Constraints and Extent of Participation of Rural Women in Turmeric (*Curcuma longa* L.) Farming in Jaba Local Government Area of Kaduna State

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Abstract: **The study examined the constraints and extent of participation of rural women in Turmeric (Curcuma longa L.) farming in Jaba Local Government Area of Kaduna State. Primary data was collected through the use of structured questionnaire. Descriptive statistics and likert type scale were used to analyse the data. The result revealed that the respondents were young with a mean age of about 31years, most 70(70%) of the respondents had a minimum of secondary school education. Women were found to participate highly in most farm activities involved in Turmeric farming except ploughing and chemical application. Fluctuation in price, pest and diseases were important factors that significantly constrained Turmeric farming in the area. The study recommended that the farmers should take advantage of associations and cooperative to bargain for better prices. Also, extension activities should be stepped up to forestall the incidence of pest and diseases.**

Key words: **Constraints, Extent, Participation, Rural women and Turmeric.**

I. INTRODUCTION

Curcuma longa L., commonly known as turmeric, is a tropical perennial monocotyledonous herb belonging to the family Zingiberaceae (Sigrist *et al.,* 2011; Jilani *et al.,* 2012). It is valued for its underground rhizome which contains a yellow coloured phenolic pigment called curcumin which is used as natural colouring agent for food, cosmetics and dye and as an active ingredient in some medicine (Olojede *et al*., 2009; Singletary, 2010). Turmeric is a cross-pollinated, triploid species, which can be propagated vegetatively using its underground rhizomes (Sasikumar, 2005). Since hybridization is ineffective in most cases, genetic improvement is often limited to germplasm selection and mutation breeding (Ravindran *et al.,* 2007). Evaluation of turmeric cultivars to identify good genotypes suitable for cultivation in different agro-ecologies has been reported. Significant variation in respect to various morphological features and yield components was observed among thirty turmeric germplasm of Bangladesh (Ravindran *et al.,* 2007).

Olojede and Nwokocha (2011) reported that in Nigeria, turmeric can be found growing from low altitude [5m above sea level (asl)] in the Southern coastal plains of the rainforest to the mid-altitude (823m asl) in the derived savanna within Longitude 3°02'E - 09°30'E and latitude 4°37'N – 10°04'N. The derived savanna covers about 10% of Nigeria's land area and extends southwards from the southern guinea zone into the forest zone (Adegbola and Onayinka, 2006). In spite of increasing demand for derived products of turmeric in Nigeria which makes its large scale production attractive, it is still cultivated mainly in small plots around homes (Olojede *et al.,* 2005) and in the wild (Olife *et al.,* 2013).

The role of agriculture has been re-appraised and re-valued on its contribution to industrialization and its importance for harmonious development, political, and economic stability with emphasis on women participation in agricultural activities. Bilkisu, (2011) noted that The International Development Community (IDC) has thus recognized agriculture as engine of growth and poverty reduction in countries where it is the main occupation of the larger proportion of the people The roles of women in agriculture includes, undertaking a wide range of activities relating to food production, processing and marketing; and beyond farming, they are involved in land and water management: most often they are collectors of water, firewood and fodder. They have access to a store of local knowledge on the medicinal use of plants; they have been in the forefront of soil conservation programmes; and it is women who perform most of the household labour devoted to animals (Bilkisu, 2011). Women participation in agricultural production therefore cut across various subsectors: planting, weeding, harvesting, processing, and marketing as well as tending livestock (Soubh, 2006). This necessitates their integration into planning, policies, and programmes for effective and sustainable development of a nation (FAO, 2003; Bilkisu, 2011)

Women as farmers, workers, and entrepreneurs face more constraints than men in assessing productive resources, markets and services – a "gender gap" – which hinder their effective participation in socio – economic (including agriculture) and political activities thereby reducing their contributions to the attainment of broader societal goals (FAO, 2011). There are empirical evidences that increased equality in access to economic assets has shown a significant raise in the productivity of female producers. This in turn helps improve household welfare through better bargaining power. These evidences concluded that increasing women's

control over economic assets have strong and immediate effects on the welfare of the next generation and on the level and pace at which physical and human capital are accumulated (Bilkisu, 2011). The full use of productive potential of human resources (male and female) cannot be realized in developing nations if women do not have access to adequate resources, productivity enhancing inputs and services; and policies such as price incentives cannot be fully successful in stimulating agricultural production if the institutional arrangements prevent women producers from getting the benefits.

In view of this the study attempted to answer the following research questions. what are the turmeric farming activities carried out by women in the study area, what are the socio-economic characteristics of Tumeric farming household in Jaba Local Government Area of Kaduna State, to what extent are women involved in turmeric farming activities in the study area?, what are the constraints faced by turmeric farmers in the study area? The followings are the specific objectives of the Study; described the socio-economic characteristics of Turmeric farmers in Jaba Local Government Area, identify turmeric farming activities carried out by women in the study area, determine the extent of participation of rural women in turmeric farming activities in the study area, identify the constraints faced by women in turmeric farming in the study area.

II. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Turmeric (botanically known as Curcuma longa Linn) is also known as 'golden spice of life' a root crop in the same family as ginger, though less attention has been given to it by Nigerian farmers, despite its huge potentials for local industries and export. It is used in the food, cosmetic and pharmaceutical industries. It is used as spice and a major component of curry powder. It is used as a dye for colouring fabrics, also used in the cosmetics industry for its brilliant yellow color and characteristic perfume. It is medically used for the prevention and treatment of diverse kinds of diseases, including heart diseases, cancer, Alzheimer's and various degenerative conditions (Joseph, 2018).

The annual global market for spices, seasonings and herbs is estimated at a whopping $6.5billion, according to the International Trade Centre (ITC). The growth is supported by the growing demand in food service, home cooking and growing consumer fascination for different cuisines, Joseph, (2018) further reported in his study that the World production level for turmeric is between 11-16 tonnes annually and out of these production figures, India accounts for over 78% of the annual production for turmeric. India is followed by China and Myanmar in Asia. Nigeria is the fourth largest producer of turmeric with about 3% of the global annual production.

However, Joseph, (2018) in his study further observed that although Nigeria can take the lead in turmeric production, her farmers are yet to properly understand the techniques for increased yield and processing, according to experts. Nigeria's climate and soil conditions are very suitable for the cultivation of spices, according to experts. The way to go is to establish organic herb farms, especially in the southern parts of the country which has more suitable agro climate. The fertile soil of Southern and Western parts of the country provides an ideal landscape for fresh herb companies to grow their crops. Turmeric is grown both under rain fed and irrigated conditions. Like other tuber crops, turmeric also requires deep soil tilt and heavy manure for high yields. After selecting suitable cultivation site, beds of convenient length and width are prepared, based on the topography of the land.

III. METHODOLOGY

The study area

The study was conducted in Jaba Local Government Area. It lies on a geographical coordinate 9° 27' 0" North, 8° 0' 0" East. The Local Government shares boundaries with Zango Kataf Local Government Area in the North, in the East by Jema'a Local Government Area, in the West by Kachia Local Government Area and in the south by Kagarko and Nassarawa State. The 2016 projected population was 210,500 (Wikipedia, 2016). The Local Government is marked with distinct dry and wet seasons normally between November to March while the wet season falls between Aprils – October. Jaba land has guinea savannah vegetation. The major occupation of the inhabitants is farming. The farmers mostly practice small-scale agriculture. Other occupations include fishing, hunting weaving and trading. Crops grown in the area include: Turmeric, sorghum, millet, maize, yam, rice, cocoyam, groundnut, acha, beans, ginger, cassava, soya bean, sweet potatoes, Beniseed and sugar cane. During the dry season vegetables such as cabbage, spinach, tomatoes and pepper are commonly grown by the farmers.

Sampling Technique

The Local Government consists of 13 districts. Five (5) were randomly selected from the 13 districts, simple random sampling was used to select 20 respondents from each of these districts. Primary data was collected by the use of structured questionnaire. Only ninety-nine (99) questionnaires were retrieved and used for the study. The data on age, sex, educational status, marital status, house-hold size, farming activities and constraints were collected.

Analytical tools

Simple descriptive statistics and linkert-type scale was used to achieve the stated objectives. In order to determine the extent of participation of women in Turmeric farming, 5-point likert scale method was employed. Participation in farming activities such as lands clearing, cultivation, ploughing, planting, mulching, chemical application, weeding, harvesting and drying were examined. Each of the parameters was scored as follow. HP = highly participated (5 point), MP = moderately participated (4 point), UD = Undecided (3 point). LP = low participated (2 point), NP = not participated (1

point). The mean score of the respondents below 2.44(0-2.44) was considered low participation, 2.45 (2.45-3.44) was considered undecided while mean score above 3.45(3.45-5) was considered very high. Furthermore, Constraints to turmeric farming was prioritized by scoring each of the parameters as follow VS = Very serious 5, S = Serious 4, UD = Undecided 3, LS = less serious 2, NP = not a problem. Furthermore, mean score below 2.44(0-2.44) was considered not a serious problem, 2.45(2.45-3.44) undecided while mean score above 3.45 i.e 3.45(3.45-5) was considered very serious.

IV. RESULT AND DISCUSSION

Socio-economic Characteristics of Tumeric Farmers

Table 1 shows that the respondents mean age was about 31years with majority 59.6% of the farmers aged between 15-30years, 28.28% within 31-45years, while 12% were aged between 45 and 60. Basically the respondents are young adults with great expectations for productivity. Most 57% of the farmers were married, with about 11% widow and widowers. Christianity dominates the respondent's religion in the area. The farmers were well educated enough to take responsibility for adoption of new technologies. About 70% of them had minimum of secondary school. The families were moderate with a mean size of about 6 people per home. The common group formations include religious organization and work groups. Cooperative societies with (13%) among respondents is low. This may likely have implication on their lending capacity for farming activities.

