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Climate Change and Migration: A Call for a Continental-Level Research Agenda

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Abstract

Climate change is manifested through increased rates of droughts, heat waves, and storms that raise global temperatures and eventually affect populations. These are accompanied by increased migration, reduced productivity in agriculture, water shortages, and losses in fishing yield that spur people to look for better economic opportunities. The present study discusses some identified trends in environmental variation, their influencing factors of migrations, and emerging policy implications through secondary analyses based on academic journals, government papers, and other sources. Sea-level rise, desertification, and the slow processes and sudden flooding and storm surges are discussed therein.

The results indicate clear trends, gaps, and priorities for further research in comprehensive data collection, interdisciplinary methods, and collaborative frameworks. The present study attempts to contribute to enabling policymakers, researchers, and practitioners to deal more effectively with the intractable problems posed by climate-induced migration by providing a comprehensive overview of existing knowledge and suggesting priority research areas.

Keywords: *Africa, agenda, Climate change, Displacement, Global, Migration, Research, Policy and interdisciplinary*

1. Introduction

Climate change includes increased global warming, prolonged spells of dry spells/drought, and violent heatwaves, as well as more recurrent and intense storms. All of these have deep and far-reaching consequences within populations worldwide—that is at the moment under consideration as environmental crises increase in scale. It is considered an important factor in reshaping demographic characteristics but challenging all frameworks—local, national, and international (Abbass et al., 2022; Sithole, Dinbabo, & Tevera, 2024). Due to climate change, loss of livelihood occurs through a reduction in productivity from agriculture, scarce water supply, and reduced fishing catch, inevitably forcing people to move in search of better livelihoods (Ishaq, 2020). Therefore, a rich research agenda is required concerning the complex relationship between environmental changes and migratory trends, prompting practical and effective policy action (Savelli et al., 2022).

Climate change migration encompasses many cases, from the gradual changes of sea-level rise and desertification to those incidents that take a very rapid development through floods and storms. All these situations pose some kind of consequence for human mobility, for example, in cases where immediate evacuation from flooded locations becomes necessary and sea-level rise threatens communities along the coastline (Zickgraf, 2021). The diverse effects of climate change on migration indeed vary among populations and locations based on some environmental, political, and socio-economic influences. As put by Askland et al. (2022), this fact is usually ignored in most research, with prior literature characterising the issue as a one-size-fits-all issue of involuntary migration, hence the need for an understanding of the complexity involved. This goes hand in glove with the findings that

provide deep explanations regarding how such changes in the environment influence the patterns of migration and what may be provided for such governance across the levels. This article derives critical trends, patterns, and gaps in the understanding of present times from the analysis of a few trustworthy sources' secondary data and formulates a global research agenda from critical areas to further investigate, conducting it through extensive data collection, using multidisciplinary approaches, and within frameworks of collaboration. Ferris (2020) noted that with the multifold impacts of climate, change there should be a thoughtful research programme developed with implications for policy and practice. This paper collates the results of data analysis and a literature review into the optimal outline of the state of knowledge related to climate-induced migration, calling for comprehensive data gathering that can reflect the full complexity of the issue. It ensures active participation in research and the development of policies that should be founded on the contribution of local communities to the elaboration of effective adaptation and resilience strategies, drawing from their concrete knowledge and experiences.

2. Methodological Approach

The paper discusses the influence of environmental changes on migration and how such changes can be translated into policy and practice at any scale through secondary data analysis. Contributing existing literature, professional and activity reports, and databases during the review course helps point out the central issues and limitations currently known in the field of studies of migration triggered by climate change. This article examines patterns of human mobility influenced by slow-onset changes such as climate change, including rising sea levels and desert encroachment, as well as geological activity related to floods and storms. Additionally, this strategy is not based on new data collected from the field; rather, it draws together existing knowledge in a way which provides a clearer understanding of how climate change may drive or encourage migration. Most importantly, it has also shown the problem from many angles of view and offered ways in which local, national, and international policy can be drafted to minimise the effects of climate-induced migration later.

