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Forum

# Where to go? Migration and climate change response in West Africa

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ABSTRACT

While certain models predict tens of millions of people will be on the move in West Africa as a result of climate change, most existing studies tend to focus on regions that have comparatively less migration flows compared to this particular region. This article investigates the patterns and complex root causes of migration in West Africa. It shows that unlike some other places, involuntary migration of the region's vulnerable populations is mostly intraregional. It also presents the common migratory routes and concludes that long-term mitigation efforts need to be complemented with near-term adaptation options to increase the resilience of concerned communities and ultimately reduce forced migration. This article urges international researchers and concerned policymakers to focus on the challenges and solutions to climate change-induced and environmental related migration, especially in the West African region.

## 1. Introduction

West Africa is uniquely positioned to face the most severe impacts of climate change. Between 1960 and 2010, the annual mean of daily maximum and minimum temperature have significantly increased by 0.16 °C and 0.28 °C each decade on average, with a 0.5 °C increase in recent years (Barry et al., 2018; IPCC, 2013). In fact, the region as a whole has experienced a documented increase in average temperatures of between 0.3 and 1.0 °C (Padgham et al., 2015). Evidence suggests that this pattern of warming is faster than the global average and will likely continue to increase at a higher rate (Collier et al., 2008). Specifically, both Global and Regional Climate Models indicate greater warming in the Western Sahel and the Sahara desert, leading to increased frequency and intensity of periods of drought and desertification (Diallo et al., 2012). According to Sylla et al. (2016), increases in dry-spell length of 30–50 % compared to the 1976–2005 baseline period are expected in some West African countries such as Senegal, Guinea, Sierra Leone, Mauritania, Mali, Burkina Faso, Nigeria, and Cote d'Ivoire (Ivory Coast). In response to the undesirable impacts of climate change, migration also is already increasing and is likely to continue becoming more frequent in the affected countries (Mpandeli et al., 2020).

When people are vulnerable and are unable to adapt to changing conditions in a given place, they often make a pre-emptive choice to migrate. There is already evidence of occasions when local living conditions deteriorate so much that people are forced to migrate in order to sustain their livelihoods (Berchin et al., 2017; Marino & Lazrus, 2015). In West Africa, models predict that up to 32 million people will be on the move within their countries by 2050 due to climate change (Rigaud et al., 2021). Notably, migration may involve internal and cross-border movements (Abel & Sander, 2014; Francis, 2019). On the coastline of West Africa alone, between 0.3 million and 2.2 million people will be forced to move as a result of sea level rise in less than 3 decades (Rigaud et al., 2021). Indeed, current evidence suggests that migration is considered to be a growing adaptation response in the face of severe climate change (Bosetti et al., 2021).

Despite such facts about climate change impacts on West African populations, most of the existing studies tend to focus on regions that have comparatively less migration flows compared to West Africa, creating significant knowledge gaps (Allgood & McNamara, 2017; Curtain & Dornan, 2019; Daoudy, 2020). Closing such gaps as done in this study, urgently requires synthesis of available evidence so as to effectively guide debates, future research directions and intervention measures or policies. To achieve this objective, a blend of methods are used. Firstly, this study assesses the most up-to-date accessible data on

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the migration rates in the top 10 West African countries, and describes some of the reasons behind it in the top two countries as far as migration patterns are concerned. It further examines the migration patterns and destinations of such migrants. Reflecting on the findings and available evidence, the next section argues that migration in this region of the world is actually multifaceted and it posits that several approaches are required to tackle this type of response to climate change impacts.

## 2. Delineating the migration patterns and destinations

Based on the most recently accessible relevant data (UNDESA, 2020), the two West African countries with the highest percentage of migrants as a proportion of the country's total population as of mid-2020 were Côte d'Ivoire (9.7 %) and The Gambia (8.9 %), which are French and English speaking countries, respectively (Fig. 1). There are many factors that likely influence migrants' choice of destination. Côte d'Ivoire in particular is ranked one of the happiest countries in West Africa as well as in Africa based on gross domestic product per capita, social suppport, healthy life expectancy, freedom to make life choices, generosity, perception of corruption and dystopia (Helliwell et al., 2021). Generally acclaimed national peace in The Gambia, the smalllest country in mainland Africa, may constitute one of the reasons why migrants are drawn to this country.

