



TECHNICAL REPORT

Climate Change and Conflict in Ghana

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About this Brief

This report explores growing concerns surrounding climate change and conflict in Ghana. However, if sufficiently supported, Ghana exhibits resiliency factors that may be critical to the country's long-term stability. This analysis is the product of a collaborative research effort between Chemonics International and CDA Collaborative Learning Projects.

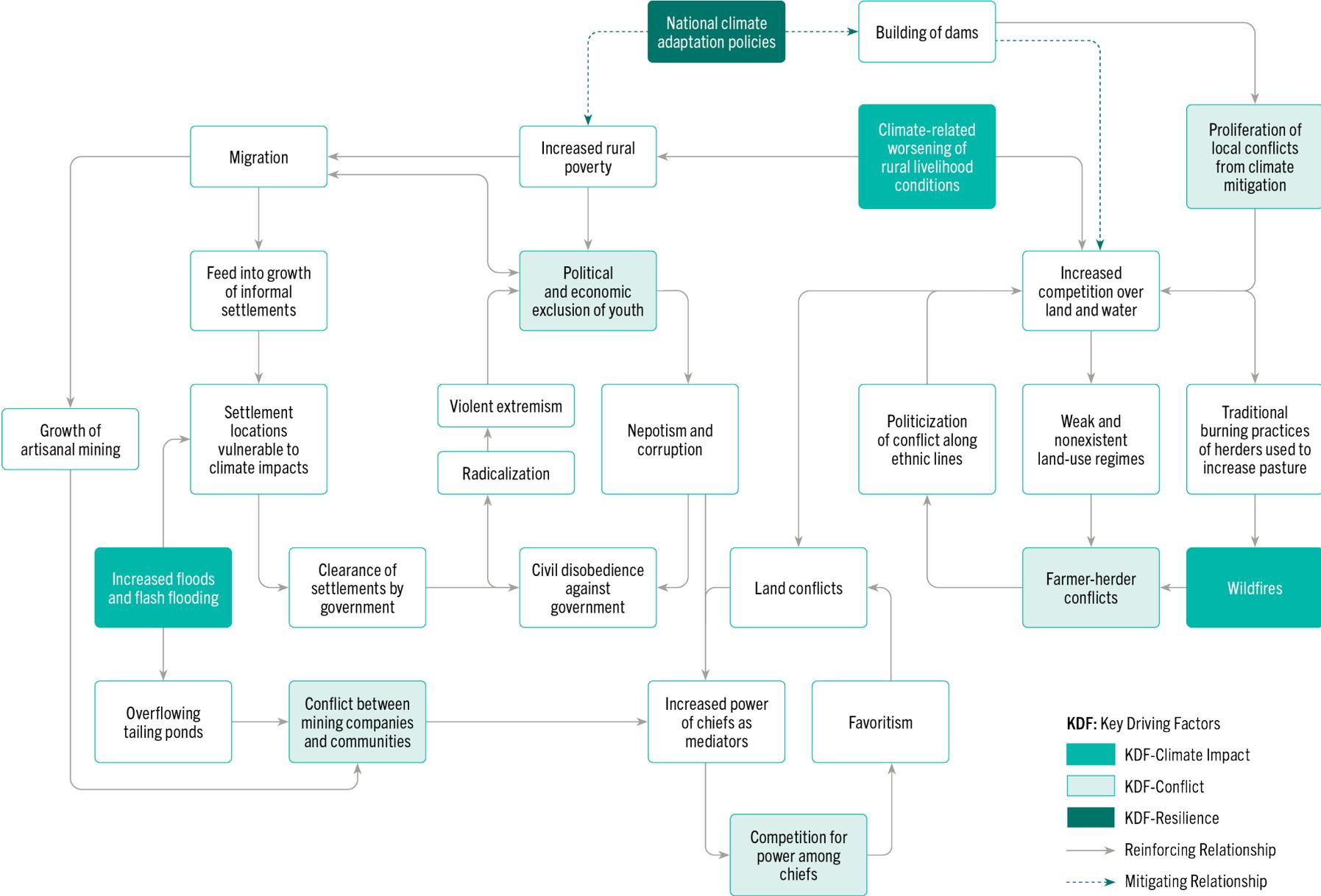
Overview

Ghana has long been one of the most peaceful countries on the African continent (Institute for Economics and Peace 2022). Strong government institutions, a tradition in the peaceful transfer of power, a vibrant civil society, and strong economic growth are significant factors contributing to this peace. However, recent climate impacts have exacerbated existing, yet mostly latent, conflict drivers such as governance and corruption accusations, farmer-herder conflict, power struggles among customary chiefs, land disputes, and the political and economic exclusion of young people, primarily through migration and resource competition pathways to conflict. Given the country's strong institutions that promote social cohesion and an existing regulatory framework for climate adaptation, Ghana is well positioned to address climate impacts and conflict together if the co-benefits of climate and conflict prevention are carefully considered. In fact, Ghana is poised to be a forerunner on the African continent by combining climate change and conflict prevention interventions. This policy paper investigates existing climate-conflict linkages in Ghana as well as capacities for climate resilience and social cohesion. It builds on a country visit organized in October 2022 by Chemonics International and the Center for Strategic and International Studies and a resultant policy paper, which was further substantiated through a two-day workshop on climate and conflict linkages in Ghana, as well as additional literature reviews.

