



Flood damages in Suhum in the eastern region of Ghana © IOM Ghana, 2010.

The migration, environment and climate change nexus in Ghana

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1. Introduction

Ghana's environment has been severely affected by climate change in the past 10 to 15 years, increasing the frequency of natural hazards, which in turn have led to disasters and changed migration patterns. Human-made hazards augment the livelihood loss and food insecurity of natural hazards, increasing migration. The increase in migration intensifies the impacts of natural

and human hazards, creating a feedback loop. This policy brief will analyse the complex interconnections between migration, environment and climate change (MECC) in Ghana, review the Government's past and current efforts towards addressing this nexus and propose recommendations on the way forward.

2. Environmental impacts on migration

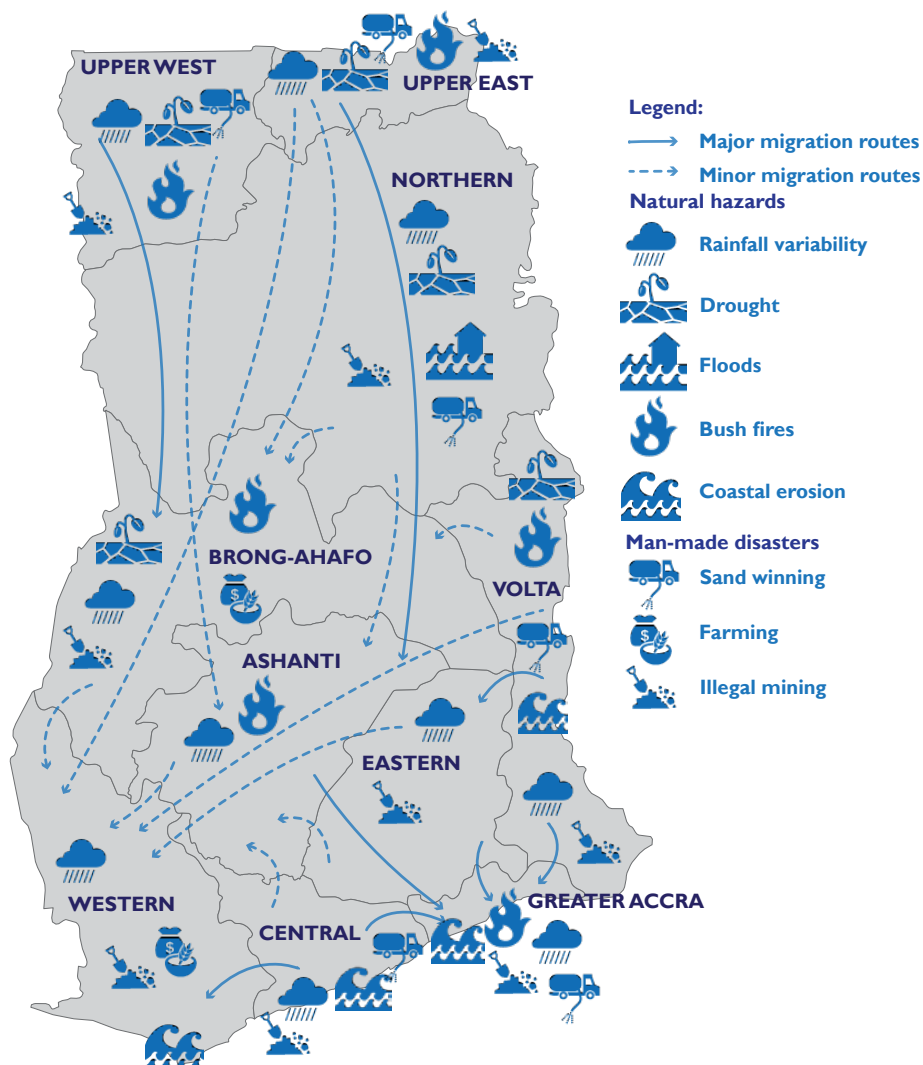
Ghana's migration patterns are characterized by socioeconomic factors; however, internal movements are directly and indirectly influenced by environmental factors.