Also drawing on the data from UNDESA (2020), the common pattern of movement within the region is from one Francophone country to another except in the cases of migration from Benin, Ghana and Togo to Nigeria as well as from Senegal to The Gambia. A migration pattern from the landlocked Sahelian countries (Mali, Niger and Burkina Faso) to the coastal countries (Côte d'Ivoire, Gambia, Benin, Liberia, Nigeria, Ghana, and Senegal) which borders the Atlantic Ocean coast has also been highlighted (AU, 2016). The aforementioned landlocked Sahelian countries have a climate which is usually hot, sunny, and dry and are thought to be relatively more vunerable to climate change impacts due to limited adaptive capacities and options. Therefore, migration could just be one of the most feasible options for the affected population during crucial times of adverse climate events. Given such instances, it is arguable that language spoken at the destination country may not be a large barrier to an individual's decision about where to migrate. Rather, the pre-established social networks of relatives and fellow citizens in the destination country seem to be also important. The increasing coverage and usage of mobile smart phones in the region (Karakara & Osabuohien, 2019) in recent years allows migrants to more easily communicate with people in their home countries and thought to contribute to people's decison to emmigrate.

The highest observable number of country to country migration within the region as of mid-2020 was 1,376,350 migrants from Burkina Faso, a landlocked country located in the northern part of the region, to Côte d'Ivoire which is further south (UNDESA, 2020). Based on existing evidence, immigrants' duration of staying in the destination country remains unclear. As such, whether migration is actually an adaptation strategy or an interim coping mechanism requires further investigation by researchers. Meanwhile, there is evidence that the most common migration pattern of people in West Africa is intraregional (i.e. movement of people within the countries of the region itself). As indicated in Fig. 2, only about 9 % of the 7.35 million West African migrants as of mid-2020 moved outside the region to other sub-Saharan African countries (UNDESA, 2020). However, migration to North American countries (especially Canada and the United States) seems to be on the rise in recent years (Fig. 2). Several factors which include climate change and socio-economic challenges such as relatively poor national development and high youth unemployment rates are presupposed to be responsible for such migration. In the most recent times, the additional impacts of the COVID-19 pandemic on various forms of societal livelihood could have further stimulated migration within and out of the region.

As pointed out in Fig. 2, the Maghreb countries (especially Libya, Algeria, and Morocco) are also among the tentative hosting countries through which some West African migrants traveled in reaching the European countries which share sea borders with the African continent. Meanwhile, the established long-time trans-Saharan trading hubs in West Africa such as Agadez, Dirkou and Arlit in Niger, and Gao in Mali are among the well-known migratory routes used in reaching the tentative Maghreb countries (OECD, 2009). Beyond these historical gateways of migration, African cities such as Johannesburg (South Africa), Cairo (North Africa), Nairobi and Addis Ababa (East Africa) and Lagos (West Africa) with big financial markets and interconnectedness

