EFFECT OF TRANSHUMANCE PASTORALISM ON FARMING ACTIVITIES AMONG CROP FARMERS IN OKE-OGUN AREA OF OYO STATE

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ABSTRACT

Transhumance is the seasonal movement of pastoralists and their livestock in search of water and feed and there had been a regular occurrence of conflicts between farmers and pastoralists in the country. This research investigates the effect of transhumance pastoralists on farming activities among crop farmers in Oke–Ogun area of Oyo State. Two Local government Areas were purposively selected from the study area due to prevalence and consistent report of pastoralists' invasion in the area. A total of 50 crop farmers were purposively selected from each local government area to give a total of 100 respondents. Data analysis was carried out using descriptive (frequency counts and percentages) and inferential statistics (Chi-Square). The findings showed that over 90% of the respondents were male and their age ranges between 40-49 years. Majority (94%) had no formal education with very few (4%) having tertiary education. The most cultivated crops in the area included cassava, maize and yam. The average farm size of respondents is 2.5 acres and the farmland was mostly acquired through lease (48%). The most utilised source of labor is family labour (44%). Causes of conflict in the study area included insufficient graze land, use of minor to tender cattle and shortage of water while some of its effects on farming activities included: destruction of farmland, reduction of income and agricultural produce, displacement of farmers and physical attack that leads to accidents and sometimes death. The study therefore recommended that community heads should ensure proper security of community dwellers and grazing reserves should be provided for pastoralists by the government for peaceful coexistence among rural dwellers.

Keywords: Conflict, farmers, pastoralist, peace, transhumance

INTRODUCTION

Agriculture plays a major role in the Nigerian economy as it provides food, employment, income, raw material for industries, foreign exchange, shelter, market for industrial goods which all bring about community/rural development (Moran, 2006). Agriculture provides food for the teeming population through domestic food production. Over 60% of Nigerian population is employed in agriculture while just about 20% are really into commercial agricultural production (Patricia, 2009). Livestock also play a vital role in agricultural production in developing countries especially the small holder farmers who utilises their waste products for improving soil fertility.

Over the years, Nigeria had become the highest cattle producer in Africa which had in one way or the other added to the Nation's Gross Domestic Product (GDP) through the exportation of the animal products like hide and skin, milk, cheese, minced meat, among others (Mur, 2011).

Pastoralism is a mobile method of rearing and keeping livestock animals (like cattle, sheep and goats) by roaming them from one place to another in search of pasture and conducive environment. This act had been of a great concern to crop farmers in most part of Nigeria as it often times leads to destruction of cultivated crops by arable farmers. The two general types of pastoralism are categorized into Nomadic and Transhumance pastoralism. Nomadic pastoralism is when a herdsman goes around from one place to another in search of pasture and water for the livestock while Transhumance pastoralism is a seasonal movement of people with their livestock within a fixed period of the year in search of pasture and shelter. This is always carried out around summer and winter periods in search of greener pasture in other locations of the country. Some of these transhumance pastoralists eventually have permanent homes in rain fed areas where their livestock can have access to green pasture almost round the year (Dale, 2002).

The increase in livestock production in Oyo state had therefore often resulted into conflict between livestock (usually cattle) rearers and crop farmers due to illicit grazing of the animals on the crop farms leaving the farms devastated and wasting the efforts of such crop farmer instead of grazing the animals on available pastures. The conflict caused by the unethical grazing of the animals on cultivated farmlands had resulted into loss of properties and lives in the state which had led to the cause of this study to assess the effect of transhumance pastoralism on arable crop farmers' productivity in Oyo State. Violent conflicts involving pastoralists have become widespread and increasingly severe in Nigeria which had necessitated this study to be carried out to identify the effect of transhumance pastoralism on farming activities among crop farmers in Oke-Ogun community of Oyo State.

The specific objectives of the study are to:

- determine the personal characteristics of arable crop farmers in the study area
- discover the enterprise characteristics of respondents in the study area
- establish the causes of conflict caused by transhumance pastoralist in the study area

- ascertain the effects of conflict on farmers' agricultural productivity in the study area

Hypotheses

$H_0$1: There is no significant relationship between respondents' personal and enterprise characteristics and effect of transhumance pastoralism on their farming activities.

$H_0$2: There is no significant relationship between the causes of conflict among farmers and pastoralists and its effect on their farming activities.

METHODOLOGY

The study was carried out in Oke Ogun area of Oyo State, The region consists of ten Local Government Areas, namely: Atisbo, Oorelope, Iseyin, Itesiwaju, Kajola, Irepo, Olorunsogo, Iwajowa, Saki East and Saki West. The land and climate of the area is favorable for both crop cultivation and livestock production. Crops cultivated in the area include: maize, yam, cassava, plantain, cocoa, fruit and leafy vegetables while different kinds of livestock animals are also reared in the region.

