International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

Effects of Farmer-Herder Conflict on Food Utilisation in Adamawa State, Nigeria

Shelleng, B. A; Gabdo, B. H; Bello, K.A; Usman, J. and Hamma'adama, A.T.
Department of Agricultural Economics and Extension, Faculty of Agriculture, Adamawa State University, Mubi. Adamawa State, Nigeria.
Corresponding Author: jalaluddeen4u@gmail.com

Date of Submission: 14-09-2024 Date of Acceptance: 28-09-2024

Abstract
The Farmer-Herders' conflict pose a significant threat to food Utilisation, particularly in north-eastern region of Nigeria, including Adamawa State. Over the years, this conflict has emerged as a severe challenge to the means of subsistence and livelihood for both farmers and herders, impacting the coexistence of communities. The consequences include an unquantifiable loss of lives, displacement of many individuals, and the destruction of properties, crops, and livestock, resulting in substantial economic costs to local and state economies. This study assessed the effects of the farmer-herder conflict on food utilisation in Adamawa State, Nigeria. Four Local Government Areas (LGAs) were purposively selected for investigation, and a sample size of 190 farmers and herders were randomly chosen for the study. Data were collected through interview schedules using digital mobile software (Kobocollect). The descriptive analysis included frequency tables presenting data based on response frequencies, percentages, means, standard deviations, and likers scale were used to achieve the objective of the study while Chi-square test was used to test the hypothesis. The results from the study revealed how conflict can erode family's capacity to meet daily required dietary with 98.98% of the respondents indicated inadequacy and non-availability of meals to consumed per day; While about 95.26% indicates conflict potentials to disrupt food quality and nutritional diversity. The chi-square test results of 291.4 (PV- 0.000) on shortages of healthy physical environment and adequate sanitary facilities, provide robust evidence to reject the null hypothesis, indicating a significant effects of farmer-herder conflicts on various aspects of food utilisation. The study recommend diversification in crop varieties and livestock breeds, to stabilize food utilisation and income sources of farmers and herders. Proper education and orientation of all the stakeholders on the modern ways of conflict management to effectively address the multifaceted challenges of farmer-herder conflict and food security in the study area.

***Key Words**: Adamawa, Conflict, Farmer-herder, Food security, Utilisation*

I. Introduction

Background of the Study

A long historical record of fluctuating conflict, competition, and co-operation between settled farmers and pastoral or transhumant herders" is one definition of farmer-herder conflict (Seddon, 1997). Put differently, this might include "periods of violent herder domination over settled farming production systems and the conversion of former pastoral lands to cultivation," as stated by Seddon (1997). It may also be described as conflicts between farmers and herders over land resources. Put differently, conflicts or confrontations between farmers and herders are often the result of a dispute over land usage. Conflicts between farmers and herders are often seen in terms of ethnicity and religion. This is due to the fact that, both Muslim and Christians of different ethnic backgrounds engaged in farming but majority of herders are members of the historically nomadic and Muslim Fulani, who make up around 90% of the country's pastoralist population.

Humanity's fundamental necessity, food has influenced human effort throughout history (Okoli & Appollonia, 2018). Finding enough food to feed a family, a community, a country, or even the whole planet has sometimes been one of man's most pressing goals. It was previously believed that the term "food security" only applied to states where there was an enough supply of food to support further increases in food consumption as well as to balance out variations in food prices and production (FAO, 2006). However, the World Food Summit in

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

1996 introduced a new definition of food security. According to this definition, food security means "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (World Food Summit, 1996). The Food and Agriculture Organization further elaborates that food security is achieved when individuals have both physical and financial access to an adequate amount of safe and nutritious food that meets their dietary needs and preferences, enabling them to lead active and healthy lives (FAO, 2006).

The process by which the body maximises the different nutrients included in meals is generally referred to as utilisation. A person's ability to consume enough energy and nutrients depends on several factors such as proper care and feeding procedures, food preparation, a varied diet, and the distribution of food throughout the family. When coupled with optimal biological utilisation of ingested food, this establishes an individual's nutritional status (World Bank, 2023). Utilisation is associated with the body's capacity to transform food. When it comes to engaging in regular physical tasks, like working in agriculture, this extra energy is crucial. In addition, basic knowledge of food preparation and storage techniques, appropriate medical care, and a hygienic physical environment are necessary for use. In this situation, having clean drinking water is crucial, particularly for cooking and maintaining a population that is healthy. 884 million people lack access to enough drinking water globally. Safe drinking water is linked to groundwater, which is often polluted by human, industrial, or agricultural waste water in addition to other causes (IICA, 2009).

