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WILLINGNESS TO PAY FOR PEACEFUL CO-EXISTENCE BETWEEN CROP FARMER AND SEDENTARY PASTORALIST'S HOUSEHOLDS IN OYO AND KWARA STATES, NIGERIA

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Abstract

The paper assessed willingness to pay for peaceful coexistence between crop farmer and sedentary pastoralist's households in Oyo and Kwara States, Nigeria. The broad objective of the study is to determine factors influencing the respondent households' willingness to pay for peaceful coexistence. Specifically, the study describes the economic and social benefits of peaceful coexistence to the respondents, identifies the perceived causes of conflicts in the past between the two sets of economic agents, determines the respondents' WTP for peaceful cohabitation, and analyzes the determinants of their WTP for coexistence in the study area. The analysis revealed that the respondents in the study area were more willing to pay for cattle entrustment contract and resource/product exchange than calf sharing and milk sharing as coexistence practices. The analysis further revealed that age, household size, farm size, herd size, membership of association(s) and farm income positively and significantly influenced the respondents' willingness to pay for coexistence practices. The willingness to pay for coexistence practices is an indication of peaceful cohabitation of these important economic agents in the study area. The paper employed a quantitative and a qualitative analysis using descriptive statistics comprising percentages and means in describing the socioeconomic characteristics of the respondents. Binary choice logit model was used in capturing the WTP for peaceful coexistence based on the dichotomous choice contingent valuation approach. The effect of the various socioeconomic factors on the respondents' WTP for coexistence were examined by specifying and estimating the binary choice logit regression model.

Key words**:** *crop farmers, sedentary pastoralists, willingness to pay, coexistence*

INTRODUCTION

Agricultural production in any country requires an enabling environment to reach its maximum potential. Sustainable development in agriculture, among other things, demands a peaceful co-habitation of producer communities [1]. It is only through cooperation that local communities could implement sustainable common pool of resource conservation and management strategies. Stable and harmonious communities are only the ones that are able to be resilient and creative to respond to environmental stresses and sustain their livelihoods rather than those which are frustrated by the circumstances in their localities. However, an important but somewhat overlooked challenge facing agriculture and rural development in Nigeria today is the problem associated with farmer-pastoralist conflicts over arable land use. Farmer and pastoralist communities in many parts of the country have long suffered from the violent conflicts. In addition to the obvious and devastating costs in human life, these conflicts take an enormous toll on the economic health of families and households and undermine local economic progress [16]. Increasing frustration and impoverishment of farmers occasioned by perennial and extensive farm plot destruction and the ensuing bitter conflicts are eroding the gains of agricultural and rural development interventions [1].

Access to natural resources especially land and water, is essential for livelihood production in rural areas of Africa. The most vulnerable tend to be people with poor access to natural resources upon which to build their

livelihood strategies [23]. Poor subsistence farmers and pastoralists depend on the availability of usable land and pasture for their livelihoods. Sustained natural resources ensures sustainable livelihoods for these actors [24]. Resource conflict, a major output of poor resource governance, is a formidable threat to both natural resources and human security [9]. It is also detrimental to rural livelihoods, food security, and social co-existence [2]. Unhealthy competition for finite environmental resources, lack of management, divergent attitudes and beliefs, as well as poor institutions trigger and exacerbate natural resource conflicts. Resource scarcity, whether perceived or actual, is a crucial component of environmental conflicts [6]. Resource conflict problems are likely to be aggravated when no institution appears to be in control, the extant regulations governing resource access and use are not enforced, or strategies for sustainable natural resources management are not translated into actions.

Although conflict between farmers and pastoralists is a recurring issue in almost all countries in West Africa, crop and livestock farming systems are keys for future global food security. The demand for animal products is rising and the livestock revolution could drive sustainable rural development and be an opportunity for thousands of smallholder farmers [14]. There are many interactions between crop and livestock production systems which vary between regions and farms, depending on household resources and external drivers (policies and markets). These interactions have several benefits to individual farmers, households, rural communities and society at large [15]. The mutually beneficial interactions between the two production systems can only be achieved under a peaceful co-existence condition [18].

