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## Effectiveness of Non-Kinetic Approaches to Conflict Resolution between Farmers and Pastoralists in Kogi State, Nigeria

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### ABSTRACT

This study determined effectiveness of non-kinetic approaches to conflict resolution between farmers and pastoralists in Kogi State, Nigeria. Three-stage sampling technique was used to select one hundred and thirty-two farmers (132), and snowball sampling technique was used to select thirty-one (31) pastoralists. Data collected were analysed using percentages, mean, and logit regression. Findings showed that traditional heads (88.9%), negotiation (78.5%), and open communication (69.9%) were the most approaches for conflict resolution. Traditional heads ( $\bar{X}$  =2.44), training on conflict resolution ( $\bar{X}$  =2.25), and capacity building ( $\bar{X}$  =2.44) were the most effective non-kinetic approaches to conflict resolution. Educational level (0.15), extension (2.86), training (1.14), frequency of conflict (0.26), and number of persons a household lost to conflict (0.37) influenced the effectiveness of non-kinetic approaches in conflict resolution. Religious tolerance should be promoted by religious heads in the study area. Also, experienced and well-informed personnel should be included in conflict resolution committee



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## **Introduction**

Conflict arises from competing for inadequate resources between two or more parties. Conflicts are inevitable in human life, organizations or even between nations. [1] reported that conflicts occur because of competition for supremacy, leadership style, scarcity of common resources, envy, and jealousy. Conflict can have detrimental effects, leading to negative emotions, strained relationships, and even violence. Farmers-herders conflict is a vital issue affecting the growth and development in Nigeria. Conflict between farmers and herders hinders cooperation, disrupt productivity, and create an atmosphere of hostility and mistrust. Unresolved conflicts can fester and escalate, causing long-term damage to individuals, groups, or communities. The unprecedented effect of conflict between farmers and herders has resulted in a reduction in output thereby contributing to the problem of food insecurity [2]. Conflict is always associated with hostility and displacement of able and productive youths which could in turn affect food production. [3] reported that farmers-herders conflict has been a long-standing issue in most parts of rural areas in Nigeria. This has resulted in significant loss of lives and properties. This conflict has been reported in various parts of the North-central geopolitical zone of the country, including Omala Local Government of Kogi State, where it has resulted in the displacement of communities and the disruption of social and economic activities despite the efforts of the government at various levels to arrest this situation [4]. Farmers-pastoralists conflict has negative impacts on the economic activities of rural areas, with reference to agriculture which happens to be the primary source of livelihood. The debilitating impact of the crisis are decreased farmer's productivity, shortage of food supply, loss of income among others [4]. Conflict has resulted in a sharp decline in agricultural production such as yams, cassava, and maize, as well as cash crops like cocoa and palm oil [5].

Efforts to put an end to farmers-herders conflict in Nigeria has not yielded positive result. Measures such as establishment of colony, avoidance of cattle routes, restriction of farmers from farming on cattle routes, and introduction of livestock transformation agenda have been counter-productive at addressing the conflict between herders and farmers. Kinetic approaches to conflict resolution, such as law enforcement and military interventions, have also proven to be insufficient in effectively addressing the root causes of the conflicts. These approaches often result in further escalation and perpetuate a cycle of violence, leading to more divisions and prolonged conflicts. However, non-kinetic approaches have been explored to offer lasting solution to the problem. It focusses on addressing the underlying issues and promoting dialogue. Identifying and analyzing non-kinetic approaches as

an alternative method for resolving conflicts between farmers and herders is essential especially by prioritizing trust, peaceful coexistence, and equitable use of available resources. Non-kinetic approaches to conflict resolution simply refer to strategies and methods that do not involve the use of physical force or violence. These approaches focus on addressing underlying issues, promoting dialogue, and finding peaceful solutions to conflicts. Some examples of non-kinetic approaches to conflict resolution include diplomacy and negotiation, mediation and facilitation, dialogue and communication, conflict transformation and capacity-building/training [6]. These approaches are somewhat in place but there is need to analyse their effectiveness. Overall, the broad objective of this research is to contribute to the development of evidence-based and context-specific recommendations for conflict resolution between farmers and herders in Kogi State, with a focus on non-kinetic approaches that promote understanding, cooperation, and sustainable peace. The specific objectives of the study are to identify the various non-kinetic approaches to conflict resolution in the study area; determine the effectiveness of non-kinetic approaches in conflict resolution; determine factors that influence the use of non-kinetic approaches and examine the constraints associated with usage of non-kinetic approaches in conflict resolution.

