>	<b>22</b>	<b>100</b>

From table 1 the number of experts that are crop scientist were 8 out of the 22 respondents giving a percentage of 36.4% while the frequency of other experts (Animal scientists, agricultural extensionists, soil scientists, Agricultural Economist,)

are 14 with a percentage of 63.4%. This shows that the other categories of agricultural experts altogether sampled are more than the crop science experts.

### Answering of Research Questions

**Research Question 1:** What are the views of agricultural experts on the practicability of stemming urban youth employment with soilless agriculture?

**Table 2**

*Mean, Standard Deviation and t. test on the Practicability of Stemming Urban Unemployment with Soilless*

SN	What is your view about the practicability of using soilless agriculture to address urban youth unemployment issues?	$\bar{X}_g$	St.D	Remarks
1	Soilless farming is good solution to solve urban unemployment problem	3.27	0.77	A
2	Any literate youth can be taught soilless farming practices	3.18	0.96	A
3	Tools and equipment for soilless farming can easily be sourced or improvised from local materials	2.91	0.97	A
4	The inputs and materials needed for soilless agriculture are the same as those used in conventional farming and can be easily obtained	1.91	0.68	D
5	Soilless farming require little space which can easily be obtained within the city environment	3.18	0.73	A
6	Illiterate unemployed youth can be trained to practice soilless farming	3.23	0.75	A

SA= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table 2 reveals the views of agricultural experts about the practicability of stemming urban youth unemployment with the practice of soilless agriculture. From the table, the agricultural experts agreed on all but one of the statements that soilless agriculture could possibly be used to stem urban youth unemployment. This is indicated by the mean value of 3.27, 3.23, 3.18, 3.18, and 2.91 for items 1, 6, 2, 5, and 3 respectively which are above the 2.50 benchmark value. However, the experts disagree on item 4 that the inputs and materials needed for soilless agriculture are the same as those used in conventional farming and can be easily obtained with the

mean value of 1.91. These responses implies that soilless agriculture could be used to solve urban youth unemployment problems for both literate and illiterate youths with little space while local materials could be improvised to practice it yet, the materials for soilless farming are not the same as those used in conventional farming system. The value of standard deviation which ranges between 0.68 and 0.97 reveals that there is little variability in the mean responses of the agricultural experts.

**Research Question 2:** what are the factors that could hinder the possibility of using soilless agriculture to stem urban youth unemployment?

**Table 3**

*Mean, Standard Deviation and t. test on Factors that could Hinder the Possibility of Using*

S/ N	Issues that could hinder the possibility of using soilless agriculture to stem urban youth unemployment	$\bar{X}_g$	ST.D.	Remark
1	Soilless agriculture cannot be used to massively reduce urban youth unemployment because of the peculiarities of this farming system	2.68	0.84	A
2	Only graduates of higher institutions can be trained in soilless farming	1.86	0.99	D
3	Soilless farming entails specialized type of skill in agriculture that not all urban youth can learn except those who read agriculture	2.55	1.01	A
4	Soilless farming tools and equipment are expensive and may not be affordable to unemployed youths	3.00	0.87	A
5	Soilless farming require special inputs and chemicals which may not be readily accessible to youths when needed	3.18	0.59	A
6	Practicing soilless agriculture require intensive and rigorous training which anxious and impatient youths may not want to go through	2.91	0.87	A
7	Though soilless, the land space required for its practice may not be readily available in cities	2.45	0.86	D
8	Soilless farming require specialized tools and equipment which may be difficult for some youths to set up	2.91	0.97	A

*Soilless Agriculture to Stem Urban Youth Unemployment*

Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree

Table 3 presents the analysis of the factors that could hinder the use of soilless agriculture to stem urban youth unemployment. The responses from the agricultural experts reveal that Soilless farming entails special inputs and chemicals which may not be readily accessible to youths when needed, the required farming tools and equipment are expensive and may not be affordable to unemployed youths, also, practicing soilless agriculture require intensive and rigorous training which anxious and impatient youths may not want to go through. They also believed that Soilless agriculture cannot be used to massively reduce urban youth unemployment because of the peculiarities of the farming system, and that Soilless farming entails specialized type of skill in agriculture that not all urban youth can learn except those who read agriculture. These are shown by the mean value of 3.18, 3.00, 2.91, 2.91, 2.68, and 2.55 respectively. However, they object to the view that though soilless, the land space required for its practice may not be readily available in cities and only graduates of higher institutions can be trained in soilless farming with mean of 2.45 and 1.86 respectively. These implies that soilless farming is faced with a lot of factors which could constrained its massive use to curb urban youth unemployment although it can still be used to reduce it. Also, the low value of the standard deviation which ranges from 0.59 to 1.01 shows there is closeness in the mean responses of the agricultural experts.

