CAPACITY BUILDING NEEDS OF SMALL-SCALE RICE FARMING FAMILIES IN AGRICULTURAL ZONE 1 OF NIGER STATE, NIGERIA

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ABSTRACT

The study accessed the capacity building needs of small-scale rice farming families in Agricultural Zone 1 of Niger State, Nigeria. The specific objectives described the socio-economic characteristics of rice farming families; their capacity building needs and the factors influencing it. Multi-stage sampling procedure was used to select 120 respondents on which structured questionnaire was administered. Data collected were analyzed with descriptive and inferential statistics. The result obtained revealed that 69.2% of the respondents were males, 70% were married, 80% had formal education and 84.2% had a moderate household size of about 1 – 10 persons. The respondents were still in their active age with mean age of 42 years. The major capacity building needs identified by the respondents were rice pest control management (79.2%), rice post-harvest management (78.3%), rice processing technology (75.8%) and rice planting technologies (68.3%) ranked 1st, 2nd, 3rd and 4th respectively among others. In terms of factors influencing the capacity building needs of the respondents, Tobit regression estimates revealed that farm size (8.24, $p<0.01$), education (4.71, $p<0.01$), cooperative (1.84, $p<0.10$) and availability of projects (2.63, $p<0.01$) positively influences the capacity building needs of the respondents, while age (-1.83, $p<0.01$) negatively influences the respondents' capacity building needs. Thus, the respondents were in need of technologies that could enhance their capacity in rice production. It was therefore recommended that relevant stakeholders should partner with Government and Non-Governmental Organizations to establish project(s) that will cater for the capacity building needs of the rice farming families in the study area.

Keywords: Capacity building, needs, small-scale, rice farming families.

INTRODUCTION

Rice is a staple food crop that is widely consumed in the world including Nigeria (Food and Agriculture Organization (FAO), 2012). It is one of the major cereals widely grown for food in Nigeria, particularly in the study area. FAOSTAT (2015) reported that rice is in high demand in Nigeria with the local production of rice estimated to be around 3 million metric tonnes. However, the overall demand for rice is about 5 million metric tonnes which is higher than the local production, thus the need for rice importation of about 2 million metric tonnes to meet up with the deficit. According to Ibrahim and Isiaku (2013), Nigeria has the capacity to be a major exporter of rice in a very short time, but this is only possible if farmers produce a product that competes with from other part of the world.

Meanwhile, capacity building is a concept that has different meanings for different people, but in general relates to enhancing or strengthening a person's or organization's capacity to achieve their goals (Viengxay, 2010). It entails building-up of capabilities. Owona *et al.* (2010) defined capacity building as skill, knowledge and attitude an individual requires in order to overcome problems and avoid creating problems. Hence, capacity building is seen as the process of acquiring technical knowledge and training in the area of rice production, processing and marketing. Ibrahim and Isiaku (2013) asserted that, it is capacity building that will help farmers to boost rice production with a view of attaining the objective of Government policy to stop rice importation.

Capacity building training focuses on increasing an individual and organization's abilities to perform core functions, solve problems, and objectively deal with developmental needs. Umar *et al.* (2015) reported that farmers' capacity building needs encompasses technical knowledge, infrastructural facilities and climate change adaptation strategies for sustainable production, processing and marketing. Nigeria's rice sub-sector is dominated by weak and inefficient producer-market linkages due to lack of production, technical know-how, poor infrastructure including lack of improved processing facilities, low rice productivity, poor post–harvest handling and storage, expensive and poor access to inputs such as high quality seed, fertilizer, and crop protection products.

It is worthy of note that most production technology developed by the research institutes has not been fully utilized because majority of the farmers lack the capacity which is a serious challenge. It was as a result of the aforementioned, this study was conceived to help examine the capacity building needs of rice farmers in Niger State, hence the following objectives which are to: describe the socio-economic characteristics of the rice farmers; identify their capacity building needs and determine the factors influencing their capacity building needs in the study area.

