



Navigating Challenges: Herdsmen-Crop Farmers Conflict and its Effect on Yam Productivity in Benue State

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ABSTRACT

The conflict between herdsmen and crop farmers in Nigeria has significantly impacted the productivity of yam farmers in the Logo Local Government Area of Benue State. The study investigated this conflict's impact on yam farmers' productivity. Data was collected from a structured questionnaire administered to 400 households affected by the conflict. The study found that the conflict negatively impacts the productivity of yam farmers in the Logo Local Government Area. The study reveals that 67.3% of yam farmers in Benue State are male, with a mean age of 35. The majority are married, have an average household size of 11 people, and have a small-scale farm size. Their low education level may contribute to unabated conflict dynamics. The study reveals that herdsmen attacks significantly reduce the productivity of yam farmers in the study area, with a higher number of respondents producing more output before the attacks and a lower number after the attacks. The logit regression model shows that Fulani attacks, attacks by Fulani herdsmen, and technology led to significant deaths in households, reducing the labour force, destroying farmers' inputs, and instilling terror. In conclusion, the study reveals that herdsmen attacks have significantly reduced the productivity of yam farmers in the study area, affecting not only the labour force but also their inputs and livelihoods, highlighting the detrimental impact of conflict-related violence. It was recommended that the government should also provide easy access to finance for farmers affected by this conflict to recover their lost farm capital.

Keywords: Herdsmen-Crop Farmers, Conflict, Agriculture Productivity, Farm Households.

ABSTRAK

Konflik antara penggembala dan petani tanaman pangan di Nigeria berdampak signifikan terhadap produktivitas petani ubi di Wilayah Pemerintahan Lokal Logo di Negara Bagian Benue. Studi ini menyelidiki dampak konflik ini terhadap produktivitas petani ubi. Data dikumpulkan dari kuesioner terstruktur yang diberikan kepada 400 rumah tangga yang terkena dampak konflik. Studi ini menemukan bahwa konflik berdampak negatif terhadap produktivitas petani ubi di Wilayah Pemerintahan Daerah Logo. Studi tersebut mengungkapkan bahwa 67,3% petani ubi di Negara Bagian Benue adalah laki-laki, dengan usia rata-rata 35 tahun. Mayoritas sudah menikah, memiliki rata-rata jumlah anggota rumah tangga 11 orang, dan memiliki lahan pertanian skala kecil. Rendahnya tingkat pendidikan mereka mungkin berkontribusi terhadap dinamika konflik yang tidak mereda. Studi ini mengungkapkan bahwa serangan penggembala secara signifikan mengurangi produktivitas petani ubi di wilayah studi, dengan jumlah responden yang lebih banyak menghasilkan lebih banyak hasil sebelum serangan dan jumlah yang lebih sedikit setelah serangan. Model regresi logit menunjukkan bahwa serangan Fulani, serangan oleh penggembala Fulani, dan teknologi menyebabkan kematian yang signifikan di rumah tangga, mengurangi angkatan kerja, menghancurkan input petani, dan menimbulkan teror. Sebagai kesimpulan, penelitian ini mengungkapkan bahwa serangan terhadap para penggembala telah secara signifikan mengurangi produktivitas petani ubi di wilayah studi, tidak hanya berdampak pada angkatan kerja namun juga input dan kehidupan mereka, sehingga menyoroti dampak merugikan dari kekerasan terkait konflik. Direkomendasikan agar pemerintah juga memberikan kemudahan akses keuangan bagi petani yang terkena dampak konflik untuk memulihkan modal pertanian mereka yang hilang. Kata Kunci: Penggembala-Petani, Konflik, Produktivitas Pertanian, Rumah Tangga Petani.