According to Fisher (2021), food utilisation basically converts the amount of food that is available to a home into nutritional security for all of its members. A component of utilisation is examined in terms of distribution based on need. There are nutritional guidelines that address the true dietary requirements of men, women, boys, girls, and pregnant women throughout a range of age groups and stages of life. However, these so-called needs are often culturally and socially manufactured. For instance, research from South Asia reveals that women eat later than males and are less likely to eat favorite meals like meat and fish in the same family (Fisher, 2021). When a person's diet is out of balance in terms of macronutrients (calories) and micronutrients (vitamins and minerals), hidden hunger is often the outcome. Even when someone seems well-fed and consumes an adequate amount of calories, they may be lacking in important micronutrients like vitamin A, iron, and iodine. Anthropometric results are often used to quantify the negative effects of conflicts in the food utilisation dimension (Martin-Shields and Stojetz, 2019). Food and Agricultural Organisation (2004), cited in Okoli and Appollonia (2018), states that during the last third of the 20th century, communal violence cost Nigeria over $12 billion in agricultural production. Given the significance of agriculture to overall economic wellbeing, particularly in conflict-prone areas of Nigeria, it is not surprising that communal conflicts not only limit food production but also have a tendency to deny people access to food and a supply of food. A significant portion of the population lives under food insecurity in the majority of war and post-conflict zones in northeastern Nigeria, according to the Food Research Policy Institute [FRPI] (2004), which was quoted by Okoli and Appollonia (2018). The majority of the time, those who are food insecure do not make up a large portion of the population. For Nigeria's food security, farmers and herders in particular are essential. Farmers' crops are being grazed on and their seeds are being utilised as cow fodder as they evacuate their fields for the protection of Internally Displaced Person camps (IDPs). This may prohibit farmers from replanting even if they were allowed to return to their properties. The World Health Organisation (WHO) predicted in 2018 that if violence between farmers and herders persists, there would likely be a food crisis that year and in 2019.

It seems that the negative impacts of wars on the volatility of food prices and the value of food imports are reflected by the food stabilization component. Adamawa state is facing series of conflicts emanating from ethnic, religious, more often crop farmer and herdsmen. These conflicts posed a serious treat on food production, distribution, utilisation and lately access to production resources such as land. Hence, this study was conducted to assess the Effects of farmer-herder conflict on food utilisation in Adamawa state, Nigeria.

II. RESEARCH METHODOLOGY

Study Area

The study was conducted in Adamawa State, located at 11º and 14º E of the Greenwich Meridian and longitude 7º and 11º N of the equator, with a projected population of 4,902,100 as at 2022 (NPC, 2006).