Following a systems-based environmental peacebuilding analysis framework developed by CDA Collaborative Learning Projects, the paper comprises four sections. The first discusses climate impacts and specific vulnerabilities in Ghana; the second demonstrates how these impacts relate to existing conflict drivers; the third explores climate resilience strategies; and the final section considers factors for peace and social cohesion in the country. The systems map in Figure 1 (next page) depicts the dynamics discussed throughout this report, illustrating climate interactions with conflict feedback loops. In it, each key driving factor is propelled by a feedback loop in the climate-conflict system, a series of causal relationships. Climate resilience factors may improve climate impacts and therefore potentially weaken the impact of climate on conflict. Further research may deepen our understanding of resiliency and social cohesion factors in the climate-conflict system — even with the goal of developing leverage points, where small shifts can result in larger positive changes within the climate-conflict system.

The following analysis is intended to serve as a starting point in an ongoing examination of how climate impacts affect peace and social cohesion in Ghana with the final aim of developing policy recommendations to address climate change policy and conflict prevention in unison. Subsequent steps will be taken to deepen the analysis of factors for climate resilience in particular. In a second step to the analysis, leverage points in the climate-conflict system above will be explored in a workshop to develop entry points for systemic change in Ghana's climate-conflict system.

Figure 1. Ghana Climate-Conflict Systems Map



Climate Impacts and Other Environmental Vulnerabilities

Ghana is highly vulnerable to climate impacts. The country's average temperature has increased by around 1 degree Celsius during the last six decades (World Bank 2022), and temperatures are predicted to rise between 1.7 to 3.7 degrees Celsius by 2080 (GIZ 2019). As temperatures rise, evapotranspiration increases, and freshwater availability is expected to decline by 70% by 2080 relative to the beginning of this century (GIZ 2019). In general, Ghana's vulnerability to climate change is connected to inadequate access to essential public services such as water, sanitation, and healthcare. In addition, since a significant portion of the Ghanaian population relies on agriculture and livestock as their primary sources of livelihood, these sectors are expected to be severely affected by climate impacts.

Erratic but heavy rainfalls have also led to significant flooding events in 2007, 2010, 2012, 2017, 2018, and 2019 (Atanga and Tankpa 2021). Heavy rainfalls and flash floods erode roads disrupting food supply chains in areas where fields are still plentiful in northern Ghana (Atanga and Tankpa 2021). According to the World Bank Country Climate and Development Report for Ghana (2022), the continuous rise in sea levels affects approximately 45,000 people annually, with nearly half of the country's 550-kilometer coastline facing severe erosion. This affects the large population residing in coastal areas (GIZ 2019, 9). In the south, the fisheries sector, which has already been under pressure from illegal overfishing, is negatively affected by higher sea temperatures and industrial and agricultural runoff from floods (Adjei-Mensah and Kusimi 2020).

Ghana's economy is expected to suffer a significant decline due to climate change. A temperature increase of 1 degree Celsius would correspond to a 2% decrease in gross domestic product (GDP), while an increase of 4 degrees Celsius would result in a 17% decline in GDP (West Africa Network for Peacebuilding 2022). According to a World Bank estimate, if there is no effective climate plan in Ghana by 2050, it is possible that at least 1 million more people could be pushed into poverty while poor households could experience a 40% income reduction (World Bank 2022).

Rising temperature and erratic precipitation in northern Ghana, as well as resultant wildfires, rising sea levels, and flooding across the country, negatively impact livelihoods, food security, and poverty reduction strategies. The general climate in the high plains of northern Ghana is tropical savannah. However, due to the impacts of climate change, the region has experienced increased unpredictability and a continuous reduction in rainfall in recent years. The period between December and March, known as the drought season, is characterized by the harsh and arid conditions brought about by the harmattan winds blowing from the Sahara. Conversely, the rainy season, which runs from March to November, is marked by heavy and erratic rainfall that can lead to flooding. Droughts have negatively impacted agricultural production across the country. The traditional pastures of herding communities that used to roam the savannahs have become increasingly dry, negatively affecting the quality and quantity of livestock production while the seasonal

burning practices of pastures have resulted in wildfires (GIZ 2019). Diminishing agricultural returns have also driven deforestation as farmers seek to expand cropland.

Rural-to-urban migration increases pressures on urban centers while leaving urban communities more vulnerable to climate impacts. Seasonal rural-to-urban migration has long been an economic coping strategy, with migrants typically moving to urban areas in November, when the agricultural season ended, and returning in June to take up agricultural activities again (Rademacher-Schulz et al. 2014). Now, however, migrants — particularly young men — migrate permanently to seek employment in urban centers or the country's booming mining industries. In Accra and other coastal cities, increased migration has resulted in the growth of urban informal settlements, now home to 40% of the urban population. Many of these settlements are built in locations vulnerable to waterborne diseases and climate impacts, including flooding and sea level rise (World Bank 2022). Climate vulnerabilities in the countryside are thereby transposed to climate vulnerabilities in urban centers where they add to the economic marginalization and larger exclusion of poor urban communities.

