

## **OCCUPATIONAL SKILLS REQUIRED BY SECONDARY SCHOOL LEAVERS IN SORGHUM PRODUCTION FOR WEALTH CREATION IN KWARA STATE, NIGERIA**

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### **Abstract**

*The importance of Sorghum to the livelihood of man cannot be underestimated as it serves as food for man, livestock feed and other forms of industrial use. Several youths, particularly idle secondary school graduates require an occupational skill as a source of sustenance. This study therefore assessed occupational skills required by secondary school graduates in sorghum production for wealth creation in Kwara state. Two research questions and hypotheses were formulated to guide the study. A purposive sampling technique was employed to select One hundred and fifty (150) respondents, comprising 114 registered farmers and 36 extension agents. The design adopted was a descriptive survey type in which questionnaire with 38 skill items validated and reliability tested was the instrument administered on the respondents. Mean was used to answer the research questions and t-test statistics used to test the hypotheses. Findings revealed that all the 38 occupational skill items were required for sorghum production. It was recommended that Extension agents should organize workshops and training for the target youths and Government should also create skill acquisition centers to train unemployed youths.*

**Keywords:** Occupation, Skills, School leavers, Sorghum Production and Wealth Creation

### **Introduction**

*Sorghum* belongs to a genus of numerous species of grasses; the plants are cultivated in warmer climates worldwide. Species are native to tropical and subtropical regions of all continents especially the steppes and savannah Africa with its origin in northern Africa. It has about 30 species of which *Sorghum bicolor* is the most widely grown because of its intrinsic properties. According to Food and Agricultural Organization (2004), *Sorghum* is an important food crop in Africa, Central America, and South Asia and is the fifth most important cereal crop grown in the world as well as the most important cereal food in the Northern states of Nigeria that covers the guinea savannah ecological zone.

*Sorghum bicolor* is a genus of numerous species of plants; the plants are cultivated in warmer climates worldwide. Species are native to tropical and subtropical regions of all continents especially the steppes and savannah Africa with its origin in northern Africa. It has about 30 species of which *Sorghum bicolor* is the most widely grown because of its intrinsic properties. It has dimensional uses such as the production of malt, beer, beer powder, sorghum meal, sorghum rice, and livestock feed among others. Sorghum grain may be ground into flour which is then used to prepare various traditional foods.

In communities where sorghum is grown as a subsistence crop, it has been included in the skills for students in other to make main food products prepared such as porridges, fermented and unfermented breads, lactic and alcoholic beers and beverages, malted flours for brewing and mixed as weaning foods which serves as wealth creation. In Nigeria, there is a growing market for pearled sorghum as an alternative to rice. Efforts have been made on use of de-hulled sorghum within feeding regimes for infants and children. All these show the high income generation capacity of sorghum in the nearest future.

Several Nigerian youths roam about the streets chasing shadows of unavailable jobs. Yet the growth and development of any nation is determined by the contribution of the youths in the work force. According to the universal declaration of Human Rights adopted by the United Nations General Assembly in December (2000), it guaranteed for the individual a whole range of basic freedom with education serving as a basic right necessary for the achievement of all other freedoms. Hence, this achievement of the right to education requires that secondary school graduates be given the opportunity necessary for the acquisition of knowledge, skills, attitudes and values that can enable them make happy and productive lives as individuals and discharge their societal duties for the betterment of life in the society.

Agbulu (2016) reported that education is the foundation on which the development of a country is hinged and the wealth of any nation is dependent on the pool of skilled and resource persons that power and drive the economy. (National Policy on Education 1998, revised 2004) maintained that Nigeria, having realized the effectiveness of education as a powerful instrument for national progress and development, had to adjust her educational philosophy and methodology to match the needs and challenges of changing economic and social structure of modern society. Igwe (2010) stated that Nigeria adjusted her secondary educational system to encompass diversified curriculum that combines academic cum technical and vocational subjects with the aim of equipping man for self-employment.