3. Background/Contextualisation

Climate change has been counted as one of the most important global issues in modern times that implicates human society and the environment (Rawat et al., 2024). Increased temperatures and changes in the precipitation cycle result in extremity within weather events, causing huge deviations in the earth's climate system due to continuously increasing greenhouse gas emissions (Touma et al., 2021; Seneviratne et al., 2021). As a result, migration has been a long-standing strategy people use to adjust to shifting environmental conditions (Balsari et al., 2020). But for the majority of communities, the speed and scope of the current climate change provide an unprecedented challenge: growing vulnerabilities while reducing adaptive capacities within their communities (Singh et al., 2022). When migration is severely impacted by these factors, it becomes clear that people are confronted not only with slow-onset phenomena but also immediate natural catastrophes, making displacement urgent. For instance, the World Bank projects that 143 million people may be internally displaced in sub-Saharan Africa, South Asia, and Latin America due to climate change alone by the year 2050 (World Bank, 2021). Another slow-onset factor in exacerbating migration dynamics is land degradation, as it compels agricultural communities to relocate in search of livelihood when their arable land is no longer usable (Naz and Saleem, 2024).

Principally, from the perspective of climate and migration, such complex relationships help one better understand that an effective solution can be found through appropriate policy framing (Daoust and Selby, 2024; Estok, 2023). According to LPerch-Nielsen et al. (2008), such changes in the environmental setting alter the immigration rate and thus may set a backdrop to the definition of the exact mechanism rooted at the centre of the association. In turn, the whole outcome of migration has become shaped by socioeconomic and political contexts—things that very considerably exacerbate already adverse conditions of poverty and social inequality (Silchenko and Murray, 2023; Sithole, Dinbabo, & Tevera, 2024). The idea now, in developing such an agenda, is to interrogate the climate change and migration interface within that already complex frame, for a dent into supportive policy and practice to happen for its vulnerable targets.

4. Literature Review/Theoretical Models

The literature review encompasses research on the theme of migration about climate change, adopting both theoretical and empirical views from different contexts. It seeks a critical review in being able to point out key similarities, differences, and gaps of knowledge in the field through the examination of theoretical frameworks like the push-pull model, the vulnerability framework, environmental determinism, and the sustainable lifestyles approach, all the while referring to methodological choices and empirical data from different geographic regions. A meta-analysis by Beine and Jeusette (2021) shows a relationship between migration trends and environmental conditions, while climate change emerges as a critical driver of both forced and voluntary migration decisions.

A recent research trend emphasises predictive modelling for predicting future migration patterns under the changing climate scenario. Such information can be instrumental in targeting and intervening early by policymakers to minimise displacement hotspots with more negative consequences (Schutte et al., 2021). For example, socioeconomic data with climate models allow for predicting those regions under which high out-migration rates occur due to stressors like climate (Cattaneo et al., 2019). Daoust and Selby (2024) offer a new analytical framework, combining socioeconomic and political factors, which underscores the need for interdisciplinary approaches in understanding the complexity of migration within the context of climate change. **Table 1** overleaf summarises the four models on climate change and migration: Environmental Determinism, Push-Pull Model, Vulnerability Framework, and Sustainable Livelihoods Approach. Each model addresses different factors influencing migration, from environmental triggers to socioeconomic conditions and adaptation strategies.

Table 1. Models explaining the initiation and process of climate change and migration

