



LEVEL OF GENDER PARTICIPATION IN TOMATO PRODUCTION IN THE AGRICULTURAL ZONE 1 OF NIGER STATE, NIGERIA

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ABSTRACT

The study analyzed level of gender participation in tomato production in the agricultural zone 1 of Niger State, Nigeria. A multi-stage sampling procedure was employed to draw 120 male and female respondents. Questionnaire was used to elicit information from the respondents. Descriptive statistics was used to analyze the data collected from the field. Result of the analysis showed that the mean age of male respondents was 41 years while of the female was 39 years. Male respondents had mean average of 19 years farming experience and that of female respondents was 18.5 years. The mean farm size of male was 1.9 hectares while that of female was 1.7 hectares. Majority (98.3%) of male respondents and 98.3% of female were involved in cooperative activities. All the male and female respondents (100%) did not have access to the extension agents. majority (71%) of male and Majority (81.7%) of female had no access to credit. Out of 12 activities studied, six (6) activities were dominantly performed by male (land clearing, land preparation, transplanting, irrigation, spraying of herbicides and pesticides) while sowing, fertilizer application, harvesting, marketing and staking were dominated by the female. Men and women participated at the same level in weeding activities (100%). The major constraints identified in the study area were inadequate water for irrigation, poor extension services, poor storage facilities, and lack of credit facilities. It was recommended that the Niger State Government as well as Non-governmental organizations (NGOs) should provide water infrastructure such as dams, reservoirs, canals and irrigation equipment and storage facilities to boost vegetable production to ensure all year-round availability of tomato.

Keywords: Gender, Niger State, Participation, Tomato, Tomato production.

INTRODUCTION

Gender is a term often associated with roles and responsibilities of males and females in the society against biological difference (Akeredolu, 2008). The integration of these roles produces a material understanding of each other's capacities and constraints at different stage of life. According to the Food and Agriculture Organization statistics (FAOSTAT, 2014), the word 'gender' is used to describe the characteristics, roles and responsibilities of women and



men, boys and girls, which are socially constructed. Gender is related to how we are perceived and expected to think and act as women and men because of our biological differences (Wainer and Nobelius, 2004).

Tomato is an annual plant cultivated for its fleshy fruits, and nutritive value such as minerals, vitamins, essential amine acid, iron and phosphorus. Tomatoes are also an important source of vitamins phosphorus, iron, and vitamin A, B, and C. They also contain small amount, of the B complex vitamins, thionin, niacin, and riboflavin (Gemehis, 2012). Tomato small holder farmers planting on between 0.5 and 4 hectares of land account for 90% of production, with the balance contributed by commercial producers (Sahel research, 2015). Nigeria has the largest area harvested for fresh tomato in African with 541,800 ha, followed by Egypt with 214, 01 ha, (FAOSTAT, 2014).

Tomatoes are grown for human consumption in the backyard garden of almost every homestead. It is a cash crop for both small holders and medium scale commercial farmers (Gemehis, 2012). They are cheap source of protein and are important to those who cannot afford to purchase adequate quantities of animal protein. Participation is the process during which individuals, groups and organization are consulted about or have the opportunity to become activity involved in a project such as production of tomato among others. In community development, participation is the process during which individuals, groups and organization are consulted about or have the opportunity to become actively involved in a project or programme of activity. Afande *et al.* (2015) and Njeru *et al.* (2015) define the concept of participation as organized efforts to increase control over resources and regulative institutions in a given situation, on the part of groups and movement of these efforts until the point in time excluded from such control. Farmers' participation refers to people's engagement in activities within the rural. It plays an essential and long-standing role in promoting quality of life (Njeru *et al.*, 2015).

In spite of the overwhelming evidence of women's role in agricultural production, especially in tomato production, it is unfortunate that extension agents or workers that are supposed to take innovations to the farmers seem to sidetrack women (Olaleye, 2009). In some situations, where men and women are on the field, the land is considered "his" not "their" (Olaleye, 2009). Generally, the implication of different roles played by males and females in agricultural production processes often manifest in economic disadvantages, such as low income, low output, and low development of human capacity from both the perspective of learning. Thus there is need to assess and compare gender roles in agriculture production and more specifically tomato production.