Multi stage sampling technique was used for the sampling procedure which included: Stage 1: purposive selection of 20% of the Local Government Areas (L.G.A) in the region due to high predominance of pastoralists in the local government areas. The selected local government areas were Saki West and Atisbo local government areas. Saki West consists of thirty seven major communities while Atisbo L.G.A. consists of seven major communities. Stage 2: Ten percent of the communities in each of the L.G.A were purposively selected (four from Saki West and one from Atisbo L.G.A.) making five communities with high prevalence of pastoralism w for the study. These are Ilua, Bodilu, Okerete, and Sannisala from Saki West L.G.A while Irawo from Atisbo L.G.A. Ilua consists of 250, Bodilu, 142, Okerete, 191, Sannisala, 184 and Irawo, 243 registered farmers. Stage 3: Ten percent of farmers from each of the selected communities were randomly selected thus giving 25, 14, 19, 18 and 24 selected farmers respectively making a total of 100 respondents used for the study.

The instrument for data collection was through the use of structured questionnaire and interview schedule. Data were analyzed using descriptive (percentages and mean) and inferential statistics (chi-square and Pearson Product Moment Correlation (PPMC)).

RESULTS AND DISCUSSION

Personal characteristics of respondents

Table 1 below reveals that a little below average (44.0%) of the respondents fell between ages 40 and 49 years with mean age of 46±2.7 indicating that most of the respondents in the study area are still in their active and productive farming years and agile to carry out farming activities productively.

The table further reveals that majority (94%) of the respondents were male, most (66.0%) of them were married and the mean household size for the study was 7±1.2. Above average (58%) of the respondents were Christians while about average (46%) of the respondents had no formal education background. This result supported Eniola and Siyanbola (2007)'s claim that youths in the study area are actively involved in agricultural practices majority of whom are not well educated.

Table 1: Distribution of Respondents according to personal characteristics (N=100)

Variable	Frequency	Percentage	Mean	S.D
Sex				
Male	94	94.1		
Female	6	6.0		
Age			46	2.7
20-29	9	9.0		
30-39	12	12.0		
40-49	44	44.0		
50-59	18	18.0		
60-69	10	10.0		
≥70	7	7.0		
Marital Status				
Single	10	10.0		
Married	76	76.0		
Divorced	4	4.0		
Widowed	10	10.0		
Religion				
Christianity	58	58.0		
Islam	40	40.0		
Traditional	2	2.0		

Variable	Frequency	Percentage	Mean	S.D
Education attainment				
No formal Education	46	46.0		
Adult Education	28	28.0		
Primary	10	10.0		
Secondary	4	4.0		
Tertiary	12	12.0		
Household size (in person)			7	1.2
1-5	22	22.0		
6-10	68	68.0		
11-15	10	10.0		
Tribe				
Yoruba	66	66.0		
Fulani	30	30.0		
Igbo	4	4.0		

Enterprise characteristics of farmers

Table 2 below explains the enterprise characteristics of the respondents in the study area. The mean farm size cultivated by the respondents is 1 ha indicating that many of the farmers are small scale farmers. Most cultivated crops in the study area included maize, cassava, vegetables and yam. Farmers acquired their farmlands mostly through lease (48.0%) and the farming system mostly practiced in the study area was mono cropping (30.0%) followed by mixed cropping (20.0%). A little below average (44.0%) of the respondents made use of family labour on their farm while few of them made use of hired labour (32%).

Table 2: Distribution of respondents according to enterprise characteristics (N=100)

Variable	Frequency	Percentage	Mean	S.D
Farm size (acres)			**2.5**	**1.6**
1-3	58	58.0		
4-6	24	24.0		
7-9	12	12.0		
≥ 10	6	6.0		
Farming system				
Alley crop	18	18.0		
Mixed cropping	20	20.0		
Crop rotation	8	8.0		
Monocropping	30	30.0		
Shifting cultivation	10	10.0		
Continuous cropping	14	14.0		
Marital Status				
Single	10	10.0		
Married	76	76.0		
Divorced	4	4.0		
Widowed	10	10.0		
Religion				
Christianity	58	58.0		
Islam	40	40.0		
Traditional	2	2.0		
Education attainment				
No formal Education	46	46.0		
Adult Education	28	28.0		
Primary	10	10.0		
Secondary	4	4.0		
Tertiary	12	12.0		
Household size (Persons)			7	1.2
1-5	22	22.0		
6-10	68	68.0		
11-15	10	10.0		
Tribe				
Yoruba	66	66.0		

Variable	Frequency	Percentage	Mean	S.D
Fulani	30	30.0		
Igbo	4	4.0		
Cultivated crops*				
Maize	42	42.0		
Cassava	46	46.0		
Yam	22	22.0		
Maize and cassava	15	15.0		
Maize and yam	20	20.0		
Vegetables	38	38.0		
Source of Labour				
Family	44	44.0		
Hired	32	32.0		
Communal	24	24.0		
Source of land acquisition				
Rent	22	22.0		
Lease	48	48.0		
Purchased	10	10.0		
Inherited	20	20.0		

*Multiple response

Causes of transhumance pastoralism conflict

Table 3 below explains that majority of the respondents affirmed that destruction of farm produce, insufficient graze land and use of minor to tender animals (70%, 68% and 67%) caused conflict between pastoralists and crop farmers in the study area. This result corroborates Micheal (2012)'s claim that indecent cattle raids, boundary/border disputes and competition over resources are major causes of conflict between pastoralists and farmers in Africa in which the study area belongs.

