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Resource Management Skill Improvement Needs of Women Farmers in Melon Production for Poverty Reduction in Enugu State, Nigeria

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Abstract – **This paper aimed at examining the resource management skill improvement needs of women farmers in melon production for poverty reduction. Six objectives and six research questions guided the study. The study adopted descriptive survey research design. The study was carried out in Enugu State. The population for the study was 1,034 persons made up of 484 teachers of agricultural science in senior secondary schools, 490 registered women farmers and 60 officials of agricultural extension. The sample for the study was 255 respondents. The instrument used for data collection was one hundred and nine structured questionnaire skill items questionnaire. The instrument was face validated by 3 experts. The Cronbach Alpha method was use to determine the internal consistency of the skill items. The values obtained were 0.85 and 0.88 which represented the Cronbach Alpha reliability coefficient (R) of the instrument. The data collected were analyzed using weighted mean and improvement needed index (INI) to answer the research questions. It was found out from the study that women farmers needed 13 resource management skills in planning for melon production enterprise, 10 skills in pre-planting operation, 6 skills in planting operation, 45 skills in post-planting and post-harvest operations and 7 skills in marketing operation in melon production in Enugu State. It was therefore recommended that the resources management skill identified by this study should be utilized by administrators skill acquisition centres to develop a training programme for retraining women farmers in resources management skills in melon production among others.**

Keywords – **Melon, Resource Management, Skills, Improvement, Women Farmers.**

I. INTRODUCTION

Melon; *Cucumis melo* is a fruit vegetable. Melon fruits are globular or oval. The skin can be smooth or rough. It is either green or streaked with white patches [1]. The seeds of melon are pale yellow, smooth, flattened and taper towards the point of attachment. Melon crop is of two varieties, they are the white long seeded melon and the brown seeded melon; the fruits are white and oblong in shape and climb on trees for good fruiting [2]. It is very common in western part of Nigeria. The oval brown seeded melon has round fruits with green colour and white tinny stripes. It crips more on the ground for good fruiting. It is very common in Kwara, Kogi, Enugu, Ebonyi and Abia States.

Nutritionally, melon seed contains food nutrients such as fat and oil, carbohydrate, protein, vitamins and minerals. The authors stated that seeds of melon are used to reduce fever and moderate digestive system in China. The seeds are also pulverized to treat tuberculosis [3]. The seeds of melon are beneficial to people with heat diseases as melon seeds contain large amount of anticoagulant known as adenosine [4]. The seeds also contain high level of potassium which benefits those with High blood pressure. The shield seeds of melon are grinded either manually or with blender and used in making soups. The seeds, according to the author, are rich in high quality oil [1]. In Enugu State, brown seeded melon is common and mainly produced because of the above mentioned importance. [5] categorized activities in melon production to include preplanting, planting, post planting and post harvesting operations. Farmers engage in the above enumerated operations for melon production.

A farmer, in the opinion of "unpublished" [6], is a person who grows crops or rears animals for the benefit of mankind. Women farmers are female individuals who own or manage melon production in their farms. Some of the farmers care for their family members; through the low income generated from their melon production. For these women farmer to increase their income in melon production to meet their expenses they require improvement in the management of their resource for melon production.

Resource is the supply of raw materials which bring wealth to an individual. There are human and non human or human and material resources [7]. Human resources exists within people and consist of a person's potential abilities as well as current attributes such as energy, knowledge, education, altitudes, skills among others [8]. Material resources are those equipment, facilities, machinery and consumables used in the laboratory or workshop for production. Resources are both human and material things such as competencies, money equipment, facilities, farm tools and so on that enhance the production of melon [9]. Both human and material resources require proper management by the women farmers.

Management, in the observation of [10], is a creative and systematic flow of knowledge that is applied to produce result by using human and other resources in an effective way. Management is the process of designing and maintaining an environment in which individuals working together in groups can effectively accomplished selected aims [11]. Management, in the context of this study, is the act by which women farmers plan, implement and evaluated both human and material resources in preplanting, planting, post-planting and post harvest operations in melon production. Reference [12] certified that categories of management include resource management, skill management, process management, product management, quality management and so on.

