



**INSTITUTIONAL AND POLICY FRAMEWORKS
UNDERPINNING IGAD CLIMATE DIPLOMACY AND
THE MANAGEMENT OF CLIMATE-INDUCED
CONFLICTS IN THE HORN OF AFRICA**

^{1*}Metrine Kawa Nafula, ²Fred Ochieng, & ³Douglas Ogolla

¹Master of International Relations, Department of International Relations, Kenya
Methodist University, Kenya

^{2&3}Department of International Relations, Kenya Methodist University, Kenya

*Email of the Corresponding Author: njerib990@gmail.com

ABSTRACT

Purpose of the Study: To examine how IGAD's institutional and policy frameworks support climate diplomacy and the management of climate-induced conflicts in the Horn of Africa.

Statement of the Problem: Despite established regional climate-security frameworks, gaps remain in translating early warning, policy commitments, and regional coordination into effective local conflict-management action.

Methods: The study used a mixed methods design in Kenya and Somalia. Quantitative data were collected from 176 respondents, while qualitative data were obtained through interviews, focus groups, observation, and document analysis.

Results: Most respondents recognized IGAD's early-warning systems, policy frameworks, dialogue structures, cross-border cooperation, and institutional responsiveness. However, only 26.14% found early-warning information useful for local planning and 11.93% considered climate security adequately integrated into regional peace and security. Institutional and policy frameworks significantly predicted conflict-management outcomes, $R^2 = .317$, $\beta = .563$, $p < .001$.

Conclusion: IGAD has a strong regional institutional architecture, but its effectiveness is weakened by limited localization, weak early warning-to-action linkages, and inadequate climate-security integration.

Recommendation: IGAD should strengthen local implementation, early action mechanisms, institutional coordination, and integration of climate security into regional peace and security planning.

Keywords: IGAD, climate diplomacy, climate security, institutional frameworks, policy frameworks, early warning, climate-induced conflict, Horn of Africa

INTRODUCTION

Climate change is increasingly embedded in international security debates because its impacts can intensify livelihood insecurity, displacement, food and water stress, and competition over natural resources in settings already affected by fragility. The relationship is not deterministic: climatic shocks interact with governance quality, social inequalities, political exclusion, conflict histories, and institutional capacity to influence whether environmental pressure produces cooperation, adaptation, or violence. This conditional understanding has become central to contemporary climate-security research and policy, particularly in regions where livelihoods are strongly dependent on rain-fed agriculture and pastoral systems (Intergovernmental Panel on Climate Change [IPCC], 2022; Sändig *et al.*, 2024).

The Horn of Africa presents a particularly important case because climate hazards routinely cross administrative boundaries while pastoral mobility, trade, river systems, and social networks connect communities across national borders. Regional governance is therefore necessary where climate risks cannot be contained within one state and where unilateral responses may transfer rather than resolve pressures associated with water, pasture, mobility, and displacement. The African Union Climate Change and Resilient Development Strategy and Action Plan consequently emphasizes coordinated, multilevel responses to climate risks, while IGAD has progressively developed specialized climate, peace, and security institutions to operationalize such regional cooperation (African Union, 2022; Intergovernmental Authority on Development [IGAD], 2023).

Background of the Study

At the global level, the focus on climate security governance has evolved from climate change as an environmental issue, to the implications of climate change for human security, livelihoods, peacebuilding, displacement, development and political stability. Climate hazards are not necessarily drivers of conflict, but rather when combined with socioeconomic inequality, livelihood dependence, governance capacity, pre-existing tensions, and the capacity of institutions to anticipate and manage climate risks (IPCC, 2022). The awareness has resulted in the incorporation of climate adaptation into disaster risk reduction, anticipatory action, conflict prevention and peacebuilding, rather than as distinct policy systems for environmental and security concerns (IPCC, 2022; United Nations Climate Security Mechanism [UNCSM], 2024). Climate diplomacy has thus grown more focused on the institutional frameworks for sharing information, aligning policies, raising resources and jointly addressing climate-related transboundary risks.

Climatic exposure is especially relevant for areas where it overlaps with political fragility, livelihood insecurity, forced mobility, and natural resource competition, as the climate security agenda is growing. Climate change is not directly causing violent conflict, but rather the ways in which climate shocks exacerbate vulnerabilities and governance gaps (IPCC, 2022; UNCSM, 2024). In this context, regional institutions play a crucial role as many climate-related security issues are linked to shared ecosystems, mobility across borders, river basins, pastoral corridors and markets, which are not effectively addressed

by unilateral national responses. This has created the institutional ability to coordinate early warning, preventative action, resource governance and policy implementation as a critical component of climate security governance.

The African Union has been making efforts to institutionalize these priorities at the continental level through the development of the African Union Climate Change and Resilient Development Strategy and Action Plan 2022–2032, which provides a continental framework for coordinated climate action and resilient development across the continent (African Union, 2022). The strategy emphasizes strengthening governance, institutional capacity, policy coherence, climate information, adaptation and cooperation at different levels of government, recognizing that the implementation of continental commitments at the national and subnational level needs the capacity of institutions to act on climate change. RECs are thus situated in a crucial space between continental climate policy and Member State action, where they can assist in coordinating the transboundary nature of climate risks (African Union, 2022). The institutional logic is particularly important in the Horn of Africa region, where droughts, floods, food insecurity, migration, pastoral mobility and resource pressures are all transboundary in nature.

The link between climate and security has become more apparent in the policy discourse in the region of the Horn of Africa. ICPAC's regional assessment points to the fact that climatic and environmental pressures can have multiple impacts on peace and security, and that the impact of climatic and environmental risks can be different in different places and institutions (ICPAC, 2022a). Thus, improved climate forecasting is not sufficient for effective regional climate governance, but it is also required to have linkages between climate knowledge and political decision making, conflict prevention, livelihood protection and coordinated institutional response. This has increasingly broadened the scope of IGAD's relevance from development cooperation to a more holistic function in climate resilience and regional security.

