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Gender Participation in Rice Processing Value Chain in Kebbi and Sokoto States, Nigeria

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Abstract- This study examined the men and women participation in rice processing activities in Kebbi and Sokoto States, Nigeria. The specific objectives were to among others: describe the socio-economic characteristics of the rice processors'; ascertain awareness of rice processing technologies among men and women processors; and identify the constraints affecting men and women in rice processing. Data were collected from one hundred and fifty two (152) beneficiaries of the Agricultural Transformation Agenda Support Program -1 (ATASP-1) in the Staple Crop Processing Zones of Kebbi-Sokoto, covering (8) LGAs in the two states, purposively selected. The data were analyzed using descriptive statistics. The result of the socio-economic characteristics revealed that the majority (55.3%) had no formal western education, most(57.8%) of the beneficiaries were males, and(42.2%) were females. Similarly, majority(48.1%) were within the age bracket of between 31-40 years of age and have been in rice processing for between 10 –14years (41.5%).

Keywords: *gender, participation, rice processing.*

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Abstract- This study examined the men and women participation in rice processing activities in Kebbi and Sokoto States, Nigeria. The specific objectives were to among others: describe the socio-economic characteristics of the rice processors'; ascertain awareness of rice processing technologies among men and women processors; and identify the constraints affecting men and women in rice processing. Data were collected from one hundred and fifty two (152) beneficiaries of the Agricultural Transformation Agenda Support Program -1 (ATASP-1) in the Staple Crop Processing Zones of Kebbi-Sokoto, covering (8) LGAs in the two states, purposively selected. The data were analyzed using descriptive statistics. The result of the socio-economic characteristics revealed that the majority (55.3%) had no formal western education, most(57.8%) of the beneficiaries were males, and(42.2%) were females. Similarly, majority(48.1%) were within the age bracket of between 31-40 years of age and have been in rice processing for between 10 –14years (41.5%). Awareness and ranking of rice processing technologies indicates, rice de-stoned machines, false bottom parboilers, and rice husking machine and polishers. Major constraints were: inadequate funds(48.7%),lack of processing skill centers (38.6%), and inadequate capacity building on processing (32.5%).ATASP-1 should initiate and sustain facilitation and linkages to credit sources so that women and youths can access start-up capital, provision of skill acquisition centers to increase women knowledge in rice value addition and fortification were recommended among others.

Keywords: gender, participation, rice processing.

I. INTRODUCTION

Gender plays a significant role in the agricultural sector where both men and women are involved in the agricultural value chain activities that complement each other. The Federal Ministry of Agriculture and Rural Development (FMARD) reported that women accounted for 75% of the farming population in Nigeria (FMARD, 2013). They are largely involved in the production, processing and trading of such food crops such as sorghum, maize, rice, cassava, cowpea, melon, pepper, vegetables, yam and palm oil. Men carry out the tedious tasks such as land clearing and felling of trees, gathering and burning of bush, and making ridges, while the women engage in planting. In addition, women participate in weeding, harvesting, and off-farm processing, and selling of farm produce. Generally, women are rarely associated with agricultural

export crops such as cocoa, rubber, cotton. A survey on gender involvement in crop production by National Bureau of Statistics (2014) showed that male involvement in crop production declined, while female involvement was on the increase. However, women often carry out farming and processing tasks using rudimentary technologies. National Bureau of Statistics (NBS) (2014) further reported that women control buying and selling of agricultural processed products such as, cassava and sorghum flour, Gari, and rice. Ademilua *et al.*, (2017) noted that the structural role of men and women in agricultural cycle reveal that women are more active specifically in processing and marketing of agricultural products in Nigeria. Accordingly, in the North West zone of Nigeria(47%)of women participation in the business of agricultural product processing and handling as against (22.5%) for men (NBS, 2014).

Despite their enormous contribution, women participation in agricultural production activities is still a challenge (Damisa, and Yohanna 2007). For instance, both men and women have disparity in access to agricultural resources notwithstanding the equal roles they play in agricultural activities.

