Chapter 10 - Assessing Peacebuilding Strategies in the Wake of Climate-induced Migration and Conflict Dynamics in Nigeria's Middle Belt Region

Hosea Olayiwola Patrick

ORCID: http://0000-0001-8022-9099

Comfort Fatimoh Sheidu

ORCID: https://orcid.org/0000-0002-9203-5600

Abstract

The vulnerability of Nigeria's Middle Belt region to the multiple effects of historical tension exacerbated by environmental forces and climate changeinduced forced human displacement is a policy and research concern. This study explores the complex dynamics of climate-induced migration and conflict in Nigeria's Middle Belt Region, with a focus on peacebuilding strategies. As climate change continues to impact migration patterns, the Middle Belt has emerged as a hotspot where environmental stressors collide with historical conflicts, and result in complex conflict scenarios. The discussion focuses on incorporating climate change adaptation into peacebuilding initiatives, emphasizing the importance of climate-sensitive tactics. Furthermore, the study accentuates the significance of community involvement and stakeholder collaboration, as essential functions of local communities in peacebuilding and the push for collaborative approaches that involve the government, non-governmental organizations (NGOs), and international organizations. This study adds to the expanding field of climate and peacebuilding by providing a detailed knowledge of the issues posed by climateinduced migration and outlining viable peacebuilding initiatives in Nigeria's Middle Belt Region. The study concludes by emphasizing the importance of national-level policy changes that include climate issues in conflict resolution frameworks.

Keywords: Climate change, Migration, Peacebuilding, Conflict, Nigeria

Introduction

The implication of climate change on migration and displacement in Africa has been a long-aged discourse in the literature on climate migration nexus. However, the discourse on peacebuilding strategies necessary to mitigate conflict dynamics prevalent with resource depletion as well as people displacement arising due to the frequency of climate-induced extreme events has received relatively limited exposure. The veracity of this assertion is even more pronounced in societies where governments seem to be more reactive than proactive in their policy engagement drive, coupled with weak government capacity and high levels of poverty (see Patrick 2020). As Sheidu and Patrick (2023) argued, Nigeria's Middle Belt region has experienced, over the years, the influx of climate change-induced nomadic migration, leading to conflicts between host communities and the headers. Supporting this postulation, Homer-Dixon's eco-violence theory argued on the propensity of violence to rise when available resources become insufficient either because of an increase in demand (demand-induced scarcity), decrease in supply (supply-induced scarcity) or structural deficiency. This leads to the capture of the available resources or ecological marginalization by a group (see Bernauer et al. 2012; Patrick 2020). The practicality of this assertion is felt in the Middle Belt region of Nigeria as farmers and herders continue to clash over available arable land due to the impact of climate change on the frequency of rainfall and water availability resulting in a decline in the availability of these resources for the increasing population of people (Madu & Nwankwo 2021). The implication of these declines means an increase in the migration and migratory tendency of people in the far northern parts of Nigeria to the Middle Belt region, thereby increasing the pressure on available resources in the region (Amusan, Abegunde & Akinyemi 2017).

This paper is an attempt to explore peacebuilding strategies necessary as coping mechanisms in ameliorating conflict dynamics in the wake of climate-induced migration into the Middle Belt of Nigeria. The aim is to proffer policy-relevant postulations necessary in curtailing resource conflict within the region. The discourse begins with an introduction, which gives an overview of the research problem and aim. This is followed by the methodology adopted and then the literature review of climate-induced migration and conflict, the impact of climate change on migration patterns, and peacebuilding measures as well as its nexus. Additionally, a historical

overview of resource-induced conflicts within the Middle Belt is outlined. Recommendations for future research and policy discourse on migration and peacebuilding in Nigeria and Africa bring the deliberations to an end.

Methodology

Using a systematic desktop review approach, the paper assessed qualitative secondary data on climate change-induced migration, conflicts, and peacebuilding in Nigeria's Middle Belt region. The data through which analyses were made were sourced using a convenience simple random sampling technique to access archival data relevant to the subject matter of inquiry (see Sharma 2017). The data were then thematically coded and analysed in line with the research agenda. Using Scopus, 42 pieces of literature on migration, conflicts, and peacebuilding were sourced and thematically analyzed for relevance in a bid to arrive at the paper's summation. The analysis and result were presented using a descriptive discourse methodology to espouse climate change, its impact on migration within the Middle Belt as well as the complex dynamics of climate-induced migration and conflict in Nigeria's Middle Belt Region, with a focus on peacebuilding strategies.

The Impact of Climate Change on Migration Patterns

Climate change has emerged as one of the most serious risks to humanity in the twenty-first century. Although climate change is a worldwide issue, it does not affect everyone equally (Schmidhuber & Tubiello 2007). According to the International Federation of Red Cross, climate change disasters have displaced more people in recent years than persecution and war (Muzaffar 2022). Climate change migration has numerous ramifications for livelihoods and long-term development. People who migrate because of climate change-related calamities tend to leave behind their well-established livelihood systems in their home countries. This is mostly due to the fact that climate-related disasters tend to disrupt the many mechanisms that would otherwise promote socioeconomic structures in places of origin (Thomas *et al.* 2019). A severe storm, for example, can destroy assets such as houses, farms, livestock, communication networks, power, and water supply systems, and in a matter of hours, despite the significant time and labor investment that

people would have made in acquiring, establishing, nurturing, and caring for such assets and systems. Similarly, with extended drought, farms and cattle are at risk, leaving humans with fewer resources to maintain life (Bushesha 2018).

