



COMMUNAL CONFLICTS OCCURRENCE AND EFFECTS ON FARMERS' ACCESS TO AGRICULTURAL EXTENSION SERVICES IN BENUE AND NASARAWA STATES, NORTH-CENTRAL, NIGERIA

¹Adzenga Jacobs Ior, ²Umar Isah Sheshi and ³Dalap Sunday Leo

¹Department of Agricultural Extension and Economics,
National Agricultural Extension and Research Liaison Services (NAERLS),
Ahmadu Bello University, P.M.B 1067, Zaria, Kaduna State, Nigeria

²Department of Agricultural Extension and Rural Development,
Federal University of Technology, Minna, P.M.B 65, Minna, Niger State, Nigeria

³Department of Agricultural Technology,
Kaduna Polytechnic, P.M.B. 2021, Kaduna, Kaduna State, Nigeria

Corresponding Author's E-mail: jakesadzenga@gmail.com **Tel.:** 08069249529

ABSTRACT

The study examined effects of communal conflicts occurrence on farmers' access to agricultural extension services in conflict prone areas of North-central, Nigeria. A multi-stage sampling procedure was used to obtain a sample size of 391 farmers. Information was elicited using questionnaires, interview schedule and analysed using both descriptive and inferential statistics. The findings showed that the farmers in the study area perceived access to agricultural extension services and activities to be low in the following activities: visitation of farmers by extension agents ($\bar{x} = 1.23$), trainings on improved practices ($\bar{x} = 1.24$), access to information on proven farming technologies ($\bar{x} = 1.25$), participation in OFAR trails ($\bar{x} = 1.25$), participation in agricultural shows ($\bar{x} = 1.25$), meetings with extension agents ($\bar{x} = 1.28$), participation in result and method demonstrations ($\bar{x} = 1.28$), participation in field days ($\bar{x} = 1.30$), access to farm inputs ($\bar{x} = 1.31$) and participation in MTPs ($\bar{x} = 1.33$). The findings further revealed that frequency of occurrence, season of occurrence, category of people mostly affected, duration of communal conflicts and period of displacement had significant relationships with farmers' access to agricultural extension services. It was concluded that occurrence of communal conflicts resulted in low access to agricultural extension services by farmers in the study area. The study recommended adoption of alternative approaches to extension services delivery as well as designing appropriate extension programmes by extension agencies in the country that would suite conflict prone areas.

Keywords: Activities, Agricultural Extension, Communal, Conflicts, Farmers.

INTRODUCTION

There is growing concern for provision of effective and sustainable agricultural extension services to majority of small-holder farmers in whose hands the bulk of agricultural production is left. Small-holder farmers belong to a Complex, Diverse and Risk (CDR) prone agriculture, which supports several millions of people in Africa. The importance of agricultural



extension system therefore, remains that of service delivery to enhance the ability of these farmers to respond to old problems and meet new opportunities (Adzenga, 2019).

Conflicts in the utilization of natural resources such as land continue to perpetuate poverty among farmers and hinder agricultural development in Nigeria. The authors stressed that communal conflicts has posed as strong retrogressive factor towards technical progress in agricultural development, nation building and food security. The percentage of land and labour put into agriculture in Nigeria have decreased over time due to conflicts, desert encroachment and aridity thereby diminishing the level of agricultural production (Adisa and Adekunle, 2010).

The fact remains that in spite of the prevalence of communal conflicts, it is apparent that agricultural activities still continues in the crisis area since that remains the major source of livelihood for the people. However, there is uncertainty on the accessibility of extension services by farmers and conduct of extension activities by extension personnel as extension staff may be afraid of the risk of residing or moving into the crises area for extension service delivery. It is against this background that the study examined the effects of communal conflicts occurrence on farmers' access to agricultural extension services (Adzenga, 2019).

The aim of the study was to examine the extent to which occurrence of communal conflicts affects farmers' access to agricultural extension services in conflict prone areas of North-central, Nigeria. The specific objectives of the study were to:

- i. determine the extent of farmer's access to agricultural extension services in conflict prone areas of the study; and
- ii. determine the effects of communal conflicts on access to agricultural extension services by farmers in the study area.