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INTRODUCTION

The conflict between herdsmen and crop farmers in Nigeria has significantly impacted agricultural productivity and communal harmony. The conflict, often driven by competition for scarce resources, has resulted in violent confrontations, loss of lives, and destruction of farmlands. In the Logo Local Government Area of Benue State, yam cultivation is a significant contributor to the state's agricultural output. The conflict has led to insecurity among farmers, decreased cultivation of yam and other crops, and displacement from ancestral lands, disrupting traditional agricultural practices and eroding livelihoods. The clashes have also strained communal relations, hampered collective efforts in yam cultivation, and impacted the overall yield and quality of yam production. The psychological trauma and emotional distress experienced by farmers have also negatively impacted their mental well-being, hindering their ability to engage effectively in yam cultivation. Addressing these implications requires a holistic approach that includes conflict resolution, land use management, and restoration of communal harmony. Only through concerted efforts and sustainable interventions can the adverse effects of the conflict be mitigated, revitalizing yam farming productivity and fostering agricultural development in the region.

According to Amao et al (2018), farmers-herdsmen disputes have been the most prevalent resource-use conflict in Nigeria. This conflict has shown a significant potential to increase insecurity and food crises, particularly in rural areas where the conflict is most hit, with nationwide repercussions. Herdsmen-crop farmers' conflict in Benue State has decimated most rural communities, robbing people of their farmlands and ancestral houses, and causing them to lose their livelihoods. The kidnapping, raping and killing of innocent people is the most concerning aspect of current events, with women and children being the most vulnerable and most affected (Mbah et al.,

2020). According to Kazeem (2018), an attack on villages in Benue state on January 1, 2018, in Guma local government killed 73 people, razed communities, and damaged houses, while the state emergency department claims 40,000 people were injured.

According to Musa et al (2016), Ijirshar et al (2015), Apenda (2016), and Kwaghtser (2019), the herdsmen-farmers conflict hurts Benue farmer's output resulting from a reduction in crop yield and income of the Benue farmers; displacement of farmers, loss of lives and properties, loss of products in storage and destruction of public and private facilities. The conflict between herdsmen and farmers has caused significant disruptions in fourteen out of 23 local governments in Benue (Apenda, 2016). In the Logo Local Government Area of Benue State, there have been numerous conflicts between Fulani herders and sedentary farmers. In 2014, Fulani herdsmen attacked five villages, killing nine people. In 2014, over 100 herdsmen attacked four villages, causing property loss and killing over 100 people. In 2015, 100 people were killed in villages and refugee camps. In 2016, eight people were killed in Ngorukgan, Tse-Chia, Deghkia, and Nhumbe. In 2017, three people were killed. In 2018, 59 people were killed in attacks by transhumant terrorists in Gabo-Nenzev, Ugondo, and Turan.

The latest of the callous and inhuman atrocities came on the morning of November 13, 2021, when some gunmen invaded a community in Mbayatyo, Mbater council ward of Logo LGA, killing scores of mourners at a wake for one of their departed relatives (Ameh, 2018; Duru, 2021). Despite condemnation from Nigerians and the International Community, many people are taking refuge in LGEA Central primary school, Ugba, and N K S T upgraded science primary school, Anyiin Logo LGA of Benue State, demanding the arrest and prosecution of herdsmen involved in terrorism. The conflict has escalated into carnage, impacting agricultural productivity in the local

government area and the state as a whole, attracting widespread attention.

Recent studies by Musa et al (2016); Ijirshar et al (2015); Apenda (2016) and Kwaghtser (2019) on this topic have raised several difficulties, including the need for increased public awareness campaigns to minimize the current prevalence, which has overrun numerous local government areas in Benue State, most notably the Logo Local Government Area. However, literature on the magnitude of this crisis on agricultural productivity is scarcely available. According to Verter and Becvarova (2014), yam production is the primary crop for 64% of farmers in the Logo Local Government Area. Therefore, the study is necessary to establish the relationship between herdsman-crop farmer clashes and the productivity of yam farmers in the Logo Local Government Area of Benue State.

