

Project ACRES-WA Advancing Climate Change Resilience and Enhancing Security in West Africa

The impact of climate change on security and conflicts in Cote d'Ivoire

TECHNICAL REPORT



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1. Introduction

For at least half century since the 1972 UN conference on human environment in Stockholm, warnings have proliferated about the possible impact of climate change on security. Policy and media discourses increasingly express fears of a possible nexus between climate change and conflict, arguing that environmental degradation and dwindling natural resources may fuel increased competition leading to conflict escalation. The UN Secretary General Antonio Guterres, too, recently reiterated the climate-conflict nexus hypothesis, pointing out that “Many conflicts are triggered, exacerbated or prolonged by competition over scarce natural resources; climate change will only make the situation worse. That is why protecting our environment is critical to the founding goals of the United Nations to prevent war and sustain peace” (cited in UNEP 2017).

West Africa, where conflicts are on the rise and environmental degradation undermines access to natural resources, appears to provide a most-likely case for this nexus to appear. This is especially true for the fringes of the Sahel, where poverty is widespread and most livelihoods depend on rain-fed agriculture and extensive pastoralism. Climate change can seriously affect the fragile balance that sustains this customary way of life, and it is feared to exacerbate competing claims over natural resources, socio-professional tensions, and ethnic polarizations, thereby paving the way to conflict escalations.

At the fringes of the Sahel region, northern Cote d’Ivoire looks particularly exposed to such risks. This is a transitional eco-region, where different livelihoods – intensive agriculture of both cash and food crops, as well as extensive semi-nomadic pastoralism – meet, coexist, overlap, and sometimes clash with each other. The impact of climate change on such fragile ecosystem is well documented (Kouassi et al. 2022), entailing greater rainfall variability, temperatures’ overall rise and growing frequency of extreme events. At the same time, the population’s adaptation capacity is limited by the weakness of existing early warning systems and poor adaptation strategies. Compounding climate and environmental security risks, rural poverty in northern Cote d’Ivoire overlaps with feelings of political marginalization vis-à-vis the country’s centre of power and decision-making in the South; furthermore, the proximity of the northern borders with Mali and Burkina Faso increases the vulnerability to the expansion of jihadist groups from central Sahel (ICG 2023). The complexity of the social fabric has fuelled identitarian claims and ethnic polarizations, paving the way to cases of community mobilization and/or marginalization (Akindès 2023). As a result, northern Cote d’Ivoire has proved prone to conflict escalations, including large-scale civil wars in 2002 and 2011, and communal clashes in 2016.

The concomitance of environmental deterioration and conflict dynamics in northern Cote d’Ivoire, whereby claims of identity and access to natural resources reinforce each other, has spurred debate that the coexistence of worsening climatic and security trends may be in fact indicative of a causal link between climate change and armed conflicts. At the same time, the interplay of climatic factors with the complexity of the country’s historical vicissitudes and the politicization of existing social cleavages requires an accurate analysis that eschews simplistic assumptions. Building on these observations, this working paper aims to examine the impact of climate change on security and conflicts in Cote d’Ivoire, looking in particular at its northernmost regions. By leveraging scientific methods and robust evidence we hope we’ll be able to contribute to both scholarly debates and evidence-based policy-making.

The argument proceeds as follows: after the introduction, the paper situates the discussion in

the existing literature on the climate-conflict nexus; it then introduces the methodology used to address the research question on the impact of climate change in Cote d'Ivoire's security. The empirical sections focus more specifically on the findings from the target regions of northern Cote d'Ivoire and: i) report experienced climate change trends; ii) provide a mapping of conflicts' typologies and dynamics; iii) assess the impact of climate change on (some of) such conflicts; iiiii) elaborate on the effectiveness of existing dispute settlement mechanisms and governance schemes to mitigate climate-change influenced conflicts. The conclusion takes stocks of such findings to put forward some cautiously generalizable remarks on the impact of climate change on security and conflicts in Cote d'Ivoire, and identifies pathways for future research.

2. Methodology

In order to address the research question on the impact of climate change on security and conflicts in northern Cote d'Ivoire, we focused our analysis on the region of Bounkani. The adoption of a case-study research design is in line with the advances in the climate-conflict nexus research, outlined above, which highlight the limits of abstract large-N statistical analyses, and instead point at the heuristic value of case-based, fine-grained qualitative evidence looking at holistic and non-linear processes. In this framework, the region of Bounkani has been specifically selected because it provides a valuable context to study the interactions between climate and social factors, owing to its being at the intersection of significant climatic and security stressors; it therefore arguably amounts to a most-likely case for the manifestation of the hypothesized nexus, valuable for theory-building purposes.