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

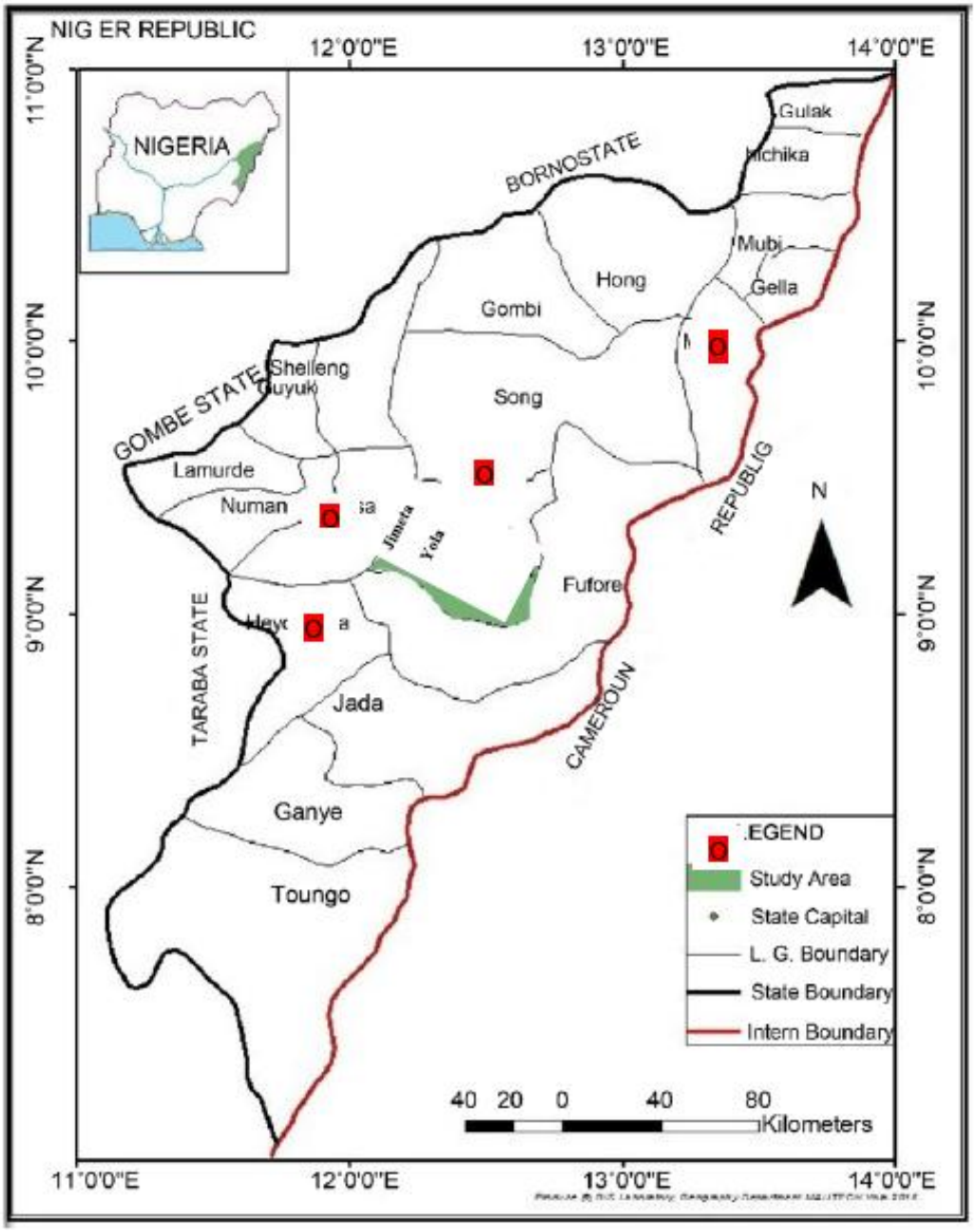

Fig 3.1: Map of Adamawa State showing the study area

Sampling Procedure and Sampling Size

The cattle herders and crop farmers in the affected areas of Adamawa state were the target population for the study. Purposive and simple random sampling techniques were employed to select respondents for the study.

The four most prone LGAs (Maiha; Girei; Mayo Belwa and Demsa LGA respectively) to farmers-herders conflict were purposively selected. Four wards were then purposively selected within the selected LGAs; and 10% of the population of farmers and herders' household heads (100 farmers and 90 herders respectively) were randomly selected as presented in table 1 below.

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

Table 1: Distribution of selection based on Population and sample size of the study.

LGA's Selected	Wards Selected	Number of farmers selected	Number of herders selected	Sample size (10%)
Maiha	Humbutudi	150 (15)	120 (12)	27
Girei	Gereng	300 (30)	160 (16)	46
Mayo Belwa	Ganle	280 (28)	300 (30)	58
Demsa	Kedemun	270 (27)	320 (32)	59
4	**4**	**1000 (100)**	**900 (90)**	**190**

Source of Data Collection

Primary data was used for this study. It was collected using two sets of questionnaires that was administered to farmers and herders separately so as to elicit adequate information from the respondents.

Analytical Techniques

Multiple regression was used to analysed the data collected while the hypothesis was tested with Chi-square.

Multiple Regression

This is a statistical techniques that can be used to analysed the relationship between a single dependent and several independent variables in the regression model, four functional forms were tested, these include linear, double log, exponential and semi log functions to determine the equation of the best fit.