The conflict between herdsman and crop farmers in the Logo Local Government Area of Benue State, Nigeria, has significantly impacted the productivity of yam farmers. The conflict stems from the competition for land and resources between nomadic herdsman and settled crop farmers, leading to violent confrontations, destruction of farmlands, and loss of lives. This has severely affected yam farmers' productivity, with far-reaching implications for food security and the overall economy of the region. The conflict has led to the destruction of yam farms and other agricultural lands, resulting in significant losses for yam farmers. The loss of lives and livelihoods has created a sense of fear and insecurity among yam farmers, further exacerbating the food security situation in the area. The conflict has also forced many yam farmers to abandon their farms and homes, disrupting agricultural activities and negatively impacting the social and economic fabric of the community.

Resource scarcity has resulted from the competition for land and resources between herdsman and crop farmers, making it challenging for yam farmers to access and utilize productive agricultural land. This has

constrained their ability to expand production and meet market demands. The conflict has had significant economic impacts on yam farmers, leading to reduced incomes, increased production costs, and limited access to markets. This has hindered the economic growth and development of the region, affecting the overall livelihoods of yam farmers. Addressing these issues is crucial to safeguarding the livelihoods of yam farmers, ensuring food security, and fostering sustainable development in the region.

Tiwo (2023) The conflict between Fulani pastoralists and farmers in Benue state is primarily a dispute over water and land use, driven by the need for increased agricultural production and grazing pastures. The conflict is characterized by boldness and various explanations for the conflict. Farmers complain of farm encroachment, while herders complain of farmers encroaching on grazing reserves and blocking grazing routes. The rainfall pattern in Nigeria is negatively affecting the situation, with drought and desertification causing drought and desertification in the northern part of Nigeria. This has led to resource contestation and conflicts with host communities, threatening peace in many parts of the country. This study integrates expert interviews and systematic evidence assessment to examine multidimensional migration motivations and the influence of climate change on people's sustenance, leading to migration to the middle belt and southern Nigeria. Key findings show that climate change's adverse effects in northern Nigeria indirectly influence migration to other parts of the country by upsetting other drivers of migration, such as economic, sociodemographic, and political aspects.

The Herdsman-Crop Farmers conflict in Nigeria has significantly impacted agricultural productivity, particularly in the Logo Local Government Area of Benue State, known for its yam farming. This conflict has led to the destruction of farmlands, loss of lives, and displacement of farming communities, ultimately impacting the productivity of yam

farmers in the region. Existing literature has extensively discussed the conflict and its consequences on agriculture, but there is a noticeable gap in the empirical review concerning the specific implications on the productivity of yam farmers in Logo Local Government Area.

Understanding the implications of the Herdsmen-Crop Farmers conflict on yam farming productivity in Logo Local Government Area is crucial for several reasons. Yam is a staple crop in Nigeria and a major source of livelihood for many farmers in the region. Any disruption to yam farming productivity can have significant socio-economic implications for the farmers and the local community. Addressing this gap in empirical research can provide policymakers, agricultural extension services, and relevant stakeholders with valuable insights into the specific challenges faced by yam farmers in the context of the conflict, which can inform the development of targeted interventions and support mechanisms to mitigate the impact of the conflict and enhance yam farming productivity in the area.

This study aims to bridge the empirical review gap by assessing the extent of farmland destruction experienced by yam farmers in Logo Local Government Area as a result of the Herdsmen-Crop Farmers conflict. It will also evaluate the yield losses attributed to the conflict, examine the socio-economic consequences of the conflict on yam farmers, and assess coping mechanisms and adaptation strategies employed by farmers to sustain yam production in the face of the conflict.

METHOD

The study utilized a cross-sectional approach, using a quantitative design to select 400 yam farmers affected by Fulani herdsmen attacks in the Logo Local Government Area of Benue State. Data was collected through an open-ended and structured questionnaire, oral interview, personal observations, and Focused Group Discussion (FGDs), to elicit both qualitative and quantitative information about

