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RESEARCH ARTICLE

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ASSESSMENT OF FEMALE ENGAGEMENT IN PROCESSING LOW COST OR NO COST AGRICULTURAL PRODUCTS FOR SELF-RELIANCE IN JIGAWA STATE, NIGER

***Babayyo Shuaibu**

Department of Curriculum Studies, Jigawa State College of Education, P. M. B. 1002, Gumel, Nigeria

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*Corresponding author:

Babayyo Shuaibu

ABSTRACT

This study focuses on Jaya community in Jigawa State, Nigeria. It seeks to identify some agricultural plants, trees and grasses that do not require money or which very little money is needed to purchase with a view to empower rural women towards involvement in processing such products for self-reliance e.g. cassia, tamarind, sesame, moringa, hibiscus sabdriffa, sorghum, groundnuts, neems etc. The population of the study comprised all the women in Jaya community. The population was made up of 79 women. As intact community was used no sample was needed for the study. Simple Percentages, Mean and Standard Deviation were used in analyzing the data. The findings revealed that, rural women could not identify most of the low cost or no cost agricultural plants nor their economic importance. The results showed that none of the women in Jaya Community had participated in any agricultural capacity building. Based on the findings, it was recommended that rural women should be empowered to cater for their children because of their closeness to their mothers and also being the first to suffer most the sufferings of their parents.

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INTRODUCTION

Jigawa State is not well vegetated due to its nature, but there were varieties of agricultural plants and tree species that have significant uses as food, fuel wood, timber, refreshment, medicine etc. So many shrubs, trees and grasses are of high economic importance in the area which are of low cost or no cost at all. The woman as a person is an agent of reproduction of life itself. This places her in the position of the lifeblood of the entire humanity. She is the first teacher, the sustained and maintainer of the home, the peacemaker, the symbol of beauty and major moulder of the character of the child. She is a mother of the human race. Among the majority of rural and low-income urban dwellers, women perform all domestic tasks, while many also engage in farming and trade. They are responsible for the care of children, the sick, and the elderly, in addition to performing essential social functions within their communities. The United Nations Development Programme (2005) in its Human Development Report listed some examples to show that in spite of the considerable progress in developing women's capacities, women and men still live in an unequal world. It was reported that poverty has a woman face, because 70 percent of the 15 billion people living in poverty are women: the increasing poverty among women arises from their unequal situation in the labour market, their status and power in the family etc ; women's labour force participation rose by just 4 percent in 20 years (from 36 percent in 1980 to 40 percent in 2000) ; women have relatively low access to credit from formal banking institutions

because they mostly do not have collaterals to offer; all regions record a higher rate of unemployment among women than men; among illiterate people in developing countries, the proportion of women is higher than men's; women's wages are below average. The UNDP report adds that in 55 countries with comparable data, the average female wage is three quarters ($\frac{3}{4}$) of the male wage in the non-agricultural sector. In developing countries, women still constitute less than one-seventh ($\frac{1}{7}$) of administrators and managers. Women occupy only 10 percent of parliamentary seats and only 6 percent of cabinet positions. Based on this, the need to empower women to become self-reliant is timely and a welcome development that can raise the status of women. On the other hand, empowerment is understood as possessing the capacity to make effective choices; that is, to translate one's choices into desired actions and outcomes (Wendy, 2009).

Also, empowerment is the vehicle which enables women to renegotiate their existence on an equitable basis. In addition, Women's Economic Empowerment is an ongoing outreach, process of interrelated and multidimensional and changes to power relations (Malhotra, Schuler & Boender (2002) In addition, women economic empowerment seeks to ensure that people have the appropriate skills, capabilities and resources and access to secure and sustainable incomes and livelihoods (Allendorf, 2006) Also, Women economic Empowerment is necessary for rural women to improve their situation.

LITERATURE REVIEW

Agriculture has been a backbone of Jigawa State for many decades for the fact that it employs many people than any other sector. About 75% of Jigawa population lives in rural area and own land or farm and engage at least in one form of agricultural activity or the other. It is a universally accepted fact that agricultural sector is capable of creating sufficient gainful employment opportunities amidst increasing population in the developing countries. The works of Mortimore as cited in Bolade, Oluwalana&Ojo (2009) and Mohammed (1997) purely showed that, the Savanna plants contributed immensely in almost every sector of rural economy especially in the extreme Northern parts of Nigeria For example, Cervantes-Godoy and Dewbre (2010) undertook a detailed examination of the importance of agricultural growth in poverty reduction in a sample of selected 25 countries classified into three groups. The researchers found that agriculture appeared especially powerful in lifting the poorer groups out of poverty, though its comparative edge declined substantially when it came to those closer to the \$2 per day poverty line. They concluded that growth in agriculture played the leading role in the reduction of extreme poverty, but non-agricultural growth was more powerful in reducing poverty among the well-off poor closer to \$2 per day. Agriculture remains the mainstay of a growing economy. According to Akor (2014), agricultural sector is particularly important in terms of its employment generation and its contribution to Nigeria Gross Domestic Product (GDP). One good thing about Nigeria is that the country is endowed with large human and material resources but one bone of contention is her inability to effectively harness these resources to the benefit of the citizenry. For example, Olatunji, Agumasy&Adesope (2011) found that 26.3% of the respondents sampled in their study in Abia State were not aware of soya beans products.

