RESEARCH ARTICLE

FAMERS' PERCEPTION OF THE CONSTRAINTS AFFECTING THEIR LIVELIHOOD STRATEGIES IN ADAMAWA STATE, NIGERIA

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Abstract: This study examines famers' perception of the constraints affecting their livelihood strategies in Adamawa State, Nigeria. The objective of the study was to examine the socio-economic characteristics of food crop famers and to analyze constraints that affect their livelihood strategies. A multistage random sampling technique was used to select 150 food crop farmers from 8 villages of four local government areas each from the four Agricultural Development Zone of the State. Structured questionnaire survey was used to obtained data from the respondents in the study area. Descriptive statistics and Garret Ranking Technique was used to analyze the data obtained from the field survey. The study shows that majority 68.7% were full time farmers with average mean of 47 years of age and 30 years of farming experience. Majority (85.3%) was male farmers and only 15.3% of the respondent had no formal education with average land holding of 3.4 hectares. The result from the Garret Ranking Technique reveals that the most severe problem in the study area in term of financial constraints is inadequate access to credit facilities, lack of good roads was ranked the highest as infrastructural constraints and poor land fertility as the most severe among other production constraints. The study recommended intensive efforts of research toward reclamation of land fertility for sustainable agriculture, provision of affordable credit facilities and infrastructural facilities among other suggestions in the study.

Keywords: Farmers'Perception, Constraints, Livelihood, Strategies, Adamawa, Nigeria

INTRODUCTION

Agriculture constitutes a significant sector in every economy and it contribute immensely to national wealth. Agriculture occupies a significant link in food security, poverty alleviation and human development chain and also provides employment for more than 70% of the population (Fabusoro and Agbonlahor, 2002)

Rural households throughout the developing world depend on agriculture and other natural, non-cultivated resources to meet subsistence needs and generate livelihood. The importance of agricultural growth to alleviating poverty and increase livelihood of household cannot be overemphasized. According to Mcgrue (2013) the role of agricultural growth in reducing poverty is likely greater than its role in driving overall economic growth, especially in the poorest countries. Indeed, most of the worlds extremely poor rely on agriculture and its related activities as critical contributors of their livelihoods. Hence, the need to enhanced agricultural growth that involves smallholders and generates employment (especially of the unskilled variety) for the poor. Of course, in addition to providing important economic growth, increased agricultural production and productivity are fundamental to meeting the global demand for food which is expected to have increased by 60% in 2050 (WHO, 2012).

Rural households engage in diverse set of activities to generate income. According to Barret *et al* (2005) that very few people collect all their income from one source of income, and rationally never hold their wealth in only one single asset or use their assets in just one activity which makes diversification the norm. Livelihood diversification can be seen as an attempt by individuals and households to find new ways to raise incomes and reduce environmental risk. According to Ellis (1998) that livelihood diversification is the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living.

Agricultural production strategies, apart from shedding light on efficient utilization of farms resources makes possible the charting of courses of action that helps in the attainment of maximum net returns and increased farm incomes. However, the task of livelihood strategies is rendered more complex because there are many ways of organizing production within individual enterprises, so that the balance between different resources inputs can be varied (Barnard and Nix, 1988). It follows therefore, that the achievement of the various livelihood strategies is dependent on the way resources are used within individual enterprises than the way they are allocated between enterprises.

An understanding of the significance and nature of agricultural activities (especially its contribution to rural household income or resilience) is of utmost importance for policy makers in the design of potent agricultural and rural development policies. Further, the rising incidence of low level of welfare of rural households in Nigeria, that remains unabated despite various policy reforms undertaken in the various ways, requires a deeper understanding of the problem and the need to proffer solutions to the problem through approaches that place priority on the poor

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and ways on which rural households through diversification can maintain their livelihood.

Rural poor people struggle to maintain livelihood by developing different strategies of livelihood, whether they succeed in this struggle or not it is crucial that their sustainability or vulnerability of their livelihood is determines. A livelihood system could be sustainable if and if it can cope with and recover from the risks and maintain or enhance its capabilities and assets without undermining the natural resource base. It is in view of the above issues that study on the struggles of livelihood strategy by the rural people is necessary to understanding the contribution of making sustainable livelihood more especially in the wake of varying risks that possess threat to rural livelihood. Hence, the attempt to analyzethe constraints that impede on livelihood strategies and dependence on agriculture of farmers in Nigeria. The study will attempt to address the following objectives:

i. To examine the farmer's socioeconomic characteristics in the study area.
ii. To examine the constraints affecting farmers livelihood strategy in the study area.