Nigeria, as a geographical location, has a God-endowed environmental climate that includes vegetation structure, areas of mangroves, and high forest side areas in the South-South, South-East, and South-West, as well as Savannah grassland in the Middle Belt towards desert areas in the country's northern part (Yahaya 2022). Precipitation along the coast and in the south-east of Nigeria averages 3000mm, 4000mm in the South-West 2000mm in the Middle Belt, and 500mm in the North (east and west) (Lanshima *et al.* 2021). As a result of the poor precipitation in Northern Nigeria, there is a water deficit. Many people have been forced to relocate to different parts of the country because of this. The low range of rainfall in various regions around the world is a result of its relationship with nature and human beings. Abuse of the environment through illegal actions such as excessive environmental pollution, industry pollution, blocking of major river sources, and tree cutting has increased the degree of low rain inflow as a contributing cause to immigration (Tyagi *et al.* 2014).

Nigeria has the world's greatest rate of deforestation (Elebe & Etuk 2022: Oyediji & Adenika 2022). Excessive forest extraction subjects the dry sandy soil of these arid locations to high winds during the dry season. There is a definite link between deforestation and climate change difficulties; many African countries practice deforestation in such a way that this attitude tempers good ecological survival, which leads to migration (Yahaya 2022; Kolawole & Iyiola 2023). Furthermore, while a storm is a natural disaster, the nature of man's action towards his surroundings can encourage susceptibility and its influence on man and his environment. Communities that cut their forests, for example, are more vulnerable to this tragedy than those that conserve forests and trees around the environment. A windy storm has significant winds but little or no precipitation (Knight & Davis 2009). Strong winds are known to impact visibility, damage crops, and destroy buildings, bridges, and so on in Nigeria's eleven (11) frontline desert northern states, converting loose debris into hazardous materials that affect humans, crops, and cattle. Windstorms in Northern Nigeria are a significant component of mass migration (Lanshima et al. 2021).

Drought is another natural disaster that usually affects the environment in such a way that food production decreases, which can easily

lead to communal or societal hunger, leaving affected victims with no choice but to migrate to find places with water and moisture to feed animals and farm for food security (Miyan 2015). It is a natural occurrence caused by meteorological fluctuations. Drought has a significant influence on the affected region's ecosystem and agriculture, as well as harm to the local economy. Drought brings heat, and heat has exacerbated the climatic conditions in Northern Nigeria by hastening water evaporation (Yahaya 2022). Consequently, the persistent degradation of the environment in areas of Northern Nigeria, which has resulted in the loss of grazing fields, has driven a southward shift of pastoralists, with the principal implications of this migration pattern being the ongoing violent conflicts between farmers in host towns and herders. The pattern of conflict has resulted in agricultural disruption, massive human casualties, and the devastation of farm settlements and towns (Ani *et al.* 2021).

Food security is consequently a huge worry in the Middle Belt region because individuals cannot either grow their food or afford it. After all, weather and temperature variability affect future agricultural output (Kralovec 2020). It is vital to emphasize that crop and animal production, the country's main economic activities are experiencing serious failures, including decreased agricultural production, which leads to famine, malnutrition, and disease. It is sad that, as farmers and herders seek to eliminate extreme poverty and boost economic growth, climate change has increased the number of vulnerable individuals, hurting the country's development possibilities (Scheffran *et al.* 2019). Climate change will alter conditions and threaten livelihoods in a variety of ways. When people cannot meet their fundamental necessities, this can act as a motivator for migration. Extreme weather and worsening conditions are likely to cause many people to vacate their homes, either temporarily or permanently.

Though the effects of climate change are general, some aspects of human existence and groups of people are more adversely affected than others; similarly, the effects of climatic variability on voluntary migration decisions are multi-causal and linked (Kaczan & Orgill-Meyer 2020). Existing climatic vulnerabilities, as well as the exposure of assets, livelihoods, and lives, define the national and sub-national impact. Extreme weather catastrophes, such as floods and droughts, might cause people to move involuntarily. Hence, community migration patterns are projected to shift significantly as a result of climate change.

From Climate-induced Migration to Conflict Dynamics

Migration is frequently used as a catch-all phrase for the voluntary or involuntary transfer of people from one region to another (Schewel 2020). Although most studies have proposed socioeconomic causes for migration, climate change and environmental factors have been mentioned in the current literature as triggers of migration, particularly internal migration (Piguet 2022; Arias & Blair 2022; Ekoh, Teron & Ajibade 2023. Orimoloye et al. (2019) claim that climate change presents a serious threat to both natural and social systems, including catastrophic phenomena like drought, heat waves, flooding, storms, and wildfires, as well as slower onset impacts like altered patterns of rainfall, rising sea levels, raised salinization, reduced soil fertility, and others. Climate change contributes to an increase in extreme weather conditions and climate-related natural disasters, as well as an increase in the number of people who lose their sources of livelihood and are compelled to leave their homes and relocate. Climate change and degradation of the environment are currently highly important forces driving migrant flows (Barnett & Webber 2010). Environmental degradation implies that once abundant natural resources such as water and fertile soil have begun to become scarce owing to man's inability to adopt environmentally friendly management methods, creating the threat of desertification, drought, and so on. According to the Intergovernmental Panel on Climate Change, warming of the climate system is unquestionable, and climate change could become a major contributor to conflicts by worsening scarcity of important natural resources, such as freshwater, and by triggering mass migration due to extreme weather events, such as droughts and desertification, as well as rising sea levels (Paglia & Parker 2021).

