



AGRIPRENEURIAL COMPETENCIES NEEDED BY UNDERGRADUATES IN SORGHUM PRODUCTION FOR SUSTAINABLE FOOD SECURITY IN BIU LOCAL GOVERNMENT AREA OF BORNO STATE NIGERIA.

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Abstract

The study was carried out to determine agripreneurial competencies needed by undergraduates in sorghum production for sustainable food security in Biu Local Government Area of Borno State. Three research questions and one hypothesis was formulated to guide the study. Survey research design was adopted for the study. The population of the study was seventy-five (75) which was made up of fifty (50) teachers of agricultural science and twenty-five (25) agricultural extension agents in Biu Local Government Area. There was no sampling due to the manageable number of the population. The instrument used for data collection was forty-five (45) structured questionnaire items which was face validated by three experts. A Cronbach Alpha reliability method was adopted to determine the internal consistency of the questionnaire items and it yielded a coefficient of 0.83. Seventy-five (75) copies of the questionnaire were administered and retrieved from the respondents. The data collected were analyzed using mean and standard deviation to answer the research questions. T-test statistics was employed for testing the hypothesis. It was found out that all the agripreneurial competencies were needed by undergraduates for sorghum production. It was therefore recommended that the identified competencies be packaged and used to train the undergraduates by the Local Government Authority in Biu, so that they can go into large scale production of sorghum that will lead to sustainable food security in a depressed economy.

Key words: Agripreneurial; Competencies; Undergraduates Sustainable; Food Security.

Introduction

Sorghum (bicolor (L) Moench) is a grain crop that belongs to the group of cereals. It is a member of the grass family called Poaceae. Sorghum (Sorghum bicolor) according to Ajeigbe, Ignatius, Folorunsho,

Abubakar, Tukur and Micheal (2020) is an important food crop in Africa and is the fifth most important cereal crop grown in the world. Crop watch stated that sorghum is believed to have first been cultivated in Africa and introduced into Americans by



slave traders. Ajeigbe et al (2020) explained that America is the largest world sorghum producer with a total production of 8.7 Million tons while Nigeria produces 6.9 million tones as the second largest producer in the world. In Africa, Nigeria is the highest producer of Sorghum followed by Ethiopia.

Sorghum also called guinea corn is one of the most important cereal food in the Northern States of Nigeria covering Sahel, Sudan and Guinea savannahs. Sorghum is produced in Jigawa, Kano, Adamawa, Gombe, Sokoto, Kastina, Plateau, Borno, Nasarawa Kebbi, Taraba, Bauchi, Zamfara and Kwara States of Nigeria. The best time to plant sorghum is between April to August when there is rain. It is a warm weather crop that requires high temperature for good germination and growth. Sorghum is a short day crop. The soil pH for sorghum is between 5.5 to 8.5 sorghum leaves are green, grass-like and flat while the blade is long, narrow and pointed.

Majority of the produce from sorghum is for household consumption by rural and urban residents. Sorghum is dried and milled into powdered form used for the preparation of tuwo (thick porridge), it is used when milled with the addition of water, kept in a basin and used for preparing pap as the need arises. Ajeigbe et (2020) explained that sorghum is used for malt drink production, it is also processed into cakes, biscuits, sweets and other confectionaries. Sorghum according to Wikipedia (2023) is used as fodder for feeding animals it is rich in protein, dietary fiber, vitamin B and minerals production of alcoholic beverages and biofuels. Sorghum

is a good source of calcium, iron, riboflavin, and Niacin. Health wise, sorghum has the ability to prevent cancer, control diabetes, improve digestive system, build strong bones and promote red blood cell development (Wikipedia 2023). Considering the economic situation of the nation and the daily rise in unemployment level, the tertiary institution graduates has the singular opportunity of learning how to produce sorghum at commercial scale while in school in order to cancel the issue of unemployment immediately after graduation. This will make them an employer of labour rather than being a job seeker.

An undergraduate according to Colin (2023) is a student who is studying for his/her first degree at college or university. In the opinion of Law insider (2023) an undergraduate is a student enrolled in an approved programme of study for a bachelor degree of the University. In the context of this study, an undergraduate is a student who is enrolled in an approved programme of agricultural education or who is interested in learning the basic rudiments of sorghum production while studying to earn a bachelor degree and at the same time practically acquire the necessary knowledge attitudes, ability and capability of an agripreneurer.