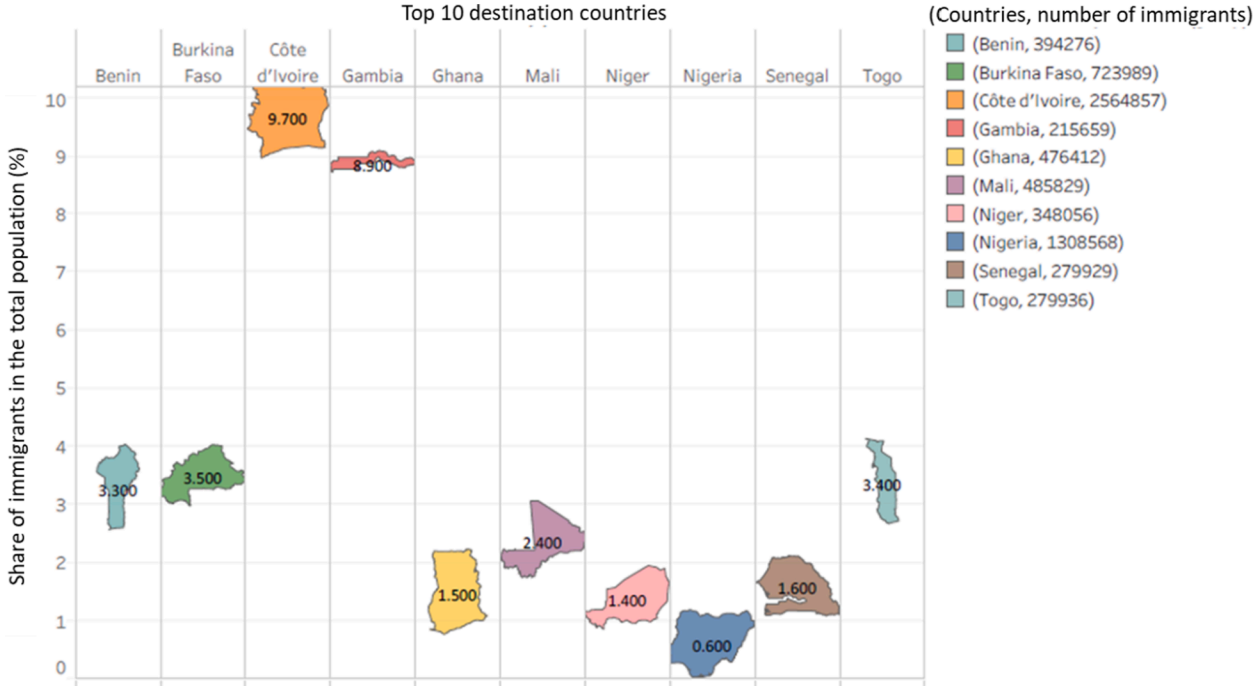


**Fig. 1.** The top 10 West African migrant hosting countries in 2020. Data Source: UNDESA (2020).

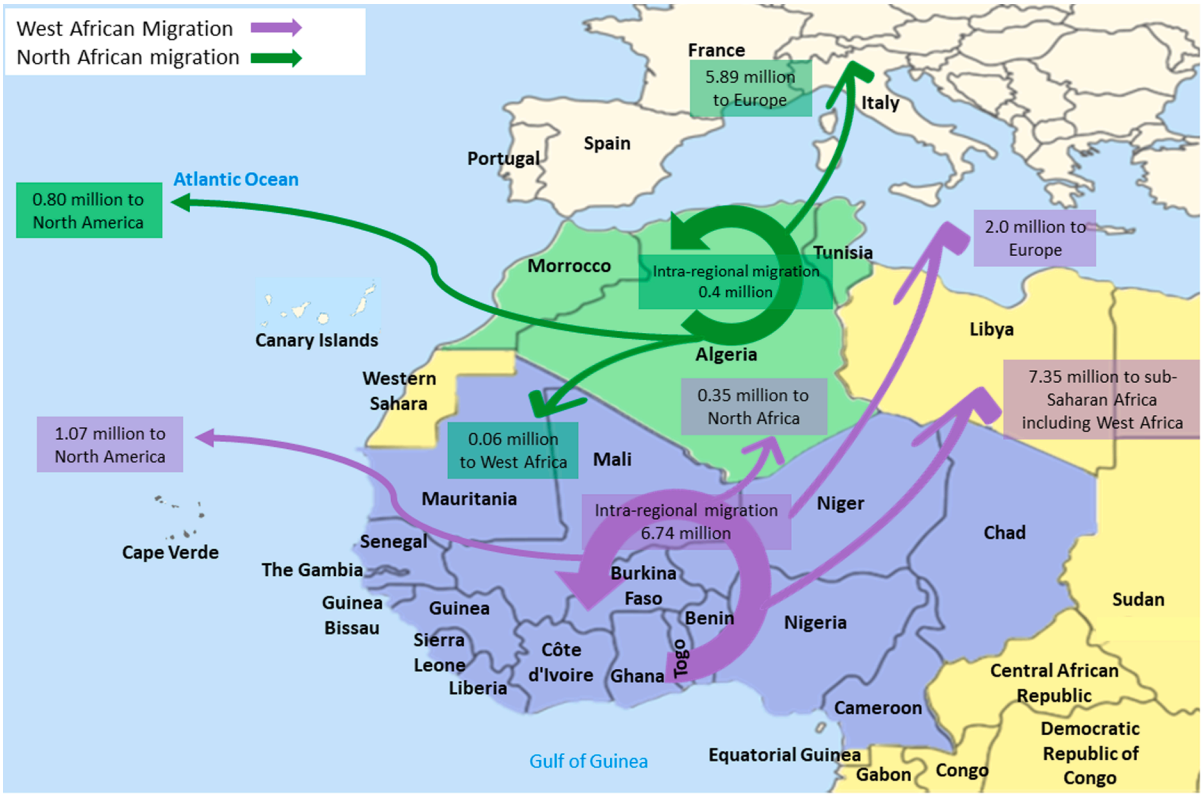


**Fig. 2.** Migration relating to West and North Africa at mid-year 2020. Data Source: UNDESA (2020).

with the rest of the world are also major transitory or final destinations for some migrants (Mercandalli & Losch, 2017). Other notable West African cities that usually receive migrants include Abidjan (Côte d'Ivoire), Banjul (The Gambia), Dakar (Senegal) and Ouagadougou (Burkina Faso). Meanwhile, in terms of intra-African migration, Côte d'Ivoire, Nigeria, Kenya and Ethiopia are remarkably the most important host countries (Mercandalli & Losch, 2017).

## 3. The multifaceted dimension of the West African migration

It is arguable that multiple factors interact to determine why, when and where people migrate. Migration per se is not a problem: for hundreds of years, people have decided to migrate for a variety of reasons: education, cultural interests, or better economic status are some of them. Migration may become problematic when a decision to migrate is based on deteriorating living conditions, which may make the home areas less suitable to living. Concerning West Africa, declining quality and quantity of water, leading to competition for access to water resources by local inhabitants has been observed in this region (Niasse et al., 2004). Also, environmental changes are placing an increasing pressure on land productivity and livestock production, further exacerbating existing migration drivers and patterns (Goff et al., 2012). An important rain-fed agricultural system that is very sensitive to climate change is pastoralism. Climate impacts could lead to a decline in pasture land, and increased pressure on local ecosystems, especially in the particularly drought-prone Sahelian part of West Africa. Climate change