The continual changes in social roles and responsibilities of men and women, call for documentation and appraisal of gender roles in tomato production so that development interventions can be targeted at the right beneficiaries when production incentives and resources are to be delivered to farmers. It is against this background that this research work was conducted. The specific objectives were to:

- i. describe the socio-economic characteristics of male and female tomato producers in the study area



- ii. assess the level of participation of male and female Tomato producers in the various Tomato production activities in the area
- iii. identify the constraints to tomato production by male and female respondents

MATERIALS AND METHODS

The Study Area

The study area of this research is Agricultural zone I of Niger State. Niger State was carved out of the former North Western State in 1976. It is divided into 25 Local Government Areas (LGAs). Niger state lies between latitude 3.20 ° East and Longitude 11.30 ° North. The State covers a total land area of 76,363km²/74,244sq km. Nupe, Gbagyi, Kamuku, Kambari, Dukawa and Koro are some of the major ethnic groups in the State. The estimated population of Niger State as at 2016 stood at 3,954,772 (National Population Commission [NPC], 2006). Niger State experiences distinct dry wet seasons with annual rainfall varying from 1,100mm in the northern parts to 1,600mm in the southern parts.

Sampling Procedure and Sample Size

A multi-stage sampling procedure was employed in the selection of respondents for this study. Stage 1: Four LGAs Agaie, Bida, Gbako and Katcha were purposively selected from the existing eight LGAs in Agricultural zone 1 of Niger State. Based on their popularity in tomato production. Stage 2: Three (3) communities well known for tomato production were purposively selected from each of the four selected LGAs giving a total of 12 communities. Stage three 3: Five (5) male and five female tomato farmers totaling ten were selected from each of the 12 selected communities. This gave a total of 120 respondents as presented in Table 1.

Table 1: Sampling Frame for Tomato Farmers in the Study Area

Selected LGA	Selected communities	Number of registered tomato farmers in the community	Number of male and female tomato farmers in the selected community		Ten tomato farmers(5males and 5 females) selected from each community	
			Male	Female	Male	Female
Agaie	Agaie Town	18	10	8	5	5
	Etsu Gaie	15	9	6	5	5
	Kutiriko	20	12	8	5	5
Bida	Bida town	26	16	10	5	5
	Masaga	25	17	8	5	5
	Landzun	28	19	9	5	5
Gbako	Lemu Town	17	10	7	5	5
	Nuwankosomma	27	17	10	5	5
	Kanko	23	13	10	5	5
Katcha	Katcha Town	20	11	9	5	5
	Badeggi	21	12	9	5	5
	Kakakpigi	20	11	9	5	5
Total		260	157	103	60	60

Source: Preliminary Survey data (2020)



Method of Data Collection

Interview schedule was administered to collect primary data from tomato farmers in the study area. The questions were able to provide data on the level of involvement of men and women in tomato production activities such as socio-economic characteristics, level of participation and key constraints in tomato farming.

Method of Data Analysis

Descriptive statistics was used to organize and analyze the data as applicable. The descriptive statistics such as frequency count, percentage, and mean scores were used to achieve objectives i, ii and iii.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

Most (51.7%) of the male respondents as shown in Table 2 aged above 40 years, 46.7% of the male respondents aged between 21-40 years while 1.7% of the male respondents was less than 21 years. The mean age of male respondents was 41 years. Majority (75.0%) of the female respondents were aged between 21-40 years while 25.0% of the female respondents was aged above 40 years. The mean age of female respondents was 39 years. This implies that both male and female respondents in the study area were within their active age of production. This agrees with findings of Ogunjimi (2012) who observed that majority of farmers in South Western Nigeria were within productive age range.

Table 2 further shows that majority (75.0%) of the male respondents had non-formal education, 13.3% had ND/NCE education while 11.7% had primary education. Majority (88.3%) of the female respondents had non-formal education, 6.7% had primary education while 5.0% had ND/NCE education. It shows that both male and female were less educated as depict by the higher percentages (75.0% and 88.3%) of the respondents with non-formal education. It also shows that more (25%) of the male respondents had formal education than their female counterparts (16.7%). Education on the overall has a strong positive correlation with increased production. The research findings coincide with the findings of Chaudhry (2004) who found that majority (77.5%) of the respondents were illiterate, followed by 19.2% and 2.5% of the respondents who were primary and matriculate, respectively.