Co-existence is defined as recognizing each other's status and rights as human beings, developing a just and inclusive vision for each community's future, and implementing economic, social, cultural or political development across former community divides. According to Berns and Fitduff [5], co-existence describes societies in which diversity is embraced for its positive potential, equality is actively pursued, interdependence between different groups is recognized, and use of weapons to address conflicts is increasingly obsolete.

The traditional lifestyle of nomadic pastoralists – freely moving with their herds – is under threat worldwide and rapidly disappearing due to many reasons [19]. More and more cattle keepers have adopted a sedentary lifestyle and are co-existing with crop farmers and deriving livelihoods from other non-pastoral activities. Politicians support sedentarization because they want to enforce development, and nomadic pastoralism is often seen as backward. Many policy makers think settlement is the condition for development.

Using some parts of the savanna ecosystem in the country (Oyo and Kwara States) where large number of crop farmers and sedentary pastoralists live together as a reference point, the study would try to proffer answers to the following questions: What benefits do these economic agents derive from peaceful co-existence? What were the perceived causes of conflicts between farmers and pastoralists in the past? How much are these agents willing to pay to live together in peace, and what factors influence their willingness to pay (WTP)?

Objectives of the study

The broad objective of this study is to determine factors influencing willingness to pay for peaceful coexistence between crop farmer and sedentary pastoralist households in Oyo and Kwara States, Nigeria. Specifically, the study describes the economic and social benefits of peaceful co-existence to the respondents, identifies the perceived causes of conflicts in the past between the two groups of resource users, determines the respondent households' WTP for peaceful cohabitation and analyzes the determinants of their WTP for co-existence in the study area.

Theoretical Framework

The measure of use and non-use values of public goods where market demand and supply functions do not exist have made economists to set up hypothetical markets, and through the use of contingent valuation

method. Contingent valuation is a method of estimating the value that a person places on a good, usually one that is not sold in market, such as environmental quality, good health and peaceful co-existence [13]. The WTP is determined by applying the Contingent valuation method (CVM). Willingness to pay provides estimates for the use value and social costs of these goods for proper policy formulation [17]. The theoretical underpinning is based on the indirect utility framework.

The annual respondent's WTP is the amount that must be taken away from the individual's income in order to live in peace, while keeping his utility constant.

$$V(y - WTP, p, q_1; Z) = V(y, p, q_0; Z) \dots (1)$$

where

V denotes the indirect utility function, y is income, p is the vector of prices by individual, and q_0 and q_1 are the alternative levels of the quality indexes (with $q_1 > q_0$, indicating that q1 refers to peaceful co-existence). Z represents relevant socio-economic characteristics that are likely to affect the individuals' indirect utility

The commonly use approach to eliciting information about the respondent's WTP is the so-called dichotomous-choice format. A dichotomous choice payment question asks the respondent if he would pay ₦X to obtain the good. There are only two possible responses to a dichotomous choice payment question: "yes and no". The naira amount ₦X is varied across respondents, and is usually termed the bid value.

MATERIALS AND METHODS

Conceptual Framework

Definition and selection of the appropriate payment vehicle depends on the resource to be valued, the socio-economic characteristics of the sample and the institutional structure governing the area [4]. The resource to be valued in this case is peaceful co-existence, therefore, the trade-offs in monetary terms that the respondents are prepared to bear to maintaining peace over resource use as economic agents is taken as the payment vehicle for peaceful co-existence.

The respondents engage in four practices that result into mutual benefits for the households. These are: resource/products exchange; cattle entrustment contract; calf and milk sharing. The trade-off to a crop farmer's household ranges from ₦150,000: to ₦300,000: while to a sedentary pastoralist's household the trade-off is between ₦150,000: to ₦400,000:00. These prices were supplied by the respondents during the interview.

