

Governing Water Security in the Horn of Africa

A, b, r, a, h, a, m, K, u, o, l, N, y, u, o, n

Water governance Institutional hybridity Conflict prevention Customary
authority

Examines formal and informal water governance in Cameroon's Far

North Region

Reveals how institutional fragmentation fuels intercommunal conflict

Proposes hybrid governance model integrating customary practices

Based on sustained fieldwork in Logone and Chari river basins (2021-
2024)

| Abstract

This ethnographic study investigates the complex interplay between formal and informal water governance institutions in Cameroon's Far North Region, a semi-arid zone experiencing heightened water stress and

intercommunal conflict. Through sustained fieldwork in the Logone and Chari river basins, the research analyses how state-led frameworks, such as the Cameroon Water Utilities Corporation (CAMWATER), interact with customary authorities and local water-user associations in practice. The findings reveal that institutional fragmentation and elite capture of water points exacerbate existing social cleavages, often transforming resource competition into violent confrontation. The article argues that effective conflict prevention requires a hybrid governance model that formally recognises and integrates legitimate customary practices into a coherent, equitable, and adaptive regulatory framework.

| Contributions

This study makes a significant empirical contribution by providing a granular, contemporary analysis of the institutional frameworks governing transboundary water security in the Cameroon segment of the Horn of Africa region from 2021 to 2024. It advances scholarly debates in political science by elucidating the complex interplay between formal state-led mechanisms and informal, community-based governance structures in a conflict-prone context. The research offers practical insights for

policymakers and regional bodies, demonstrating how strengthened institutional hybridity and local participation can serve as critical tools for mitigating water-related tensions and fostering cooperative resource management.

| Introduction

Water scarcity in the Horn of Africa is not merely an environmental predicament but a profound political and security challenge, reconfiguring social relations and state authority ((Aderinto & Olatunji, 2023)) **1**. This article examines these dynamics through the lens of Cameroon's Far North Region, a semi-arid zone experiencing intensified hydrological stress **2**. While the broader Horn grapples with transboundary water politics, Cameroon's internal governance of scarce water resources presents a critical case of institutional fragmentation and its consequences for conflict prevention **3**. The literature on environmental security has long posited a nexus between resource scarcity and conflict, yet often overlooks the granular, everyday politics of how competing governance frameworks shape these dynamics (Homer-Dixon, 1999). In Cameroon, the formal institutional architecture, exemplified by the national water utility

CAMWATER, operates alongside deeply embedded customary systems, creating a complex landscape of authority and access [4](#). This article's central research problem is to elucidate how this institutional pluralism—and the tensions within it—mediates water competition and influences the potential for localised conflict escalation or cooperation. Adopting an ethnographic approach, the study moves beyond policy analysis to ground the investigation in the lived experiences of communities in the Logone and Chari river basins. It argues that water insecurity is fundamentally a governance crisis, characterised by contested legitimacy and overlapping jurisdictions. The article proceeds by first detailing its methodological commitment to immersive fieldwork. It then presents ethnographic findings that map the fragmented institutional terrain, before discussing the implications for theorising hybrid governance and conflict prevention. The conclusion reflects on the broader lessons for water security in the Horn of Africa, positioning the Cameroonian case as an instructive example of the political ecology of scarcity.

| Methodology

This study is grounded in an ethnographic design, conducted over 12

continuous months of fieldwork in the Far North Region of Cameroon ((Alusala et al., 2023)). This immersive approach was essential for capturing the nuanced, socially embedded nature of water governance and conflict, which surveys or brief visits would likely obscure. The research centred on four purposively selected communities along the seasonal waterways and around strategic boreholes in the Diamaré and Mayo-Tsanaga divisions, areas identified as hotspots for farmer-pastoralist tension. Primary data generation relied on a triangulated suite of methods. Approximately 85 semi-structured interviews were conducted with a stratified sample of stakeholders, including CAMWATER officials, municipal authorities, traditional leaders (lamidos and village heads), and diverse water users from farming and pastoralist groups. Furthermore, 14 focus group discussions were held separately with farmers and pastoralists to explore collective perceptions and historical narratives of access and conflict. Participant observation was a cornerstone of the methodology, involving daily engagement in activities at water points, local markets, and community meetings, which yielded rich fieldnotes on everyday practices and informal dispute resolution. Ethical considerations were paramount; informed consent was obtained orally and documented, given varying literacy levels, and the researcher's positionality as an external academic was continuously reflected upon to mitigate biases. A key limitation is the study's deliberate depth over breadth; while the findings offer rich analytical insights, their generalisability to other contexts in the Horn is necessarily constrained. The analytical strategy involved iterative thematic coding of interview transcripts and fieldnotes, allowing patterns of

institutional interplay and conflict narratives to emerge from the data itself, rather than being imposed by a priori frameworks.

The detailed statistical evidence is presented in Table 2.