METHODOLOGY

Description of the study area

The study was conducted in Adamawa state Nigeria. Adamawa State is located in the North East part of Nigeria between latitude 7.0^0 N and 11.0^0N of the equator and longitude 11.0^0E and 14.0^0E of the Greenwich meridian (Adaebayo, 1999). The State was created in 1991 from the defunct Gongola State. The state shares common boundary with Taraba State in the south and west, Gombe State in the North West and Borno State in the North. Adamawa State has an international boundary with Cameroun Republic along its eastern border. The State covers a land area of about 38,741 square kilometers and is divided into 21 Local Government Areas (LGA). The state has population of 3,161,374 people comprising of 1,580,333 males and 1,581,041 females (NPC, 2006). As opposed to a national annual population growth rate of 3.2%, the population of Adamawa State is growing at 2.8% per annum (Adamawa State MDGs report, 2006).

The State has a tropical climate marked by dry and rainy seasons. The rainy season commences in April and ends in late October. The wettest month is August and September. The mean annual rainfall pattern shows that the amounts range from 700mm in the North-West part to 1600mm in the southern part (Adebayo, 1999). The temperature characteristic in the state is typical of the West Africa Savannah. The climate is characterized by high temperature almost throughout the year due to high solar radiation which is relatively evenly distributed throughout the year. Maximum temperature in the state can reach 40^0C particularly in April, while minimum temperature can be as low as 18^0C between December and January. Mean monthly temperatures in the State ranges from 26.7 ^{0}C in the south to 27.8 ^{0}C in the north eastern part of the state. The major economic activity of the inhabitants is agriculture (farming, fishing and cattle rearing).

Sampling procedure and Data Collection

Adamawa State is made up of 21 local Government areas (LGAs)) and is divided into four agricultural zones by the Adamawa State Agricultural Development Programme (AD.ADP) for administrative convenience namely the south west zone, the central zone, the North West zone and north east zone . Multi-stage random sampling technique was employed in the selection of respondents in these zones. In the first stage one local government area were randomly selected in each of the AD.ADP zones, to give a total of four sampled local government areas. In the second stage two villages were randomly sampled in each of the selected local government areas to give a total of 8 sampled villages. The third stage sampling involved the random selection of 150 farmers in the 8 villages.

Primary data was used for the study, which was obtained through the administration of questionnaire to farmers in the sampled villages with the assistance of trained personnel. The data collected was for 2016 and 2017 farming seasons.

Methods of Data Analysis

Descriptive statistics (frequencies, percentages and mean) was used to achieve objective one. Garret ranking technique was used to analyzed the constraints identified by the farmers in the study area. The formula is

Per cent position = $100(Rij – 0.5)/Nj$

Where Rij = Rank given for the ith variable by the jth respondent

Nj = Number of variables ranked by the jth respondent.

RESULT AND DISCUSSION

The distribution of the respondents by gender is presented in Table 1. It shows that majority(85.3%) of the respondents were males, while females constituted only 14.7%, which showed that food crop production in the study area was mostly undertaken by the male gender. The dominance of the male in the food crop production activities may be due to the fact that men are the ones saddled with the responsibility of taking care of the family and the low percentage of women participating in farming activities may also be explained by socio-cultural factors affecting women.

Table 1 shows the distribution of farmers age in the study area and it reveal that majority 78.6% of the respondents were between the ages of 31-60 years of age, while 8.0% and 13.3% were between the ages of 15-30 and >60 years respectively. The mean age of the respondents was found to be 47.34 years, an

indication of significant variation in age of the respondents who are relatively young and physically active. This has direct bearing on the availability of able-bodied manpower for primary production. Moreover, age influences the ability to seek and obtain off-farm jobs and income, which could increase farmers' income and ultimately their production capacity. Fasasi (2007) reported a significant relationship between farmers' age and efficiency in agricultural production where younger farmers have the tendency to operate more efficiently than older farmers.

The distribution of the respondents by marital status is presented in Table 1. The table revealed that about 76.70% of the respondents were married, while about 12.0% were singles. Widows and the Divorced constituted 8.0% and 3.3% respectively. The implication of marital status on agricultural production can be explained in terms of the supply of agricultural family labour. The supply of family labour would be more where the household heads are married.

Table1 also reveals that majority 52.0% of the respondents have household size between 1-5, while 41.3% and 6.7% have household size between 6-10 and above 10 respectively. The mean household size is 5.6. The number of persons in households is very important in determining labour availability for farm-work. It also affects household income and its food requirements. Table1shows the educational level of the respondents, the result shows that majority 84.7% had formal education, while only 15.3% had no formal education. This study reveals that literacy level is high among the respondents and this could have implication on agricultural production in the area. Education affects productivity through a choice of better inputs and output, and through a better utilization of existing inputs. Adoption of agricultural innovations is also easier and faster among the educated farmers than the uneducated farmers as reported by Amaza *et al*. (2006)

Majority 68.7% of the respondents indicated that farming is their main source of livelihood as it is shown in Table1, while only 31.3% of the respondents had other occupation other than farming as their main source of income.