Climate change-induced migration causes land conflict in Nigeria, offering global, regional, and national security issues. Climate change-induced migration includes the relocation of both nomadic and sedentary farmers in search of a better livelihood and arable land to graze and farm (Sabo 2020). Conflicts arise owing to these farmers' interactions and disputes over fertile land spaces. Even though most research focuses on the possibility of climate change-induced conflicts between farmers and herders, climate change-induced migration poses a higher risk. The global phenomena of climate change have reshaped the lives of several communities, particularly people in the agricultural industry (Dalby 2009). Farmers and pastoralists are the most vulnerable. Farmer and herder disputes occur in

environments where populations frequently live under harsh natural and weather conditions (Sabo 2020). Conflicts frequently arise because of competition for access to or possession of natural resources required to support their livelihood. Furthermore, the host populations may feel endangered as a result of the inflow of migrants who speak different languages and have different religious beliefs (Esses *et al.* 2017). In this setting, even if migration does not directly cause conflict, the risk of tolerating people from various ethnic groups may cause conflict.

Theresa and Uroko (2018) contend that due to the aforementioned lack of adequate feed or green grasses in Northern Nigeria, pastoralists are forced to relocate to the Middle Belt region, which is thought to have superior rainfall and humidity precipitation. Many ethnic groups make up Nigeria's migrant pastoralists, with the Fulani forming over 90% of the total. These pastoralists are usually nomadic, herding cattle over their domain's vast desert hinterlands while remaining somewhat isolated from the nearby agricultural inhabitants (Dunmade 2018). However, there is growing evidence of farmers' and herders' conflict as an outcome of climate change, which is moving pastoralists away from their natural habitat and into wetter lands in search of grazing. As a result, the entrance of environmental migrants might strain the receiving area's economic and resource basis, encouraging native emigrant competition for resources (Njiru 2012). The number of migrants and inhabitants is likely to increase, especially when resources are low in the receiving area and property rights are poorly developed. Excessive demand for resources may also result in lateral pressure, the spread of political and economic endeavors beyond the region's or state's borders to obtain resources, increasing the likelihood of conflict (Musa et al. 2021). One of the reasons for conflict has been identified as ethnic animosity between host communities and migrants. Such friction frequently arises due to the host communities' perceptions of migrants as strangers or others. Aside from ethnic differences, socioeconomic competition for resources may lead to conflict between the two groups (Ojo 2023). For example, migrating pastoralists and permanent farmers may compete for land.

Owing to the migration pattern, there has been an increase in the occurrence of violent conflict between farmers and herders in Nigeria's Middle Belt region. However, Nigeria is not the only country beleaguered by desertification-prone conflict between herders and farmers in Africa. Countries such as Côte d'Ivoire, Mali, Niger, Ghana, South Africa, Chad, Burkina Faso, Kenya, Cameroon, as well as Senegal, among others, have

witnessed serious conflicts arising from fierce competition over land and water resources between herders and farmers (Lenshie *et al.* 2021). Hence, many conflicts in Africa may be linked back to the impact of climate change-induced migration, making Africa one of the world's most vulnerable regions to the destructive effects of climate change.

Conflict Dynamics in Nigeria's Middle Belt Region

The Nigerian Middle Belt region is an ethnically diverse zone dominated by minority ethnic groups. Benue, Plateau, Kwara, Kogi, Taraba, Nasarawa, Niger, Adamawa, and Abuja are among the states in the region. It is one of the most fertile farming areas in the country (Merem *et al.* 2017). This is due in part to the soil's high fertility, as well as a mild and varied climate (Azare *et al.* 2020). The country's Middle Belt region, a hub of farmers/ herders conflicts, is the meeting location between the North (largely dominated by Muslims) and the South (largely dominated by Christians), and identity political leaders have discovered ways to propagate the idea that the conflict is between Christians and Muslims (Adigun 2019). Conflicts over grazing land between farmers and herders account for a large proportion of land disputes. The degradation of the environment, societal control of ethno-religious misconceptions, and technological progress have disrupted historically interdependent and mutually beneficial partnerships (Mahmood & Azuaga 2020).

Osayi and Opara (2023) contend that natural calamities, such as rivers overflowing their banks, gully erosion, and internal fighting between communities and villages, have displaced people in numerous states and regions around Nigeria. The farmers-herdsmen conflict in Nigeria's Middle Belt region is an example of this domestic strife. The aforementioned emergency conditions bring to light the circumstances and agony of migrants, as well as the implications of the situation on their development and advancement. The unexpected and dangerous situations brought on by societal instability have negative repercussions and implications (Norris et al. 2008). In the same vein, Bukari et al. (2019) connect the causes of violence to global climate change and competing drought and aridity, which have diminished arable and grazing lands and forced pastoralists to relocate in search of forage for their livestock. Ademola-Oyelana (2023) also states that desertificationinduced migration is one of the factors driving herdsmen to migrate. This has caused shepherds who formerly relied on green pasture to relocate to the Middle Belt areas, putting additional pressure on land. Consequently, environmental degradation has disrupted formerly symbiotic and mutually beneficial interactions. Tensions and assault cycles caused the deaths of thousands of people and displaced more than 62,000 in the region (Osayi & Opara 2023).