Rainfall variability is changing Ghana's migration trends. For example, migration was traditionally undertaken by men; however, since the late 1990s, women from the northern regions have undertaken short- or long-term labour migration to the cities of Kumasi and Accra to help fund dowries, support families back home, and/or pursue employment/educational opportunities (Ungruhe, 2011). In northern farming tradition, women stayed at home and were given part of the harvest to help pay dowries. Decreasing crop productivity since the 1980s ended this practice. While the percentage of women undertaking migration is growing, the majority still consists of male farmers.

According to the Ghana Statistical Services' 2015 National Employment and 2014 Labour Report, the informal agriculture sector employs 60 per cent (7.8 million persons) of the working population. Traditionally, farmers undertake labour migration from the northern regions (Northern, Upper West and Upper East) to Brong Ahafo when there are no crops to harvest or plant. The combined impacts of natural and human-made hazards is causing farmer labour migrants to go further south or change livelihoods. However, the nontraditional labour migration is not a first choice: evidence suggests migration is used as a coping mechanism when food security is compromised for the household (Laube, Schraven and Awo, 2012). While many migrants perceive their decision to migrate as an economic and food security choice, the initial drivers of migration are climate change effects (Warner et al., 2012; Tschakert et al., 2010).

Map 1: Environmental impacts on Ghana

Climate change impacts and migratory routes in Ghana



Source: IOM Ghana, 2017.

As can be seen on Map 1, climate change impacts on natural and human-made hazards affect Ghana's 10 regions differently. Drought, flood, bush fires and pest/disease outbreaks are increasing in the northern regions; Brong Ahafo, Ashanti, Eastern and Volta may lose one of their two rainy seasons; disease and pest outbreaks are increasing from drought and flooding; and rapid urbanization is accelerating coastal erosion (Asante and Amuakwa-Mensah, 2015; Choudhary et al., 2016; Akudugu, Dittoh and Mahama, 2012; Yaro, 2013). The combined impact of these forces drives migrants from rural to urban areas, creating a positive feedback loop between rapid urbanization, natural hazards and human-made hazards.

The northern regions experience net outmigration given the richness of the southern lands (Sow, Adaawen and Scheffran, 2014; van der Geest, 2010; Anarfi et al., 2003). Migrants may head to the Ashanti region, which acts as a migration conduit, as Kumasi is a major hub for migrants travelling north to Brong Ahafo, or south to Greater Accra (Ackah and Medvedev, 2010). Migration is not experienced equally by the sexes; women face greater burdens and vulnerability than men. Some women migrants work as head porters in urban areas, usually in highly exploitative situations. Women in rural areas face limited income-earning potential, causing disproportionate suffering from food insecurity and poverty impacts (Ministry of Food and Agriculture, 2007; Glazebrook, 2011).

Besides gender differences, there are ethnic differences in migration. The Fulani – who are a nomadic and semi-nomadic people – face particular discrimination as they head south from their historic northern communities in search of better grazing land. Multiple ethnicities coexist in Ghana; however, the Fulani pastoralists face singular social discrimination (Tonah, 2002; Bukari and Schareika, 2015). Reduced water resources is driving Fulani pastoralists southward for better grazing land (Barre, 2012; Kuusanaa and Bukari, 2015; Bukari and Schareika, 2015). This expansion has put them in conflict with farmers as grazing land can include farms, and farmland has expanded into grazing land. The greater competition over water sources fuels social conflict between Fulani pastoralists and the communities they live in. In response to communities, the Government has attempted to expel the Fulani, such as the 2015 botched mission Operation Cow-Leg (Botchway, 2016; Bukari and Schareika, 2015; Opoku, 2014; Osam, 2015). The Fulani community is not recognized in the census nor are they considered Ghanaian citizens. Government recognition of Fulani as one of the many ethnic groups of Ghana would decrease social conflict (Olaniyan, Francis and Okeke-Uzodike, 2015). Moreover, including Fulani in the census would

aid climate change adaptation strategies by knowing the community distribution. Land-use planning could meet both the pastoral needs of the Fulani and farmland expansion without conflicting with each other spatially.

3. Environmental changes and impacts on migration in Ghana

The flow chart (Figure 1) summarizes the interconnection between various migration, environmental and climate change outcomes.