The institutional structure of IGAD has evolved from being an initial drought and development organization to a regional organization with mandate on peace and security, climate resilience, economic cooperation, conflict prevention and regional integration. The IGAD Regional Climate Change Strategy and Action Plan 2023-2030 provides a regional policy framework to address climate vulnerability, and recognizes that responses need to be multi-governance and multi-sectoral (ICPAC, 2022b; IGAD, 2023). The IGAD Climate Adaptation Strategy 2023-2030 also offers a coordinated regional response to build adaptive capacity, and explicitly calls for a whole-of-society approach to resilience (IGAD, 2023). These strategies together reflect a shift from project interventions to a more institutionalized approach where climate adaptation, resilience, knowledge building, coordination and implementation can be done at the regional level.

One of the key elements of this architecture is the Conflict Early Warning and Response Mechanism (CEWARN), a regional data-based mechanism for conflict prevention and response that was set up in 2002. Currently, CEWARN integrates economic, social, governance, security and environmental data and links to decentralized data collection by both governmental and non-governmental data collectors with regional analysis and

response coordination (Aeby, 2023, 2024; IGAD, n.d.). It is currently institutionalizing its objectives as: integrating decision support tools into policy-making and integrating early warning and response into local, national and regional governance processes. CEWARN is therefore an important institutional link between the detection of climate-sensitive conflict risks and the political and administrative processes in which preventive interventions are likely to take place.

ICPAC's technical role of producing regional climate forecasts and climate services for preparedness and decision-making in the Greater Horn of Africa is a positive aspect of IGAD's early warning architecture. This move towards anticipatory action has been gathering momentum, and is reflected in the IGAD Regional Roadmap for Anticipatory Action, which calls for harmonized, coordinated and scaled-up approaches that can avert humanitarian crises from becoming humanitarian disasters, before they even happen (IGAD, 2024). The growing emphasis on anticipatory action is institutionally relevant as it is not only about the quality of the forecast, it is also about the governance processes that need to be established to move from information to financing, preparedness, livelihood protection and preventive action. In this respect, the impact of regional climate diplomacy is increasingly reliant on the ability of information produced at the regional level to catalyse decisions at the national and local institutional level in a timely manner.

The regional architecture also applies to pastoral mobility and transboundary governance of natural resources. The IGAD Protocol on Transhumance provides a mechanism to support the safe and secure movement of pastoralists and livestock across borders and to improve cooperation on access to water, pasture, livestock health and shared resources (IGAD, 2021). These arrangements acknowledge mobility as a key livelihood and climate adaptation strategy, and not just a security issue, especially in dryland settings where natural resources vary significantly across space and time (Derbyshire *et al.*, 2024; Sändig *et al.*, 2024). Empirical evidence from the Horn of Africa borderlands also demonstrates how pastoral mobility can contribute to livelihood resilience, and how poorly coordinated borders, insecurity, access restrictions and lack of recognition of customary institutions can create an arena of contestation, further highlighting the need for cooperative regional resource governance (Suliman *et al.*, 2024).

But, the fact that there are well-established regional institutions does not imply that they are implemented well. Derbyshire *et al.* (2024) demonstrate that the perceptions of drought risk technically and administratively do not always match with the knowledge, decision making, and livelihoods of pastoral communities in northern Kenya. Aeby (2024) also concludes that operationalization challenges, organizational limitations, and the lack of integration of non-state actors into intergovernmental response mechanisms limit the potential of civil society in supporting African conflict early warning systems. The findings reveal a disconnect between institutions that produce climate and conflict information and institutions that have the capacity for governance, political will and local connections to take timely action in response to the information.

A gap between warning and action has been increasingly identified in IGAD institutional development. The IGAD Council of Ministers in December 2022 agreed to create a

Regional Climate Security Coordination Mechanism to build Member States capacity to anticipate, prevent and mitigate climate-induced conflict and displacement, with the mechanism being set up as a multilateral platform in 2023 to link IGAD Member States with the African Union and the United Nations (IGAD Council of Ministers, 2022; IGAD, 2023). The United Nations Climate, Peace and Security Hub for the Horn of Africa was then an important enabler to support the strengthening of the climate security analysis, policy coordination and institutional action in the region. The developments demonstrate the increasing recognition of regional actors of the climate security as an institutional coordination challenge, which needs to be tackled through linkages between environmental, humanitarian, development and peace and security frameworks, and not parallel interventions.

But, recent events in the region indicate that the coordination problem is not solved. During the Regional Validation Workshop on Climate, Peace and Security in April 2026, it was recognized that while there had been progress in the Regional Climate Security Coordination Mechanism and regional communities of practice, responses were still fragmented, and climate, peace and security continued to work through partially parallel systems (ICPAC, 2026). The communiqué called for more policy coherence, institutional coordination, gender-responsive action and direct linkages between climate-conflict early warning, anticipatory action, long-term development planning and peacebuilding. The issues remain several years after the development of the coordination architecture, and institutional effectiveness should not only be assessed by the existence of regional structures, but by the extent to which they are utilized to shape policy implementation and preventive action.

The current regional investments in conflict early warning is even more explicitly a "implementation imperative". The SECURES-IGAD project, which aims to strengthen the capacity of early warning, crisis prevention and link between analysis and decision makers, was launched by IGAD and the African Development Bank in June 2026, following institutional recognition of the value of warning systems in terms of the action they trigger. The investments show that IGAD's institutional challenge has progressed from the development of information systems to strengthening the decision-making process that facilitates regional analysis to provide coordinated preventive responses. The policy relevance is to make sure that technical capacities are institutionally linked to the agencies and local actors that have the means and mandate to intervene.

