FUDMA Journal of Sciences (FJS)
ISSN online: 2616-1370
ISSN print: 2645 - 2944
Vol. 9 April Special Issue, 2025, pp 171 - 177
DOI: https://doi.org/10.33003/fjs-2025-09(AHBSI)-3415

INVESTIGATION OF THE EFFECTS OF BANDITRY ON EXTENSION SERVICES DELIVERY AND CROP PRODUCTION ACTIVITIES IN ZAMFARA STATE NORTH-WEST, NIGERIA

***Ekpa Daniel, Adeola Segun S., Ojoko Emmauel A. and Altine Amadu**

Department of Agricultural Economics, Federal University Dutsin-Ma, Katsina State.

*Corresponding authors' email: ekpadaniel3322@gmail.com

ABSTRACT

The study analyzed the effects of banditry on extension services delivery and crop production activities in Zamfara State North-West, Nigeria. A total of 261 crop farmers and 33 extension workers were sampled using multi-stage sampling techniques. The study used primary data which was collected using a structured questionnaire. Analytical tools such as descriptive statistics, Binary Logit regression model, and paired t-test were used in achieving the stated objectives. The results of the socio-economic characteristics revealed that the mean age for farmers and extension workers were 49 and 47 years old respectively. The result on the effect of banditry on extension delivery services showed that variables such as Frequency of banditry attacks, availability of security personnel, distance to extension delivery service areas, and blocking of local routes by bandits were all statistically significant, thus shows negative effect on extension delivery services to rural farmers. The analysis on the effect of banditry on crop income obtained by the farmers showed that before the onset of banditry, the farmers were realizing an average crop income of ₦302,398.99/ha, but as the bandits continued to invade their communities, the crop income now drastically dropped to ₦128,587.69/ha with a negative difference of ₦-173,811.3 (284.65kg). It was recommended that government should improve the condition of service of the extension agents through regular recruiting more staffs, full armed security escorts and special allowances. These would facilitate effective extension delivery services to the rural farmers.

Keywords: Extension Services, Crop Farmers, Banditry Effect, Income

INTRODUCTION

Agriculture is the foundation of the Nigerian economy and accounts for about 24 percent of the nation's Gross Domestic Product (GDP), providing the main sources of livelihood for the majority of Nigerians. The country is notable in various types of agricultural productions such as sorghum, millet, rice, cassava, palm oil, cocoa, beans, maize and livestock among the others. The farming sector of the country employs about 70 percent of the entire country's labour force. Nigeria's small farms produce about 80 percent of the total national output and about 33 percent of the country's land is under cultivation for the purpose of agricultural productions. Hence, Nigeria is the leading African country in the farming sector as it has the highest levels of productivity and profitability in farming compared to other West African countries (Maxwell, 2018). Records showed that 87 percent of households practice crop farming in rural areas of Nigeria and this shows a strong potential for agricultural development in the country (International Trade Administration (ITA), 2021).

The official slogan of Zamfara State (farming is our pride), clearly indicates that it is an agrarian state with over 80 percent of the population engaged in farming during both the rainy season and dry season. The State has been recognized as one of the major producer of the major arable crops grown in North Western Nigeria. Thus, apart from gold mining, agriculture is the State's main occupation and the central source of income. The State has great potential to be a net producer of food crops, minerals and other industrial items and indeed a net exporter of cash crops such as cotton, groundnut and cassava. The human resources, vast arable land and huge irrigation facilities positioned the State to be economically vibrant, which opportune the State towards increasing the nation's GDP by about ₦1.262 trillion in 2019 with a per capita GDP of ₦300,390.00 (Zamfara State Government, 2021).