MATERIALS AND METHODS

The Study Area

North Central Zone occupies total land area of 296,898 km² representing about 32% of the land area of the country. It is located between latitudes 6° 30' to 11° 20' North and longitudes 2° 30' to 10° 30' East. More than 77% of the people in the region are mostly engaged in one form of agricultural activity or the other. The Zone has two main seasons namely dry and wet seasons, with the wet season beginning towards the end of March and ending at the end of October, while the dry season is from November to March. The rainfall per annum ranges from 1000 to 1500mm with an average of 187 to 220 rainy days, and average monthly temperature ranging from 21° C and 37° C. The vegetation of the Zone consists of the Forest Savannah Mosaic, Southern Guinea Savannah and the Northern Guinea Savannah (Ojo *et al.*, 2014). The vegetation, soil and weather patterns are favorable to produce a wide spectrum of agricultural food, industrial and cash crops of various types such as rice, yam, cassava, soybeans, millet, cowpea and maize (Tsado, 2013).

Sampling Procedure

Purposive sampling was adopted to select two (2) States (Benue and Nasarawa) from the seven (7) States in North-central Nigeria where communal conflicts occur frequently. The



population of the study comprised all farm families in Benue and Nasarawa States, Nigeria. All the agricultural zones in the two (2) States were considered for the study. Seven (7) LGAs that have recorded high incidence of communal conflicts over the years were purposively selected, that is, four (4) out of 23 LGAs from Benue State and three (3) out of 13 LGAs from Nasarawa State, respectively. Eleven (11) extension blocks with high prevalence of communal conflicts were purposively selected from the LGAs (eight [8] extension blocks from Benue State and three (3) extension blocks from Nasarawa State. Twenty-four (24) extension cells that have experienced recurrent communal conflicts were randomly selected (15 extension cells from Benue State and nine (9) extension cells from Nasarawa State). From the list of farm families from each of the cells, 391 farmers (277 farmers from Benue State and 114 farmers from Nasarawa State) were selected through proportionate and random selection using the Taro Yamane formula for determination of sample size.

Method of Data Collection

Primary data were collected with the use of structured questionnaire and interview schedule which elicited information from the farmers and analysed using both descriptive statistics (frequencies, percentages, mean and Likert-type rating scale) and inferential statistics (Ordered Logit Regression). The empirical model for the Ordered Logit Regression model estimation used in this study is explicitly specified as:

$$\text{Prob. (AC}_{ij}) = Z_{ij} \Theta + \tau_{ij} \quad \dots(1)$$

where;

AC = Low, Moderate and High access to agricultural extension services which takes the assigned values of 1, 2 and 3, respectively.

Z = Vector of explanatory variables;

Θ = Vector of regression coefficients; and

τ = the error term.

For this study,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + u_i \quad \dots(2)$$

where;

Y_i = Perception Score

β_0 = Intercept

$\beta_1 - \beta_{11}$ = Parameters to be estimated

X = is the set of explanatory variables.

The independent variables used in the model are:

X_1 = Frequency of occurrence of conflicts (Number 2015/2016)

X_2 = Type of communal conflicts (Number)

X_3 = Extent of social and economic losses (Naira)

X_4 = Season of occurrence of conflicts (Rainy season=1, Otherwise=0)

X_5 = Time of the day of occurrence of conflicts (Day time=1, Otherwise=0)

X_6 = Category of people affected by conflicts (Young=1, Otherwise=0)

X_7 = Duration of communal conflicts (Months)

X_8 = Period of displacement from community (Months)



X_9 = Distance between home and displacement camp (km)

X_{10} = Places of attacks (Home=1, Otherwise=0)

X_{11} = Loss of lives (Number)

u_i = Error term

RESULTS AND DISCUSSION

Extent of Farmer's Access to Agricultural Extension Services in Conflict Prone Areas

Table 1 shows the perception of farmers on access to extension services during occurrence of communal conflicts in the study area. Access to improved farm inputs ($\bar{x} = 1.25$) was considered low by majority of the by farmers in Benue State. This was closely followed by participation in on-farm adaptive research trials ($\bar{x} = 1.28$). Also, majority of the farmers affirmed that participation in agricultural shows ($\bar{x} = 1.29$), trainings on improved practices ($\bar{x} = 1.29$), access to information on proven farming technologies ($\bar{x} = 1.30$), participation in method and result demonstrations ($\bar{x} = 1.30$), visitation of farmers by extension agents ($\bar{x} = 1.31$), meetings with extension agents ($\bar{x} = 1.32$) participation in MTPs ($\bar{x} = 1.33$) and participation in field days ($\bar{x} = 1.33$) were perceived to be low during occurrence of communal conflicts in the study area.