These institutional aspirations can be assessed in the Kenya-Somalia borderlands. The pastoral and agro-pastoral livelihoods in northern Kenya and southern Somalia are very climate-sensitive, and climatic variability can add to mobility, insecurity, resource competition, weak service provision and uneven state presence to increase vulnerability. Regional institutions can contribute by facilitating the development of common rules, sharing of resources, information sharing, and dialogue between national governments and pastoral communities in the borderlands, where grazing systems, access to water, kinship networks, trade, displacement and pastoral mobility may cross formal boundaries (Derbyshire *et al.*, 2024; Sulieman *et al.*, 2024). The effectiveness of these regional

arrangements will depend on the extent to which regional level institutional arrangements are "domesticated" and connected to local governance where climate-related pressures are felt and managed.

The gap between regional institutionalization and the implementation of policies in practice is thus the central research problem. Although IGAD's climate strategies, adaptation frameworks, early warning systems, climate services, mobility protocols, institutional coordination and cross-border governance arrangements are still evolving, the literature and current regional policy assessments point to gaps in institutional coordination, localization, early action, and integration of climate-security policy (Aeby, 2024; Derbyshire *et al.*, 2024; ICPAC, 2026). Although existing literature has yielded some insights on early warning, pastoral adaptation, civil society engagement, climate services, and cross-border mobility, these are generally explored separately, and there is limited empirical evidence on the functioning of IGAD's institutional and policy architecture as a coherent climate diplomacy framework and the impact of strengthening institutional and policy frameworks on climate-induced conflict management. This study addresses this gap by conducting an empirical study of the institutional and policy frameworks that facilitate IGAD's climate diplomacy and how this is connected to the management of climate-induced conflict in the Horn of Africa.

LITERATURE REVIEW

The literature on climate diplomacy in the Horn of Africa lies at the intersection of regional governance, climate-security research, conflict early warning, pastoral mobility, and environmental peacebuilding. A consistent theme across this literature is that climate risk becomes politically consequential through institutions: governments and regional organizations determine how information is produced, how warnings are communicated, how resource access is negotiated, and whether preventive action occurs. The review therefore considers empirical evidence on the institutional dimensions of IGAD climate diplomacy before anchoring the analysis in Liberal Institutionalism Theory (Aeby, 2023; IPCC, 2022).

Empirical Literature Review

Empirical evidence indicates that IGAD has established a relatively comprehensive architecture for climate governance, resilience and conflict prevention at the regional level. IGAD Regional Climate Change Strategy and Action Plan 2023-2030 (ICPAC, 2022b) highlights the importance of institutional coordination, mainstreaming, climate knowledge, capacity development and implementation arrangements for effective regional climate action. The IGAD Climate Adaptation Strategy 2023–2030 builds on this architecture, offering a coordinated regional approach to build resilience and adaptive capacity of IGAD Member States through a whole-of-society approach (IGAD, 2023). These frameworks illustrate the growing institutionalization of climate diplomacy in the Horn of Africa, with common approaches and implementation mechanisms, rather than relying on ad hoc diplomatic interactions.

One of the more mature elements of this regional architecture is early-warning systems. CEWARN is a decentralized system that connects regional conflict analysis to national institutions, civil society organizations and local information networks, while ICPAC offers specialized climate monitoring and forecasting services for the Greater Horn of Africa (IGAD, n.d.; Aeby, 2024). Aeby (2024) notes that the African continent's overall experience with conflict early-warning systems has been a strong example of institutional development in terms of information collection and analysis, but civil society engagement and the translation of warnings into action is uneven. This indicates that institutional effectiveness is not just about the generation of warning information but also the robustness of the national and local institutional frameworks that enable preventive responses (Aeby, 2024).

This is confirmed by research in northern Kenya, which shows that there is a difference between early warning and early action. Derbyshire *et al.* (2024) reported that drought early-warning systems have become more sophisticated, but are not necessarily well-suited to pastoral knowledge, livelihoods, and pastoral coping with uncertainty. Hassan *et al.* (2024) also show that pastoral communities have indigenous warning systems, informal support networks, preventive practices, and locally embedded coping mechanisms that are not always included in external anticipatory-action systems. The evidence therefore indicates that the effectiveness of climate information should not be judged only on its forecasting ability, but also on its accessibility, local relevance and capacity to elicit timely institutional responses (Derbyshire *et al.*, 2024; Hassan *et al.*, 2024).

This concern has been a growing influence on IGAD's shift towards anticipatory action. The IGAD Regional Roadmap for Anticipatory Action aims to harmonize and scale up anticipatory action across IGAD Member States through strengthening the link between forecasts, preparedness, coordination and intervention (ICPAC, 2024). The Kenya Anticipatory Action Roadmap 2024-2029 also describes early warning, early action, coordination, governance, financing, research, and monitoring as interdependent pillars, not as separate interventions, at the national level (ICPAC, 2024). The developments underscore the empirical evidence that the usefulness of regional climate information is highly dependent on institutional arrangements that can turn forecasts into coordinated decisions and action.

The second empirical theme is on governance of cross-border cooperation and pastoral mobility. Climate adaptation is often linked to regional governance of movement, as pastoral livelihoods are often reliant on access to water, grazing, markets, and mobility corridors that span across national boundaries (Musau, 2021; Sulieman *et al.*, 2024). The IGAD Protocol on Transhumance offers an institutional mechanism for safe and orderly transhumance mobility and aims to enhance cooperation, conflict prevention and harmonization of approaches of Member States on pastoral movement (IGAD, 2021). However, as Musau (2021) shows, the implementation of the protocol can be hindered by insecurity, proliferation of small arms, divergent national approaches, and weaknesses in coordinated cross-border governance.