the effect of the conflict on the productivity of yam farmers. The population of the study is yam farmers in the Logo Local Government Area of Benue State, which has a projected population of 228,900 as of 2016. According to Verter and Becvarova (2014), yam production is the primary crop for 64% of farmers in the area. Therefore, the population of yam farmers is $64/100 \times 160,230 = 102,547$. The sample size was determined using Taro Yemem's formula, which states that $n = N / (1 + N(e)^2)$. This resulted in a sample size of approximately 400. Descriptive statistics were used to analyze the data and regression analysis, including frequency distributions, tables, charts, percentages, and means. A Paired t-test was used to determine the differences in productivity before and after the Fulani attacks, while a Logit regression technique was used to assess the impact of herdsmen attacks on the productivity of yam farmers in the Logo Local Government Area of Benue State. A Logit regression technique was used to determine the impact of herdsmen attacks on the productivity of yam farmers in the Logo Local Government Area of Benue State. The model was modified from Ijirshar et al (2015), which is specified as follows: $cY = f(NOD, NAF, HEA, FMLS, LEED, FMEX, HSTA, TECH, NMHC, FU)$. The study's expectations of anteriority were positive, meaning that parameters B1-B3 would increase the probability of farmers' output changing with herdsmen attacks, while B4-B10 would reduce the chance of productivity changes. The majority of affected farmers, 67.0%, fell within 21-60 years of age, with a mean age of 35 years. This indicates that these farmers are still active and productive, and may respond violently to conflict or aggression from herdsmen.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Affected Households.

The socioeconomic characteristics of the respondents are presented in Table I below:

Table 1. Socioeconomic characteristics of respondents

Variable	Frequency	Percentage
Gender		
Male	269	67.3
Female	131	33.7
Age (years)		
Less than 20	16	4.0
21-40	150	37.5
41-60	126	31.5
60 above	108	27.0
Marital Status		
Single	24	6.0
Married	287	72.3
Widowed/widower	87	21.7
Household Size		
Greater than 5		7.5
6-10	30	21.0
11-15	84	63.5
Less than 15	254	8.0
Farm Size (hectare)		
Greater than 1	90	22.5
1 - 2	170	42.5
3- 4	92	23.0
Less than 5	48	12.0
Educational Level		
No formal education	99	24.8
Primary education	122	30.5
Secondary education	138	34.5
Tertiary education	41	10.2

Results on socioeconomic characteristics of yam farmers in the study area as shown in Table 1 indicate that 67.3% of the affected yam farmers in the study area are male, indicating that men are more proactive in responding to conflict. The majority of these farmers are between 21-60 years old, with a mean age of 35. This indicates that they are energetic and may respond violently to conflict or aggression from herdsmen. The majority (73.5%) are married, with an average household size of 11 people. The majority of the farmers are small-scale, with an average farm size of 2.75 ha, likely due to inheritance and individual land ownership. The education level of the farmers is relatively low, with only 10.2% having higher qualifications. This could negatively affect their perception of conflict situations and behavior, potentially contributing to the unabated farmer-herder conflict in Benue State. Overall, the study highlights the importance of understanding the socioeconomic characteristics of yam farmers in addressing conflict dynamics.

Analysis of the Productivity of Yam Farmers
The analysis of the productivity of Yam farmers' output before and after the attacks is presented in Tables 2 and 3 below.

Table 2. Farmers' output before and after Herdsmen attacks

QTY	Before		After	
	Frequency	Percentage	Frequency	Percentage
Less than 1000	40		204	
1000 - 2000	48		100	
2000 - 3000	108		60	
3000 - 4000	150		34	
Greater than 4000	54		2	
Total	400		400	

Table 3. T-test result

Indicator	Before	After	Difference	T- Value	Prob
Yam output	4,217	3,196	1,021	16.889	0.0001

The study reveals that herdsmen attacks have significantly reduced the productivity of yam farmers in the study area. The results show that a higher number of respondents produced more output per hectare before the attacks, and a lower number produced less output after the attacks. Factors contributing to this reduction include inadequate access to land, reduction in farm labor, and destruction of yam seeds. Many farmers have not yet accessed their farmlands in remote areas due to land occupied by Fulani nomadic people. Young men from other local governments are also no longer coming to work due to fear of being attacked by herdsmen.