Models explaining the initiation of and process of climate change and migration	
Theories	**Brief description of theories**
Environmental Determinism	*Theories of environmental determinism are some of the more obsolete framings of climate-induced migration. It stipulates that people directly act in accordance with the environment; hence, mobility can be directly linked to environmental degradation (Hunter and Simon, 2023). Although this theory has a straightforward explanation, critics argue that it oversimplifies the interaction of complex social, economic, and political factors that interact in influencing migration decisions (Black et al., 2011). This approach usually lacks the necessary ingredients of social networks, economic opportunities, and political stability.*
Push-Pull Model	*The push-pull model offers a framework for understanding migration, identifying factors that drive individuals away from their origin and attract them to new destinations (Van Hear et al., 2020). Climate change-related push factors, such as drought-induced livelihood losses, and pull factors, like perceived opportunities in less affected areas, are significant in this context (Hermans and McLeman, 2021). However, De Haas (2010) also criticised the said concept for failing to represent complexities such as the presence of coercion in forced migration displacement processes during sudden-onset disasters.*
Vulnerability Framework	*As argued by the integrated framework by Biswas and Nautiyal (2023), it is only the interaction between these three factors: exposure to risks, sensitivity, and adaptation capacity—that diversified socioeconomic and political contexts grasp the magnitude of the changeability impacts. Poor, politically excluded, marginalised communities endure it. Political and economic exclusion hinders them from even migrating or adapting. Therefore, interventions concerning the same have to be targeted at enhancing the adaptive capacity of the targets while reducing their vulnerability as put forth by Adger (2006).*
Sustainable Livelihoods Approach	*The sustainable livelihood approach focuses on the resources, strategies, and outcomes by which people and communities generate their living in the context of climate change (Tambe, 2022). It emphasises migration as an income diversification strategy but underscores urgency and adaptation to environmental change more strongly (Badewa & Dinbabo, 2022; Scoones, 2021). However, this approach requires in-depth contextual analysis, which is resource-intensive and challenging for large-scale studies.*

Source: Authors' Compilation (2024).

There are theories on climate-induced migration, which are also faced with a plethora of drawbacks. According to Environmental Determinism, degradation of environmental conditions—drought, flood, and increased sea level—-is an inevitable step towards making people move from one place to another (Hunter and Simon, 2023; Nzabamwita & Dinbabo, 2022). For example, this theory explains the relationship between environmental degradation and migration. However, the theory

is termed an oversimplification because it failed to account for other factors including job opportunities, social networks, and political stability. People do not migrate just for environmental reasons. Whereas Black et al. (2011) develop a more complex situation where the social and political strands are mingled with the economic and environmental ones—especially when this last case is related to Africa—some stay put because of climate impacts due to economic or supportive deficiency of any kind.

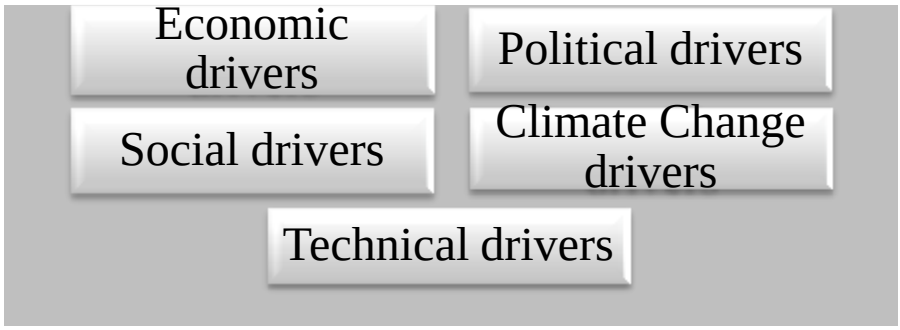
In the Push-Pull Model, migration is considered by "push" factors, which are when a job is lost due to drought, while "pull" factors are improved opportunities available in safer areas (Van Hear et al., 2020). It leaves out forced migration, such as sudden disasters like flooding (De Haas, 2010); therefore, it is something that needs to be better comprehended, more specifically voluntary migration and displacement within climate change contexts. This is beyond that; the Vulnerability Framework shows that the poor and politically excluded—-or marginally placed—are more vulnerable to climate change because of little ability to respond. It builds from other studies like Adger (2006) and Biswas and Nautiyal (2023). As a result, the Sustainable Livelihoods Approach focusses on how communities adapt to climate stress, but its effectiveness is dependent on extensive local knowledge (Scoones, 2021; Tambe, 2022).

5. Data Analysis and Presentation

This part of the research shows the data and results about climate change and migration. It is organised into thematic subsections that include important statistical figures to illustrate key trends and patterns. By presenting the data this way, the study aims to give a better understanding of how climate change impacts people's choices to move across Africa. Each theme will look at different aspects of how climate change and migration are linked, giving useful insights to help shape good responses and policies.

Figure 1 shows some important drivers of migration, as taken from the African Union in 2022: economic, social, political, and environmental. All these drivers are influential in the patterns of migration across the continent.