Resource management, in the opinion of [13], is the development and allocation of resources to meet one's goal. Resource management is the coordination of all the resources of an individual or organizing, directing and controlling in other to attain an individual or organizational goal [14]. Resource management is the act by which women farmers plan their resources, implement farming activities using material and human resources with reference to pre-planting, planting, post-planting and post-harvesting operations in melon production. Resource management by women farmers, to a great extent, determines the level of their production.

In Enugu state, melon is mostly grown by women farmers. They produce melon in small quantity and supply to the market which falls short the quantity demanded in the market. The quantity of melon produced is relatively low when compare to the quantity of other crops produced like pepper, maize, cassava, yam and cocoyam. The researchers observed that most of these women farmers grow melon on a small scale through interplanting with major crops such as yam, cassava, maize; employ traditional labour with little technology involvement; investing little capital on the production which limits large scale production and diverting any little money made from the sale of melon into growing of other crops and provision of family needs. All these characteristics limit large scale production of melon which resulted into low supply to the market with low income for the women farmers. The low supply of melon consequently leads to low income of the women farmers which expose them to poverty and has some effects on meeting their house hold expenses. This low level of production could be associated with the low level at which these women farmers manage their resources in melon production among competing crops. More people are demanding melon due to its nutritive and medicinal values, yet it is not readily available because of low production. In order to increase the women farmers' income from melon and meet market demand, there is need for the women farmers to improve their skills in managing resources in melon production.

Skill, in the view of [15], means potentials possessed by workers through training to ensure proficiency and competence in the performance of occupational task. In reference to this study, skills mean the abilities of the women farmers to manage human and material resources in preplanting, planting, post-planting and post-harvest operations in melon production very well. By implication, the observation of the researcher of the low level of production of melon by women farmers indicates that there is need to improve their resource management skills to boost their production level.

Improvement is the act of causing somebody and something to become better. Improvement is the act of making something better [16]. Improvement, in the context of this study means making women farmers acquire those skills in which they are deficient in melon production through skill acquisition centre. To determine the skill improvement need of women farmers in melon production, it involves assessment..

Assessment, in the opinion of [17], is a form of evaluation that uses collected data for estimating the worth and quality of a programme or a project. In this study, assessment is the act of evaluating women farmers through collection of data from them to determine the level of skills possess by them in resource management in preplanting, planting, post-planting, post-harvest and marketing operations in melon production.

If the improvement needs of women farmers are identified through assessment and retrained in managing their resources in melon production, it is likely that they will increase the quantity of melon they produce and its supply to the market to earn more income for poverty reduction. It is therefore necessary to determine the resource management skill improvement needs of the women farmers in melon production to reduce poverty in Enugu State. Specifically the study sought to identify the resource management skill improvement needs of women farmer in:

- Planning for melon production enterprise
- Pre planting operations in melon production
- Planting operations in melon production
- Post-planting and post harvest operations in melon production
- Marketing operations in melon production
- Management of material resources in melon production

II. Research Questions

1. What are the skill improvement needs of women farmers for effective planning for melon producing enterprise?
2. What are the skill improvement needs of women farmers in pre planting operation in melon production?
3. What are the skill improvement needs of women farmers in planting operations in melon production?
4. What are the skill improvement needs of women farmers in post-planting and post harvest operations in melon production?
5. What are the skill improvement needs of women farmers in marketing operations in melon production?
6. What are the improvement needs of women farmers in management of material resources in melon production?

III. Methodology

Six research questions guided the study. The study adopted descriptive survey research design. Descriptive survey research design is suitable for this study since it made use of the questionnaire to collect data from teachers of agricultural science, women farmers and agricultural extension agents on resource management skill improvement needs of women farmers in melon production in Enugu State.

The study was carried out in Enugu State which comprises three Agricultural Zones; Awgu, Enugu and Nsukka [18]. Enugu State is naturally endowed with good soil, adequate rainfall, optimal temperature and sunshine for melon production and women in rural area of these

zones are interested and involved in melon production as a vegetable crop. Therefore, the area is considered very suitable for carrying out this study. The population for the study was 1,034 made up of 484 teachers of agricultural science in senior secondary schools, 490 registered women farmers and 60 officials of agricultural extension in the three agriculture zones of Enugu State [19 & 18]. The sample for the study was 255 consisting of 97 teachers of agricultural science, 98 registered women farmers and 60 agricultural extension agents. Proportionate (20%) stratified random sampling technique was used to select the sample for teachers of agricultural science and women farmers while the entire population of extension agent was use for the study because their number was small and manageable. According to Gall, Gall and Borg in [20], 20% of the population of up to 1,000 should be sampled for a study.