As rural communities seek new livelihood strategies, diminishing agricultural returns have driven the growth of legal and illegal mining, which negatively impacts environmental health. Valuable minerals like gold, diamond, manganese, and bauxite have played a significant role in the country's economy. The mineral sector has been responsible for approximately 37% of Ghana's exports in recent decades and contributed around 8.4% of the country's GDP in 2011, up from 6.1% the year before (Yiridomoh 2021). Although the mining industry has supported socioeconomic development in Ghana, it continues to negatively affect environmental health (Emmanuel et al. 2018). While large-scale mining companies obtain permits to extract the minerals, smaller groups and individuals who do not often possess the requisite permits also engage in small-scale artisanal mining. In many of the country's mining communities, illegal mining activities popularly known as "*galamsey*" — largely driven by poverty and a lack of alternative income-earning opportunities — have led to severe environmental degradation, including air and water pollution. Most of these communities are in rural areas and are marked by poverty, youth unemployment, and a lack of basic services, such as infrastructure, healthcare, clean drinking water, and sanitation (Emmanuel et al. 2018).

Mining, and particularly gold mining, which dominates the sector, uses heavy metals such as arsenic and mercury stored in tailing ponds. While these ponds are volatile to begin with, the increase in climate change-related flash floods is particularly dangerous, as floods wash tailing ponds into waterways and aquifers. Illegal small-scale mining also causes the destruction of farmlands, water source pollution, and agricultural resource depletion through the release of toxic chemicals. After losing their agricultural land to illegal artisanal mining, farmers often resort to either renting land or clearing nearby forests to find alternative land, which leads to a decrease in forested areas. Moreover, mining activities produce dust that affects air quality, and the high level of noise pollution can cause hearing disabilities among those residing in and near the mining sites (Emmanuel et al. 2018). While illegal mining takes a toll on mining communities, the economic benefits and the alleged complicity of public

officials mean that it is unlikely to end soon despite government interventions (Wireko-Gyebi et al. 2020).

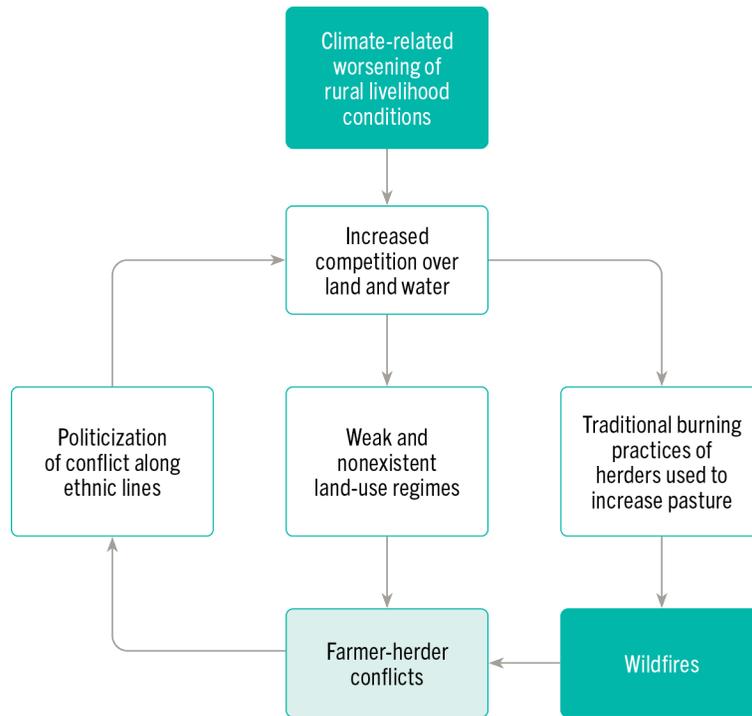
The shortage of land and water resources significantly impacts the livelihoods, productivity, learning, and health of women and girls, exacerbating existing gender-based discrimination. Droughts aggravate women's household labor and impact gender-based violence. As women, customarily responsible for procuring household water, need to walk long distances to fetch water, they are exposed to violence and health hazards (Adjei-Mensah and Kusimi 2020). Similarly, climate-driven financial strains on rural households contribute to early marriages as coping strategies for poor families (Amoako-Mensah et al. 2019). Head-load-carriers known as *kayayei* — many of whom are young girls — migrate from the rural areas of northern Ghana to the urban centers of the south to escape poverty, forced marriages, and exploitation.

Key Conflict Drivers and Their Relationship to Climate Impact

Ghana enjoyed a period of relative peace and stability following its independence in 1957 until the overthrow of its first president, Kwame Nkrumah, in 1966 and a resultant series of military regimes between 1969 and 1985 (Tsikata and Seini 2004). While outright large-scale violent conflict is extremely rare, localized small-scale, armed conflicts are not uncommon. Today, issues like chieftaincy conflicts, farmer-herder disputes, political divisions, poor government services in the north, political violence, high youth unemployment, and related, nascent violent extremism bear the most potential for violent conflict.

In the absence of well-established land-use regimes and water rights, long-standing conflicts between farmers and herders over land and water resources have intensified as climate change diminishes the quantity and quality of pasture, farmland, and freshwater resources. For example, records from the local chiefs in Gushegu district in Northern Ghana indicated that, between 2016 and 2022, there were 102 cases of farmer-herder conflicts and 17 cases of rape involving herders (Ahmed 2022). However, the number is most likely far higher, as these clashes are rarely reported. Many of the tensions between farmers and herders in Ghana arise when farmers plant crops on designated cattle pastures or transhumance corridors, leading to conflicts when cattle trample or feed on the crops (Figure 2, next page). These conflicts have often escalated into violent attacks between the two groups (Issifu et al. 2022). During the dry season, the transhumant herders, who mostly belong to the Fulbe ethnic group, move their cattle from the Sahelian zone and neighboring countries to Ghana in search of pasture and water (Aning and Aubyn 2017; Turner 2004). These seasonal movements are motivated by climate change, epidemics, conflicts, bush burning, and market forces (Dosu 2011). Crop farming and the under-regulation of grazing reserves along the valleys of streams and riverbanks have often led to the destruction of cultivated farmlands and the contamination of water bodies by livestock, resulting in conflict between farmers and herders.