Agripreneurial is an individual who has acquired the knowledge, skills, attitude, of an entrepreneur but uses these values acquired for agricultural production or any agricultural allied business. Boidurje (2020) explained that agripreneurial is an individual who starts, organizes and manages a business venture focusing on the agricultural sectors. IGI Global (2023)



defined agripreneur as an individual who practiced entrepreneurial activities with the goal to create wealth by applying innovative skills within the agricultural industry. Thus, an undergraduate who learns the necessary skills in an entrepreneurship with the hope of using the skills in agripreneurial production or agriculturally allied business after graduation is an agripreneur but the individual needs competencies in the area of his/her agricultural interest.

Competency is the knowledge skills attitudes; ability, values and enablement that an individual need to perform effectively and efficiently as an expert in the area of his/her agricultural interest. National Institute of Health (2023) asserted that competency is a series of knowledge, abilities and skill experiences or behaviours which leads to effective performance in some individual activities it is measureable and can be developed through training. The author further explained that the knowledge, skills, abilities and behaviours contributes to individual and organization performance. These qualities mentioned above can be acquired through training in commercial sorghum production in Biu Local Government Area of Borno State.

In time past, according to Bitrus (2020) sorghum was the saviour of the people in Biu Local Government during the time of hunger when yams, rice, beans and maize becomes a scarce community when the available quantity of these food stuff and their prices were at the roof top beyond the reach of the poor masses. The crop contributes significantly to the regional and nutritional food security, as the area of

study was one of the highest producers of sorghum. This has made the majority of the population to be living an average standard of life in relation to the financial benefits derived from sorghum production. In this area, the current situation is that of drastic reduction in the quantity and quality of sorghum production. The reason is that the sorghum farmers are now aged, their children after graduation started roaming the street and towns looking for non-existent white collar-jobs. The level and rate of unemployment in the area of study continues to increase as the universities were churning out graduates without competencies for any particular occupation. This lack of competency has led some of the university graduates to join political thuggery, yahoo activities, prostitution, stealing and youth restiveness. This situation is pitiful and needs urgent attention. The situation therefore has led the researchers to determine agricultural competencies needed by undergraduates in sorghum production for sustainable food security in a depressed economy.

Food security according to World Bank (World Food Summit 2023) is when all the people at all times have food that meets their dietary need and food preferences for an active and healthy life. Wikipedia (2023) described food security as the ability of individual within that country to access, afford and source adequate food stuff. Presently in the whole world, there is on-going discussions, workshops and conference on sustainable food security. The sustainable development goal number 2 calls for zero hunger. The implication of this is that every citizen in a country must be adequately fed in terms of quantity and



quality. Food and Agricultural organization FAO (2015) explained that a sustainable food security system is a food system that delivers food security and nutrition for all in such a way that the economic, social and environment bases to generate food security and nutrition for future generations are not compromised. Sustainable food security is the long term capacity on food system to provide an adequate quantity of nutritious food for present population and that of the future. In simple term according to Feenstra (2014) sustainability in agricultural food production is the production of food, fiber, or other plant and animal products (in this case sorghum production) using farming techniques that protect the environment, public health human communities and animal welfare. The principle of sustainability is hinged on the fact that we must meet the food needs of the present without compromising the ability of the future generations to meet their own needs (Bashir, 2015).

Purpose of the Study

The major purpose of the study was to determine the agripreneurial competencies need by undergraduates in sorghum production for sustainable food security in Biu Local Government Area of Borno State: specifically, the study sought to determine

1. The agripreneurial competencies needed by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State.
2. The agripreneurial competencies needed by undergraduates in post-planting operations of sorghum production for sustainable food

security in Biu Local Government Area of Borno State.

3. The agripreneurial competencies needed by undergraduates in harvesting and marketing operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State.

Research Questions

The study was designed to answer the following research questions.

1. What are the agripreneurial competencies needed by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State?
2. What are the agripreneurial competencies needed by undergraduates in post-planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State?
3. What are the agripreneurial competencies needed by undergraduates in harvesting and marketing operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State?

Hypothesis

The null hypothesis was tested at $P \leq 0.05$

There is no significant differences in the mean ratings of the responses of agricultural science teachers and agricultural extension agents on the agripreneurial competencies needed by



undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State.

