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Research Article

Media Projections for Farm Insecurity in Osun State, Nigeria

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Abstract

The increasing spectrum of security challenges on crop production is of major concern to sustainable food availability for the nation at large. This study x-rayed security threats to crop production and examined the capacity of available communication sources for security information. Multi-stage sampling procedure was used to select 149 crop farmers from six Local Government Areas - Oriade, Obokun, Odo-Otin, Boripe, Ejigbo and Iwo LGAs in Osun State. Data on farmers' personal characteristics, security challenges, effect of insecurity on crop production, communication sources and capacity for farm security information were collected with the use of structured questionnaire. Data were described using frequencies, means and percentages, while Independent samples T-test and linear regression determined existing relationships and mean differences among variables. The data was analysed using the Statistical Package for the Social Sciences (SPSS) version 20. Result showed a mean age of 47 years, majority could communicate in Yoruba (91.3%) and English (98.0%) and 91.9% had less than 5 acres of farm land. Most severe farm threat was pilfering ($\bar{x}$ = 1.63) and community clashes ($\bar{x}$ = 1.56). There was a significant difference (t=7.45; p<0.05) in the crop production before and after insecurity attacks in communities. Farm information use was mainly through farmers' association (85.9%) and fellow farmers (81.9%); however, local task force, internet and radio ($\bar{x}$ = 66.2, 44.8 and 40.4) respectively were assessed to have more strength for farm security information than others. Radio, extension visit, local task force and the internet contributed significantly to the change in crop production during security. Internet, local task forces, radio and farmers association have the strength for security information. The state government should ensure that all police officers deployed to rural communities work closely with the local task forces to facilitate the sharing of security information among crop farmers

Keywords

Crop Production, Farm Insecurity, Information Sources, Pilfering, Radio

1. Introduction

Several efforts by the government of Nigeria to sustain peaceful cohabitation and development have been marred by ever emerging factors such as migrations, conflicts, climate change which have threatened life and food securities [1, 2]. Achieving the sustainable development goal of peace, justice and strong institutions is therefore becoming a mirage. There are various challenges to agricultural development in Nigeria; notable amongst them include the Boko Haram in the North east, the Bandits and kidnappers. These vices aggravate already existing uncompetitive environment for agribusiness, underinvestment, corruption, lack of access to quality agricultural inputs, weak implementation of policies, poor market access and national insecurity [3]. No society is totally devoid of crime [4], however, the effect on some critical sectors of

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the economy is unquantifiable. The state of National Insecurity has direct effect on the farm and the farmer, thus constituting the major threat to the agricultural sector [5]. In the South West region of Nigeria, the sustained terrorist activities of the herdsmen and bandits have had negative impact on agricultural activities [6]. Not only are farming activities incapable of being carried out under an unsecured environment, domestic agricultural production is stifled, farming communities are displaced and access to regional market is blocked [5]. No region of the country has been spared the vicious scourge of conflict, although the prevalence and intensity have not been the same in across the length and breadth of the nation. In addition, the herdsmen (Fulani herdsmen) have become a major threat to farming communities due to incessant attacks on farmers with attendant fatalities [6]. The present situation is further intensified by elements of globalization, natural disasters, proliferation of weapons and light arms, corruption, executive lawlessness and leadership ineptitude [7]. The escalation of insurgency in South Western States has caused many farmers to abandon their farms. This is as a result of fear of attacks especially by marauding bandits' insurgents, clashes between herdsmen and the farmers, communal conflicts and other forms of conflicts. The farmers are no longer able to produce in sufficient quantities to meet the demand from increasing population growth. The shortages in food supply have had a direct linkage to ineffective information use [8].

Access and effective use of security information among farmers are a panacea to farm and human existence and security threat [9, 8]. Effective information flow with new communication technologies such as mobile phones, radio, and television among farmers was identified by [10] and Phuong, [11]. Other non-mediated information sources such as one-on-one interactions, friends and families, community leaders, etc. are still very important and reliable media for information sharing among rural farm families [12]. The overall, information acquisition and use are dependent on media channels [13]. According to [14], there is a direct relationship between the effect of social insecurity and food availability. All these studies have argued on the relationships between media and insecurity or food production but none has evaluated the effect of media on the two variables, processing what type of media is more suitable for rural farmers' use in the face of escalated insecurity. Or what effect can such type of media have on crop production? This study brings out the relevance of media use for farm insecurity in Osun State.

