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Assessment of Women Involvement in Cassava Processing Value Chain in Gwaram Local Government Area of Jigawa State, Nigeria

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Abstract
The study examined involvement of women in cassava value addition activities in Gwaram Local Government Area of Jigawa States, Nigeria. A multi stage sampling technique was employed to select a total of sixty (60) women beneficiaries of the Agricultural Transformation Agenda Support Program -1 (ATASP-1) which served as sample for the study, from the population of fifteen women cassava processor groups. Structured questionnaire and oral interview were used for data collection. The data were analyzed using descriptive statistics, such as frequencies, percentages and ranking. Results of the awareness of cassava value added products among women showed that Garri (85%), High Quality Cassava Flour (HQCF) (68%), Dry cassava chips, (56%) and cassava/wheat supplemented pie (chin-chin) (42%). Major findings from the women perceived level of satisfaction on cassava value added products indicated: Garri (M=3.06), High Quality Cassava Flour (HQCF) (M=2.86) and dry cassava chips (M=1.61). The result also found that inadequate trainings on processing and value addition on cassava (1st), lack of access to simple labour saving devices (2nd) and Poor markets information and linkages (3rd) as the major constraints affecting women in cassava processing activities. The programme should adopt continued trainings of women leaders to serve as community advisors to compliment the few female extension. There should be increased awareness and information on processed cassava price in the State.
Keywords: *Agricultural program, Cassava Processing; Value addition, Women involvent in Cassava processing*

Introduction

Cassava, *Manihot esculenta* is a starchy staple in the diet of people throughout Sub - Saharan Africa and more especially in Nigeria. According to Food and Agriculture Organization Statistic (FAOSTAT, 2013) Nigeria is the world largest producer of cassava, with an average annual estimate of 38 million metric tons and a global market share of 19% (Apata, 2013). The trend according International Fund for Agricultural Development (2014) cassava production in Nigeria has increased from 45 million metric tons in 2014 to 51million metric tons in the 2017. A good number of farmers who cultivate cassava in Nigeria have transformed from traditional production system to improved production technology (Kuye *et al.,* 2016). However, cassava processing is mostly done by women using traditional method, which is labour intensive, and time consuming.
A value chain in agriculture describes the range of activities and set of actors that bring agricultural product from production in the field to final consumer's table, wherein at each stage value is added to the product (Fatunbi, *et al,* 2015). According to Apata, (2013) a value chain is the whole lot of activities from production, processing, distribution and marketing of specific traded commodity. Jabil and Mohammed (2017) described cassava value chain as a full range of value adding activities required to bring cassava through the different phases of production and processing till its products get to the final consumers. Cassava is a cheap source of energy and can be produced all year round. The primary industrial products from cassava that are globally utilized are cassava flour, cassava ethanol, starch and animal feed (cassava chips and pellets). Cassava can also be processed into various secondary products for utilization. These include cassava bread, cassava

starch, glucose syrup, cassava alcohol, noodles, and bakery and confectionery products. It is also processed as raw material in the coating of pharmaceutical products, the manufacture of glues and adhesives and oil drilling starch (Apata, 2013).

The introduction of the women in agriculture (WIA) in the ADP system in the late 70s resulted in female extension agents working directly with rural women to provide them with information not only in traditional areas of home economics, but also crop production and processing, animal husbandry, poultry production and fisheries. These had a significant positive effect on the activities of rural women, but it has not been sustained (FAO, 2011). Usman *et al.* (2016) observed that women in farming and other non-agricultural activities received little attention in terms of interventions to expand their activities. Specifically, women had limited access to relevant improved technologies for processing activities in rural areas of northern Nigeria, especially for cassava crop (Asadu, *et al.,* 2013). This is because of its restricted production and processing in the area compared to southern part of Nigeria, where it is being produced in large quantities. This means that women are often marginalized from optimum utilization of the commodity from accessing benefits derivable (Bezner Kerr, 2011). The Federal Government of Nigeria in collaboration with African Development Bank (AfDB) established and provided funding for the Agricultural Transformation Agenda Support Program Phase-1 (ATASP-1) as one of the mechanisms for achieving the ATA goals. Consequently, the government received an African Development Fund (ADF) loan and grant resources to finance the ATASP-1. The Program is to contribute to the objectives of the Agricultural Transformation Agenda (ATA) of the Federal Government by addressing the constraints of Rice, Sorghum and Cassava value chains in four Staple Crop Processing Zones. The specific objectives of ATASP-1 are: to contribute to food and nutrition security; employment generation and wealth creation along the priority commodity value chains (African Development Bank, (AfDB, 2017).