In Nigeria's Middle Belt region, continuous conflicts have had profound economic, social, and political consequences. The area, which lies between the country's mostly Muslim North and predominantly Christian South, is notable for its unique religious, ethnic, and cultural backgrounds (Çancı & Odukoya 2016). However, the region has a lengthy history of conflicts triggered by a variety of linked circumstances. Religious fanaticism and indoctrination are a threat to the peace and stability of the region. While religious differences are not the primary source of conflict in the region, on the one hand, extreme groups have exploited existing divisions to further their ideological goals (Chakraborti & Garland 2012). On the other hand, Ajala (2020) argues that climate change is exacerbating vulnerability and conflict in Nigeria's Middle Belt region by increasing competition between farmers and pastoralists for grazing and farming land.

Climate change has a devastating impact on pastoralists' animal output and supply of water (Tiwo 2023). Climate change has also reduced the availability of arable land for grazing. Herders are constantly on the lookout for grazing pastures and watering holes to ensure the continued existence of their herds. Farmers occupied existing lands in the Middle Belt, while pastoralists competed with farmers for restricted resources (Ojo 2023). The compulsion of each group to safeguard its interests and livelihood in the face of a shortage of land frequently leads to conflict between farmers and herders. Even though the problem is primarily an environmental one, those with a stake in the conflicts appear to be reaping some benefits in terms of solidifying power and financial resources (Adigun 2019). As a result, the conflict dynamics in Nigeria's Middle Belt region have major consequences for national security, and the necessity to successfully curb the tendency through peacebuilding processes becomes critical.

Peacebuilding Measures in the Context of Climate-induced Migration

Given that climate change is hard for people to understand because it is intangible, frequently unseen, and has a sluggish beginning, it is critical to raise awareness about the effects of natural resource availability (Klein 2015). In

the same way that improving the sustainability of resources through restoration efforts can lower the likelihood of resource disputes, learning and acquiring the means to protect finite natural capital and understand the threats posed by climate change represents a chance for peacebuilding (Nguyen *et al.* 2023). The establishment of a robust peace and security framework does not happen overnight. It is the consequence of a dynamic interaction of several stakeholders, entities, governments, and communities at large attempting to function based on shared interests (Dredge 2006). Therefore, climate-resilient peace is described as the process of resolving disparities in the access and distribution of power and resources in response to the systems that drive climate change and influence how people experience its consequences (Nicoson 2021). A set of mechanisms comprising how environ-mental management could be related to peacebuilding outcomes determines the peace-contributing potential of climate-peace pathways (Nguyen *et al.* 2023).

Furthermore, to attain the absence of violence, climate action's contribution to economic growth revolves around meeting basic human needs, hence, creating new jobs and supporting current ones (Pelling 2010). Climate adaptation offers economic opportunities by boosting yields and returns, enabling people with diverse livelihoods and sources of income, reducing risks, and boosting available resources by avoiding losses (Heltberg et al. 2009). Climate action may help create and sustain livelihoods by securing food production, supplying critical inputs, diversifying revenue, spreading activities, discovering chances for additional value, and rebuilding deteriorated infrastructure. To achieve significant integration, it is critical to spread the economic benefits of climate action to all communities, particularly the most disadvantaged. Thus, the sub-mechanism by which climate action contributes to peace through economic development promotes the supply of public goods and services (Sarzana et al. 2022). These sub-mechanisms characterize climate action program aspects that may improve economic capacities and contribute to peacebuilding by facilitating economic growth.

It is vital in post-conflict contexts to utilize restoration frameworks for degraded ecosystems to restore the quantity and quality of land and water resources to avoid potential conflict relapses over limited natural resources (Jensen & Lonergan 2012). Natural resource conservation and protection strategies can also support the development of shared identities as well as substantial integration (Giller *et al.* 2008). For example, to establish shared identities, climate action programming packages might incorporate agricultural techniques for sustainable resource use, which can enhance the long-

term availability of resources for communities and hence ensure the stability of livelihoods.

The creation of institutional ability to improve natural resource governance is a critical component of peacebuilding operations (Krampe et al. 2021). To accomplish the absence of violence, the contribution of climate action to better institutional capacities necessitates programs to promote the rule of law; therefore, improving institutional capacities for effective environmental governance is a vital aspect (Dasgupta & De Cian 2016). This sub-mechanism's activities include tackling the unlawful exploitation of natural resources, managing the conflict economy by decreasing corrupttion, improving transparency, and incorporating local authorities in program administration. This can be accomplished by safeguarding property rights, addressing legal issues regarding natural resource tenure and rights, certifying resource rights, and establishing circumstances for resource communication and negotiation (Paradza et al. 2020). Encouraging a fair allocation of resources and benefits is a critical institutional peacebuilding technique for achieving meaningful integration. Indeed, developing rules, standards, and procedures that promote collective action and cooperative resource management can increase the agency of socially marginalised groups and result in a more equitable distribution of resource benefits (Corbera et al. 2007). Climate action programs can embrace such goals by more effectively and equitably controlling resource usage and rights, as well as ensuring that they disperse program benefits evenly across populations.

Development collaboration can provide an excellent opportunity to immediately stabilise the general situation in the region. However, it is critical to utilize a sustainable development cooperation approach in this context that takes ethnic and cultural factors into account (Azapagic 2004). Without a long-term development cooperation strategy, any potential stabilization in the Middle Belt region could be lost as development cooperation programs come to an end. Climate-smart farming methods, technologies, and services can be used to foster collaboration (Totin *et al.* 2018). Climate adaptation measures can foster trust and collaboration, which can have a positive impact on peace (Azapagic 2004). One of the most commonly mentioned peacebuilding processes is the growth of trust and cooperative capacities. Climate adaptation initiatives that meaningfully involve relevant community stakeholders, especially climate-vulnerable and conflict-affected households in program planning and administration processes while minimizing dialogue between conflict parties have a chance of mitigating conflict potential

and establishing a sense of mutual dependence (Paradza et al. 2020).