Table 1: Extent of Farmer's Access to Agricultural Extension Services in Conflict Prone Areas of Benue State (n = 277)

Services	High	Moderate	Low	Sum	Mean (\bar{x})	Rank
Interpersonal contact:						
Field and home Visitation	3.61	23.47	72.92	362	1.31	7th
Group contact:						
Farmers' group meetings	1.08	30.32	68.59	367	1.32	6th
Farmers' group trainings	2.53	24.19	73.29	358	1.29	3rd
Field day:						
Green cum Brown	3.25	26.71	70.04	369	1.33	9th
Agricultural shows	1.44	25.99	72.56	357	1.29	3rd
Field demonstration:						
Method cum Result	2.89	23.83	73.29	359	1.30	5th
On-Farm Training:						
Participation in MTPs	3.25	26.71	70.04	369	1.33	9th
Participation in OFAR trials	2.17	23.83	74.01	255	1.28	2nd
Mass Contact:						
Access to information on-farming technologies	1.44	26.71	71.84	359	1.29	3rd
Access to farm inputs	1.08	33.57	65.34	376	1.25	1st

Note: Figures in parenthesis are percentages, High Access = 3, Moderate Access = 2, Low Access = 1;

Decision rule: Mean scores ≥ 2 = Perceived as high access to extension services;

Mean scores < 2 = Perceived as low access to extension services.

Source: Field survey (2017)



Similarly, Table 2 reveals that majority of farmers in Nasarawa State perceived access to extension services during conflicts in the study area to be low with mean scores of less than 2 in the following activities: visitation of farmers by extension agents ($\bar{x} = 1.04$), trainings on improved practices ($\bar{x} = 1.12$), access to proven farming technologies ($\bar{x} = 1.14$), participation in agricultural shows ($\bar{x} = 1.17$), participation in OFAR trials ($\bar{x} = 1.18$), meetings with extension agents ($\bar{x} = 1.18$), access to Farm inputs ($\bar{x} = 1.18$), participation in field days ($\bar{x} = 1.21$), participation in demonstrations ($\bar{x} = 1.23$) and participation in MTPs ($\bar{x} = 1.32$). This result suggests that farmers in the two States perceived access to agricultural extension services and activities to be low in key areas of agricultural extension services which are essential for effective service delivery.

Table 2: Extent if Farmer's Access to Agricultural Extension Services in Conflict Prone Areas of Nasaawa State (n = 114)

Services	High	Moderate	Low	Sum	Mean (\bar{x})	Rank
Interpersonal contact:						
Field and home visitation	0	4.39	95.61	119	1.04	1 st
Group contact:						
Farmers' group meetings	0.88	15.93	83.19	136	1.18	5 th
Farmers' group trainings	0.88	10.53	88.60	128	1.12	2 nd
Field day:						
Green cum Brown	0	21.24	78.76	139	1.21	8 th
Agricultural shows	0.88	14.91	84.21	133	1.17	4 th
Field demonstration:						
Method cum Result	0	22.81	77.19	140	1.23	9 th
On-Farm Training:						
Participation in MTPs	0	31.58	68.42	150	1.32	10 th
Participation in OFAR trials	0	17.54	82.46	134	1.18	5 th
Mass Contact:						
Access to information on-farming technologies	1.75	11.41	86.84	131	1.14	3 rd
Access to farm inputs	2.63	13.16	84.21	135	1.18	5 th

Note: Figures in parenthesis are percentages, High Access = 3, Moderate Access = 2, Low Access = 1; decision rule: Mean scores ≥ 2 = Perceived as high access to extension services; Mean scores < 2 = Perceived as Low access to extension services.

Source: Field survey (2017)

The pooled result in Table 3 indicates that most of the farmers in the study area perceived access to agricultural extension services and activities to be low in the following activities: visitation of farmers by extension agents ($\bar{x} = 1.23$), trainings on improved practices ($\bar{x} = 1.24$), access to information on proven farming technologies ($\bar{x} = 1.25$), participation in OFAR trails ($\bar{x} = 1.25$), participation in agricultural shows ($\bar{x} = 1.25$), meetings with extension agents ($\bar{x} = 1.28$), participation in result and method demonstrations ($\bar{x} = 1.28$), participation in



field days ($\bar{x} = 1.30$), access to farm inputs ($\bar{x} = 1.31$) and participation in MTPs ($\bar{x} = 1.33$). This finding justifies the findings in Table 3 where most of the aforementioned activities were negatively affected by communal conflicts as reported by extension field workers. In this study, the activities which recorded least accessibility were visitation of farmers by extension field workers, farmer group training on improved practices and participation on agricultural shows and OFAR Trials. This result affirms the findings of Robertson and Steve (2012) and Kimenyi *et al.* (2014) that conflicts hinder the smooth operation of government agencies, ADPs and research institutes operating in affected farming communities thereby, forcing most of these institutions to reduce their activities like field trials and monitoring among others to minimal functions or cancel some activities.

