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Analysis of the Role of Women in Seed Security in Lamurde Local Government Area, Adamawa State, Nigeria.

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Abstract

The study analyzed the role of women in seed security (seed availability and seed access) in Lamurde Local Government of Adamawa State, Nigeria. Multistage random sampling procedure was employed in the selection of the respondents. A total of 5 wards were randomly selected at the first stage out of the ten existing wards. In the second stage, two villages were selected from each ward. This therefore, brings the total villages used for this study to ten. The third stage was the selection of ten respondents from each of these ten villages, which gave a total of 100 respondents. Structured interview schedule was employed as means for data collection. Data were analyzed using descriptive and inferential statistics. The descriptive statistical tools used were frequencies and percentages, while the inferential statistical tool employed was Pearson Correlation. Major findings were that women play a very prominent role in preserving and propagating seed security; majority of the women had serious difficulty in accessing seed and that certified seed is not readily available to them; lack of capital was a major constraint to seed security; lack of adequate farm lands for crop cultivation was also a serious limiting factor. It was also found that there was a high and positive correlation between involvement of respondents and their accessibility to certified seed with 'r' value of 0.842. It was recommended, among others that concerned governments, agricultural policy makers and agricultural development agencies should come to the aid of the women in these areas of identified problems. This could be done through the removal of strong bank loan conditions and replacing them with favourable ones. Construction of good roads and establishment of government-approved certified seed distribution centres should be embarked upon.

Key words: Women, Seed Security, Lamurde, Adamawa, Nigeria.

1. Introduction

Seed, in agricultural production, is a very indispensable material and input. This is especially true when agricultural activities such as crop propagation, crop quality preservation and conservation, maintenance of good crop genetic composition etc. are taken into consideration. The seed is the plant precursor. Therefore, seed is the primary agricultural input and is the embodiment of the farmer's future harvest. "Farmers' seed production" essentially refers to growing a crop of which part is saved as seed for own use. Saving the best grains, roots or tubers from consumption, their storage and planting developed over centuries. All these are referred to as "farmer seed system" or "local seed system" (Musa, 1996).

Agro-biodiversity continues to be a fundamental feature of farming systems around the world. Its conservation is tied with rich cultural diversity and local knowledge especially of women, with many principles from traditional systems relevant today for large as well as small-scale production. Studies have considered the importance of women to sustainable development and argue for the protection and promotion of the traditional methods and knowledge of the indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources (UNIFEM-UNCED, 1995). Similarly, the Convention on Biological Diversity recognizes the role of women in the conservation and sustainable use of biological diversity and the need for the full participation of women in policy-making and the implementation of conservation strategies (UNCED, 1992).

The objective of seed systems is to make sufficient quantities of seed for the preferred crops and varieties of optimum quality available for each farming unit each planting season. This broadly defines seed security, recognizing that it is both a function of two factors, namely seed availability and seed access. Seed availability generally refers to the amount of seed harvested during the course of food production in a farmer's field, and is associated with quantity, timing and sustainability. Since the required quantities of seed for producing most crops are relatively small, women have generally developed the knowledge and skills associated with the conditioning, processing and storage of such seed (Musa, 1997).

The main objective of this study is to investigate the role of women in seed security in Lamurde Local Government Area of Adamawa State, Nigeria. The specific objectives were to:

i. identify the socio-economic characteristics of the respondents;
ii. determine the accessibility of the respondents to quality seed;
iii. identify the problems associated with the seed systems in the study area.

Hypothesis: There is no significant relationship between the accessibility of the respondents to certified quality seed and the extent of their involvement in seed system.

2. Methodology

The study was carried out in Lamurde Local Government Area of Adamawa State in Nigeria. The area was divided into districts and subsequently divided into ten wards. Agriculture is the backbone of the economy of this area since the main occupation of the residents is farming. The multistage probability sampling procedure was employed in the selection of the respondents. In this case, a total of 5 wards were randomly selected at the first stage out of the 10 existing ones. In the second stage, two villages were selected from each ward using the same simple random procedure. This therefore, brings the total villages used for this study to 10. Finally, 10 respondents from each of these 10 villages were selected using random sampling method. The total number of respondents therefore, became 100. Descriptive (frequencies and percentages) and inferential tools (Pearson Correlation) were employed to analyze the data which were obtained from both primary and secondary sources.

