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Abstract: The objectives of the study were to describe the major sources of resources accessed by the respondents in the study area, as well as the adequacy of the resources. A sample of 129 male and 121 female farmers were randomly selected for the study; while primary data were obtained by the use of questionnaire. Result showed majority (97%) of male farmers had access to land as compared to the female (40%) farmers. Access to credit was a problem in the study area as 51% of the male and only 40% of the female farmers reportedly had access to credit. The quantity of ginger seeds acquired for planting was found to vary among the male and female farmers. Sixty percent (60%) of the male farmers acquire 2000 kg and above, while none of the female farmers could afford this quantity. The maximum quantity of seeds the female farmers could afford was between 1001 – 1500 kg, which is low when compared to the male farmers. Resources were not adequately used by farmer, owing to a range of reasons which include limited use of modern technological inputs, such as improved ginger seeds, inorganic fertilizers, and poor access to credit. Therefore, the need for government to increase in the provision of modern technological inputs and the purchasing price of these resources should be subsidized which can improve ginger production.

Keywords: Accessed, differentials, ginger, quantities, resources, yield

Introduction

Everywhere around the world, agricultural production is central to the overall well-being of the populace. This is why different countries place high premium on agriculture and strive to develop and protect the sector, thereby guaranteeing the sustainable food supply. In Nigeria, where over 75% of the population, mostly rural dwellers are involved in agricultural activities, productive resources such as land, modern inputs, technology, education and financial services are a critical determinant of agricultural productivity (Omotesho *et al.*, 2007). The lack of access to resources/inputs is an obstacle to agricultural growth in Africa (FAO, 2011). People in rural areas rely heavily on their environment for most of their needs and are affected by the deterioration in the quality and quantity of these resources accessed (Taimi, 2003; Muruviwa, 2011).

Ginger is widely cultivated as cash crop in Nigeria; it was a major export crop up till the onset of petroleum exploration. High production of ginger from Kaduna State made Nigeria one of world producer of ginger, although export is said to have declined (KADP, 2000). Access to resources is essential to improving agricultural productivity of both men and women farmers. Rahman (2008) carried out a study in Kaduna State in which he observed that in order to encourage capacity building of farmers, their access to productive resources needs to be improved. Improving productivity will depend to a great extent on ensuring that women farmers, as well as men farmers, have sufficient access to production inputs and support services.

Thus, efforts to build social capital among rural farmers are necessary for sustainable production through provision of facilitating resources (Flora, 2001). Improving the access of rural farmers to productive resources such as land, water and finance can play a significant role in enhancing farmers' productivity, food security, poverty reduction and sustainable development. There are few or scanty literatures on comparative analysis of ginger farmer's accessibility to productive resources in the study area. To this end, objective of the study is to identify the sources and quantities of resources acquired and the effects of access to resources on yield of farmers.

Materials and Methods

Kaduna State is located at the centre of Northern Nigeria. Southern Kaduna where the study was conducted is situated within the central high plains of Northern Nigeria. It is located between longitude 5° and 7° east (Kaduna State government, 2018). For this study, multistage sampling technique was used to select the farmers. The first stage involved purposive selection of three LGAs. In this regard, Kachia, Kagarko and Jaba LGAs were purposively selected for this study, due to the high level of ginger production in these places. In the second stage, random selection of three villages from Kachia, Kagarko and Jaba LGAs was done. In the third stage, random sampling of 15% of female and 15% of male ginger farmers from each of the villages was done. A total of 250 (comprising 129 males and 121 female) ginger farmers were randomly selected for this study.

Questionnaires were administered to ginger farmers to generate the primary data that was used for this study. The questionnaire was design to provide information on the sources and quantities of productive resources accessed and information on the effects of inputs on yield of farmers. Descriptive statistics such as percentages, frequency distribution, graphs, pie charts and bar charts were used to analyse and organize the data.