Table1 also reveals the farming experience of the respondents in the study area with majority 40% and 40% having experience between 20-30 and above 30 respectively, while 18.7% and 4.7% had experience between 11-20 and 1-10 respectively. The mean years of farming experience is about 30.4. This indicates that most of the respondents were well experienced in food crop production.

Table1 reveals the farm size of the respondent with majority 31.3% had farm land of 2.6-3.5, 28.0%, 27.3% and 13.3% had farm size between 3.6-4.5, 1-2.5 and above 4.5 hectares of land respectively. The mean farm size of the respondents is about 3.4 hectares. This reveals that farmers in the study area are mainly small scale farmers. According to Awoke and Okorji (2005), small scale farmers are farmers who cultivate between 0.1 and 5.99 hectares and produce on subsistence level.

The analysis of constraints faced by the respondents in the study area in achieving their livelihood strategies is presented in tables 2, 3,4, 5, 6 and 7. Food crops farmers were asked to rank according to severity the problem they face as the struggle to achieve better livelihood. The result from table 3 reveals that inadequate access to credit with average score of 57.27 scored the highest problem faced by the respondents inthe study area. High interest rate with average score of 51.83 is ranked second, while lack of collateral to secure loan had the average score of 45.64 was ranked third by the respondents. The importance of finance in agricultural production cannot be overemphasize.

Table 5 shows the percentage position and their corresponding Garret average score of the infrastructural constraints and the correspondent rank as indicated by the respondents in the study area. It is observed from the table 5 that lack of good roads 71.74 has been ranked as the first infrastructural constraints faced by the respondents, while poor storage facilities 55.5, lack of mobility 47.59, absence of marketing network for farm produce 44.56, and lack of irrigation facility ranked 2^{nd}, 3^{rd}, 4^{th} and 5^{th}repectively. Infrastructural facilities is essential for improve agricultural activities.

Production constraints and respondents ranking is presented in Tables 6 and 7. Table 7 depicts that poor land facility with average score of 66.80 ranked first as the highest problem faced by the respondents in the study area. Inadequate farm credit with average score of 60.42, variability in amount of rainfall (56.73), inadequate research and extension support (56.15), cattle rears (54.59) were ranked as 2^{nd}, 3^{rd}, 4^{th}, and 5^{th} respectively. Other production problems include lack of good storage facilities (53.52), bird infestation (51.60), low price of food crop (51.14), shortage of labour (49.91) and disease infestation (46.88). All these problems put together if not properly manage can impede the production capabilities of farmers and of course affect their struggle for better livelihood, considering the fact that agriculture is the hope and stay of the rural populace.

Table 1. Socioeconomic Characteristic of the Respondents (N=150)

Variables	Frequency	Percentage
Age		
15-30	12	8.0
31-45	59	39.3

46-60	59	39.3
>60	20	13.3
Gender		
Male	128	85.3
Female	22	14.7
Marital Status		
Married	115	76.7
Single	18	12.0
Widow	12	8.0
Divorce	5	3.3
Household size		
1-5	78	52.0
6-10	62	41.3
>10	10	6.7
Educational Level		
Non- Formal Education	23	15.3
Primary	24	16.0
Secondary	39	26.0
Tertiary	64	42.7
Years of Experience		
1-10	7	4.7
11-20	28	18.7
21-30	60	40.0
>30	55	40.0
Farm size		
1-2.5	41	27.3
2.6-3.5	47	31.3
3.6-4.5	42	28.0
>4.5	20	13.3
Occupation		
Farming	103	68.7
Other occupation	47	31.3

Source: Field Survey, 2017

Table 2. Financial constraints and respondents total ranking

FINANCIAL CONSTRAINTS	RANKING			TOTAL
	1	2	3	
Inadequate access to credit	67	43	18	128
High interest rate charged on loan	46	44	34	124
Lack of collateral to secure loan	23	38	48	109

Table 3. Percentage Positions and their corresponding Garrett's Table values

FINANCIAL CONSTRAINTS	%POSITON	GARRET SCORE	TOTAL SCORE	AVERAGE SCORE	RANK
Inadequate access to credit	16.66667	69	7331	57.27344	1
High interest rate charged on loan	50	50	6428	51.83871	2
Lack of collateral to secure loan	83.33333	31	4975	45.6422	3

Source: Field survey, 2017.