Methodology

The study adopted a survey research design. The design was adopted because the study used structured questionnaire items to obtain responses from the respondents. Three research questions guided the study while one hypothesis was formulated for the study. The study was carried out in Biu Local Government Area of Borno State. The population of the study was seventy five (75) which comprised of fifty (50) Agricultural science teachers from the ten (10) Senior Secondary Schools in the area and twenty five (25) Extension agents in Biu Local Government Area of Borno State. Due to the manageable size of the population, the entire population constituted the sample for the study. The instrument for data collection was a- 45 structured questionnaire items developed by the researchers through the literature review. The questionnaire had four categories of response options on sorghum production. They are:

Highly needed (HN) = 4 Points

Averagely needed (AN) =3 points

Slightly needed (SN) = 2 Points

Not needed (NN) = 1Point

Each of the four response options had a corresponding value attached to them. The instrument was face validated by three experts. Two from the Department of Science Education, Agricultural Education Unit, while one was from the Department

of Agronomy, all from Federal University of Kashere, Gombe State. Their suggestions were used to produce the final copy of the questionnaire items used for the study. The instrument was administered on ten (10) agricultural science teachers of senior secondary schools and ten (10) agricultural extension agents in a nearby Local Government Area of Borno State. Test-retest reliability method was adopted by administering the same questionnaire twice over a period of time to a group of individuals. Finally, the responses were analyzed and it yielded a reliability coefficient of 0.83 the instrument was administered to all the seventy five (75) respondents in Biu Local Government Area of Borno State by the researchers. All the seventy-five (75) questionnaire administered were retrieved. The data collected were analyzed using weighted mean and standard deviations to answer the research questions. The arithmetic mean value is $4+3+2+1= 10/4=2.50$. The 2.50 obtained was used as the cut. off-point for decision making. Any competency item with the mean value of 2.50 and above was regarded as needed while those with the mean value below 2.50 was regarded as not needed. A low standard deviation indicates that the respondents tend to be very close to the mean whereas a high standard deviation indicates that the respondents were far from the mean.

In testing the hypothesis of no significant difference, any item whose p-value is greater than $p=0.05$ was regarded as not significant while any item whose p-value is less than $p=0.05$ was regarded as significant.

Results



The results for the study were obtained from the data collected and analyzed as follows:

Research Question 1

What are the agripreneurial competencies needed by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State

Table 1- Mean rating analysis of Agricultural science teachers and Extension agents on the agripreneurial competencies needed by undergraduates on the pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State. N=75

S/N	Items Statement	\bar{X}	SD	Remark
1	Select suitable site that is well drained	3.83	0.62	N
2.	Clear all undergrowth vegetation on the land	3.08	0.89	N
3.	Stump, pack debris and burn them	2.68	0.89	N
4.	Survey the land to indicate boundaries	3.11	1.24	N
5	Till the soil by ploughing and harrowing	3.32	074	N
6	Test the sorghum grains for viability before planting (germination test)	3.12	087	N
7	Sow on beds, ridges or flat land	2.67	1.12	N
8.	Measure out planting distances to specification	2.95	1.05	N
9.	Measure out grains of 60-100kg per hectare	2.447	0.88	N
10.	Treat seeds with fungicides before planting	3.19	1.06	N
11.	Dig a hole of 2cm at each point for sorghum planting	2.81	0.98	N
12.	Put 2-4 grains inside the hole	2.80	1.34	N
13.	Cover up the hole with the top soil of the field after planting the grains	2.67	1.12	N
14	Examine the farm for the germination of planted seeds on the fifth day	3.76	0.43	N

Key = \bar{X} = Mean; SD= Standard Deviation N = Needed; NN=Not Needed

The data Table 1 revealed that thirteen (13) agripreneurial competency items in pre-planting and planting operations had their means ranged from 2.67 to 3.83 each of these means is higher than the cut- off point of 2.50 indicating that all the thirteen (13) agripreneurial competency items were

needed by undergraduates for pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State. However, the data in Table 1 showed that one (1) agripreneurial competency item (item number 9) had its mean to be 2.47



which is lower than the cut -off point of 2.50, indicating that the agriprenural competency item was not needed by the undergraduates for pre-planting and planting operations of sorghum production in Biu Local Government Area of Borno State. The standard deviation for the fourteen (14) agriprenural competency items ranged from 0.43 to 1.34 which are low' indicating that the respondents were

not far from the mean and from one another in their responses. This lends some credence to the reliability of the mean.