Tamarind is one of the many multi-purpose forest trees with a good economic potential because of its diverse uses (Jadhav, Sahoo, Ghosh, Ranvear& Mali., 2010; Gunasena and Hughes, 2000; Ishola, Agbaji, &Agbaji., 1990). Virtually every part of the tree is utilised either as food flavouring or medicine portion (Gunasena and Hughes, 2000, Tsuda, Watanabe, Ohshima, Yamamoto, Kawakoshi&Osawa, 1994).

Neem is the most versatile, multifarious tree with immense potential possessing maximum useful non-wood products (Girish and Shankara, 2008; Koul and Wahab, 2004). Neem is natural source of insecticides, pesticides and agrochemicals (Brahmachari, 2004) and also used as a bio-control agent to control many plant disease (Kak, 2000; Jatav and Mathur, 2005).

Adansoniadigitata (Baobab tree) is an important tree of the savanna; many uses were discovered from it. More than thirty different uses were found from the tree (Von maydell, 1990). The plant has numerous medicinal and non-medicinal applications in Africa; every part of the baobab tree is reported to be useful (Owen, 1970) in (Gebauer, 2002). The leaves are used in the preparation of soup. The flower is eaten raw; the seeds also provide flour, which is very rich in vitamin B and protein, and it is used as baby food. In addition, the seeds are roasted and grounded, used to flavor soup in substitute of groundnut. The fruit pulp obtained from the seed provides a refreshing drink when dissolved in water or milk. The spongy and soft nature of the tree makes it to store water, often chewed by human and animals during the extreme scarcity of water. The bark of the young baobab tree is used in making fishing nets, baskets, mats and clothes (Von maydell, (1990), Mohammed, (1997) and Gebauer as cited in Sarban & Hassanzadeh, (2014).

The leaves of the baobab tree are a staple food source for rural population in many parts of Africa especially the central part of the continent (Gebauer as cited in Sarban&Hassanzadeh, (2014). Young leaves are widely used, cooked as spinach, and frequently dried, often

powdered and used for soups over porridges, thick gruels of grains or boiled rice.

Faidherbiaalbida (Gawo in Hausa) Harrison (1987) and Von Maydell (1990) report that *Faidherbiaalbida* is of good importance to African farmers because it provides fodder to livestock and keeps its leaves in dry season serves as browse for livestock when little or no other fodder is available. At the end of the dry season, it drops protein rich pods-up to five tones per hectare, which can be used as fodder. Soil around the trees is enriched by the trees nitrogen fixing roots nodules, by leaf fall, and by droppings of livestock that shelter them from the hot sun.

Hibiscus sabdariffa – The tender leaves and stalks are eaten as salad and as a pot herb and are used for seasoning with curry. The seeds contain oil and are eaten in Africa (Mera, Singh & Singh, as cited in Barau, 2012). The seed are also boiled, fermented and dried for use as condiments for local soup preparations (Mera, Singh & Singh, as cited in Barau, 2012). Again the red succulent calyxes are boiled with sugar to produce a local drink called 'zobo'.

Cassia– It has been found to possess excellent wound-healing properties (Benjamin & Lamikanna, 1981; Palanichany, Bakthavathala, Nagarayan, as cited in Barau, 2012) and is also useful in the treatment of eruptive and pastular skins conditions by rubbing crushed fresh leaves on infected area (Akinde, Okeke, Orafidiya, as cited in Alade, 2000). The pulp of ripe pods is a very strong purgative and is eaten and made into a drink, rich in protein and carbohydrates, given to patients of diabetes and blood poisoning. It is an excellent fuel wood and yields excellent charcoal.