Study Area

The study area consists of Oyo and Kwara States, Nigeria. Specifically, the study was conducted in Oyo North and Kwara South. These two locations belong to the guinea savanna region of Nigeria. Guinea savanna is at times called rich savanna. The annual rainfall is 1,000 to 1,500mm and the rainy season lasts six months. The vegetation of the study area favours pastoral farming and the cultivation of cereal crops, grain legumes of all types, root crops, tubers, fruits and vegetables. This location was purposively selected because of the possibility of gathering useful information on the existing interactions between crop farmers and sedentary pastoralists.

Agricultural sector forms the base of the overall development thrusts of the two states, with farming and pastoralism as the main occupations of the people in the area. Pastoralism is carried out in the area by the pastoral Fulani while crop farming is carried out by the Yoruba indigenes who are originally the land owners in the area.

Sampling Techniques

The target population of this study consists of crop farmers and sedentary pastoralists. The study was based on primary data. The data were obtained from selected households through a well-structured questionnaire. The dichotomous choice contingent valuation method (DC-CVM) recommended by the NOAA panel [4] was employed to obtain the WTP. Qualitative data were collected through the use of focus group interview.

Multi-stage sampling technique was used in selecting respondents for interview. There are thirteen and six Local Government Areas (LGAs) in Oyo North and Kwara South respectively. The first stage involved a

purposive selection of six LGAs (four from Oyo North and two from Kwara South) based on their proximity, vegetation that favours pastoral farming and climatic condition that supports cultivation of different types of crops. The selected LGAs are Saki East, Olorunsogo, Irepo, Oorelope (in Oyo State), Moro and Asa (in Kwara State). In the second stage five farming communities where both crop farmers and sedentary pastoralists co-exist were randomly selected. In the last stage, six crop farmers and four herdsmen were randomly selected from each community. Thus, 180 crop farmers and 120 sedentary pastoralists were interviewed. Interview schedule using a structured questionnaire that was initially subjected to face validity and reliability test using split-half technique was used to collect data from crop farmers and sedentary pastoralists on their willingness to pay for peaceful co-existence and how much they are willing to pay. Willingness to pay was measured at nominal level as a dichotomous variable of Yes (1 point) and 0 (no point).

The payment vehicle used in the survey is monetary value of the amount that a respondent is willing to sacrifice to ensure peaceful cohabitation with other resource user in the community. Under a peaceful co-existence scenario, both groups of resource users have some trade-offs to pay, however. The parcel of land that the crop farmer releases for the use of sedentary pastoralist is the trade-off he pays while the latter hires mature herders to control the movement of his flock during pasturing. The trade-off of each agent constitutes the payment vehicle (bid amount).

Data Collection

Primary data (both quantitative and qualitative) were used for the study. Quantitative data were collected with the aid of structured questionnaire. Data collected on the socioeconomic characteristics of the respondents and the amount that they were willing to pay for each of the coexistence practices, their perceived social and economic benefits of peace and causes of conflicts in the past. Qualitative data were collected with the aid of Focus Group Discussion (FGD). Information were collected on the respondents' perceived social and economic benefits of peace and causes of conflicts in the past.

Analytical Procedure

Descriptive analysis

Descriptive statistics comprising frequency, percentages and averages (means) were used to analyse the socioeconomic characteristics of the respondents and to determine the average amount that the respondents were willing to pay for each coexistence practice.

Binary logit analysis

The binary choice logit model was used in capturing the Willingness to Pay (WTP) for peaceful co-existence based on the dichotomous choice contingent valuation approach. The effect of the various socioeconomic factors were examined by specifying and estimating the binary choice logit regression model following the approach of Hanemann [10] from Cooper and Loomis [7] as stated by Okojie [21] thus:

$$Li = \frac{1}{1+ exp^{-(\beta_o + \beta_i X_j)}} \text{ ……..…… (2)}$$

where:

Li = Respondents response to the bid offer (1 if yes and 0 if otherwise)

β_o = Constant

β_i ……..β_n = coefficients of the explanatory variables X_1……..X_n

The explanatory variables are: X_1 = Gender, X_2 = Age, X_3 = Household size, X_4 = Farm and/or herd size, X_5 = Membership of association, X_6 = Farm income, X_7 = Level of education, X_8 = Work experience.