As one of the northernmost regions of Cote d'Ivoire, in fact, the Bounkani region is a quintessentially transitional ecoregion, featuring social and ecosystemic characteristics that are common to both the semi-arid Sahelian savannahs to the North, and the fertile tropical forests to the South. As a result, its social composition is mixed – and arguably fragmented – featuring sedentary and (semi-)transhumant communities, farmers and pastoralists. These are articulated in a variety of ethnic groups, including most prominently the Koulango – the traditional landowners; the Lobi – the largest community, mostly devoted to agriculture; the Fulani – mostly pastoralists, from both Cote d'Ivoire and neighboring countries; and the so-called “Malinké” – traders straddling across Cote d'Ivoire borders with Mali and Burkina Faso. Of course, these groups are not reified entities, as intermarriages are frequent, mobility is rampant, and ethnogenesis lingering.

Since the indigénat policies (Asiwaju 1979) of colonial times and through the post-colonial “son of the soil” narrative (Coté and Mitchell 2017), in fact, claims to indigeneity and stigmatization of alleged allochthon communities have been recurrent themes in Cote d'Ivoire's state-building. The longstanding regime of Houphouët-Boigny prioritized continuing the agricultural policies inherited from colonial times, relying heavily on migrant labour to expand the burgeoning cocoa sector. The efforts to make of Cote d'Ivoire, and especially its northern regions, a melting pot of ethnicities and nationalities was however dubbed by its detractors as ethno-social engineering (Ogunmola and Badmus 2009). With the advent of the liberal regime in the 1990s, Houphouët-Boigny's successors implemented instead ethno-political electoral strategies. In the name of “ivorité”, legal measures were adopted with a view to restricting land ownership and political rights of some communities – especially those living in the North of the country, owing to their perceived ties to foreign migrants. As a result, access to resources, particularly land, has remained unequal among various ethnic groups (Woods 2003; Soumahoro and Tchan Bi 2022), making of claims over access to natural resources a heavily political issue in Cote d'Ivoire.

It is within this complex historical context that should be read the contemporary conflict

dynamics related to the access to natural resources in the Bounkani area.

Eruptions of intercommunal violence have punctuated the history of the region, including the inter-ethnic clashes that made several victims in 2016. Furthermore, owing to the proximity of the borders with Burkina Faso and Ghana, the region of Bounkani is particularly exposed to the extralegal economies, informal traffics and violent extremism proliferating in neighbouring countries (Berger and Zran 2023). As a result, the Bounkani region has been stricken especially by terrorist activities trying to expand the reach of Sahelian groups southward. In the years 2020-2022, cases of attacks, kidnapping, thefts and threats have been reported in the localities of Téhini, Tougbo, Bolé, Togolokaye, Kolobougou, Gôgô, Zèpou, as well as, most prominently, in the town of Kafolo – which borders the Bounkani region, yet is formally part of the Tchologo region (ICG 2023). While officially unclaimed, this string of attacks is largely attributed to JNIM operatives based across the border in Burkina Faso. Further compounding the Bounkani's security challenges, the region features several goldmining sites – including informal and illegal ones, as well as the Comoé national park, the largest protected area in the whole of Cote d'Ivoire. It is worth observing in this regard that goldmines, woodlands, forested areas and national parks appear to by and large overlap with the main springboards of jihadist encroachment and expansion in West Africa coastal countries (Brottem 2022;). Jihadist groups are hypothesised to target forested regions with a view to protecting themselves against detection; leveraging existing grievances against restrictions to access to natural resources and mobilize followers against local states; and profiting from illegal economies, including trafficking in protected species, logging and goldmining. For all these reasons, exploring the climate-conflict nexus in the Bounkani region provides a promising research path for both scholarly and policy purposes.