The study assessed media effects on farm insecurity among crop farmers in Osun state, Nigeria.

The research specifically:

1) described the socio economic characteristics of the respondents in the study area;
2) identified the specific security challenges among crop farmers in the study area;
3) determined the change in crop production after insecurity among respondents; and
4) examined the strength of media use for farm insecurity in the area
5) determined media effect on crop production in the area

This study hypothesized a significant contribution of media strength to crop production after insecurity and a possible difference in the crop production before and after insecurity incidences in the State.

2. Materials and Methods

2.1. Study Location

The study was carried out in Osun State, Nigeria. Recently, the government of Osun State flagged off a promotion of crop farming enterprise to combat the twin problems of unemployment and poverty in the State. This State was purposely selected for the study because of emerging security challenges faced by crop farmers in attaining optimum farm production to achieve the goal of the government. Osun State lies between longitude 4 °and 5 ℄E and latitude 7 °and 8 ℄N. The State is bounded to the North by Kwara State, to the East by Ondo and Ogun States, to the south by Ogun State and to the west by Oyo State. The State is located within the tropics and enjoys two distinct climatic seasons; the wet and the dry season. Farmers in the State produce varieties of crops ranging from pepper, melon, chocorus, amaranth, celosia, tomatoes, cassava, maize, sorghum, cocoa, cocoyam melon, soya bean and okra. The population of the study comprised all crop farmers in Osun State.

2.2. Sampling and Data Collection

Multi stage sampling technique was used for this study. In the first stage, a random sampling of two out of three (67%) of the Agricultural Development Programme (ADP) zones in the State was done. The zones were Osogbo and Ife-Ijesha zones. The second stage involved purposive sampling of Local Government Areas (LGAs) from the two zones that have more registered farmers with ADP for most crops. A total of 6 LGAs were selected which included Oriade, Obokun, Odo-Otin, Boripe, Ejigbo and Iwo LGAs. In the third stage, a random sampling of 20% of communities in the selected LGAs was done and lastly, a random sampling of 10% of farmers in each community was selected to give a total of one hundred and forty-nine farmers (149) who were interviewed for the study. Data for the study were collected with the aid of structured questionnaire. The dependent variable for this study was the effect of farm insecurity on crop production. For the study, an array of crops produced in the State was listed for farmers to indicate their produce before the insecurity (2008/2009 cropping season) and in the 2020/2022 cropping season. The quantity given by each farmer was summed to give his/her ton for the period of interest. This was measured as the difference in the quantity produced in tons for various crops before the escalated incidences of farm insecu-

rity and after. Other variables such as media strength were measured by assessing each information source on the basis of prompt and accurate information, established facts and accessible information anywhere [11]. The respondents were asked the specific security challenges which were measured as most severe, severe, unsure, not severe and not affected.

2.3. Data Analysis

Data for this study were analyzed using descriptive statistics such as frequency, mean and percentage, while linear regression and independent sample T-test were used for the relationships at 5% significant level. *The data were analysed using the Statistical Package for the Social Sciences (SPSS) version 20.*

This study used an independent sample t-test to compare the difference in the means of the responses before the escalated insecurities as X_1 and the mean response from the quantity sold per farmer during the insecurities as X_2. The number of crops by the farmer was calculated by pooling all the output from the different crops together in tons (yam, cocoyam, cassava etc.) for both before and during the insecurity. The total population is 149 farmers grouped into 4 production groups and mean of the four calculated for before and during the incidences.

$$\tau = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu 1 - \mu 2)}{\sqrt{\frac{{S_1}^2}{n_1} + \frac{{S_2}^2}{n_2}}}$$

The study also explored the contributions of other variables to the change in crop produced calculated as the dependent variable. The variables considered included all the information sources which are the independent variables for the study. The model can be specified as