As a result, mediators who are objective, neutral, and uncompromising must be used in the negotiating and mediation process. To bridge the gap in relationships between warring sides, an effective mediation must be fair and preserve the interests of all parties (Wallensteen & Svensson 2014). Along with this, a diverse variety of mediation experience is required since an experienced mediator is considerably more likely to succeed than an incompetent mediator, and a confidence-building approach to mediation has the prospect to generate a favorable conclusion than forceful diplomacy (Nathan 2005). Therefore, the need for skilled, neutral, and uncompromising mediators cannot be overstated to strengthen the mediation process. Thus, it is critical to recognize that mitigating climate change may offer the foundation for a true shift in the situation. Preventive intervention is performed against future unfavorable consequences in nations particularly sensitive to climate migration as part of the effort to reduce climate change (McMichael et al. 2012). Climate-induced migration may be reduced by mitigating the effects of climate change on people's livelihoods, allowing those who migrated in the past to return to their communities (Singer 2020).

Concluding Remarks

Climate change-related migration in Nigeria's Middle Belt region is not a new phenomenon. As an adaptation mechanism, environmental calamities create migratory flux and conflicts due to the need to flee disaster-affected areas or compete for scarce resources (Olagunju et al. 2021). Climate change-related mass migration has negative repercussions, such as a growing humanitarian catastrophe, fast urbanization with attendant slum growth, and halted development. The abundance of biological resources has proven to be a significant pull factor attracting people to a place deemed to be more hospitable for economic reasons (Issifu et al. 2022). Meanwhile, when demand for these ecological resources exceeds availability due to the reality of climate change, disputes frequently emerge or worse situations take place. Actions aimed at providing neutral spaces for conversation are appropriate techniques for achieving peace while creating common identities in tolerant societies because they facilitate negotiation and eliminate uncertainties (Brugnach et al. 2011). Such measures must try to improve knowledge, resource sustainability, institution building, trust and cooperation, and capacity and resilience.

Climate change, migration, and violence all coexist in Nigeria, posing a significant and difficult concern for policymakers. While it is challenging to draw a precise line of causality from specific climate change threats to migration decisions or specific conflicts, the interdependence of these issues means that analyzing and tackling them separately is no longer effective. Therefore, it is suggested that once the effects of climate change are a source of conflict in the country as a result of migration, Nigerian policymakers ought to seriously consider all climate change adaptation possibilities available beyond what is already underway. This postulation is true not only for locally financed efforts but also for seeking additional assistance and resources from developed countries to enhance investment in adaptation initiatives.

References

- Ademola-Oyelana, A.D. 2023. Herders Farmers Conflict, State Government's Intervention and Conflict Management in Nigeria: Empirical Assessment From Ogbese Community in Akure North Local Government, Ondo State.
- Adigun, O.W. 2019. A Critical Analysis of the Relationship between Climate Change, Land Disputes, and the Patterns of Farmers/ Herdsmen's Conflicts in Nigeria. *Canadian Social Science* 15,3: 76 89.
- Ajala, O. 2020. New Drivers of Conflict in Nigeria: An Analysis of the Clashes between Farmers and Pastoralists. *Third World Quarterly* 41,12: 2048 2066. https://doi.org/10.1080/01436597.2020.1811662
- Amusan, L., O. Abegunde & T.E. Akinyemi 2017. Climate Change, Pastoral Migration, Resource Governance and Security: The Grazing Bill Solution to Farmer Herder Conflict in Nigeria. *Environmental Economics* 8, Iss. 3: 35 45. https://doi.org/10.21511/ee.08(3.2017.04)
- Ani, K.J., V.O. Anyika & E. Mutambara 2021. The Impact of Climate Change on Food and Human Security in Nigeria. *International Journal of Climate Change Strategies and Management* 14,2: 148 167. https://doi.org/10.1108/IJCCSM-11-2020-0119
- Arias, S.B. & C.W. Blair 2022. Changing Tides: Public Attitudes on Climate Migration. *The Journal of Politics* 84,1: 560 567. https://doi.org/10.1086/715163
- Azapagic, A. 2004. Developing a Framework for Sustainable Development Indicators for the Mining and Minerals Industry. *Journal of Cleaner*