The agricultural extension delivery services are of utmost important towards improving agricultural productivity in agriculture-dependent economies. Agricultural extension programmes have been one of the main conduits for disseminating information on new improved farming technologies, support rural adult learning and assist farmers in developing their farm technical and managerial skills as well as getting the farmers actively involved in the agricultural knowledge and information system (AKIS). It is expected that extension programmes will help increase farm productivity, farm revenue, reduce poverty and minimize food insecurity (Gebrehiwot, 2015; Olaniyi and Farinde, 2017). The extension workers' role is to teach and demonstrate to innovative farmers how to use new technologies. Once innovative farmers have adopted the new technologies, it is assumed that other 'laggards' or 'followers' farmers will copy them and the technology will diffuse to the majority of farmers. This also helps in teaching farmers the value of improved agriculture; recommending suitable crops and, livestock for different agro- ecological zones; encouraging adopting of appropriate technologies, and evaluating farmers' reaction and attitudes toward development projects (Aremu *et al.*, 2015).

However, within the last decade, the role of the agricultural extension workers in boosting agricultural productivity in Nigeria and the country's potential for agricultural development has been hurt by several shocks of insecurity especially the conflicts between herdsmen and local farmers as well as the banditry activities in the rural areas of the country's Northwest region where larger quantities of arable crops are being produced (International Trade Administration (ITA), 2021). Historically, North West Nigeria's bandit problem originated in Zamfara State largely as a result of

corrupt land titling processes in the early 2000s that benefited Hausa elites at the expense of herders. The forested areas of Zamfara State are one reason that full-time criminal gangs eventually took root there. The gangs also operate artisanal gold mines in Zamfara and exploit its international border with Niger for profit from arms and narcotics smuggling (Africa Center for Strategic Studies (ACSS), 2021). Armed banditry has become a major problem in Zamfara State. This menace had been on the increase in frequency since 2011 after general elections, leading to violent conflict between the Fulanis and their allies from within and outside the country (Olayoku, 2014). The outcome of this conflict has claimed thousands of lives and caused destruction of properties worth billions of naira in the State. It could be argued that there is no village in the state that has not witnessed the impact of armed banditry which greatly has affected the agricultural activities in the State (Bello, 2017).

Currently, in Zamfara State, towns and villages are being attacked by bandits almost on daily basis. People are being killed, kidnapped for ransom, women raped, hundreds of cattle rustled, traders robbed, houses and markets destroyed, farming was proscribed by bandits; those who cultivated crops have been warned not to venture near their farms (Tukur, 2022). There is wanton destruction of lives and properties and high level of human rights violation going on in the State. Armed banditry has created a large number of destitute, orphans, widows and internally displaced persons in the rural areas of the State (Tukur, 2022). The transhumance system of livestock production characteristic of seasonal and cyclical animal migration between complementary ecological zones has been poorly controlled due to fluctuating of criminal activities. Infiltration operations by livestock bandits, which have specialized in rustling and incursions by transhumance shepherds from adjacent nations has become the order of the day. The ethno-religious conflict, the ecological, climate and gradual population change and cattle growth of non-agricultural land uses, social and living conditions common in the Northern areas are also other factors (Omitola *et al.*, 2021).

MATERIALS AND METHODS

Zamfara State is among the seven States that formed the North-west geopolitical zone of Nigeria. It was created in 1996 out of the then Sokoto State. It shares an international border with the Republic of Niger to the North, and interstate boundaries with Katsina to the East, Sokoto State to the West, Kebbi, Niger and Kaduna States to the South. Zamfara State Comprises fourteen (14) Local Government Areas namely; Gusau, Tsafe, Bungudu, Maru, Kaura-Namoda, Zurmi, Shinkafi, Birnin-Magaji, Talata-Mafara, Bakura, Maradun, Anka, Bukkuyum, and Gummi. The State has a land mass of thirty nine thousand seven hundred sixty two square kilometres (39,762km²). It has a population of three million two hundred and seventy eight thousand, eight hundred and seventy three people 3,278,873 which is projected to hit about 6,644,798 by 2023 (NPC, 2006) and predominantly agrarian. Hausas are the dominant tribe while the Fulanis formed between twenty to thirty percent total population out of which about fifteen to twenty percent are pastoral in nature. Zamfara State is endowed with vast forest composed of thirty thick grazing reserves. The grazing reserves cover about two million two hundred and twenty five thousand, six hundred and fourty eight hectares (2,225,648 hectares). This provides the habitable environment for farming pastoralism in the State (Nadama, 2019).