## **Methodology**

This study was executed in Kogi State, North Central Zone. The State falls within latitudes 6°33' and 8° 44'N and longitude 5° 22' and 7° 49' E. The State has a population of approximately 5,053,734 people as of 2023 and about 2 million hectares of land (National Bureau of Statistics, 2023). The availability of vast land in the State eases the cultivation of arable crops such as yam, cassava, maize, sorghum, rice, cowpea, and groundnut (National Bureau of Statistics, 2023). However, adopting the geometric progression formula at 2.9% growth rate, the population is therefore projected against 323,038 persons in 2018. A three-stage sampling technique was used for the study: purposive selection of Omala Local Government Area due to recurrent farmers and pastoralists conflicts which have resulted in severe loss of life and properties. The second stage involved random selection of 6 communities in the LGA. The third stage involved proportional selection of 10% of respondents from the sample population to give a total of 132 farmers. For the pastoralists, the Snowball sampling method was used through the help of their umbrella body - Miyetti Allah Cattle Breeders Association of Nigeria (MACBAN). The leadership of the group assisted the researcher to select one pastoralist who later assisted in locating other pastoralists. A total of thirty-one (31) was sample for the study.

**Table 1.** Sample farmers

Omala	Villages	Sampling Population	Sample Size
	Bagana	244	24
	Iyade	182	18
	Ibado	156	16
	Bagaji	223	22
	Agbenema	352	35
	Olla	170	17
Total	6	1327	132

### Effectiveness of Non-Kinetic Approaches used in Conflict Resolution between Farmers and Pastoralist

Non-kinetic approaches were measured using 3–points Likert scale of very effective = 2, effective =1 not effective = 0. The overall effectiveness was classified into effective  $\geq 2$ , while those with mean score value  $<2$  indicated not effective

Objective four was achieved using logit regression. The implicit and explicit forms of the models are specified below.

Effectiveness (Y) is a function of  $=f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, \dots, X_n)$

$$Y = (b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + U) \text{ -----}$$

-- (5)

Y = Effectiveness (1 if effective and 0 otherwise)

X<sub>1</sub>= Education level (years)

X<sub>2</sub>=House-hold size (number)

X<sub>3</sub>= Experience in primary occupation (years)

X<sub>4</sub>=Membership of association (Yes=1, No=0)

X<sub>5</sub>=Extension visit (number of visit)

X<sub>6</sub>=Training (number)

X<sub>7</sub>=Frequency of conflict (number)

X<sub>8</sub>=Conflict control mechanisms (number)

X<sub>9</sub>=Number of households lost (number)

X<sub>10</sub>= Loss of assets (number)

Constraints associated with non-kinetic approaches:

Constraints associated with non-kinetic approaches were measured using 3 points Likert type of very severe=3, severe=2, not severe=1. These were

added together to get 3+2+1=6 and were divided by 3 to get a mean score of 2.0 which served as the mean point. Any point less than 2.0 was regarded as not severe while above 2.0 was regarded as severe

## Results and Discussion

### Non-Kinetic Approaches to Conflict Resolution between Farmers and Pastoralists

Table 2 shows that traditional heads (100.0%), capacity building (96.8%), negotiation (83.9%), cultural exchange (64.5%), and mediation (64.5%) were the non-kinetic approaches used to resolve conflict as reported by pastoralists. On the other hand, farmers reported traditional heads (86.4%), open communication (81.8%), negotiation (77.3%), and use of third parties (68.2%) as the most non-kinetic approaches accessed. The pooled result showed that use of traditional heads (88.9%), negotiation (78.5%), open communication (69.9%), and use of capacity building (62.6%) were the most non-kinetic approaches to conflict resolution in the study area. It implies that traditional heads, and negotiation played vital roles in conflict resolution through unconditional validity and acceptability within a specific social setting in Nigeria. Farmers and pastoralists are often always ready to make pact for peace. Negotiation between farmers and herders gives room for peace and harmonious understanding.