**Research Question 3:** What are the differences or similarities in the views of crop scientists and other agriculturist on the practicability of stemming urban youth employment with soilless agriculture?

**Ho 1.** There is no significant difference in the views of crop scientists and other agriculturists on the practicability of stemming urban youth employment with soilless agriculture.

**Table 4**

*Mean, Standard Deviation and t. test on the Practicability of Stemming Urban Unemployment with Soilless*

	What is your view about the practicability of using soilless agriculture to address urban youth unemployment issues?	N=1 4_ X1	SD1	N=8 _ X2	SD2	t.cal	Decisi on
1	soilless farming is good solution to solve urban unemployment problem	3.29	0.73	3.25	0.89	0.10	NS
2	Any literate youth can be taught	3.14	0.95	3.13	0.99	0.04	NS

	soilless farming practices						
3	Tools and equipment for soilless farming can easily be sourced or improvised from local materials	2.64	1.01	3.13	0.83	-1.21	NS
4	The inputs and materials needed for soilless agriculture are the same with those used in conventional farming and can be easily obtained	2.00	0.68	2.13	0.64	-0.43	NS
5	Soilless farming require little space which can easily be obtained within city environment	3.36	0.50	2.88	0.99	1.29	NS
6	Illiterate unemployed youth can be trained to practice soilless farming	3.00	0.78	3.63	0.52	-2.25	NS
	<b>Average Mean</b>		<b>2.90</b>	<b>3.03</b>			

t.tab = 1.725 @ DF =20 @ 0.05  $\alpha$  level

Table 4 indicates that there is a slight difference in the average mean response of both categories of respondents on the practicability of stemming urban youth employment with soilless agriculture while the test of hypothesis, indicate that there is no significant difference in the opinions of the crop science experts and other agricultural experts because t. calculated value is less than the critical table value at 0.05 level of significance for all the items.

**Research Question 4:** What are the differences or similarities in the views of crop scientists and other agriculturists on the issues that could hinder the use of soilless agriculture to stem urban youth unemployment?

**Ho 2:** There is no significant difference in the views of crop scientists and other agriculturists on the issues that could hinder the practicability of using soilless agriculture to stem urban youth unemployment.

**Table 5**

*Mean, Standard Deviation and t.test on Factors that could Hinder the Possibility of Using Soilless Agriculture to Stem Urban Youth Unemployment*

S/ N	Issues that could hinder the possibility of using soilless agriculture to stem urban youth unemployment	N=1 4_ X1	SD1	N=8 _ X2	SD2	t.cal	De c
1	Soilless agriculture cannot be used to massively reduce urban youth unemployment	2.71	0.73	2.63	1.06	0.21	NS

	because of the peculiarities of this farming system						
2	Only graduates of higher institutions can be trained in soilless farming	2.00	1.04	1.88	1.13	0.26	NS
3	Soilless farming require specialized type of skill in agriculture that not all urban youth can learn except those who read agriculture	3.00	0.96	2.00	0.76	2.70	S
4	Soilless farming tools and equipment are expensive and may not be affordable to unemployed youths	3.00	0.88	3.25	0.89	-0.64	NS
5	Soilless farming require special inputs and chemicals which may not be readily accessible to youths when needed	3.21	0.70	3.13	0.35	0.40	NS
6	Practicing soilless agriculture require intensive and rigorous training which anxious and impatient youths may not want to go through	2.71	0.91	3.00	1.07	-0.63	NS
7	Though soilless, the land space required for its practice may not be readily available in cities	2.43	0.76	2.50	1.07	-0.17	NS
8	Soilless farming require specialized tools and equipment which may be difficult for some youths to set up	2.79	1.05	3.38	0.74	-1.53	NS
	<b>Average Mean</b>		<b>2.73</b>		<b>2.72</b>		

t.tab = 1.725 @ DF =20 @ 0.05  $\alpha$  level

Table 5 indicates that there is almost no difference in the average mean response of both categories of respondents on the issues that could hinder the practicability of using soilless agriculture to stem urban youth unemployment. The test of hypothesis also reveals that there is no significant difference in the responses of the crop science experts and other agricultural experts on the statements with the exception of items number 3 indicating that all other items have their t. calculated value less than the critical table value of 1.1725 at 0.05 level of significance except for that item 3.

