An Assessment of Women's Participation in Rice Production in Lavun Local Government Area of Niger State, Nigeria

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Abstract

The study assessed women's participation in rice production in Lavun LGA of Niger state. Primary data were collected from the farmers with the aid of questionnaire and interview schedule. Fifty respondents were randomly selected from 5 villages and data collected were analysed using descriptive statistics and regression analysis. The results indicated that women are involved in all rice production activities with rice processing ranking as first while weeding ranked as ninth. Findings also revealed that husbands/ relatives (52%) and families (56%) are the major sources of farm land and labour to the respondents respectively. The respondents identified processing, storage and marketing as their major areas of training needs. Further analysis shows that labour, purchased inputs and extension contact had positive and significant (P< 0.05) relationship with rice output. Based on the findings, it was suggested that more extension services should be rendered. Furthermore, the paper drew attention to the need to provide more purchased inputs to women rice farmers, in order to achieve the much needed increase in rice output and ensure food security as well as poverty alleviation in the area and nation at large.

INTRODUCTION

Rice is a staple food in many countries of Africa and constitutes a major part of the diet in many countries. Over the past decades, rice demand has been increasing steadily and its importance is evident given the important place rice occupies in the strategic food security planning policies of many countries. With the exception of a few countries which have attained self-sufficiency in rice production, rice demand exceeds production in most countries and large quantities of rice are imported to meet demand at huge expense in terms of hard currency (Imolehin, 2000). Africa's inability to produce rice to self-sufficiency levels is indicative of the presence of major constraints in the rice industry requiring urgent attention (Central Bank of Nigeria [CBN],1999).

The bulk of rice production is done by the small-scale producers who are mainly in rural areas and operate under limited resources base. In this situation, the aim of improving rice production may be difficult to attain. Increased rice production requires massive investment in improving agricultural technologies associated with rice production (Tsado *et al*, 2000) .Such investment is expected to raise the productivity and income of the farmers as well as make rice sufficiently available for the rapidly growing number of the populace. For several small-scale farmers with low productivity and income, raising adequate resources to adopt improved agricultural technologies is often difficult especially for women farmers (Hamidu, 2001).

Women are known to be greatly involved in the production of rice, but they are confronted with problems of acquiring inputs and learning new technologies, techniques, skills and practices because of socio-economic and cultural barriers (Imolehin,2000). This situation is further worsened by the present economic downturn which shifts most responsibilities to women. However, with the present global food crisis, poverty and over-population, the significant role of women in rice production can no longer be overlooked and its implications in academic research and policy making can not be over emphasized. The specific objectives of the study were to:

(i)   determine the activities of women in rice production;

(ii)   identify type of resources used by women rice farmers in the area;

(iii)   determine the effect of inputs on rice output of women farmers in the study area and

(iv)   identify the training needs of women rice farmers in the area.

METHODOLOGY

The study was carried out in Lavun L.G A of Niger State. The local government area is located in Guinea Savanna ecological zone of Nigeria .The period of the rains lasts between April–October with annual rainfall varying from 1600mm in the south to 1100mm in the north and the average monthly temperature ranged from 23°C to 29°C.Farming is the primary occupation of the people. Among the rain-fed crops produced in the area include rice, sorghum, maize, millet, yam, beans and groundnut.

(Niger State Government Diary [NSGD], 2003)

Simple random sampling technique was used in selecting five villages from a list of eight villages known for rice production in the local government area. The villages selected are Boku, Manbe, Jima, Busu and Vunchi. In each village, 10 women rice farmers were randomly sampled from the sampling frame established with the assistance of the village heads. In all, 50 respondents were selected. Data were collected from the respondents with the aid of questionnaire and interview schedule in 2007.Data were collected on activities of women in rice production, as well as on inputs used and areas of training needs.

