

# Navigating Climate Change Effects on Boundary Management and Border Security in Ghana

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## Summary

This policy brief underscores the nexus between climate change and boundary management in Ghana. Climate variability, driven by natural fluctuations and human activities, leads to rising sea levels, erratic rainfall, and droughts, posing unprecedented challenges to regions along international boundaries. These challenges include the deterioration of boundary markers and heightened territorial security risks. Collaboration among stakeholders such as governments and development partners is crucial to support initiatives aimed at constructing boundary markers capable of withstanding dynamic climate patterns to safeguard Ghana's territorial integrity. The Ghana Boundary Commission (GhBC), which is mandated to determine, demarcate, and delimit Ghana's land and maritime boundaries in accordance with international law, is central to this effort. The GhBC must develop strategies to mitigate the adverse effects of climate change on the management of Ghana's territorial boundaries to ensure environmental sustainability and overall security and stability.

## Introduction

Climate change denotes alterations in long-term weather patterns stemming from either natural fluctuations or the impact of human activities.<sup>1,2</sup> This phenomenon presents an imminent and pressing threat on a global scale, with implications for various facets of society, notably the management and security of territorial boundaries. Changes in weather patterns have given rise to a recurrent surge in sea levels and a concurrent escalation in atmospheric temperatures, both of which substantially influence global migration patterns.<sup>3</sup> Projections indicate an unnerving scenario: by 2050, an estimated 200 million<sup>4</sup> people worldwide will be forcibly displaced due to climate-related factors. This impending crisis will have implications on the management of international boundaries, including border security, necessitating a re-evaluation of existing strategies and policies. Climate-induced

changes in weather patterns, coupled with rising sea levels, create multifaceted challenges that transcend borders, impacting international cooperation, human rights,<sup>5</sup> forced migration, and national security.

Considering available statistics, the scale of this challenge is overwhelming. Since 2008, an annual global average of 21.7 million individuals have been displaced due to climate-related factors. In 2010, more than 100,000 people were affected by floods in northern Ghana.<sup>6</sup> In similar flooding events in 2015, approximately 53,000 people were affected, causing US\$55 million in damage and losses to housing, transportation, water, and sanitation facilities, with estimated reconstruction costs at US\$105 million.<sup>7</sup> Five persons got drowned in Northeast Region in 2021, and more than 500 homes were flooded in Greater Accra Region in 2022. In 2023, heavy rains, coupled with a controlled spillage of the Akosombo and Kpong hydroelectric dams displaced approximately 26,000

individuals, destroyed homes, farms and other social infrastructure, including hospitals and schools.<sup>8</sup>

Given the gravity of these circumstances, it is imperative to analyse the challenges climate change pose to boundary management and border security. This policy brief explores the implications of climate change on boundary management and border security and proffers policy recommendations to address the challenges.

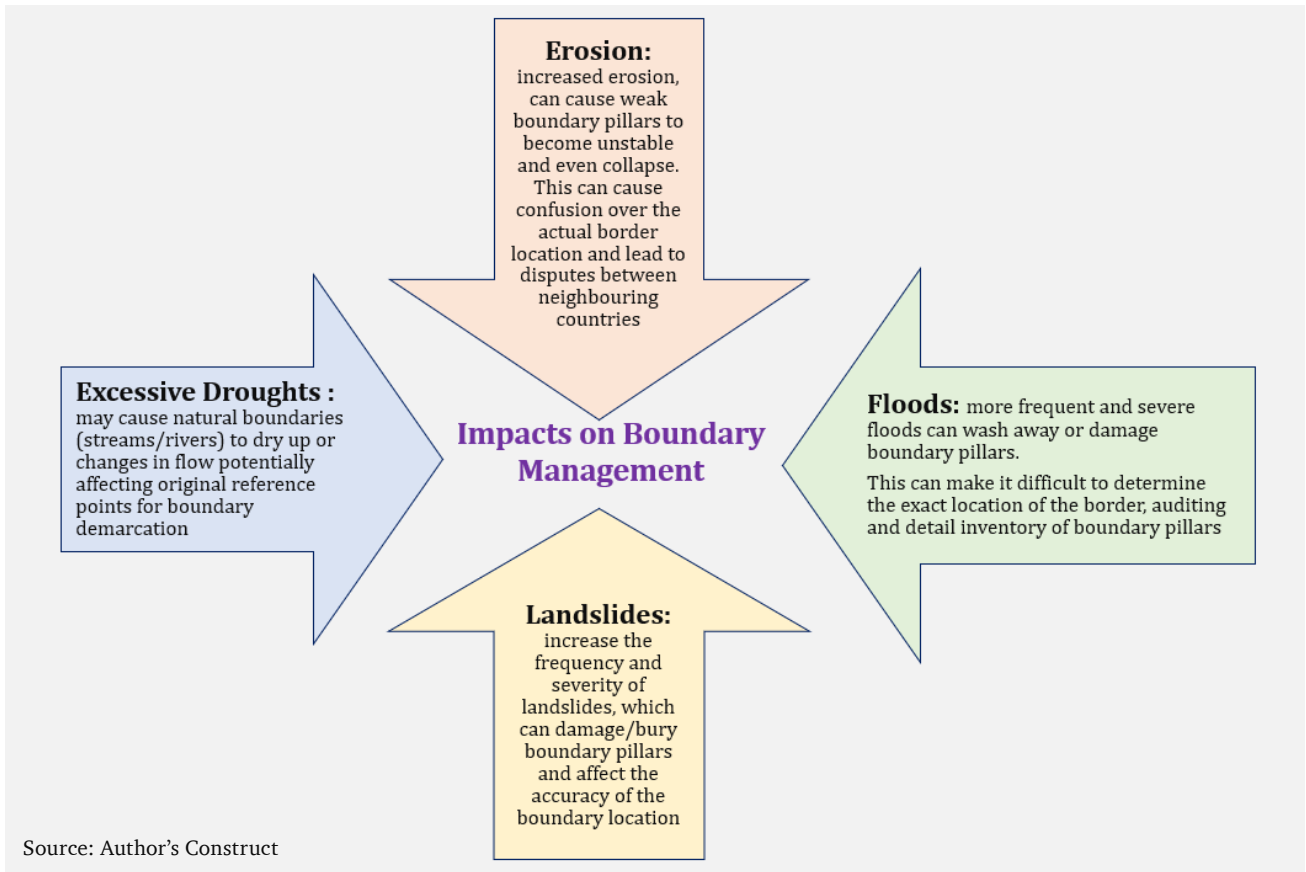
### Impact of Climate Change on Boundary Management