Table 4. Logit Regression Results

Variables	Coefficient	Standard error	Z-Statistics	Prob.
MOD	31.247	4.126	7.573	0.009
NAF	-2.356	1.157	2.036	0.040
HEA	-8.838	5.698	-1.551	0.129
FMIS	-2.440	1.888	-1.293	0.291
LEED	-0.626	1.092	-0.573	0.574
FMEX	-3.226	1.785	-1.807	0.047
HSTA	04.063	1.839	-2.209	0.042
TECH	5.358	2.332	-2.298	0.034
NMHC	-2.976	2.111	-1.410	0.159
FU	-5.246	3.179	-1.650	0.099
C	15.708	5.699	2.756	0.027

The logit regression model reveals that the number of deaths recorded by households due

to Fulani attacks (NOD), attacks by Fulani herdsmen (NAF), and technology (TECH) were positive and statistically significant at a 5% critical level. These results agree with previous research, which found that killing people during conflict and attacks by Fulani herdsmen reduced the labor force, destroyed farmers' inputs, and instilled terror in farmers, leading to a significant drop in yam productivity. However, the outcome for TECH did not align with expectations, possibly due to the poor farming households in the study area lacking sufficient capital to use machines for farming. Family size, years of farming practice, and health status also had negative and statistically significant effects on farmers' productivity. The level of education, land area cultivated, and fertilizer use did not significantly affect the reduction. The costs of treating family members did not agree with a priori expectations, possibly due to the low poverty status of farm households in the study area. The Mac Fadden R² value of 0.576 indicates that the explanatory variables included in the model explain changes in market access by 54.04%. The Akaike and Schwarz statistics are relatively low, suggesting the model performs well. The LR statistics are significant at a 5% level of significance, suggesting elements of joint effect by the explanatory variables.

Discussion

Research question one result shows that herdsmen attacks have reduced the productivity of yam farmers in the study area. This result agrees with the study of Ukamaka et al. (2017) who reported that the respondents are subsistence farmers with an average farm size of 2.9 hectares. Concerning education, about 75.2% of the sampled farmers had formal education. The results obtained from research objective 2 revealed that killing people during the conflict and attacks by Fulani herdsmen significantly reduces the labor force, destroys farmers' inputs, and instills terror in farmers, causing them to abandon agriculture operations in that area, resulting in a significant drop in the productivity of yam. This result

agreed with the result by Ijirshar et al. (2015), who also found out that killing human beings in the course of the conflict and the attacks by the Fulani herdsmen turned to reduce the labor force, creating fear in farmers and serving as a deterrent to other energetic people to withdraw from the farm production in that area, resulting in a great reduction in the output.

CONCLUSION

The study investigates the impact of herdsmen-crops farmers' conflict on yam farmers in Logo Local Government Area of Benue State. The results show that the conflict has a negative and significant effect on agricultural productivity, causing depletion of resources, displacement of farmers, loss of property and farm revenue, increased unemployment, slowed economic, cultural, social, political, educational, and religious activities, and increased rural-urban migration. This has led to a higher poverty rate in the region, including food and social insecurity. The leadership should promote cultural, economic, social, religious, and political understandings to bring together Tiv farmers and various tribes in Nigeria, including nomads. Stakeholders, government agencies, civil society groups, and non-governmental organizations should work to resettle Fulani nomadic people who have occupied farmland to allow access to farmland for farmers. The government should also provide easy access to finance for farmers affected by the conflict to recover their lost farm capital. In conclusion, the study reveals that herdsmen attacks have significantly reduced the productivity of yam farmers in the study area, affecting not only the labour force but also their inputs and livelihoods, highlighting the detrimental impact of conflict-related violence.