Figure 2. Limited Land Access and Farmer-Herder Conflicts



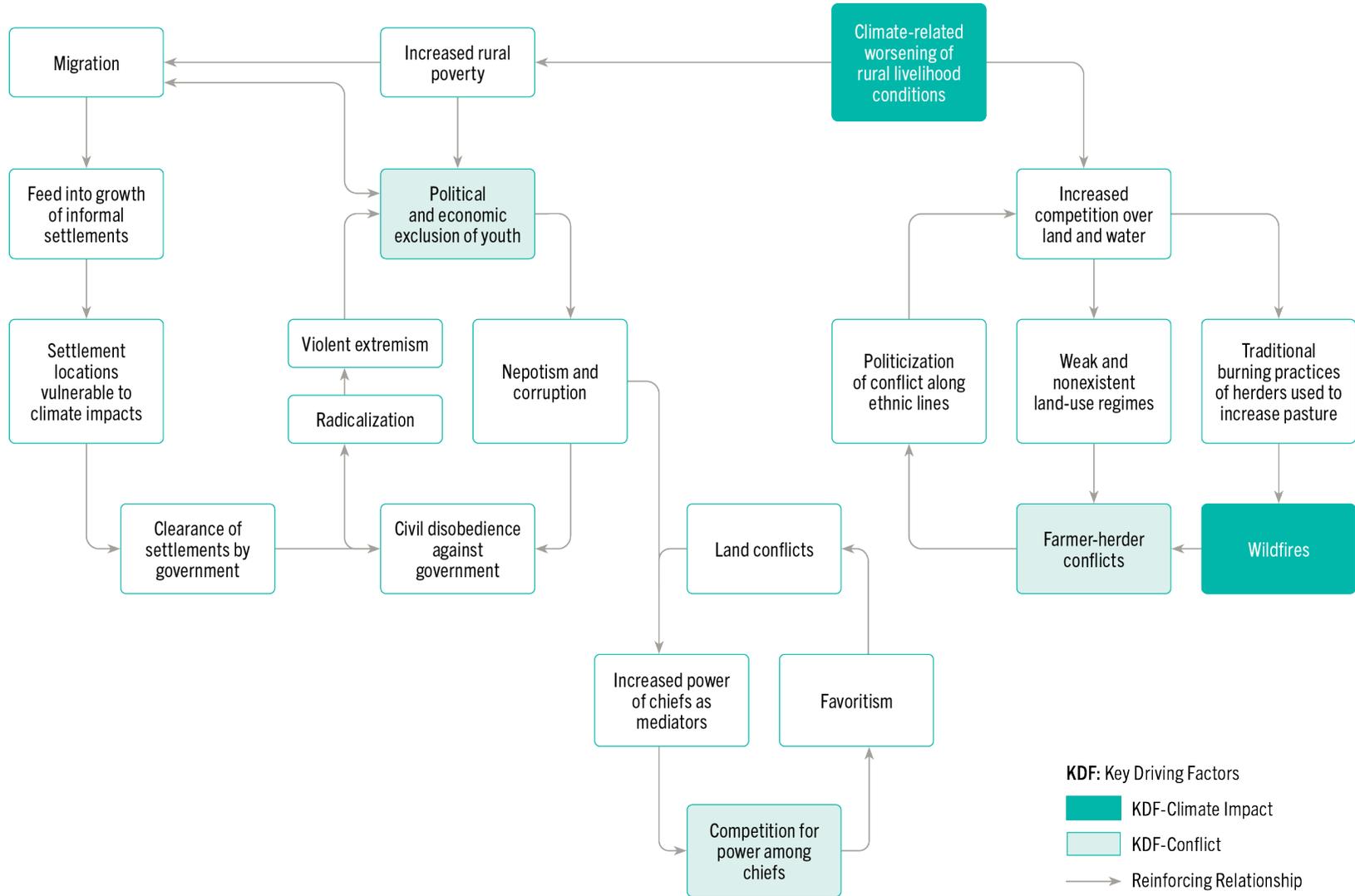
Climate change impacts on farmer-herder conflicts are being politicized along ethnic lines.

The Fulbe, who traditionally engage in transhumance, have a settled population in Ghana that continues to face social marginalization and political exclusion as a minority group. Despite living in Ghana for generations, the Fulbe, as a nomadic people, face barriers in obtaining government documents, land confiscation and eviction, and are omitted from the national census (Bukari and Schareika 2015). The Fulbe are also wrongfully stereotyped as dangerous, armed robbers, murderous, and violent (Ahmed 2022). For instance, in 2016, two non-Fulbe policemen and a civilian were arrested in a failed robbery of a Ghana Commercial Bank bullion van at Maame Krobo in the Afram Plains after disguising themselves in caftans, complete with native Fulbe footwear. After the incident, the Fulbe population felt exonerated after being stereotyped for years as criminals (*News Ghana* 2016). Harmful stereotypes and a resource-scarce mindset have contributed to the Fulbe’s social exclusion and forced them to live on the periphery of their communities without access to public services, perpetuating a cycle of prejudice, violence, and retribution (Bukari and Schareika 2015).

Climate-driven resource conflicts also fuel local power struggles in the chieftaincy system, which can have national implications.