METHODOLOGY

This study was conducted in Agricultural Zone I of Niger State, Nigeria. The State is located between Latitude 8º 20′ North and Longitude 38º 30′ East of the equator. It has a population of 3,950,249 people and about 8.6 million hectares of land mass representing 9.3% of the total area of the country (NPC, 2006). However, the projected population as at 2019 using 3.2% growth rate was 5,960,112 people. The State experiences distinct dry and wet seasons with annual rainfall varying from 1,100mm in the Northern part to 1,600mm in the Southern part. The Temperature ranges from 23ºC to 37ºC (Niger State Agricultural Mechanization and Development Authority (NAMDA), 2018). The major occupation of the people is farming (crop and livestock production), while others engaged in vocations such as white collar jobs, manufacturing, business, production of crafts and arts.

Multi-stage sampling procedure was adopted. First stage involved random sampling of 2 LGAs from Agricultural Zone I out of 8 LGAs. Second stage involved random selection of 3 communities from each of the LGAs selected to get 6 communities. In the third, 20 rice farming families were randomly selected from each of the communities to get of 120 respondents. Primary data were collected using structured questionnaire, while the data collected were analyzed using descriptive (frequency counts, percentage and mean) and inferential (Tobit regression model) statistics.

RESULTS AND DISCUSSION

Socioeconomic characteristics

The results of some of the socio-economic characteristics of the respondents as presented in Table 1 revealed that more than half (54.1%) of the respondents were between the age of 26 – 45 years with mean age of 42 years, implying that the respondents were still in their active or productive age where they could actively carry out rice production. This agrees with the findings of Omoare and Oyediran (2017) which reported that the average age of the rice farmers in their study area is 42 years. Majority (69.2%) of the respondents were male, while the female farmers account for 30.8%. This implies that rice production is dominated by males which could be due to rigorous and tedious nature of rice farming. Also, majority (70.0%) of the respondents were married implying that married people were involved in rice farming activities in the study area to meet food demand of their household. This agrees with the findings of Afolami *et al.* (2012) who reported that majority of their respondent in rice production were married.

Furthermore, majority (84.2%) of the respondents had household size of between 1 – 10 persons with a mean household size of 7 persons which implies that majority of the respondents had a relatively large household size, while 80.0% of the respondents had formal education (primary, secondary and tertiary education) which implies that the respondents were literate and could interact to generate new ideas or participate in capacity building to boost rice production. This agrees with the findings of Ayodele (2016) who reported that majority of their respondents had formal education. In terms of farming experience, majority (90.2%) of the respondents had a farming experience between 6 – 15 years with a mean farming experience of the respondents was 16 years. This implies that, the respondents were experienced in rice production.

Table 1: Distribution of respondents based on their socio-economic characteristics (n=120)

Descriptions	Frequency	Percent (%)	Mean
Age (years)			
< 26	13	10.8	42
26 – 45	65	56.2	
> 45	42	35.0	
Gender			
Male	83	69.2	
Female	37	30.8	
Marital Status			
Single	19	15.8	
Married	84	70.0	
Divorced	6	5.0	
Widowed	11	9.2	
Household size (number)			
1 – 5	48	40.0	7
6 – 10	53	44.2	
> 10	19	15.8	
Education Status			
Primary	33	27.5	13
Secondary	41	34.2	
Tertiary	22	18.3	
Farming experience (years)			
1 – 5	66	9.2	16
6 – 15	56	46.7	
> 15	53	44.3	

Source: Field Survey, 2018

Capacity building needs of the respondents

Capacity building needs of the respondents in rice production as presented in Table 2 revealed that majority (79.2%) of the respondents required capacity building on pest control management ranked 1st among the capacity building needs. This could be due to the fact that rice grains need to be taken care of against pest and diseases, as infected rice grains will lead to low yield and income to the rice farmers. This is followed by 78.3% of the respondents who required capacity building training on post-harvest management ranked 2nd implying that the rice farmers need to know how to handle rice output properly after harvesting to enhance increase in the quality, income and returns of rice farmers. Furthermore, 75.8% of the respondents required capacity building on rice processing technology ranked 3rd and implies that rice needs to be processed after harvesting which encompasses threshing, winnowing, drying and bagging to reduce losses and enhanced income. This corroborate with the findings of Agbo and Nongugwa (2017) who reported that capacity building needs of the farmers in their study area comprises production, processing and marketing for sustainable food security.