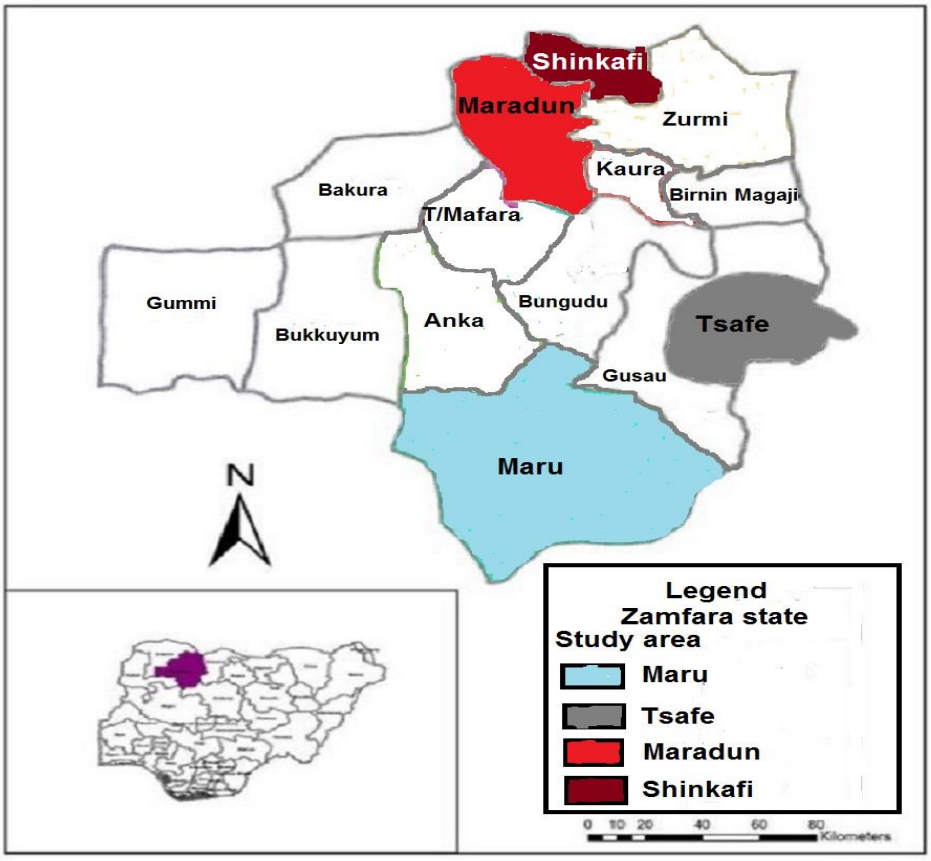

Figure 1: Map of Zamfara State.

Data and Sampling Procedure

The population of the study comprises of extension workers and farmers of IFAD-CASP in Zamfara State, North west Nigeria. The State was divided in to three agricultural zones namely: Northern zone (Birnin Magaji, Kaura Namoda,Shinkafi and Zurmi LGAs),Central zone (Bungudu, Gusau, Maru and Tsafe LGAs, and western zone (Anka Bakura,Bukkuyum,Gumi, Maradun and Talata Mafara LGAs). A comprehensive list of registered members of both farmers and extension workers was obtained from ministry of agriculture office in Gusau. Multi-stage sampling technique was employed in the study. The first stage involves purposive selection of four Local Government Areas (LGAs) with higher records of banditry activities in Zamfara State. These areas include Shinkafi, Tsafe, Maru and Maradun. The second stage involves random selection of three villages from each of the four sampled Local Government Areas, making a total of twelve villages used in the study. The study was limited to the three villages in each LGA due to limited resources and convenience to ensure thoroughness. The third stage was the application of proportionate sampling in order to allocate the recommended Raosoft sample size of 262 for the farmers in their respective Local Government Areas and villages. However, after the data collection exercise, one questionnaire was found invalid due to incomplete information, thus 261 was finally used. On the other hand, due to the limited number of extension agents in each Local Government Area of Zamfara State, therefore all the extension workers in the sampled Local Government Areas were used in this study. The extension workers were used for data collection because they are aware of the safe periods to enter those villages and they know the farmers under them. The following expression of the proportionate sampling was used.