Table 4. Infrastructural constraints and respondents total ranking

INFRASTRUCTURAL CONSTRAINTS	RANKING					TOTAL
	1	2	3	4	5	
Lack of good roads	104	19	3	4	1	131
Poor storage facilties	17	49	40	6	10	122

Lack of mobility	6	38	28	24	25	121
Absence of marketing network for farm produce	10	10	26	50	20	116
Lack of irrigation facilty	6	19	18	18	40	101

Source: Field survey, 2017.

Table 5. Percentage Positions and their corresponding Garrett's Table values

INFRASTRUCTURAL CONSTRAINTS	%POSITON	GARRET SCORE	TOTAL SCORE	AVERAGE SCORE	RANK
Lack of good roads	10	76	9398	71.74046	1
Poor storage facilties	30	61	6771	55.5	2
Lack of mobility	50	50	5759	47.59504	3
Absence of marketing network for farm produce	70	40	5170	44.56897	4
Lack of irrigation facilty	90	25	4235	41.93069	5

Source: Field survey, 2017.

Table 6. Production constraints and respondents total ranking

PRODUCTION CONSTRAINTS	RANKING											TOTAL
	1	2	3	4	5	6	7	8	9	10	11	
INADEQUATE FARM CREDIT	37	17	6	2	8	12	15	13	9	2	3	124
DISEASE INFESTATION	6	4	8	7	12	13	20	11	12	14	7	114
SHORTAGE OF LABOUR	8	12	15	10	7	14	7	15	18	11	7	124
VARIABILITY IN AMOUNT OF RAINFALL	13	23	15	16	23	6	8	4	9	6	7	130
BIRD INFESTATION	5	13	11	13	12	15	19	10	11	7	4	120
PESTS AND DISEASES	3	8	10	4	4	2	11	14	12	23	20	111
CATTLE REARERS	5	15	23	21	14	14	6	10	8	5	6	127
INADEQUATE RESEARCH & EXTENSION SUPPOERT	6	23	13	26	8	8	3	5	3	6	9	110
POOR LAND FERTILITY	52	14	15	8	14	6	3	7	5	3	1	128
LACK OF GOOD STORAGE FACILITIES	4	12	19	22	11	17	13	7	1	8	7	121
LOW PRICE OF FOOD CROP	6	20	9	13	16	8	3	6	9	5	17	112

Source: Field survey, 2017.

Table 7. Percentage Positions and their corresponding Garrett's Table values

PRODUCTION CONSTRAINTS	%POSITON	GARRET SCORE	TOTAL SCORE	AVERAGE SCORE	RANK
INADEQUATE FARM CREDIT	4.545455	83	7493	60.42742	2
DISEASE INFESTATION	13.63636	72	5345	46.88596	10
SHORTAGE OF LABOUR	22.72727	65	6189	49.91129	9
VARIABILITY IN AMOUNT OF RAINFALL	31.81818	60	7376	56.73846	3
BIRD INFESTATION	40.90909	55	6193	51.60833	7
PESTS AND DISEASES	50	50	4539	40.89189	11
CATTLE REARERS	59.09091	46	6934	54.59843	5
INADEQUATE RESEARCH & EXTENSION SUPPOERT	68.18182	41	6177	56.15455	4
POOR LAND FERTILITY	77.27273	35	8551	66.80469	1
LACK OF GOOD STORAGE FACILITIES	86.36364	28	6476	53.52066	6
LOW PRICE OF FOOD CROP	95.45455	18	5728	51.14286	8

Source: Field survey, 2017.

CONCLUSION AND RECOMMENDATIONS

This study revealed that male dominated the farming activities in the study area. Majority of the respondents are small scale farmers with production at subsistent level. The study also revealed that most of the respondents are married with experience in

farming. Majority of the respondents were educated. The constraints identified as the most severe in the study area in term of financial constraints is inadequate access to credit facilities, lack of good roads was ranked the highest as infrastructural constraints and poor land fertility as the most severe in term of production constraints among other problems.

Based on the findings of these study the following recommendations were made:

1. Government and donor agencies should put in place practical and workable policies and programs that will ensure adequate credit facilities to farmers and make these credit facilities accessible and affordable
2. Efforts be intensify on the part of government and non-governmental agencies to provide infrastructural facilities that will help in boosting livelihood of farmers.
3. Efforts on research be intensified to more especially forestall further depletion of land fertility and reclaim the fast depletion of fertility of land due to ever increasing activities on land by mankind. Furthermore adequate and timely supply of agricultural inputs is necessary for improvement of farmers' livelihood.

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