Evidence suggests **rainfall variability** impacts **drought** and **flood** directly, and **bush fires** indirectly in Ghana. As the climatic and environmental driver in the MECC nexus, it is critical for policy to anticipate increasing or decreasing **rainfall variability**. However, predicting this in Ghana is complex. For example, Brong Ahafo rainfall may decrease by 36 per cent or increase by 32 per cent (Asante and Mensah, 2015). Brong Ahafo farmers need the two-month dry period to prepare for the second farming season (Ministry of Environment, Science, Technology and Innovation (MESTI), 2012; van der Geest, 2011). Increasing annual rainfall would drown crops and remove topsoil, while decreasing rainfall would reduce the rainy season to once a year. Either scenario would result in decreased agricultural productivity, decreasing food security and a loss of livelihood, which would lead to an increase in migration.

Farms in the northern regions have adapted to dry periods. However, as the dry season has extended, increasing **drought**, farms have become more vulnerable to crop failure and, compounded by a lack of economic power, have low adaptive capacity (Choudhary et al., 2016; Antwi-Agyei et al., 2012; Dumenu and Obeng, 2015). Additionally, periods of drought increase **bush fires** (MESTI, 2012; Abu, Codjoe and Sward, 2014). The destruction of **bush fires** cannot be underestimated: a third of all agricultural crops were lost during the bush fires between 1982 and 1985, causing widespread food scarcity (Arthur and Arthur, 2011; van der Geest, 2010). During this time, there was little north-to-south migration (van der Geest, 2010). The combination of factors has increased **pest and disease outbreaks**, resulting in crops losses and reduced agricultural productivity (Akudugu, Dittoh and Mahama, 2012).

Despite projections of reduced rainfall in the northern regions, **flooding** is a regular occurrence. **Flooding** has become more intense as the amount of rain in any one event has increased, though the annual rainfall decreased from 1960 to 2008 (Tschakert et al., 2010; Choudhary et al., 2016). Flooding is the greatest displacer in Ghana, as evidenced in 2007 when 70,500 hectares

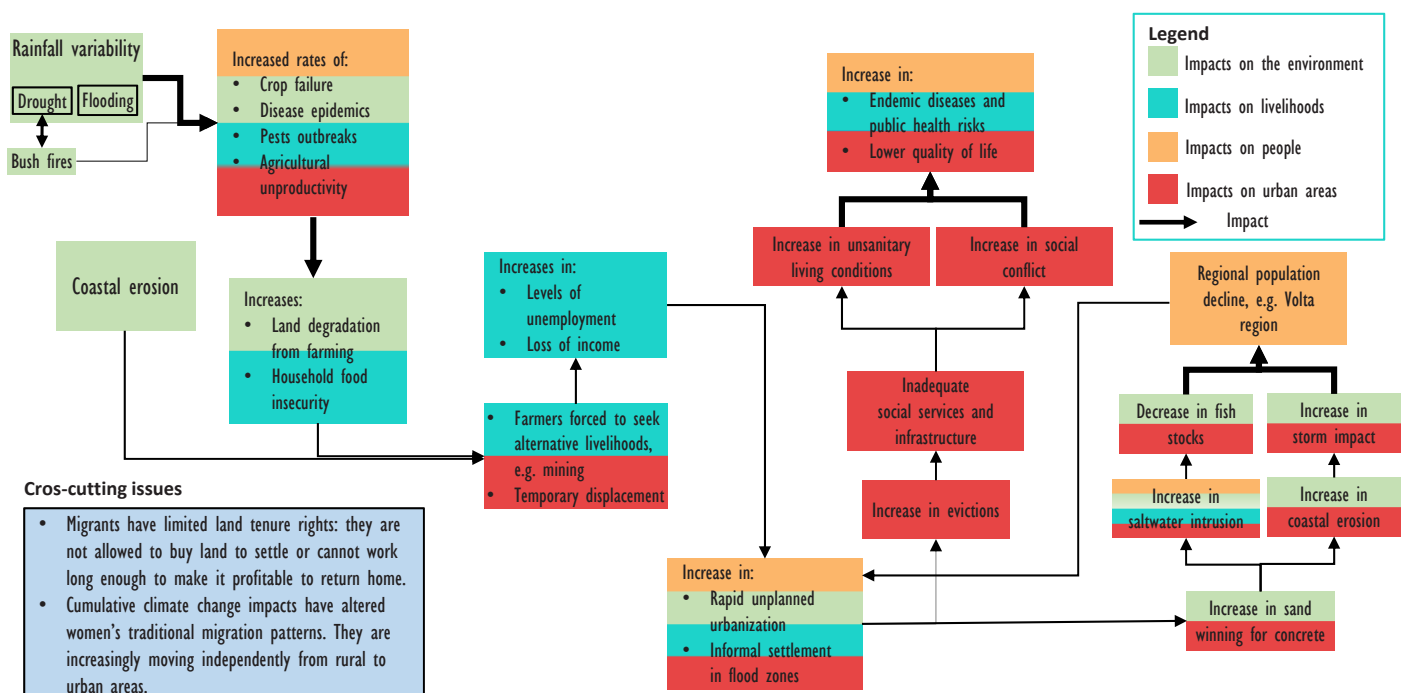
of cropland were lost in the northern regions. A total of 325,000 people were affected in 2008, necessitating emergency food distribution (Samaddar, Oteng-Ababio and Dayour, 2015; Laube, Schraven and Awo, 2012). As **flooding, drought, bush fire** and **pest/disease outbreaks** have decreased household food and livelihood security, paradoxically, agriculture has compounded these problems via land degradation brought on by **long-term farming**.