$n = \frac{G}{D} \times N$

Where:

n = Sample size of farmers selected per village

G = Number of farmers in a village

D = Total number of all farmers in all the LGAs.

N= Recommended sample size for the study by Raosoft sample size calculator.

The proportionate distribution of the respondents is computed in the following table.

Table 1: Sample Size Distribution of the Respondents

S/N	LGA	Villages Selected	Population of farmers	Number Selected	Number of extension agents/LGA
1	Shinkafi	Maberaya	70	22	
		Badarawa	73	23	2
		Birnin yero	82	26	
2	Tsafe	Kizara	58	19	
		Nasarawa	86	28	12
		Gidan dawa	63	20	
3	Maru	Jabaka	65	21	
		Kanoma	67	21	9
		Mayanci	54	17	
4	Maradun	Bayanruwa	68	22	
		Faru	70	23	10
		Gwargawu	60	19	
Total	4	12	816	261	33

Source: Reconnaissance Survey, Author's Computation, and Zamfara State Ministry of Agriculture, (2022)

Analytical Method

The data collected were analyzed using the following analytical tools: Descriptive statistics, Multiple regression model and T-test were used to achieved the objectives.

Model Specification

This simply involves the use of mean, frequency distribution and percentages to present the characteristics of the data or information collected. Hence, tables and figures were employed for clear illustrations of the research findings.

Multiple Regression Model

Multiple regression is a statistical technique that uses several explanatory variables to predict the outcome of a response variables. The goal of this model is to model the linear relationship between the independent variables and response (dependent) variable (Beza and Reidsma, 2017). The model was used to assess the effect of banditry on extension delivery services to the rural farmers in the study area. In this case, a linear functional form was explicitly specified as follows:

$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \mu.$

β_1- β_6 Parameters to be estimated

Y = Frequency of extension visits paid by extension agents to rural areas in the last cropping season (Number of visits)

X_1 = Frequency of banditry attacks experienced at extension delivery areas (Number of times)

X_2 = Chasing of extension workers at their offices (Number of times chased)

X_3 = Availability of Security personnel (1=Yes, 0 =No)

X_4 = Distance to extension delivery service areas in kilometer (in km)

X_5 = Blocking of local routes (1= Yes 0=No)

X_6 = Training of extension agents on security issues (Number of training attended)

μ = Unobservable random Error term

Paired T-Test

The paired t- test was used to address objective (i) to determine the effect of banditry on land area cultivated in the study area and objective (ii) to determine the effect of banditry activities on crop income obtained in the study area and also to test the hypothesis of the study at (P< 0.1%) level of significance, using SPSS package.

The general formula of the t-test is given as:

$$t = \frac{\ddot{X}_1 - \ddot{X}_2}{\sqrt{\frac{s_1^2 - s_1^2}{n_1 - n_2}}}$$

Where:

t = t-value

$\ddot{X}_1$= the mean sample of respondents land cultivated (ha)/income of farmers in selected communities before banditry.

$\ddot{X}_2$= the mean sample of respondents land cultivated (ha)/inputs supply/income of farmers in selected communities after banditry incidence.
S_1^2 = sample standard deviation for respondents land cultivated (ha)/income of farmers in the affected communities before banditry.
S_2^2 = sample standard deviation for respondents land cultivated (ha)/income of farmers in the affected communities after banditry incidence.
n_1 = sample size of respondents land cultivated (ha)/income of farmers in the affected communities before the incidence of banditry.
n_2 = sample size of respondents land cultivated (ha)/income of farmers in the affected communities after the incidence of banditry.