Results and Discussion

Land is the most important asset for the farmers since a farming family's income/livelihood depends mainly on land. The study showed, male farmers had more access to land as compared to the female farmers. As shown in Fig. 1, majority (97%) of male farmers had access to land; about 3% do not have access to land. On the other hand, more than half (60%) of female farmers do not have access to land. This indicates that access to land is a limiting factor against female farmers in the study area. According to Kajoba (2002) in countries where ownership and inheritance laws have not been reformed in favour of women, in practice women do not necessarily have more rights to land, as local customs act as barriers. Land is a basic source of livelihood; providing employment, the key factor in agricultural activities, and a major determinant of a farmer's access to other productive resources and services. Famer's right to land is a critical factor in social status, economic well-being and empowerment.

Credit: Farmers require credit for farming activities, adequate and timely access to credit is beneficial to farmers. Access to credit was a problem in the study area as 51% of the male and 40% of the female farmers reportedly had access to credit. It was found that accessibility to credit facilities for both male and female farmers was low, but worse for the female farmers, where 59% had no access to credit as shown in Fig. 2. This result conforms with the observation of Dolan (2004) that the share of female-headed households that use credit is 9 percent smaller than the share of male-headed households.

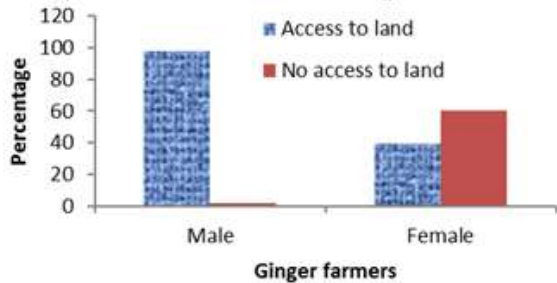


Fig. 1: Distribution of farmers based on their accessibility to land

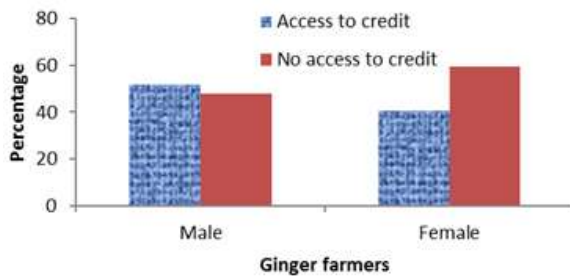


Fig. 2: Distribution of farmers based on their accessibility to credit

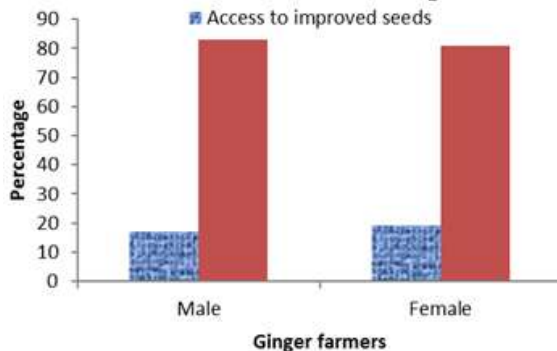


Fig. 3: Distribution of farmers based on access to improved seeds

Large proportion of the farmers' sources of credit was personal savings (Table 1). Money lenders happened to be the

source of credit to 38% of the male farmers while 73% of the female farmers sourced their credit from money lenders too. Friends and relatives were the sources of credit to 56% of the male farmers while 95% of the female farmers reported to have access to similar sources of credit. This result showed personal savings, friends and relatives to be the major source of credit to both male and female farmers in the study area.

Table 1: Distribution of ginger farmers based on their sources of credit

Source of credit	Male		Female	
	Frequency	%	Frequency	%
Personal saving	118	91.5	120	99.2
Friends/relatives	73	56.6	116	95.9
Banks	7	5.4	4	3.3
Money lender	50	38.8	89	73.6

* Multiple responses

Access to credit is likely to encourage ginger farmers' continuation of ginger production. All the ginger farmers reported a desire to expand their farming activities. They cited the lack of access to credit as one of the most prominent barriers to agriculture. Since personal savings, friends and relatives are the major sources of credit; the credit obtained by the farmers might be small and not really have a positive impact. The gender gap in access to credit is also confirmed by Ellis *et al.* (2006); Fabiyi *et al.* (2007) and FAO (2011).