Change in crop production = F (radio, television, family and friends, local task force, police, internet sources)

Change in production = $\beta_0 + \beta_1$ Radio + β_2 Internet + β_3 family and friends ……..U

Where U is the Error term

3. Results and Discussion

Personal characteristics of respondents

Table 1 shows that the mean age of respondents as 47±9.14years. This category of farmers should be knowledgeable about modern communication methods and the importance for farming activities [8]; however, ability to use the modern communication tools to access security information might be diminishing at this age which might pose a threat to farm safety. This is in line with the findings of [15] that age significantly contributed to the modern communication use qualities associated with young and middle aged people; such as their active involvement in modern farming activities. According to [15], younger farmers are more open to new ideas and innovations compared to older ones. Old people are reluctant to change, especially the technology base as they are not familiar with and not used, unlike younger ones who can use the Information Communication Technology (ICT) to access information on production, markets, agricultural techniques, extension services etc.[16]. This age group also has higher responsibility than young farmers and thus could be badly affected by the negative effects of farm insecurity [16].

Majority (73.2%) of the respondents were male. Female involvement in crop production, especially in the face of frequent insecurity attacks, is likely to be more prominent in the processing and marketing level. Furthermore, Table 1 shows that 43.0% of the respondents had secondary education, while 7.4% of the respondents had no formal education. Cumulatively, above 90% of the crop farmers had one form of education or the other. Education has a way of shaping the mind to receive information, thus it might be possible for the respondents to receive proper and prompt security information useful for their farming activities. The study revealed an average household size of five persons, the increasing influx of westernization is gradually eroding the original culture of a large farming household size.

Table 1. *Personal Characteristics of the Respondent.*

Variable	Frequency	Percentage	Mean/std
Age			47±9.14
Less than 35	11	7.4	
36-55	54	36.2	
46-55	59	39.2	
56-65	19	12.8	
66 and above	6	4.0	
Sex			
Male	109	73.2	
Female	40	26.8	
Religion			
Islam	45	30.2	
Christianity	104	69.8	
Education status			
Primary education	24	16.1	
Secondary education	64	43.0	
Tertiary education	50	33.6	
No formal education	11	7.4	

Variable	Frequency	Percentage	Mean/std
Household size			5±183
Ability to read and understand Yoruba			
Yes	136	91.3	
No	13	8.7	
Ability to read and understand English language			
Yes	146	98.0	
No	3	2.0	

Source: Field Work, 2022.

Specific security challenges among crop farmers.

Table 2 shows the specific farm security challenges among crop farmers in the study area. The results showed that community clash (86.6%) had the highest percentage as the most severe security challenge among crop farmers in the study area, closely followed by pilfering (81.2%), banditry (80.5%) and kidnapping (60.4%). Majority of the respondents were not affected by herdsmen menace (62.4%) in the study area. This indicated that pilfering and community clash were major security challenges in the study area. This corroborates the findings of [17] who revealed that communal clash had very serious effect on agricultural output, prices of produce, marketing and distribution of agricultural products, agricultural extension activities, agricultural credit opportunities, transportation costs, labour supply and farm income of farmers.

Table 2. *Security Challenges to Crop Production in Osun State.*

Specific security challenges	Most severe	Severe	Undecided	Not severe	Mean	Rank
Herdsmen menace	36(24.2)	3(2.0)	9(6.0)	8(5.4)	0.68	6th
Banditry	120(80.5)	0(0.00	3(2.0)	22(14.8)	1.46	3rd
Kidnapping	90(60.4)	3(2.0)	18(12.1)	4(2.7)	1.11	5th
Hoodlums	86(57.7)	20(13.4)	8(5.4)	11(7.4)	1.30	4th
Community clash	123(86.6)	2(1.3)	4(2.7)	6(4.0)	1.56	2nd
Pilfering	121(81.2)	1(0.7)	4(2.7)	7(4.7)	1.63	1st

Source: Field Work, 2022.