National Policy on Education (2013) stated that the broad aims and objectives of secondary education in Nigerian educational system are the preparation for useful and acceptable living within the society and preparation for higher education. Igwe (2010) opined that the area that is cogent to this study is the objective of preparation for self-employment. However, more than twenty five years after adoption of the laudable initiative, majority of Nigerian secondary school students are idle and some are involved in various vices due to unemployment. They do not have the required skills to either fit into many types of jobs that are available or create jobs for source of livelihood. United Nation Scientific and Cultural Organization (2009) stated that the world is generally faced with youth unemployment and the solution is equipping them with the required vocational and technical skills.

It is no longer news that the nation's youth unemployment rate has been increasing at an alarming rate. The federal government recorded that about 80 percent of Nigeria's youth are unemployed and 10 per cent underemployed as the Nigerian Federal Office of statistics (2016) observed that about 21.9% of Nigerian youths are unemployed and the Minister of Education noted that the poor quality of graduates is worrisome. Abdullahi (2013) opined that many Nigerian youths lacks skill to compete in a rather weak economy and tight labor market and therefore loiter dusk till dawn in search of non- existing jobs.

This vision of preparing youths for self-employment cannot be achieved without youth empowerment for job creation and wealth generation. Adekoya, Uduma,& Ellah (2008) affirmed that for the Nigerian secondary school graduates to be empowered economically there is need to give them necessary skills, and for this to be done, the curriculum should be effectively implemented. It is believed that to ensure a brighter future for Nigeria, the students who are being the future leaders of the country ought to be well equipped with basic skills to drive the economy higher.

Hassan and Ojo (2012), and Osajere (2013) reported that unemployment in Nigeria is due to defective and non-functional curricular that places emphasis on certificate rather than psycho-productive skills acquisition. Federal Government of Nigeria considering the

suggestions of various stakeholders in curbing youth unemployment introduced trade and entrepreneurship curricula in 34 vocational and technical subject areas in 2013. According to Nigerian Educational Research and Development Council (NERDC), the curricula was formed to meet the aspirations of the National Economic Empowerment and Development Strategy (NEEDS) which are expressed as value re-orientation, poverty eradication, job creation, wealth generation and using educating its citizenry for empowerment. Thus, the curricula uphold skill acquisition as the main components of the vocational and trade subjects.

Skill as opined by Ekele (2013) is an inherent habit of carrying out a task that involves acquisition of ability as a result of repetitive performance of an activity or operation. Occupational skill is one of the vocational skills taught at senior secondary education level in Nigerian education system. Occupational skills in agricultural science include crop and animal production skills, farm management skills, farm product processing skills and farm product marketing skills. Thus, Agricultural science could play a significant role in the achieving the goals of the National Economic and Development Strategy (NEEDS). These goals include wealth creation, employment generation, and reduction of poverty, elimination of corruption and the general re-orientation of values. If skills are imparted into youths in the production of plantation and arable crops such as maize, cowpea, rice, sorghum etc., it will go a long way in solving the problem of food scarcity and high prices.

FAO (2004) mentioned that Sorghum is an important food crop in Africa, Central America, and South Asia and is the fifth most important cereal crop grown in the world as well as the most important edible cereal food in the Northern states of Nigeria that covers the guinea savannah ecological zone. Sorghum belongs to the grass family together with maize, wheat, barley, pearl millet and finger millet. It has an extensive root system that aids efficient moisture extraction and a smaller leaf area which reduces water loss through evapo-transpiration.

However, the low level of skills possessed by youths in the production of this crop could be a stumbling block in realising these benefits and this call for the need to develop their capacity. Hence, findings generated from this study will be of immense benefits to unemployed secondary school leaver in Kwara state, agricultural extension agents, sorghum farmers and state ministry of Agriculture.

### **Statement of the Problem**

Sorghum is a very important crop as it is utilised in several ways ranging from food for man, animal feeds, the production of beer, biscuits, and also adhesives, but it is produced by farmers who are mostly peasant in nature. Despite its delicacy, medicinal function and generation of steady flow of income, sorghum production in the State is still low due to lack of man power; yet many unemployed Secondary Schools leavers roam the streets. When they fail to secure jobs, they embrace unacceptable behaviours and societal vices for survival such as prostitution, drug addiction, stealing and to some extent kidnapping. However, they could be helped to live a more meaningful and acceptable life through skill development in sorghum production enterprise for wealth creation and expanded food supply. There is the need for the expansion of sorghum production to meet human needs and create employment opportunities for idle youths. Several factors called for this study, such as high important value of sorghum due to its various uses, high cost of /scarcity of sorghum due to low productivity, idle youths roaming the street due to lack of finance to pursue further studies and unemployment and unaware of the inherent benefits that awaits them by engaging in sorghum production. A search for alternative to improve on sorghum

production in the State becomes necessary, hence necessitated this study, which may help provide advisory role for Government to consider involving idling Secondary School Leavers in affiliation with the International Vocational Centre in the state to help in job creation opportunities and Skill acquisition training of interested youths.