Women also faced limitations with less access to land, information, credit, and inputs in agricultural production compared to their men counterparts, which reduces their productivity (Najjar *et al.* , 2016). Similarly, Kagbu (2018) opined that women had weak abilities to link, convince and influence other individuals, agencies and groups in order to maintain the wide ranged business network, including cassava processing and marketing. Similarly, Auta *et al.* (2012) opined that adopting improved value addition innovations and use of simple labour savings devices would help rural farmers in their processing practices by enhancing their incomes and improve living standards. However, majority of rural women lack access to these productive resources. Considerations of these challenges are imperative particularly where government and other development partners are responsible for allocation of resources and interventions with negative implications due to women's lack of access to resources.

The Agricultural Transformation Agenda Support Programme Phase -1 (ATASP-1) aimed at solving these challenges and provided support on a wide range of activities across cassava value chain that affect production and adoption of processing technologies to beneficiaries of the project, including women groups in Gwaram (AfDB, 2017). The evaluation of the present status of women's awareness to cassava processing and value addition activities in the study area is therefore imperative. It was against this background, that the study was carried out to examine women participation in cassava processing and value addition activities in Gwaram Local Government Area of Jigawa States. The specific objectives were to: ascertain common cassava value added products among the women beneficiaries; assess the awareness of processing technologies among cassava women processors; determine perceived level of satisfaction of

cassava value added products by women in the study area, and identify the constraints affecting women participation in cassava processing activities.

Methodology

The study was conducted in Gwaram Local Government Area (LGA) of Jigawa State. The State lies between latitude 12^0 N and 12.62^o N of the equator and longitudes 9^0 23E and 9.38^0 E of the Greenwich meridian. The State population as at 2017 was estimated to be 142,809, (NPC, 2006) as projected based on 3.2% growth rate per annum. Gwaram is one of the LGAs under the Agricultural Transformation Agenda Support Pragram -1 (ATASP-1) of the Kano-Jigawa zone. The dwellers are predominantly agrarians and small to medium scale commodity processors and marketers'. Population for the study include all the women groups' beneficiaries of the (ATASP-1 in Gwaram. A multi stage sampling technique was employed to select the respondents for the study. The first stage involved purposive sampling of five cassava women processors groups in Kila community of Gwaram LGA. The condition that guided the selection of the community and the groups was the viability and availability of project activities. The second stage involved random sampling of twelve (12) women from each group, which gave (60) respondents for the study. Structured questionnaire was administered through oral interview for data collection, between the months of August and November 2017. The objectives (iii) were measured on a 4-point rating scale and responses were based on rating scale of HS=Highly Satisfied (4 point), S= Satisfied (3 point), DS=Dissatisfied (2 point), HD=Highly Dissatisfied (1 point). The 4-point rating scale technique was used as proposed by (Awoma, 2014). A mid-point was obtained thus, 4+3+2+1=10/4=2.5. Based on the mid score decision rule, any mean score less than or equal to 1.99 is graded as highly dissatisfaction, a mean score between 2.0-2.49, Dissatisfied. Similarly, A mean score of 2.5-2.99 was taken as an index of satisfied, while a mean score of 3.0 and above as an index of highly satisfied. The data was analyzed by means of frequencies, percentages and ranking.

Results and Discussion

Table I present awareness of cassava value added products among women in the study area. The results showed that the respondents ranked Garri (1^{st}) as the most common cassava value added products among the women. This was closely followed by boiled cassava roots, ranked (2^{nd}) and High Quality Cassava Flour (HQCF) was ranked third. The least common cassava value added products ranked by the respondents were cassava flakes and cassava meat/fish pie products. This implies that Garri and cassava flour were the most popular product processed from cassava in the study area.

Table 1: Distribution based on women awareness of cassava value added products (n=60)*

Cassava value added products	Frequency	Rank
Garri	52	1
Boiled cassava root	34	2
High Quality Cassava Flour (HQCF)	28	3
Cassava pie (Kosai Rogo)	22	4
Dry cassava chips	18	5
Cassava flakes	12	6
Cassava meat/fish pie	10	7

*Multiple responses **Source:** Field Survey (2017)

This finding is in agreement with Apata (2013) who found that the most important cassava value added products generating income among women to be *gari* (40%) and *appo* (19%). Ajani and

Igbokwe (2012) also reported that petty trading of processed gari among women were the main income generating activities.