The four functional forms of multiple regression are explicitly explained thus;

i. Linear function
Y = bo + b1 x1 + b2 x 2+ b3 x 3+ …… bnxntui

ii. Semi-logarithm function
Y= Lnb0 + b1Lnxi + b2 Lnx2 +…….. bnLnxn+ui

iii. Exponential function
LnY = b0 + b1 x 1 + b2 x 2 + ……bnLnxn+ ui

iv. Double Logarithm function
LnY = Lnb0+b1Lnx1 + b2 Lnx2+……bnLnxn+ui

For herders

$Y = f(X_1 X_2 X_3 + \ldots\ldots\ldots X_n, V_i)$

Where:
Y = Income of herder (₦)
X_1 = Number of animals lost
X_2 = Loss of family member
X_3 = Displaced of family members
X_4 = Frequency of displacement
X_5 = Loss of crop on the field (kg)
X_6 = Number of animals in the herd
Ui = Error terms

For farmers
Y = Income of the farmer (₦)
X_1 = quantity of crops loss in the field (kg)
X_2 = Loss of family member
X_3 = Displaced of family members
X_4 = Frequency of displacement
X_5 = Loss of crop in store (kg)
X_6 = No of animals own by the herder
Ui = Error terms

Chi-Square test model is explicitly specified as

$$\chi^2 = \frac{\sum(fo - fe)^2}{fe}$$

Where:
χ^2 = Calculated value
$\sum$ = Summation sign
fo = Observed frequency
fe = Expected frequency
The level of significance = 0.05 or 5%

III. Results and Discussion

Effects of Farmer-Herder Conflict on Food Utilisation in Adamawa State

Table 2 shows a comprehensive exploration of the effects of farmer-herder conflicts on food utilization in Adamawa State, encapsulating respondents' perceptions and shedding light on the multifaceted challenges these conflicts introduce to communities' ability to access and make effective use of food resources. The data reveal a consensus among respondents that the shortages of a healthy physical environment and adequate sanitary facilities are intensified by the conflicts, with a substantial majority strongly agreeing or agreeing (95.26%). This underscores the disruption of crucial living conditions necessary for hygienic food preparation and consumption, aligning with research indicating how conflicts can

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

undermine basic living standards (WFP, 2021). Additionally, a significant portion of respondents (95.79%) acknowledge that these conflicts force household members to seek meals outside their homes. This outcome exemplifies the dislocation and alterations to daily routines that conflicts can induce, influencing traditional dietary practices and potentially leading to a decline in nutrition diversity and quality (Webb *et al*., 2018). The impact on meal consumption locations echoes the broader socio-economic upheaval conflicts can cause within communities.

Furthermore, the result unveil how conflicts affect health awareness and food preparation practices. A substantial percentage of respondents (93.68%) indicate a strong agreement or agreement regarding the misunderstanding and unawareness of proper health care and food preparation due to conflicts. This finding highlights the disruption conflicts can bring to health and nutrition education efforts, potentially diminishing individuals' ability to make informed dietary decisions (Heman, 2022). Moreover, the result underscore a shared sentiment among respondents regarding the inadequacy of meals consumed per day (98.95%) and the non-availability of food to ensure household nutritional security (98.95%). These results accentuate how conflicts can erode families' capacity to meet their daily dietary needs, exacerbating food insecurity and contributing to malnutrition, emphasizing the intricate interplay between conflicts and nutrition (WFP, 2021; Maxwell *et al*., 2014). Furthermore, the responses reflect the influence of conflicts on dietary imbalances and micronutrient deficiencies. The agreement on the absence of balanced diets (ranging from 87.89% to 95.26%) emphasizes the conflicts' potential to disrupt food quality and nutritional diversity, aligning with existing studies that highlight the broader nutritional implications of conflicts (Webb *et al*., 2022).

In summary, Table 2 elucidates the intricate ways in which farmer-herder conflicts intertwine with food utilization dynamics within Adamawa State. The nuanced insights captured in this data emphasize the multifaceted challenges communities face in maintaining appropriate dietary practices amidst conflicts, underscoring the need for comprehensive strategies that address both immediate impacts and broader consequences of conflicts on food utilization and nutritional well-being.