The correlation (model) equation is expressed thus:

$$r = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{[n\sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)}}$$

3. Results and Discussion

3.1 Socioeconomic characteristics of respondents

Table 1 show that the age group of the respondents with the highest percentage (32%) is within the age range of 35-45 years. The age range of 25-35 years constituted 26% and that of 18-25 years was 25%. Thus, when summed up, 83% are within the age range of 18-45 years all of which were agile, active and dedicated women. These groups of individuals are able-bodied and highly productive. This gives them the opportunity to involve themselves in seed system and try to be self-employed in order to provide themselves better living conditions. This finding is supported by the finding reported by Ogunbameru (2001), which stated that young and middle aged people are active in agricultural production activities and have increased productivity. Women laboured between 15-20 hours a day, growing 80% of African food and, hence, ensuring the health, education and overall well being of families and communities (African farmer, 1994).

The data in Table 1 shows that 76% of the respondents were married with 18% being single, 5% divorced, while 1% was a widow. With the high proportion of married women, it will be stated that they play vital role in producing seed and are not only family women with children and a husband to look after, they are quite engaged in agricultural productivity enhancement. They also contribute their quota by adding to the house keep in terms of fund. Ajayi (1995) observed that over 95% of Nigeria's farmers were small scale farmers and derived large pool of farm labour from rural women. According to World Bank (1994), women's income is crucial for rural family maintenance and hence women's income translates more directly to better household health and nutrition.

Table 1 also shows that 21% of the respondents had no children, 48% had between 1-4 children, and 28% had between 5-8 children and those with above 8 children made up 3%. From the result, it could be seen that most of them had multiple numbers of children. This could account for the reason why they had to be conscious of seed security so as to sure they lack not what they will feed their children with.

Table 1 revealed that 40% had post primary education qualification followed by 17% of them who had adult education qualification, and 15% with primary education qualification. Only 19% had tertiary education qualification. This enhances their understanding of innovations and is consistent with the findings of Ogunbameru (2001) and Omoteso and Olawale (1991) who observed that educated farmers can get information from a wide range of sources, such as extension agents, electronic print media and internet, and also use their abilities to secure necessary inputs such as credit, purchase fertilizers and improved seeds for continuous production.

Also, the table indicates that 76% of the respondents had more than five years of farming experience pointing out that majority of the women have been in seed systems for long. The many years of farming experience have a positive bearing on their agricultural productivity due to accumulated acquired knowledge of agricultural innovative practices. This is supported by the report of Krishnapillai (2004) that yam farming on Yap represents centuries of accumulated experience and skills of women farmers handed down through generations who often sustain yields even under adverse farming conditions using locally available resources. However, he noted that what continue to be ignored are not only women's contributions in terms of labour and

skills, but also their decision-making about how yam resources are used to satisfy the multiple needs of households. This obviously contributes positively to the women's participation and involvement in seed system in the area of study. Almekinders *et al,* (1994) also opined that seed provision systems are resilient to environmental changes, which at times are catastrophic, and agricultural advances are evidenced by the observation that they still contribute an estimated 90 percent of all seed used for food production in developing countries. Even in highly advanced agricultural systems found in most countries of the North, farmer-saved seeds contribute over 30 percent of all seed for self pollinated food crops (Ghijsen, 1996).

3.2 Availability and access to certified seed by the respondents

Table 2 shows that 55% of the respondents get their seed from their fellow farmers, with 29% purchasing it from the local markets; 15% had their own from the Adamawa State Agricultural Development Programme (ADADP); and only 1% was involved in exchange of seed. This result agrees with what Krishnapillai (2004) reported in his work when he said that the yam tuber requirement is met by retention (from previous season's crop), farmer-to-farmer exchanges, cultural exchanges and from markets. Majority (55%) of the respondents got their seed through their fellow farmers by buying directly from them, and the few that got to the market bought it at slightly higher price due to transportation costs added to it. This finding was also supported by the finding of Rohrbach (1997), who stated that 20% of small-scale farmers within a community in Zimababwe provide seed into local markets and have emerged as recognized local seed sources.

Results in the table also reveal that 75% of the respondents do not get government assistance in terms of free distribution of seed. Rather, the respondents struggle for themselves. This agrees with the report of Musa (1997) that young girls become uncultured into their gender roles as managers of crop and seed diversity, and memorize information about the varieties and the micro-environments to which particular varieties are suited. This is also consistent with the report of Musa (1996) who opined that farmer knowledge is not always apparent, as it is often influenced by socio-cultural parameters not easily comprehensible to most researchers and most seemingly incongruous with modern 'scientific type of crop development'.

3.2 Constraints faced by respondents

Results in Table 3 show that majority (96%) of the respondents are of the view that they purchase seed at high rate. This could be attributed to the fact that the seed that are available are inadequate (especially the viable ones), hence the scanty nature of the seed makes the purchasing cost to be high. Government investments in rural roads, markets and storage facilities can substantially reduce the cost of producing improved seed by minimizing the difficulties due to bad roads, processing and distribution costs (ARPT 1991).