RESULTS AND DISCUSSION

The socioeconomic characteristics of the farmers and extension workers were presented and discussed according to their age, gender, marital status, household size, educational level, level of experience and occupation. Such features directly or indirectly can influence the operational performance of the respondents. The details are shown in Table 2.

Table 2: Socioeconomic Characteristics of the Respondents

Socio-economic characteristics	Farmers		Extension workers	
	Frequency	**%**	**Frequency**	**%**
Age (years)				
16-29	28	10.7	8	24.2
30-43	76	29.1	11	33.3
44-57	83	32.0	9	27.3
58-71	63	24.1	5	15.2
72-85	11	4.2	0	0
Total	261	100	33	100
Mean	49		47	
Minimum	16		30	
Maximum	85		62	
Gender				
Male	221	84.7	33	100
Female	40	15.3	0	0
Total	261	100	33	100
Household size				
1-7	36	14.0	7	21
8-15	187	72.0	16	48
16-23	24	9.0	5	15
24-31	14	5.0	5	15
Total	261	100	33	100
Mean	9		5	
Level of education				
Primary	29	11.0	-	-
Secondary	44	16.9	-	-
Tertiary	6	2.3	-	-
Informal/Adult education	31	11.9	-	-
Quranic education	151	57.9		-
Certificate	-	-	8	24.2
ND/NCE	-	-	3	9.1
BSc/HND	-	-	22	66.7
MSc/PhD	-	-	0	0
Total	261	100	33	100
Farm size(ha)				-
0.5 – 3.5	33	12.6	-	-
4.0 – 7.0	217	83.2	-	-
7.5-10	11	4.2	-	-
Total	261	100	-	-
Farming/Working Experience (Years)				
2-13	37	14.2	11	33.3
14-25	43	16.5	10	30.3
26-37	62	23.7	12	36.4
38-49	72	27.6	0	0
50-61	47	18.0	0	0
Mean	25		19	
Minimum	2		9	
Maximum	61		30	
Total	261	100	33	100

Source: Field Survey Data (2023).

The result in Table 2 shows that majority (32.0%) of the farmers were within the age of 44-57, while majority of the extension workers (33.3%) were within the age of 30-43. The mean age for farmers and extension workers were 49 and 47 years respectively. This implies that majority of the farmers were still within their productive age and can engage efficiently in crop production with high possibility of adopting new discoveries for developing the farming activities unlike the older age. Similarly, the middle age of the extension workers is a potential of delivering extension services to rural areas. However, the analysis shows that 24.1% of the farmers were within the age group of older age who by implications may experience physical limitations and reduced mobility. This can make them more vulnerable to banditry attacks as they may have difficulty escaping or defending themselves in dangerous situations. Bandits may perceive older individuals as more defenseless or less likely to resist or fight back during an attack. This perception could make older individuals more attractive targets for banditry incidents. Similarly, older individuals might have limited awareness of their surroundings or may be less familiar with the tactics and strategies employed by bandits. This lack of awareness and response could make them more susceptible to falling victim to banditry attacks. Older individuals may rely more on others for support and assistance, which can further increase their vulnerability. If their support system or caregivers are unable to protect them from banditry attacks, they may face higher risks. The study agrees with the work of Mohammed *et al.* (2021) and Ekpa et al., (2017). who reported that the farmers in Niger State had a mean age of 42 years.

The result on gender reveals that males dominated both the crop production activities and extension services in the study area. This implies that majority of the male farmers and male extension workers are more prone to banditry attacks during farming activities and when delivering extension services than their females counterpart, since the males dominated the farming and extension services in the area. As for the household size, majority of the crop farmers (72%) and the extension workers (48.0%) had a family size of 8-15 people with a mean of 9 and 5 respectively. This indicates the possibility of utilizing family labour among the farmers, but on the other hand, they may endanger more people in the family members to banditry insurgent while providing the family labor on farm activities. The findings corroborate the work of Audu and Adamu (2021) in Katsina state where it was revealed that majority (69%) of the crop farmers had a mean household size of 8 individuals.