**Table 2.** Non kinetic approaches to conflict resolution

Variables	Farmers (n=132)	Pastoralists (n=31)	Pooled (n=163)
	Percentage	Percentage	Percentage
Use of Capacity building mechanism	54.6	96.8	62.6
Economic empowerment	45.5	38.7	44.2
Mediation	54.6	64.5	56.4
Environmental conservation	45.5	35.5	43.6
Open communication	81.8	19.4	69.9
Negotiation	77.3	83.9	78.5
Use of third party	68.2	38.7	62.6
Organize community event	50.0	19.4	44.2
Joint planning of resources	45.5	48.4	46.0
Arbitration	50.0	51.6	50.3
Provision of legal aid and assistance	45.5	29.0	42.3
Cultural exchange	45.5	64.5	49.1
Early warning system	59.1	48.4	57.1
Training on conflict resolution	45.5	58.1	47.9
Address root causes of conflict through reforms	45.5	35.5	43.6
Use of traditional heads	86.4	100.0	88.9

Sources: Field survey, 2024

### Effectiveness of Non-Kinetic Approaches in Conflict Resolution between Farmers and Pastoralists

Table 3 reveals that traditional heads ( $\bar{X}$  =2.32), training on conflict resolution ( $\bar{X}$  =2.25), capacity building mechanism ( $\bar{X}$  =2.22), negotiation ( $\bar{X}$  =2.17), early warning system ( $\bar{X}$  =2.12), and mediation ( $\bar{X}$  =2.04) were the most effective non-kinetic approaches as reported by farmers. The pastoralists reported that the use of traditional heads ( $\bar{X}$  =2.90), capacity building ( $\bar{X}$  =2.38), mediation ( $\bar{X}$  =2.29), training on conflict resolution ( $\bar{X}$  =2.22), negotiation ( $\bar{X}$  =2.19), and early warning system ( $\bar{X}$  =2.0) were the effective non-kinetic approaches. The pooled result shows that traditional heads ( $\bar{X}$  =2.44) is the most effective approach. Traditional heads mechanisms are very proactive due to their

knowledge of customs, culture and tradition of both parties involved in conflicts. Training on conflict resolution ( $\bar{X}$  =2.25) is another effective approach. Training is very important because it builds farmers and pastoralists with knowledge, skills and techniques involved in conflict resolution. Capacity building ( $\bar{X}$  =2.25) is another effective approach. Capacity building through empowerment for better livelihood is a very effective non-kinetic approach. Negotiation ( $\bar{X}$  =2.18) is another effective approach in the study area. Negotiation is very important because it creates rooms for fostering unity and peaceful coexistence. Early warning mechanism ( $\bar{X}$  =2.10) is another effective approach used for conflict resolution. Early warning mechanism assists in preventing future conflict and foster unity.

**Table 3.** Effectiveness of non-kinetic approaches in conflict resolution

Variables	Farmers (n=132)		Pastoralists (n=31)		Pooled (n=163)	
	Mean	Decision	Mean	Decision	Mean	Decision
Use of capacity building mechanism	2.22	E	2.38	E	2.25	E
Economic empowerment	1.59	NE	1.61	NE	1.59	NE
Mediation	2.04	E	2.29	E	2.09	E
Environmental conservation	1.54	NE	1.39	NE	1.51	NE
Open communication	2.08	E	1.71	NE	2.01	E
Negotiation	2.17	E	2.19	E	2.18	E
Use of third party	1.90	NE	1.51	NE	1.83	NE
Organize community event	1.87	NE	1.29	NE	1.76	NE
Joint planning of resources	1.61	NE	1.54	NE	1.59	NE
Arbitration	1.69	NE	1.71	NE	1.69	NE
Provision of legal aid and assistance	1.61	NE	1.39	NE	1.56	NE
Cultural exchange	1.65	NE	1.90	NE	1.69	NE
Early warning system	2.12	E	2.0	E	2.10	E
Training on conflict resolution	2.25	E	2.22	E	2.25	E
Address root causes of conflict through reforms	1.56	NE	1.42	NE	1.53	NE
Use of traditional heads	2.32	E	2.90	E	2.44	E