The instrument used for data collection was one hundred and nine structured questionnaire skill items questionnaire generated from review of literature. The questionnaire was divided into two parts. Part A was used to obtain information on personal data of the respondents while Part B was used to elicit information on skills in resource management in melon production. Part B has two components of needed and performance. The needed component has a 4 point response options of Highly needed (HN), Averagely needed (AN), Slightly needed (SN) and not needed (NN) while the performance component has a 4 point response options of High Performance (HP), Average Performance, (AP), Low Performance (LP) and No performance (NP). Teachers of agricultural science and women farmers and extension agents responded to the needed component while the women farmers only responded to the performance components.

The instrument was face validated by 3 experts, two from agricultural education Units, Department of Vocational Teacher Education and one from the Department of Crop Science of the University of Nigeria, Nsukka. The experts were requested to restructure and correct items that were wrongly written and eliminate all those that were irrelevant. The contributions of the experts were used to develop the final copy of the questionnaire. The Cronbach Alpha method was use to determine internal consistency of the instrument. The values obtained were 0.85 and 0.88 which represented the Cronbach Alpha reliability coefficient (R) of the instrument.

The researcher hired three (3) research assistants who helped to administer the instrument to the teacher of agricultural science, women melon farmers and agricultural extension agents in the (3) agriculture zones in Enugu State. The assistants were hired based on their environment. They were instructed on how to administer the questionnaire to respondents and how to assist the women melon farmers where they have difficulty to understand the language of the questionnaire. 255 copies of the questionnaire were administered to the respondents and retrieved through the research assistants by the researcher at an agreed location and time.

The data collected were analyzed using weighted mean and improvement needed index (INI) to answer the research questions.

Decision making on improvement need index was determine as follow:

(1) The mean $\left(\bar{x}n\right)$ for the needed categories was calculated

(2) The mean $\left(\bar{x}p\right)$ for the performance categories was calculated

(3) The difference between $\left(\bar{x}n\right)$ and $\left(\bar{x}p\right)$ for each item was calculated to obtain the need gap value (NG) i.e $\left(\bar{x}n\right) - \left(\bar{x}p\right) = NG$

(1) If NG value is zero (0) there is no need for improvement on that item because the level of needed for that item is equal to the level of performance of that item by the women farmers.

(2) If NG value is positive (+) improvement is needed on that item because the level of need for that item is higher than the level of performance of the same item by the women farmers.

(3) If NG value is negative (-) there is no need for improvement on that item because the level of need for that item is lower than the level of performance of that item by women farmers.

IV. Results

Results for the study were presented in the tables below.

Table 1: Need gap analysis of the mean ratings of the responses of women farmers in planning for melon production enterprise in Enugu state (N = 98).

S.No.	Skill items in Planning	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n- $\bar{x}$ p)	Remark
1	Formulate specific objectives in melon production	3.03	2.24	0.79	IN
2	Review the objectives periodically based on changes in market demand.	3.51	2.74	0.77	IN
3	Decide where to locate the farm.	3.53	3.00	0.53	IN
4	Make a decision in the cropping system to adopt in the farm (mono or mix cropping).	3.51	2.23	1.28	IN

5	Draw up an activity schedule to cover stages of melon production.	3.51	2.23	1.28	IN
6	Identify relevant personnel to assist in production and management process.	3.00	2.49	0.51	IN
7	Identify material resources to be involved in production and management process.	3.28	3.00	0.28	IN
8	Identify relevant material resources required for the production and management process.	3.51	2.49	1.02	IN
9	Identify market outlet for melon production.	3.77	3.00	0.77	IN
10	Forcast profit form melon production to make decision.	3.77	2.73	1.03	IN
11	Identify relevant records to keep for melon production.	3.03	2.24	0.779	IN
12	Budget for melon production	3.27	3.00	0.27	IN
13	Develop a melon production plan to indicate size of the farm, process of production, number or quantity and quality of human and material resources.	3.77	2.24	1.52	IN

$\bar{x}$ n = mean needed, $\bar{x}$ p = mean performance, IN = improvement needed, NG = needed gap

The data in table 1 revealed that the needed gap values of all the thirteen skill items ranged from 0.27 to 1.52 and were all positive. This indicated that women farmers needed improvement in the thirteen skill items in planning for melon production.