Figure 1. The Drivers of Migration



Source: African Union (2022: 22-24)

5.1. Drivers of Migration in Africa

Economic drivers: As indicated in the African Union (2022:23), the socio-economic differences between the places of origin and destination are a key factor in economic migration. Particularly for young people, migration frequently takes place from locations with bad economic conditions, such as high rates of poverty, low incomes, and few employment opportunities, to more alluring urban areas or other nations. Dinbabo et al.(2021), as cited in the African Union(2022: 23), indicate that people migrate in search of better possibilities for themselves and their families without doing much planning because of factors including youth unemployment, inequality, and difficulty accessing opportunities. In Africa and other developing nations, this trend is common among young people, displaced people, and irregular migrants.

Political determinants of migration: include national (state capacity, migration policy) and international (governance regimes, geopolitics) elements. Aspirations to migrate are greatly influenced by national policy, while competition among migrants and possible destinations is shaped by global dynamics. Conflicts and measures to reduce unemployment through remittances have led to a rise in migration in post-independence nation-states. To stop brain drain, several African governments, such as those in Algeria, Egypt, and Côte d'Ivoire, have discouraged emigration due to xenophobia and nationalism (Flahaux and De Haas, 2016, as mentioned in the African Union (2022: 23).

Intra-African mobility has been improved by regional collaboration through organisations such as the Economic Community of West African States (ECOWAS) and the East African Community (EAC), trade liberalisation, and visa-free regulations (Dinbabo and Badewa, 2020; as stated in the African Union, 2022: 22-24). Border fortifications

in conflict zones are a result of political tensions and conflicts that have forced refugees and internally displaced people across borders. States have the power to ease and restrict migration; traffickers have benefitted from tighter regulations and the militarisation of routes in Libya, Niger, and Algeria (Dinbabo et al., 2021; as cited in the African Union, 2022: 23).

Social factors: include the demographic dimension (population increase and natural population expansion in cities), which can influence the intensity of migration when combined with social development levels, the condition of institutions in the places of origin, and the degree of food insecurity. Individual traits like education, network connections, and the ability to migrate—which is also linked to poverty and income levels—also influence migration trends, even though historical and linguistic ties and social receptivity are thought to be important factors in determining the direction of migration (African Union, 2022).

Micro-evidence shows that most Africans migrate for work, education, or family reunification, defying the widespread belief that African emigration is primarily about irregular movement (Schoumaker et al., 2015; as described in the African Union, 2022: 22-24). "Social relations/ties among kinship or family groups, households, friendship circles, neighbourhoods, and formal institutions" are examples of Meso-level factors that frequently impact the migration drive in Africa, according to Faist (1997), as cited in the African Union (2022: 22–24). As a recent empirical study of West African migrants reveals, parents in many societies typically advise youths to settle elsewhere when starting a new life away from the family or hometown if they want to prosper (Dinbabo et al., 2021; as reported in the African Union, 2022: 22-24).

Environmental drivers: include climate variability and change, emphasising the impact of natural resources, especially soil quality and water availability, and energy access on migration. Although forced migration can be directly caused by environmental change, social, political, demographic, and economic factors are frequently involved. Numerous studies contend that economic considerations have a greater say in migration choices, possibly ignoring how climate change may affect livelihoods, agriculture, human settlements, health, and resource conflicts, particularly in arid areas. With multiple classes of climate change, such as changes in climate variability, fast-onset climatic events (such as extreme weather, droughts, floods, and heatwaves), and slow-onset changes (long-term variations in temperature and rainfall), the

relationship between migration and climate change is dynamic and complex (Neumann and Hilderink, 2015; as cited in the African Union, 2022: 25).

Technical drivers: are advancements and innovations in technology, particularly in information and communication technology (ICT). Technical production methods and farm productivity levels are important factors that influence migration in Africa's agricultural sector (Mercandalli et al., 2019; as reported in the African Union, 2022: 26). Migration and mobility are greatly impacted by the Internet and social media sites (such as Facebook, YouTube, WhatsApp, and Twitter) (Dinbabo and Badewa, 2020; as cited in the African Union, 2022: 26). Numerous political and economic factors influence the complex reasons behind scientific and technical migration. Access to information and reasonably priced internet has affected migration decisions despite widespread poverty, unemployment, and inequality, especially among young people in Africa (Smith, 2019; as mentioned in the African Union, 2022: 26).