and environmental degradation have been inducing movement of pastoralists from Niger, Mali, and Northern Nigeria, for instance, to neighbouring countries in search of water and grassland for their animals. In addition, ocean acidification leading to decreased fish catch has been identified as one of the climate related factors responsible fpr coastal areas to city migration of artisan fishers in West Africa (IOM, 2019). Increased migration of youths from pastoral rural communities to cities in other countries has also been observed (FAO, 2021). As long as many individuals in the region rely on agriculture for sustenance and for livelihoods, and local conditions continue to deteriorate, human migration is likely to increase. Migrants are more likely to face negative mental and physical health consequences, have difficulty finding houses and accessing basic services, and be at risk of exploitation and human trafficking (Tuite et al., 2018; Mannucci et al., 2015; Anderson et al., 2017; Feingold, 2005). Once they arrive, mostly in cities like those mentioned previously, migrants may face significant challenges characterised by a high degree of vulnerability to malnutrition, disease or violence.

In addition to climate change events, the protocol of free movement of goods and services adopted by the Member States of the Economic Community of West African States in 1979, for instance, is also a major contributing factor to the high rate of migration within this African subregion. Concerning outward migration, food insecurity, economic constraints and limited resources to diversify livelihoods have been identified among the West African migrants (WFP, 2017). Unfortunately, many African countries are yet to produce proper agreements and policies for coping with climate change induced migration, which may assist vulnerable people and populations looking for better living conditions (Fernández et al., 2019).