In the case of level of education, the analysis discloses that 57.9% of the farmers had Quranic education while 66.7% of the extension workers had BSc/HND qualification. This indicates a very low level of western education among farmers in the study area. However, majority of the extension workers had attained a milestone of western education. This can be a good indication that the extension workers may have some strategies of extending extension information to rural farmers amidst the dare situation of banditry in the study areas. Similarly, the level of education can lead them to acquiring special training on how to conduct their extension services with minimal risk of experiencing banditry attacks because new ideas and skills could be learned. The result on farm size shows that 83.2% of the farmers had a land area of 4 to 7 ha. This implies that majority of the farmers in the study area are smallholder farmers who have been operating at subsistence level. This can lead to decreased productivity which simultaneously coupled with banditry activities, thereby forcing the farmers to cultivate on fragmented lands. This situation may result to lower yield in crop production in the area. The result agreed with the work of Gorny and Mark (2020) in Kaduna State who discovered that majority of crop farmers in the study area were small scale farmers with about 3.5 to 6.5 ha of land.

The analysis on farming/working experience showed that 27.6% of the farmers had spent 38 to 49 years in farming activities with a mean of 25 years, while 36.4% of the extension workers on average spent 19 years in carrying out extension services in the study areas. This implies that greater percentage of farmers in the area have acquired a high years in farming experience, hence, there might have been a continuous learning and developmental strategies of mitigating the menace of decreased productivity due to banditry activities in the area. Similarly, the result also indicates that majority of the extension workers had longer working experience in the area. Thus, there is tendency of good rapport between the extension agents and the farmers, which could give a room for extending extension information to the farmers by exploiting alternative sources instead of direct contact which was crippled by banditry insurgency in the study areas. The result agreed with that of Olaniyi and Farinde (2017) in Southwest Nigeria who reported that the extension workers spent an average of 20 years in extension services in the area.

The analysis of the effect of banditry on extension delivery services was obtained using Multiple regression model and the result is presented in Table 3.

Table 3: Effect of Banditry on Extension Delivery Services to Farmers

Variable	Coefficient	Std. Error	T-value	P>ltl
Frequency of banditry attacks experienced in the extension delivery areas	-0.002567	0.013425	-0.19	0.323
Chasing of extension workers at their offices	-0.1914483	0.1199882	-1.60	0.113
Availability of security personnel	0.3754725	0.0570363	6.58	0.000***
Distance to extension delivery service areas	-0.0000368	-0.0000163	-2.25	0.026**
Blocking of local routes by bandits	-0.2468912	0.2423311	-1.02	0.310
Training of extension agents on security issues	0.9168078	0.4815107	1.90	0.059*
R-square				0.712

Source: Field Survey Data (2023)

*Significant at 10%, **Significant at 5%, ***Significant at 1%

Dependent variable: Frequency of extension visits paid by extension agent to rural farmers in the last cropping season (No: of times)

The result in Table 3 shows the effect of banditry on extension delivery services to the rural farmers in the study areas. The analysis reveals that availability of security personnel was significant at 1% and had a positive relationship with the dependent variable. This indicates that as the number of the available security personnel assigned to provide security in the affected areas increases so also the number of extension visits expected from the extension workers to deliver extension information in those areas. In addition, distance to extension delivery service areas was significant at 5% with a negative relationship. This implies that decrease in the distance to the assigned rural areas where the extension agents are required to deliver extension information may increase the number of extension visits payable to the farmers. Thus, the remote areas that are much far away from the extension agents are likely to be more affected in accessing extension services as a result of the dare situation of banditry. Similarly, Training of extension agents on security issues was significant at 10% and had a positive relationship with the dependent variable. This indicates that as the extension workers continue to receive security related trainings, this may lead to the increase in the number of extension visits to the rural areas. The overall R-square value of the model reveals that 71% of the variation in the dependent variable was explained by the independent variables included in the model. Consequently, the result depicts how much the banditry activities had affected the extension delivery services in the study areas, and in turns crippled the potential crop yield in the areas. The finding is in line with the work of Audu and Adamu (2021) in Katsina State where it was uncovered that the disruption in farming activities due to armed bandit attacks affect agricultural productivity with serious implications on food security.