Research Question 2

What are agriprenural competencies needed by undergraduates in post-planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State?

Table 2 Mean Rating analysis of Agricultural Science teachers and Extension agents on the Agriprenural Competency Needed by undergraduates on the Post-Planting Operations of Sorghum production for sustainable food security in Biu Local Government Area of Borno State.

N=75				
S/N	Item Statement	\bar{X}	SD	Remarks
1.	Weed the farm manually on the 3 rd to 5 th day after planting	3.59	0.57	N
2.	Supply the missing stands after germination	2.84	1.05	N
3.	Thin the germinated sorghum to 2-3 plants per stand	2.93	0.86	N
4.	Apply herbicides for weed control two months after first weeding	3.51	0.86	N
5.	Earthen up the ridges/beds after the second weeding in order to control lodging of the crops	2.51	0.78	N
6.	Apply nitrogenous fertilizer at the rate of 60-100kg per hectare	2.53	0.92	N
7.	Inject soluble fertilizer through irrigation system	2.77	0.73	N
8.	Examine the plants for disease infestation	2.76	0.96	N
9.	Irrigate the farm plot when the soil is dry	2.87	0.95	N
10.	Practice appropriate irrigation technique when the soil is dry	2.89	1.07	N
11.	Drain the water when there is water logging	2.67	1.12	N
12.	Maintain farm hygiene till sorghum is matured for harvesting	3.04	0.53	N

Key = \bar{X} = Mean; SD= Standard Deviation N = Needed; NN=Not Needed

The data in Table 2 showed that the twelve (12) agriprenural competency

items in the post-planting operations had their means ranged from 2.51 to 3.59 each



of the means is higher than the cut –off point of 2.50 this indicated that all the twelve (12) agriprenuerial competency items in post planting operation of sorghum production were needed by undergraduates for sorghum production for sustainable food security in Biu Local Government Area of Borno State. The standard deviation for the twelve (12) agriprenuerial competency items were low, indicating that the respondents were not far from the mean

and from one another in their responses. This added some values to the reliability of the mean.

Research question 3

What are the agriprenuerial competencies needed by undergraduates in harvesting and marketing operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State?

Table 3- Mean rating analysis of Agricultural science teachers and Extension agents on the agriprenuerial competencies needed by undergraduates in harvesting and marketing operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State.

S/N	Item Statement	\bar{X}	SD	Remarks
1.	Harvest when the leaves turn brown and matured grains are dried	3.48	0.81	S
2.	Use the harvesting tool to harvest (sickle or cutlass)	3.68	0.55	N
3.	Hold the handle of the sharp sickle in one hand on astride position	3.19	1.06	N
4.	Cut down the whole plant with heads of sorghum	3.49	0.92	N
5.	Gather the sorghum plants for heads cutting with the other hand	3.28	0.97	N
6.	Cut the head later and leave the stalk	3.04	1.05	N
7.	Dry the heads containing the grains to reduce the moisture content to between 11-13%	3.72	0.73	N
8.	Thresh the dry heads to remove the dry grains	3.88	0.43	N
9.	Select/sort and remove the infected grains	3.76	0.65	NS
10	Winnow the threshed grains to remove the chaff	3.60	0.69	N
11.	Bag the dry and winnowed grains and store in a cool and dry place	2.93	0.65	N
12.	Apply preservatives to store seeds to prevent pest infection	3.56	0.58	N
Marketing Operations				



13.	Carry out market survey for the produce for consumer and price	2.76	0.96	N
14	Fix appropriate price for each bag	2.50	1.10	N
15	Advertise the sale of sorghum to customers and locate market outlets	2.82	1.06	N
16.	Open a sales book for the produce	2.79	1.23	N
17.	Transport and distribute sorghum to bulk buyers	2.51	1.14	N
18	Balance farm account at the end of farming season	2.50	1.10	N
19.	Determine the profit margin from the sales	2.89	0.07	N

Key = \bar{X} = Mean; SD= Standard Deviation N = Needed; NN=Not Needed

The data in Table 3 revealed that all the nineteen (19) agriprenuerial competency items in harvesting and marketing operations had their means ranged from 2.50 to 3.88. Each of these means is higher than the cut-off-point of 2.50, indicating that all the nineteen (19) agriprenuerial competency items in harvesting and marketing operations of sorghum production were needed by undergraduates for sorghum production for sustainable food security in Biu Local Government Area of Borno State. The standard deviation for the nineteen (19) agriprenuerial competency items ranged

from 0.07 to 1.24 which were low indicating that the respondents were not far from the mean and from one another in their responses. This added some credibility to the reliability of the mean.