Seeds: Access to improved ginger seeds was found to be low among farmers. Eighty (80%) percent of male farmers and 76% of female farmers had no access to improved seeds (Fig. 3). The major source of seeds in the area was previous harvest. It was found out that 64% of male farmers make use of previous seeds from their farms and 83% (Fig. 4) of the female farmers also use previous seeds from their farms. Only 33% of male farmers and about 13% of female farmers acquire seeds from open markets. Similarly, the result of Integrated Seed Sector Development Programme (ISSD, 2014) indicate that about 89% of the farmers obtain seed from informal sources, majorly from previous harvest.

Quantity of seeds accessed

The quantity of ginger seeds acquired for planting was found to vary among the male and female farmers. Sixty percent (60%) of the male farmers acquire 2000 kg and above, while none of the female farmers could afford this quantity. As shown in Fig. 5, the maximum quantity of seeds the female farmers could afford was between 1001 – 1500 kg, which is low when compared to the male farmers. This is attributed to the differences in resource endowments between men and women; the females had less accessibility to credit and the amount received was inadequate. In addition to that, the female farmers reported seeds to be expensive. The quantity of seeds use in the study area does not meet the recommended quantity of 250,000 kg of rhizome seed required for planting per hectare.

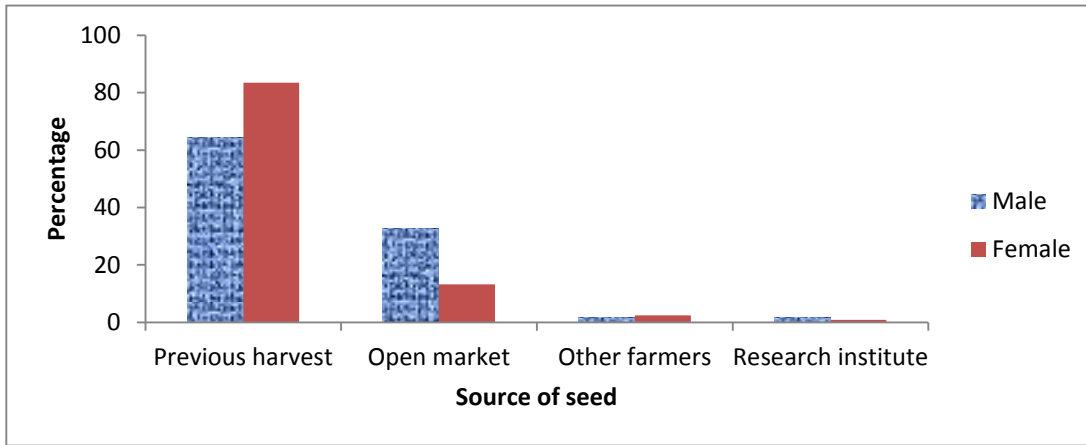


Fig. 4: Distribution of farmers based on sources of seeds

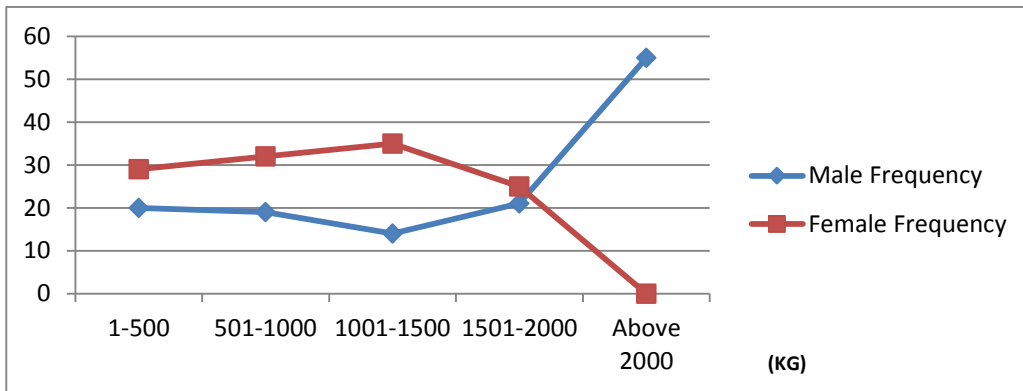


Fig. 5: Distributions of ginger farmers based on the quantity of seed accessed

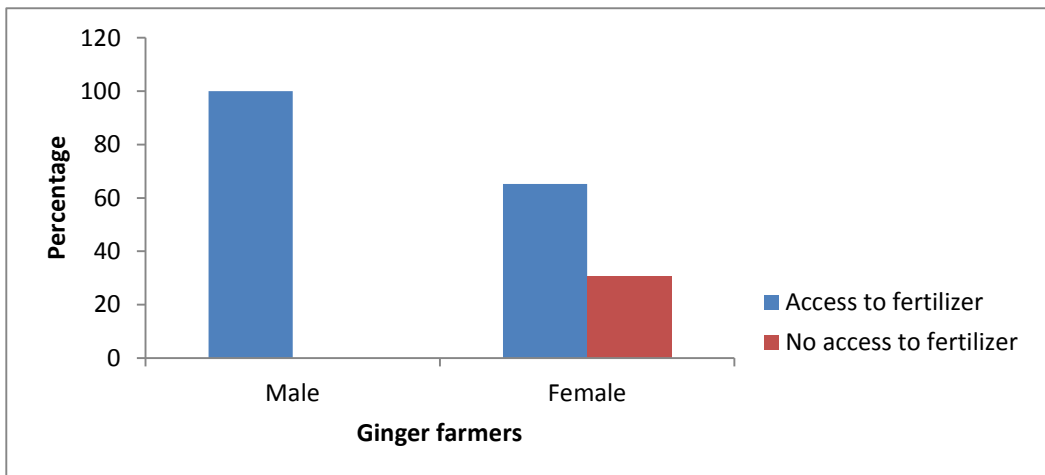


Fig. 6: Distribution of farmers based on their access to fertilizer

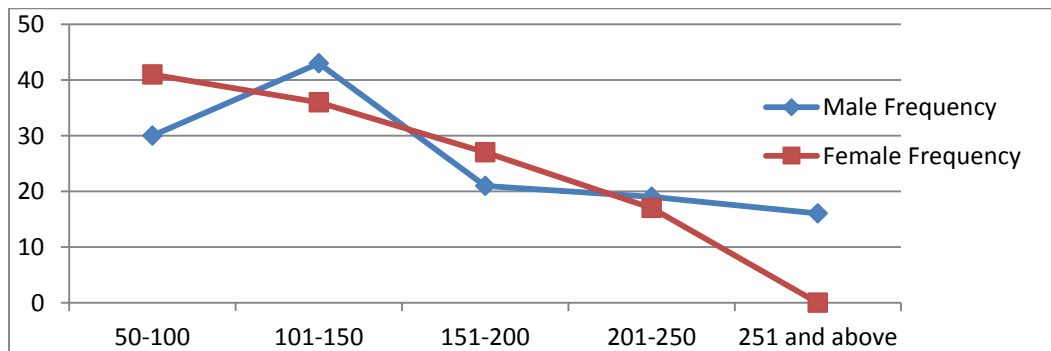


Fig. 7: Distribution of ginger farmers based on the quantity of fertilizer used

Fertilizer

Fertilizer plays an important role in increasing the soil nutrient level which is essential for optimum productivity. In case of access to fertilizer and usage; all the male (129) farmers had access to fertilizer at all times. However, 69% of the female farmers had access, while 31% did not (Fig. 6). The major source of fertilizer in the area was open market. The quantity of fertilizer acquired for use was found to vary among the male and female farmers. As shown in Fig. 7, the maximum quantities of fertilizer the female farmers had access to was between 50 – 200 kg, while some of the male farmers were able to access 251 kg and above. Fertilizer use was low when compared with National Agricultural Extension and Research Liaison Services (NAERLS) recommendation of 400 kg/ha.