Table 2: Need Gap Analysis of the mean ratings of the responses of women farmers on skill in pre-planting operations in melon production in Enugu state. (N = 98).

S.No.	Skills in pre-planting operation	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n- $\bar{x}$ p)	Remarks
1	Choose a suitable site for melon production considering soil fertility, topography, labour availability source of water, climate factors and market demand.	3.77	2.27	1.01	IN
2	Clear the land of existing vegetation manually or mechanically.	3.77	2.50	1.27	IN
3	Fell trees and remove their stumps and cut down the branches of the felled trees.	3.27	2.26	1.01	IN
4	Gather the cleared vegetation into heaps and burn.	2.81	2.94	-0.13	INN
5	Level the surface for easy plotting.	2.79	2.50	0.29	IN
6	Map out the land into plots to create roads and parts.	3.51	2.50	1.01	IN
7	Plough the soil to incorporate the remains of cleared vegetation	3.76	2.76	1.00	IN
8	Spread organic matter to increase soil nutrient.	3.76	2.50	1.26	IN
9	Harrow to pulverize soil and incorporate weeds and manure into the soil.	2.53	1.73	0.80	IN
10	Make ridges of about 1 metre wide, 10 metres long and 4 cm high.	2.77	1.74	1.02	IN

$\bar{x}$ n = mean needed, $\bar{x}$ p = mean performance, IN = improvement needed, NG = needed gap

The data in table 2 revealed that the needed gap values of nine (9) out of 10 skill items ranged from o.29 to 1.27 and were positive. This indicated that women farmers needed improvement in the nine skill items. One (1) skill item number four (gather the cleared vegetation into heaps and burn) had need gap value of -0.13 indicating that women farmer need no improvement in one skill item.

Generally, the data in table 3 indicated that women farmers needed improvement in 9 skill items in pre-planting operations in melon production because the need gap value of one skill items was very small and that the women farmers cannot do without the one skill item during pre-planting operation.

Table 3: Need gap analysis of the mean ratings of the responses of women farmers on skills in planting operations in melon production (N =98).

S.No.	Skill items in planting operations	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n - $\bar{x}$ p	Remarks
1	Determine the correct time for planting.	4.00	3.00	1.00	IN
2	Test the seeds for viability.	3.77	3.00	0.77	IN
3	Dissolve appropriate fungicide in water and allow for six hours.	2.78	2.50	0.28	IN
4	Soak melon seeds in the solution for 24 hours.	2.53	2.26	0.27	IN
5	Measure out spacing of 1 metre between rows and 1 metre within rows if no flat and 1 metre apart if it is on ridges.	3.51	2.26	1.25	IN
6	Sow the soaked melon seeds 2-3 seeds per hole.	3.53	2.74	0.79	IN

$\bar{x}$ n = mean needed, $\bar{x}$ p = mean performance, IN = improvement needed, NG = needed gap

The data in table 3 revealed that the need gap values of all the six skill items ranged from 0.27 to 1.25 and were positive. This indicated that the women farmers needed improvement in all the six skill items in planting operation.

Table 4: Need gap analysis of the mean ratings of the responses of women farmers on skills in post-planting and post-harvest operations in melon production. (N = 98)

S.No.	Cluster Skill items in post- planting and post-harvest operations.	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n - $\bar{x}$ p	Remarks
1	Supplying and thinning (7 skill items).	3.72	2.86	0.86	IN
2	Mulching of melon crop (2 skill items).	3.15	2.37	0.78	IN
3	Irrigation of melon crop (4 skill items).	3.58	2.70	0.80	IN
4	Fertilizer application (7 skill items).	3.42	2.69	0.73	IN
5	Weeding of melon farm (5 skill items).	3.95	3.46	0.49	IN
6	Disease and pest control (7 skill items).	3.83	2.79	1.04	IN
7	Harvesting and processing of melon pods (13 skill items).	3.93	2.87	1.06	IN

The data in table 4 revealed that the need gap values of the 7 clusters skill items ranged from 0.49 to 1.06 and were positive. This indicated that women farmers needed improvement in the 44 out of 45 skill items in post-planting and post-harvest operations in melon production.