Research Hypothesis 1

There is no significant difference in the mean ratings of the responses of agricultural science teachers and extension agents on the agriprenuerial competencies weeded by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Bor

t-test analysis of the mean ratings of the responses of agricultural science teachers and extension agents on the agriprenuerial competencies needed by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State.

TABLE 4 **N₁ =25, N₂=50, N=75**

S/N	Item Statement	Extension agents		Agricultural Science Teachers		P-value	Remarks
		\bar{X}_E	SD ² ₁	\bar{X}_A	SD ² ₂		
1.	Select suitable site that is well drained and flat	3.68	0.85	3.90	0.46	0.01	S
2.	Clear all undergrowth of the site	3.00	1.00	3.12	0.84	0.64	NS



3.	Stump and pack debris and burn them	2.72	0.84	2.66	0.92	0.26	NS
4.	Survey the land to indicate boundaries	3.12	1.27	3.10	1.25	0.94	NS
5.	Till the soil by ploughing and harrowing	3.32	0.75	3.32	0.74	1.00	NS
6.	Test the sorghum grains for viability before planting (germination test)	2.88	1.01	3.24	0.77	0.24	NS
7.	Sow on beds or ridges	2.76	1.13	2.62	1.12	0.83	NS
8.	Measure out planting distances to specification	2.60	1.11	3.12	0.90	0.42	NS
9.	Measure out grains of 60 -100kg	2.16	0.89	2.62	0.83	0.95	NS
10.	Treat seeds with fungicides before planting	3.12	1.13	3.22	1.03	0.77	NS
11.	Dig holes of 2cm at each point for sorghum planting	2.72	1.02	2.86	0.96	0.69	NS
12.	Put 3-4 grains inside the hole	2.60	1.29	2.90	1.36	0.37	NS
13.	Cover up the hole with the top soil on the field after putting the grains	2.72	1.02	2.86	0.97	0.69	NS
14.	Examine the farm for germination of the planted seed on the 5 th day	3.84	0.37	3.72	0.45	0.15	NS

Key = N= Number of respondents; \bar{X} E= Mean of Extension Agents; \bar{X} A = Mean of agricultural Science Teachers; S= Significant and NS=Not Significant

The data presented in Table 4 revealed that thirteen (13) agripreneurial competency items in pre-planting and planting operations of sorghum production had their p-value ranged from 0.15 to 1.00. the items are from item 2 to 14. Each of the p-value is equal to or greater than $p=0.05$ level of significance indicating that there was no significant difference in the mean ratings of the responses of agricultural science teachers and extension agents on the agripreneurial competencies needed by

undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State. Therefore, the hypothesis of no significant difference was accepted for the thirteen (13) competency items.

However, the data in Table 4 showed that one (1) agripreneurial competency item in pre-planting and planting operations of sorghum production had its p-value to be



0.01. This agripreneurial competency item is No 1. This indicated that the p-value is less than 0.05 indicating that there was significant difference in the mean ratings of the responses of agricultural science teachers and extension agents on the agripreneurial competencies needed by undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State. Therefore, the hypothesis of no significant difference was rejected for item No 1.