Other borderlands in the Horn of Africa region also show the need for flexible and cooperative mobility governance. Despite the challenges of insecurity, movement restrictions, livestock theft, and competing territorial claims, pastoral mobility continued to cross the Sudan–Ethiopia border, and customary pastoral leaders were found to be important facilitators of transboundary mobility (Sulieman *et al.*, 2024). Their findings align with the need for cooperative land-management arrangements that acknowledge customary rights and cross-border livelihood realities, which are not necessarily based on restrictive territorial approaches (Sulieman *et al.*, 2024). This evidence is important for IGAD climate diplomacy because it shows that regional mobility frameworks are more likely to contribute to conflict prevention if formal institutions do not replace but complement locally legitimate governance systems.

Local legitimacy is also a key concept in current environmental peacebuilding research. While the effects of natural resource governance on peace are complex and contingent on local political and institutional contexts, Johnson *et al.* (2021) identified four pathways through which NRG can promote peace: better livelihoods, better institutions, intergroup cooperation, and inclusive management arrangements. Krampe *et al.* (2021) also highlight the role of cooperation, institutional development, and better public service delivery in sustainable peace as mechanisms by which natural resource governance can play a role. These findings question top-down governance for climate-security, as they show that institutions work better when they involve affected communities in meaningful ways in resource-management and conflict-prevention processes (Johnson *et al.*, 2021; Krampe *et al.*, 2021).

This local dimension is even more emphasized in recent environmental peacebuilding research. Local knowledge, local identities, social structures and institutional relationships are important factors that can either foster cooperation or exacerbate inequalities and exclusion in the implementation of environmental interventions, according to Sändig *et al.* (2024). They also warn against deterministic interpretations, where climate stress is automatically interpreted as leading to violence; political marginalization, resource governance, livelihood systems and institutional arrangements often shape whether environmental pressures result in competition or cooperation (Sändig *et al.*, 2024). This is especially important in pastoral borderlands where formal regional institutions are constantly in dialogue with customary institutions and local resource-management systems.

Another empirical issue that has been a constant worry is institutional coordination. Climate-security risks often have multi-sectoral impacts, including on environment, water, livestock, migration, disaster management, peacebuilding and security institutions, with significant coordination needs at regional and national levels (IGAD, 2022; UNCSM, 2024). The establishment of a Regional Climate Security Coordination Mechanism (RCSCM) by IGAD was a recognition that there is a need for improved institutional linkages between CEWARN, ICPAC, Member State institutions and international partners for effective support to peace and security decision making processes. The ongoing focus on coordination in the regional climate, peace and security process also suggests that

fragmentation is a substantive institutional problem despite the growing scale of regional policy frameworks (ICPAC, 2026).

The involvement of civil society also illustrates the gap between institutional design and operation. CEWARN's decentralized approach formally opens up opportunities for CSOs and community organizations to participate in data collection, analysis, early warning and response, which may enhance local knowledge and institutional legitimacy (IGAD, n.d.). Despite the expected benefits of civil society involvement in African conflict early-warning systems, Aeby (2024) identified a number of challenges, including capacity constraints, political sensitivities, funding limitations, and operational integration issues. The focus is on the extent to which institutions have a real influence on warning and response activities, not whether they exist formally (Aeby, 2024).

The overall picture from the empirical literature is that IGAD has developed significant capacity in climate forecasting, conflict early warning, regional policy development, anticipatory action, pastoral mobility governance and cross-border cooperation. Meanwhile, weaknesses in localization, institutional coordination, national implementation, civil society participation, and the translation of regional information into preventive action have been consistently identified (Aeby, 2024; Derbyshire *et al.*, 2024; Hassan *et al.*, 2024). Previous research has focused on the individual institutional elements of early warning, pastoral mobility, environmental peacebuilding, civil society involvement, or climate-policy coordination, but not on their combined effect on conflict management. The present study aims to fill this empirical gap by exploring the relationship between early warning, policy guidance, institutional dialogue, climate-security integration, cross-border collaboration and institutional responsiveness as an integrated package, and how these are linked to the management of climate-induced conflicts in the Horn of Africa.

Theoretical Literature Review: Liberal Institutionalism Theory

Liberal Institutionalism offers the most suitable theoretical framework for the study of IGAD's climate diplomacy because the study is concerned with the development of rules, information systems, dialogue platforms and policy arrangements that facilitate cooperation among states in addressing a shared transboundary problem. In the absence of central authority, Keohane (1984) suggests that international institutions can help to promote cooperation by lowering transaction costs, providing information, lowering uncertainty, and establishing expectations of repeated interactions. Institutions are important because they change the context in which states determine the costs and benefits of cooperation (Keohane, 1984).

The theory also suggests that institutions enhance cooperation through the creation of mechanisms for information sharing, monitoring, coordination and negotiation. Keohane and Martin (1995) point out that institutional arrangements can increase the credibility of commitments and offer states ways to deal with collective-action problems in which unilateral action would be inefficient. In the field of climate diplomacy, these roles are manifested in joint early-warning systems, policy alignment, cross-border agreements, and

regional climate and security platforms where Member States are able to coordinate their responses to climate and security threats (Keohane & Martin, 1995; IGAD, n.d.).

The theory is especially applicable to the Horn of Africa as climate risks are interdependent. Drought, mobility, livestock movement, river systems, displacement and resource pressures do not neatly follow national boundaries, and this can provide an incentive for states to create common institutions that can share information and coordinate action. The IGAD climate strategies, CEWARN, cross-border policy instruments, and climate-security coordination arrangements can thus be seen as institutional solutions to a regional collective-action problem (ICPAC, 2022b; IGAD, 2021, 2023).

Liberal Institutionalism also provides a basis for distinguishing institutional existence from institutional performance. While institutions can establish rules and platforms, cooperation will still rely on the compliance of the states, the capacity to implement them, domestic political support, and the capacity to link regional commitments with national and local action. This limitation is relevant because empirical research on CEWARN shows that formal architectures can coexist with incomplete national operationalization, lack of participation, and response delays between warning and response (Aeby, 2023, 2024).