5.2. *Statistical Data (Climate Change and Migration) in Africa*

Global warming is proving to be the ultimate push factor, affecting Africa and Sub-Saharan Africa in myriad ways regarding changing migration. By 2050, the World Bank estimates that it will displace 86 million people in the Sub-Saharan Africa region, making it the largest internal climate migrant group in the world (World Bank, 2021). Policies addressing the relationship between climate change and migration need to be developed. In the year, 2021, 2.6 million people were displaced in Sub-Saharan Africa because of climate-related disasters, hence showing the urgency of action (OCHA, 2022). As of August 2022, drought was experienced in the Horn of Africa. Already, 36.1 million people have being affected by this drought and, apart from those people, 8.9 million livestock also lost their lives because of four consecutive failed rainy seasons (OCHA, 2022).

In addition, more than 16.5 million people in this region lack access to safe drinking water, while as many as 20.5 million individuals are classified as food insecure (WHO, 2023). The environmental and weather conditions worsen the situation. Lake Chad indeed shrunk by 90%, leaving more than 30 million inhabitants without water and food supply (Amadi and Vundamina, 2023). Southern Africa has experienced some cyclones, the last of which was Cyclone Freddy, which washed

away homes for about 659278 people in Malawi alone (Mbiyozo and Maunganidze, 2023; Braka et al., 2024). Statistics like this point not just to the number of people who were displaced but also to the complexity of relationships between climate-related disasters and population movements.

Climate change cannot be solely relied on to decide migration because it influences other socioeconomic issues, and vice versa, because the effect can be the other way around because of other causes such as poverty and conflicts. More than 60% of the most significant workforces in the African continent are part of the agricultural industries, which come under the sectors that face critical climate change (Chevallier, 2023; Amadi and Vundamina, 2023). The changing patterns of rainfall and temperature depress agricultural productivity and consequently force many to move elsewhere in search of better fortunes.

Regional cooperation thus plays a significant role in this. Ideas that have been recently forwarded, such as the Kampala Ministerial Declaration on Migration, Climate Change, and Environment are to promote that persons internally displaced by climate-related disasters should enjoy unhindered liberty of movement (Maunganidze and Mbiyozo, 2024). Even though their establishment has been smooth, their adaptation has not. Currently, over 50 policy frameworks in Africa are specific to different elements of the interaction between mobility and climate change (Amakrane et al., 2023). The governments, policymakers, and other relevant authorities must act before time is accomplished on the short-term humanitarian needs and the long-term resilience of affected populations because climate change is also determining the pattern of migration in Africa. Therefore, this demands a multimodal approach to the problem, hence the inclusion of human mobility about environmental sustainability.

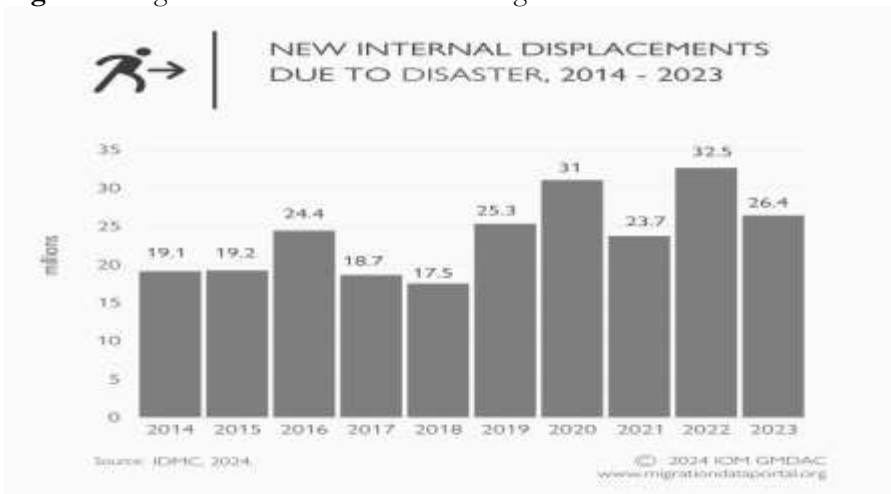
5.3.Migration Linked to Climate Change

Its consequences, long drought, and desertification increased the speed at which climate change has accelerated by 29% since 2000 and degraded 1.6 billion hectares, hence affecting 3.2 billion people worldwide (IPCC, 2019; IISD, 2023).