The objective of this study is to determine factors affecting crop farmer and sedentary pastoralist households' willingness to pay for peaceful co-existence. Thus, the dependent variable, peaceful co-existence, in this case is a dummy variable, which takes a value of zero or one depending on whether or not a respondent is willing or non-willing to pay for peaceful co-existence. The independent variables are both continuous and binary. Since a probability associated with a respondent's willingness to pay for peaceful co-existence is desired, a binary logit model is used.

RESULTS AND DISCUSSIONS

Socioeconomic benefits of peaceful coexistence

Peaceful cohabitation of two economic agents portends important livelihood outcomes that result into economic and social benefits for the agents. Under a peaceful cohabitation condition, the respondents in the study area revealed that they enjoy the following positive livelihood outcomes as shown in Table 1: increase in productivity and income, assets, livelihood activities, increase in level of trust, and conducive business environment. Majority of the respondents (67.8%) of crop farmers and (86.7%) of sedentary pastoralists' households agreed that peaceful cohabitation leads to increase in productivity and income in a general sense. This is in line with the finding of [1] that sustainable development in agriculture, among other things, demands a peaceful cohabitation of producer communities.

Table 1. Socioeconomic Benefits of Peaceful Coexistence

Benefits	Crop Farmers		Sedentary Pastoralists	
	Frequency	Percentage	Frequency	Percentage
Increase in productivity & income	122	67.8	104	86.7
Increase in assets	20	11.1	8	6.7
Increase in livelihood activities	14	7.8	2	1.6
Increase in level of trust	14	7.8	3	2.5
Conducive business environment	10	5.5	3	2.5
Total	180	100.0	120	100.0

Source: Field Survey, 2017.

Causes of Conflicts in the Past

The respondents equally specified the following as causes of conflicts in the past as shown in Table 2: high level of mistrust, crop field damage by animals, competition for land and water, and poisoning of animals. In a nutshell, majority of the respondents (78.9%) of crop farmers and (85%) of sedentary pastoralists' households revealed that crop damage by the animals of the pastoralists is the major cause of conflicts between themselves in the past. However, the respondents opined that conflicts arising from these causes were locally resolved by the leaders of both groups (Local community chiefs and Fulani elders' group). Also, the sedentary pastoralists in the study area have created social structures geared towards minimizing conflicts with farmers (the hosts) and preserving the overall harmony between the two groups that is necessary for their production symbiosis. The Fulani pastoralist group has an elected official (Ruga) who regulates the grazing and pasture use of his group. He is in charge of selecting migration routes and deciding where specific animals will graze. He is also responsible for internal and external dispute management and settling conflicts between farmers and his group.

Table 2. Causes of Conflicts in the Past

Causes	Crop Farmers		Sedentary Pastoralists	
	Frequency	Percentage	Frequency	Percentage
High level of mistrust	28	15.6	10	8.4
Crop damage by animals	142	78.9	102	85.0
Unguided competition for land & water	4	2.2	4	3.3
Poisoning of animals	6	3.3	4	3.3
Total	180	100.0	120	100.0

Source: Field Survey, 2017.

Socioeconomic Characteristics of the Respondents

Socio-economic characteristics are important attributes that help to enhance farm entrepreneurs (both crop farmers and pastoralists) efficiency to adopt practices that can improve their production. They help to shape the entrepreneurial abilities of farmers in rational decision making, especially those relating to agricultural enterprises [11]. Given this understanding, the relevant socio-economic characteristics of the respondents were investigated in order to ascertain their relevance to the respondents' willingness to pay for peace.