Change in crop production among farmers in Osun State

The study assessed the quantity of produce by respondents before the recurrent farm insecurity challenges and the produce at the last cropping year. Table 3 shows the distribution of crop farmers according to the quantity of produce before the escalated farm insecurity and now (during insecurity). The result revealed that majority (86.6 and 93.3%) were producing less than 15 tons at every cropping season with or without insecurity. However, there was an increase of 6.7% of farmers producing less than 15 tons after farm insecurity. This figure (6.7%) was drawn from farmers producing between 16 tons to above 45 tons of crop obviously affected by the recurrent insecurity. Furthermore, the table presents a significant t-value (t-7.45; $p<0.05$) of the means from the two groups of responses. This finding indicates that the recurrent farm insecurity has a more significant value on the quantity of crop produced in the State. The result is in tandem with the findings of [18] and [3] that a reduction in produce of farmers due to insecurity, which reflects in the destruction of agricultural resources, dislocation and displacement of people. Most ranked insecurity threat to crop production in the State was pilfering (Table 2). This implies that despite government's efforts to increase crop production in the State, incidences of crop theft from the field, during transport or in storage poses a significant threat to achieving this goal. This is because the effect of State administration diminishes as it goes farther from the cities and seats of government. This makes the rural communities highly prone to the activities of warlords and criminals.

Table 3. *Effect of Insecurity on Crop Productions in the Study Area.*

Period/ tons	< 15tons	16 – 30 tons	31 – 45 tons	> 45 tons	Df	T
Before insecurity	86.6	7.4	3.4	2.6		
At insecurity	93.3	4.7	1.3	0.7	148	7.45*
Change	6.7	-2.7	- 2.1	1.9		

*significant @5% level.

Media strengths for farm security information among farmers in Osun State.

Farmers' use of available information sources for farm security as shown in Table 4 reveals a more frequent use of farmers' associations (85.9%) and fellow farmers (81.9%). Other sources indicated by most farmers included relatives (78.5%), local task force (78.6%) and mobile phones (71.8%). The use of relatives, close family and farm associates is not unexpected, as this presents an informal way of showing concern for the safety of their members. [4] describe this process as the active participation of citizens in the gathering and dissemination of information, which creates alertness. The internet provides wide range of mediated information in all useful areas through platforms such as Facebook, WhatsApp, Telegram, e-mails etc. to a large circle of audience. Old conventional media such as radio (9.4%) and television (9.4%) are not, frequently used by farmers for security information. Interactivity promotes confidence in communication [19] and more so in security information. [20] affirmed that interpersonal communication was always embraced by farmers in most situations. As much as [21] and [22] affirmed the more use of radio and television by farmers for agricultural information, because of several associated advantages. This study, on the other hand, reveals the limited use of these media in security information. There is need for the development of a media code for reporting issues of farmer-herder conflict and associated cases of banditry and kidnapping.

On the other hand, the table also reveals an average strength of each source for security information. Information source that presents prompt and accurate security information, established fact and high accessibility to farmers are ranked higher than others. From the table, local task force, internet and radio were the first three sources that qualify in these criteria. The local task force was appraised by [23] as very useful in intelligent gathering for insecurity situation. The local task force according to [23] are usually sourced from the community, and commissioned purposely to secure their people. It could be inferred that loyalty aids the local task force's commitment to ensuring that accurate and prompt security information is released to the farmers. Internet is mostly connected through mobile phones in recent years. Thus, accessibility and vast broadcast of internet information could help the high ranking in use for security information as found in this study. This study corroborates the findings of [22], that farmers are aware of several information sources, but rely on few for accurate use. Familiarity and trust in accuracy of information by farmers [21] still promote the ranking of radio for any farm information. Furthermore, the table reveals the unreliability of research information, police alert and print media (newspaper) in security information. The reason for this is not far-fetched, [11], had assessed media based on participation and human involvement and found these two as very important in media strength. Police alert and newspapers and research report present a one-way communication process. These three information sources were ranked least in capacity to accommodate security information.