- *Production* 12,6: 639 662. https://doi.org/10.1016/S0959-6526(03)00075-1
- Azare, I., M. Abdullahi, A. Adebayo, I. Dantata & T. Duala 2020. Deforestation, Desert Encroachment, Climate Change and Agricultural Production in the Sudano-Sahelian Region of Nigeria. *Journal of Applied Sciences and Environmental Management* 24,1: 127 132. https://doi.org/10.4314/jasem.v24i1.18
- Barnett, J.R. & M. Webber 2010. Accommodating Migration to Promote Adaptation to Climate Change. *World Bank Policy Research Working Paper 5270*. https://doi.org/10.1596/1813-9450-5164
- Bernauer, T., T. Böhmelt & V. Koubi 2012. Environmental Changes and Violent Conflict. *Environmental Research Letters* 7,1: 015601. https://doi.org/10.1088/1748-9326/7/1/015601
- Brugnach, M., A. Dewulf, H. Henriksen & P. van der Keur 2011. More is not Always Better: Coping with Ambiguity in Natural Resources Management. *Journal of Environmental Management* 92,1: 78 84. https://doi.org/10.1016/j.jenvman.2010.08.029
- Bukari, K.N., P. Sow & J. Scheffran 2019. Real or Hyped? Linkages between Environmental/ Climate Change and Conflicts The Case of Farmers and Fulani Pastoralists in Ghana. Human and Environmental Security in the Era of Global Risks: Perspectives from Africa, Asia and the Pacific Islands. https://doi.org/10.1007/978-3-319-92828-9_9
- Bushesha, M.S. 2018. The Influence of Climate Change on Migration Drivers: A Qualitative Analysis. *Climate Change* 4,16: 789 803.
- Çancı, H. & O.A. Odukoya 2016. Ethnic and Religious Crises in Nigeria: A Specific Analysis upon Identities (1999 2013). *African Journal on Conflict Resolution* 16,1: 87 110.
- Chakraborti, N. & J. Garland 2012. Reconceptualizing Hate Crime Victimization through the Lens of Vulnerability and 'Difference'. *Theoretical Criminology* 16,4: 499 514. https://doi.org/10.1177/1362480612439432
- Corbera, E., K. Brown & W.N. Adger 2007. The Equity and Legitimacy of Markets for Ecosystem Services. *Development and Change* 38,4: 587 613. https://doi.org/10.1111/j.1467-7660.2007.00425.x
- Dalby, S. 2009. Security and Environmental Change. Cambridge: Polity.
- Dasgupta, S. & E. de Cian 2016. Institutions and the Environment: Existing Evidence and Future Directions. FEEM Wortking Paper 41. https://doi.org/10.2139/ssrn.2800948

- Dredge, D. 2006. Networks, Conflict and Collaborative Communities. *Journal of Sustainable Tourism* 14,6: 562 - 581. https://doi.org/10.2167/jost567.0
- Dunmade, I. 2018. Socioeconomic Impacts Assessment of Farmers Herders Conflicts and Pathways for Sustainable Solutions. *Journal of Popular Education in Africa* 2,2.
- Ekoh, S.S., L. Teron & I. Ajibade 2023. Climate Change and Coastal Megacities: Adapting through Mobility. *Global Environmental Change* 80: 102666. https://doi.org/10.1016/j.gloenycha.2023.102666
- Elebe, T.M. & I. Etuk 2022. Assessment of Deforestation: The Empirical Study of the Environmental Implication and Control Strategies. *Assessment* 8,1.
- Esses, V.M., L.K. Hamilton & D. Gaucher 2017. The Global Refugee Crisis: Empirical Evidence and Policy Implications for Improving Public Attitudes and Facilitating Refugee Resettlement. *Social Issues and Policy Review* 11,1: 78 123. https://doi.org/10.1111/sipr.12028
- Giller, K.E., C. Leeuwis, J.A. Andersson, W. Andriesse, A. Brouwer, P. Frost, N. Koning 2008. Competing Claims on Natural Resources: What Role for Science? *Ecology and Society* 13,2. https://doi.org/10.5751/ES-02595-130234
- Guo, Y. & I.G.A.W. Puja (eds.). 2022. Sustaining Peace in ASEAN and the Asia-Pacific: Preventive Diplomacy Measures. Volume 8. Singapore: World Scientific Co. https://doi.org/10.1142/12242
- Heltberg, R., P.B. Siegel & S.L. Jorgensen 2009. Addressing Human Vulnerability to Climate Change: Toward a 'No-regrets' Approach. *Global Environmental Change* 19,1: 89 99. https://doi.org/10.1016/j.gloenycha.2008.11.003
- Issifu, A.K., F.D. Darko & S.A. Paalo 2022. Climate Change, Migration and Farmer Herder Conflict in Ghana. *Conflict Resolution Quarterly* 39,4: 421 439. https://doi.org/10.1002/crq.21346
- Jensen, D. & S. Lonergan 2012. Emerging Issues. Assessing and Restoring Natural Resources. *Post-conflict Peacebuilding* 5: 411. https://doi.org/10.4324/9780203550199
- Kaczan, D.J. & J. Orgill-Meyer 2020. The Impact of Climate Change on Migration: A Synthesis of Recent Empirical Insights. *Climatic Change* 158, 3-4: 281 300. https://doi.org/10.1007/s10584-019-02560-0
- Klein, N. 2015. *This Changes Everything: Capitalism vs. the Climate*. New YorK: Simon and Schuster.