Chiefs in Ghana hold significant political power and are part of the formal governance system under Article 270 of the country’s 1992 constitution (Helplinelaw n.d.). Competition over chieftaincy succession drives conflict in some areas of Ghana, leading to violent clashes between the supporters of hopeful ascendants (Tsikata and Seini 2004). According to *Ghana Business News* (2017), there were 352 unresolved chieftaincy conflicts across the country, with the most violent ones clustered in northern Ghana. Increased land and water scarcity further enhance the chiefs’ importance in economic decision-making, increasing competition for these leadership positions (Figure 3, next page).

Figure 3. Land Scarcity, Economic Impacts, and Political Tensions



As traditional custodians, chiefs are responsible for determining how land and resources are used in most communities, and they bear some responsibility for community development and dispute resolution. As land and water conflicts increase due to climate change, the role of local chiefs increases. Moreover, political elites frequently align themselves with either one of the conflicting parties in these conflicts and in return expect support during the election period (Tseer et al. 2022). Even on a national level, the two major political parties in Ghana, the New Patriotic Party and the National Democratic Congress, align themselves with certain ethnic groups for vote trading purposes (National Peace Council n.d). At times, local political parties hire, or form into, armed vigilante groups that intimidate and attack politically opposed groups and engage in property destruction (GCDD 2020). These conflicts have further fed into underdevelopment, poverty, and high unemployment, forcing young people to migrate (Tseer et al. 2022).

Climate change also exacerbates conflicts between mining companies and mining communities and between small-scale and industrial mining companies over land use, environmental pollution, compensation, and unfulfilled promises. Mining is bound up in conflicts over dwindling land and water resources and entangled with government corruption and securitization of the mining sector (Figure 4, next page). Illegal mining results in deforestation, depriving the local population of sources to sustain their lives and livelihoods, protect communities from increasingly changing weather patterns, and protect biodiversity (Forests and Climate Change 2021). Mining companies also divert waterways and pollute surface and groundwater sources (Taylor and Taylor 2018). As a consequence, farmers' economic activities and communities' food security are threatened, pushing young farmers to participate in mining activities or sell their lands to mines to generate income. These economic coping strategies can therefore lead to conflicts between communities and mining companies, as well as a split within communities, often along generational lines.

In 2017, the government banned small-scale mining. The newly established Inter-Ministerial Committee on Illegal Mining was responsible for overseeing the implementation of the ban and the vetting of small-scale miners. The government further deployed the military to enforce the ban through Operation Vanguard (Ghana Ministry of Defense n.d.). However, this approach was criticized for its use of excessive force, corruption, and targeting small-scale miners instead of the top officials who benefit from and enable illegal mining. After these criticisms, Operation Vanguard was dissolved in March 2020 and replaced with Operation Halt II in April 2021 (Albrecht, Aubyn, and Edu-Afful 2021). The militarization of mining conflicts has resulted in arbitrary arrests and clashes with security personnel, grievances which then further drive conflict (Asantehene 2022).

Climate-related environmental change feeds into youth unemployment and disaffection with the government. Epitomized in youth nonviolent protests in 2021 known as #FixTheCountry, Ghana's younger population's discontent with the government over corruption allegations and ineffectiveness is growing. Ghana faces a disconnect between economic growth, as measured by GDP, and employment opportunities, particularly for young people. The lack of low-skill jobs and disappearance of agricultural jobs, in part due to climate change, is a major issue, as it leaves many young people with few alternatives for

income beyond resorting to criminal activities such as armed robbery, drug trafficking, and cyber fraud (World Bank 2020). Unemployed youth are also active participants in ethnic conflicts and political violence across the country, especially during elections (Cook 2019). Compounded by the economic impacts of COVID-19, rural-to-urban migration has become a key coping strategy for youth, and especially young men. Urban areas also experience congestion, unregulated urban expansion, pressure on social amenities, environmental pollution, and an increased formation of urban slums (World Bank 2022). The redundancy of youth who are often unqualified for formal jobs has sometimes resulted in increased urban crime and social unrest (World Bank 2020). In the north, where violent extremist organizations operate on the borders with Burkina Faso and Togo, unemployed youth are also vulnerable to recruitment into violent extremist organizations.

Climate change mitigation itself is leading to localized conflicts. Infrastructure development — in particular, building dams — used to mitigate the effects of droughts and boost hydropower has become enmeshed in localized conflicts (Figure 5, next page). Communities near dams suffer from flooding when dams release water. For example, the spillage of the Bagre Dam in Burkina Faso in either August or September every year to prevent destruction to the dam has often resulted in flooding in low-lying communities in Ghana along the White Volta in Bawku Municipal, Bawku West, Garu, Binduri, Nabdam, and Talensi districts. Fishermen who rely on river tributaries are also affected by dam development, which reduces fish availability, affecting their income and food security. In urban centers, the dispersal of informal settlements from flood-prone zones has also led to conflicts between settlers and the government. Forest carbon trading schemes, such as reducing emissions from deforestation in developing countries (REDD+), in the absence of strong land and water management regimes, also risk feeding into localized land conflicts in Ghana (Forestry Commission 2016).