Effect of Banditry on Crop Income Obtained by Farmers

The effect of banditry on income obtained by the farmers from cultivating different crops before and after bandits was examined using paired t-test and the result is shown in Table 5.

Table 4: Effect of banditry on crop income obtained by farmers (from all crops)/ha

Parameter	Income Without Banditry (₦)	Income With Banditry (₦)	Difference in income (₦)
Mean	302,398.99	128,587.69	-173,811.3
Std. Deviation	118,751.10	45,269.54	-73,481.6
Minimum	101,000	60,000	-41,000
Maximum	499000	200,000	-299,000
N	261		
t-value	20.977***		

Source: Field Survey Data (2023).
***Significant at 1%

The result in Table 4 shows the effect of banditry on crop income obtained by farmers from different crops cultivated per hectare. The analysis was conducted by comparing the means of income realized before and after the incidence of banditry activities in the study areas. It was found that before the onset of banditry, the farmers were realizing an average crop income of ₦302,398.99/ha, but as the bandits continued to invade their communities, the crop income now drastically dropped to ₦128,587.69/ha with a negative difference of ₦-173,811.3 (284.65kg) that has never reached the ultimate farmers in the area. Similarly, the t-value of the paired mean for crop income was statistically significant at 1%, indicating significant difference in the means of the paired observations. This implies that the banditry activities had significant effect on the crop income obtained by the farmers. The decrease in the crop income was possibly triggered by the number of hectares of land seized by bandits, coupled with those abandoned by the farmers in fear of banditry attacks. Crop production remains one of the major source of food for majority of the farmers in the affected areas. Therefore, it is not surprising that the livelihood of these farmers has been tempered, and as such they may not be able to meet their basic needs. The consequences of this situation can also affect the overall availability of food in Zamfara state, since the production was mainly carried out by smallholder farmers who are mostly rural based farmers. The findings are in consonance with the work of Gorny and Mark (2020) in Kaduna state, where the result revealed significant difference in the farmers' level of crop income before and after the banditry with a t-value of 2.48 showing 5% level of significant. This indicates that the farmers realized high yield and high income from the crop production before the insurgency of banditry in the area compared to what they harvest during the era of the banditry activities. Similarly, this result had led to the rejection of null hypothesis formulated in the study which says banditry activities have no significant effect on the output of farmers in the study area.

CONCLUSION

Based on the research findings, it can be concluded that banditry activities had crippled the ability of the extension workers to effectively deliver extension services in the study areas. Similarly, the land area cultivated and the level of crop income obtained by the farmers had substantially decreased as a result of the banditry activities. Therefore, the livelihood of these farmers has been tempered, and as such they may not be able to meet their basic needs. However, the crop farmers have not encountered security challenges in accessing farm inputs despite the activities of bandits in their communities.

RECOMMENDATION

The following recommendations are suggested:

i. `The crop farmers should be encouraged to diversify their sources of income. This will help in reducing the income gap they faced from crop income.
ii. The community leaders in collaboration with security operatives should thoroughly search and neutralize all the informants that are feeding the bandits with information about the rural settings and movement of troops.
iii. The government should improve the condition of service of the extension agents through regular training on security issues. provision of life insurance, recruiting more staffs, full armed security escorts, special allowances, reliable mobility etc. These would facilitate effective extension delivery services to the rural farmers.
iv. The crop farmers are advised to use the available land areas at their disposal and practice irrigation farming during the dry season. This would minimize the menace

caused by bandits, since their criminal activities often worsen during rainy season.

v. The crop farmers should learn to work in groups during the crop farming activities, and at least under the surveillance of local vigilante.

