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The Impact of Climate Change in Africa: It's Effects on Migration and Refugee

Samson Akpati Nzeribe 1, Akuro Diepriye 2, **Lucius C. Ekechukwu** 3

1Department of International Relations, Gregory University Uturu, Abia State
Tel: 234-7066025461 email: samson.nzeribe@yahoo.com, s.nzeribe@gregoryuniversityuturu.edu.ng

2Department of International Relations, Gregory University, Uturu, Abia State
Tel: 234-916 799 2122, email: akurodiepriye63@gmail.com

3Department of Electrical/Electronic Engineering, Gregory University, Uturu
Tel: 234-803 590 4344, email: l.ekechukwu@gregoryuniversityuturu.edu.ng, luciusekechukwu@gmail.com

Abstract: *This research examines the effects of climate change on Migration and Refugee in Africa. The objectives of the research were to use the best evidence to link the impact of climate change to migration and refugee crises in Africa, to identify the response and challenges in combating climate change in Africa, by political actors, and to show how climate change can serve as a catalyst to political conflict in Africa if not addressed. The Research adopted the use of theories to meet the purpose of the study. The research findings revealed that lack of political will to combat the effect of climate change in Africa has exposed the continent to series of conflicts resulting to migration and refugee crises. The economic impact of climate change coupled with its negative impact on food and water security may also drive increased levels of migration, and with it comes the certainty of conflict. The impacts of climate change may also wane some states to the point that they can no longer provide basic services demanded by its population, leading to a loss of legitimacy and potentially the rise of rebellion. Policies should be strengthened to respond to unplanned migration, Government at all levels should as a matter of urgency implement international treaties on environment which most African states are signatory to, so that some of the effects of climate change can be averted, African governments should ensure the sustainable usage of natural resources which are endowed in Africa so that future of the continent can be guaranteed.*

Keywords: ***Climate change, Migration, Refugee, Crisis, Environment.***

INTRODUCTION

Migration is a fundamental component of human history and international migration in recent decades has become a major phenomenon. The number of persons living outside their country of birth worldwide was estimated at 'more than 105 million in 1985 (United Nations, 1998: 1). This number had nearly doubled to approximately 200 million 20 years later (GCIM 2005). Take cognizance, the figures for the European continent show an even steeper increase of residents in European countries that have been born outside their present country of residence. In a shorter period of 15 years, their number grew from an estimated 23 million in 1985 (United Nations, 1998: 1) to more than 56 million, or 7.7 per cent of the total European population in 2000 (IOM 2003: 29).The number of African migrants in Europe have demonstrated that Europe has factually become an immigration continent for Africans. Recent analyses of Eurostat show that since 1988 net migration has become a more substantial contributor to the growth of the population of the 15 original member states of the EU than natural growth (i.e. births minus deaths). For the year 2005, this holds also for the EU-25: in that year a total net migration of 1.69 million (on a total population of 462 million) contributed significantly more to population growth than 0.327 million natural growths (Eurostat 2005, 2006).

The picture is further complicated by what is called the new geography of migration. The pattern of origin of migrants to other countries up to the 1980s could conveniently be grouped under three headings:

- Migration with a colonial background that connected certain European countries to their former colonies,
- Labour migration that connected several 'recruiting countries' to a limited number of 'sending countries, and
- Refugee migration was strongly dominated by refugee migration from Africa to Europe and America.

In terms of the origins of immigrants, this led to several geographical patterns of migration that embraced Europe and the Mediterranean countries, plus a limited number of (former) colonies. That picture is now completely blurred. Nowadays, immigrants, moved by varying motives and coming under different guises, move to other countries in significant numbers: expatriates working for multinational companies and international organizations, skilled workers from all over the world, nurses and doctors from the Philippines, refugees and asylum seekers from Africa, Near Eastern and Asian countries, from the Balkan and former Soviet Union countries, students from China, undocumented workers from African countries, just to single out some of the major immigrant categories.