Resilience Factors Against Climate Impacts

Ghana has a well-developed, yet not always effective, environmental governance regime. Since the late 20th century, but accelerating dramatically in the 2010s, the country has been actively addressing environmental impacts through a wide array of government initiatives. A leader on the African continent, Ghana established its Environmental Protection Agency in 1994. To coordinate with international efforts, in September 1995, Ghana joined the United Nations Framework Convention on Climate Change (UNFCCC) and later ratified the Paris Agreement in September 2016. Other key national policies include the National Climate Change Adaptation Strategy (2012) and National Climate Change Policy (2013). These documents stress the urgency of climate adaptation and mitigation and reflect Ghana's commitment to addressing climate change (Sova et al. 2014). The Ghana Environmental Conventions Coordinating Authority, which was established to coordinate Ghana's commitment to the Rio Conventions on Desertification, Climate Change, and Biological Diversity, is responsible for managing almost 35 international environmental conventions. Its main objective is to ensure synergy among these conventions to enhance Ghana's ability to address the adverse effects of climate change (Sova et al. 2014). As a member of the African

Union, Ghana also actively cooperated with other member countries since 2009, when "Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa (AfricaAdapt)" was established. Lastly, following its ratification of the Paris Agreement in 2016, Ghana submitted its nationally determined contribution climate action plan to the UNFCCC in 2021. The plan is ambitious and focuses its mitigation priorities on energy, forestry, and waste management and its adaptation primarily on infrastructure, urban planning, agriculture, and food systems (World Bank 2022).

Despite well-established environmental governance regimes and an impressive climate mitigation plan, at the moment corruption, governance issues, and major budgetary constraints render these adaptation plans ineffective at best. In addition, the connections between climate and conflict systems have not yet been integrated into policy and programming.

On a communal level, traditional knowledge is key to mitigating climate impacts on ecosystem services. Land has a strong spiritual dimension in Ghana. Customarily, communities are only seen as stewards of the land, believing that “the living holds them in trust for their ancestors and future generations” (Awuah-Nyamekye 2019, 63). In Ghanaian culture, the chief is regarded as the earthly embodiment of the ancestors who represent the place and is considered the guardian of the land. As chiefs and elders are believed to have the support of their ancestors and gods, laws enacted by them are considered to have divine backing, ensuring obedience from their community. As a result, laws regarding the use of land and its resources in the community are often treated with reverence.

Local communities also have profound environmental knowledge. For instance, as the biggest ethnic group in Ghana, the Akan people have developed practices of assessing soil suitability, including its acidity or alkalinity, by tasting the soil (Awuah-Nyamekye 2019). The Akan also use many methods applicable to mitigating climate threats. They use a farming strategy called “Ape” where a fire line is created between the farm and surrounding bushes to prevent the spread of fire during the burning stage. Another one is called the “Proka” farming method, which involves clearing land without burning, waiting for the first rain to fall, planting crops through the cleared bushes, and using the decomposed material from the bushes as organic fertilizer for the crops. Sacred groves, known as “Kwaεbennε,” are one of the major means used by Indigenous Ghanaian communities to conserve forests (Awuah-Nyamekye 2019). These groves are small but have been protected for centuries due to their cultural and religious significance. Local taboos, norms, and belief systems are used to protect the groves, and failure to comply with them could result in social sanctions or even bad luck, diseases, or deaths. While many communities understand the relationship between ecosystem services and their livelihoods, more research is required to understand how customary methods of water purification, pollination, climate regulation, natural hazard regulation, nutrient cycles, and spiritual and recreational services can feed into climate-resilient strategies.

Factors for Peace and Social Cohesion

Since gaining independence in March 1957, Ghana has been hailed both locally and internationally as an oasis of peace and stability, as it has not experienced any form of large-scale violence or civil war. Due to its peaceful political transitions, successful general elections since 1992, and local conflict resolution mechanisms, Ghana is regarded as one of the most stable and democratic countries in West Africa, setting an example for good governance and stability on the continent (Issifu 2017).

Ghana has strong formal conflict-management mechanisms. Ghana's conflict-management system is nested at the national, regional, district, and community levels. The 1992 Constitution of Ghana promotes conflict prevention, management, and resolution through the establishment of an independent judiciary and relevant institutions like the Commission on Human Rights and Administrative Justice and the National Commission for Civic Education. The constitution also established multiple security agencies and intelligence services that function collectively at the national, regional, metropolitan, municipal, and district levels to maintain internal stability and the territorial integrity of the state (UNDP 2022). Key among these institutions are the Ghana Armed Forces, Ghana Police Service, Ghana Immigration Service, and National Investigation Bureau.

Compared to its neighboring countries, Ghana has an advantage in terms of security capacity and places a strong emphasis on developing the professional and military capabilities of its security sector. Ghana has significant defense cooperation with the United States and has engaged in joint military exercises with the United Kingdom and France. Each year, Ghanaian special operations units conduct regional military exercises with U.S. Africa Command.

Ghana has been a major contributor to regional and global peacekeeping efforts. The Ghana Armed Forces, Police Service, Immigration Service, and Prison Service have played a crucial role in maintaining peace and stability in countries such as Liberia, Sierra Leone, Sudan, Somalia, South Sudan, Mali, Haiti, East Timor, the Democratic Republic of the Congo, and Côte d'Ivoire (Aubyn et al. 2019). Furthermore, the Ghana Armed Forces have provided essential support in peacekeeping missions in Rwanda, Lebanon, and Cambodia, among others. Ghanaian forces actively collaborate across the region with troops from Burkina Faso, Côte d'Ivoire, and Togo to address transnational threats such as violent extremism, smuggling, and drug trafficking. An example of such collaboration is the Accra Initiative, which aims to prevent spillover terrorism from the Sahel and to address transnational organized crime and violent extremism in the coastal countries of West Africa.