Table 5: Need gap analysis of the mean ratings of the responses of women farmers on skills in marketing operations in melon production (N=98)

S.No.	Skill items in marketing operations.	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n - $\bar{x}$ p)	Remark
1	Survey the market for melon production.	3.77	2.76	1.01	IN
2	Weigh the bags of melon using weighing machine and record the weight for each bag.	3.31	2.00	1.31	IN
3	Fix prices for melon per kilogram weight.	2.80	2.00	0.80	IN
4	Identify distributing channels.	4.00	2.76	1.24	IN
5	Advertise melon seeds to buyers.	3.27	2.51	0.76	IN
6	Sell melon seeds to buyers at farm site or at the market.	3.51	2.50	1.01	IN
7	Keep sales record to calculate profit or loss for melon production.	3.77	3.00	0.77	2.99

The data in table 5 revealed that the needed gap values of the 7 skill items ranged from 0.76 to 1.31 and were positive. This indicated that the women farmers needed improvement in the 7 skill items in melon production.

Table 6: Need gap analysis of the mean ratings of the responses of women farmers on skills in management of material resources in melon production (N=98)

S.No.	Skills in management of material resources	$\bar{x}$ n	$\bar{x}$ p	NG ($\bar{x}$ n - $\bar{x}$ p)	Remarks
1	Select land for establishing melon farm	4.00	2.76	1.24	IN
2	Use cutlass for clearing, felling trees and shrubs and harvesting of the melon pods.	4.00	3.00	1.00	IN
3	Use pick and axe for stumping stems and roots.	3.77	2.24	1.52	IN
4	Use hoe for tilling the soil.	3.28	2.00	1.28	IN
5	Buy water tanks for providing water in the melon farm.	3.77	2.51	1.26	IN
6	Use tape, rope and pegs for land measurement.	3.51	2.76	0.76	IN
7	Select seed for planting.	4.00	2.50	1.50	IN
8	Provide bucket for fetching water and carrying out viability test.	3.53	2.76	0.78	IN
9	Use pesticides, fungicides and ash for health management of melon crop.	4.00	2.50	1.50	IN
10	Apply pre-emergence herbicides for weed control.	3.51	2.7.6	0.75	IN
11	Collect grasses and leaves for mulching.	3.76	2.50	1.26	IN
12	Buy watering can for sprinkling water.	3.51	2.50	1.01	IN
13	Use knapsack sprayer for spraying chemicals.	3.76	2.50	1.26	IN
14	Purchase wheel barrow, head-pan and basket for carrying melon pod during harvesting.	4.00	2.76	1.24	IN
15	Buy fertilizer to be applied to the soil to increase soil nutrient.	3.78	2.76	1.01	IN
16	Provide money for purchasing farm input.	4.00	2.51	1.49	IN
17	Select stick for breaking the pods.	3.27	2.24	1.02	IN
18	Use wooden turner/ broom for striving of stirring of melon extracts during processing.	4.00	2.76	1.24	IN
19	Provide baskets, perforated container or pots for processing.	4.00	3.00	1.00	IN
20	Buy polytheen sheets for drying melon seeds	3.27	2.24	1.02	IN
21	Provide tray for winnowing dried melon seeds.	3.27	2.23	1.02	IN
22	Buy jute bags for packaging, storing and transporting melon products	3.27	2.50	0.77	IN
23	Provide needle and thread for sowing the mouth of the melon bags.	3.51	3.00	0.51	IN
24	Use scale machine for weighing melon bags.	3.53	2.50	1.03	IN
25	Buy record books for keeping accounts during melon production.	3.51	2.76	0.76	IN
26	Farm cooperative for melon production.	3.53	2.76	0.78	IN
27	Manage finances obtain from melon production to give room for savings for reinvestment.	4.00	2.76	1.24	IN
28	Hire and manage labour only at peak period in the production process (weeding, harvesting and processing).	4.00	2.76	1.24	IN

The data in table 6 revealed that the need gap values of the 28 skill items in management of material resources in melon production ranged from 0.51 to 1.52 and were positive. This indicated that the women farmers needed improvement in 28 skill items in management of material resources in melon production.