Table 3: Causes of conflicts by transhumance pastoralism (N=100)

Causes of conflict by pastoralist	Yes	No
Destruction of farm produce	70	30
Use of minor to tender animals	67	33
Lack of enough grazing land	68	32
Shortage of water	42	58
Poor land tenure system	12	88

Effects of transhumance pastoralism

Table 4 below reveals that the main disastrous effects of transhumance pastoralism were farmland destruction (74.0%), reduction of agricultural produce and farmer's income (64.0%), competition over land use (60.0%) and physical attacks leading to accidents (53.0%). This implies that the presence of pastoralists in the study area is posing more harm than good for farmers in the study area which hinders inter-personal and social relationship among both parties involved, hence reducing farmer's agricultural productivity. This result corroborates Ruto *et al* (2015) who found the impact of conflict among pastoralists to be displacement of lives and properties, disruption of socio-economic activities and livelihoods and environmental degradation.

Table 4: Effect of Transhumance pastoralist on social relationship among rural dwellers n=100

Variables	Yes		No	
	F	%	F	%
Destruction of farmland	74	74	26	26
Reduction of income and agricultural produce	64	64	36	36
Displacement of farmers	32	32	68	68
Competition over land use	60	60	40	40
Physical attack that leads to accidents	53	53	47	47
Death	15	15	75	75

Hypotheses testing

Test for relationship between respondents' personal and enterprise characteristics and effect of transhumance pastoralism on their agricultural production

Table 5 below summarizes hypotheses 1 and 2 showing that age (p=0.002), education (p=0.010), farm size (p=0.048) and farming system (p=0.027) had significant relationship with the severity of conflict caused by transhumance pastoralists in the study area. This result indicated that the older the farmer, the higher the chances of resolving conflicts due to experience and the larger the farm, the higher the chances of transhumance pastoralist conflict. Educational background also helped in ensuring best farming practices that will reduce transhumance pastoralist conflict. The result further shows that respondents' farm size and the farming system practiced also had effect on the severity of conflict caused by transhumance pastoralists. Therefore, the null hypothesis which stated that there is no significant relationship between the personal and enterprise characteristics of the respondents and the effect of transhumance pastoralist on farming activities was rejected.

Table 5: Chi square table showing relationship between personal and enterprise characteristics of respondents and effect of transhumance pastoralist activities on respondents' production

Variables	χ^2	df	p-value	Decision
Age	19.12	5	0.002	S
Sex	38.72	1	0.067	NS
Marital Status	48.24	3	0.230	NS
Religion	19.36	2	0.089	NS
Education	27.81	4	0.010	S
Tribe	59.23	3	0.092	NS
Farm size	46.28	4	0.048	S
Farming system	27.54	5	0.027	S

S=Significant, NS= Not significant
Level of significance= 0.05

Test for relationship between the causes of conflict among farmers and pastoralists and its effect on their agricultural production

Table 6 shows that there was significant correlation between respondent's causes of conflict and effect on farming activities. This result indicates that the causes of transhumance pastoralism conflict have a significant effect on respondents' farming practices. This corroborates the claims of Ibrahim, Abdurrahman and Umar Muhammed (2015) that the causes of farmer-pastoralist conflict have been studied with the premise that land use change is the major cause of crises and that the relationship between the pastoralist and their host communities is shrinking and being replaced by conflicts and open hostilities.

Table 6: PPMC result showing relationship between causes of conflict and effect on agricultural production

Variables	r – value	p – value	Decision
Causes	-0.207	0.003	Significant

CONCLUSION AND RECOMMENDATIONS

The findings from this study revealed that the effect of transhumance pastoralism on crop farmers' production is of great influence. The causes of conflict between crop farmers and pastoralists had more hazardous effect on the crop farmers as they usually suffer loss of farm produce, land degradation and sometimes injuries. These leads to harmful effects such as reduction of farmers' income and agricultural produce, total displacement of farmers or worse still death of farmers. The development of effective actions to tackle each of the cause is presently proving difficult because these problems are rooted in human behavior and the environment is already domiciled by inhabitants from various part of the country.

The study therefore recommends from its findings that:

1. community heads should ensure proper security of community dwellers
2. grazing reserves should be provided for pastoralists by the government for peaceful coexistence among rural dwellers
3. Taking measures directly aimed at conflict prevention such as developing mediation and conflict prevention capacities of the communities involved and establishing projects in support of pastoralists' need to invest in awareness raising (i.e early warning of consequences and early action)

through training and indigenous peace building processes.

4. Provision of emergency and other conflict related exigencies relief and assistance should be made for affected persons and also rehabilitation of displaced groups and communities as well as need for re-orientation on conflict management and resolution(s).

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