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LAND OWNERSHIP, CULTURAL PRACTICES AND CROPPING PATTERNS AMONG LOAN BENEFICIARIES IN ZAMFARA STATE, NIGERIA

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ABSTRACT

The study was conducted to find out the system of land ownership, cultural practices and cropping patterns in the Zamfara State. Multi-stage sampling technique was used in selecting 200 farmers. Data were analyzed using descriptive statistics and Chi-square. The results showed that land acquisition by the respondents was mainly through inheritance which accounted for 86% of the total respondents. Informal loan beneficiaries recorded the highest percentage (88%) under inheritance followed by 14%, purchase with 13% for rent/lease arrangement and 19% under 'others' which includes gifts and borrowed land from friends and relations. The formal loan beneficiaries recorded the highest of 84% under inheritance, 27% under purchase and 20% under lease/rentals. The results of the study revealed that 61% and 36% of the formal and informal loan beneficiaries used tractors while 43% and 50% of the groups used animal traction, respectively. An assessment of the number of farm plots owned and cultivated by both the formal and informal loan beneficiaries generally ranged between 1-9 plots with an average of 5 plots for the two groups. Analysis of the farm size revealed that majority of the respondents (75.5%) owned less than 4 hectares of farmland. The formal loan beneficiaries recorded 29% and 36% for farm size ranges of 0.1 - 2 hectares and 2.1 - 4.0 hectares, respectively. The informal loan beneficiaries recorded the highest percentage of 45 under the 0.1-2.0 followed by 41% under the range of 2.1 - 4.0 hectares. Average farm size holdings of 2.35ha and 1.08ha were established for the formal and informal loan beneficiaries, respectively. Chi square test value found to be significant at $P<0.01$ between the two groups of respondents. It was recommended that government should open more arable land and distribute to farmers at affordable prizes.

Keywords: Loan beneficiaries; Land; Inheritance and Land ownership

INTRODUCTION

It has been widely observed that a good proportion of the farmers in African societies obtained certain portion of their land through inheritance (Baba and Alhasan, 2000; ILRI, 2001). This scenario shows that land acquisition in many African societies was dominated by inheritance. Baba and Alhasan (2000) further reported that land tenure by

inheritance is the process whereby land is passed from generation to generation along the family bloodline. This process is usually responsible for land fragmentation in many African societies and thus decreasing area of land due to increase in population. This situation constitutes a serious hindrance to mechanized agriculture.

On the other hand, the cropping system practised by many farmers is mixed cropping (Ahmed *et al*., 2003). They further observed that in Zamfara State, inter-cropping is the dominant crop production system, with cereals (millet and sorghum) constituting an important component in the cropping system. According to many farmers, mixed cropping affords them an opportunity of having different crops on the farm. Adebayo and Ajayi (2001) in their study of factors affecting the practice of crop-livestock integration in the derived Savannah and rain forest zones of Nigeria observed a very high proportion of the farmers practising mixed cropping. Due to intensification of mixed cropping in the north, Norman (1974) observed that 83 % of the total cropped area was devoted to crop mixtures of cereals and legumes, and it involved mixtures of two to six crops, but two crop mixtures were predominant. Baba and Alhassan (2000) also observed that farmers grew crops in mixtures because the income realized was higher than what could be obtained under sole cropping. Farmers plant their cereals at wide spacing at the onset of rains and later plant either cowpea or groundnut. The components complement each other overtime to potentially produce higher yields. It is in view of the importance of the practice that this study intended to find out the system of land ownership, cultural practices and cropping patterns in the study area.

MATERIALS AND METHODS

Zamfara state was created from the former Sokoto state on 1st October 1996. With a land area of 38,418 square kilometers, the state is located between latitudes 10^0 40' and 13^0 40' North and longitudes 4^0 30' and 7^0 06' East. It shares boundary with Sokoto state to the North, Kebbi and Niger states to the West; Katsina state to the East and Kaduna state to the South. It has an estimated 254,411 farming families and a population of 3,259,846 (NPC, 2006). About 82% of the population live in rural areas and largely depend on agriculture for their livelihood. Majority of the families practise mixed farming. During off season the farmers get involved in other secondary occupations like trading, fishing and travelling out to cities for menial jobs (ZMSG, 2007).