The qualitative data examined in this paper has been collected by ACRES-WA researchers throughout the year 2024. A recursive approach to ethnography has granted access to valuable research targets in Cote d'Ivoire, including key informant interviews in Abidjan as well as interviews and focus groups in Bouna, the administrative capital of the Bounkani region. Overall, the data herein examined is based on 36 interviews with Ivorian authorities at national, regional, local and customary level; representatives of international organisations – both governmental and non-governmental – operating in Cote d'Ivoire and the Bounkani region; civil society leaders; religious authorities; representatives of Cote d'Ivoire's security forces. Furthermore, two focus groups discussions have been carried out with, respectively, 15 farmers and 15 herders (both men and women) from the the Bounkani region, in order to explore local communities' perceptions of climate change and security. In addition, a final workshop in Abidjan has provided an opportunity to share our findings and further refine our analysis on the basis of peers' feedbacks. All interviews and focus groups have abided by strict research protocols to ensure the ethicality of our approach and the safety of all participants.

3. Research results

3.1 Climate change trends and perceptions in Côte d'Ivoire

Given the limited availability of reliable quantitative data to measure climate variability in Côte d'Ivoire, and the need to critically examine positivist assumptions about causal links between measured data and local lived experiences of environmental challenges (Basset and Zuéli 2000), this study prioritizes the analysis of people's perceptions. This approach aligns with the qualitative emphasis of emerging research on the relationship between climate change and conflict. Although perceptions are difficult to verify, they play a crucial role in shaping community behaviour and decision-making. Understanding these subjective experiences is therefore essential for capturing the social and political dynamics at play.

Local populations' perceptions concur with existing studies (Dje 2014) in finding changes in

precipitation patterns as a defining characteristic of climate change manifestations. Many respondents in Bouna report a perceived shift in the inception of rains after the dry season, and a consequent temporal discrepancy between rainfall timing and traditional planting seasons. For instance, a 54-year-old female farmer recalled that “When I was a child, rains used to start in March and when we went to the village during school holidays in June maize and yam was already there ready to be eaten. Today, people start cultivating in June”. In addition to shifting temporalities, the northern region of the country also experiences a shortening of the rainy season of an estimated 10-20 days (Dje 2014).

Respondents also perceived a remarkable reduction in the intensity and quantity of rainfall. As a male herder noted: “in the past, when it rained, everything would fill with water... Now, the intensity of the rain is less. When it’s like this [this time of the year, early October], the sun is really harsh... and the earth is all dry.” While local perceptions may be subject to distortion, the documented rise of 1-2 °C of temperatures since 1960 (Yao et al. 2013) is a significant factor that warrants consideration.

Another theme emerging from farmers’ and herders’ perceptions concerned soil productivity. Even though the reduction of soil productivity is a complex phenomenon to assess and measure, and its causality remains hard to ascertain, farmers witnessed its implications for crops quality: “Previously, plants were a vibrant green, but now they appear yellow. For instance, cashews have become discolored”, claimed a female farmer aged 54. Repercussions are also visible on yields: according to a female farmer aged 55 “When we were young, we could farm a small plot of land, yet the output was adequate for our family. Today, even with 10 hectares, we do not produce enough to meet our needs”. This is consistent with findings from prominent scholarship (Ramírez-Villegas and Thornton 2015). Uncontrolled use of chemical fertilisers and pesticides was also mentioned among the hypothetical causes for this productivity reduction, with herders noticing the diffusion of new plants previously unknown to the area that would not be suitable for feeding the cattle.

3.2 Conflict typologies and dynamics in the Bounkani region

The research design entailed a preliminary mapping of existing conflicts in the Bounkani region, with a view to analytically disentangling their causes and assess the respective impacts of climate change. We mapped six main typologies of conflicts, involving different types of actors and suffering from climate change multiplier effects in different degrees.

Farmer-herder conflicts

Conflicts between farmers and herders have long shaped social relations in the region (Basset 1988; Speight 2017). The area is primarily known for its cashew nut cultivation, alongside food crops such as yams, sweet potatoes, manioc, and various fruits and vegetables. Cashew farming is mostly small-scale, with local producers selling their harvest to large companies for processing and export.

In the past, food crop farming coexisted with pastoral activities. After the harvest, cattle would graze on the leftover vegetation, simultaneously clearing the fields and fertilizing the soil with manure for the next planting season. However, cashew trees are perennial crops that can be damaged by wandering livestock. As a result, farmers – who once allowed cattle to graze on their fields – now burn crop remnants after harvest to prevent animals from being drawn to their land.

Farmer-herder conflicts arise when cattle encroach on agricultural fields and damage crops. While these disputes rarely escalate into widespread violence, they occasionally result in the killing of livestock. Nonetheless, tensions remain high. Herders reportedly prefer to migrate elsewhere during the dry season rather than stay in the Bouna area, where farmers are often perceived as having an advantage in dispute resolution processes.