Figure 2 shows new internal displacements due to disasters from 2014 to 2023, with the highest displacement of 32.5 million in 2022. Annual trends of displacement vary between years because of the varying impacts that disasters have had within the period. Human activities like unsustainable agriculture further worsen these effects through decreased

productivity and increased poverty. By 2050, up to 216 million people could be forced to migrate globally due to drought and water scarcity (Geneva Environment Network, 2024).

Figure 2. Migration Linked to Climate Change



Source, IOM GMDAC (2024).

- Water shortage is still one of the causes of migration, where a shortage of water contributed to a 10 per cent rise globally in migration from 1970 to 2000 (World Bank, 2021). As many as 700 million people might face severe drought by the end of the century. In total, 60% of the Middle East and North African population live in water-stressed areas. Policies for efficient management of water resources must be implemented from now on. (International Organisation for Migration, 2018).
- Climate change drives the need for livelihoods in moving away from the countryside to towns, thereby encouraging urbanisation and migration to the coastlines. Already, 55% of the human population is housed in cities globally. This would grow with the saltwater intrusion and lack of water in keeping people from the coasts. The most significant implications involve extra loads of resources and infrastructural stress that increase the vulnerability of city areas (UN, 2022; Almulhim et al., 2024).

5.4. Temperature Rise

- As one of the critical impacts of climate change, sea-level rise is likely to displace 150 million people by 2050 and will consequently affect low-lying areas, which include Bangladesh and Sub-Saharan Africa, severely (World Bank, 2021). In Africa itself, the cities of

Lagos and Alexandra are highly liable to flooding or erosion that is likely to shatter infrastructure and livelihoods that could, in turn compulsorily internal or international peoples' migration (Mixed Migration Centre, 2023).

- The internally displaced persons, close to 1 million who faced severe drought in Somalia in 2022, reported the climate crisis as one of the most powerful drivers of migration in East Africa. According to Leal Filho et al. (2023), erratic rainfall has characterised Kenya and Ethiopia, with crop failures and lack of water hence driving pressure on communities to look into internal movements for better livelihoods.

- 90% loss of water in the Lake Chad Basin was experienced over these years, on which millions of people have depended for livelihood (Jedwab et al., 2021). The environmental degradation has driven substantial migration, with over 30 million affected people seeking more resources. Conflict and instability further exasperate the climate-induced displacement across Chad, Niger, Nigeria, and Cameroon.

- By 2050, up to 86 million people in Sub-Saharan Africa could be displaced due to climate-related factors like droughts, floods, and sea-level rise (World Bank, 2021). This highlights the urgent need for policies addressing immediate humanitarian needs and long-term adaptation strategies (Schwerdtle et al., 2024). Inaction may worsen displacement, socio-economic challenges, and conflicts in vulnerable communities.

6. Future Research Directions and Practical Applications

6.1. Future Research Directions

The current gaps in the literature should be filled by future research, which should focus on under-represented locations and longitudinal studies that monitor migration trends over time. In addition to helping identify changing patterns and strategies, longitudinal studies can shed light on the long-term consequences of climate change on migration. A thorough knowledge of the dynamics of global migration requires research in under-represented locations, such as the Arctic and the Middle East and North Africa (MENA). An understanding of migration

decisions and results may also be obtained by examining the intersectionality of several causes and the function of social networks.

6.2. Practical Applications

Policymakers, practitioners, and researchers should take note of these research findings' practical implications. Along with creating all-encompassing migration management policies, policymakers should prioritise projects that increase climate resilience and adaptation capacity. Practitioners must concentrate on offering vulnerable populations support, which should encompass connecting them to resources and services that aid in adaptation and migration. The intricacies of migration brought on by climate change should be further studied by researchers, using various techniques and interdisciplinary approaches to guide successful interventions and policies.