The climate is marked by a single rainy and long dry seasons. The average annual rainfall ranges between 500-800mm. The rainy season is usually between April and October with the heavy rain in the months of July and August. The length of the rainy season is 4-5 months. The climate is warm tropical with temperature rising up to 40'C between March and May. The soil type is rich sandy-loam suitable for agricultural activities. The vegetation of the state is largely the Sudan savanna type (ZMSG, 2007).

Sampling Procedure and Sample Size

The study specifically focused on farmers that obtained loans from the formal and informal sources and it was carried out to find out the system of land ownership, cultural practices and cropping patterns in the Zamfara State. A multi-stage sampling technique was employed starting from the Local Government Areas, Districts and then Villages and wards. Five Local Governments were selected using simple random sampling technique. One district was also randomly selected from each of the selected Local Government Areas.

Two villages were then selected from each district making a total of ten villages. The list of all the Local Government Areas, Districts and villages were obtained from Ministry of Local Government and Chieftaincy Affairs and Zamfara Agricultural Development Project. The five selected local governments were Maradun, Bungudu, Gummi, K/Namoda and Shinkafi with Gidan Goga, Rawaiya, Gyayari, Kurya and Jangeru districts selected respectively. Malikawa and Sakkida villages were selected from Gidan Goga district; Marke and Sabon Gida from Rawayya district; Adarawa and Gudu from Gyayari district; Sakke and Balankabe from Kurya district and Baje and Bayawa from Jangeru district.

With the help of the Village Heads and Extension Workers, ten respondents were randomly selected from those that obtained loan from formal sources and informal sources making a total of twenty respondents per village. Altogether, 200 respondents were selected.

Data Collection

The data for the study were collected from both primary and secondary sources. The primary data were collected through interview schedules with the aid of structured questionnaire via cross-sectional survey. Since the majority of the farmers could neither read nor write in English language, questionnaires were administered by experienced and well-trained enumerators of the Planning, Monitoring and Evaluation Department of the Zamfara State Agricultural Development Project.

Data Analysis

The data collected were subjected to both descriptive statistics such as frequencies, percentages and Chi-square test.

The Chi-square test, derived from the following formula test is a statistical test used in determining whether there is any significant difference between the observed and expected theoretical frequencies obtained from a distribution. It is also a test of independence.

$$X^2 = \sum \frac{(O-E)^2}{E}$$

Where:-
$\sum$ = Summation sign
O = Observed Frequency (formal loan beneficiaries)
E = Expected Frequency (informal loan beneficiaries)

RESULTS AND DISCUSSION

Land ownership, Farmers' Cultural Practice and Cropping System

Irrespective of whether agricultural credit is sourced from formal or informal sources, the fact remains that the loan so obtained is supposed to influence the adoption of some basic farming practices. This will ultimately enhance production efficiency and improve the income and standard of living of the farmers. An attempt was made to assess the respondent's pattern of land acquisition, agricultural practice with particular emphasis on land preparation method, the average household farm size and cropping pattern adopted

by the farmers in the study area. The results obtained on these important aspects are presented in Table 1.

Method of land acquisition

Land resource is one of the basic agricultural input without which farming activities could not take place. Land tenure system obviously affects the farmers' adoption behavior and land improvement practice to be embarked upon. The method of land acquisition by the respondents was investigated and the result is presented in Table 1.

Table 1: Distribution of respondents according to land ownership, farmers' cultural practice and farm size.