The data collected were analysed using descriptive statistics such as frequencies and percentages. These were used in achieving objectives one, two, three and five while regression analysis was employed to determine the relationship between the inputs and output (objective four). The multiple regression analysis was implicitly specified as:

$Y = f (X_1, X_2, X_3, X_4 U)$

Where:

Y= Rice output (kg)

X_1 = Labour input (mandays)

X_2 = Value of purchased inputs (naira)

$X_3 =$ Farm size (ha)

X_4 = Extension contact (number)

U = Error term.

The four functional forms were expressed in the explicit form as:

Linear: $Y = b_o + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + U$

Semi-Log: $Y = \text{Log } b_o + b_1 \text{ Log } X_1 + b_2 \text{ Log } X_2 + b_3 \text{ Log } X_3 + b_4 \text{ Log } X_4 + U$

Exponential: $\text{Log } Y = b_o + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + U$

Cobb-Douglas: $\text{Log } Y = \text{Log } b_o + b_1 \text{ Log } X_1 + b_2 \text{ Log } X_2 + b_3 \text{ Log } X_3 + b_4 \text{ Log } X_4 + \text{Log } U$

Where:

b_o or $\text{Log } b_o$ is the intercept and b_1- b_4 are the regression coefficients. While X_1-X_4 are as previously defined.

RESULTS AND DISCUSSION

Activities of Women in Rice Production

Table 1shows that processing ranked first as a major activity of women in rice production as indicated by all the respondents (100%).However, because of difficulties of gaining access to modern processing machines as a result of its high cost, some of the respondents revealed that some quantities of rice are sold unprocessed while some women adhered to the traditional method of processing in which rice is parboiled to soften the husk. After parboiling, rice is laid out on cemented ground floor to dry and followed by threshing. Milling is undertaken by pounding in a mortar, which often breaks the grains, thereby reducing the market value of the rice. The above situation suggests the need for development of more processing technologies that will be affordable by rural women who process the bulk of rice produce in Nigeria.

Marketing was second with 92% response; this was followed by storage (76%), planting (58%), pest control (34%), harvesting (30%), land clearing (26%) and fertilizer application (22%). Weeding activity was the least in the ranking with 16% response.

TABLE 1: Activities of women in rice production (n=50)

Activities	Frequency	Percentage
Land clearing	13	26.00[7]
Planting	29	58.00[4]
Weeding	8	16.00[9]
Fertilizer application	11	22.00[8]
Pest control	17	34.00[5]
Harvesting	15	30.00[6]
Processing	50	100.00[1]
Storage	38	76.00[3]
Marketing	46	92.00[2]

Source: Field survey, 2007

Note: Superscripts 1- 9 are rankings of activities

Land Acquisition

Findings in Table 2 revealed that 52% of the respondents acquired their lands through husbands and relatives. The respondents further reported that land acquisition through husbands and male relatives is easier. This may be attributed to the fact that in most Nigerian societies, the male has greater access to common resources of production (land inclusive) over the women. In a related study of constraints by women farmers, Bzugu (1995) reported that because of Islamic beliefs, men are considered the head of households and therefore they dominate the family decisions with regards to land acquisition and utilization. Inherited lands were reported by 20%, while 14% of the respondents used community lands. Only 8% indicated purchasing of lands for farming.

TABLE 2: Farm land acquisition by the respondents

Sources of farm land	Frequency	Percentage
Inherited	10	20.00
Purchased	4	8.00
Husband/relatives	26	52.00
Rented	3	6.00
Community owned	7	14.00

Source: Field survey, 2007

Type of Labour Used

Result in Table 3 revealed that family labour (56%) was the most prevalent type of labour used by the respondents. However, a combination of family and hired labour also accounted for over 10% of labour used by the women rice farmers. The respondents indicated preference for family labour because it was readily available and cheaper even at the peak of production season. Other respondents indicated not needing hired labour considering the small size of land they cultivated while others could not afford paying for the wages. In fact some respondents revealed that labour constraints at times forced them to limit their farm sizes and hence, the production volume. In a similar study, Ndanitsa (2005) also submitted that greater proportion of labour requirement for rice production was provided by family members of the farmers, the author further reported that hired labour was not utilized by many farmers.