Table 3 shows the socio-economic characteristics of the respondents. The table shows that the respondents were predominantly male, (91%) crop farmers and (99%) sedentary pastoralists. This is the pattern of most agricultural communities in Africa where male dominates the population.

Table 3. Socio-economic characteristics of the respondents

Variable	Crops Farmers	Sedentary Pastoralist	
	Percent	Percent	
Sex of household head			
Male	91.1	100.0	
Female	8.9	0.0	
Age (Years)			
31-40	5.0	3.3	
41-50	19.4	23.4	
51-60	35.6	31.4	
>60	40.0	42.4	
Mean	54	52	
Household Size (Number)			
3-6	13.4	15.0	
7-10	47.2	34.3	
11-14	31.1	41.2	
>14	8.3	9.5	
Mean	10	11	
Farm size (Ha)		**Herd Size (Herd count)**	
0-5	6.7	50-100	10.8
6-10	42.5	101-150	20.9
11-15	35.2	151-200	22.5
>15	15.6	>200	45.8
Mean	9.2	135	
Membership Association			
Yes	88.4	90.2	
No	11.6	9.8	
Farm Income(₦'000)			
100-150	16.4	4.2	
151-200	34.6	6.8	
201-250	38.2	22.4	
>250	10.8	66.6	
Work Experience			
1-10	8.4	9.2	
11-20	8.6	14.8	
21-30	72.3	68,8	
>30	10.7	7.2	
Mean	22.4	21.6	
Level of Education			
No formal	75.4	88.5	
Primary	15.3	8.2	
Secondary	9.3	3.3	
Residency (Years)			
1-10	N/A	6.8	
11-20	N/A	88.0	
>20	N/A	5.2	

Source: Field survey 2018.

The average household sizes were 10 and 11 persons respectively. In the traditional agricultural production, family labour plays a significant role in the farm labour supply. An average farmer/pastoralist first uses all sources of labour in his family before hiring labour in order to reduce the cost of production [20]. This suggests the possibility of much availability of family labour for both groups of respondents. The mean average ages of the respondents were 54 and 52 years respectively. This implies that most of the respondents were relatively old. The table further shows that the respondents have long years of farming and herding experiences. Proficiency and skill acquisition usually grow with years of experience. Majority of the respondents have farming and herding experiences above 20 years (83% and 76%) respectively. The average farm size of the crop farmers was 9.2 hectares while the average number of livestock of the sedentary pastoralists was 135 herds (comprising cattle, sheep and goats). About 88% of the sedentary pastoralists had been resident in their respective communities for more than 21 years. This may be the reason for mutual understanding the sedentary pastoralists had with the crop farmers (host). The respondents' education level was low, with majority of the crop farmers (75%) and sedentary pastoralists (89%) having no formal education.

Distribution of Respondents According to their Willingness to Pay for Co-existence Practices

In the course of the survey, the respondents were made to understand the economic meaning of WTP as the amount of trade-offs in monetary terms that they would be prepared to bear to maintain peace in resource use. Distribution of the respondents according to their WTP for co-existence is shown in Table 4. From the table, 91% and 85% of the sampled crop farmers and sedentary pastoralists' households were readily willing to pay for peaceful coexistence. The results show that sustainable development in agriculture, among other things demands a peaceful cohabitation of producers as opined by [1].

Table 4. Distribution of Respondents According to their Willingness to Pay for Co-existence Practices

Variable	Crop Farmers		Sedentary Pastoralists	
	Frequency	Percentage	Frequency	Percentage
Willing to pay	164	91.1	102	85.0
Not willing to pay	16	8.9	18	15.0
Total	180	100.0	120	100.0

Source: Field Survey, 2017

Respondents' Distribution of Prices for Willingness to Pay for Coexistence

The WTP was assessed using the CV approach. After the hypothesized prices of the four co-existence practices were explained to the respondents, they were asked to disclose the maximum amount they would be willing to pay in order to guarantee a perfectly peaceful community. The idea is that rational individuals are willing to pay for a public

good up to that amount that the public good benefits them. However, the bid amount for the respondents' WTP in this study is limited to the amount of trade-off under a particular co-existence practice. In all, the four practices were grouped together as one product (coexistence). The distribution of the respondents according to the prices they are willing to pay is shown in Table 5. The results show that 93% of the willing crop farmers were willing to pay ₦150,000 – ₦350,000 for peaceful coexistence while 83% of the willing sedentary pastoralists were willing to pay ₦250000 -- ₦500000 for peaceful coexistence.