Moringa tree- The tree has been of many uses to human race, ranging from consumption to domestic usage, animal forage, plant manure, bio pesticides and as ornamental plants. Its edible properties and evidence of its role in human health and nutrition made it a tree that is long consumed by man. The fractures are boiled and eaten whole, while the tender young pods that look like strong beans are cooked and eaten whole or sliced, the pulp are extracted from the mature pods called the drumsticks, and soft seeds from immature drumsticks are boiled and eaten like fresh peas (Livestrong, 2012). The leaves are boiled and cooked like vegetables, or dried and ground into powder while the flowers are cooked to make tea, the root are pickled or crushed into condiments. All parts of moringa tree is edible and consumed by humans (Anwar & Bhanger, 2003).

Sorghum – It has been used in West Africa to colour leather goods which include suitcase, shoes, baskets, hats and book covers. Traditionally, bundles of leaf sheaths are extracted in a laborious cottage-industry process. Other uses of sorghum include the production of vegetable oil, broom-making, waxes, sizing papers and cloth (Kochar, 1981). Sorghum bicolor are popularly used nationwide to prepare a gruel meal or pap. The gruel has been found to be highly nutritious (Olukemi&Olukemi, 2005).

MATERIALS AND METHODS

Two instruments were used for data collection in this study: oral interview and coloured picture identification questionnaire. These instruments were constructed by the researcher. The interview comprised 12 items and the coloured picture questionnaire comprised 10 photo items identification. The interview was an oral question type which required the respondent to give verbal response to the question asked. The coloured picture identification questionnaire comprised different pictures of agricultural plants for identification by the subjects of the research. A training guide was used for capacity building for the rural women on processing low cost or no cost agricultural plants for commercial purposes. It took twelve good days for the training; each day's training was on processing a particular agricultural product for commercial purposes. To ensure the content validity, the oral interview and coloured picture questionnaire were validated by 3 specialists, one from Entrepreneur Unit, one from

Curriculum Studies Department and one from Measurement and Evaluation Unit of Jigawa State College of Education, Gumel. The training manual was also validated by the same team of specialists. After the validation of the instruments, they were further subjected to reliability testing. The reliability coefficient obtained for the oral test was 0.99 which indicated its reliability. The reliability coefficient for the colour picture questionnaire was 0.89 which also indicated its reliability.

RESULTS

Research question 1

How many rural women are familiar with low cost or no cost agricultural plants in their area?

The analysis result presented as Table 1 showed how rural women were able to identify low cost or no cost agricultural plants in Jaya Community of Jigawa state before and after the capacity building. As many as 12 agricultural plants which included Tamarind, Neem, Adansoniadigitata, Faidherbiaalbida, Hibiscus sabdariffa, Cassia, Moringa, Sorghum, among others, were shown to the rural women for identification. From the result, as many as 63.3% of the rural women could only identify 1 to 3 agricultural plants before the capacity building, while the remaining 36.7% of the women could only identify 4 to 6 agricultural plants. This shows that the rural women were not much familiar with low cost or no cost agricultural plants before the capacity building. To confirm this, the minimum number of plants identified by the rural women was 1 out of 12, while the maximum was 6. In the same way, the mean of the number of low cost or no cost agricultural plants identified was 3.18. This implies that before the capacity the rural women could on the average identify only 3 low cost or no cost agricultural plants out of the 12 shown to them.

Table 1. Descriptive analysis identifying rural women familiar low cost or no cost agricultural plants

| Could you identify low cost or no cost agricultural plants in your area | | | | |
|---|-----------------------|-------------|------------------------|-------------|
| Response category | Pre capacity building | | Post capacity building | |
| | Frequencies | Percentages | Frequencies | Percentages |
| 1 to 3 agricultural plants | 50 | 63.3 | 0 | 0 |
| 4 to 6 agricultural plants | 29 | 36.7 | 0 | 0 |
| 7 to 9 agricultural plants | 0 | 0 | 60 | 75.9 |
| 10 to 12 agricultural plants | 0 | 0 | 19 | 24.1 |
| Total | 79 | 100.0 | 79 | 100.0 |
| Minimum | 1 | | 7 | |
| Maximum | 6 | | 11 | |
| Mean | 3.18 | | 8.75 | |

Source: Researchers Capacity Building, 2018

Table 2. Frequencies and Percentages on whether rural women have participated in any capacity training on processing low cost or no cost agricultural plants for commercial purposes

| Have you participated in any capacity training on processing low cost or no cost agricultural plants for commercial purposes | Frequency | Percentage |
|--|-----------|------------|
| Yes | 0 | 0 |
| No | 79 | 100.0 |
| Total | 79 | 100.0 |

Source: Researchers Capacity Building, 2018

Table 3. Frequencies and Percentages on the number of rural women are involved in processing low cost or no cost agricultural plants

| Involved in commercial quantity processing of low cost or no cost agricultural plants | | | | |
|---|-----------------------|-------------|------------------------|-------------|
| Response category | Pre capacity building | | Post capacity building | |
| | Frequencies | Percentages | Frequencies | Percentages |
| Yes | 3 | 3.8 | 73 | 92.4 |
| No | 76 | 96.2 | 6 | 7.6 |
| Total | 79 | 100.0 | 79 | 100.0 |