Sources: Field survey, 2024

**Note:**

E=Effective

NE=Not effective

### Factors Influencing the Effectiveness of Non-Kinetic Approach in Conflict Resolution

Table 4 shows the results of factors influencing effectiveness of non-kinetic approach in conflict resolution between farmers and pastoralists using the Logit Regression Model. The result indicated a Pseudo  $R^2$  of 0.2890. This signifies that 28.9% effectiveness of non-kinetic approach was explained by the independent variables included in the model, while the remaining 71.1% was due to external factors not included. Education (0.15) positively influences the effectiveness of non-kinetic approach to conflict resolution. It implies more education of farmers and pastoralists will increase the effectiveness of non-kinetic approach. Education plays an important role in enhancing effectiveness

of non-kinetic approaches in conflict resolution by preparing individual involved in conflicts to navigate and manage relationship for better peaceful resolution [8]. The finding tallies with [9] that education influenced adoption of climate-smart practices among arable crop farmers in Kogi State. Extension contacts (2.86) positively influenced the effectiveness of non-kinetic approach to conflict resolution. It indicates that availability of extension service to farmers and herders tends to increase the effectiveness of non-kinetic approach. Access to extension can enhance the effectiveness of non-kinetic approaches by creating conducive environment for dialogue and building a resilience and capacity building for resolving conflict. Training (1.14) positively influenced the

effectiveness of non-kinetic approach. This signifies access to training for farmers and pastoralists will increase the effectiveness of non-kinetic approach in conflict resolution. Training can empower farmers and pastoralists with the knowledge, skills and mindset required to approach conflict non-kinetically, promote dialogue and understanding that contribute to peaceful resolution. Frequency of conflict (0.27) positively influenced effectiveness of non-kinetic approach in conflict resolution. This implies that as conflict increases in number, the use

of non-kinetic approach to conflict increases. Frequency of conflict can provide avenue for farmers and pastoralists to build relationships and adaptability and ultimately enhance the effectiveness of non-kinetic approach to conflict resolution. Also, the coefficient of a few households lost (0.87) positively influenced non-kinetic approach.

**Table 4.** Factor influencing the effectiveness of non-kinetic approaches in conflict resolution

Variables	Coefficient	Z-value
Education level	0.1538567	2.77***
Household size	-0.0103547	-0.23
Experience primary occupation	0.0105081	0.50
Membership of cooperative	0.4350925	0.50
Extension visit	2.862883	3.55***
Access to training	1.144108	1.70*
Frequency of conflict	0.2692978	2.65***
Conflict control mechanisms	-0.22528	-0.52
Number of household lost	0.3667217	1.83*
Loss of assets	0.3690694	0.87
Chi2	66.18	
Pseudo R2	-77.963259	
Log likelihood	0.2980	

Sources: Field survey, 2024

#### Constraints associated with Usage of Non-Kinetic Approaches

Table 5 reveals that religious differences ( $\bar{X}$  =2.82), lack of women participation ( $\bar{X}$  =2.61), limited technical expertise ( $\bar{X}$  =2.61), political interest ( $\bar{X}$  =2.37), historical grievances ( $\bar{X}$  =2.29), cultural differences ( $\bar{X}$  =2.26) and inadequate access to resources ( $\bar{X}$  =2.25) were the most severe constraint to the usage of non-kinetic approach as reported by farmers. The pastoralists reported that religious differences ( $\bar{X}$  =2.81), cultural differences ( $\bar{X}$  =2.70), mistrust between parties ( $\bar{X}$  =2.55), historical grievances (2.45) and political interest ( $\bar{X}$  =2.35) were the most severe constraints to non-kinetic approach as reported by the farmers. The pooled result reported that religious differences ( $\bar{X}$  =2.82) were a severe constraint. Limited technical knowledge ( $\bar{X}$  =2.53) is another severe constraint. This arises due to lack of technical experts equipped with knowledge and skills that would bring lasting

solutions to conflict between farmers and pastoralists. Also, lack of women participation ( $\bar{X}$  =2.52) is a serious challenge. It was observed that women are not cohort in conflict resolution between farmers and pastoralists in Omala Local Government Area. political interest ( $\bar{X}$  =2.37) is another constraint. Differences in culture between both parties and historical grievances that have been in existence for decades are serious limitations that hinder the effectiveness of non-kinetic approaches. Cultural differences ( $\bar{X}$  =2.35) is a severe constraint. Cultural differences are serious problem because farmers and herders have different cultural orientations and do not always subscribe to the same ideology. This finding agreed with [1] who reported that religious differences, inadequate skill personnels, mistrust and lack of access to resources are the constraints to alternative dispute resolution strategies in Niger and Nasarawa States, Nigeria.