Long-term farming depletes soil nutrients and ongoing water usage degrades the land, thereby increasing the sensitivity to drought and risks of floods and mudslides (Asante and Amuakwa-Mensah, 2015; van der Geest, 2015). Additionally, most farms lack irrigation systems, decreasing the ability to cope with drought or flood impacts. There have been attempts to encourage irrigation. However, these efforts have been unsuccessful as they have been hampered by inadequate farmer outreach and education, lack of credit and weak policy coherence (FAO, 2015; Bawakyillenuo and Alfred, 2013). Unsurprisingly, when farmers control water availability, migration propensity decreases. Farms with irrigation produce more money per tilled acre: small-scale irrigation farmers in the Upper East make between USD 53 and USD 109 for a plot of 0.05 hectare of tomatoes and onion, reducing the tendency to migrate (Bawakyillenuo and Alfred, 2013; Laube, Schraven and Awo, 2012).

Farmers are not only being affected by the impact of the **long-term farming**, but also **illegal small-scale mining (*galamsey*)**. Mercury from ***galamsey*** tailings contaminates potable water, thereby displacing farms. In response, farmers have either moved their farms or have transitioned to mining due to its economic attractiveness (Schueler, Kuemmerle and Schröder, 2011; Rajee et al., 2015; Boateng, Codjoe and Ofori, 2014). As recently as May 2017, there has been a widespread media and government campaign against ***galamsey***; however, no data has been generated yet to show the impact that this campaign has had.

The displacement of farmers and communities affected by **drought, flooding, bush fire, disease/pest outbreak, long-term farming** and ***galamsey*** has driven migrants towards urban areas. Despite a higher cost of living, Kumasi and Accra pull populations due to perceived employment and education opportunities. **Rapid urbanization** has contributed to informal settlement growth and slums. Usually, the settlements lack basic infrastructure and public services, and many are placed within 200 metres of Ghana's coastal flood zones (Okyere, Yacouba and Giglenbach, 2012; Jonah et al., 2016; Niang et al., 2014). From a government viewpoint, informal settlements have no legal recognition. Though these communities contain schools and clinics, and generate economic activity through the informal sector, they are legally non-existent. Due to the communities being in

Figure 1: The MECC nexus in Ghana



flood zones, a practice of mass eviction accompanied by later date demolitions without proper planning for community development has occurred since 2001 (Paller, 2012; Okyere, Yacouba and Giglenbach, 2012; Amoako and Boahmah, 2015). With limited agency, most residents rebuild their homes where they are demolished. Continued demolition and livelihood disruption negates the possibility of community upgrading. The population is economically trapped and with daily arrivals of new residents, the settlement continues to grow, which increases rapid urbanization and resource consumption.