6.3. Key Priorities for a Research Agenda

The following is a summary of the research agenda suggested for the African region.

- Analysing the interconnection between climate change and migration will help to understand the South-South migration and development research.
- Analysing climate change, migration, irregular migration, forced displacement, internal migration, etc.
- Cost-benefit analysis of forced reverse migration in Africa and Europe, with a focus on the Mediterranean region, which is a major area for migration between the two continents.
- Assessing the current legislative policies on migration issues linked to climate change, migration, and human rights.
- Examining the impact of climate-induced migration on rural livelihoods in Sub-Saharan Africa.
- Investigating climate change as a driver of cross-border migration in West Africa.
- Exploring urbanisation and climate refugees: challenges and opportunities in African cities.
- Investigating climate change and human trafficking: the vulnerabilities of migrants in Africa.

The study's findings emphasise how critical it is to have a well-organised research agenda to tackle the intricate relationships between migration and climate change in Africa.

Table 2 summarises the key research priorities for migration with responsible bodies for each agenda. AfDB would conduct a longitudinal analysis of the trends in migration; IOM would conduct case studies of regional climate impact, and the AU would conduct evaluation studies of the policies. The other priorities were to establish the socio-economic factors and cross-border dynamics that relate to current and future trends in migration and to ascertain better data collection methodology.

Table 2. Key Priorities for a Research Agenda

S. No	Research Agenda	Responsible Body
1	**Longitudinal Analysis of Migration Trends**	African Development Bank (AfDB) in collaboration with regional universities and research institutions.
2	**Regional Case Studies on Climate Impact**	International Organisation for Migration (IOM) and regional research networks such as the West African Research Association (WARA).
3	**Intersection of Climate Change with Socio-Economic Factors**	United Nations Development Programme (UNDP) and African socio-economic research organisations.
4	**Evaluation of Existing Policies and Practices**	African Union (AU) and the Centre for Research on the Epidemiology of Disasters (CRED).
5	**Cross-Border Migration Dynamics and Regional Stability**	African Union's Department of Political Affairs and regional border management agencies.
6	**Development of Climate Resilience and Adaptation Strategies**	World Bank Group and African Climate Change Fund (ACCF).
7	**Role of Social Networks in Migration Decision-Making**	International Institute for Environment and Development (IIED) and local NGOs focused on migration and development.
8	**Improvement of Data Collection Methods and Research Methodologies**	United Nations Environment Programme (UNEP) and African Centre for Technology Studies (ACTS).

Source, Authors' Compilation (2024).

7. Conclusion

With great implications for communities, businesses, and policies worldwide, climate change is increasingly recognised as a major contributor to migration. The evidence supporting this study underlines the complex, multifaceted relationship between the environment and

mobility; it therefore needs urgent inclusion in a broad research agenda as a way of effectively facing these challenges.

The findings point out that these environmental changes, with sudden and slow onsets, are important causes of migration. Sudden-onset disasters like floods and storms are known to be linked to sudden but often large-scale movements, whereas slow-onset phenomena, such as desertification and sea-level rise, produce gradual, continuing displacement. Socioeconomic factors in this dynamic contribute to worsening conditions of change due to poverty and economic instability, which in turn create pressure for further migration.

It means that regional case studies from Latin America, South Asia, and Sub-Saharan Africa have demonstrated the various forms that climate change-induced migration might take, necessitating a unique set of measures. Knowledge of climate change-induced migration is considerably deficient. Determination of the other causes requires deeper investigation, research in the relatively marginalised areas, and longitudinal studies through monitoring the migrations over time. It is equally important to solve the gap existing between the theorised models, as well as how the policies will be implemented, as a way to handle the migration challenges posed as a result of climate change.

8. Data Availability Statement

The data that support the findings of this study are available from the corresponding author, M.F.D., upon reasonable request.

9. Authors' Contribution Statement

All authors have read and approved the final manuscript.

10. Disclosure of Interest

The authors declare that they have no competing interests to disclose.

11. Declaration of Funding

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