- Knight, D.B. & R.E. Davis 2009. Contribution of Tropical Cyclones to Extreme Rainfall Events in the Southeastern United States. *Journal of Geophysical Research: Atmospheres* 114: D23. https://doi.org/10.1029/2009JD012511
- Kolawole, A.S. & A.O. Iyiola 2023. Environmental Pollution: Threats, Impact on Biodiversity, and Protection Strategies. In Izah, S.C. & M.C. Ogwu (eds.): Sustainable Utilization and Conservation of Africa's Biological Resources and Environment. Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-6974-4_14
- Kralovec, S. 2020. Food Insecurity in Nigeria An Analysis of the Impact of Climate Change, Economic Development, and Conflict on Food Security. Malmö universitet/ Kultur och samhälle.
- Krampe, F., F. Hegazi & S.D. van de Veer 2021. Sustaining Peace through Better Resource Governance: Three Potential Mechanisms for Environmental Peacebuilding. *World Development* 144: 105508. https://doi.org/10.1016/j.worlddev.2021.105508
- Lanshima, C.A., A. Butu & E.L. Balami 2021. Impact of Climate Change on Mass Migration in Northern Nigeria: An Implication for Sustainable Development. *Lapai International Journal Administration* 3,4: 32 49.
- Lenshie, N.E., K. Okengwu, C.N. Ogbonna & C. Ezeibe 2021. Desertification, Migration, and Herder Farmer Conflicts in Nigeria: Rethinking the Ungoverned Spaces Thesis. *Small Wars & Insurgencies* 32,8: 1221 1251. https://doi.org/10.1080/09592318.2020.1811602
- Madu, I.A. & C.F. Nwankwo 2021. Spatial Pattern of Climate Change and Farmer Herder Conflict Vulnerabilities in Nigeria. *GeoJournal* 86,6: 2691 2707. https://doi.org/10.1007/s10708-020-10223-2
- Mahmood, H.U. & C.I. Azuaga 2020. Perceptions of the Relationship between Cultural Biases and Farmer Herder Conflicts in Taraba State, Nigeria. *Journal of Agricultural Extension* 24,2: 104 111. https://doi.org/10.4314/jae.v24i2.11
- McMichael, C., J. Barnett & A.J. McMichael 2012. An Ill Wind? Climate Change, Migration, and Health. *Environmental Health Perspectives* 120,5: 646 654. https://doi.org/10.1289/ehp.1104375
- Merem, E., Y. Twumasi, J. Wesley, P. Isokpehi, M. Shenge, S. Fageir, G. Hirse 2017. Analyzing Rice Production Issues in the Niger State Area of Nigeria's Middle Belt. *Food and Public Health* 7,1: 7 22. https://doi.org/10.5923/j.fph.20170701.02
- Miyan, M.A. 2015. Droughts in Asia's Least Developed Countries: Vulner-

- ability and Sustainability. *Weather and Climate Extremes* 7: 8 -23. https://doi.org/10.1016/j.wace.2014.06.003
- Musa, M.a.A., M.L. Shehu & H. Mali 2021. Statecraft and the Perennial Farmers Herder Clashes in Nigeria. *Global Journal of Political Science and Administration* 9,2: 15 33.
- Muzaffar, E. 2022. Climate Change and Migration: New Challenges to the Global South. *Journal of Contemporary Studies* 11,1: 69 84. https://doi.org/10.54690/jcs.v11i1.213
- Nathan, L. 2005. Mediation and the African Union's Panel of the Wise. London: Crisis States Development Centre, paper 10.

 https://www.lse.ac.uk/international-development/Assets/Documents/PDFs/csrc-discussion-papers/dp10-Mediation-and-the-African-Unions-Panel-of-the-Wise.pdf
- Nguyen, T.T., U. Grote, F. Neubacher, M.H. Do & G.P. Paudel 2023. Security Risks from Climate Change and Environmental Degradation: Implications for Sustainable Land Use Transformation in the Global South. *Current Opinion in Environmental Sustainability* 63: 101322. https://doi.org/10.1016/j.cosust.2023.101322
- Nicoson, C. 2021. Towards Climate Resilient Peace: An Intersectional and Degrowth Approach. *Sustainability Science* 16,4: 1147 1158. https://doi.org/10.1007/s11625-021-00906-1
- Njiru, B.N. 2012. Climate Change, Resource Competition, and Conflict amongst Pastoral Communities in Kenya. In Scheffran, J., M. Brzoska, H.G. Brauch, P.M. Link & J. Schilling (eds.): Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-642-28626-1_24
- Norris, F.H., S.P. Stevens, B. Pfefferbaum, K.F. Wyche & R.L. Pfefferbaum 2008. Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness. *American Journal of Community Psychology* 41; 127 150. https://doi.org/10.1007/s10464-007-9156-6
- Ojo, J.S. 2023. Climate-related Armed Conflict and Communities' Resistance to Rural Grazing Area Settlement Policy in Nigeria's Middlebelt. *Conflict Resolution Quarterly* 41,2: 121 141. https://doi.org/10.1002/crq.21390
- Olagunju, T., S. Adewoye, A. Adewoye & O. Opasola 2021. *Climate Change Impacts on Environment: Human Displacement and Social Conflicts in Nigeria*. IOP Conference Series: Earth and Environmental Science. https://doi.org/10.1088/1755-1315/655/1/012072

- Orimoloye, I.R., S.P. Mazinyo, A.M. Kalumba, O.Y. Ekundayo & W.Nel 2019. Implications of Climate Variability and Change on Urban and Human Health: A Review. *Cities* 91: 213 223. https://doi.org/10.1016/j.cities.2019.01.009
- Osayi, K.K. & E.R. Opara 2023. Migration for Survival in Nigeria: Interrogating Causations and Consequences. *Nigerian Journal of Arts and Humanities* (NJAH) 3,1: 1 13.
- Oyediji, O.T. & O.A. Adenika 2022. Forest Degradation and Deforestation in Nigeria; Poverty Link. *International Journal of Multidisciplinary Research and Analysis* 5,10: 2837 2844. https://doi.org/10.47191/ijmra/v5-i10-35
- Paglia, E. & C. Parker 2021. The Intergovernmental Panel on Climate Change: Quardian of Climate Science. Guardians of Public Value. In Boin, A., L.A. Fahy & Paul t'Hart (eds.): *How Public Organisations Become and Remain Institutions*. Cham, Switzerland: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-51701-4_12
- Paradza, G., L. Mokwena & W. Musakwa 2020. Could Mapping Initiatives Catalyze the Interpretation of Customary Land Rights in Ways that Secure Women's Land Rights? *Land* 9,10: 344. https://doi.org/10.3390/land9100344
- Patrick H.O. 2020. Climate Change, Water Security and Conflict Potentials in South Africa: Assessing Conflict and Coping Strategies in uMkhanyakude District Municipality, KwaZulu-Natal, South Africa. In Walter L.F, M.L. Johannes & Y.A. Desalegn (eds.): *Handbook of Cliamte Change Management*. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-030-22759-3_84-1
- Patrick H.O. 2022. A Systematic Review of Climate Change, Water Security, and Conflict Potentials in Kwazulu-Natal Province, South Africa. *African Renaissance* 19,1: 125 145. https://hdl.handle.net/10520/ejc-aa_afren_v19_n1_a7
- Pelling, M. 2010. *Adaptation to Climate Change: From Resilience to Transformation*. London: Routledge. https://doi.org/10.4324/9780203889046
- Piguet, E. 2022. Linking Climate Change, Environmental Degradation, and Migration: An Update after 10 Years. *Wiley Interdisciplinary Reviews: Climate Change* 13,1: e746. https://doi.org/10.1002/wcc.746
- Sabo, A. 2020. An Alternative Perspective to Understanding Climate