REFERENCES

Adebanwi, W. (2009). Terror, territoriality and the struggle for indigeneity and

- citizenship in Northern Nigeria. *Citizenship Studies*, 13(4), 349-363.
- Amao, O., Adeagbo, T. A., Olojede, M. O., Ogunleye, B. T., & Ogundoyin, C. O. (2018). Effects of Fulani herdsmen conflict on productivity of arable crop farmers in Ibarapa areas of Oyo State. *International Journal for Research in Social Science and Humanities*, 4(7), 1-12.
- Ameh, C. G. (2018). Herdsmen killings: Benue Government releases timeline of attacks. Retrieved from <https://dailypost.ng/2018/02/06/herdsmen-killings-benue-govt-releases-timelineattacks/>
- Amnesty International. (2018). Harvest of death: Three years of bloody clashes between farmers and herders in Nigeria. Amnesty International.
- Apenda, I. T. (2016). Assessment of the impact of farmers-herders conflict on food security in Benue state, Nigeria. *International Journal of Development Strategies in Humanities, Management and Social Sciences*, 6(2), 187-200.
- Awuna, J. M., Musa, A. U., & Onah, A. E. (2023). Effects of Gross Fixed Capital Formation and Selected International Trade Policy Instruments on Agricultural Productivity in Nigeria: An Autoregressive Distributed Lag (ARDL) Model Approach. *Nigerian Journal of Agriculture and Agricultural Technology (NJAAT)*, 3(2).
- Awuzie, E. I., Okechukwu, N. M., Kuma, M. P., Okafor, V. C., & Itodo, I. C. (2023). Communal Conflict and Socio-economic Development Process in Nigeria: Evidence from Ukum and Shitile Communities in Sankara Benue State. *Communal Conflict and Socio-economic Development Process in Nigeria: Evidence from Ukum and Shitile Communities in Sankara Benue State.*, 125(1), 10-10.
- Blench, R. (2001). Pastoralism in the new millennium. *FAO animal production and health paper*, 150, 11-34.
- Blench, R. (2004). *Natural resource conflicts in north-central Nigeria*. London: Mandaras.
- Blench, R. (2017). Pastoral conflict and supplying Nigeria with meat: how can the paradox be resolved. Cambridge. Department of Philosophy and Religious Studies, Tansian University.
- Blench, R. (2019). A tropic cascade in Nigerian vegetation and its implications for herder-farmer conflict. Department of History, University of Jos Kay Williamson Educational Foundation
- Blench, R., & Dendo, M. (2003). Position paper: the dimensions of ethnicity, language and culture in Nigeria. Cambridge: DFID.
- Blench, R., & Dendo, M. (2003). *The Transformation of Conflict Between Pastoralists and Cultivators in Nigeria*. Cambridge Cb1 2al United Kingdom. The Journal Africa, Ed. M. Moritz.
- Duru, P. (2021). 1,773 killed by armed herdsmen in Benue, LG chiefs, tribal leaders cry out. Retrieved from <https://www.vanguardngr.com/2021/11/1773-killed-by-armed-herdsmen-in-benuelg-chiefs-tribal-leaders-cry-out/>
- Elbadawi, E., & Sambanis, N. (2000). Why are there so many civil wars in Africa? Understanding and preventing violent conflict. *Journal of African economies*, 9(3), 244-269.