Globally, efforts have been made to deal with the challenges posed by climate change.<sup>9</sup> Amidst these endeavours, the repercussions on boundary management loom. International land boundaries in most cases trace their course along watercourses.<sup>10</sup> The frequent changes in these features, wrought by climate change, such as floods, landslides, and erosion, alter boundary markings as illustrated in

Figure 1. Border regions in Ghana such as Volta, Upper West, and Upper East are prone to climate change-induced flooding, disrupting several reaffirmation exercises by the GhBC, particularly those aimed at the “identification, auditing, and detailed inventory of Ghana’s international boundary pillars”.<sup>11</sup> During a joint land boundary reaffirmation exercise by Ghana and Togo it was discovered that River Aka, flooded at the time, had submerged boundary Pillar 3 and Pillar 4. Consequently, the reaffirmation exercise was postponed until the subsequent dry season, as the entire area was impassable during the rainy season.<sup>12</sup>

The excessive droughts (refer to Figure 1), particularly in semi-arid regions,<sup>13</sup> have adverse effects on land boundary markers and pillars. Watercourses serving as natural boundaries in these regions are likely to dry up or experience significant changes in flow.<sup>14</sup> In view of this, the original reference points for boundary demarcation may be shifted, and no longer be recognised. This has the tendency to result in

Figure 1: Impact of Climate Change on Boundary Management



disputes over the precise location of the boundary markers. Besides, excessive droughts can reduce the vegetation cover, causing soil erosion and landslides during heavy rainfalls. Erosion gradually displaces or buries boundary markers, leading to inaccuracies in land delineation.

Given the traditional approaches by which African states handle international boundaries, neglecting the impacts of climate change potentially leads to the destruction or displacement of boundary markers if not safeguarded. The lack of visible boundary markings, apart from legacy documents, maps, and georeferencing data,<sup>15</sup> gives rise to boundary disputes. Consequently, it is imperative to integrate climate change considerations into boundary management to mitigate these risks.

### **Implications of Climate Change on Border Security**

In the Upper West, Upper East, and North-East regions of Ghana, threat of flooding persists, driven by intensified rainfall patterns and the overflow of Burkina Faso's Bagre Dam reservoir.<sup>16</sup> The climate-induced events in 2018 resulted in significant human and environmental tolls, claiming 17 lives, devastating 75,607 farms, destroying 1,067 homes, and contaminating 43 wells in local communities.<sup>17</sup> These calamities not only jeopardize human lives but also heighten competition and conflicts over natural resources beyond international boundaries. Illustratively, the protracted dispute among Ethiopia, Sudan, and Egypt over the Grand Ethiopian Renaissance Dam exemplifies how climate-induced water scarcity exacerbates geopolitical tensions.<sup>18</sup> Additionally, a water-related conflict between Cameroon and Chad in 2021 resulted in 22 casualties and displaced 100,000 individuals, highlighting the impact of climate change on border security.<sup>19</sup> Addressing these challenges and fostering international cooperation is imperative in mitigating discord and instability in regions where water resources are increasingly contentious and scarce.