Table 5. Distribution of Respondents According to their willingness to pay

Amount (₦) per annum	Crop Farmers				Sedentary Pastoralists			
	No. of Respondents	%	Min. (₦)	Max. (₦)	No. of Respondents	%	Min. (₦)	Max. (₦)
≤ 150,000	12	7	85,000	140,000	6	6	78,000	132,000
150,001-250,000	20	12	160,000	245,000	12	12	170,000	246,000
250,001-350,000	122	74	248,000	342,000	22	22	262,000	320,000
350,001-500,000	10	7	350,000	500,000	62	61	350,000	500,000

Source: Field Survey, 2017.

Results of Logit Regressions showing Socioeconomic Factors Influencing the Respondents' Willingness to Pay for Coexistence

The results of the logit model are presented in Tables 6 and 7 for crop farmers and sedentary pastoralists respectively. Table 6 shows that four explanatory variables were positively significant variables influencing WTP for co-existence for the crop farmers. These include age of household head, household size, farm size, and membership of social association. Age, household size, and membership of social association were found to be statistically significant at 5% probability level while farm size was statistically significant at 10%. The result of the logit model showed that age of household head, household size, farm size, and membership of social association increase the probabilities of farmers' willingness to pay for peaceful cohabitation. The result further showed that older farmers were 7.7% more willingly to pay for peace in comparison to younger farmers. This could be attributed to the fact that older farmers in the community could have been involved in resource use conflict in the past which possibly had resulted into loss of valuables for them. To them, the economic benefits of peace could be imagined.

The result further showed that farmers with large family size were 8.1% more willing to pay for peace than farmers with small family size. Farmers with large family size would be readily willing to pay any amount to live in peace and to prevent occurrence of conflict because of what it portends for the vulnerable members of households. This finding is in consonant with the finding of [12].

Table 6. Logit regression model showing socio-economic factors influencing crop farmer households' WTP for co-existence

Variable	Coeff.	T-value	Marginal effects
Age	0.239	0.472	0.077***
Years of experience	0.480	0.813	0.108
Education	0.263	1.124	0.056
Household size	1.045	2.819	0.081***
Farm size	0.111	1.671	0.099***
Membership of association	1.963	0.856	0.022***
Membership of coop	0.030	1.576	0.006
Farm income	0.088	3.836	0.004
Off-herd income	-0.526	0.745	0.124
Constant	1.338		
Log likelihood	-57.721		
R^2	0.63		

Source: Field Survey, 2017.

Farmers who belong to many social associations and/or clubs were found to be more willing to pay for peace than those who do not belong to any. Social clubs could be sources of good information about the danger of conflict and benefits of peace. Farmers who are members of social association were found to be 2.2% more willing to pay for peaceful co-existence. The result of logit regression additionally showed that farmers with large

farm size were 9.9% more willing to pay for peace. As the farm size increases, the probability of WTP for peaceful co-existence also increases. This finding is in line with the finding of [8] and [12].

The estimates of parameters of the variables determining the sedentary pastoralists' WTP for peaceful co-existence are presented in Table 7.

Table 7. Logit regression model showing socio-economic factors influencing sedentary pastoralist households' WTP for co-existence

Variable	Coeff.	T-value	Marginal effects
Age	0.253	1.154	0.056***
Years of experience	1.817	1.732	0.107
Education	0.988	0.433	0.124
Household size	0.864	1.648	0.082***
Herd size	1.406	2.586	0.044***
Membership of association	0.484	1.742	0.076***
Membership of coop	0.749	0.763	0.443
Income (herd)	0.187	2.271	0.081***
Off-herd income	1.964	1.631	0.442
Constant	5.426		
Log likelihood	76.72		
R^2	0.68		

Source: Field Survey, 2017.