In this context, the theory suggests that greater institutional and policy development should be correlated with better management of climate-induced conflicts, as it increases information sharing, coordination, dialogue, predictable cross-border cooperation, and collective response. The expectation in the explanatory part is not that institutions would eradicate conflict, but that they would increase the ability of Member States and local actors to anticipate, negotiate, and manage climate-related pressures better. This theoretical expectation is in line with the institutional logic of IGAD's existing climate-security architecture (Keohane, 1984; ICPAC, 2026).

The study therefore tested the hypothesis that institutional and policy frameworks that support IGAD climate diplomacy have a positive and significant relationship with the management of climate induced conflicts in the Horn of Africa. The proposition allows an empirical test of the Liberal Institutionalism by comparing the perceived changes in the institutional dynamics in the region with the conflict-management outcomes. The inferential analysis is thus directed towards the direction, strength and predictive significance of this relationship (Keohane & Martin, 1995).

METHODOLOGY

The study used a mixed methods research design because institutional climate diplomacy is both measurable (stakeholder perceptions) and context dependent (governance processes). Patterns were assessed using quantitative evidence, and the relationship between institutional and policy framework dynamics and conflict-management outcomes tested, while qualitative evidence explained the operation of warning systems, policy processes, dialogue platforms, and cross-border initiatives. These strands bolstered the interpretation process, with triangulation being the method used, which aligns with the mixed-methods used in multidimensional governance and conflict studies (Creswell & Plano Clark, 2018).

The study was carried out in selected conflict-prone border areas of Kenya and Somalia where climate variability is linked to pastoral mobility, livelihood insecurity, resource competition and cross-border governance. The Kenyan component included counties in the north of the country that are vulnerable to climate change, namely Turkana, Marsabit, Mandera, Wajir and Garissa, while the Somalia component was on Gedo and Lower Juba. These settings were suitable as they bring together the practical aspects of regional climate-security institutions and communities whose livelihoods are reliant on mobile access to water and pasture (Derbyshire *et al.*, 2024; IGAD, 2021).

The target population included households, pastoral communities, local leaders, climate practitioners, members of peace committees, government officials, civil society actors and regional institutional representatives involved in climate impacts and/or conflict management. The Yamane finite population approach was used to select a quantitative sample of 176 respondents at the conventional 5% margin of error, with proportionate stratified sampling to enhance representation among respondent categories. The sample achieved contained both policy-level and community-level actors, which allowed for the analysis to reflect perceptions of institutional performance at the regional level from a variety of governance roles (Yamane, 1967).

The data collection methods were quantitative (structured questionnaire with Likert-type items) and qualitative (semi-structured key informant interviews, focus group discussion, observation, document analysis). The indicators for the institutional and policy framework construct were: timely early warning, usefulness of climate information for local planning, cross-border dialogue, inter-community cooperation, tension reduction, shared-resource governance, policy guidance, climate-security integration, and responsiveness to emerging security risks. These dimensions align with the institutional roles highlighted in IGAD's formal strategies and the CEWARN architecture (IGPAC, 2022b; IGAD, n.d.).

The internal consistency of the study scales was satisfactory in the reliability diagnostics conducted in the statistical output that was archived. The corrected item-total correlation for the institutional climate-diplomacy composite was .649 and the alpha-if-item-deleted was .878, with all reliability diagnostics for the constructs analyzed being above .70, the standard for acceptable reliability. The results supported the use of inferential analysis while the methodological triangulation using multiple data sources increased the credibility of the results (Tavakol & Dennick, 2011; Creswell & Plano Clark, 2018).

The quantitative analysis was carried out in two steps. Descriptive analysis was used to summarize the institutional and policy framework assessment by stakeholders using frequencies and percentages, while inferential analysis was used to assess the association and predictive relationship between institutional climate-diplomacy composite and conflict-management outcomes through Pearson correlation and simple linear regression. The composite for the inferential output is based on the questionnaire block on early warning, local planning, cross-border dialogue, cooperation, tension reduction and shared-resource governance, which is the most empirical measure of the dynamics of the institutional and policy frameworks for the present analysis (Field Data, 2026).

Qualitative data were analysed thematically, with the aim of identifying common patterns with regard to regional coordination, local planning, policy integration, early warning, cross-border cooperation and implementation. The quantitative results were supplemented by findings from interviews, focus group discussions, observation, and document review. Ethical procedures followed included informed consent, voluntary participation, confidentiality, anonymisation of responses, and careful handling of information that could be sensitive in a fragile and conflict-affected setting, as per accepted principles for social research in fragile and conflict-affected settings (Braun & Clarke, 2006; Creswell & Plano Clark, 2018).

FINDINGS

The findings are presented in two stages. The first stage describes stakeholder perceptions of the institutional and policy frameworks underpinning IGAD climate diplomacy, while the second stage reports the inferential relationship between the institutional climate-diplomacy composite and the management of climate-induced conflicts. Quantitative results are complemented by qualitative evidence where it directly clarifies the institutional meaning of the observed patterns (Field Data, 2026).

Descriptive Findings

The descriptive results reveal a mixed but analytically coherent pattern. Stakeholders generally recognized the existence of regional institutions, policy frameworks, early-warning capacity, dialogue platforms, cross-border cooperation, and institutional responsiveness, yet they were substantially less positive about the translation of regional information into local planning and the integration of climate change into peace and security policy. This contrast indicates that institutional development is more advanced at the regional architecture level than at the point of implementation and localization (Field Data, 2026).