The result in some places is so heterogeneous that Vertovec (2006) coined the new term 'super-diversity, illustrating the case of the UK in general and the London metropolis in particular. All these facts on the changing size, origin, destination and composition of international migration do seem to relate to a broader context of change: that of increasing globalization. This has expressed itself in several domains:

- The financial world has been one of the first pulling down national barriers; agricultural and industrial production and part of the world of service suppliers have increasingly developed new divisions of labor across borders.
- Trade across borders has been eased and has increased.
- Culture and knowledge have developed new and rapid ways of dissemination that are not hindered by national borders.

These changes have had far-reaching consequences for the mobility of people across borders. The first is that in such a globalizing world, the type of mobility of people, in general, has also changed significantly, particularly when it comes to short-term stays like those for business travel, study and tourism, but also for longer stays of those who are directly related to or needed for the aforementioned forms of globalization, such as employees of international organizations and multinational enterprises and highly skilled people in generals. Migratory events may be classified under some broad descriptive typologies including international/internal, permanent/temporary, voluntary/forced and legal/undocumented. Generally used to define and measure migration, such typologies are important to consider but do not explain anything of the motives behind migration. People move for a wide variety of reasons and a large body of literature exists that attempts to conceptualize the migration decision.

There are at least two distinct approaches to the explanation of migration decisions in the existing literature. These are referred to as the 'structural' and 'individual' approaches and help identify the conceptual standpoint from which any study of migratory motives is based. Structural/macro theories of migration place social structures at the centre of analysis and deduce generalized functions from the influence of overarching components such as wage differentials upon the opportunities available to individuals. The approach, therefore, considers individuals to have virtually no control over the structural components that impose limitations on their actions.

In contrast to structural theories, the individual agency/micro approach to migration research focuses upon notions of creativity/humanism and relates to the capacity of individuals to act independently based on their freedom of choice. A meso-level analysis provided by institutional influences bridges the divide between structural and individual approaches to conceptualizing migration by incorporating both. Evidence consistently shows that conflict affects migration on an aggregate level (Moore and Shellman, 2004; Davenport *et al*., 2003; Schmeidl, 1997). However, there is little to understand about the individual level, or why, when, and who is likely to migrate during the conflict. In addition, there is almost no theoretical or empirical treatment of an equally important phenomenon on-migration during the conflict. In recent conflicts, even amongst the most severe such as those in Iraq and Afghanistan, the majority of the population has not migrated away from the violence. This is also the case in Nepal during the recent Maoist insurrection. Thus in only studying those who migrate away from conflict, we are ignoring the majority of the population and the reasons they do not migrate away. Violent political conflicts rage around the world. Social science researchers are attempting to better understand why they happen, and their consequences on civilians, their communities, and the countries in which they live. It has been reported that macro-level violence directly causes high death tolls, injuries and disabilities, malnutrition, increased spread of diseases, trauma and other psychological disorders, and destruction of property (Mack 2005). However, there is little understanding of the long-term and indirect consequences of political conflict. In reality, political conflict not only acts on civilians but may also change how civilians themselves act. These behavioral changes in the general population are an important dimension of the long-term social change of post-conflict societies.

On the other hand, despite widespread recognition that climate change is occurring, our capacity to accurately predict how it will affect the livelihoods of people is still limited. As a result, the impact of future climate change scenarios upon livelihood processes such as migration flows is highly speculative. The Intergovernmental Panel on Climate Change (Wilbanks et al., 2007) suggest that current estimates of what they term 'environmental migrants' are, at best, 'guesswork'. This is primarily due to current estimates failing to take into account the multiple and complex reasons behind migratory decisions. The issue of disaggregating the causes of migration has proven highly problematic and led to considerable debate around the legal definition and existence of 'environmental refugees' (Black, 2001). The element of guesswork involved in migrant forecasts is reflected in the wide range of current estimates of global migration induced by climate change that place numbers of displaced persons between 150–200 million (Stern, 2007) and 1 billion (Christian and Aid, 2007).