Table 3: Extent of Farmer's Access to Agricultural Extension Services in Conflict Prone Areas (n = 391)

Services	High	Moderate	Low	Sum	Mean (\bar{x})	Rank
Interpersonal contact:						
Field and home visitation	2.56	17.90	79.54	481	1.23	1 st
Group contact:						
Farmers' group meetings	1.03	26.15	72.82	500	1.28	6 th
Farmers' group trainings	2.05	20.20	77.75	486	1.24	2 nd
Field day:						
Green cum Brown	2.31	25.13	72.56	506	1.30	8 th
Agricultural shows	1.28	22.76	75.96	490	1.25	3 rd
Field demonstration:						
Method cum Result	2.05	23.53	74.42	499	1.28	6 th
On-Farm Training:						
Participation in MTPs	2.30	28.13	69.57	519	1.33	10 th
Participation in OFAR trials	1.53	21.99	76.47	489	1.25	3 rd
Mass Contact:						
Access to information on-farming technologies	1.53	22.25	76.22	490	1.25	3 rd
Access to farm inputs	1.53	27.62	70.84	511	1.31	9 th

Note: Figures in parenthesis are percentages, High Access = 3, Moderate Access = 2, Low Access = 1; decision rule: Mean scores ≥ 2 = Perceived as high access to extension services; Mean scores < 2 = Perceived as Low access to extension services.

Source: Field survey (2017)

Effects of Communal Conflicts on Access to Agricultural Extension Services by Farmers

As indicated in Table 4, the overall model was statistically significant (LR $\chi^2 = 83.80$, $p = 0.000$). The conflict variables that were significant include: frequency of occurrence of communal conflicts, season of occurrence of communal conflicts, category of people mostly affected by conflicts, duration of communal conflicts and period of displacement. Frequency of occurrence of communal conflicts was negative and significant at 1% ($z = -3.49$) which is an indication that an increase in the frequency of occurrence of communal conflicts in the study



area is likely to disrupt the activities of extension field workers, thus making access to extension services by the farmers to be low or even not available because of insecure working situation.

Season of occurrence of communal conflicts was negative and significant at 1 % ($z = -3.46$) which shows that an increase in the occurrence of communal conflicts during the rainy season would result in low access to the services since extension services are mostly available during the planting seasons when rains are available.

Category of people mostly affected by communal conflicts was negative and significant at 1% ($z = -3.69$) implying that as the category of young farmers continues to be affected by occurrence of communal conflicts, there is the probability of having low access to extension services. This result is consistent with Idi (2011), Yahaya (2011) and Onyango *et al.* (2016) who stressed that the major beneficiaries of extension programmes were young farmers (15-45 years) and that the impact of armed conflict on children, youth and their families can be catastrophic and long lasting resulting in long term psychological trauma, poverty, high rate of school dropout and increasingly violent behaviour.

Duration of communal conflicts was negative and significant at 1% ($z = -4.84$). The result indicates that with an increase in the duration of communal conflicts within farming communities, farmer's access to extension services becomes low due to insecurity and displacement from their communities.

Period of displacement was negative and significant at 1% ($z = -5.65$). The result showed that increase in the period of displacement of farmers from their communities as a result of communal conflicts could result to low access to agricultural extension services. This implies that farming communities experience consequent interruption of farming and other economic activities across the communities affected by communal conflicts due to the displacements of several settlements. The findings agrees with that of Adelakun *et al.* (2015) and Institute for Peace and Conflict Resolution ([IPCR], 2017) that incessant resource-based conflicts have continued to undermine the impact of agricultural extension service delivery in Nigeria resulting in severe effect on availability to extension services, adoption of improved technology and continued use of adopted technology.