Table 1: Descriptive Findings on IGAD Institutional and Policy Frameworks (n = 176)

Statement	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
IGAD provides timely climate and conflict early-warning information.	34 (19.32)	81 (46.02)	37 (21.02)	13 (7.39)	11 (6.25)
IGAD has developed policy frameworks that guide climate diplomacy in the Horn of Africa.	48 (27.27)	56 (31.82)	42 (23.86)	18 (10.23)	12 (6.82)
The early-warning information shared by IGAD is useful for local planning.	25 (14.20)	21 (11.93)	14 (7.95)	81 (46.02)	35 (19.89)
IGAD's institutional structures facilitate dialogue on climate-related peace and security issues.	41 (23.30)	67 (38.07)	47 (26.70)	10 (5.68)	11 (6.25)

Statement	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
Existing IGAD policies adequately integrate climate change into regional peace and security initiatives.	11 (6.25)	10 (5.68)	67 (38.07)	47 (26.70)	41 (23.30)
IGAD's climate diplomacy has strengthened cross-border collaboration in managing shared climate-related challenges.	79 (44.89)	37 (21.02)	35 (19.89)	13 (7.39)	12 (6.82)
The institutional and policy frameworks established by IGAD are responsive to emerging climate-induced security threats.	64 (36.36)	46 (26.14)	40 (22.73)	13 (7.39)	13 (7.39)

Note. SA = strongly agree; A = agree; N = neutral; D = disagree; SD = strongly disagree. Percentages are based on n = 176. Source: Field Data (2026).

Early-warning capacity was one of the most highly rated institutional dimensions. Sixty-five.34% of respondents agreed or strongly agreed that IGAD provides timely climate and conflict early-warning information, and 59.09% agreed that IGAD has developed policy frameworks that guide climate diplomacy in the Horn of Africa. Key informants also identified increased access to climate forecasts and conflict-warning information at the regional level, and document analysis revealed that early warning and coordinated climate action are included in IGAD's regional strategies (Field Data, 2026; IGAD, n.d.; ICPAC, 2022b).

The greatest implementation gap was around the value of early-warning information for local planning. 65.91% disagreed or strongly disagreed that the information shared by IGAD is useful for local planning, while 26.14% agreed or strongly agreed. Participants in the focus groups highlighted that information is sometimes delivered too late or in a format that is not easily translated into actionable early response, further emphasizing the need to distinguish between technically credible warnings and actionable early response at the pastoral level (Field Data, 2026; Derbyshire *et al.*, 2024).

The institutional dialogue was evaluated more positively than the policy integration. Sixty-one point 36% of the respondents agreed that IGAD institutional arrangements support dialogue on climate change related peace and security issues, while only 11.93% felt that the existing policies sufficiently incorporate climate change into IGAD's peace and security processes. Qualitative evidence also showed that climate and peacebuilding functions can be implemented in parallel, reducing the extent to which climate information is systematically used for security planning and preventive diplomacy (Field Data, 2026; ICPAC, 2026).

The cross-border dimension was one of the most pronounced institutional dimensions, with 65.91% reporting that IGAD climate diplomacy has enhanced cooperation on addressing shared climate-related challenges. Furthermore, 62.50% found IGAD's institutional and policy frameworks to be responsive to emerging climate induced security threats. The IGAD-supported cross-border initiatives were linked to better communication between neighbouring communities by the focus group participants, indicating a higher institutional visibility of IGAD where climate risks are clearly border-crossing and require collaborative action across the borders (Field Data, 2026; IGAD, 2021).

Inferential Findings

Pearson correlation analysis established a positive and statistically significant relationship between institutional and policy framework dynamics and conflict-management outcomes ($r = .563$, $p < .001$). The coefficient indicates a moderately strong positive association, meaning that higher assessments of IGAD's early-warning, dialogue, cooperation, and shared-resource governance dynamics were associated with better reported management of climate-induced conflicts. The result provides empirical support for the expectation that regional institutional quality is consequential for climate-conflict management (Field Data, 2026).

Table 2: Pearson Correlation between Institutional and Policy Framework Dynamics and Conflict-Management Outcomes

Relationship	R	p
Institutional and policy framework dynamics and conflict-management outcomes	.563	<.001

Note. Two-tailed Pearson correlation. Inferential statistics reproduced from archived SPSS output for the institutional climate-diplomacy composite. Source: Field Data (2026).

Simple linear regression was then used to assess the predictive contribution of the institutional and policy framework construct.

Table 3: Regression Model Summary for Institutional and Policy Framework Dynamics

Statistic	Value
R	.563
R ²	.317
Adjusted R ²	.314
Standard error	.65831
F	90.101
P	<.001

Note. Predictor: framework dynamics; outcome: conflict management. Source: Field Data (2026).

The model produced $R = .563$ and $R^2 = .317$, indicating that the predictor explained 31.7% of the variance in conflict-management outcomes, while the adjusted R^2 of .314 confirms that the explanatory contribution remained substantively similar after adjustment. The model was statistically significant ($F = 90.101$, $p < .001$), demonstrating that institutional and policy framework dynamics provided meaningful explanatory power beyond a model with no predictor (Field Data, 2026).

Table 4: Regression Coefficients for Institutional and Policy Framework Dynamics

Statistic	Constant	Framework dynamics
B	1.167	.382
SE B	.161	.040
B	—	.563
T	7.229	9.492
P	<.001	<.001

Note. B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Source: Field Data (2026).

The regression coefficient was positive and statistically significant ($B = .382$, $SE = .040$, $\beta = .563$, $t = 9.492$, $p < .001$). Substantively, a one-unit increase in the institutional climate-diplomacy composite corresponded with a .382-unit increase in the reported conflict-management outcome, holding the simple model specification constant. The standardized coefficient indicates a moderately strong effect and supports the proposition that stronger institutional and policy frameworks are associated with improved management of climate-induced conflicts (Field Data, 2026).

DISCUSSION

The results reveal that IGAD has created a discernible and impactful institutional framework for climate diplomacy in the Horn of Africa. Respondents recognized the importance of early warning, policy guidance, institutional dialogue, cross-border cooperation, and responsiveness to new climate-security challenges, with majorities recognizing each of these. This is in line with Liberal Institutionalism which assumes that regional institutions will facilitate cooperation by providing information, reducing uncertainty and create a structured forum for the resolution of shared problems (Keohane, 1984; Keohane & Martin, 1995).