### **Objectives of the Study**

The main purpose of this study was to investigate occupational skills required by secondary school leavers in sorghum production for wealth creation in Kwara state. Specifically, the study identified occupational skills required by secondary school leavers in:

- (i) establishment and Management of sorghum farm for wealth creation.
- (ii) harvesting and storage of sorghum produce for wealth creation.
- (iii) marketing of sorghum produce for wealth creation.

### **Research Questions**

The following research questions were developed to guide the study.

- (i) What are the occupational skills required by secondary school leavers in establishment and management of sorghum farm for wealth creation?
- (ii) What are the occupational skills required by secondary school leavers in harvesting and storage of sorghum produce for wealth creation?
- (iii) What are the occupational skills required by secondary school leavers in marketing of sorghum produce for wealth creation?

### **Research Hypotheses**

The following null hypotheses were tested in the study at 0.05 level of significance:

- H<sub>01</sub>: There is no significant difference in the mean ratings of the responses of sorghum farmers and extension agents on occupational skills required by secondary school leavers in establishment and management of sorghum farm for wealth creation.
- H<sub>02</sub>: There is no significant difference in the mean ratings of the responses of sorghum farmers and extension agents on occupational skills required by secondary school leavers in harvesting and storage of sorghum produce for wealth creation.
- H<sub>03</sub>: There is no significant difference in the mean ratings of the responses of sorghum farmers and extension agents on occupational skills required by secondary school leavers in marketing of sorghum produce for wealth creation.

### **Methodology**

The study adopted a survey research type, one in which the representative sample is studied by collection and analysing data from the group through the use of questionnaire or interview and the result is generalized upon the entire population. The study was carried out in Kwara state which is suitable for the study due to the fertile soils of the agricultural zones that support good yield for sorghum production.

The population for the study was the entire farmers and agricultural extension agents in the area of study. However, purposive sampling technique was employed to obtain 150 respondents comprising 114 registered farmers and 36 extension agents from Agricultural Development Project, Kwara state.

The instrument used for data collection was a structured questionnaire titled: Sorghum Production and Occupational Skills questionnaire (SPOSQ). The instrument was developed from literature review, discussions with agricultural extension agents and information from farmers in sorghum production enterprise. The items were grouped into two parts; A and B. Part A was used to collect information on the personal data of the respondents while part B

has corresponding items which was used to collect information from the respondents on occupational skills required for sorghum production in establishment and management of sorghum farm for wealth creation and, harvesting and storage of sorghum produce for wealth creation. Each section has 4-point response options of Highly Required (HR), Required (R), Moderately Required (MR), and Not Required (NR).

The questionnaire was given to four lecturers in University of Ilorin for validation, editing and inclusion of any missing information or practices that was needed but not included in the instrument. The corrections and suggestions were used to improve the SPOSQ before administration. Also for reliability, 15 copies of the SPOSQ were administered on 15 respondents comprising 10 farmers and 5 extension agents randomly selected in Kwara state which were not part of the study population but have the same characteristics with that of the study population. The data collected were analysed using Cronbach-Alpha reliability co-efficient to determine the internal consistence of the instrument and a value of 0.68 was obtained.

The researcher employed a research assistant to help in the administration of the instrument to the respondents in the respective agricultural zones. The assistant was trained on what to do when distributing and retrieving the copies of the questionnaire from the respondents as majority of the farmers were illiterates. A total of 150 copies of the questionnaire were administered to the respondents.