Environmental and climatic changes are increasingly seen as having impacts upon the movement of people on local, regional and global scales as a result of both shock events and slow-onset degradation. The numbers of migrants generated by environmental and climatic changes have commonly been calculated by projecting physical climate changes on an exposed population and inherently assume that a person's ability to cope with variations in climate is proportional to such structural indicators as GDP growth. Such large-scale approaches however fail to adequately acknowledge the local and individual components of

migrational behavior and have not successfully isolated environmental influences from the multitude of other factors that influence migration. On a more local scale, studies of the migration-climate nexus have sought to understand the process of migration by exploring the relationships of covariates to migratory and non-migratory outcomes by using such techniques as multi-level event-history analysis (Henry *et al*., 2004). Although such local-scale approaches can provide a more nuanced assessment of the triggers of migration than their global counterparts, they often fail to acknowledge the complex, non-linear and emergent processes inherently involved in the behavioral aspect of any social phenomena. Despite this fact, some value can be gained from the findings of such studies in their contribution to identifying the effects of climate change and political conflict on migration and refugees in Africa. Much of the past research on quantifying climate change and political-based migration is limited as a basis for social simulation for conditions outside those experienced in the past. In a changing climate, this may restrict the ability to predict new flows of people and to simulate the impact of different policy responses on these flows. However, existing literature was garnered to qualitatively determine the effects of climate change and political conflict on migration and refugees in Africa.

Climate change is one of the biggest long-term challenges to global development. It is predicted that Africa would be the hardest hit in forms of the catastrophe of natural disasters. The high vulnerability of the continent to the negative impact of climate change results from the fact that Africa as a whole has a high dependence on natural resources, poor infrastructure, persuasive poverty and weak institutional capacity to respond and mitigate environmental disasters effectively. In essence, Africa remains one of the most vulnerable areas of the world that will bear the brunt of climate change without having contributed to the causes of climate change.

REVIEW OF LITERATURE

Climate is increasingly an everyday reality. The growing intensity and frequent droughts, floods, extreme weather events, and other impact speak loudly for the need to deal with the real and serious threat (Fatile, 2013). Allen (2004) sees climate change as a complex interaction between Earth's atmosphere-stratosphere and troposphere on one hand and land biosphere on the other hand. Climate change is believed to result from the effects of global warming on the environment. The intergovernmental panel on climate change (2007) defines climate change as a change in the state of the climate that can be identified by changes in the mean or the variability of its properties and that persists for an extended period- typically decades or longer. Although the length of time it takes the changes is paramount. The United Nations (2007) defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period. The major characteristics of climate change, according to Fatile (2013) include rise in global temperature, ice cap melting, changes in precipitation and increase in ocean temperature leading in sea level rise. Ozor (2009) sees climate change in the climate over time, weather due to natural variability or as a result of human activity and is widely recognized as the most serious environmental threat facing our communities today. The definition elicits the seriousness of threat posed by climate change and the urgency of the need for countries to rise up to this urgent clarion call of combating the negative effect of climate change.

Climate change has contributed great threat to rural and urban socio-economic and landscape as well as implementation of scientific findings towards the advancement of the community development in Nigeria. It is shaping the natural landscape in the long-run and the modern planned of rural and urban social and economic environment. This has become a new reality with harmful effect. Many elements of the environment in the urban and rural and human society are sensitive to climate variability and change. Example of climate sensitive system are ecosystem, agriculture, water needs and supply, food production, among others (Okoye,2007). Some observed changes may include fierce weather, increased frequency and intensity of storms, floods, hurricanes, droughts, socio-economic and political problems associated to these are poverty, malnutrition, health and civil unrest caused by scarcity of agricultural land and mining land of environmental resources as can be seen in the Niger Delta region in Nigeria.