The Kofi Annan International Peacekeeping Training Centre (KA IPTC) was established in 1998 and commissioned in 2004 to build upon and share Ghana's five decades of internationally acclaimed experience and competence in peace operations. Today, the KA IPTC offers training courses in peacekeeping to military, police, and civilian personnel in and beyond Africa. It is believed that the participation of troops in UN peacekeeping missions over the past three decades has played an important role in consolidating democratic processes

domestically. The peacekeeping experience has transformed behavior and attitudes, countering the “coup-making mentality” in the armed forces (Aubyn et al. 2019).

Ghana has shown its commitment to regional stability by accepting and providing refuge to a considerable number of individuals fleeing conflict in neighboring West African countries such as Liberia and Côte d’Ivoire. This, among other reasons, prompted the American Fund for Peace to describe Ghana as the most peaceful and stable country in Africa in 2009 (Issifu 2017). Moreover, external institutions provide support to Ghana’s government through research, assessments, and policy recommendations. In 2019, the Security Council Counter-Terrorism Committee Executive Directorate returned to Ghana to evaluate the country’s responses to terrorist threats. The Ghanaian government collaborated with the directorate on issues related to legal and criminal justice, terrorism financing, law enforcement, border management, and countering violent extremism. Ghana has made progress in taking proactive measures to respond to the nature of the terrorist threat.

The launch of the National Security Strategy in July 2021 and the National Framework for Preventing and Countering Violent Extremism and Terrorism (NAFPCVET) provide critical platforms for integrating local organizations in national security decision-making. In Ghana’s northern border, state agencies, grassroots organizations, and intergovernmental organizations actively work to address drivers and humanitarian consequences of violent extremism from neighboring countries at the grassroots level within the framework of NAFPCVET. NAFPCVET aims to prevent terrorism and minimize the threat to Ghana and its interests. It operates through four mutually reinforcing pillars: 1) Prevention measures to counter violent extremist and terrorist attacks by addressing root causes, minimizing vulnerability, and building resilience; 2) Pre-empting activities to detect and deter violent extremist and terrorist threats; 3) Protection measures to safeguard vulnerable infrastructure and spaces; and 4) Response activities to mitigate the impact and recover from violent extremist activities and terrorist incidents (National Peace Council 2019).

The government has also established national bodies for conflict prevention and resolution and has integrated formal and informal conflict-management systems, such as the formalization of chieftaincy power. The National Peace Council was established in 2011 as an independent statutory institution designed to facilitate sustainable peace through the development of mechanisms for conflict prevention, management, and resolution (National Peace Council Act 2011). Providing regional and district-level engagement opportunities for peace councils with their complementary security councils is crucial for preventing and resolving conflicts. The Regional Peace Councils and District Peace Councils have earned community trust by being inclusive and transparent, which enables them to effectively mediate conflicts related to land disputes, succession contestation, and election-related violence.

Furthermore, the National House of Chiefs is a multilevel national body — institutionalized through legislation — that encompasses traditional rulers, chiefs, and kings from different regions of Ghana and has the main function of dispute settlement. Its primary role is to exercise appellate jurisdiction in any regional chieftaincy matter, as determined by the Regional House of Chiefs. As mentioned above, while these bodies are generally seen as

peaceful and regulate conflicts, they are also a source of conflict and competition. Queen mothers are traditional women rulers in Ghana who have political access and are a legitimate source of peace, women empowerment, and socioeconomic development in local communities.

The National Peace Council promotes religious and ethnic harmony by integrating conflict-management practices from religious bodies of different faiths, such as the Catholic Church, Tijahaniya Muslims, Ahmadiyya Muslim Mission, Al-hasuna Muslims, Ghana Christian Council, Ghana Pentecostal Council, and Ghana Charismatic Council. The multi-ethnic composition of Ghanaian society and the country's enviable tradition of interfaith tolerance and cooperation, especially between Christians and Muslims, has been a key determinant of peace, harmony, and national cohesion. The council was instrumental in preventing the escalation of election violence in 2008 (Tongerren 2017) and continues to manage ongoing tensions in the Upper West and Northern Volta regions (Owusu 2017).

Access to justice is prioritized, even for poor and vulnerable populations. When citizens cannot afford legal representation in courts, the government provides pro bono attorneys who assist their defense. Through the Legal Aid Commission, the government also provides high-quality legal services to the poor and vulnerable in society in need of cost-effective justice. Nevertheless, there remain challenges that limit the efficacy of justice delivery. Key among them are the high cost of initiating or defending suits, limited and under-resourced justice institutions, the complexity of judicial processes, delays in administering justice caused by frequent adjournments, missing case dockets, slow documentation processing due to high caseloads, high perception of corruption leading to minimal public trust in the courts, and high perception of executive and political interference in the work of the judiciary (Legal Resources Centre n.d.).

National conflict-management mechanisms are complemented by the vibrant role of civil society organizations (CSOs) in peace and security. The conflict-resolution methods employed by CSOs have been effective in promoting sustainable peace due to their impartiality and cultural sensitivity by adopting a comprehensive approach that addresses the root causes of conflicts. This generally results in mutually beneficial solutions for all parties involved (Issifu 2017). A lively and open civil society provides a regular forum for practicing this harmony and for resolving disputes. Ghana's security and peace councils provide additional opportunities for conflict prevention, representing a creative, decentralized framework worthy of further exploration. Ghana's public and private media have also been a critical pillar in the peace and governance processes. The media has continually set the agenda on critical peace and security matters, sustained the discourse with the active participation of citizens, and brought pressure to bear on the government to effect change and act on critical national security issues (Aubyn 2021).