The data collected was analysed using Mean and Standard Deviation to answer research questions, while t-test statistics was used in testing the null hypothesis at 0.05 level of significance. The mean of 2.50 was used for decision making. Any item with a mean rating of 2.50 or above will be regarded as required while any item with a mean less than 2.50 was regarded as not required. The null hypothesis of no significance difference was rejected for any item whose p-value is less than the alpha value of 0.05 while it was not rejected for any item whose p-value is greater than or equal to alpha value of 0.05 level of significance.

## Results

### Research Question 1

What are the occupational skills required by secondary school leavers in establishment and management of sorghum production for wealth creation?

**Table 1: Mean Responses of Farmers and Extension Staff on Occupational Skills required in establishment and management of sorghum farm for wealth creation**

S/N	STATEMENT	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	Remark
1.	Select site with good soil formation	3.27	.88	3.25	.86	3.26	.87	Required
2.	Survey the site to determine the size Required for row planting and free of plant pathogens	3.25	.88	3.22	.85	3.23	.87	
3.	Determine the correct time for planting	3.25	.88	3.22	.84	3.23	.86	Required
4.	Clear the vegetation with tractor or cutlass for easy ploughing	3.32	.86	3.32	.84	3.23	.86	Required
5.	Plough and harrow the site for easy root Penetration	3.21	.87	3.20	.83	3.20	.85	Required
6.	Map the ploughed area with tape and pegs	3.23	.86	3.20	.83	3.21	.84	Required
7.	Make ridges with row space of 4 to 6 feet	3.19	.86	3.21	.83	3.20	.85	Required

8. Plant the seeds at spacing of 30cm for easy weed control within rows	3.25	.84	3.25	.81	3.25	.83	Required
9. Thin number of sorghum down to 2 plants per stand	3.23	.83	3.23	.80	3.23	.82	Required
10. Apply post emergence herbicides or manual weeding at 3 weeks after planting	3.26	.85	3.25	.83	3.25	.84	Required
11. Apply 50kg/ha of Urea at 5-8 weeks	3.25	.83	3.26	.81	3.25	.82	Required
12. Apply insecticides like Furadan at the growth stage of the crop	3.26	.85	3.25	.83	3.25	.84	Required

**Key:**  $\bar{X}_1$  = mean of farmers,  $SD_1$  = Standard Deviation of farmers,  $\bar{X}_2$  = mean of extension staff,  $SD_2$  = Standard Deviation of extension staff,  $\bar{X}_g$  = Grand mean of respondents,  $SD_g$  = Grand Standard Deviation of the respondents

Table 1 revealed that all the 12 items had their mean values ranging from 3.19 to 3.27, indicating that their values were greater than 2.50. This showed that the respondents agreed that all the 12 items were occupational skills required by secondary school leavers in establishment and management of sorghum farm for wealth creation in Kwara state. The standard deviation also ranged from .81 to .88, which revealed that the respondents opinion were close to each other in their responses on the occupational skills required in planning for sorghum production in Kwara state.

**Table 2: t- test analysis on Responses of Farmers and Extension agents on occupational Skills required in establishment and management of sorghum farm for wealth creation in Kwara state**

Group	N	$\bar{x}$	SD	df	t-cal	Sig	Remark
Farmers	114	3.24	.68	148	.644	.343	NS
Extension Agents	36	3.13	.61				

Table 2 shows the P-value of .343 which is greater than the alpha value of 0.05. This means that there is no significant difference in the mean rating of responses of farmers and extension agents in the identified occupational skills required for establishment and management of sorghum farm for wealth creation. Hence the hypothesis was not rejected. This implies that the occupational skills are all required for establishment and management of sorghum farm.

## Research Question 2

What are the occupational skills required by secondary school leavers in harvesting and storage of sorghum produce for wealth creation?