Source: Researchers Capacity Building, 2018

On the other hand, after the capacity building, 75.9% rural women could identify as many as 7 to 9 low cost or no cost agricultural plants while the remaining 24.1% of the rural women were able to identify 10 to 12 low cost or no cost agricultural plants. This shows that after the capacity building, all the rural women were able to identify more

than half of the 12 low cost or no cost agricultural plants. To buttress this finding, the minimum number of low cost or no cost agricultural plants identified was 7, while the maximum was 11 low cost or no cost agricultural plants. Also, the mean number of low cost or no cost agricultural plants on the average identified by the rural women 8.75 (9). This implies that before the capacity building, the rural women could not identify most of the low cost or no cost agricultural plants but after the capacity building they became more familiar with the low cost or no cost agricultural plants and were able to identify most of them.

Research question 2

Have the women participated in any capacity training on processing low cost or no cost agricultural plants for commercial purposes?

Information presented as Table 2 showed whether the rural women have participated in any other capacity building before the capacity building initiated by the researcher. The result from the analysis showed that none of the women in Jaya Community of Jigawa state have participated in any other low cost or no cost agricultural plants capacity building before. This was expected considering the inability of rural women to identify low cost or no cost agricultural plants in their community and the level they were able to identify it after the capacity building.

Research question 3

How many rural women are involved in processing low cost or no cost agricultural plants in their area?

Table 3 depicted information on how many rural women were involved in commercial quantity processing of low cost or no cost agricultural plants in Jaya Community of Jigawa state before and

after the capacity building. From the result presented on Table 3, only 3.8% rural women were involved in the processing of low cost or no cost agricultural plants in Jaya Community of Jigawa state before the capacity building, while as many as 96.2% of the rural women were not involved in the processing of low cost or no cost agricultural

plants. On the other hand, after the capacity building, as many as 92.4% of the rural women engaged in the processing of low cost or no cost agricultural plants in Jaya Community of Jigawa state while the remaining 7.6% were not into low cost or no cost agricultural plants processing. This shows that the capacity building impacted greatly on the rural women as most of them became interested in the commercial quantity processing of low cost or no cost agricultural plants and started the processing it.

Research question 4

How has their income improved after receiving the capacity training?

Table 4. Frequencies and Percentages on how the income of rural women have increased after the training

| Level income of rural women changed after the capacity building | Frequency | Percentage |
|---|-----------|------------|
| Low level | 7 | 8.9 |
| High level | 34 | 43.0 |
| Very high level | 38 | 48.1 |
| Total | 79 | 100.0 |
| Mean | 3.39 | |
| Standard Deviation | 0.65 | |

Source: Researchers Capacity Building, 2018

The analysis result presented on Table 4 above highlighted the level to which the incomes of rural women have increased since they undertook the capacity building on low cost or no cost agricultural plants in Jaya Community of Jigawa state. From the result, 8.9% of the rural women indicated that their income has increased to a low level. Also, 43.0% and 48.1% of the rural women indicated that to a high level and very high level the capacity building has increased their income respectively from processing of low cost or no cost agricultural plants in Jaya Community of Jigawa state. This shows that most of the rural women have increased their income from low cost or no cost agricultural plants in Jaya Community of Jigawa state since they went through the capacity building. Confirming this, the mean of their response of 3.39 (based on real limit mean decision criterion) indicated that to a high level, the capacity building has increased the income of rural women in low cost or no cost agricultural plants in Jaya Community of Jigawa state.

CONCLUSION AND RECOMMENDATIONS

This research work assessed rural womens' knowledge of agricultural plants and trees in Jaya Community and the level of participation by the rural women in processing them for commercial purposes and how such rural women were empowered to eradicate poverty and become self-reliant. This will also trigger off the development of the industrial and economic development which eventually will result in National development. There will be increase in productivity as such there will be no room for evil men to hire women for their evil purposes as prostitutes, suicide bombers, religious extremist or as parasites. The resultant effect will be peace, good health, wealth and tranquility in the area of study and in Jigawa State as a whole. Based on results of this study, the following recommendations are suggested:

- 1). Women are capable of changing themselves, reforming the society and motivating the next generation. Therefore, there is the need to empowere rural women through capacity workshops at rural setting in order to immensely contribute to their development effort and self-reliance.
- 2). Because of the close link between education and economic development, there is the need to educate the rural women. By educating a woman, the whole family, the entire society or the whole population is educated.

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