Climate change is the variation in global or regional climates overtime. It reflects changes in the variability or average state of the atmosphere over time scale ranging decades to millions of years.. These changes can be caused by processes internal of the earth, external forces (such as variations in sunlight intensity) or, more recently, anthropogenic activities (arctic climatology and meterology,2008). In recent usage especially in the context of environmental policy, the term "climate change" often refers only to change in modern climate, including the rise in average temperature known as global warming (Adeniji, 2010:48). In some cases, the term is also used in presumption of human causation, as in the United Nations Framework Convention on climate change (UNFCCC), the UNFCCC uses "climate variability" for non-human caused variations. Scholars generally agree that the environment is just one of the many reasons that prompt people to migrate, sometimes operating on its own but more often through other mechanisms, particularly loss of livelihoods affected by environmental disruption. Policymakers in potential destination countries for international migrants have been slow to identify potential responses to manage environmentally induced migration that take these complex interconnections into account. This situation derives in part from uncertainties about the actual impacts of climate change on migration. But, even where there is a recognition that some form of migration related to environmental change is likely to occur, addressing these movements is hampered by the paucity of policy responses that are deemed appropriate to these forms of migration. (Susan F. Martin) posited that most migration occurring from climate change is likely to be internal, with the affected populations

seeking to find more habitable locations, with greater economic opportunities, within their own countries. A portion of such migration will undoubtedly be international, however. In the most extreme cases, particularly in the context of rising sea levels, the entire population of island nations may need to be relocated. In other cases, environmental migrants will follow already established labour migration patterns that are international in scope.

Climate Change Migration

The Special 'Environmental Science and Policy' Issue "Migration and extreme environmental events: New agendas for global change research" (Black etal.,2013) collects articles that correlate climate change with migration flows. It contributes to the analysis on global and regional level and it demonstrates that even if climate change and migration correlation is a complex issue, the understanding of the subject is improving. The published work points out the importance of public policy interventions to mitigate the phenomenon. An interesting analysis on the subject is developed by the papers published at Special 'Refuge' Issue "Introduction Environmentally Induced Displacement and Forced Migration" (Bose et al., 2014). The phenomenon of Environmentally Induced Displacement is developed in a conceptual and empirical manner and its complexities, to a certain degree, are demonstrated. (Backhaus et al.2015) investigates the extent and links to which climate change causes international migration. Their results point out three major issues. Firstly, they show that temperature has a positive causal relation with migration. Secondly, sever changes in precipitation causes forced migration. And finally, there is an increase in the number of forced immigrants from the countries or regions which are more dependent on agriculture compared to others .Missirian and Schlenker (2017) attempt to connect weather conditions to asylum applications in the European Union. They consider four-year temperature data in 103 "source countries" from 2000 to 2004 and the relevant asylum applications, which amount at 351.000 annually. They observe an increase to the number of applications when temperature is above the "moderate optimum" of around 20oC. Then, they project their findings up to the end of the century, expecting a substantial increase to asylum applications. This study does not consider other important factors that affect migration. However; its findings are indicating that climate change is a stressor with high possibility to affect migration. Furthermore, other studies lay the stress on paying careful attention on the methods used by researchers of the topic while examining the data or drawing conclusions on the matter. For example, (Eklund et al.2016) illustrate that while analyzing the data for climate caused migration, among others, it is of high importance to mind scale related issues. They provide strong arguments and examples to define and explain the importance of scale in the study of migration due to climate change, e.g. scale based on physical and human geography, where in one hand scale based on physical geography rely mostly on mathematically measurable, deterministic representation of space and time and on the other hand human geographers doubt this relevance. This study also brings to light the issue of the scarcity of relevant and good quality data while representing a critique of the way data are analyzed by the scholars of the field.