Coastal erosion affects the Central, Volta, Greater Accra, and the Western regions. More than 25 per cent of the Ghanaian population lives within 30 metres of the coastline of Ghana (National Climate Change Policy (NCCP), 2013). Combining modelling from Mimura (2013) and the Ghana National Climate Change Policy, the projected sea-level rise of 34.5 cm by 2060 could cause a 57 per cent loss of Ghana coastline; permanently displacing communities and exacerbating rapid urbanization impacts. **Rapid urbanization** affects coastal erosion by removing protective land barriers through construction of new buildings, but the myriad of demands that urbanization requires further depletes land. For example, the energy demands of Accra led to the damming of the Volta River in 1965. Evidence suggests that since damming the Volta River, sediment outflow decreased from 71 million m³/year to 7 million m³/year (Addo, 2015). According to the Government of Ghana: “The decline in the population of Keta [a town in the Volta region] is due mainly to the sea erosion which caused population movements out of the town and also affected commercial and other activities” (Government of Ghana, 2017). Compounding the loss of sedimentation is the direct mining of sand. **Illegal sand mining (“winning”)** occurs throughout Ghana as the building/construction sector needs sand for concrete. Though **sand winning** is banned, enforcement of the ban is lax (Addo, Jayson-Quashigah and Kufogbe, 2011; Appeaning Addo, 2008). **Illegal sand winning** accelerates **coastal erosion** by removing natural barriers that reduce floodwater and seawater intrusion from storms. Removing these natural barriers increases the risk of **saltwater** (or seawater) **intrusion** into potable coastal groundwater sources, which has been linked to freshwater fisheries collapse and farm displacement due to nutrient leaching (Owusu-Daaku and Diko, 2017; Sekovski, Newton and Dennison, 2012; Bruns and Frick, 2013; Addo and Adeyemi, 2013). Outmigration from affected coastal areas can be decreased through the following: (a) training more agents to enforce the illegal sand winning ban; (b) training local community members in beach conservation (e.g. sand dune restoration) to create new jobs; and (c) implementing other conservation strategies.

4. International and national policies

The Government of Ghana is signatory to several international conventions related to the environment and climate change, including:

- Rio Declaration, signed in 1992;
- Kyoto Protocol in 1997;
- Cancun Agreement in 2010; and
- Paris Agreement in 2015, as the first sub-Saharan African country to sign this agreement.

In complying with the international agreements, Ghana has shown a firm commitment to mitigating climate change impacts with its domestic policies. Table 1 highlights the key policies relating to the MECC nexus.

Table 1: Key national policies in the MECC nexus

Key MECC policies	Key provisions
National Climate Change Adaptation Strategy (NCCAS), 2012	<ul style="list-style-type: none"> • Highlights gaps in adapting to climate change; • In section 2, “Agriculture”: <ul style="list-style-type: none"> ◦ Migration is framed as social fallout from climate variability ◦ Links north-to-south migration to climate change.
National Climate Change Policy (NCCP), 2013	<ul style="list-style-type: none"> • Builds on the NCCAS • Three key principles: <ul style="list-style-type: none"> ◦ Climate change will have different degrees of effect on different drivers of migration; ◦ Planned migration can be a proactive and significant adaptation strategy to difficult situations; and ◦ Migration can amplify political and social tension, causing conflict in destination areas. • Focus area 9 addresses migration: <ul style="list-style-type: none"> ◦ “Climate change is expected to exacerbate these drivers of migration with the potential to increase the volume of outmigration in particular from rural to urban areas.”
National Climate Change Master Plan (NCCMP), 2015	<ul style="list-style-type: none"> • Implementation plan of the NCCP, 2014; • Ensures that migrants have equal opportunities to enjoy the economic and social amenities of destination locations that they need in order to adapt to climate change; • Promotes development and resilience in the sites of both origin and destination.

Key MECC policies	Key provisions
National Migration Policy for Ghana (NMP), 2016	<ul style="list-style-type: none"> Provides legal framework for migrants; Recognizes the economic benefits of managed and facilitated migration. Category 7, “Migration; Environment, and Climate Change” specifies mainstreaming migration into the NCCP, the National Urban Policy of 2012 and into national development planning.