Climate change has increased migration flows, causing people to abandon their homes and travel across national borders. This displacement often sparks conflicts over such essential resources as water and food, resulting in the high number of 'climate refugees'.<sup>20</sup> Transhumant communities,<sup>21</sup> whose livelihoods are tied to natural resources such as water and grazing lands, are also vulnerable to the effects of climate change. Climate change disrupts their traditional migratory patterns due to dwindling grazing lands and water scarcity.<sup>22</sup> Herders and their livestock are forced to move across international boundaries due to changing weather patterns, introducing additional complexities to border security.<sup>23</sup> The diminished availability and quality of grazing lands further leads to a decline in livestock productivity, impacting the livelihoods of both border and transhumant communities.<sup>24</sup><sup>25</sup> This underscores the need for a comprehensive and proactive approach to address the evolving challenges at the intersection of climate change and border security.

### **Holistic Approach to Effects of Climate Change on Boundary and Border Security**

In tackling the consequences of climate change on boundary management and border security, an exhaustive strategy becomes paramount, encompassing environmental, social, and economic considerations. This necessitates a concerted effort to foster collaboration not only at the regional and sub-regional levels but also at the grassroots, effectively addressing both existing and emerging challenges along borders. Concurrently, it demands the optimisation of procedures involved in delimiting, demarcating, and reaffirming interstate boundaries.<sup>26</sup>

As a proactive response to the challenges posed by boundary management, the African Union Border Programme (AUBP)<sup>1</sup> advocates the establishment and strengthening of national boundary commissions of member states.<sup>27</sup> These commissions are mandated to,

<sup>1</sup> Development partners, especially GIZ, have substantially supported the AUBP, resulting in the successful delimitation and demarcation of over 6,000 kilometres of African boundaries. Going beyond financial and technical assistance, GIZ has played a pivotal role in fostering critical infrastructure development and implementing boundary reaffirmation and delimitation programmes in Ghana.

and are instrumental in, the delineation, demarcation, and maintenance of boundaries. Aligned with this continental initiative, the Economic Community of West African States (ECOWAS), at the subregional level, emphasises the importance of prioritising climate financing as a strategic tool to mitigate the impacts of climate change. Member states are urged to explore innovative financing strategies to address the adverse effects of climate change.<sup>28,29</sup>

Adopting an approach that integrates climate change and environmental considerations into boundary management and champions regional cooperation, emerges as a sustainable strategy for addressing the nexus of climate change impacts and border security.

To conclude, the following proposals are made:

- **Support National Boundary Commissions:** The Government of Ghana should prioritise supporting the GhBC, ensuring its capacity to collaborate and engage with neighbouring countries in the delineation and reaffirmation of the nation's land boundaries.
- **Involve Development Partners:** Development partners, international governmental organisations, and relevant stakeholders are admonished to support the GhBC in the construction of climate-resistant boundary pillars.
- **Conduct Community-led Conservation Initiatives:** Champion and encourage grassroot conservation initiatives that empower communities to safeguard natural resources in close proximity to boundaries. This might involve endorsing initiatives such as tree planting and the promotion of sustainable agricultural practices that counteract the adverse impact of human activities.
- **Undertake Community Sensitisation Programmes:** Roll out community engagement and sensitisation initiatives designed to heighten awareness regarding the significance of preserving boundary integrity. These programmes should

emphasise the role of local communities in safeguarding boundary markers and pillars.

- **Strengthen Border Security:** At the core of this strategy lies the strengthening of border management and security measures, prioritising the well-being of border communities grappling with the impacts of climate change. This entails providing essential needs such as clean drinking water. These initiatives are significant, not just for the welfare of the communities but also for cultivating stability and harmony within the border regions.

## Conclusion

This policy brief emphasises the need to acknowledge and promptly tackle the adverse impacts of climate change on both boundary management and border security. The effects of climate change heighten the susceptibility of border communities, exposing them to increasingly harsh weather conditions, heightened migration pressures, and conflicts arising from competition over natural resources between nomadic and resident border populations.

Climate change substantially threatens the integrity of state boundaries, as the increased frequency and severity of such weather-related disasters as floods, landslides, and erosion jeopardise the stability of boundary markings. The disruptive influence of climate change affects the operations of the GhBC, especially in affirmation exercises.

This situation warrants immediate attention. Considering these detrimental effects, it is imperative for governments to prioritise the development of border management and security strategies, including the construction of climate-resilient border markers and pillars, complemented by a concerted effort to foster international cooperation.

## Endnotes

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## About the Ghana Boundary Commission

The Ghana Boundary Commission (GhBC) is a state agency mandated to determine, demarcate and delimit Ghana's international land and maritime boundaries in accordance with accepted principles of international law. Accordingly, the Commission is responsible for the settlement of boundary disputes between Ghana and neighbouring countries. The mandate of the Commission, therefore, has a wider implication for safeguarding the territorial sovereignty of Ghana at all times. To this end, the GhBC collaborates with both local, regional and international actors in implementing the mandate.

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