Conflict related to land property and access rights

In the Bounkani region, land is administered through customary right, with the Koulango king and his notables, who form the Royal Court of Bouna, recognized as the official landlords. Traditionally, land is granted to members of other communities upon request and the payment of a symbolic offering, often a cow. Once allocated, rituals are performed by the landowners, and a fetish is donated to protect the plot.

Despite this seemingly smooth process, several factors complicate land management. The Lobi community, traditionally farmers, has progressively expanded into lands that were not formally allocated to them, primarily for cashew nut cultivation, which has proven highly profitable. This economic success has led to increased wealth, a growing population, and greater political influence. Lobi representation in local government structures has strengthened, and they have established patronage networks with powerful Lobi figures in Abidjan, including the director of the port of Abidjan.

However, while the Lobi do not have significant representation among Côte d'Ivoire's traditional authorities – who are officially recognized through the Chamber of Kings and Traditional Leaders – they are increasingly challenging their inability to acquire land permanently. In an effort to solidify their position, they have sought to establish a Lobi *chefferie* (chiefdom), a move that has sparked outrage among the Koulango.

The Fulani community is also an impactful land user, as they request land for cattle grazing, sometimes for extended periods. Traditionally, land transactions do not involve cash payments, but there are allegations that the Fulani have, at times, paid Koulango landlords to secure land. As the regional population grows, land scarcity has become a pressing issue. Koulango landowners are alleged to often allocate the same plot to multiple families, sometimes granting sections of Lobi-assigned land to Fulani herders. The Lobi view this as a deliberate attempt to restrict their agricultural expansion and undermine their land claims through the presence of Fulani.

Adding further complexity, many Fulani herders graze cattle that belong to influential figures, including prominent politicians in Abidjan and members of the Koulango elite. These overlapping interests contribute to ongoing tensions over land access and ownership in the region.

Inflow of asylum seekers and cattle from Burkina Faso

The Bounkani region shares a border with Burkina Faso, a country grappling with severe security challenges due to the escalating activities of jihadist groups and the *Volontaires pour la Patrie* (VPF), a state-backed militia composed of civilian volunteers. These groups have fuelled widespread violence, leading to mass displacement as communities flee attacks, forced recruitment, and deteriorating living conditions.

As a result, an estimated 61,418 asylum seekers have crossed into Côte d'Ivoire, with 52,356 officially registered as of June 2024 (UNICEF 2024). Many of these refugees, primarily women and children, have sought safety in northern Côte d'Ivoire, particularly in the Bounkani and Tchologo regions, where access to basic services remains limited.

Despite an official ban by the Ivorian government on bringing livestock across the border – due to concerns over resource competition, environmental degradation, and the spread of animal diseases – it is reported that many asylum seekers have managed to enter Côte d'Ivoire with their cattle. This has heightened tensions with local communities, particularly farmers, who fear encroachment on agricultural land and increased pressure on grazing areas.

The ongoing influx has placed significant strain on host communities, prompting humanitarian organizations such as UNHCR and UNICEF to scale up assistance efforts. These include

providing essential protection services, improving access to education and healthcare, and strengthening community resilience to mitigate potential conflicts between displaced populations and local residents.

In 2024, the International Organization for Migration (IOM), in partnership with organizations such as the Réseau Billital Maroobé (RBM) – a regional network representing pastoral communities across West and Central Africa – introduced the Transhumance Tracking Tool (TTT) in Côte d'Ivoire. This tool is designed to monitor and map cross-border livestock movements, capturing data on both traditional transhumant herders and those forced to migrate due to insecurity. Understanding the scale and dynamics of these movements is crucial for preventing the spread of false claims and mitigating intercommunal conflicts over access to resources, helping to inform evidence-based policies that promote peaceful coexistence.

Access into the Comoé National Park

Comoé National Park in Côte d'Ivoire, one of the largest and most biodiverse West-African natural reserves, has experienced significant challenges in the past due to armed conflicts and political instability. During the civil war in the early 2000s, the park suffered from increased poaching, illegal grazing, and a lack of effective management, leading to its inclusion on the UNESCO List of World Heritage in Danger in 2003. Following the stabilization of the political situation after 2012, concerted conservation efforts have led to notable improvements. At the same time, limited incidents involving the encroachment of the park fauna on adjacent farming fields have been reported. To counter local dwellers' frustration, awareness-raising campaigns run by the park managers have contributed to sensitizing the local communities on the value of conservation.