Agrochemical

Access to agrochemical and usage in the study area was high. Farmers in the study area use agrochemical to protect their crop from the attack of pests and diseases. Majority of the farmers had access to agrochemical at all times. However, 7% of the female and 3% of male farmers had no access. The major source of agrochemical in the area was open market. The quantity of agrochemical bought for use was found to vary among the male and female farmers. Seventy-seven percent (77%) male and 85% female farmers acquire between 1-4 litres. As shown in Fig. 8, the maximum quantity of agrochemical the farmers accessed was between 1 – 4 litres.

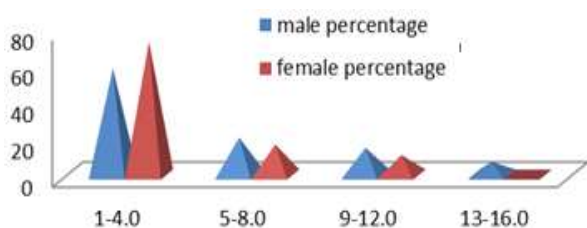


Fig. 8: Distribution of ginger farmers based on the quantity of agro-chemicals used

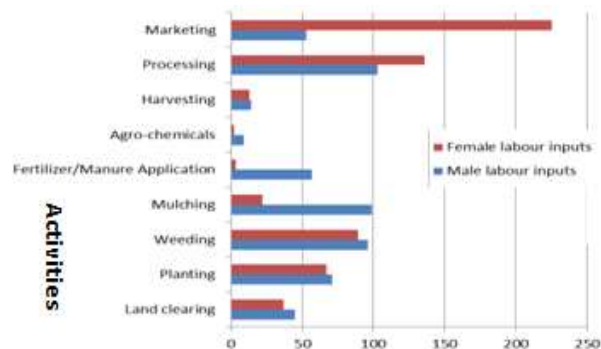


Fig. 9: Activities of male and female farmers in ginger production

Labour

Labour is an important factor in ginger production. This could be in the form of family labour or hired labour. The male farmers use combined labour (76%) more than the female (61%) farmers (Table 2), who depend majorly on family labour. Anyaegbunam *et al.* (2010) opined that hired labour tends to be more productive than family labour because of the incentive of wages and proper supervision. The male farmers labour input (land clearing, planting, weeding and fertilizer application and harvesting) was 217 man-days. Man-days of 196 were used for (land clearing, planting, weeding and fertilizer application and harvesting) by the female farmers.

As shown in Fig. 9, the activities of male and female to ginger production was similar except for marketing. Processing is a major activity for women particularly washing, drying, bagging and storage. Also, carrying the produce from the field is considered a woman's activity. It is, therefore, evident that women have to contribute their labor to almost all the activities. This suggests that women are constrained as their labor has to be divided up to perform various tasks. The result in this study, conforms with Rahaman (2008) findings, that, both men and women participated fairly equally in land clearing, planting, fertilizer application and weeding activities.

Table 2: Distribution of ginger farmers based on the type of labour used

Types of labour used	Male		Female	
	Frequency	%	Frequency	%
Family	129	100	121	100
Hired	53	41.08	31	25.61
Both	99	76.74	74	61.15

*Multiple responses

Table 3: Distribution of ginger farmers based on the quantity of yield obtained

Yield harvested (kg/ha)	Male		Female	
	Frequency	%	Frequency	%
2000-3000	67	52.0	76	62.8
3001-4000	61	47.2	44	36.4
Above 4000	1	0.8	1	0.8
Total	129	100	121	100

Quantity of ginger produced

It was found that 0.8% of male and female farmers had yields of above 4,000 kg. Sixty-two percent (62%) of the female farmers harvested between 2000 – 3000 kg, while 52% of the male farmers harvested the same quantity. Forty-seven percent (47%) of the male farmers harvested between 3001 – 4000 kg and 36% of the female farmers also harvested the same quantity. NAERLS (2004) gave the yield potential of the two common varieties of ginger as UGI 70 - 80 tons/ hectare and UGI 50 - 60 tons/ hectare. Comparing the yield realised by the farmers (Table 3) with the potential of the crop, the yield realised by the farmers in the area was very low, implying that there is still room to increase ginger yields in the study area. The low output of ginger could be explained by the relatively less quantities of input used by the farmers.