**Table 3: Mean Responses of Farmers and Extension Staff on Occupational Skills required in harvesting and storage of sorghum produce for wealth creation**

S/N	STATEMENT	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	Remark
13.	Observe sorghum plants at maturity for harvesting	3.27	.88	3.25	.86	3.26	.87	Required
14.	Check for sorghum heads that are matured and dried	3.25	.88	3.22	.85	3.24	.87	Required
15.	Hold the plants near the stem and draw it down with go-to-hell to Reach the dried head	3.25	.88	3.22	.83	3.24	.86	Required



16. Cut the sorghum head with knife to harvest mature heads	3.26	.86	3.22	.84	3.24	.85	Required
17. keep the cut sorghum heads under sun to dry up to 10-12% moisture content	3.21	.87	3.20	.83	3.20	.85	Required
18. Hit the bunches with stalk to remove the seed from panicle	3.23	.86	3.20	.83	3.21	.85	Required
19. Thresh the panicle to separate the seed from the chaff	3.20	.86	3.21	.83	3.20	.84	Required
20. Raise threshed seeds in the direction of the wind to separate the chaff from the seed in a tray by winnowing	3.25	.84	3.25	.81	3.25	.82	Required
21. Pound the seed in the mortar to remove the husk	3.23	.83	3.21	.80	3.22	.81	Required
22. Wash the grain two to three times	3.26	.85	3.25	.83	3.25	.84	Required
23. Air dry the clean grains properly	3.25	.83	3.26	.81	3.25	.82	Required
24. Package them into sizeable bags and seal the bags	3.34	.85	3.30	.83	3.32	.84	Required
25. Clean the Rhumbus or silos in preparation for storage	3.26	.83	3.25	.83	3.25	.83	Required
26. Disinfect the Rhumbus or silos free from pathogens, insects or rodents	3.36	.88	3.35	.86	3.35	.87	Required
27. Store the bagged grains properly	3.32	.85	3.35	.86	3.33	.87	Required
28. Fumigate the environment free from termites and field to store pests	3.29	.85	3.28	.83	3.28	.84	Required
29. Check the grains frequently from insect infestation till marketing	3.26	.86	3.25	.87	3.25	.86	Required

**Key:**  $X_1$  = mean of farmers,  $SD_1$  = Standard Deviation of farmers,  $X_2$  = mean of extension staff,  $SD_2$  = Standard Deviation of extension staff,  $X_1$  = Grand mean of respondents,  $SD_g$  = Grand Standard Deviation of the respondents

In Table 3, it was observed that all the 17 items had their mean values ranging from 3.20 to 3.35, indicating that their values were greater than 2.50. This showed that the respondents agreed that all the 17 items were occupational skills required by secondary school leavers in harvesting and storage of sorghum produce for wealth creation in Kwara state. The standard deviation also ranged from .80 to .88, which revealed that the respondents opinion were close to each other in their responses on the occupational skills required in harvesting and storage of sorghum produce in Kwara state. This implies that the occupational skills are all required by secondary school leavers in harvesting and storage of sorghum produce for wealth creation in Kwara state.

## Hypothesis 2

There is no significant difference in the mean rating of responses of farmers and extension agents in identifying the occupational skills required for harvesting and storage of sorghum for wealth creation.

**Table 4: t-test analysis on Responses of Farmers and Extension agents on occupational Skills required in harvesting and storage of sorghum for wealth creation in Kwara state**

Group	N	$\bar{x}$	SD	df	t-cal	Sig	Remark
Farmers	114	3.30	.77	148	.562	.295	NS
Extension Agents	36	3.12	.69				

Table 4 showed the P-value of .295 which is greater than the alpha value of 0.05. This means that there is no significant difference in the mean rating of responses of farmers and extension agents in identifying the occupational skills required for harvesting and storage of sorghum for wealth creation. Hence the hypothesis was not rejected.

### Research Question 3

What are the occupational skills required by secondary school leavers in marketing of sorghum produce for wealth creation?

**Table 5: Response of Farmers and Extension Staff on Occupational Skills required in marketing of sorghum produce for wealth creation**

S/N	STATEMENT	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	Remark
30.	Survey the market to determine the value and demand for sorghum produce	3.27	.88	3.25	.86	3.26	.87	Required
31.	Fix the price for sorghum produce	3.25	.88	3.22	.85	3.23	.87	Required
32.	Identify distribution channels for marketing of sorghum produce	3.25	.88	3.22	.84	3.23	.86	Required
33.	Advertise the sales of produce to buyers locally or through media	3.32	.86	3.32	.84	3.23	.86	Required
34.	Sell the produce at the farm or transport to market to potential buyers	3.25	.88	3.22	.83	3.22	.84	Required
35.	Keep appropriate record of sales for accountability	3.21	.87	3.20	.83	3.20	.85	Required
36.	Determine the income and expenditure of the farm	3.23	.86	3.20	.83	3.21	.84	Required
37.	Evaluate the profit or loss of farm account	3.19	.86	3.21	.83	3.20	.85	Required
38.	Ensure to manage finances obtained from sales to give room for savings and re-investment	3.25	.84	3.25	.81	3.25	.83	Required