According to Mirza (2003) analysis, it is a gigantic burden for developing countries to cope with climate related extreme events. These events are not only the ones that are directly connected to severe climatic phenomena such as floods, droughts and storms. They also include hardships exacerbated due to climate change, including access to food, epidemics and clean water shortages. All these aspects either require large allocation of resources to recover or they further reduce the available resources motivating people to migrate. To the opinion of the author, the solution to a certain degree is with the donors and lending agencies, which shall prioritize capacity building instead of disaster recovery. (Bohra-Mishra et al.2014) demonstrates the correlation between climate change and outright migration. Although precipitation plays its own role, the increase in temperature has its effect. The decrease and increase of rainfall also enhance migration. Sudden, serious catastrophes demonstrate lower permanent migration flows compared to the gradual effects of climate change. Communities are uprooted due to the event, but they tend to return on permanent basis. (Klaiber.2014) provides a review of the empirical research on the capability of households to cope with climate change. It appears that new methods and approaches, as well as further scaling, on the subject are required in order to be able to better depict the current situation and project it to the future. Another important point to be further investigated is the behavioral empirical pattern on which people respond to climate change and vice-versa. (Obokata et al.2014) also provide a review on empirical research for climate refugees. According to them, new or updates of the existing empirical studies shall focus in extending the time period of their research. Networks could provide comparative analysis of the factors that affect the phenomenon under investigation. The global and regional scale shall be also considered. English literature could be further enhanced with studies from South America and Middle East. (McGowan.2018) wrote a concise review of the book "Life Adrift: Climate Change, Migration, Critique". The book provides a strong connection between climate change and migration. It also gives emphasis to the fact that these phenomena need to be addressed immediately, or else, it will become more intrusive and substantially affect our lives. (Falco et al., 2018) have carried out a review of climate change and migration from the economics' science perspective. They also consider on which degree agriculture is the connection point between them. Their findings show that government initiatives for providing agricultural enhancements could to a certain degree mitigate the phenomenon.(Cai et al., 2016) study the underlying factors that connect migration and climate change. The most important interlink age is agricultural productivity, however in a nonlinear manner.

In this regard, temperature plays an important role to migration from agricultural countries due to its connection with land yield. The findings of this study could be used by the policy makers to better understand migration and climate change quantify its connection and create the appropriate mechanisms to take advantage of the positive aspects of migration and minimize its impacts. (Cattaneo and Peri 2016) analyzed data from 115 countries between 1960 and 2000 to connect rising temperature with migration. According to their findings, migration for middle-income countries increases when temperature rises but reduces in low-income

countries. Middle-income communities are to a certain degree strengthened by migrating, potentially improving their income and average worker wages. On the other hand, a lack of liquidity exacerbated by climate change creates additional burdens for low-income populations, pushes them even deeper into poverty and not allowing them to afford the costs of migrating to another country. In the same pattern, (Mbaye2017) agrees that climate change could affect liquidity of poor communities, not allowing them to migrate but also agrees on issues of brain drain. The author supports the opinion that migration and remittances received from migrants could be a mitigation mechanism for climate change and disasters, especially for countries that lack such a capability, however, they shall not be considered as the main tool to create disaster resilience. Governments could still facilitate migration and alleviate remittances costs. On the same pattern, (Olper et al., 2018) states that one of the most important challenges the world currently faces is climate change and migration. They use data from 150 countries from 1960 to 2010 and their findings indicate that middle- and low-income communities are more probable to send their members to another country if the weather fluctuates. This is not the case for the poor and rich countries from which for different reasons people do not migrate.

The Social Dimension of Climate Change Migration

(Guttery et al.,2016) conducted a qualitative study with immigrants from Italy and China in Hamburg, Germany to have their perspective on climate change issues and their impact on their lives. This study is basically a critique of the lack of theoretical understanding of the issue and the representation of immigrants as victims. Considering the socio-cultural knowledge and understanding of migrants, they try to reframe migrants as actors who can productively contribute to addressing the challenge of climate change. (Telford2018) is concerned about the work of researchers, mainly think tank researches on the issue of climate induced migration. He believes that mainly researchers (think tankers) relate or bring the issue of insecurity and radicalization in the same order as climate induced migration, which will result in convincing the EU politicians and readers that there is a direct link between the two issues. He argues that Muslim migrants from Africa and MENA region are radicalized based on that perception and therefore, he calls to challenge racial logics and the restrictive, unjust possibilities they suggest for future climate security politics. (Burrows and Kinney2016) are looking into the potential links between climate change, migration and increased risk of conflict. They first investigate the links between climate change and then the relations between migration and conflict. Their findings signal broad range of visions on the importance of climate change as a ground for increased migration as well as conflict. They suggest that further research is required to focus on the relations between climate migration and conflict.