TABLE 3: Types of labour used by the respondents

Type of labour	Frequency	Percentage
Family labour	28	56.00
Hired labour	9	18.00
Communal labour	3	6.00
Family and hired labour	6	12.00
Family and communal labour	4	8.00

Source: Field survey, 2007

Training Needs of Women Rice Farmers

Table 4 showed the training needs of respondents in descending order starting from processing (92%), storage (84%), marketing (70%), pest control (44%), planting (36%), fertilizer application (26%) and harvesting (14%). The first three identified areas of training needs i.e. processing, storage and marketing are areas that relate to financial benefits which should be a concern of every farmer who is interested in maximizing profit. As such, respondents need to be trained on processing and storage to enable them produce good quality grains that will meet buyers needs. The respondents also need to be educated on means of marketing for maximum profit. The other areas of training needs are pest control, planting and fertilizer application to ensure good crop take off, proper growth and yield. Thus, addressing all these areas of concern will serve as basis for respondent's continuous production of rice in the area.

TABLE 4: Training needs of the respondents

Areas of training	Frequency	Percentage
Land clearing	-	-
Planting	18	36.00
Weeding	-	-
Fertilizer application	13	26.00
Pest control	22	44.00
Harvesting	7	14.00
Processing	46	92.00
Storage	42	84.00
Marketing	35	70.00

Source: Field survey, 2007

* Multiple responses

Regression analysis

Rice output in kilogram (Y) was regressed against the explanatory variables of labour input in man-days (X_1), value of purchased inputs in naira (X_2), farm size in hectares (X_3), extension contact in number (X_4) and the random error term (U). From the four functional forms tried, linear function was selected as the lead equation because of its fitness criteria. Apart from the fact that it has a relatively higher R^2 value, it also has three significant variables and expected signs of regression coefficients. The result of the lead equation is presented in Table 5. From the lead equation result, labour, purchased inputs and extension contacts were significant ($P < 0.05$). Furthermore, labour, purchased inputs and extension contacts had a positive relationship with rice output, while farm size did not affect rice output significantly. Therefore, the result suggests that labour, other purchased inputs and extension services explained 57% variation in rice yield of women farmers in the study area. The result implies that an increase in labour and other purchased inputs will result in additional increase in rice output of women rice farmers in the area. The result also shows that it is more likely that farmers' output will increase if the number of extension contacts is increased. Thus, labour, purchased inputs and extension services are important variables that should be considered in promoting rice production in the area, especially among women.

TABLE 5: Regression results for effect of inputs on rice output

Variables	Coefficients	Standard error	t-value
Constant	46.763	6.190	7.555
X_1	.417	.125	3.335
X_2	3.894	1.317	2.958
X_3	.726	.386	1.881^{ns}
X_4	1.792	.874	2.050

Std error = 9.91059
R^2 = 0.57
F = 9.707**
** Significant at $P<0.01$ * Significant at $P<0.05$ ns Not significant

CONCLUSION

The result of the study revealed that women rice farmers are involved in all activities of rice production ranging from land clearing to processing and storage. Husbands and relatives were the major sources of land available to the respondents, while family members were the main sources of labour at the disposal of women farmers. Respondents perceived considerable need for training in some specific areas (processing, storage and marketing).Labour, purchased inputs and extension contact were the factors influencing rice output among women farmers in the area.

RECOMMENDATIONS

Advocacy campaign should be carried out in favour of women to remove traditional restrictions that limit their access to land. Furthermore, more purchased inputs should be allocated to women farmers while adequate extension services should be rendered to them in order to achieve the much needed increase in output and ensure food security and alleviate poverty.

In other to reduce the problem of labour which limits the farm size of some of the respondents, tractor hiring services for only women farmers is suggested. To facilitate this, women should be encouraged to form viable cooperative associations through which the services could be made available.

All the areas of training needs identified by the respondents should be adequately attended to with special emphasis on rice processing and storage. This will improve women farmer's technical competencies in processing rice of high qualities that will meet the preference of the consumers.

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