- Ejim, A. M., & Gani, S. M. (2023). Assessment of factors responsible for farmers-herders conflict in Benue state north central, Nigeria. *World Journal of Advanced Research and Reviews*, 18(2), 764-772.
- Folger, J. P., Poole, M. S., & Stutman, R. K. (2021). *Working through conflict: Strategies for relationships, groups, and organizations*. Routledge.
- Gyong, J. (2007). *The Structure of Communication in Peace and Conflict Resolution, Identity, Crisis and Development in Africa*. Malhouse Press.
- Haddad, L. J., Hawkes, C., Achadi, E., Ahuja, A., Ag Bendeche, M., Bhatia, K., Bhutta, Z., Blossner, M., Borghi, E., Eriksen, K. & Flores-Ayala, R. (2015). *Global Nutrition Report 2015: Actions and accountability to advance nutrition and sustainable development*. International Food Policy Research Institute
- Hanumanthappa, K. M. (2014). A Clarification of the Concept of Agricultural Productivity in Karnataka. *International Journal of Innovative Research and Development*, 3(7), 395-397.
- Higazi, A. (2016). Farmer-pastoralist conflicts on the Jos Plateau, central Nigeria: security responses of local vigilantes and the Nigerian state. *Conflict, Security & Development*, 16(4), 365-385.
- Ijirshar, V. U., Ker, G., & Terlumun, Y. C. (2015, August). Socio-Economic Effects of Farmers–Herdsmen Conflict on Farmers’ Output in Benue, Nigeria. In an International Academic Conference on Nigeria and the Emerging Challenges in the 21st Century: The Way Forward (pp. 25-28).
- Kazeem, Y. (2018). A new wave of brazen attacks by herdsmen in Nigeria is sparking fears of genocide. *Quartz Africa Online News*.
- Kwaghtser, P. A. (2019). Impact of the conflict between farmers and herdsmen on food production in the agro-ecological Zone-B of Benue State, Nigeria. *Ianna Journal of Interdisciplinary Studies*, 1(1), 56-64.
- Last, M. (2007). Muslims and Christians in Nigeria: an economy of political panic. *The Round Table*, 96(392), 605-616.
- Mbah, E. N., Jiriko, R. K., & Amah, N. E. (2020). Socio-economic impacts of conflicts between farmers and cattle herdsmen in rural households of Benue State, Nigeria. *Journal of Agriculture and Sustainability*, 13.
- Mechri, A., Lys, P., & Cachia, F. (2017). Productivity and efficiency measurement in agriculture: Literature review and gaps analysis. technical report series GO-19-2017.
- Mellawen, Zannah, F., & Elhawwa, T. . (2024). Students’ and Teachers’ Perception on the Development of Local Wisdom Module to Increase Student Learning Outcome. *Jurnal Penelitian Pendidikan IPA*, 10(2), 516–521.
<https://doi.org/10.29303/jppipa.v10i2.5063>
- Murjani, D., & Zannah, F. (2023). Identifikasi Kesulitan Peserta Didik Kelas V SDN 5 Palangkaraya Melalui Kegiatan Pembelajaran Secara Luring Di Masa Covid-19: Identification of Difficulties Of Class V Students in Palangkaraya 5

- State Elementary School Through Online Learning Activities in the Covid-19. *Pedagogik: Jurnal Pendidikan*, 18(2), 164–169. <https://doi.org/10.33084/pedagogik.v18i2.5482>
- Musa, S. D., Shabu, T., & Igbawua, M. I. (2016). Resource use conflict between farmers and Fulani herdsmen in Guma local government area of Benue state, Nigeria. *Journal of defence studies and resource management*, 4(1), 1-6.
- Mustapha, A. R., & Ehrhardt, D. (Eds.). (2018). *Creed & grievance: Muslim-Christian relations & conflict resolution in northern Nigeria (Vol. 11)*. Western Africa.
- Ochonu, M. E. (2014). *Colonialism by Proxy: Hausa imperial agents and Middle Belt consciousness in Nigeria*. Indiana University Press.
- Porter, G., Lyon, F., Adamu, F., Obafemi, L., & Blench, R. (2005). *Trade and market in conflict development and conflict resolution in Nigeria: scoping study report to the UK Department for International Development*.
- Sari, E., Bulkani, B., & Rahmaniati, R. (2023). The Effect of Using the STAD (Student Teams Achievement Division) Cooperative Model Assisted by Finger Puppets on Students' Learning Motivation. *International Journal of Universal Education*, 1(2), 61–68. <https://doi.org/10.33084/ijue.v1i2.6949>
- Tiwo, R. A. (2023). Pastoralists and farmers conflict in Benue state: Changes in climate in northern Nigeria as a contributing factor. *World Journal of Advanced Research and Reviews*, 17(3), 325-344.
- Ukamaka, D. M., Danjuma, S. E., Mbolle, C. J., Achonam, E. I., & Mbadiwe, I. E. (2017). Livelihood issues in herdsman-farmers conflict among farming communities in Kogi State, Nigeria. *African Journal of Agricultural Research*, 12(24), 2105-2115.
- Verter, N., & Becvarova, V. (2014). Yam production as pillar of food security in Logo Local Government Area of Benue State, Nigeria. *European Scientific Journal*, 10(31).