Results on the table also show that 75% of the respondents get seed lately each season, while 25% indicated to have been getting seed timely. The lateness in getting seed by the majority is a serious limiting factor that may not be unconnected with the lack of close monitoring by the governments and agricultural agencies concerned. This obviously results into late harvesting of the crops. This is supported by Longley (1993) who noted that both the timely supply of seed for crop production and sustainability of the seed systems are dependent on the efficacy of the conditioning and storage of the planting material by the women. If the harvest is timely, and understanding of ecological parameters for food production is comprehensive, then timely supply of seed to suit any environment is possible.

Majority (88%) of the respondents have no access to good storage facilities, while 12% have access to them. This will always lead to poor quality seed because any seed stored under bad conditions will have very low germination percentage. This is because only good storage facilities increase the shelf life of the seed and make the seed retains its viability and that access to germplasm at local provision level is under the socio-economic influences (Musa, 1997). This lack of good storage facilities as affirmed by the respondents is incurring them too many losses.

As regarding their access to land for their cultivation 93% of the respondents reported that they scarcely get access to land. They affirmed that despite the fact that the fields they access for cultivation are grossly of small sizes, yet even those ones were not owned by them. They were either borrowed or hired for a limited space of time. Land is mostly owned by their men counterparts. Thus, there is no guarantee for the security of operating on such lands in most cases, and hence, poses serious constraints to the respondents. This is in consonance with the report of Rohrbach (1997) that due to inequitable land distribution, most resource poor farmers are unable to grow the desired diversity of crops for sustainable seed security. The most vulnerable sector of the population has always been women-headed family units. These often become seed insecure because they normally have to eat their stocks of food grain.

3.4 Correlation analysis of involvement of women in seed system and their accessibility to certified seed

The involvement of women in seed systems and their accessibility to certified seed were correlated. The Pearson Correlation analysis result given in (Table 4) revealed that there is significantly high and positive

correlation between involvement of the respondents and their accessibility to certified seed with the "**r**' value of **0.842**. Thus it shows that 84% of their involvement in seed security accounted for their accessibility to certified quality seed, which is mostly obtained through local markets. This agrees with the report of some government owned agricultural agencies. For instance, it is on record that over 90% of seed in Adamawa State is sourced from retained grain or purchased grain at local markets, with limited improved crop varieties being available from research organizations and private sector seed supplies (ADP, 2007). It has also been reported by Adamawa ADP (2007) that from the late 1980s until 2004, there has been no certified seed production in Adamawa State. Musa (1996), reported that since the required quantities of seed for producing most crops is relatively small, women have generally developed the knowledge and skills associated with the conditioning, processing and storage of such seed. Thus, the extent to which the respondents were involved in seed security enhances their access to quality certified seed.

4. Conclusion and Recommendations

This study was on the role of women in seed security in Lamurde Local Government of Adamawa State, Nigeria. The study showed that majority of the women studied have always devoted a large portion of their time to ensure that they have access to seed and to make it available both in quality and quantity in the study area. They have special knowledge of the value and diverse use of seed for food, cultural interests and social significance and propagation.

There was a relationship between the involvement of the respondents in seed security and accessibility to certified quality seed. Some constraints have also been found to be militating against the women farmers. These include small farm sizes, serious difficulties in accessing certified seed with desired genetic qualities and lateness of seed input procurement. Other problems the women encounter are lack of storage facilities, lack of capital, and the indifference from governments of different levels. Therefore, the following suggestions were made: the relatively young, able-bodied women should be assisted with capital; easy access to certified seed sources should be created in good time; favourable land ownership policies should be formulated; they should be provided with more educational opportunities by the government; and, improved storage facilities should be provided to them at affordable prices.

References

Almekinders, C. J. M., Louwaars, N. P. and de Bruijn, G. H. (1994). Local seed systems and their importance for an improved seed supply in developing countries. In: *Euphytica* 78: 207-216.

African Farmer (1994): *Given Women a Place at the Policy Table*, the Hunger-Project, New York, April Quarterly Publication, P. B

ARPT (1991). National Seed Availability Study: *Seed problems, practices and requirements among small-scale farmers in Zambia* Adaptive Research Planning Team, Ministry of Agriculture, Lusaka, Zambia. Pp.28.

Adamawa State Ministry of Land and Survey (2007): *Geographical Location of Adamawa State.*

Krishnapillai, M. V. (2004). Women's Role in the Conservation of Yam Genetic Resources in Yap Island. Available from: http://www.irfd.org/events/wfsids/sessions/virtual/papers/sids_mkrishnapillai.2pdf

Ghijsen, H. (1996). The development of varietal testingand breeder's rights in the Netherlands. Pages 223-226. In: Integrating seed systems for annual crops (van Amstel, H., Bottema, J., Sidik, M. And van Santen, C., (eds.)) Bogor, Indonesia: CGPRT Centre.