Table 2: Distribution based on awareness of technologies for cassava processed to Gari (n=60)*

Cassava Processing Technologies	Frequency	Rank
Cassava crushing machines	18	1
Improved soaking and fermentation of cassava technologies for garri processing	16	2
Improved cassava grating kits	13	3
Cassava grater machine	11	4
Improved drying of cassava	08	5
Improved cassava frying equipment	05	6

*Multiple responses **Source:** Field Survey (2017)

The results in Table 2 revealed that the cassava processors ranked cassava crushing machines (1st), soaking and fermentation of cassava technologies for garri processing (2nd), cassava grating kits (3rd) and cassava grater machine (4th) respectively as the most improved value chain activities the women aware of in the study area. The least improve technologies awareness among the women were improved cassava drying and frying technologies. This implied that the women are still using rudimentary processes of drying and frying gari from cassava. The findings concurred Auta, Ariyo and Akpoko (2012) who reported that most rural women lack access to simple labour saving devices which could help them in their processing practices. Improved technologies such as cassava driers and improved frying devices would enhance efficiency of their operations and improve quality of their products.

Table 3: Distribution based on perceived level of satisfaction for cassava value added products among women (n=60)

Cassava Value added products	HS	S	DS	HD	Weighted score	Mean score	Remark/ judgement
Dry cassava chips	05	06	10	39	97	1.61	Highly dissatisfied
Cassava flakes	09	12	15	24	136	2.18	Dissatisfied
Garri	31	12	07	10	184	3.06	Highly satisfied
High Quality Cassava Flour (HQCF)	25	15	07	13	172	2.86	Satisfied
Cassava meat/fish pie	10	06	19	30	125	2.11	Dissatisfied
Boiled cassava root	23	08	10	17	156	2.60	Satisfied
Cassava/wheat supplemented pie (chin-chin)	26	09	12	14	169	2.81	Satisfied

Source: Field Survey, (2017) *HS=Highly Satisfied (4 point), S= Satisfied (3 point), DS=Dissatisfied (2 point), HD=Highly Dissatisfied (1 point)*

Table 3 present the major findings from the women perceived level of satisfaction on cassava value added products. The results indicated that the respondents were highly satisfied with Garri (M=3.06). The results also shows that, the women are satisfied with High Quality Cassava Flour (M=2.86), cassava/wheat supplemented pie (chin-chin) (M=2.81), boiled cassava root (M=2.60). Similarly, the women are highly dissatisfied with dry cassava chips (M=1.61) and Cassava meat/fish pie, (M=2.11). It implies that Garri and cassava flour production were most dominant

value added products. The findings might be due to the ease of their processing and profitability as compared to other cassava value added products. Jibril and mohammed found in their study that cassava processed to garri was profitable with a gross ratio of 1.4, meaning that the return on investment was 40% compared with processing of cassava into flakes with a gross margin ratio of 1.2 given a return on investment of 20%. This might have contributed to the attraction by women cassava processors, who were mostly operating small to medium scale agri-business in the area.

Table 4: Constraints to women participating in cassava processing value chain (n=60) *

Constraints	Frequency	Rank
Inadequate trainings on processing and value addition on cassava	34	1
Lack of access to simple labour saving devices	28	2
Poor markets information and linkages	22	3
Lack of functional processing/skill centres	12	4
Inadequate linkages between researcher and farmers/off-takers	16	5
Inadequate extension services on cassava value added products	10	6

*Multiple responses Source: Field Survey, (2017)

The most important constraints to women participating in cassava processing value chain as presented in Table 4 were inadequate trainings on processing and value addition on cassava (1st), limited access to simple labour saving devices) (2nd), poor markets information and linkages (3rd), insufficient functional processing/skill centres (4th) and inadequate linkages between researcher and farmers/off-takers (5th). Najjar *et al.* (2016) found poor storage facilities (34%) and poor market (22%) as the major constraint to women participating in cassava processing value chain in the study. However, in a study conducted by Adam (2018) found lack of capital to expand trades as the major constraints of both men and women in agri-business enterprises.

Conclusion

The study revealed that women were involved in processed cassava to garri and flour as the major value added activities in Gwaram local government of Jigawa state. The study also showed that majority of the cassava processors were aware of cassava grinding machines, improved cassava grating kits and improved soaking and fermentation of cassava technologies for processing into gari product. Furthermore, the study found that most of the women were more satisfied with garri processing as the most productive value added products. It is therefore recommended that the programme should adopt continued trainings of women leaders to serve as community advisors to compliment the few female extension. There should be increased awareness and information on processed cassava price in the State.