An analysis of Cassava Value Chain in Nigeria from a Pro-poor and Gender Perspective of Farming Households in Southwest, Nigeria, showed (36.7%)men as compared to (79.3%) of women involvement in the cassava value chain processes (Apata, 2013). Women were also involved in the sales of packaging materials used for most crops and processed foods such as garri, maize and yam flakes (Rahman, 2008). It was argued by Ogunlela and Mukhtar (2009) that if incomes of women are increased, they may have more access to resources and invest in their children's education, health care and nutrition. Men mostly play the part of the middle men as there were hardly "middle women" across the value chain. Also, women were less involved in wholesale but were more active on the retail side and very visible in open air markets (Okoh, 2009). Recent research findings indicated that women participation in aquaculture in Nigeria is also increasing daily and this has contributed to household food security. Processing has been the most prominent activity of women in fisheries of Lake Kainji and constitutes about 60% of the women (Nwabeze *et al.*, 2013).

Rice (*Oryza sativa*) is the sixth major crop cultivated after sorghum, millet, cowpea, cassava and yam and most important staple food for most Nigerian

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(Nwaleji, *et. al.*, 2014; National Cereal Research Institute (NCRI), 2004). It is used in the preparation of several local dishes that are eaten in virtually every home, especially during festivals and ceremonies (Julius & Chukwuma, 2014). Rice played a major role in the economy of Nigeria, however, its processing related activities is faced with a lot of challenges in respect to quality and standards which has led to low prices of the commodity in the Country. Agricultural produce processing comprises of all the activities relating to the commodities, the handling, value addition, development of product to additives and fortification. Nwaleji *et al.* (2014) opined that production and processing of rice is always complex and involved distinct stages in successive order as production through harvesting; movement from the farm to processing center; parboiling, drying, milling, de-stoning, polishing and winnowing, moving the milled rice from rural processing center to storage or marketing.

There is a general agreement that gender disparities persists in ownership and access to useful resources such as education, extension and health which have contributed to higher poverty and lower employment opportunities among women. Specifically, gender matters in all aspect of value chain development which ranges from production, processing, handling and marketing. There has been established gender considerations in agricultural value chain development. Hence, there is need for vibrant understanding of the roles of men and women and their level of participation in rice processing value chain development activities among the beneficiaries of ATASP-1 in the zone. It is against this background that this study was design to assessed gender participation in rice processing among the beneficiaries of the project in Kebbi-Sokoto zone in the North West, Nigeria; specifically the study sought to:

1. Describe the socio-economic characteristics of the rice processors';

2. Determine the roles of men and women along the rice processing value chain;
3. As certain awareness of rice processing technologies among men and women processors; and
4. Identify the constraints affecting men and women in rice processing.

II. METHODOLOGY

The study was conducted in the Staple Crop Processing Zones of Kebbi-Sokoto under the Agricultural Transformation Agenda Support Program -1 (ATASP-1). The zone comprises of 8 Local Government Areas in the two States. The LGAs are: Kebbi State (Argungu, Bagudu, BirninKebbi, Dandi, Ngaski, Shanga and Suru) and (Kware) in Sokoto State. The inhabitants are predominantly farmers and small to medium scale commodity processors and marketers'. A multi stage sampling technique was employed to select a total of one hundred and fifty two (152) respondents for the study. The first stage involved the purposive sampled of two LGAs namely Kware and Birnin Kebbi were selected from Sokoto and Kebbi states respectively out of the eight LGAs of the zones. In the second stage, with the assistance of extension staff in the selected (LGAs), four communities were also selected, two from each LGAs. The condition that guided the selection of communities was the availability of the project activities. The third stage was a random sampling often (10%) sample size from the population of the beneficiaries which was one thousand five hundred and twenty five (1,525), which formed the sampling frame. Therefore, total sample for the study were two LGAs, four communities and 152 respondents' as shown in Table 1. Data were collected from the respondents' using structured interview schedule and were analysed using descriptive statistics such as frequencies and percentages.

Table 1: States, LGAs, Communities and respondents for the Study

State	LGAs	Community	Population	10% sample Size
Kebbi	BirninKebbi	BirninKebbi	540	54
		Gwadangwaji	281	28
Sokoto	Kware	GidanTambari	340	34
		GarinKware	364	36
Total			1,525	152

III. RESULTS AND DISCUSSION

a) Socio-economic characteristics of rice processor'

Table 1 showed the socio-economic characteristics of rice processors in the study area. Results revealed that majority (48.1%) of the respondents were between the age bracket of 31 – 40 years, married (63.2%), had no formal education (55.3%), have been in rice processing between 10 – 14 years (41.5%) and have a household size of 6 – 10 persons (48.7%). This implies that the rice processors

were within their active and reproductive age, saddled with the responsibility of looking after their family, having a fairly large household size of 8 persons, have been processing rice for over 14 years and had fairly low level of literacy.