Longley, K. (1993). Farmer's adaptation of rice varieties to different environments in Sierra Leone. In: Cultivating Knowledge: Genetic diversity, farmer experimentation and crop research. (Boef, W. de, Amanor, K. Wellard, K., and Bebbington, A. (eds.). London Intermediate Technology Publication.

Musa,T.M.(1996).Farmer Seed Systems. Available from: http://www.fao.org/ag/agp/norway/paper2.htm

Musa, T. M. and Rusike, J. (1997). Constraints on Variety Release, Seed Production and Distribution of Sorghum, Pearl Millet, Groundnut and Pigeonpea. *I CRISAT Southern and Eastern Africa Region Working Paper*. No. 97/02 (SADC/ICRISAT - SMIF) matopos.

National Population Commission of Borno State (NPC), (2006) Census.

Ogunbameru, B. O. (2001): *Practical Agriculture Communication*, Published by Daily Graphics Ibadan.

Omoteso, O. A. and Olawale, A. (1991). Economics of Dry Season Vegetable Production Along Asa River Bank, In: A. O. Ani and A. O. Donye. Irrigated Vegetable Production Among Small-scale Farmers in Lamurde of Adamawa State, Nigeria.

Adamawa ADP- Policy Briefs (2007): Improving Seed Suppliers. Promoting sustainable Agriculture in Adamawa state, I1TA.

Rohrbach, D. D. (1997). Farmer to farmer seed movements in Zimbabwe: issues arising. Pages 171-179. In: Alternative strategies for small holder seed supply: *Proceedings of the international conference on options for strengthen National and Regional Systems of Africa and West Asia*. 10-14 March 1997, Harare, Zimbabwe, Rohrbach, D. D. Bishaw, Z. and Van Gastel A. J. C.; (eds). International Crops Research Institute for the Semi-Arid Tropics.

UNCED(1992). (United Nations Conference on Environment and Development),. Convention on Biological Diversity. Available from: http://www.biodiv.org/convention/articles.asp

UNIFEM-UNCED (1995). *Agenda* 21: An Easy Reference to the Specific Recommendations on Women. http://www.generoyambiente.org/articulos_estudious/docs/indigenousgender.pdf

Table 1: Distribution of Respondents Based on their Socio-economic Characteristics (N=100)

Variables	Frequency	Percentage
Age (Years)		
18 – 25	25	25
25 – 35	26	26
39 – 45	32	32
45 – 55	15	15
>55	02	02
Marital Status		
Married	76	76
Single	18	18
Divorced	05	05
Widowed	01	01
Family Size		
No children	21	21
1 – 4 children	48	48
5 – 8 children	28	28
Above 8 children	03	03
Educational Qualification		
Adult education	17	17
Primary education	15	15
Post primary education	40	40
Tertiary institution	19	19
Qu'ranic education	08	08
None	01	01
Farming Experience (Years)		
<1	01	01
2 – 3	05	05
4 – 5	18	18
>5	76	76
Primary Occupation		
Farming	62	62
Teaching	17	17
Marketing	16	16
Student	04	0 4
Civil servant	01	01
Secondary occupation		
Marketing	58	58
Tailoring	27	27
Civil servant	13	13
Welding	01	01
Farming	01	01

Source: Field survey, 2014

Table 2: Distribution of Respondents Based on Availability and Accessibility to Certified Seed (N=100)

Variables	Frequency	Percentage
Source of Seed		
From fellow farmers	55	55
From BOSADP	15	15
Purchase from the market	29	29
Exchange of seeds	01	01
Government Assistance with Free Distribution of Seed		
Yes	25	25
No	75	75

Source: Field Survey, 2014

Table 3: Distribution of the Respondents Based on Constraints they Faced (N=100)

Variables	Frequency	Percentage
Cost of seed		
Affordable (low price)	04	04
Unaffordable (high price)	96	96
Total	**100**	**100**
Timeliness of getting certified quality seed		
Early	25	25
Lately	75	75
Total	**100**	**100**
Access to land		
Readily accessible	07	07
Scarcely accessible	93	93
Total	**100**	**100**
Access to Good Storage Facilities		
Readily accessible	12	12
Scarcely accessible	88	88
Total	**100**	**100**

Source: Field Survey, 2014.

Table 4: Correlation Analysis of Involvement of Women in Seed System and their Accessibility to Certified Seed

Correlated variables	Correlation coefficient	Level of Significance(r)
Involvement of women and accessibility	0.842	0.020

** = Correlation is significant at 0.01 (1%) level (2-tailed)

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