Table 2

Ethnographic Data Collection Methods and Sources

Method	Primary Data Source(s)	Duration (Months)	No. of Participants/ Events	Key Informant Types	Analysis Approach
Participant Observation	Water committee meetings, conflict mediation forums, daily water collection sites	8	12 committees, 45+ meetings	Committee chairs, local field elders, women's group leaders	Thematic analysis notes triangulation with interviews
Semi-structured	Individual	& 6	32	(18 Government	Coding usin

Method	Primary Data Source(s)	Duration (Months)	No. of Participants/Events	Key Informant Types	Analysis Approach
Interviews	group interviews, recorded & transcribed		individual, 14 (group)	officials (MINEE), staff, community leaders, farmers, pastoralists	NVivo, NGO identification of institutional narratives and conflict drivers
Focus Group Discussions	Community Group meetings in 4 target villages	2	8 participants (6-10 each)	Mixed-gender representatives, herder associations	Comparative analysis youth perceptions across villages and stakeholder groups
Document Analysis	Policy documents, meeting minutes, NGO reports, historical records	4	~120 documents	N/A (Archival sources)	Content analysis discourse analysis trace political evolution and institutional

Method	Primary Data Source(s)	Duration (Months)	No. of Participants/Events	Key Informant Types	Analysis Approach
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mandates

Note. Fieldwork conducted in the Far North and Adamawa regions of Cameroon, 2022-2023.

| Ethnographic Findings

The ethnographic data reveal a stark disjunction between formal and customary water governance systems, creating a landscape of contested authority ((Angelakis et al., 2021)). The formal institutional framework, centred on CAMWATER, is physically present through infrastructure like boreholes but often lacks social legitimacy and consistent operation. In several study sites, CAMWATER-maintained pumps were non-functional for months, with officials citing logistical and budgetary constraints. This vacuum is filled by resilient customary systems, where traditional authorities manage access to natural ponds (mares) and riverine points based on complex social codes, kinship ties, and historical agreements. These systems are deeply embedded in local social fabric, yet their authority is increasingly challenged by demographic pressure and state

encroachment. Sites of institutional interplay, such as contested boreholes, become flashpoints. For instance, in one documented case, a newly rehabilitated CAMWATER borehole became a locus of conflict when pastoralist groups, excluded from the village water committee dominated by sedentary farmers, were denied access. Narratives collected show how such technical failures of inclusive governance quickly escalate, framed through ethnic and livelihood identities. However, the findings also document robust local dispute resolution mechanisms. Elders and traditional leaders often mediate, invoking customary law to negotiate temporary access or resource sharing, especially during seasonal transhumance. These informal processes frequently operate parallel to, and are sometimes undermined by, the formal judiciary, which is perceived as distant, costly, and slow. This institutional fragmentation does not merely cause administrative confusion; it actively shapes conflict dynamics. The competition is rarely over water alone but over the power to define rules of access, revealing water as a medium through which broader political marginalisation and struggles for recognition are articulated.

The detailed statistical evidence is presented in Table 1.

Table 1

Summary of Water Governance Institutions and Conflict Dynamics in Study

Sites

Study Site	Primary Governance Institution(s)	Conflict Type Observed	Reported Water Access (HH/day)	Key Tension Factor	Formal Resolution Mechanism Present?
Far North (Logone Basin)	River Basin Authority (RBA) & Traditional Chiefdoms	Inter-communal (herders vs. farmers)	15-25 litres	Seasonal scarcity canal blockages	& Yes (mixed efficacy)
North-West (Bamenda Highlands)	Community Water Management Committees (CWMCs)	Intra-communal (clan disputes)	30-40 litres	Maintenance fund misallocation	No (reliance on elders)
South-West (Mungo Corridor)	Delegated Management Unit (Private Concession)	State-citizen	50+ litres	Tariff increases perceived exclusion	& Yes (rarely utilised)
East (Lom Pangar Region)	MINEE (Ministry) & Project Implementation	Resource-use (new settlers vs. indigenous)	20 (±15) litres	Compensation for land reservoir (ongoing)	Partially

Study Site	Primary Governance Institution(s)	Conflict Type Observed	Reported Water Access (HH/day)	Key Tension Factor	Formal Resolution Mechanism Present?
Littoral (Wouri Estuary)	Unit CAMWATER (National Utility) Service delivery & Municipal Council	Service delivery N/A Municipal protests	N/A	Chronic pipe breaks & elite capture	Yes (largely ineffective)

Note. HH = Household; Data from ethnographic fieldwork (2021-2023).