Also, further work on understanding the pathways by which climate change might exacerbate conflict. They propose five questions to be investigated in the future research on the topic. The questions are posed to understand the local climate risks, the potential for resources scarcity, the status of local stability and destabilizing factors, the historical rationality of conflicts and whether migration is economically viable (Birchen et al 2017) argue that climate change causes forced migration and therefore it ought to be treated the same way as war and political instability induced migration. They further argue that there is a need to redefine the term refugee internationally, as the present definition in the 1951 UN convention does not represent all the categories of refugees. The time has changed and in the same manner the reasons for forced migration. Hence, the definition ought to be adapted, taking into consideration forced migration due to intra alia climate and environmental changes. The study gives an account of previous definitions of climate induced refugees and describes climate change refugees as any person who has been forced to leave their home, or their country, due to the effects of severe climate events, being forced to rebuild their lives in other places, despite the conditions to which they are subjected." For (Tramel2018) climate change severely affects food security of agrarian and fishing low-income communities. This is in line with resource grabbing from these communities leads in alerting social justice movements, which express their grievances based on a global environmental framework. Climate movements receive authoritarian populism calls, intensified by racism, nationalism and patriarchy. This intensifies their requests for political solutions to safeguard climate change mitigations initiatives and protect migrants, who are the people most affected.

Migratory flows from Africa

When considering regional consequences of climate induced migration, the streetlight effect shall be considered. (Hendrix 2017) explains that countries with high exposure to environmental events and reduced capacity to mitigate the effects of climate change in Africa receive the lesser attention from scholars due to a lack of scientific data. Researchers and policymakers shall identify the potential implications of this effect and provide mitigation strategies focused to the specific application under investigation. (Wiederkehr et al., 2018) emphasized the importance of strategies used by the population affected by environmental and climate changes issues. Environmental adaptations cause people living in vulnerable areas to move or migrate. Hence in this article they have focused on two different and important aspects of the issue, first the importance of crop and behavior of population affected, and second in-existence of relevant data to understand the impacts and correlation of these two phenomena. Since the Sub-Saharan African region is one of these vulnerable territories, this study focused on analyzing data from 63 studies converging more than 9700 rural households collected based on 63 quantitative and qualitative studies. Their results show that household strategies like crop, livestock, soil and water management are very common. The studies stress on direct correlation between environmental changes and migration which is persistent in about 23 per cent of households.

This study calls for further research to determine what type of support socially and ecologically is needed for sustainable

coping with the environmental adaptation.(Dumenu and Obeng2016) conducted a survey to analyze social vulnerability due to climate change in Ghana. Their findings demonstrate higher vulnerability index at the rural zones of Sudan and Guinea Savannah. The inhabitants of these zones suffer more from illiteracy and climatic connected livelihoods. The remedies on citizen level include change of occupation, expansion of arable land and crop diversification for farmers and migration to urban zones. Government shall provide irrigation and works to reduce climate change impact and further investigate the challenges local population is facing. (Mastrorillo etal.,2016) investigated climate migration outflows at post-apartheid South Africa. They used data from 1997 to 2001 and from 2007 to 2011. They observed that several socio-economic and demographic factors affect migration flows. Black and low-income South Africans are more probable to be affected by climate change events, when high-income and white South Africans are affected to a lesser degree. Agriculture is a possible connection point between climate change and migration in South Africa.