In 1995, Ghana passed its first National Environmental Policy, which was updated in 2012. The 1995 policy created the Environmental Protection Agency and provided it with the mandate to protect national resources while encouraging sustainable development.

In 2010, the National Climate Change Adaptation Strategy (NCCAS), which expires in 2020, provides a framework to build comprehensive and targeted climate change adaptation and disaster risk reduction into national policy and development plans for community resiliency. The Strategy led to the creation of the National Climate Change Committee (NCCC) in 2010 to oversee the policy development, monitor and evaluate, establish policy guidelines, assist local institutions in capacity-building, and supervise programmes and projects of the NCCAS.

To synergize the strategies of the NCCAS, the 2013 National Climate Change Policy (NCCP) was developed. It outlines general “focus areas” building on “systematic pillars” that provide the context for the synergistic strategies.

Addressing the need for specific roles, responsibilities and budgets to be considered for implementing the NCCP, the National Climate Change Master Plan (NCCMP) was developed and passed in 2015. Overseen by the NCCC, the NCCMP runs from 2015 to 2020 and provides action plans for the strategies outlined in each focus area.

Paralleling the NCCMP are the development plans created by the National Development Planning Commission (NDPC), a member of the NCCC. The NDPC publishes five-year national development plans that build on the previous plans and incorporate the agendas of the current administration. The NDPC addresses climate change and migration in the national development plans using the 17 categories of the UN Sustainable Development Goals of 2015–2030.

The National Migration Policy (NMP) was launched in 2016 as a framework for migration management. In one section, the Policy stipulates the need to incorporate

MECC nexus policies in national climate change strategies and coordinate across agencies to reduce the impact of environmental/climatic changes on migrants.

5. Recommendations

The Government of Ghana has various policies in place to address the MECC nexus. Following a capacity-building workshop on migration, environment and climate change for policymakers in Accra, held in April 2017, the following strategies are proposed to address these issues:

- Increase research and data collection, analysis and data sharing

Research on the migration and climate change nexus has been conducted, but not to the degree needed for evidence-based approaches. Research projects, for example, the University of Ghana’s membership in the Deltaic Vulnerability and Climate Change: Management and Approach project, is producing reliable data on the migration patterns in the Volta Delta region. Yet, more interdisciplinary research needs to be conducted and disseminated.

In 2017, IOM Ghana’s Ghana Integrated Migration Management Approach project, developed standard operating procedures (SOPs) for migration-oriented ministries and departments to centralize and communicate migration data. The SOPs have instituted a process of transparent data collection and data sharing to be housed in a central database. Given the stipulations mentioned in the NMP, MESTI and other ministries that directly interface with climate change should also contribute to the migration data, to allow for climatic data identified in this brief that affects migration to be included in the data collected.

- Improve coordination among different actors

Ghana practices decentralized governance using the Municipal, Ministerial and District Assemblies (MMDAs) for national policy implementation. Communication and coordination between MMDAs and parent agencies are key areas of improvement. The evolving MECC nexus requires agencies to adopt a holistic strategy for inter-agency action. As an example, addressing the conflict between Fulani pastoralists and farmers requires coordination between local and national authorities, including with neighbouring countries, as well as collaboration between various agencies. Similarly, in order to better plan for increasing urbanization, interventions need to take place both in the rural areas to increase livelihood options locally, and in the cities to provide enhanced infrastructure, housing and services to accommodate for the increasing population. The

interventions to be put in place are not the responsibility of one agency alone, but require multidisciplinary expertise.

- Involve local communities in decision-making

Ultimately, the local communities are the ones who need to be equipped to successfully adapt to climate change and supported by government partners. The present institutional approach does not fully incorporate local communities in the decision-making process. An integrated process needs to occur between the MMDAs and local citizens that is representative. Local input and buy-in is essential for successful policy implementation.

Moreover, care needs to be taken to ensure decision-making is gender sensitive and does not reinforce community tension (e.g. the existing prejudice against the Fulani). In many cases, communities have local knowledge that has not been fully appreciated at the national level. It is indispensable that they be consulted in any proposed actions and are involved in identifying possible solutions. Communities can help implement policy, increasing local government effectiveness and build trust between institutions and local communities.

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