**Key:**  $\bar{X}_1$  = mean of farmers,  $SD_1$  = Standard Deviation of farmers,  $\bar{X}_2$  = mean of extension staff,  $SD_2$  = Standard Deviation of extension staff,  $\bar{X}_g$  = Grand mean of respondents,  $SD_g$  = Grand Standard Deviation of the respondents

Table 1 show that all the 12 items had their mean values ranging from 3.19 to 3.27, indicating that their values were greater than 2.50. This implies that the respondents agreed that all the 12 items were occupational skills required by secondary school leavers in establishment and management of sorghum farm for wealth creation in Kwara state. The standard deviation also ranged from .81 to .88, which revealed that the respondents opinion were close to each other in their responses on the occupational skills required in planning for sorghum production in Kwara state.

**Table 6: t-test analysis on the Responses of Farmers and Extension agents on occupational Skills required in Marketing of sorghum produce for wealth creation in Kwara state**

Status	N	$\bar{x}$	SD	df	t-cal	Sig	Remark
Farmers Group	114	3.30	.77	148	.562	.295	NS
Extension Agents	36	3.12	.69				

Table 6 shows the P-value of .562 which is greater than the alpha value of 0.05. This means that there is no significant difference in the mean rating of responses of farmers and extension agents in identifying the occupational skills required for marketing of sorghum produce for wealth creation. Hence the hypothesis was not rejected. This implies that the occupational skills for marketing of sorghum produce are all required.



## Discussion

The results revealed that farmers required 12 skills in establishment and management of Sorghum farm and 18 skills in harvesting and storage of Sorghum produce and 9 skills in marketing of sorghum produce. The results of this study agree with the findings of Ukonze (2010) in a study on vegetable production skills needed by instructors in Universities for effective teaching of vegetable crop in Enugu State. The researcher identified the skills required in planning for vegetable production, skills for management and skills in marketing for effective teaching of vegetable crop in Enugu State.

The findings of this study are in consonance with the findings of Asogwa, Olaitan and Asouzu (2010) in a study on entrepreneurial skills required by women retirees for processing of pineapple fruit into juice as a sustainable business in Enugu State, where it was found out that 16 skills were required by woman retirees in processing of pineapple fruit into juice.

Also the findings of this study is in conformity with the study of Anjov, Mudu'utdai and Longshall (2015) in a study on skills needed by youths for soybean production for enhancing food security in Benue State, nineteen skills were required for in soybean seed and land preparation, eleven skills in planting and post planting operations and fourteen skills in harvesting and marketing of soybeans. On the hypotheses tested, it was found that there was no significant difference in the rating of farmers and extension agents on all the forty occupational skills required by secondary school leavers for sorghum production for wealth creation in Kwara state. These findings were supported by Uga (2006) who iterated that work skill items such as threshing and winnowing, processing and storage are needed for success in rice and other cereal crops production.

## Conclusion

Sorghum has much more benefits in terms of health management, energy, income generation, low production cost among others. This could help in wealth creation for the populace, ameliorate hunger and poverty and reduce unemployment and other delinquent acts among school leavers in the state. If the identified skills are properly utilized to train the targeted unemployed youths, they will be encouraged to go into its production, most importantly due to the fact that the crop has high resistant to pest and diseases and can be stored for a longer period of time.

## Recommendations

- (i). The identified skills should be packaged by skill acquisition centres for training of secondary school leavers and unemployed youths in sorghum and other cereal crop production.
- (ii) The extension agents should ensure that the necessary information on the occupational skills required in sorghum production be delivered to the end users by all methods for proper assimilation. This could be done by organizing workshops and training for cereal crop production.
- (iii) Government should also help in funding skill acquisition centres through the provision of facilities and instructors to train farmers in sorghum and other cereal crop production for food, employment, wealth creation and economic security.

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