In Sub-Saharan Africa at large, nature-based challenges resulting from over-exploitation and diminishing resources have also influenced various civil conflicts and disasters which could ultimately result in involuntary displacement. Such incidents could possibly be fueled by limited finances, loss of livelihood and constrained social capital. However, out-of-country migration is becoming more popular, and people are moving to neighbouring countries or continents (Bosetti et al., 2021). This further creates problems in the destination country due to the competition for resources and the ensuing population pressures. Demographic and ethnic conflicts may arise, and these may lead to violence in receiving countries (Bosetti et al., 2021; Brzoska, 2019).

Considering the number of new internal displacements due to disasters over 10 years (2010–2019) in the 16 West African countries

(IOM, 2020), a consistent migration trend could not be easily established. However, the drivers are relatively clear: the highest recorded number of displacements of 4,480,700 in 2012 and 787,352 in 2018 coincide directly with floods and heavy rains (IOM, 2020) especially in Nigeria, the most populous country in West Africa. Accessible data from UNDRR (2020) indicate that from 2000 to 2019, climate-related disasters accounted for up to 90 % of the 7,348 described events within the period. In addition, such increased frequency of natural disasters and extreme weather events such as flash floods, droughts, storms and cyclones has so far resulted in the involuntary displacement of more than 17 million people since 2008.

## 4. Conclusions

This paper has outlined the conntections between climate change and migration in West Africa. The implications of the paper are twofold. Firstly, it sheds more light on some of the determinants of inland and international/intercontinental migration from the West African region. Notably, intraregional migration predominates in West Africa, which challenges dominant narratives of hordes of cross-regional international migration that influence international policy. Secondly, whereas a consistent migration trend could not be established, it is clear that in regions more affected by climate change, migration is a more present trend whose intensity is correlated with the level of exposure and vulnerability to disasters and climate change related events. In fact, migration is not a uniform process, especially when induced by climate change. Arguably, solutions cannot be easily standardised. This reality is further complicated by the dynamics of climate events in the West African countries. Meanwhile, the evidence presented here implies that more resources for systematic monitoring and documentation of climate events and disasters in the region is required, since these are known to have an influence on migration. A greater understanding of the interactions between the climate events leading to migration in the region is also needed to guide appropriate measures of addressing the problem and its many facets. There is, for instance, a need for near-term adaptation options which may complement long-term mitigation efforts. In this regard, transformative adaptation that can address climate change impacts and other the root causes of migration is recommended.

More specifically, regional planning activities and policies need to be implemented to positively manage migration and further promote sustainable development. Studies have indicated that incorporating the nexus of climate change migration and adaptation into development planning may assist in building resilience and in coping with instability from climate change. Suitable measures should focus on improving the livelihoods of people in rural areas, and thus incentivize them to stay in their homelands whenever this option is feasible.

Some West African economies are vulnerable as a result of the relatively high share of rainfed agriculture in the region‘s economy, poor level of water control, and poor replenishment of reservoirs used for hydropower generation in some countries (Boko et al., 2007). There are also increasing concerns that smallscale agricultural production on fragmented lands by many West African populations is not sustainable in the long run. Up-scaling resilience and adaptation tools such as rain water harvesting combined with drip irrigation, climate-smart agriculture, ecosystem-based disaster risk reduction and environmental restoration, and use of agro-ecology principles in farming can help to increase resilience and reduce the need for migration of local African communities. To yield the expected benefits, synergisitically combined engagement of local, national and regional governments, non-governmental organizations, development agencies, local leaders and individuals is required. As evidenced here, migration flows in West Africa are already being significantly impacted by climate change, and urgent action to prevent further human suffering in the form of forced displacement is necessary.

## CRediT authorship contribution statement

**Walter Leal Filho:** Conceptualization, Methodology, Investigation, Writing - original draft, Writing - review & editing. **Olawale Festus Olaniyan:** Investigation, Methodology, Formal analysis, Visualization, Validation, Writing - original draft, Writing - review & editing. **Gabriela Nagle Alverio:** Investigation, Writing - original draft, Writing - review & editing.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

The data is publicly available and the link has been provided in the article. Thanks.

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