Table 2: Degree of the Effects of Farmers-Herders Conflict on Food Utilisation

Effects of Farmers-Herders Conflict on Food Utilisation	Frequency	Percentage
There are shortages of healthy physical environment and adequate sanitary facilities		
Strongly agree	121	63.68
Agree	60	31.58
Undecided	1	0.53
Disagree	7	3.68
strongly disagree	1	0.53
Total	**190**	**100.00**
Absence of household eating from same pot		
Strongly agree	92	48.42
Agree	90	47.37
Undecided	0	0.00
Disagree	7	3.68
strongly disagree	1	0.53
Total	**190**	**100.00**
Unawareness of proper food hygiene methods		
Strongly agree	105	55.26
Agree	73	38.42
Undecided	2	1.05
Disagree	7	3.68
strongly disagree	3	1.58
Total	190	100.00
Less than three square meals taken per day in the household		

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

Strongly agree	111	58.42
Agree	76	40.00
Undecided	1	0.53
Disagree	1	0.53
strongly disagree	1	0.53
Total	**190**	**100.00**
Household Food Quality increase		
Strongly agree	113	59.47
Agree	75	39.47
Undecided	0	0.00
Disagree	1	0.53
strongly disagree	1	0.53
Total	**190**	**100.00**
Household inadequate food quality daily consumption		
Strongly agree	121	63.68
Agree	69	36.32
Undecided	0	0.00
Disagree	0	0.00
strongly disagree	0	0.00
Total	190	100.00

Source: Field Survey, 2023.

Table 2: Degree of the Effects of Farmers-Herders Conflict on Food Utilisation, Continued

Effects of Farmers-Herders Conflict on Food Utilisation	Frequency	Percentage
Too long and uncoordinated make it brisk		
Strongly agree	138	72.63
Agree	47	2.74
Undecided	0	0.00
Disagree	2	1.05
strongly disagree	3	1.58
Total	**190**	**100.00**
Absence of balanced diet in a household		
Strongly agree	106	55.79
Agree	83	43.68
Undecided	0	0.00
Disagree	1	0.53
Strongly disagree	0	0.00
Total	**190**	**100.00**
Absence of quality (minerals and vitamins) in household diet.		
Strongly agree	115	60.53
Agree	73	38.42
Undecided	0	0.00
Disagree	2	1.05
Strongly disagree	0	0.00
Total	**190**	**100.00**
Households members are not interested in food quality but quantity only		
Strongly agree	110	57.89
Agree	58	30.53
Undecided	4	2.11

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

Disagree	12	6.42
Strongly disagree	6	3.16
Total	190	100.00

Source: Field Survey, 2023.

Average Effects of Farmer-Herder Conflicts on Food Utilisation

Table 3 delves into the average effects of farmer-herder conflicts on food utilisation in Adamawa State, encapsulating a nuanced view of respondents' perceptions and providing insights into the impacts that these conflicts exert on various dimensions of food utilisation. The result reveal that, on average, respondents acknowledge the significant challenge posed by the shortage of a healthy physical environment and adequate sanitary facilities, as evidenced by the mean score of 4.542 (with a standard deviation of 0.739). This outcome echoes the substantial negative impact of conflicts on fundamental living conditions necessary for maintaining hygienic food practices, underscoring the perturbation these conflicts introduce to everyday life (WFP, 2022).

Furthermore, the result show that, on average, respondents indicate a mean score of 4.395 (with a standard deviation of 0.725) regarding the impact of conflicts on forcing household members to seek meals elsewhere. This underscores the disruptions conflicts bring to the regular dietary routines of households, potentially influencing the diversity and quality of nutrition and echoing the broader socio-economic implications of conflicts on communities' daily lives (Webb *et al.*, 2018). The result also reflect the average perception that conflicts lead to misunderstanding and unawareness of proper health care and food preparation practices, as indicated by a mean score of 4.421 (with a standard deviation of 0.824). This outcome underscores the potential erosion of essential health and nutrition education efforts, which are pivotal in supporting individuals' informed dietary choices (Heman, 2022). Moreover, the result highlight the average perception of respondents regarding the insufficiency of meals consumed per day (mean score: 4.553, standard deviation: 0.595) and the non-availability of food for ensuring household nutritional security (mean score: 4.568, standard deviation: 0.585). These findings accentuate the complex dynamics introduced by conflicts, affecting both the quantity and quality of food intake and heightening food insecurity concerns (WFP, 2022; Maxwell *et al*., 2014). Furthermore, the responses indicate an average understanding of the existence of nutritional standards aligned with actual nutritional needs (mean score: 4.658, standard deviation: 0.693). This recognition reinforces the importance of established dietary guidelines, particularly amidst the disruptions and uncertainties caused by conflicts, in sustaining balanced and nutritious food consumption patterns (FAO, 2020).