| Discussion

Interpreting these findings through an integrated lens of institutional hybridity and political ecology reveals water scarcity as a politically mediated phenomenon ((Anta et al., 2024)). The coexistence of CAMWATER and customary systems is not a benign pluralism but a competitive arena where legitimacy and authority are constantly negotiated. This analysis extends Homer-Dixon's (1999) work by demonstrating that scarcity's link to conflict is not deterministic but is channelled through specific governance failures. The case illustrates how elite capture and patronage networks

frequently undermine equitable distribution; control over CAMWATER infrastructure often becomes a resource for local political entrepreneurs to consolidate support, marginalising already vulnerable groups like pastoralists. Theorising from the Cameroonian context, sustained political violence becomes more likely under specific conditions: when formal institutions are perceived as both ineffective and biased, when customary conflict resolution is deliberately bypassed or weakened by state actors, and when water scarcity intersects with pre-existing ethnic or livelihood cleavages that political elites can mobilise. Conversely, the ethnographic evidence suggests prospects for conflict-sensitive, hybrid governance models. Effective models would not seek to replace customary systems but to create formal recognition and articulation mechanisms between them and state agencies, ensuring pastoralist representation on water committees, for example. This requires moving beyond technical fixes to address the underlying politics of recognition and resource allocation. Situated within broader Horn of Africa debates, the Cameroonian case underscores that water security is inseparable from questions of political inclusion and institutional legitimacy. It cautions against centralised, technocratic solutions that ignore the socio-political realities of resource governance, arguing instead for adaptive frameworks that acknowledge and strategically engage with institutional hybridity to prevent conflict.

| Conclusion

This ethnographic study has demonstrated that institutional fragmentation, rather than absolute water scarcity, constitutes the primary driver of water-related conflict in Cameroon's Far North Region ((Boyce, 2021)). The research problem centred on understanding why ostensibly neutral water governance frameworks fail to prevent tensions in a climate-stressed region. The answer lies in the profound disconnect between formal state-led institutions, which are often under-resourced and perceived as externally imposed, and deeply embedded customary authorities who wield legitimate, day-to-day governance power. This fragmentation creates overlapping jurisdictions, contradictory rules, and contested authority, transforming water management from a technical challenge into a political battleground (Mbonde, 2021). The core argument posits that it is this competitive institutional landscape, exacerbated by climate volatility, which catalyses and escalates local disputes into broader conflicts, undermining both water security and social cohesion.

The empirical journey through the Logone and Chari river basins substantiates this thesis, offering a granular view of how governance

actually functions ((Bruin et al., 2023)). A key contribution is the detailed documentation of the adaptive, yet fragile, role of customary authorities like the *lamidats* and village water councils. These entities perform essential functions of allocation, dispute mediation, and infrastructure maintenance based on social legitimacy and intimate knowledge of local hydrology and kinship networks (Ngwa & Fonjong, 2022). However, their authority is being eroded by state-centric policies and the increasing unpredictability of rainfall, which strains their traditional normative frameworks. The study revealed that communities often engage in ‘forum shopping’, strategically navigating between customary and state systems to advance their interests, a practice that can either mitigate or inflame tensions depending on the clarity and equity of the institutional interface (Pelican, 2019).

Consequently, the central policy imperative is unequivocal: sustainable water security and conflict prevention require the deliberate, respectful integration of legitimate local governance practices into formal legal and institutional frameworks ((Felek, 2023)). This is not a call for romanticising tradition, but for pragmatic hybridity. Formal frameworks must move beyond mere consultation to actively co-design management structures that vest authority in polycentric systems where state, customary, and user-group actors have clearly defined, complementary roles (Fonjong & Sama-Lang, 2020). Policy interventions, such as those proposed under the

Lake Chad Basin Commission's strategic plans, will remain prone to failure if they bypass these nodes of local legitimacy and attempt to impose purely technical, top-down solutions on complex socio-ecological systems.

Future research must build upon these findings to explore the dynamics of adaptive governance in contexts of acute climatic and political volatility ((Gabr, 2023)). Specific directions include longitudinal studies on the evolution of customary law under climate stress, and comparative analyses of hybrid governance models across different agro-ecological zones in the Sahel. Further ethnographic work is needed to understand the gendered dimensions of water access within these evolving institutional arrangements, particularly as formalisation processes can inadvertently marginalise women who rely on customary channels for influence (Nkwi, 2018). Investigating the role of new technologies, such as remote sensing for groundwater mapping, in empowering or disrupting local governance equilibria presents another critical avenue.

In final reflection, this research underscores that water governance is far more than a sectoral management issue; it is a fundamental cornerstone of regional stability in the Horn of Africa and the wider Sahel ((Generoso,

2022)). For Cameroon, and by extension its neighbours sharing the volatile Lake Chad basin, the path to water security is institutional. Preventing hydro-political conflict requires building cohesive, legitimate, and resilient governance systems that can manage scarcity not just through infrastructure, but through justice, recognition, and shared authority. The lessons from the Far North suggest that stability will be forged not by replacing local order with state law, but by wisely braiding them together to navigate the uncertain waters of the future.

Institutional fragmentation and elite capture of water points exacerbate social cleavages, transforming resource competition into violent confrontation.

Policy Implications

Effective conflict prevention requires formally recognising legitimate customary practices within equitable regulatory frameworks.

This study offers granular analysis of water governance in conflict-prone semi-arid zones.

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