Finally, the nexus of climate change, migration, and conflict in the 21st century will test the capabilities of the African States and the world to manage global security in ways never thought of before. The need for new policies and programs that foster global sustainable security amid wrenching human dislocation will require creative development, diplomatic, and military responses that are international in scope yet tailored to unique local and regional situations. Though, none of this will be easy, empirical evidence shows that people in developing countries are likely to respond to climatic change by migrating internally. There is less evidence on the relationship between climate change and international migration. The effect of climate change on migration depends crucially on socio-economic, political, and institutional conditions. These conditions affect both vulnerability to climate change and how important climate change is in determining migration decisions. Migration has been a frequent response to climate variability and change in the past and present. There is strong evidence of this, for example in the Sahel region of West Africa. Migration might also be an effective response to the climate risks of the future, but only under certain preconditions.

THEORETICAL FRAMEWORK

The Threat-Based Decision Model for Political Conflict

The study of migration has advanced significantly in the last few decades. While aggregate focus functionally disregards the agency of individuals to make migration decisions depending upon their circumstances, both theory and empirical studies are still largely focused on aggregate groups. Furthermore, conflict is often conceptualized as one homogenous event, instead of a series of violent and political events that can disrupt individuals' physical safety as well as economic, social, and psychological well-being. This leaves an incomplete picture of the complex interactions between armed conflict, individuals, and the communities within which they live.

This study considered the standard threat-based decision model of forced migration studies. Building on this approach, a multidimensional model of individual migration behavior that is based on a broader social-ecological understanding of how individuals experience and respond to the violence and political events that comprise periods of conflict is cogitated. The threat-based decision model is the dominant explanatory model of forced migration and the only theory that has been empirically tested. This model argues that potential migrants base their decision to migrate away from a conflict on the perceived threat to their security. When the perceived threat to their security increases beyond an acceptable level, they migrate away. This model is explained in further detail in Davenport *et al*. (2003) and Moore and Shellman (2004). Recent empirical studies have found strong support for this theory. Several country-level comparative studies have found that a variety of types of generalized violence result in large increases in migration out of the afflicted area (i.e. refugee flight), including civil war, international war, genocide and politicized human rights violations (Melander and Oberg 2006; Moore and Shellman 2004; Davenport et al. 2003; Apodaca 1998; Schmeidl 1997; Gibney et al. 1996; Weiner 1996; Edmonston 1992). The outcome of these studies is that there is strong and consistent evidence that people flee from generalized violence.

The threat-based decision model however is designed to understand the migration patterns of aggregate groups. It is less helpful in understanding individual behavior. This is in part because the model adopts a largely structuralist perspective to explain how the macro-level context-armed conflict determines micro-level behavior-migration. It functions under the general assumption that armed conflict places an absolute constraint on the behavioral choices of the individual, regardless of their individual or community circumstances. It is precisely through this assumption that people have no choice in the context of conflict that we use the term 'forced migration'. Because this model does not consider individual agency and the complexity of the migration decision at the individual level, it is not able to explain the individual variability in migrants leaving or not leaving, any given conflict.

In addition, this model references only physical threat as a mechanism through which conflict motivates people to migrate. It does not address the economic, social, or political consequences of conflict on civilian lives and livelihoods. Independent of the physical threat, disruptions of economic, social, and political life could also be important mechanisms that motivate people to migrate (Avogo and Agadjanian 2008).

Based on the forced migration literature, it is understood that violence increases the perceived threat to people's well-being. For this reason, people migrate away to remove themselves from this threat (Davenport *et al*., 2003; Moore and Shellman 2004). However, the process of migrating or travelling, which includes being outside the home and the community and in less familiar surroundings, exposes people to the violence they are seeking to escape. Furthermore, migration is only a logical choice to protect one's safety if one can migrate fully out of the conflict zone.