Result of the logit model showed that five explanatory variables were positively statistically significant; these are age of household head, household size, herd size, membership of social association/club, and income from pastoral business. The result showed that older sedentary pastoralists who had lived for some time in the community were 5.6% more willing to pay for peace arrangement with other resource users than younger ones. The finding of this survey may be attributed to the fact that older sedentary pastoralists are known in the community and possibly have come into a mutual and beneficial terms with their hosts with a view to living in peace and harmony. The result further showed that sedentary pastoralists with large family size were 8.2% more willing to pay for peace just as their counterparts in crop farming sub-sector. Also sedentary pastoralist's household with large herd size were 4.4% more willing to pay for peace than household with small herd size. Additionally, sedentary pastoralists who are members of social associations were more willing to pay for peace. Should such household members take part in destructive conflict in the community, they are more likely to be traced to their clubs/social associations. This finding is in consonant with the finding of [12].

According to him, the ability of the Fulani pastoralists to settle in a particular location outside their local environment is dependent on the information they could gather through networks and interaction. Finally, sedentary pastoralists with higher income from pastoral business were more willing to pay for peace. This indicates that keeping the influences of other factors constant, the decision of sedentary pastoralists in favour WTP for peace increases by a factor of 8.1% as pastoral income increases by a thousand Naira. Sedentary pastoralist' households with higher income levels were willing to pay for peace in order to secure continuity in business since their budget constraint becomes less stringent and the households could afford to pay. This finding is consistent with the findings of [22] and [3].

CONCLUSIONS

The respondents were very conscious of the benefits (social and economic) derivable directly or indirectly from peaceful cohabitation. Positive relationship between co-existence and households' livelihoods had been established in the study. The study also makes it clear that households suffer beyond the devastating losses of family members, injury, trauma, and fear; farmer-pastoralist conflict deeply damages the well-being of households and communities. The findings of this study suggest that in order to ensure sustainable economic progress in the agricultural sector of the Nigerian economy, prevention of inter-communal conflict, particularly conflict between farmers and pastoralists in the country is timely essential. In order to realize the economic benefits of sustained peace in the agricultural producer communities, the Nigerian government should take action in the following areas.

It is deducible from the WTP of the respondents that they agreed to the opinion that since they benefit directly or indirectly from peaceful cohabitation; therefore, they

were willing to pay for co-existence to ensure sustainable enjoyment of the benefits embedded therein. The results of the study can therefore be used in agricultural policy formulation aiming at enhancing symbiotic relationship between crop and livestock production systems through cohabitation policy. To guarantee a sustained peace, governments at all levels should embark on a rigorous enlightenment campaigns on the economic and social benefits of peaceful cohabitation among agricultural producer communities.

The Federal government should make policies and programmes that will promote and encourage sedentariness of pastoralists in any parts of the country. Such will make pastoralists in general to be touched with livelihood-improvement developmental projects.

At the moment, part of the local population in the country is still reluctant to see the Fulani pastoralists establish permanent settlements in some territories. However, the sedentary pastoralists interviewed said they are resolved to stay in their locations at any price (i.e. they were willing to pay for co-existence). As their status is seemingly illegal, Federal government should regularize their residency. A pragmatic approach is necessary to implement this policy.

Since nomadism is the central issue in Africa in general and Nigeria in particular, its transformation should be seen as a question of national emergency. But while nomadism lasts, the country should establish and manage a network of pastures fully equipped with watering points and veterinary clinics. The areas demarcated should be fully developed to encourage nomads/pastoralists to settle down near these permanent pasture-lands. There should be an integrated approach towards the utilization of crop residues, offal and agro-allied by-products for the development of livestock feed.

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