Conclusion and Recommendations

This study clearly shows that female farmers have low access and usage of resources in the study area. On a general observation, farmer's accessibility to inputs is mainly from the open market; the implication of these is that, some of these inputs could be adulterated and likely affects the yield of farmers. Based on the findings of this study, farmers in the study area have limited access to major productive resources, but the females were more constrained. Thus, it is recommended, the necessary resources and the same enabling environment should be provided to the farmers to achieve high productivity.

Conflict of Interest

Author has declared that there is no conflict of interest in this study.

References

Anyaegbunam, H. N., Nto, P. O., Okoye, B. C and Madu, T. U. (2010). Analysis of Determinants of Farm Size Productivity among Small-Holder Cassava Farmers in

- South East Agro Ecological Zone, Nigeria. *American Journal of Experimental Agriculture*. 2(1): 74-80.
- Dolan, C.S. (2004). Gender and livelihood diversification in Uganda. *Canadian Journal of Development Studies*, 25(4): 643–661.
- Ellis, A., Manuel, C. and Blackden, C.M. (2006). Gender and economic growth in Uganda: unleashing the power of women. World Bank, Washington, DC.
- Fabiyi, E.F., Danladi, B.B., Akande, K.E., and Mahmood, Y. (2007). “Role of Women in Agricultural Development and Their Constraints: A Case Study of Biliri Local Government Area of Gombe State, Nigeria”. *Pakistan Journal of Nutrition* 6 (6): 676 – 680.
- Flora, C.B. (2001). Access and Control of Resources: Lessons from the SANREM-CRSP. *Agriculture and Human Value*, 18 (1): 41-48.
- Food and Agriculture Organization (2011). The State of Food and Agriculture. FAO Publication. Rome. 2011 :1-160.
- Integrated Seed Sector Development Programme ISSD (2014). Baseline report on farmers’ access to seed and other planting materials. Integrated seed sector development programme in Uganda, Wageningen UR Uganda. Kampala. 1-32.
- Kaduna State Agricultural Development Project – KADP (2000). Production of ginger. An extension guide. Kaduna State, Agricultural Development Project, Kaduna.
- Kaduna State Government www.kadunastate.gov.ng/kad.html, accessed November, 2018.
- Kajoba, G.M. (2002). Women and Land in Zambia: A Case Study of Small-Scale Farmers In Chenena Village, Chibombo District, Central Zambia. *Eastern Africa Social Science Research Review* 18 (1) :35-61
- Muruviwa, A.T (2011). Livelihood strategies of the aged people in Mubaira community, Zimbabwe. A Dissertation submitted to the department of Sociology, University of Fort Hare, Zimbabwe. :1-295
- National Agricultural Extension and Research Liaison Services – NAERLS (2004). Extension guide. Zaria, Federal Ministry of Agriculture and Rural Development. Omotesho, O.A., Adewumi, M.O. and Fadimula, K.S.(2007). Food Security and Poverty of the Rural Households in Kwara State, Nigeria. AAAE Conference Proceedings (2007) :571-575.
- Rahman, S.A. (2008). Women’s Involvement in Agriculture in Northern and Southern Kaduna State, Nigeria. *Journal of Gender Studies*, Volume 17, Issue 1, :17-26
- Taimi K.K. (2003). Strategy for Professionalization of Rural Development. *Tamindu Journal of Development*. Nadras Vol. 9: 269-304.