Examples of civil society groups involved in peacebuilding in Ghana are diverse and include social movements, professional associations, cooperatives, and self-help initiatives. NGOs, media organizations, community-based organizations, and faith-based organizations are also actively engaged in conflict-resolution and peacebuilding efforts across the country. Conflict-resolution methods employed by CSOs have been effective in promoting sustainable peace

due to their impartiality, cultural sensitivity, and comprehensive approach that addresses the root causes of conflicts, resulting in mutually beneficial solutions for all parties involved (Issifu 2017). Ghana's public and private media have also critically contributed to social cohesion. The media has continually set the agenda on critical peace and security matters, sustained the discourse with the active participation of citizens, and brought pressure to bear on the government to effect change and act on critical national security issues (Aubyn 2021).

Recommendations

Addressing climate and conflict linkages in Ghana, as elsewhere, will require a more integrated approach based on humanitarian-development-peacebuilding linkages. Acknowledging the complexity and interconnectedness of the issues at hand will require inductive and adaptive interventions based on systemic understandings of these linkages in the context of climate change. Ghana has the advantage of a solid conflict-management architecture. This architecture could now be used to prevent and mitigate climate-conflict linkages as well as to ensure conflict-sensitive mitigation and adaptation for the country. As such, Ghana could be a forerunner in the integration of these different mechanisms. Any efforts to address climate and conflict linkages should align with Ghanaian government priorities, which can be found in various policy frameworks such as the National Climate Change Policy Framework and Ghana's National Adaptation Plan Framework (2018), focusing on issues relating to agriculture, energy, health, ecosystems, infrastructure, tourism, water, gender, and migration.

The following recommendations aim to build the capacity of existing conflict and climate change resiliency mechanisms and promote sustainable peace in Ghana:

- **Focus on boosting disaster risk preparedness and integrating it with conflict prevention architecture.** This work could include developing/strengthening existing early warning and response systems in priority communities at the local and national levels; strengthening the emergency capacity of institutions like the National Disaster Management Organization; and improving risk communication and public risk awareness for communities. Such an early warning system could not only intersect with excellent early conflict prevention warning systems of the National Peace Council and the West Africa Network for Peacebuilding, but disaster risk reduction itself could also be used as a tool for social cohesion in which communities are rallied around and social cohesion built through disaster risk reduction.
- **Focus on incorporating local knowledge to ensure effective adaptation to climate change.** Households and communities have often employed traditional knowledge to cope with the adverse impacts of climate change, including conserving natural resources, protecting the environment, making farming decisions, predicting weather, and managing health. It would be critical to explore further the potential of how this traditional knowledge can be blended with available science to ensure a holistic approach to climate change adaptation in Ghana. In some cases, traditional methods prove to be more cost effective than foreign technology.

- **Focus on building sustainable livelihood opportunities and livelihood diversification as a transformation adaptation strategy.** For farmers, pastoralists, and those in the fisheries and small-scale mining sector, income diversification is one of the most effective strategies — livelihood skills development including entrepreneurial skills, vocational skills, and financial literacy. The diversification of livelihood strategies could ease pressures on the climate-livelihoods-conflict pathways as well as function as mechanisms for conflict prevention if developed in a conflict-sensitive manner across conflict lines.
- **Focus on water-related climate mitigation and adaptation measures to address the impacts of more extreme and erratic weather.** Target infrastructure and systems to build and maintain water-related services across society and the economy. For example, constructing and rehabilitating small dams and boreholes (especially in northern Ghana), along with improving solar irrigation systems, rainwater harvesting, and irrigation is helping farmers cultivate their land and grow crops during the dry season.
- **Strengthen local infrastructures for peace and social cohesion by bolstering their reach, influence, legitimacy, and linkages.** Most local communities have established ways of addressing conflicts and disputes through local peace committees or inter-ethnic peace committees. In some places, these structures have helped resolve farmer-herder conflicts through the payment of compensations and negotiating places for grazing/farming and water resources, among others. These peace committees should be strengthened to address local conflicts that may not require the involvement of state security agencies. In addition, there are opportunities to strengthen collaboration between local mechanisms and the National Peace Council, which could facilitate organizational learning.
- **Strengthen existing government proposals to create grazing reserves and corridor systems.** In 2017, the government established a ranching committee to manage pastoral migration. Fodder banks and ranches in the Afram plains were established as a pilot case. However, this and other initiatives have had limited coverage so far.

Other Considerations

As mentioned in the introduction, Ghana's enduring peace is impacted by climate change. As elsewhere in the world, there is no direct causality; climate change exacerbates many existing conflict drivers rather than creating novel conflict. However, given Ghana's strong conflict-management institutions, the country is extremely well situated to explore the co-benefits of low-carbon development, climate adaptation, and peacebuilding. Further research is needed to explore exactly when and how Ghana's conflict-management mechanisms hold and how well they are placed to address climate-conflict linkages. An integrative analysis of factors for climate resilience, and how these are related to peace and social cohesion, will be a next step in this particular research process. This opens the

opportunity for additional analysis of where more concrete leverage points in the climate-conflict system could be explored to develop specific programming and policy recommendations to address climate-conflict linkages in Ghana and the broader region.

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