Results in Table 2 also show that majority (55.0%) of the male respondents had tomato farming experience of between 11-20 years, 41.7% of the respondents had above 20 years of tomato farming experience and 3.3% had between 1-10 years of tomato farming experience. The mean tomato farming experience for men was 19 years. Majority (63.3%) of the female respondents had between 11-20 years of tomato farming experience, 31.7% had above 20 years of farming experience while 5.0% had between 1-10 years of farming experience. The mean tomato farming experience for female was 18.5 years. This implies that both males and females had high level (Above 10years) of tomato farming experience and this can help in taking management decisions on tomato production and adoption of improved technologies. This agrees with Challon (2003) who reported that tomato marketers in Ilorin metropolis, Kwara State, Nigeria, had been involved in tomato marketing for quite a long time.



The results in Table 2 show that majority (81.7%) of male respondents had farm size of between 3-4 hectares, 10.0% of the respondents had farm size above 4 hectares while 8.3% had farm size of between 1-2 hectares. The mean farm size for male respondents was 1.9 hectares. Majority (61.7%) of the female respondents had between 3-4 hectares of land, 33.3% of the respondents had between 1-2 hectares of land while 5.0% of the respondents had above 4 hectares of land. The mean farm size for female respondents was 1.7 hectares. These findings are in line with that of Thomas (2012) who found that the mean farm size of the respondents was 5.75 hectares, about 65.5% of participants had farm size between 1 and 5 hectares. This implies that most participants in youth in agricultural production were small scale farmers as international standards classify farmers having less than 10 hectares as small scale farmers. The study further revealed that majority (81.7%) of male respondents' and majority (88.3%) of the female respondents' land ownerships were inherited. This implies that the respondents had access to enough farm land for cultivation of tomato production.

The findings revealed that majority (98.3%) of the male respondents were involved in cooperative activities, while 1.7% was not. Similarly, majority (98.3%) of the female respondents were involved in cooperative activities, while 1.7% was not. This implies that Membership of cooperative societies has advantages of ensuring that members derive benefits from the groups such that could not be derived individually. This agrees with report of Akinsami *et al.* (2005) that cooperatives are a vehicle for development since they provide informal credit to farmers.



Table 2: Socio-economic Characteristics of the Respondents (n = 120)

Variable	Frequency		Percentage		Mean	
	Male	Female	Male	Female	Male	Female
Age (years)	60	60	50.0	50.0		
1- 20	1	0	1.7	0		
21-40	28	45	46.7	75.0		
Above 40	31	15	51.7	25.0	41 years	39 years
Educational level						
Non-formal education	45	53	75.0	88.3		
Primary education	7	4	11.7	6.7		
Secondary education	0	0	0.0	0.0		
ND/NCE	8	3	13.3	5.0		
Farming experience (in years)						
1-10	2	3	3.3	5.0		
11-20	33	38	55.0	63.3		
Above 20	25	19	41.7	31.7	19 years	18.5 years
Farm size (in hectares)						
1-2 hectares	5	20	8.3	33.3		
3-4 hectares	49	37	81.7	61.7		
Above 4 hectares	6	3	10.0	5.0	1.9 hectares	1.7 hectares
Cooperative membership						
Yes	59	59	98.3	98.3		
No	1	1	1.7	1.7		
Access to extension contacts						
Yes	0	0	0.0	0.0		
No	60	60	100	100		
Total	60	60	100	100		

Source: Field survey, 2020

The results in Table 2 show that all (100.0%) of both the male and female respondents did not had access to extension agents. This implies that extension contact which is supposed to be one of the main sources of agricultural information technologies for improved methods of tomato production activities was completely lacking in the study area. The implication of this is that farmer may not be well training on the management practice which may subsequently affect production of the tomatoes in the study area.

Level of Participation of the Respondents in the Various Tomato Production Activities

As presented in Table 3, out of the 12 tomato production activities studied, six (6) activities were dominantly performed by males while five (5) of the activities were dominantly performed by females. Tomato farming activities in which men dominated were: land clearing (100%), land (bed) preparation or tilling (100%), transplanting (100%) and irrigation /watering (100 %) while spraying of herbicides and spraying of pesticides was (96.7%) dominated by males. Likewise, tomato farming activities in which women dominated were: sowing (100%), fertilizer application (100%), harvesting (100%), marketing (98.3%) and staking (16.9%). Men



and women participated at the same level (100.0%) in weeding activities. It was found out that women dominated in tomato farming activities such as sowing, fertilizer application, harvesting, marketing and staking probably because these activities required less energy and light implements. This agrees with Omowumi and Olatomide (2015) in their study of participation of rural women in vegetable production in Araromi and Agbala in Ikorodu LGA of Lagos State, Nigeria. Findings of their study indicated that activities performed by females were sowing of seeds, transplanting of seedlings to nursery and vegetable harvesting.