Description	Formal beneficiaries		Informal beneficiaries		Total	
	Freq.	%	Freq.	%	Freq.	%
Land Acquisition						
Inheritance	84	84	88	88	172	86
Purchase	27	27	14	14	41	21
Rent	12	12	8	8	20	10
Lease	8	8	5	5	13	7
Others	7	7	19	19	26	13
TOTAL	138	-	134	-	272	-
$X^2 = 16.37$***						
Land Preparation Method						
Using tractor	61	61	36	36	97	48.5
Using animals traction	43	43	50	50	93	46.5
Using manual labour	38	38	52	52	90	45
TOTAL	142	-	138	-	280	-
$X^2 = 9.09^{ns}$						
Household farm size(ha)						
0.1 – 2.0	29	29	45	45	74	37
2.1 – 4.0	36	36	41	41	77	38.5
4.1 – 6.0	14	14	11	11	25	12.5
6.1 – 8.0	12	12	2	2	14	7
8.1 – above	9	9	1	1	10	5
TOTAL	100	100	100	100	200	100

$X^2 = 27.68$*** Source**:** Field Survey 2009; ***: significant (P>0.01)

Table 1 shows that land acquisition by the respondents was mainly through inheritance, which accounted for 86% of the total respondents. Informal loan beneficiaries

recorded the highest of 88% for inheritance followed by 14% for purchase with 13% for rent lease arrangement and 19% under 'others' which includes gifts and borrowed land from friends and relations. The formal loan beneficiaries recorded the highest of 84% under inheritance, 27% under purchase and 20% under lease rentals.

Although land acquisition by inheritance appeared to be the most popular among the respondents in the study area as per the outcome of the study, as corroborated by the findings of Bello (2006), the system was identified by Baba and Wando (1998) to lead to subdivision of land and consequently the fragmentation of land holdings, thereby preventing the farmers from benefiting from economics of scale. Chi-square test revealed a significant difference in terms of land acquisition between the two groups at $P<0.01$. This shows that formal loan beneficiaries have more land than non-beneficiaries, this may be due the accessibility of the former to loan facilities which enables them to acquire more land.

Methods of Land Preparation

Our rural farmers are known to be operating at subsistence level using labour intensive hand tools for land preparation. A study of the methods used by the respondents in land preparation showed a remarkable improvement in the use of modern machines. The results of the study in Table 2 revealed that 61% and 36% of the formal and informal loan beneficiaries used tractors while 43% and 50% of the groups used animal traction, respectively. The formal group seems to have more access to the use of tractors than the informal group. The respondents were found to use a combination of methods for land preparation as evidenced by the multiple response recorded. Chi- square test revealed no significant difference between the two groups in terms of land preparation methods.

Average Number of Plots and Farm Size

An assessment of the number of farm plots owned and cultivated by both the formal and informal loan beneficiaries showed that generally it ranged between 1-9 plots with an average of 5 plots for the two groups. This implied that farm holdings of the respondents are fragmented into several fields and dispersed over considerable distances. The type of land ownership in the area, which is mostly through inheritance, could be responsible for these fragmentations. Small and fragmented farms, according to FAO and GTZ (1998) have some obvious implications for credit administrators and users as dispersed locations of farmers' fields and communities with poor access roads could lead to high transaction cost for both bank officials and borrowers. High transaction cost to banks, because several supervision visits have to be made by the credit officers to determine the viability of the on farm investment before credit is availed. Similarly, borrowers also have to make several visits to the credit institution to conclude the loan processing and approval procedures which often take long time to conclude before disbursements are affected.

Farm size is an important factor in farming as it affects not only the output but also the level of inputs to be used. This obviously has implication on the amount of money required to procure the basic essential inputs. Farm size is an important determinant in the allocation of resources like basic inputs and labour, which will eventually impact on the final output and returns. The distribution of respondents according to the farm size holding was investigated and also presented in Table 1.