Table 2: Capacity building training needs of the respondents in rice production

Capacity building needs	Frequency	Percentage	Ranking
Pest control management	95	79.2	1st
Post-harvest management	94	78.3	2nd
Rice processing technology	91	75.8	3rd
Planting technologies	82	68.3	4th
Weed control management	81	67.5	5th
Seed management	75	62,5	6th
Weather forecast	74	61.7	7th
Timely planting	68	56.7	8th
Availability of new varieties	66	55.0	9th
Fertilizer/chemical application	41	34.2	10th
Method of harvesting	37	30.8	11th

Source: Field Survey, 2018

Factors influencing the capacity building needs of the respondents

Tobit regression estimates on the factors influencing the capacity building needs of the rice farmers are presented in Table 3. The result revealed chi-squared value of 225.74 at $p<0.01$ implying goodness of fit of the model, while Pseudo R^2 value of 0.5970 which implies that about 60% variation in the dependable variables were explained by the independent variables included in the model. Out of the nine variables specified in the model, five variables (age, education, farm size, cooperative membership and access to projects) were statistically significant at $p<0.01$ and $p<0.10$, respectively. The age of the respondents (-1.83) was negative and statistically significant at $p<0.10$ implying that as the farmer grows older, their need for capacity building on rice production decreases. This agrees with the findings of abdullahi *et al.* (2015) who reported that age of the farmers has inverse relationship with their participation in IFAD-community project. Also, educational status of the respondents (4.71) was positive and statistically significant at $p<0.01$ implying that level of education has a direct relationship with capacity building needs of the respondents. This could be because education exposes individual through learning as accrued from capacity building training. Furthermore, the farm size of the respondents (8.24) was positive and statistically significant at $p<0.01$ implying that farm size has a direct relationship with capacity building needs of the respondents. The higher the farm size, the more likely to participate in capacity building training to derived the benefits attached to such training.

Table 3: Tobit estimates on factors influencing capacity building needs of the respondents

Variable	Coefficient	Standard error	t – value
Constant	0.2546	0.0375	6.79***
Age	-0.0018	0.0010	-1.83*
Marital status	0.0145	0.0119	1.22
Education	0.0124	0.0026	4.71***
Farming experience	0.0021	0.0015	1.44
Farm size	0.0584	0.0071	8.24***
Credit	-0.0171	0.0711	-0.24
Extension visit	-0.0062	0.0101	-0.61
Cooperative membership	0.0278	0.0164	1.70*
Access to projects	0.0353	0.0134	2.63***
Sigma	0.0513	0.0033	
Pseudo R-squared	0.5970		
Log likelihood	183.55		
Chi-squared statistics	225.74***		

Source: Field Survey, 2018

Cooperative membership of the respondents (1.70) was positive and statistically significant at $p<0.10$ implying that, the more the respondents are into cooperative societies, the more likely is their need for capacity building training in rice production. Also, access to projects (2.63) was positive and statistically significant at $p<0.01$ implying that, access to projects on capacity building training could influence the needs of the respondents to participate in such project for the benefits.

CONCLUSION AND RECOMMENDATIONS

This study was concluded that the respondents in the study area were in their mid-age and active in rice production. Capacity building training on pest control management ranked first among the capacity building needs of the respondents in rice production, while factors such as age, education, farm size, cooperative and access to projects influences respondents capacity building needs. It was therefore recommended that, Government and relevant stakeholder should partner to establish project(s) that will cater for the identified capacity building training needs of the rice farmers. Financial institutions should to provide flexible micro-credits that will help boost rice production especially in rural areas. A well-equipped modern rice processing factory/industry should be established to enhance the processing of rice that compete with imported rice.

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