Table 4. *Strength of Information Sources for Security Information and Distribution of Use by Farmers.*

Information source	Use	*1	*2	*3	Av Strength	Rank
Internet (Mobile phone)	71.8	15.9	35.8	82.7	44.8	2nd
Fellow farmers	81.9	2.2	8.8	89.1	33.7	5th
Relatives	78.5	73.2	23.0	11.1	35.8	4th
Local task force	78.6	80.5	56.0	62.0	66.2	1st
Farmer association	85.9	60.4	2.0	12.1	24.8	10th
Workshops/seminars	71.2	57.7	13.4	5.4	25.5	9th
Extension agents	60.4	46.0	28.5	25.5	33.3	6th

Information source	Use	*1	*2	*3	Av Strength	Rank
Posters	43.6	35.0	28.5	36.5	33.3	6th
Research information	41.6	2.7	7.4	2.5	4.2	13th
Police alert	49.7	24.2	5.4	6.0	11.9	11th
Newspaper	10.1	14.8	2.0	2.7	6.5	12th
Television	9.4	81.0	10.9	8.0	33.3	6th
Radio	9.4	23.2	45.3	52.6	40.4	3rd

*1. Prompt and accurate information; 2. - Established fact 3 - Accessible information anywhere.

Media strengths and effect of insecurity on crop

There was a significant contribution of the information strength of radio (β-0.14; t-2.46), extension visit (β-0.12; t-1.86), research news (β-0.144; t-2.11), workshop information (β-0.173; t-3.47), posters (β-0.9; t-2.51) and the internet (β-0.135; t-3.49) on the changes in crop production after insecurity. Table 3 had observed a negative effect of insecurity on crop production, thus, information sources that contributed to the negative trend were those available with the farmers but could not assist in security incidences. [11] and [19] found interactivity and listener's factor in media use among farmers. In line with this, farmers' use of these identified information sources could be limited to the receiver's end of the process, which did not correlate to effective use [4]. This implies that crop production can increase in crisis situation, if information sources are effectively used by appropriating human factors and improving interactivity.

Table 5. *Contributions of Information Sources to Change in Crop production Due to farm Insecurity in Osun State.*

Variable	B	T	Sig
Constant	7.34	2.32	0.02
Radio	0.139	2.46*	0.015
Television	1.36	1.36	0.175
News papers	0.026	1.12	0.265
Police	-0.062	-1.04	0.265
Extension visit	0.117	-1.86*	0.04
Task force	0.05	2.21	0.029
Fellow farmers	0.005	0.21	0.391
Research news	-0.144	2.11*	0.003
Friends and family	0.005	0.112	0.911
Workshop information	-0.173	3.47*	0.001
Posters	-0.09	2.51*	0.013
Internet	0.135	3.49*	0.001

R^2 = 0.13 Adjusted R^2 =0.53; Standard error = 0.34.

4. Conclusion and Recommendations

This study confirmed a significant negative effect of security challenges faced by farmers on crop production in Osun State, Nigeria. More farmers produced less than the usual annual production during security challenges. There were incidences of kidnappings, hoodlums, community clashes, and pilfering in the study area and these reduced the scale of production of farmers; however, pilfering of produce was the most common threat to crop production. Security information was mostly shared through family and friends, farmers' association, Internet (mobile phones) and local security task force. However, farmers association relied more on security information disseminated by local task force, radio and the internet (mobile phones).

A more technologically equipped local security force such as the use of drones, intercom devices and a farmer-friendly community radio station capable of disseminating security information across the State should be embarked upon.

The State Government should ensure that all uniformed security personnel sent to rural communities have an affiliate with the community task force, to ensure effectiveness in information sharing. Furthermore, a social media platform (WhatsApp, Telegram, etc.) comprising farmers' associations, local task force and security personnel across the State should be encouraged.

Abbreviations

ADPs	Agricultural Development Programmes
LGAs	Local Government Authorities
ICT	Information Communication Technology
SPSS	Statistical Package for the Social Sciences

Conflicts of Interest

The authors declare no conflict of interest.

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Research Field

Amusat, Adeniyi Suraju: Agricultural Extension and Rural Development

Fadairo Anjolaoluwa Oreoluwa: Agricultural Extension and Rural Development