Table 3: Level of Participation of the Respondents in Various Tomato Production Activities

Production activity	Frequency (male)	Frequency (female)	Participation % (male)	Participation % (female)
Land clearing	60	58	100.0	96.7
Bed preparation	60	59	100	98.3
Sowing	53	60	86.9	100
Weeding	60	60	100	100
Transplanting	60	58	100	96.7
Fertilizer application	55	60	90.2	100
Irrigation/watering	60	58	100	96.7
Staking	6	10	9.8	16.9
Herbicide application	59	55	96.7	93.2
Pesticide application	59	55	96.7	93.2
Harvesting	56	59	91.8	100
Marketing	56	58	91.8	98.3

Source: Field survey, 2020

Constraints in Tomato production by the Respondents

The results (Table 4) shows the problems faced by both the male and female respondents in tomato production. All (100%) of the respondents, male and female, had the problem of inadequate water supply for irrigation during dry season, all (100 %) of them indicated poor extension services, 91.7% of the male and female had problem of poor storage facilities, 76.7% of the male and 80.0% of female respondents lack credit facilities. The result findings also revealed that (45.0%) of both the male and female respondents had problem of high cost of irrigation equipment, 23.3% of the male and 25.0% of female had problem of incidence of pests and diseases. Others constraints include poor access to improved varieties of seeds, and high cost of inputs/agro-chemicals with both male and female having 6.7%. The implication of insufficient irrigation water during the dry season could hamper dry season production of tomato, lack of extension services could deprive the farmer's access to valid sources of agricultural information/technologies for improved methods of tomato production. Maliwichi *et al.* (2014) reported that the constraints affecting smallholder farmers in the production of tomato in Mhohlele, South Africa include mechanization, access to production inputs, access to credit, diseases and pest attack, lack of transportation, distance to market, access to water for irrigation and extension service.



Table 4: Constraints in Tomato Production by the Respondents

Constraints	*Frequency		Percentage	
	Male	Female	Male	Female
Inadequate water for irrigation during dry season	60	60	100.0	100.0
Poor extension services	60	60	100.0	100.0
Poor storage facilities	55	55	91.7	91.7
Lack of credit facilities	46	48	76.7	80.0
High cost of irrigation equipment	27	27	45.0	45.0
Incidence of pests and diseases	14	15	23.3	25.0
Poor access to improved varieties of seeds	3	5	5.0	8.3
High cost of inputs (agro-chemicals)	4	4	6.7	6.7
High cost of hired labour	1	1	1.7	1.7
Inadequate land/poor fertility of the soil	1	1	1.7	1.7
Poor marketing facilities	1	1	1.7	1.7

* Multiple responses exists

Source: Field survey, 2020

CONCLUSION AND RECOMMENDATIONS

Based on the research findings, it was concluded that tomato production in Agricultural Zone I of Niger State was being carried out by both male and female farmers. The study revealed that tomato farming activities in which men dominated were land clearing, land preparation, transplanting, irrigation, spraying of herbicides and insecticides while women were found to dominate in sowing, fertilizer application, harvesting, staking and marketing. The following recommendations were made for policy actions to increase gender participation in the production of tomato farming:

- 1 The Niger State Government should invest in water infra-structure such Dams, reservoir and irrigation canals for dry season irrigation farming so that farmers can expand their production and reduce yield fluctuation. This will ensure all year round production and availability of tomato and stabilize its market.
- 2 Provision of storage facilities by non-governmental organizations and government is necessary in assisting the farmers to keep their produce safe from environmental hazards such as heat, high temperature among others.
- 3 There is a need to create awareness by extension agents that will sensitize the farmers to form a corporative society and link them with those institutions that offer credit support to small holders such as anchor borrowers, Rice Association OF Nigeria (RIFAN), Bank of Agriculture (BOA), Farm Service Agency (FSA), Farmers Credit System (FCS) and among others, so as to empower those who do not have capital for tomatoes production.
- 4 The Niger State Agricultural Development Project (ADP) and Non-Governmental Organizations (NGOs) should make a provision for effective extension service available throughout the Agricultural Zones of the state. This would enhance greater



participation of the farmers in the project and as well raise tomato production beyond the subsistence level to commercial level in the study area and to also boost their socio-economic development.

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