



**ASSESSMENT OF GENDER INVOLVEMENT IN RICE PROCESSING UNDER  
STAPLE CROP PROCESSING OF AGRICULTURAL TRANSFORMATION  
AGENDA SUPPORT PROGRAM -1 (ATASP-1) IN KEBBI STATE**

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**ABSTRACT**

This study examined the gender involvement in rice processing activities in Kebbi State, Nigeria. A three stage sampling technique was employed to select (150) beneficiaries of the Agricultural Transformation Agenda Support Program -1 (ATASP-1) in the Staple Crop Processing Zones of Kebbi-Sokoto, covering eight LGAs in the two states. Structured questionnaire and oral interview were used in the data collection. The data were analysed using descriptive statistics (such as frequencies, percentages and ranking). The result of the socio-economic characteristics revealed that more than half (55.3%) of the processors had no western education, more than half (57.8%) of the beneficiaries were males, and 42.2% of them were females. Similarly, 48.1% of the beneficiaries were within the age bracket of 31-40 years of age and had been in rice processing for 10 –14 years (41.5%). Findings on awareness and ranking of rice processing technologies indicates rice de-stoned machines ranked 1<sup>st</sup>, false bottom parboilers ranked 2<sup>nd</sup> and rice husking machines and polishers were ranked 3<sup>rd</sup> and 4<sup>th</sup> respectively. The findings also indicates the major constraints faced by the processors included 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 men and women can access start-up capital.

**Keywords:** Gender involvement; Rice processing; ATASP-1

**INTRODUCTION**

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 food crops such as sorghum, maize, rice, cassava, cowpea, water melon, pepper, vegetables, yam and palm oil. Men are known to carry out the tedious tasks such as land clearing and felling of trees, gathering and burning of bush, and making ridges, while women are engaged in planting. In addition, women participate in weeding, harvesting, and off-farm processing, and selling of farm produce.

A survey on gender involvement in crop production by National Bureau of Statistics-NBS (2014) showed that male involvement in crop production declined, while that of females

was on the increase. National Bureau of Statistics further reported that women control the buying and selling of processed agricultural 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 reveals 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 participates in the business of agricultural products processing and handling was higher (22.5%) than those of men (NBS, 2014).

Despite their enormous contributions, women participation in agricultural production activities is still a challenge (Damisa, and Yohanna, 2007) because an analysis of Cassava Value Chain in Nigeria from a Pro-poor and Gender Perspective of Farming Households in Southwest, Nigeria, showed that men constitutes (36.7%) as compared to (79.3%) of the women involvement in the value chain processes (Apata, 2013). Women were also involved in the sales of packaged agricultural produced 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.

Rice (*Oryza sativa*) is the sixth major crop cultivated after sorghum, millet, cowpea, cassava and yam and it's the most important staple food for most Nigerians (Nwalieji *et al.*, 2014). The crop is used in the preparation of several local dishes that are eaten in virtually every home, especially during festivals and ceremonies. Nwalieji *et al.* (2014) opined that production and processing of rice is always a complex process and it involves distinct stages in successive order. The stages include production through harvesting; movement from the farm to processing centre; parboiling, drying, milling, de-stoning, polishing and winnowing, moving the milled rice from rural processing centre to stores or marketing.

There have been established gender considerations in agricultural value chain development. Therefore, there is need for vibrant understanding of the roles of men and women and their level of involvement in rice processing value chain development activities among the beneficiaries of ATASP-1 in the zone. The Federal Government of Nigeria in collaboration with the African Development Bank (AfDB) has developed the Agricultural Transformation Agenda Support Program Phase-1(ATASP-1) as one of the instruments for achieving the ATA goals. Subsequently, 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 (AfDB, 2013).

It is against this background that this study was designed to assessed gender participation in rice processing among the beneficiaries of the project in Kebbi State in the North West, Nigeria; specifically the study sought to: describe the socio-economic characteristics of the rice processors'; determine the roles of men and women along the rice processing value chain; ascertain awareness of rice processing technologies among men and women processors; and identify the constraints affecting men and women in rice processing.