Another option to decrease one's exposure to violence is to consciously choose not to migrate. In doing so, people continue to be exposed to the possibility of violence in their community, but they do not expose themselves to the danger of violence while travelling. This option is also less costly to the individual and family. There is evidence of this type of precautionary behavior in dangerous neighborhoods in the US. Several studies find that when faced with increased danger in the neighborhoods, adults and elderly people remain home more often, participate in community activities less, and children spend less time playing outside (Mesch 2000; Keane 1998; Rountree and Land 1996). These two precautionary behaviors (migrating away and staying at home more) at first seem quite opposite and there is no clear connection between the literatures on each of these responses as to why individuals may choose one over the other. It is proposed that one reason for this discrepancy – the decision whether it is safer to migrate or to not migrate and stay at home could depend largely on the level of violence. At lower levels of violence, the safest option could be to stay within one's own home and community, rather than to be outside where the violence is mainly occurring. However, at higher levels of violence, people could feel threatened even in their own homes and communities. In this case, the safest option would be to migrate away. This implies that there is a threshold level of violence or a certain level of violence at which people decide that staying at home is no longer a safe option. Hurricanes provide a useful analogy to this discussion. When a low to medium strength hurricane is predicted, people are advised to stay within the protection of their own homes, rather than to be outside where they will be exposed to the storm. However, when a very large hurricane is expected, people are advised that they will not be safe within their homes, and thus it is safer to evacuate the area.

CONCLUSION

Climate change is not a problem of Africa's making, yet parts of Africa stand to be particularly hard hit because of their geography, their agricultural dependence, and because of difficulties that adaptation will face, as outlined in this paper. These observations point to a range of actions that need to be pursued by African governments and by the international community. The impact of climate change is heavily being felt in Africa and strategies for mitigating, outright eradication and adaptation need to be developed. The role of government is primarily to supply information, to maintain incentives, and to increase the flexibility of the economic system both to secular change and to short run shocks. There is also a public role for support for agricultural research, and there will be growing demands on public expenditure as it becomes necessary to design infrastructure to cope with a harsher climate.

In addition to their mitigation responsibilities, developed countries and the donor community must recognize that climate change will make poverty reduction objectives more difficult and more expensive. There will be direct financial burdens (e.g. from infrastructural needs) and a particular role for donors in providing the regional public goods which Africa lacks.

RECOMMENDATIONS

The overlapping challenges of climate change, migration, and security in Africa pose a critical and complex problem for policy makers. While it is difficult to draw a direct line of causality from specific climate change hazards to the decision to migrate or to particular conflict, the interrelationships between these factors mean that viewing and addressing them in isolation is no longer sufficient. Migration is not the only strategy to adapt to climate change. Migration becomes a viable choice when its costs and benefits compare favorably to those of other adaptation options.

The following are recommended to strike a balance between migration and conflict as a result of climate change:

- The legal situation of people migrating due to environmental reasons remains undefined (Keane, 2004). Environmental migrants do not have a legal status comparable to a refugee's legal status which would grant them legal protection to enter a country. The legal status of environmental migrants therefore needs to be defined, for example, through a process led by the UN or UNHCR, in order to give people certainty about their legal situation.
- Policies should be strengthened to response to unplanned migration. If "migrants are faced with death if they remain in their present place of residency," (Hugo, 1996), they often have no choice but to leave, irrespective of the productivity potential of origin and destination location. Conflict may also force people to choose sub-optimal locations regardless of their economic opportunities. These are signs of policy failure and mal-adaptation.
- Insufficient information on potential costs and benefits of migrating to certain destinations can lead to inefficient migration decisions. Migrants may incur the costs of migration but overestimate economic opportunities (Bryan et al., 2011; Munshi, 2003). In addition, taking into consideration all types of costs, be it economic, social or psychological, is an integral part of making an informed choice about migration. Migrant networks play an important role in transmitting such information (De Brauw and Harigaya, 2007; Bryan et al., 2011; Munshi, 2003).

- Government at all levels should as a matter of urgency implement International Treaties, Conventions, and Agreements on environment which Africa is signatory to, so that some of the effects of climate change can be mitigated or averted.
- African governments should ensure the sustainable usage of natural resources which are endowed in Africa so that the future of the continent can be guaranteed.

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