Analysis of the farm size revealed that the majority of the two groups of respondents (75.5%) owned less than 4 hectares of farmland. The formal loan beneficiaries recorded

29% and 36% for farm sizes range of 0.1 - 2 hectares and 2.1 - 4.0 hectares, respectively. The informal loan beneficiaries recorded the highest percentage of 45 under the 0.1 - 2.0 followed by 41% under the range 2.1 -4.0 hectares. The formal category had 9% of under the 8.1 -10.0 hectare range while the informal group recorded only 1%. Average farm size holdings of 2.35ha and 1.08ha were established for the formal and informal loan beneficiaries, respectively indicating that the former had larger average farm holding than the later. Chi square test was found to be significant at $P<0.01$ between the two groups of respondents. This shows that the formal loan beneficiaries have more land due to access to formal loan.

The average farm holding for the two groups of respondents from the foregoing is clearly low and this confirms the view of Falaki (2004) that farming activity in the study area was small-scale dominated judging from the size of respondents' holdings. He further reported that a large population of small scale farmers who accounted for over 80% of total food production in Zamfara state cultivates essentially small holdings of not more than five hectares.

Major Crops Grown and Type of Cropping System

Farmers' land holdings as earlier discussed are small and fragmented. Combination of more than one crop on the same piece of land practised by the respondents reduces the risk of total failure occasioned by drought, pest and diseases, ensures maximum land use, economizes labour and allows for the production of a wider range of crops under small scale farmers holdings (PCU, 2001).

The study examined the major crops grown in the area and the cropping patterns practised by the farmers. The results are equally presented in Table 2.

Table 2: Distribution of respondents according to cropping patterns

Cost Items for Crop Enterprise	Formal Beneficiaries			Informal Beneficiaries		
	Cost	Return	% of Total	Cost	Return	% of Total
Millet, Sorghum, Cowpea	43	43	44	44	87	43.5
Millet, Sorghum, G/Nut	25	25	34	34	59	29.5
Millet, Sorghum, G/Nut, Cowpea	9	9	8	8	17	8.5
Millet and Cowpea	5	5	4	4	9	4.5
Sorghum and Cowpea	2	2	3	3	5	2.5
Maize and Cowpea	3	3	2	2	5	2.5
Maize sole	8	8	2	2	10	5
Cotton sole	2	2	1	1	3	1.5
Rice sole	3	3	2	2	5	2.5
Total	100	100	100	100	100	100
$X^2 = 6.12^{ns}$						

Source**:** Field Survey 2009

Results of this study in Table 2 reveald that the major rainfed crops grown in the study area included Millet, Sorghum, Groundnut, Cowpea, Maize, Rice and Cotton. Most of the crops with the exception of cotton and rice are grown in various combinations. Millet, Sorghum and Cowpea was the most common enterprise combinations grown by both the formal loan beneficiaries (43%) and informal loan beneficiaries (44%), followed by Millet, Sorghum and Groundnut that recorded 25% and 34% for the formal and informal loan beneficiaries.

Of the crops grown as sole, maize was found to be grown more by the formal group (8%) compared to 2% in the informal group. Cotton and Rice were equally grown as sole but, generally below 5% respondents believe that crops grown in mixtures are more consistent with the objective of meeting their household food requirements and tendency for high return.

From the observed crop combinations, the respondents adopted cropping patterns typical of Nigeria small scale farmers. The findings of this study conform to the outcome of an annual assessment of crop production in Nigeria jointly conducted by the National Agricultural Extension and Research Liaison Service (NAERLS) and Project Coordination Unit (PCU) which revealed that crop production in mixture remains the most popular practice among farmers in Nigeria. Cereal-legume inter-crops were the predominant crop mixtures in the North-west as per the findings of NAERLS and PCU (2001). Similar findings were also reported by Okunmadewa (2001), ZMSG (2007) and Falaki (2004).

CONCLUSION

The study clearly revealed that land acquisition by the respondents was mainly through inheritance and farmers' land holding was small and fragmented making economics of scale difficult.

RECOMMENDATIONS

1. Government should open more arable land and distribute to farmers at affordable prices.
2. Farmers should form cooperative societies so as to enable them have better access to formal loans and thus acquire more land and other capital inputs for production.

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