The data also underscore the average perception of respondents regarding the imbalances in people's diets, with a mean score of 4.547 (standard deviation: 0.53). This resonates with the broader implications of conflicts on dietary diversity and balance, potentially exacerbating nutritional vulnerabilities within the affected communities (Webb *et al*., 2018). Moreover, the result reveal that respondents, on average, acknowledge the potential for conflicts to disrupt the appropriate balance of macro and micronutrients in people's diets, as reflected in a mean score of 4.584 (standard deviation: 0.555). This insight reflects the multifaceted nature of nutritional challenges posed by conflicts, encompassing not only the quantity of food but also its nutritional composition.

In summary, Table 3 offers a comprehensive perspective on the average effects of farmer-herder conflicts on food utilisation in Adamawa State. The nuanced insights captured in this data underscore the intricacies of conflicts' impacts on various aspects of food utilisation, emphasizing the complex interplay between conflicts and the accessibility, availability, and quality of food resources.

Table 3 Average Effects of Farmers-Herders Conflict on Food Utilisation

Effects of Farmers-Herders Conflict on Food Utilisation	Obs	Mean
There are shortages of healthy physical environment and adequate sanitary facilities	190	4.542 (0.739)
Absence of household eating from same pot	190	4.395 (0.725)
Unawareness of proper food hygiene methods	190	4.421 (0.824)
Less than three square meals taken per day in the household	190	4.553

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

		(0.595)
Household Food Quality increase	190	4.568
		(0.585)
Household inadequate food quality daily consumption	190	4.637
		(0.482)
Too long and uncoordinated make it brisk	190	4.658
		(0.693)
Absence of balanced diet in a household	190	4.547
		(0.53)
Absence of quality (minerals and vitamins) in household diet.	190	4.584
		(0.555)
Households members are not interested in food quality but quantity only	190	4.337
		(1.014)

Source: Field Survey, 2023. Standard deviation is provided in bracket.

Test of Null Hypothesis: Farmer-Herder Conflict has no significant effect on Food Utilisation in Adamawa State

The outcomes of chi-square test presented in Table 4 illuminate the profound impact of farmer-herder conflicts on food utilisation in Adamawa State. These results underscore the significant associations between the outcomes of conflicts and various dimensions of food utilisation, leading to the compelling rejection of the null hypothesis that suggests no significant effect. The chi-square statistics, accompanied by p-values of 0.000, unequivocally indicate that the farmer-herder conflict holds substantial implications for food utilization in the State.

The result unveiled in Table 4 indicate that the shortage of a healthy physical environment and adequate sanitary facilities is significantly associated with the conflict (chi-square statistic: 291.368, p-value: 0.000). This underscores the far-reaching consequences of conflicts on the foundational conditions necessary for maintaining proper hygiene and health practices, ultimately affecting the utilization of food resources (WFP, 2022). Furthermore, the data reflect a significant connection between conflicts and the phenomenon of household members seeking meals elsewhere (chi-square statistic: 159.768, p-value: 0.000). This outcome reinforces the disruptive nature of conflicts on daily dietary routines, influencing food access and altering utilisation patterns within households (Webb *et al.*, 2022). The data also highlight the notable association between conflicts and the misunderstanding and unawareness of proper health care and food preparation practices (chi-square statistic: 242.000, p-value: 0.000). This insight underscores the multifaceted repercussions of conflicts on not only physical but also nutritional well-being, with implications for the informed utilisation of food resources.

Additionally, the chi-square test outcomes reveal that conflicts significantly contribute to the insufficiency of meals consumed per day (chi-square statistic: 286.316, p-value: 0.000) and the non-availability of food for ensuring household nutritional security (chi-square statistic: 197.284, p-value: 0.000). These findings accentuate the multifaceted challenges conflicts pose, resonating in diminished food utilisation stemming from both quantitative and qualitative aspects. Additional analysis reveals that the incidence and severity of farmer-herder conflicts positively and significantly affect food insecurity, measured by the number of days with limited varieties of food eaten. Moreover, the data indicate significant associations between conflicts and the consumption of less quantity of meals per day (chi-square statistic: 14.232, p-value: 0.001) and the existence of nutritional standards aligned with actual needs (chi-square statistic: 257.705, p-value: 0.000). These outcomes underscore the intricate interplay between conflicts and dietary practices, revealing the role of conflicts in shaping food utilisation patterns and nutritional norms (FAO, 2021).