Discussion of Findings

The findings of the study on the agripreneurial competencies needed by the undergraduates in pre-planting and planting operations of sorghum production for sustainable food security in Biu Local Government Area of Borno State revealed that the undergraduates needed thirteen (13) agripreneurial competencies in pre-planting and planting operations of sorghum production. The agripreneurial competencies were: select suitable site, clear all undergrowth till the soil, do germination test, sow on beds or ridges and put 3-4 grains in a hole among others. This study was in line with the study of Ekele, Abdullahi and Raka (2017) on entrepreneurial skills required for empowering farmers in sorghum production in Nasarawa State where it was found out that twenty-one (21) skill items were required for empowering farmers in planting and planting operations of sorghum production. However, one (1) competency item was not needed by the undergraduates in pre-sorghum production. The competency item is measure out grains

of 60-100kg per hectare. This indicated that the undergraduates in Biu Local Government Area already possessed good practical knowledge of the quantity of sorghum grains needed for planting on hectare of a land. This is consonance with the work David (2017) on competency improvement needs of NCE graduates of agricultural education in snail farming where it was found out that the NCE graduates did not need competency improvement in six (6) competency items in the area of management of snail because they could perform them at required proficiency level.

The findings of the study on the agripreneurial competencies needed by undergraduates in post planting operations in sorghum production for sustainable food security in Biu Local Government Area of Borno State revealed that all the twelve (12) agripreneurial competencies in post planting operations were needed by undergraduates for sorghum production. The agripreneurial competencies are: weed the farm manually on the 3rd to 5th day after planting, supply missing stands after germination, thin germinated sorghum to 2-3 per stand and apply nitrogenous fertilizer at the rate of 60-100kg per hectare among others. The study is in conformity with study conducted by Anyogo, Weye, Anjor and Aduku (2019) on skills required by unemployed secondary school graduates for goat production enterprise in Benue state where it was found out the unemployed secondary school graduates required eighteen (18) feeding and marketing skills for goat production.



The findings of the study on agripreneurial competencies needed by undergraduates in harvesting and marketing operations for sustainable food security in Biu Local Government Area of Borno State revealed that all the nineteen (19) agripreneurial competencies were needed for sorghum production. The competencies are: harvest when the leaves turn brown with matured grains, cut down the whole plant with heads of sorghum, thresh the dry heads to remove the grains, carry out market survey, fix appropriate price for each bag, open sale book for the produce and balance farm account at the end of the farming season. The study is in line with the study of Isiwu and Asogwa (2017) on the competency improvement needs of teachers of agricultural education in South East Nigeria where it was found out that all the nine (9) competency improvement in planning for teaching farm business management were needed by students in colleges of education in South East Nigeria.

The hypothesis tested on the mean ratings of the responses of agricultural science teachers and extension agents on agripreneurial competencies needed by undergraduates in pre-planting and planting operations of sorghum production in Biu Local Government Area of Borno State showed that there was no significant difference in the thirteen (13) agripreneurial competencies needed by undergraduates in Biu Local Government Area of Borno State. Therefore, the hypothesis of no significant difference was not rejected. However, there was a significant difference in one (1) of the agripreneurial competencies needed by

undergraduates in sorghum production in Biu Local Government Area of Borno State. Therefore, the hypothesis of no significant difference was rejected for the item.

The views of the authors cited above justified the findings of this study.

Conclusion

Biu Local Government Area in Borno State use to be one of the highest producers of sorghum in the Northern States of Nigeria. The crop contributes significantly to the regional and nutritional food security of the area. The current situation revealed that there is a drastic reduction in the level of production from this area due to the farmers that are now aged. The young ones are in school and after graduation they start to roam about looking for white collar jobs that are non-existent. With the national situation of food insecurity and high unemployment rate, it becomes necessary to equip these undergraduates with agripreneurial competencies in sorghum production so that after graduation, they can easily start the production of sorghum on a large scale, become fully employed, and be able to employ others instead of looking for jobs that are non-existent. Based on the findings of this study, it was discovered that undergraduates in Biu Local Government Area of Borno State needed agripreneurial competencies in pre-planting and planting operations, post planting operations, harvesting and marketing operations. It is therefore to train them with the identified agripreneurial competencies so that sorghum production will be boosted and sustainable food



security will be achieved in Biu Local Government Area of Borno State.

Recommendations

Based on the findings of this study, it was recommended that:

1. The local Government Authority and leaders in Biu should jointly organize a workshop for the undergraduates in the area in order to train them on how to be fully involved in the large scale production of sorghum. The undergraduates should be well motivated for the training so that they can attend. After graduation of those trained, the Local Government Authority should provide them with all the necessary logistics with which to start sorghum production.
2. Agricultural science teachers in secondary schools in Biu Local Government Area of Borno State should motivate their students to have their own farm no matter how small, for sorghum production.

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