References

Adam, A.G. (2018). Role of Men and Women in Agro-input Business in North West, Nigeria: Journal *of Agricultural Extension*, Vol. 22 (1) Pp 15-21 Available @ http://journal.aesonnigeria.org http://www.ajol.info/index.php/jae

African Development Bank. (2017). Agricultural Transformation Agenda Support Program - Phase 1 (ATASP-1): Federal Republic of Nigeria: Appraisal Report: OSAN Department, AfDB.

Ajani, E.N and Igbokwe, E.M. (2012). Promoting entrepreneurship and diversification as a strategy for climate change adaptation among rural women in Anambra State, Nigeria. *Journal of Agricultural Extension.* 16(2):61-71

Apata T.G., (2013). Analysis of Cassava Value Chain in Nigeria, from a Pro-poor and Gender Perspective of Farming Households in Southwest, Nigeria. *Merit Research Journal of Agricultural Science and Soil Sciences (ISSN: 2350-2274) Vol. 2(11) pp. 147-153.*

Asadu, A.N, Egbujor, C.L, Chah, J.M and Ifejika, P.I (2013). Gender Roles in Urban Crop Production in Imo State, Nigeria. Journal of Agricultural Extension. Vol. 17(2) Pp1-7.

Auta, S. Ariyo, J., and Akpoko J. (2012). Socio-spatial variation in the adoption of agricultural innovations in selected villages in Funtua and Jama'a Local Government Areas. *The Nigeria Journal of Agricultural extension. Vol. (1), pp 86-90*

Awoma, C.I. (2014). Managerial Skills as Predictors of Sports Development in Edo State, Nigeria. Journal of Educational Research and Development, 8(2): 180-187.

Bezner K.R. (2011). "Gender and agrarian inequality at the local scale." *Agricultural systems:Agro ecology and rural innovation for development*. Burlington, MA: Academic Press.

Fatunbi, A.O., Adekunle, A.A., Anthony, Y., Odularu, G.O., Adisa, S.A., Ifdon, O., and Akinbamijo, A.A. (2015). A Resource Manual for Training in Integrated Agricultural Research for Development (IAR4D) in Innovation Platforms: Forum for Agricultural Research in Africa (FARA), Accra, Ghana.

FAO (Food and Agriculture Organization of the United Nations). (2011). *The State of Food and Agriculture 2010- 11: Women in Agriculture- Closing the gender gap for development*. Retrieved July 20, 2017 from FAO website: http://www.fao.org/docrep/013/i2050e/i2050e.pdf

Jibrin, I.Y. and Mohammed, I. (2017). Enterprising Through Cassava Value Chain in Nassarawa State, Nigeria. *Proceedings of the 31st Annual National Conference of the Farm Management Association of Nigeria (faman) held at Abubakar Tafawa Balewa University, Bauchi, Nigeria, 9th-12th October, 2017,* Pp 617-625

Kagbu J. H. (2018). Constraints to Women Farmers' Entrepreneurial Development in Nasarawa State, Nigeria. Journal of Agricultural Extension. Vol. 22 (1) Pp. 48-57

Kuye, O.O., Ettah, O.I., Oniah, M.O., and Umo, I.E. (2016). Analysis of Socio-Economic Factors Affecting Cassava Production and Value Chain in Ikot Ekpene Local Government Area, Akwa Ibom State. *Proceedings of the 30th Annual National Conference of the Farm Management Association of Nigeria (faman). (Edited by Ogisi et.al)* held at University of Abuja, Nigeria, 28th-2nd December, 2016, Pp 19-24.

Najjar, D., Abubakar, F. and Alma, E. (2016). Gender Roles and Relations in the Wheat Production of Nigeria: Strengthening the Participation of Women. Report Prepared for the Support to Agricultural Research for Development of Strategic Crops in Africa (SARD-SC) Wheat Project. Available online @ Pp1-40.

Usman, I.S., Salihu, A. and Musa, N.Y. (2016). Assessment of women participation in yam production in Adamawa State, Nigeria. *Proceedings of Annual Conference of the Agricultural Extension Society of Nigeria,* held at National Agricultural Extension Research and Liaison Services (NAERLS) Ahmadu Bello University, Zaria, 15th – 17th May Pp. 191 – 199.