## MATERIALS AND METHODS

### Study Area

The study was conducted in Kebbi State within the areas covered by the Staple Crop Processing of the Agricultural Transformation Agenda Support Program -1 (ATASP-1). The programme covered seven Local Government Areas in the state. The LGAs are: Argungu, Bagudo, Birnin Kebbi, Dandi, Ngaski, Shanga and Suru. The dwellers are predominantly farmers and small to medium scale commodity processors and marketers.

### Sampling Procedure and Sample Size

Official record from the office of the Agricultural Transformation Agenda of the Ministry of Agriculture of the states revealed a total of 1, 505 beneficiaries of the programme, and which constitutes the sample frame of this study. Three stage sampling procedure was employed to arrive at the sample size of the study. The first stage involved the purposive sampling of two Local Government Areas (LGAs) namely Birnin Kebbi and Suru LGAs from Kebbi State out of the seven LGAs of the State that had the highest participating farmers. In the second stage, with the assistance of extension staff in the selected LGAs, four communities were also selected purposively, two from each LGAs. The condition that guided the selection of communities was the availability of the project activities. The third stage was a proportionate selection of 10% of the sample. Therefore, total sample size for the study was 150 beneficiaries.

### Data Analysis

Descriptive statistics such as means, frequencies, percentages and ranking were used.

Table 1: Sample size for the study

LGAs	Villages	Sample frame	10% Sample Size
BirninKebbi	BirninKebbi	521	52
	Gwangwaji	331	33
Suru	Kwakware	292	29
	Kwandage	361	36
Total		1,505	150

## RESULTS AND DISCUSSION

### Socio-economic Characteristics of Rice Processors

Table 1 showed the socio-economic characteristics of rice processors in the study area. Results revealed that more than half (57.8%) of the beneficiaries were males, and 42.2% of them were females. The dominance of males in projects activities agrees with Bashir *et al.* (2013). It also confirms the findings of Baba *et al.* (2010) who found that males constitute the majority and have stronger interest in participating in the project activities than females.

The results further showed 48.1% of the processors were between the age brackets of 31 – 40 years, the mean age was 35. This implies that the rice processors were within their active and reproductive age, saddled with the responsibility of looking after their family. The result also shows that majority of the processors (63.2%) were married and their educational level indicated that more than half (55.3%) had no formal education. The results further show that 41.5% of the processors had between 10 –14 years of experience in rice processing activities, with 12 years as mean. The processors had mean household of 8 and 48.7% were between the ranges of 6 – 10 persons. Which could be attributed to the current practice of *purdah* (women in seclusion) as the people in the area are predominantly muslims. It also corroborated the findings of *Auta et al. (2012)* who reported that large proportions of small-scale farmers in Nigeria are male and married.

Table 2: Socio-economic characteristics of the respondents (n=150)

Variable	Frequency	Percentage	Mean
<b>Sex</b>			
Male	87	57.8	
Female	63	42.2	
<b>Age (years)</b>			
Less than or equal to 20	12	8.0	
21-30	28	18.7	
31-40	72	48.0	35
41-50	21	14.0	
Above 50	17	11.3	
<b>Years of Experience in rice Processing</b>			
1-4	21	14.0	
5-9	31	20.6	
10-14	62	41.3	12
15 and above	36	24.0	
<b>Marital Status</b>			
Married	95	63.2	
Single	30	20.4	
Widowed	18	11.8	
Divorced	7	4.6	
<b>Household Size</b>			
1-5	28	19.2	
6-10	74	48.7	8
11-15	27	18.5	
16 and above	21	13.6	
<b>Educational Level</b>			
No formal education	83	55.3	
Primary education	34	23.1	
Secondary education	25	16.4	
Tertiary education	8	5.2	

Source: field Survey, 2017

### Roles of Men and Women along the Rice Processing Value Chain

Figure 1 showed the roles of men and women along the rice processing value chain activities. The result shows that women are involved in parboiling (69.6%), drying (54.8%), winnowing (57.9%), fortification/additives (27.9%) and Product development and diversification (26.4%). Similarly, the percentages of men who are involved in rice processing value chain activities indicates that (27.8%) were in milling and polishing, (21.1%) in sorting and grading, while (11.3%) of the men processors were in packaging and bagging. Men who are involved in handling and transportations constitutes (28.9%). 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. The findings agrees with Ademilua *et al.* (2017) who noted that the structural role of men and women in agricultural cycle revealed that women are more active in processing and marketing of agricultural products in Nigeria. It also corroborated Auta, Ariyo and Akpoko (2012) who stated that women are mainly involved in the processing and trading of such food crops as maize, rice, cassava, yam and palm oil.