REFERENCES

Africa Center for Strategic Studies (ACSS), (2021). Criminal gangs destabilizing Nigeria's North West. *Spotlight December, 14.*

Audu, Y.A. & Adamu, A. (2021). Effects of armed banditry on food security in Katsina state Nigeria. *Journal of Research and Development, 6*(2), 43-51.

Aremu, P.A., Kolo, I.N., Gana, A.K. and Adelere, F. A. (2015). The Crucial Role of Extension Workers in Agricultural Technologies Transfer and Adoption. *Global Advanced Research Journal of Food Science and Technology*, Vol:*4*(2), 014-018.

Bello, A. (2017). "Herdsmen and farmers conflicts in North-Eastern Nigeria: Causes, repercussions and resolutions." University farm research, Yobe State University, Damaturu, Nigeria. *Academic Journal of Interdisciplinary Studies Rome*, Vol: *2*(5), 129.

Beza, E. & Reidsma, P. (2017). Review of yield gap explaining factors and opportunities for alternative data collection approaches. *European Journal of Agronomy, 82*(B), 206-222.

Ekpa, D., Akinyemi, M., and Ibrahim, H.I, (2017). "Investigating Climate Smart Agricultural Practices in Livestock Production in Sokoto State, Nigeria: An Application of Principal Component Analysis" *FUDMA Journal of Sciences (FJS) Maiden Edition: Vol. 1 No: 1, November, 2007, pp 103 – 108.*

Gebrehiwot, KG. (2015). The Impact of Agricultural Extension on Households' Welfare in Ethiopia. *International Journal of Social Economics*, *42*(8), 733–48.

Gorny, T.B. & Mark, A.M. (2020). Effect of banditry on crop farmers. A cross sectional survey in Kaduna state. *Journal of Environmental Studies, 6*(7), 23-29.

International Trade Administration (ITA), (2021). Nigeria Country Commercial Guide: Nigeria's Agricultural Sector. *The Global Site, United State Department of Commerce.*

Maxwell, M. (2018). Why Agriculture in Nigeria is Important: Addressing Poverty and Hunger and Working towards ending them. *The Borgen Project, Huffington Post.*

Mohammed, U., Umar, I.S., Olaleye, R. S., Pelemo, J. J., Ahmad, B. S., Mohammed, U. and Umar, A. (2021). Effects of Banditry on Income and Livelihoods of Yam Marketers in Shiroro Local Government Area of Niger State, Nigeria. *Journal of Agriculture and Food Sciences, 19*(1), 163-178.

Nadama, M.U. (2019). Armed Banditry and Internal Security in Zamfara State, Nigeria. *International Journal of Scientific and Engineering Research, 10*(8), 1219-1226.

Olaniyi, A.A. and Farinde, A.J. (2017). Extension Service delivery of Agricultural Development Programmes in Southwest Nigeria during the Post-World Bank era (1996-2013). *Ethiopian Journal of Environmental Studies and Management, 10*(5), 102-117.

Olayoku, P.A. (2014). Trends and Patterns of Cattle Grazing and Rural Violence in Nigeria (2006-2014). Nigeria Watch Project. *IFRA- Nigeria Working Papers Series No. 34.*

Omitola, B., Adedire, S., Akinrinde, O.O., Omodunbi, O. and Sackflame, M.M. (2021). The Triangle of Terror: Boko Haram, Fulani Herdsmen, Bandits and organised Insecurity in Nigeria. *Journal of International Relations and European Studies, 15*(1), 1843-1925.

Tukur, T.A. (2022). Armed Banditry and Cattle Rustling: Collapse of the Peace Deal and Resurgence of Fresh Violence. *International journal of innovative research and development*. Vol:6(12), 161-171.

Zamfara State Government (2021). Budget Performance Report. *First Quarter, 2021.*