Level of Participation of Women in Turmeric Farming Activities

Table 2 shows the extent of women participation in turmeric farming, the activities examined includes; land clearing, cultivation, ploughing and planting. From the results, women were considered to have participated highly in land clearing (4.23), cultivation (4.23), planting (4.40), mulching (4.09), weeding (4.03), harvesting (4.21) Ploughing (3.7) and Drying (4.09) respectively. The respondents were undecided in their response to chemical application (2.94) possibly because it involves loading and hauling the Knapsack sprayer which may be tedious for the women.

Constraint to Turmeric Farming

Table 3 shows the prioritization of the constraints to turmeric farming activities. The most serious constraints to turmeric production in the study area is price fluctuation (3.99), prevalence of pests and diseases ranked second (3.62). Farmers in the study area don't see rainfall and land acquisition as constraints because they had adequate rainfall and enough land for the plant. The respondents were undecided on access to capital, extension services and availability of labour. However, this finding negate those of Fabiyi, *et al*. (2007) in their study on the role of women in agricultural development and their constraints: A Case Study of Biliri Local Government Area of Gombe State through the use of simple random sampling technique in the selection of six villages from the LGA and 60 women farmers by using Interview scheduled to obtain information from the women on their socio-economic characteristics, farm activities, farm production and their constraints. The women farmers' constraints include mainly; lack of land for farming, credit facilities, costly and late input delivery. Also, Butt et al. (2010) conducted a study on the role of rural women in agricultural development and their constraints: a case study of Depalpur, Okara-Pakistan; found women playing crucial role in ensuring food security and stability of rural areas due to keeping crop production, livestock production as well as cottage industry alike. They also found women having incomplete access to farm input/resources, agricultural extension education services, and newest technical knowledge and information sources.

V. CONCLUSION AND RECOMMENDATIONS

Results showed that most of the respondents were young (with mean age of 31years) who are very energetic in carrying out turmeric farming, about 57% of the respondents are married and just few of them 2% are divorced. Women were found to be highly involved in almost all the farming activities examined except for chemical application and ploughing to which the women response were indifferent. The most serious constraints were price fluctuation and pest and diseases. The study recommends that farmer's cooperatives should be involved in helping farmers organize group sales to get better bargain for their products. Extension agents should also be made to do more to help curb the problems associated with pests and diseases in the study area.

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APPENDIX

Table 1. Socio-economic variables of respondents

Variable	Frequency	Percentage
Age		
15-30	59	59.59
31-45	28	28.28
45-60	12	12.12
Mean Age 31years		
Marital Status		
Married	57	56.56
Single	31	31.31
Divorced	2	2.02
Widowed	11	10.10
Religion		
Traditional	2	2.02
Islam	8	8.08
Christianity	89	89.89
Educational Level		
Non Formal	12	12
Primary	17	17
Secondary	43	43
Tertiary	27	27
Household Size		
1-5	47	47.47
6-11	42	42.42
12-17	10	10.10
Mean 6		
Membership of Organization		
Religious Group	44	44.44
Work Group	30	30.30
Cooperative Group	12	12.12
Farmers Group	13	13.13

Source: Field Survey 2019

Table (2). Extent of women Participation in Turmeric Farming Activities

ACTIVITIES	5(HP)	4(MP)	3(UD)	2(LP)	1(NP)	N(99)	M S	Remark
Clearing	30	67	0	2	1	423	4.23	H.Participated
Cultivation	36	59	0	3	2	424	4.24	H.participated
Ploughing	18	63	2	8	9	373	3.73	Undecided
Planting	49	46	3	0	2	440	4.40	H.Participated
Mulching	22	73	1	1	2	409	4.09	H.participated
Chemical app	6	38	6	44	6	294	2.94	Undecided
Weeding	23	66	5	4	2	403	4.03	H.participated
Harvesting	30	66	1	1	2	421	4.21	H.participated
Drying	25	68	1	3	3	409	4.09	H.participated

Source: Field survey, 2019

Note. H.Participated. Highly participated

Table (3). Constraints to Turmeric Farming Activities

ACTIVITIES	VS	S	UD	LS	NP	N (99)	MS	Rank	Remark
Land acquisition	5	7	0	9	79	150	1.50	6th	Not a problem
Access to capital	6	21	1	66	6	255	2.55	5th	Undecided
Adequate rainfall	1	0	3	32	64	142	1.42	7th	Not a problem
Irregular ext. service	9	6	54	7	24	269	2.69	4th	Undecided
Fluctuation of price	16	75	3	4	2	399	3.99	1st	Very serious
Pest and disease	9	66	5	18	2	362	3.62	2nd	Very serious
Labour	14	24	40	14	8	322	3.22	3rd	Undecided

Source: Field survey, 2019