### Discussion of Findings

The studies found that it is practicable to employ soilless agriculture to stem urban youth unemployment problems for both literate and illiterate youths with little space while local materials could be improvised to practice it. Although the materials for soilless farming are not the same as those used in conventional farming

method. In the view of the agricultural experts, soilless farming could be used as one of the various measures of getting urban unemployed youth engaged by training all interested and trainable literate and illiterate youths who could cope with the training. They believed that with the use of little space that may be available in urban centers and by using locally improvised materials, unemployed youths can be made to acquire soilless farming techniques. This finding is in line with the United States Environmental Protection Agency (2016) assertion that growing interests have been expressed by communities in urban aquaponics farms as a means of providing job and educational opportunities for citizens sustainably while also serving as a source of healthy, fresh, and cost-effective protein and vegetables. It maintained further that an urban aquaponics farm can be established as a profit-oriented urban farm business. Medina et al., (2016) also agreed with this view by explaining that soilless agricultural systems are suitable for urban areas, highly productive, and can solve the problem of shortage of land due to the growing demand for food production arising from increasing population.

The study shows further that soilless farming is faced with a lot of factors which could constrained its massive use to curb urban youth unemployment although it can still be used to reduce it. The responses of the agricultural experts indicate that the massive use of soilless farming to curb urban youth unemployment is limited. The factors that are considered as constraints include the requirement of special inputs which may not be readily accessible to youths when needed, the need for expensive farming tools and equipment that may not be affordable to unemployed youths, the intensive and rigorous training which anxious and impatient youths may not want to go through and the peculiarities of this farming system which demands special type of skill in agriculture which at times not all urban youth can learn except those who read agriculture. It was however affirmed that small space capacity is never a constraint to its practice and it could be learned by any youth whether graduates or not. These findings are in line with the view of Agriman (2016) who explained that aeroponics farming could be expensive while Maxipharo (2017) noted that aeroponics culture is an automated system which could make it require some level of technological know-how. Patillo (2017) also remarked that hydroponics and recirculating aquaculture developed separately as a discipline for many years before aquaponics was discovered, hence, there is very little specialized equipment for aquaponics. Thus, confirming most of the fears that agricultural experts expressed could constrained the massive use of soilless agriculture as a means of stemming urban youth unemployment.

The study finally found that there is no difference in the view of crop scientists and other agricultural experts on the practicability of using soilless farming to stem urban unemployment as well as the constraints that could limit its use. This lack of difference conforms with the findings of Agbidi and Ikeoji (2019) which reveals no difference in the opinion of urban and rural teachers in the implementation of new trade agricultural curriculum. This lack of difference is brought about by the fact that both categories of experts might have been introduced to soilless farming practices at their undergraduate levels. Though crop scientists may have deep knowledge of the principles and processes involved in soilless farming more than other agricultural Scientists who specialized in other branches of agriculture, yet the knowledge that other experts have is enough for them to know if soilless systems can be used to solve urban soil availability issues or not.

### **Conclusion**

The study has examined the perception of agricultural lecturers who are experts in the field of agriculture about the understanding of what soilless agriculture is and the possibility of using soilless agriculture as a means of curbing or stemming urban youth unemployment in urban centers. Agricultural experts have confirmed that soilless agriculture could be used to stem urban-youth unemployment problem ravaging the nation. However, experts opinion have revealed that massive use of soilless agricultural system in stemming urban youth unemployment could be constrained by many factors, prominent among which is the high technicality of the practice and the availability of finance to acquire the required equipment as well as the impatience nature of some youth to acquire the requisite skills for engaging in soilless farming. Thus, the soilless agricultural practice should be given a trial by the government to stem the rising tide of unemployment bedeviling the Nigerian society.

### **Recommendations**

1. Government and NGOs should make finances available for procurement of soilless farming equipment for distribution to youths who have passion for soilless farming.
2. Youths who are just leaving school especially those just completing NYSC should be motivated and trained in soilless practices.
3. Soilless agricultural practices could also be incorporated into the General Studies at the tertiary education levels so that youths can be taught the principles and practices while in school. This would assist them to be occupied with soilless farming while still seeking for employment.

4. Training in soilless farming should be incorporated into the National Youth Service Corps entrepreneurial training schemes to equip youths who are interested in soilless farming. While they should be assisted with seed equipment and inputs to practice on completion of training
5. The Government through the Federal Ministry of Agriculture should create awareness and orientation about the possibility of soilless farming in most Nigerian cities to solve the problem of food scarcities in urban areas.
6. Youths should be encouraged to embark soilless farming especially those who are agricultural graduates

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