Table 2: Socio-economic characteristics of the respondents (n=152)

Variable	Frequency	Percentage
Sex		
Male	88	57.8
Female	64	42.2
Age (years)		
Less than or equal to 20	13	8.5
21-30	29	19.1
31-40	73	48.1
41-50	22	14.5
Above 50	15	9.8
Years of Experience in rice Processing		
1-4	22	14.5
5-9	31	20.4
10-14	63	41.5
15 and above	26	17.1
Marital Status		
Married	96	63.2
Single	31	20.4
Widowed	18	11.8
Divorced	7	4.6
Household Size		
1-5	29	19.2
6-10	74	48.7
11-15	28	18.5
16 and above	21	13.6
Educational Level		
No formal education	84	55.3
Primary education	35	23.1
Secondary education	25	16.4
Tertiary education	8	5.2

Source: field Survey, 2017

b) Types of operations in rice processing activities

Figure 1 showed the type of operations carried out by the processors according to gender in rice processing and handling activities. Operations like parboiling, (69.6%), drying, (54.8%), winnowing (57.9%), Fortification/additives (27.9%) and Product development and diversification (26.4%) were mostly performed by women. Similarly, milling and polishing (27.8%), sorting and grading (21.1%), packaging and bagging (11.3%), handling and transportations (28.9%) operations are mostly executed by men. This implies that both gender participated in the rice processing value chain activities in the ATASP-1 project in the zone, however women appears to be more involved in the core value addition activities than men.



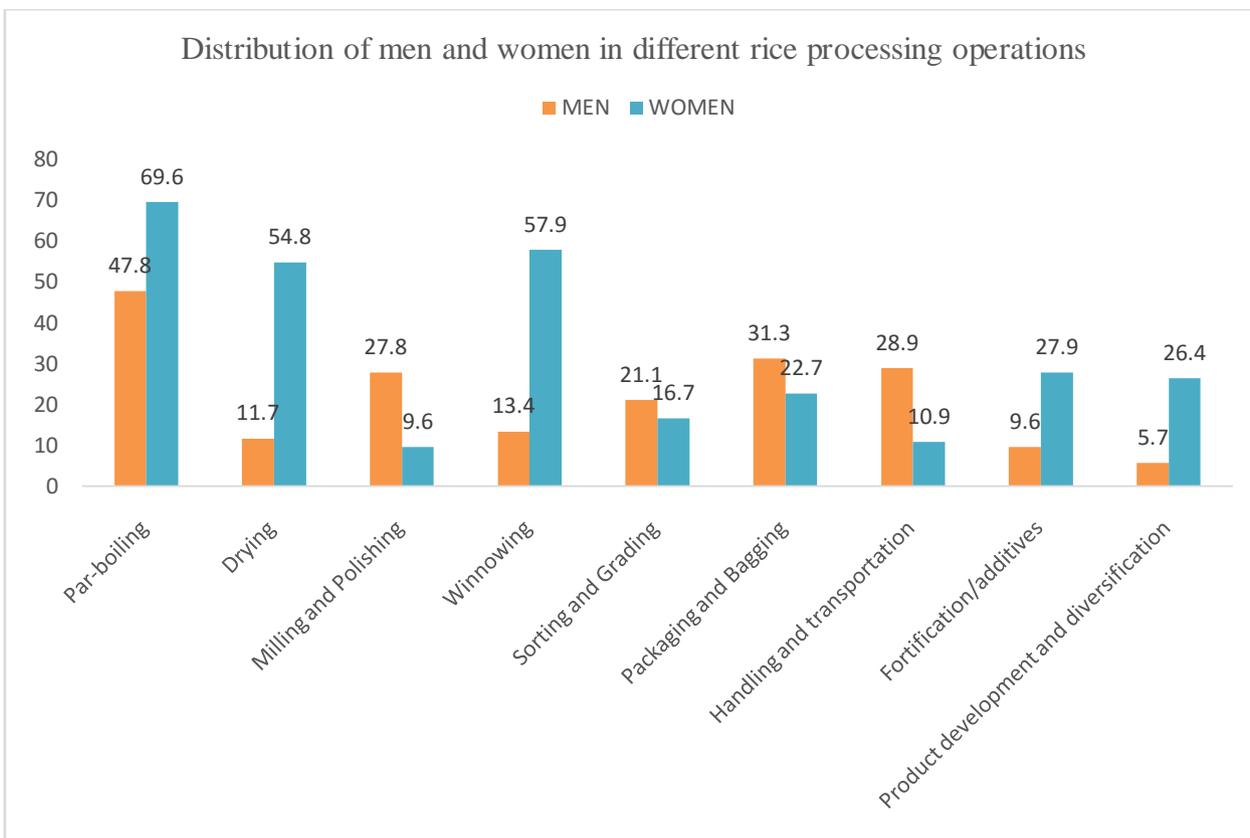


Figure 1: Showing percentage of men and women in different rice processing operations multiple responses