The positive evaluation of the early-warning capacity is in line with the institutional development of CEWARN and ICPAC. CEWARN is specifically developed to link data collection and analysis to national and regional conflict prevention processes and ICPAC offers climate information and forecasting to support regional preparedness. The empirical evidence thus corroborates the technical and institutional visibility of IGAD's warning architecture, which is also identified as one of the key strengths of IGAD's conflict early-warning systems in recent analyses (Aeby, 2023; IGAD, n.d.).

The early-warning-to-action gap is evident in the dramatic drop from 65.34% who recognized the timely warning to 26.14% who found the information useful for local planning. Even with the development of formal drought-warning systems, Derbyshire *et al.* (2024) demonstrate that these systems can still be out of reach of pastoral decision-making and local knowledge. Aeby (2023, 2024) also shows that warning systems require national operationalization, institutional coordination, civil society involvement, and response capacity, which is why information does not necessarily translate into preventive action (Aeby, 2023, 2024; Derbyshire *et al.*, 2024).

A second key finding is the limited strength of the integration of climate-security policy. While 61.36% of the respondents identified institutional dialogue, only 11.93% felt that climate change was sufficiently mainstreamed in regional peace and security processes, indicating that dialogue has progressed faster than mainstreaming. The 2026 regional communiqué explicitly states that climate, peace and security issues need to be mainstreamed into policy and implementation plans (ICPAC, 2026) which reinforces this interpretation.

The dimension of IGAD's climate diplomacy that is cross-border cooperation is relatively robust. The result that 65.91% of respondents saw an increase in cross-border cooperation is in line with the rationale of the Protocol on Transhumance, which aims to ensure predictable institutional arrangements for mobility, access to resources and conflict prevention between Member States. It also aligns with recent environmental peacebuilding research that indicates that common environmental challenges can foster cooperation in the context of inclusive and locally legitimate governance arrangements (IGAD, 2021; Sändig *et al.*, 2024).

The inferential results support these descriptive results by demonstrating that the dynamics of institutional and policy frameworks are not just observable by stakeholders, but are also significantly related to outcomes in conflict management. The positive correlation of .563 and regression coefficient of $\beta = .563$ suggest that there is a positive relationship between early-warning, dialogue, cooperation, and shared-resource governance and reported conflict management. This offers empirical evidence for the core Liberal Institutional assumption that regional institutions can influence outcomes by coordinating behavior and by enabling collective action in the context of interdependence (Keohane, 1984; Keohane & Martin, 1995).

Concurrently, the model accounts for 31.7% of the variance, meaning that a significant portion of conflict-management outcomes is related to other factors that are not part of the institutional construct examined in this study. This is theoretically correct since climate-induced conflict is not just a product of regional diplomacy, but also political exclusion, livelihood vulnerability, historical grievances, insecurity, local power dynamics, and the ability of national and community institutions. Modern climate-security research also warns against institutional or environmental determinism, and highlights the interplay between climatic stress and other political and socioeconomic factors (IPCC, 2022; Sändig *et al.*, 2024).

The study thus brings in a valuable difference between institutional availability and institutional operationalization. The regional framework of IGAD is not empty: there are credible warning systems, policy strategies, dialogue structures and cross-border mechanisms, and these institutional dynamics are statistically linked to better conflict-management outcomes. The need to translate regional capacity into integrated peace and security policy, locally accessible information, and timely action is also highlighted in recent regional pledges to enhance climate-security coordination (ICPAC, 2026; UNCSM, 2024), and is also evident in the more pressing weakness.

Policy-wise, the results indicate that the establishment of new institutional frameworks should be the first institutional measure taken only if there is a clear normative gap. Improvements in the implementation chain from regional information to national decision making, subnational planning and community-level action are likely to yield greater returns. This focus aligns with CEWARN's institutional vision of integrating warning and response into governance processes and ensuring cross-border preventive activities are locally and nationally owned (IGAD, n.d.; Aeby, 2024).

CONCLUSION

The study finds that IGAD has developed a solid institutional and policy framework for climate diplomacy in the Horn of Africa. Its early-warning potential, policy processes, dialogue forums, cross-border collaboration, and responsiveness to new climate-security challenges are recognized by stakeholders, and the inferential evidence shows that these institutional dynamics are strongly linked to better conflict-management outcomes. The results then confirm the hypothesis that regional institutions can play a meaningful role in governance of transboundary climate-security risks.

The major constraint of the current framework is not the lack of institutions, but the lack of uniform implementation. Regional warning capacity is more effective than its utility for local planning, and institutional dialogue is much more effective than embedding climate considerations in peace and security policy. These gaps highlight the importance of the quality of linkages between regional institutions, national governments, subnational governments, civil society, and locally legitimate governance structures for the effectiveness of climate diplomacy.

Thus, the challenge is to move beyond the current focus on the number of IGAD climate diplomacy strategies, platforms and warning products to measuring whether these instruments lead to timely action, influence security planning and enhance resource governance in IGAD borderlands. This change can be institutionalized through the newly established Regional Climate Security Coordination Mechanism, provided that it is accompanied by clear implementation responsibilities and measurable national and local outcomes. Hence, the future effectiveness of IGAD's climate diplomacy will rely on the integration of policies, increased localization, and continued coordination, not on institutional proliferation.

RECOMMENDATIONS

1. IGAD should establish a formal early-warning-to-action protocol that assigns clear responsibilities, response thresholds, and timelines to CEWARN, ICPAC, national CEWERUs, relevant ministries, and subnational authorities. The protocol should specify what institutional action is triggered by different levels of climate and conflict risk and should require documented follow-up after major alerts.