**Table 5.** Constraints associated with usage of non-kinetic approaches

	Farmers (n=132)	D	Pastoralists (n=31)	D	Pooled (n=163)	D
Variables	Mean		Mean			
Mistrust between both parties	2.23	S	2.55	S	2.29	S
Power imbalance	1.45	NS	1.87	NS	1.53	NS
Inadequate access to educate both parties	1.18	NS	1.45	NS	1.23	NS
Political interest	2.37	S	2.35	S	2.37	S
Economic interest	1.18	NS	1.64	NS	1.27	NS
Cultural differences	2.26	S	2.70	S	2.35	S
Inadequate access to resources	2.25	S	2.32	S	2.26	S
Historical grievances	2.29	S	2.45	S	2.32	S
Inadequate funding	1.13	NS	1.54	NS	1.21	NS

Limited technical expertise	2.61	S	2.19	S	2.53	S
Lack of woman participation in conflict resolution	2.61	S	2.09	S	2.52	S
External influences	1.09	NS	1.26	NS	1.12	NS
Religious differences	2.81	S	2.81	S	2.82	S

Sources: Field survey, 2024

**Note:**

D=Decision

S=Severe

NS=Not severe

## Conclusion

It can be concluded that traditional heads, negotiation and open communication were the most non-kinetic approaches to conflict. More so, traditional heads, training on conflict resolution, and capacity building mechanisms were the most effective non-kinetic approaches. Educational level, extension, training, frequency of conflict, and number of household lost to conflict influenced the effectiveness of non-kinetic approach in conflict resolution. It is recommended that religious tolerance should be promoted by the religious heads. Experienced and knowledgeable personnels should be included in the conflict resolution committee. Moreover, traditional heads should foster trust between farmers and pastoralists and, cultural exchange should be promoted to restore peace.

## References

- [1] Omaku, M. I., Umar, I. S., Olaleye, R.S., Tsado J. H., and Pelemo, J. J. (2021). Effectiveness of Alternative Dispute Resolution Strategies in Improving Farmers-Pastoralists Relationship in Nasarawa and Niger States, Nigeria, *International Journal of Agriculture and Rural Development*, 24 (1), 5569-5574.
- [2] Omaku, M. I., Salisu, O. U., Yakubu, S., Abubakar, U. A., Yisah, L. J. and Aliyu, K. A. (2023). Analysis of Farmers and Pastoralists Willingness to use Alternative Dispute Resolution (ADR) Strategies in Conflict Resolution in Nasarawa State, Nigeria, *A Proceedings of 57th Annual Conference of Agricultural Society of Nigeria (ASN)(ASN)* held at Landmark University, Federal University Lafia, Nasarawa State. Pp 1070-1074.
- [3] Jibrin, S. Abdullahi, A., Mohammed, Y., Umaru, A. and Mustapha, M. (2023). Effects of Farmer - Pastoralist Conflicts on Extension Service Delivery in Niger State, Nigeria, *A Proceedings of 57th Annual Conference of Agricultural Society of Nigeria (ASN)(ASN)* held at Landmark University, Federal University Lafia, Nasarawa State. Pp 1075-1078
- [4] Fidelis, A. and Abraham, M. A. (2023). "Farmers and Herders Conflict: The Case of Omala Local Government Area. *Wukari International Studies Journal*, 7 (3), 21-26.
- [5] Chamo, A. M., Abdulsalam, R. Y., Orifah, M. O., Goni, M. and Tambari, I. W. (2024). Roles of Stakeholders in Farmer-Pastoralist Conflict Prevention and Resolution in the Context of a Rural

Community in a Developing Country–Nigeria. *Nigerian Journal of Rural Sociology*, 24, 2, 32-40

- [6] Isidori, E., Alonzi, R. and De Martino, M. (2023). Creativity and Conflict Management: From the Theory to Practice
- [7] National Bureau of Statistics (NBS) (2023). Population by State and Sex. [https://en.m.wikipedia.org/wiki/List\\_of\\_Nigerian\\_states\\_by\\_population](https://en.m.wikipedia.org/wiki/List_of_Nigerian_states_by_population).
- [8] Sanusi, R.O., Fakoya, E.O., Oyeyinka, R.A., Omotayo, A.M., Ajibola, B.O. and Ajibade, A.S. (2021). Determinants of Adoption of giz-sponsored Technologies among Cassava Farmers in Ogun State, Nigeria. *Cogent Food & Agriculture (Taylor & Francis)*, 7(1) 1917165, DOI: [10.1080/23311932.2021.1917165](https://doi.org/10.1080/23311932.2021.1917165) ([www.tandfonline.com/loi/oafa20](http://www.tandfonline.com/loi/oafa20))