Table 4: Effects of Communal Conflicts on Farmers Access to Agricultural Extension Services

Variables	Coefficient	Std. error	Z
Frequency of occurrence of conflict	-0.115609	0.0331246	-3.49***
Extent of social and economic losses	-1.32e-08	2.22e-08	-0.59
Type of conflict	0.565157	0.7029859	0.80
Season of occurrence	-1.180104	0.3415432	3.46***
Time of the day of occurrence	-0.3824123	0.3457577	-1.11
Category of people affected	-2.104458	0.569823	-3.69***
Duration of the conflicts	- 0.2426259	0.0501159	-4.84***
Period of displacement from community	-0.2452529	0.0434353	-5.65***
Distance from home to displacement camp	-0.084516	0.0125985	-0.67
Places of attacks	-0.5415464	0.378724	-1.43
No. of death recorded from conflicts	0.1020865	0.715692	1.43
LR Chi2 (11)	83.80		
Prob > Chi2	0.0000		
Pseudo R ²	0.7405		

***significant at 1%

Source: Field survey (2017)

CONCLUSION AND RECOMMENDATIONS

The study revealed that farmers in the study area perceived access to most of the agricultural extension activities to be low as a result of the occurrence of communal conflicts. Frequency of occurrence of communal conflicts, season of occurrence of communal conflicts, category of people mostly affected by communal conflicts, duration of communal conflicts and period of displacement significantly affected access to agricultural extension services by farmers in the study area. In view of the long durations spent in internally displaced persons (IDPs) camps, agricultural extension agencies should institutionalize agricultural extension services in IDPs camps like every other essential service to facilitate access to knowledge and productive resources that will increase their productivity and well-being.

REFERENCES

- Adelakun, O. E., Adurogbangba, B. A. and Akinbile, L. A. (2015). Socioeconomic effects of farmer-pastoralist conflict on agricultural extension service delivery in Oyo State, Nigeria. *Journal of Agricultural Extension*, **19**(2): 59-70.
- Adisa, R. S. and Adekunle, O. A. (2010). Farmers and herdsmen conflicts: A factor analysis of conflict variables among arable crop farmers in North-Central Nigeria. *Journal of Human Ecology*, **30**(1): 1-9.
- Adzenga, J. I. (2019). *Effects of communal conflicts on agricultural extension services delivery in Benue and Nasarawa States, Nigeria*. Thesis submitted to the postgraduate school,



- Federal University of Technology, Minna, Nigeria, in partial fulfilment of the requirement for the award of PhD in agricultural extension and rural sociology. 205Pp.
- Idi, G. (2011). *Influence of agricultural extension Programme on farmers' agricultural production in Kano State*. Thesis submitted to the school of postgraduate studies, Ahmadu Bello University, Zaria, Nigeria, in partial fulfilment of the requirement for the award of masters of agricultural education.
- Institute for Peace and Conflict Resolution [IPCR] (2017). *2016 Strategic conflict assessment of Nigeria*. Consolidated and Zonal Reports, Abuja. Retrieved on January 16, 2018 from <http://www.ng.undp.org>.
- Kimenyi, M., Adibe, J., Djiré, M., Jirgi, A. J., Kergna, A., Deressa, T. T., Pugliese, J. E. and Westbury, A. (2014). *The impact of conflict and political instability on agricultural investments in Mali and Nigeria*. Washington, DC, Africa Growth Initiative, Working Paper 17, 51p.
- Ojo, M. A., Ojo A. O., Odine, A. I. and Ogaji, A. (2014). Determinants of crop diversification among small-scale food crop farmers in North Central, Nigeria. *Production Agriculture and Technology*, **10**(2): 0794-5213.
- Onyango, P., Morara, B., Niekerk, J., Lynch, M. and Lalor, K. (2016). *Impact of armed conflict and terrorism on children and youth*. Nairobi, Kenya; Colorado, U.S.A. Report on International Conference on the Impact of Armed Conflict and Terrorism on Children and Youth. African Network for the Prevention and Protection against Child Abuse and Neglect (ANPPCAN) and International Society for the Prevention of Child Abuse and Neglect (ISPCAN). Retrieved on October 15, 2018 from <https://www.ispcan.org/>
- Robertson, A. and Steve, O. (2012). *Adapting agricultural extension to Peace building: USA*, Report of a Workshop by the National Academy of Engineering, 51Pp.
- Tsado, J. H. (2013). *Analysis of adoption of improved rice packages by farmers in Kwara and Niger States, Nigeria*. Unpublished Ph.D. Thesis, Federal University of Technology Minna. 192Pp.
- Yahaya, A. J. (2011). *Ethnic and religious conflicts in Kaduna and Plateau States: Implications for development in Nigeria*. A thesis submitted to the department of religion & cultural studies, faculty of the social sciences, University of Nigeria, Nsukka, 176Pp.
- Achike, A. I. and Anaku, T. A. K. (2010). Economic analysis of the marketing margin of rice farmers in Ebonyi State. *Journal of Tropical Agriculture, Food, Environment and Extension*, **1**(1): 47-55.