V. Discussion of Results

It was found out from the study that women farmers needed 13 resource management skills in planning for melon production enterprise in Enugu state. The findings of the study were in agreement with the view of [21], who stated the steps involved in planning school farm activities are: formulate specific objective for the farm, revise the objectives periodically, draw up programme plan for the farm and so on.

The findings on the skills needed by women farmers in pre-planting operation in melon production were 10 skill items. The finding were in consonance with the view of [22], who stated that skills in pre-planting operation in palm oil production includes select a good site for planting oil palm seedlings, survey the land for planting, clear the land of existing vegetation, fell trees and remove their stumps and so on.

The findings on the skills needed by women farmers in planting operation in melon production were 6 skill items. The findings were in agreement with the view of Purseglove in [23], who stated that planting of cocoyam involves: plant to specification, especially with the corms facing up, deep plant corms and cornels to encourage the plant root deeper among others.

The findings on the skills needed by women farmers in post-planting and post-harvest operations in melon production are 45 skill items. The findings were also in agreement with international institute of tropical agriculture [24], who recorded that skills in high quality cassava flour production process include: peel and wash freshly harvested cassava root, grate the root in a mash dewater the mash by pressing in a clean bag among others. The findings of the study were in line with that of [25], who said that the skills in post-planting of bambra groundnut involves thin the seedling to 2 per stand based on soil fertility, apply sulphate of ammonia through top dressing to increase nutrient availability for the crop, provide pegs to support the crop depending on the variety and so on.

The findings on the skills in marketing operation in melon production are 7 skill items. The findings of the study were in consonances with the view of Adiene in [26], who said that the basic skills involve in marketing of agricultural products are: find buyers, search for market, grade and standardize product stores the product, distribute and transport the products and so on. The views and contributions of the authors cited above added more value to the reliability of these findings of the study.

VI. Conclusion and Recommendations

In Enugu state, women farmers have not been producing melon in large quantity to meet up with demand of the consumers in the market. The low production had led to low supply of melon by the women farmers in the market which resulted in earning low income by the women farmer. They could not meet up with their domestic expenditure.

The researcher observed that the women melon farmers have some limitations in skill in management of resources in melon production. This study therefore, determined the resource management skill improvement need of women farmers in melon production. It was therefore recommended that:

1. The resources management skill identified by this study should be utilized by administrators skill acquisition centres to develop training programmes for retraining women farmers in resources management skills in melon production;
2. The government should direct her agencies such as Enugu state agricultural development programme to develop the identified resources management skill into a programme for retraining of women farmers in melon production through workshop.
3. The agricultural extension agents should utilized the identified resources management skills in melon production to make women farmers improve their melon production through small plot adoption technique.

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University of Nigeria, Nsukka.
Ph.D (Agricultural Education): (2011, Student)
University of Nigeria, Nsukka:
M. Ed (Agricultural Education): (2010)
Ernycom Institute of Technology, Ekpoma, Edo State
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B. Sc Agricultural Education: (2006)
Community Secondary School, Obukpa
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Courses Taught At Present

AED 203: Principle and methods of Agricultural Education.
AED 011: Principle and methods of Agricultural Education.
AED 013: Supervised Occupational Experience Programme in Agricultural.
AED 602: Policy issues in Vocational Technical Education.
AED 603: Administration and supervision in Vocational Education

Publications

1. Uko,E.O; **Asogwa, V.C** and Olaitan,S.O (2011) Element of critical constraints to youths participation in Agriculture in Southeastern States of Nigera**.** In *Nigeria at fifty:Issues, challenges and Agenda*. Vol 1. Chapter 28: 316-327.
2. Mama, R. O; **Asogwa, V. C** & Ukonze, J. A. (2012) Entrepreneurial Competencies required by Secondary School Graduates for Processing of Cashew Nuts to Kernel for Poverty Reduction in Enugu State, Nigeria. Journal *of Emerging Trends in Educational Research and Policy Studies* (JETERAPS). 3(6): 893-88. Manchester, United Kingdom: Jeteraps.scholarlinkresearch.org.
3. Olaitan, S. O; **Asogwa, V. C.** and Abu, M. (2013) Technology competencies required by secondary school graduates in maintenance, servicing and repairing of electronic machines for agribusiness occupations to minimize wastage. *Journal of Development and Agricultural Economics*. 5(1): 1-6. hppt://www.academicjournals.org/JDAE among others.