2. IGAD and Member States should operationalize integrated climate-security planning through the Regional Climate Security Coordination Mechanism and corresponding national coordination structures. Climate risk information should be incorporated systematically into peacebuilding, mediation, disaster management, pastoral mobility, natural resource governance, and security planning rather than being managed through parallel institutional tracks.
3. IGAD should localize climate and conflict information through county, district, and community institutions by investing in context-specific dissemination, translation, feedback, and participatory interpretation of warnings. Local peace committees, customary authorities, pastoral associations, women's groups, youth structures, and civil society organizations should be incorporated into the warning-response chain so that regional information is converted into locally feasible preventive action.
4. Member States should accelerate domestication and implementation of regional cross-border instruments, particularly arrangements governing transhumance, shared natural resources, and preventive dialogue. Implementation should include clearly mapped mobility corridors, negotiated access arrangements for water and pasture, joint local dispute-resolution structures, and regular cross-border review meetings involving both formal authorities and customary institutions.
5. IGAD should institute an annual climate-diplomacy implementation scorecard that measures outcomes rather than policy adoption alone. Core indicators should include the proportion of high-risk alerts followed by preventive action, time between warning and response, incorporation of climate risk into peace and security plans, implementation rates of cross-border agreements, local participation in climate-security decisions, and evidence of conflict de-escalation in identified hotspots.

References

- Aeby, M. (2023). CEWARN's strategy framework and civil society partnership: Lessons for early-warning and response systems. *Conflict Trends*, 2023(2).
- Aeby, M. (2024). High expectations: Civil society participation in conflict early warning and response systems of the AU, ECOWAS and IGAD. *South African Journal of International Affairs*, 31(2), 167–190. <https://doi.org/10.1080/10220461.2024.2385935>
- African Union. (2022). *African Union climate change and resilient development strategy and action plan (2022–2032)*. African Union Commission.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.
- Derbyshire, S. F., Banerjee, R. R., Mohamed, T. S., & Roba, G. M. (2024). Uncertainty, pastoral knowledge and early warning: A review of drought management in the drylands, with insights from northern Kenya. *Pastoralism: Research, Policy and Practice*, 14, 13006. <https://doi.org/10.3389/past.2024.13006>

- Hassan, R., Stites, E., & Howe, P. (2024). *Pastoralists' perspectives on early warning, anticipatory action, and emergency response*. Feinstein International Center, Tufts University.
- IGAD Climate Prediction and Applications Centre. (2022a). *Report on state of climate, peace and security in the Horn of Africa*. Intergovernmental Authority on Development.
- IGAD Climate Prediction and Applications Centre. (2022b). *IGAD regional climate change strategy and action plan (2023–2030)*. Intergovernmental Authority on Development.
- IGAD Climate Prediction and Applications Centre. (2024). *IGAD regional roadmap for anticipatory action*. Intergovernmental Authority on Development.
- IGAD Climate Prediction and Applications Centre. (2026, April 24). *Joint communiqué on climate, peace and security in the Horn of Africa*. Intergovernmental Authority on Development.
- IGAD Council of Ministers. (2022, December 1). *Communiqué of the 48th Ordinary Session of the IGAD Council of Ministers*. Intergovernmental Authority on Development.
- Intergovernmental Authority on Development. (n.d.). *IGAD's Conflict Early Warning and Response Mechanism (CEWARN)*. IGAD.
- Intergovernmental Authority on Development. (2021). *IGAD protocol on transhumance*. IGAD Centre for Pastoral Areas and Livestock Development.
- Intergovernmental Authority on Development. (2023). *The IGAD climate adaptation strategy (2023–2030)*. IGAD.
- Intergovernmental Authority on Development. (2024). *Kenya signs the IGAD free movement of persons protocol*. IGAD.
- Intergovernmental Authority on Development, & African Development Bank. (2026, June 17). *IGAD and African Development Bank officially launch SECURES-IGAD project to strengthen early warning and crisis prevention in the Horn of Africa*.
- Intergovernmental Panel on Climate Change. (2022). *Climate change 2022: Impacts, adaptation and vulnerability*. Cambridge University Press.
- Johnson, M. F., Rodríguez, L. A., & Quijano Hoyos, M. (2021). Intrastate environmental peacebuilding: A review of the literature. *World Development*, 137, 105150. <https://doi.org/10.1016/j.worlddev.2020.105150>
- Keohane, R. O. (1984). *After hegemony: Cooperation and discord in the world political economy*. Princeton University Press.
- Keohane, R. O., & Martin, L. L. (1995). The promise of institutionalist theory. *International Security*, 20(1), 39–51. <https://doi.org/10.2307/2539214>
- Krampe, F., Hegazi, F., & VanDeveer, S. D. (2021). Sustaining peace through better resource governance: Three potential mechanisms for environmental peacebuilding. *World Development*, 144, 105508. <https://doi.org/10.1016/j.worlddev.2021.105508>
- Musau, B. M. (2021). The Intergovernmental Authority on Development's (IGAD's) Protocol on Transhumance and the need for an IGAD common policy on

- disarmament of pastoralists. *Journal of Conflict Management and Sustainable Development*, 6(2), 99–116.
- Sändig, J., Dalmer, N., Ide, T., & Vogler, A. (2024). From climate conflicts to environmental peacebuilding: Exploring local dimensions. *Environment and Security*, 2(1), 3–20. <https://doi.org/10.1177/27538796241231090>
- Suliman, H. M., Babekir, A., & Ahmed, A. M. (2024). Pastoralist mobility along the Sudanese Ethiopian borderland: Towards cooperative land management. *Nomadic Peoples*, 28, 19–40. <https://doi.org/10.3828/whpnp.63837646691042>
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- United Nations Climate Security Mechanism. (2024). *2023 progress report*. United Nations Multi-Partner Trust Fund Office.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.