c) Gender Awareness' of Improved Rice Processing Technologies

Table 3 showed gender awareness of improved rice processing technologies among the ATASP-1 beneficiaries. Most women rated rice husking machines, rice de-stoned machines and false bottom parboilers' as the most essential technologies that can benefit them in their rice processing value chain activities. While the men ranked rice de-stoned machines, False bottom parboilers and rice milling machines were the most

valuable technologies which could support their activities as presented in Table 3. The results implies that most of the rice processors were aware of improved technologies that might benefits both men and women in their processing activities, however majority appears to lack access to these equipment. This could be attributed to the fact that most of the people in the study area are small-medium scale processors and marketers who lack access to reproductive resources.

Table 3: Distribution of Respondents Awareness of Rice Processing Technologies (n=152)*

Rice Processing Technologies	Awareness and ranking of Processing Technologies			
	Men(n=88)		Women(n=64)	
	Frequency	Rank	Frequency	Rank
Rice milling/grinding machines	27	3	24	4
Simple threshers for rice	16	9	9	14
Rice de-stoned machines	32	1	27	2
Rice par-boilers equipment	25	4	23	5
Rice polishers	17	8	20	6
Rice husking machines	19	7	29	1
Paddy separator's and polishers	11	13	14	12
False bottom parboilers	29	2	26	3
Simple grinding machine	15	10	16	10
Simple dryer	21	5	19	7
Grain sorting machine	20	6	17	9
Customized package/bag	8	14	18	8
Gem parboilers	12	12	12	13
Flash drier	14	11	15	11

*Multiple responses
Source: field Survey, 2017

d) Constraints Affecting Rice Processing Activities

The important constraints that affects rice processing and its value chain activities in the study area are presented in Table 4.

The results in Table 4 revealed inadequate funds to procure improved processing machineries (48.7%), lack of processing skill centres (38.6%) and inadequate capacity building activities on processing and value addition on rice (32.5%) and lack of technical

knowledge on rice value addition/fortification (23.9%) were the major factors affecting rice processing activities which were ranked next to each other respectively. This implies that majority of the processors need alternative sources of funds to purchase those desirable improved processing technologies and equipment. This is because majority of women in the rural areas sourced capitals for starting agro-businesses through personal savings (Adam and Bidoli, 2017).

Table 4: Constraints affecting rice processing activities

Variables	Frequency*	Percentage	Rank
Inadequate female extension workers	18	9.2	6
Lack of technical knowledge on rice value addition/fortification	47	23.9	4
Lack of access to simple labour saving devices and equipment	20	10.2	5
Inadequate funds/capital	42	48.7	1
Lack of processing skill centers	25	38.6	2
Inadequate capacity building activities on processing and value addition on rice	29	32.5	3
Limited mobility	16	8.1	7

* Multiple responses

Source: field Survey, 2017

IV. CONCLUSION AND RECOMMENDATION

The study showed that the beneficiaries' were mostly men, majority were between the productive average age of 35years, and most had fairly low level of education. There is high level of experience in rice processing activities among the beneficiaries. This is critical which could influence their processing activities and enhance the value chain addition to their rice. Majority of the beneficiaries were aware of improved rice processing technologies that will benefit them, however, most of them lack access to these desirable equipment. Factors such as inadequacy of funds to acquire improved processing machineries, lack of processing skill centres and inadequate capacity building activities on processing and value addition were the serious constraints affecting rice processing activities. Therefore, it was recommended that:

1. ATASP-1 should initiate and sustain facilitation and linkages to credit sources with favorable interest rates so that vulnerable women and youths can access start-up capital for increased productivity.
2. ATASP-1 should provide female skill acquisition centers in each of the ATASP-1 LGAs in order to increase women knowledge in rice value addition and fortification for greater participation in project activities.
3. More rice processors should be encouraged to participate through expansion of the project to cover more L.G.As of Sokoto State.

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