Furthermore, the data illuminate the significant relationship between conflicts and imbalanced diets (chi-square statistic: 96.200, p-value: 0.000), as well as the imbalances between macro and micronutrients in people's diets (chi-square statistic: 103.021, p-value: 0.000). These insights emphasize the broader nutritional vulnerabilities introduced by conflicts, influencing the utilisation of food resources in a way that affects both the balance and composition of diets.

In conclusion, Table 4 establishes compelling evidence of the significant effect of farmer-herder conflicts on food utilisation in Adamawa State. The outcomes of the chi-square test affirm the intricate linkages between conflicts and various aspects of food utilisation, underscoring the

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

complexities of food security challenges in conflict-affected regions.

Table 4 Chi Square Test of the Effect of Farmer-Herder Conflict on Food Utilisation

Effect of Farmer-Herder Conflict on Food Utilisation	Chi-square Statistics	Significance (P-values)
There are shortages of healthy physical environment andadequate sanitary facilities	291.368	0.000
Absence of household eating from same pot	159.768	0.000
Unawareness of proper food hygiene methods	242.000	0.000
Less than three square meals taken per day in the household	286.316	0.000
Household Food Quality increase	197.284	0.000
Household inadequate food quality daily consumption	14.232	0.001
Too long and uncoordinated make it brisk	257.705	0.000
Absence of balanced diet in a household	96.200	0.000
Absence of quality (minerals and vitamins) in household diet.	103.021	0.000
Households members are not interested in food quality but quantity only	222.105	0.000

Source: Field Survey, 2023.

IV. Conclusion and Recommendations

The effects of the farmer-herder conflict on food utilisation in Adamawa State, Nigeria was assessed in four most prone Local Government Areas (LGAs). The results from the study reveal that, on average, respondents acknowledge the significant challenge posed by the shortage of healthy physical environment and adequate sanitary facilities, as evidenced by the mean score of 4.542 (with a standard deviation of 0.739), as the major effect among others The chi-square test results of 291.368 (PV- 0.000) on shortages of healthy physical environment and adequate sanitary facilities, provide robust evidence to reject the null hypothesis, indicating a significant effects of farmer-herder conflicts on various aspects of food utilisation. The study recommend diversification in crop varieties and livestock breeds, to stabilize food utilization and income sources of farmers and herders. Proper education and orientation of all the stakeholders on the modern ways of conflict management to effectively address the multifaceted challenges of farmer-herder conflict and food security in the study area.

Acknowledgment

I want to sincerely appreciate and thank the government of Nigeria and the Tertiary Education Trust Fund (TETFund) for encouraging and sponsoring Institutional Based Research (IBR) in the country.

REFERENCES

[1]. Fisher, M. R. (2021). "Environmental Biology". https://openoregon.pressbooks.pub/envirobiology/chapter/8-1-food-security/

[2]. Food and Agricultural Organisation (FAO), (2015). Agriculture and Development Economics Division, Food Security. FAO Policy Brief Issue, 202 pp.

[3]. Food and Agricultural Organisation (FAO), (2015). Voices of the Hungry Website. http://www.fao.org/economic, 542 pp.

[4]. Food and Agricultural Organization of the United Nations (FAO) (2019). "Climate-Smart Agriculture in Adamawa state of Nigeria". https://www.fao.org/3/ca5411en/ca5411en.pdf

[5]. Food and Agricultural Organization, FAO (1996) "Socio-Political and Economic Environment for Food Security, Food and Agriculture Organization of the United Nations". World Food Summit, Vol. 1, Sec. 1.4

[6]. Food and Agriculture Organization, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme, and World Health Organization. 2020. The State of Food Security and Nutrition in the World 2020: Transforming Food Systems for Affordable Healthy Diets. FAO, Rome. Available at https://www.fao.org/3/ca9692en/ca9692en.pdf (accessed June 2023).