- Change-induced Farmers Herdsmen Conflict in Nigeria. *African Scholar Journal of Humanities and Social Sciences* 18,6: 245 254.
- Sarzana, C., G. Meddings, A. Melgar, P. Läderach & G. Pacillo 2022. Evidence and Processes for Mainstreaming Peacebuilding in Climate Adaptation Efforts. A Framework and a Safeguard Approach for Conflict-sensitive and Peace-responsive Climate Action: The Climate Security Sensitiveness Tool (CSST). AICCRA Working Paper No.9. Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA). https://hdl.handle.net/10568/126582
- Scheffran, J., P.M. Link & J. Schilling 2019. Climate and Conflict in Africa. In Von Storch, H. (Editor in Chief.): Oxford Research Encyclopedia of Climate Science. Oxford: OUP. https://doi.org/10.1093/acrefore/9780190228620.013.557
- Schewel, K. 2020. Understanding Immobility: Moving Beyond the Mobility Bias in Migration Studies. *International Migration Review* 54,2: 328 355. https://doi.org/10.1177/0197918319831952
- Schmidhuber, J. & F.N. Tubiello 2007. Global Food Security Under Climate Change. *Proceedings of the National Academy of Sciences* 104,50: 19703 19708. https://doi.org/10.1073/pnas.0701976104
- Senehi, J., I.M. Scott, S. Byrne & T.G. Matyók (eds.). 2022. In Senehi, J., I.M. Scott, S. Byrne & T.G. Matyók (eds.): *Routledge Handbook of Peacebuilding and Ethnic Conflict*. London: Routledge & Taylor & Francis. https://doi.org/10.4324/9781003000686
- Sharma, G. 2017. Pros and Cons of Different Sampling Techniques. *International Journal of Applied Research* 3,7: 749 752.
- Sheidu, C.F & H.O. Patrick 2023. Climate Change and Open Grazing Impact on Agricultural Production in Benue State, Nigeria. *African Journal of Public Administration and Environmental Studies (AJOPAES)* 2,1, June: 29 52. https://doi.org/10.31920/2753-3182/2023/v2n1a2
- Singer, L. 2020. Climate-induced Migration: A Tthreat to Peace and Security? A Regional Analysis of the West African Sahel. Global Campus Master's thesis.
- Theresa, N.C. & F.C. Uroko 2018. The Socio-Religious Dynamics Of Internal Migration in Nigeria: The Fulani Pastoralists and Middle Belt Indigenes. *Journal of African Studies and Sustainable Development* 1,3.
- Thomas, K., R.D. Hardy, H. Lazrus, M. Mendez, B. Orlove, I. Rivera-Collazo, R. Winthrop 2019. Explaining Differential Vulnerability to Climate Change: A Social Science Review. *Wiley Interdisciplinary*

- Reviews: Climate Change 10,2: e565. https://doi.org/10.1002/wcc.565
- 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. https://doi.org/10.30574/wjarr.2023.17.3.0402
- Totin, E., A.C. Segnon, M. Schut, H. Affognon, R.B. Zougmoré, T. Rosenstock & P.K. Thornton 2018. Institutional Perspectives of Climatesmart Agriculture: A Systematic Literature Review. *Sustainability* 10,6: 1990. https://doi.org/10.3390/su10061990
- Tyagi, S., N. Garg & R. Paudel 2014. Environmental Degradation: Causes and Consequences. *European Researcher* 81,8-2: 1491. https://doi.org/10.13187/er.2014.81.1491
- Wallensteen, P. & I. Svensson 2014. Talking Peace: International Mediation in Armed Conflicts. *Journal of Peace Research* 51,2: 315 327. https://doi.org/10.1177/0022343313512223
- Yahaya, J.U. 2022. An Assessment of Climate Change and the Consequences of Migration in Africa. *Journal Penelitian Ilmu Pendidikan Indonesia* 1,1: 35 43. https://doi.org/10.31004/jpion.v1i1.14
- Yahaya, J.U. 2022. An Assessment of Climate Change and The Consequences of Migration in Africa. *Jurnal Penelitian Ilmu Pendidikan Indonesia 1*,1: 35 43.

https://doi.org/10.31004/jpion.v1i1.14

Dr. Hosea Olayiwola Patrick Postgraduate Research Fellow Africa and Black Diaspora Studies Program McMaster University, Canada

Research Fellow University of KwaZulu-Natal, South Africa patrickukzn2016@gmail.com

> Dr. Comfort Fatimoh Sheidu Peace and Conflict Studies PhD in Policy Analysis University of Abuja Nigeria comsheidu@gmail.com