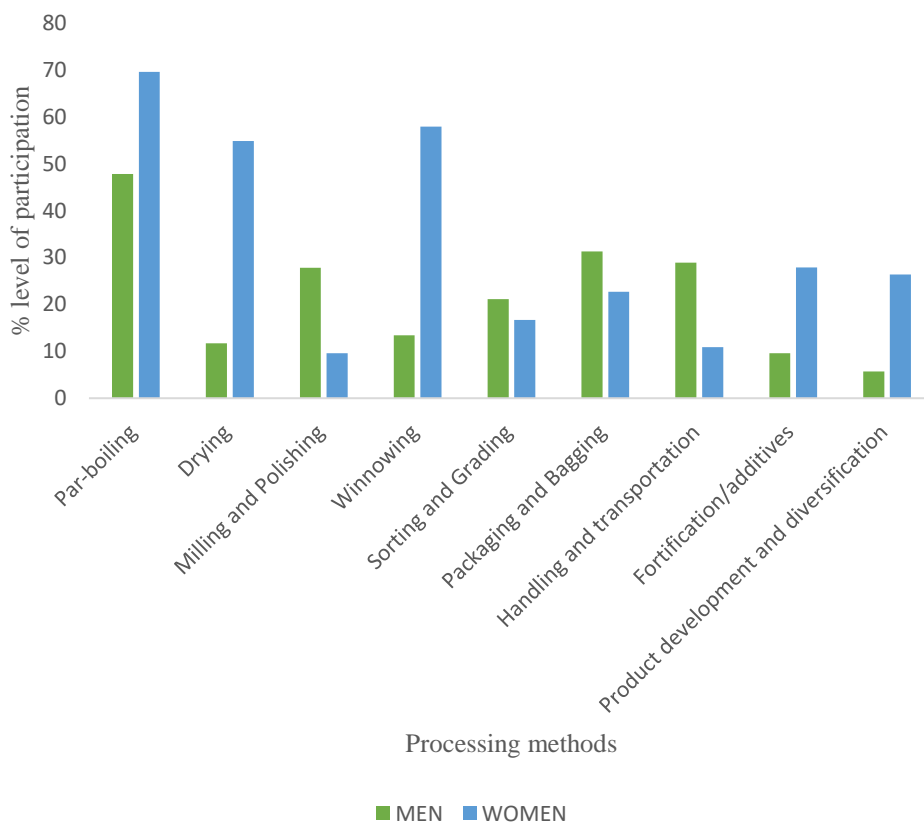


Figure 1: Men and women in different rice processing operations

\*Multiple responses

## 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 imply 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 the 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 productive resources. The finding agrees with Bashir *et al.* (2013) who reported high awareness of improved farming technologies among farming households. However, as noted by Auta *et al.* (2012) women had very limited access to improved technologies and reproductive resources.

Table 3: Distribution of respondents based on awareness of rice processing technologies

Rice Processing Technologies	Awareness and ranking of Processing Technologies			
	Men(n=87)		Women(n=63)	
	Frequency	Rank	Frequency	Rank
Rice milling/grinding machines	27	3	24	4
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
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
Flash drier	14	11	15	11
	*219			

\*Multiple responses; Source: field Survey, 2017

## Constraints Affecting Rice Processing Activities

The important constraints to rice processing and its value chain activities in the study area are presented in Table 4. The results 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 could be due to the fact that majority of women in the rural areas sourced capitals for starting agro-businesses through personal savings (Adam and Bidoli, 2017).

Table 4: Constraints to 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	42	48.7	1
Lack of processing skill centres	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

## CONCLUSION

Both men and women participated in the rice processing value chain activities in the ATASP-1 project in the state. There was high aware of improved rice processing technologies that will benefit them, however, most of them lack access to this 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.

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. ATASP-1 should provide female skill acquisition centres in each of the ATASP-1 LGAs. In order to enhance processing skills in rice value addition and fortification among the beneficiaries, there should be regular trainings and re-trainings.

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