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 4, Issue 5, Sep.-Oct., 2024, pp: 406-416 ISSN: 3048-6874
www.ijhssm.org

[7]. Food and Agriculture Organization, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme, and World Health Organization. 2021. The State of Food Security and Nutrition in the World: Transforming Food Systems for Food Security, Improved Nutrition and Affordable Healthy Diets for All. FAO, Rome. Available at https://doi.org/10.4060/cb4474en (accessed November 2023).

[8]. Food and Agriculture Organization, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme, and World Health Organization. 2017. The State of Food Security and Nutrition in the World 2017: Building Resilience for Peace and Food Security. FAO, Rome. Available at http://www.fao.org/3/a-I7695e.pdf (accessed May 2023).

[9]. Food and Agriculture Organization. 2006. Food Security. FAO, Rome. Available at https://www.fao.org/fileadmin/templates/fao italy/documents/pdf/pdf_Food_Security_Co c ept_Note.pdf (accessed May 2023).

[10]. Hamoodi, M.N. 2021. "Investigating the Effects of Armed and Political Conflicts on the Land Use/Cover Change and Surface Urban Heat Islands: A Case Study of Baghdad, Iraq." Journal of the Indian Society of Remote Sensing 4(7): 1–14. https://doi.org/10.1007/s12524-021-01330-9.

[11]. Heman, J. (2022). A study of effects of farmer-herder conflict on women in Demsa LGA of Adamawa state. NOUN International Journal of Peace Studies and Conflict Resolution [NIJPCR] VOL. 2, NO. 1.

[12]. IICA, (2009). Food Security, http://www.iica.int/Esp/conocimiento/actualidad/ Documents/Food%20security%20IICA%20 Eng.pdf

[13]. International Crisis Group (2017). "Herders against Farmers: Nigeria's Expanding Deadly Conflict". In Africa Report N°252 | 19 September 2017. https://d2071andvip0wj.cloudfront.net/252-nigerias-spreading-herder-farmer-conflict.pdf

[14]. International Crisis Group (2018). "Stopping Nigeria's Spiralling Farmer-Herder Violence". Report 262/Africa. 26 July 2018. https://www.crisisgroup.org/africa/west-africa/nigeria/262-stopping-nigerias-spiralling-farmer-herder-violence

[15]. IPCC, The Intergovernmental Panel on Climate Change (2019). "Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems". [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. Cambridge: Cambridge University Press. doi: 10.1017/9781009157988

[16]. Martin-Shields, C.P., and W. Stojetz (2019). "Food security and conflict: Empirical challenges and future opportunities for research and policy making on food security and conflict." World Development 119: 150–164. https://doi.org/10.1016/j. worlddev.2018.07.011.

[17]. Maxwell, D., B. Vaitla, and J. Coates. 2014. "How do indicators of household food insecurity measure up? An empirical comparison from Ethiopia." Food Policy 47: 107–116. https://doi.org/10.1016/j.foodpol. 2014.04.003.

[18]. National Population Commission (NPC) (2006). Population and Development Review. 33(1): 206-210.

[19]. Okoli, H. and Appollonia, A. (2018). "Implication of Fulani Herders/Benue Farmers Crises on Food Security of Benue State of Nigeria". In International Journal of Academic Multidisciplinary Research. Vol. 2 Issue 10, October – 2018, Pages: 16-23

[20]. Seddon, J. S. D. (1997). "Conflict between Farmers and Herders in Africa: An Analysis".https://assets.publishing.service.gov.uk/media/57a08d5140f0b649740017b8/R6618a.pdf

[21]. World Food Programme, [WFP] (2022). "Sudan faces deepening hunger crisis amid protracted conflict, climate shocks and skyrocketing prices". https://www.wfp.org/news/sudan-faces-deepening-hunger-crisis-amid-protracted-conflict-climate-shocks-and-skyrocketing

[22]. World Bank (2010). "Rising Global demand in Farmland: can it yield Sustainable and Equitable Benefits?". The World Bank. Washington DC.
[23]. World Bank (2019). World Bank Development indicators. Available at www.dataworldbank.org/indicator/slgr.empl.zs.
[24]. World Bank (2023). "What is Food Security". https://www.worldbank.org/en/topic/agriculture/ brief/food-security-update/what-is-food-security