Nevertheless, Comoé National Park continues to face challenges from illicit activities. Poaching has declined considerably thanks to the work of the *Office Ivoirien des Parcs et Réserves* (OIPR), but the park remains a critical water and grazing reserve for herders from surrounding communities, particularly during drought periods. Efforts by the park rangers to drive herders and their cattle out of the parks have in the past given rise to frequent clashes (Berger and Zran 2023), yet recent trust-building measures are reportedly contributing to assuaging tensions.

Additionally, the Comoé National Park's mineral-rich soil attracts artisanal gold miners, who frequently organize week-long mining expeditions within the park. While these operations often involve the use of toxic chemicals such as mercury, studies by the OIPR suggest that the level of water and soil chemical contamination remains low, as gold-washing activities primarily take place in surrounding villages.

The park is also occasionally used as a safe haven for jihadist groups infiltrating Côte d'Ivoire, further complicating conservation efforts and security management (Brottem 2022).

Exploitation of mineral resources

Artisanal gold mining has expanded rapidly in recent years, drawing in unemployed and landless youth seeking quick financial gains. Our research indicates that all communities in the region are equally engaged in this activity, which exists in a grey zone between criminalization and tacit tolerance by national and local authorities.

On the one hand, gold mining is officially regulated through a system of licenses issued by the government, which grants permits for industrial and semi-industrial operations while prohibiting unregulated artisanal mining. However, in practice, artisanal mining continues largely unchecked, as authorities often turn a blind eye – not only because it provides employment for youth but also due to the alleged involvement of powerful patronage networks, stretching to prominent politicians in Abidjan as well as to foreign actors. Additionally, miners

travel from across the Sahel region, further highlighting transnational dimension of this lucrative activity which might fuel the expansion of jihadist networks.

Upsurge in violent extremism

Between 2020 and 2022, the Bounkani region experienced a series of unclaimed attacks, which were attributed to Jama'at Nasr al-Islam wal Muslimin (JNIM), a Sahel-based al-Qaeda franchise. Since 2021, Cote d'Ivoire made significant efforts to strengthen security in the region. The presence of the gendarmerie has tripled – previously, forces were concentrated in Bouna, with only small checkpoints scattered across the area that could easily become targets. With a view to strengthening state presence and territorial garrisons, new gendarmerie bases were established in Bouna, Téhini, and Doropo, alongside an additional military base in Kafolo. Beyond military strategy, efforts are also being made to improve relations between civilians and security forces, addressing both trust issues and the direct personal connections between security force leaders and Abidjan – a legacy of wartime alliances. These ties have grown stronger since the post-war integration of armed forces, which saw many former northern fighters rise to high-ranking positions. As a result, when civilians in the north witness suspicious activities or security failures, rather than relying on local commanders, they often report directly to senior officials in Abidjan with whom they have personal connections.

At the same time, several incidents of intimidation, including phone threats, blackmail, and even kidnappings have been reported, with the suspected implication of jihadist groups. This has placed the Fulani community in an increasingly precarious position, since they are the primary targets of such harassment, but at the same time are often perceived as linked to jihadist groups due to ethnic associations. As a result, the Fulani face suspicion from both security forces and local communities. However, when they attempt to distance themselves – for example, by refusing to trade cattle with jihadists – they may become targets of retaliation. This dynamic leaves them caught between a rock and a hard place, facing pressure from all sides.

3.3 Impact of climate change over existing conflicts in the Bounkani region

Our analysis suggests that the conflicts listed above are primarily rooted in socio-economic factors. Nevertheless, some are also shaped by the effects of climate change. In particular, farmer-herder disputes, land conflicts, illegal encroachment into Comoé National Park, and tensions surrounding the arrival of Burkinabé asylum seekers and their cattle all illustrate how climate change acts as a threat multiplier, which may catalyse underlying conflict drivers. This intensifying effect of climate change manifests itself in several ways. We report here some of the identified mechanisms: further research can help elucidate their scope-conditions, triggers, and inner functioning.

- Unpredictable rainy and dry seasons create challenges in planning agricultural and pastoral activities, leading to poor coordination between planting schedules and cattle movements. The lack of access to meteorological services further increases this risk.
- Water scarcity intensifies competition for water sources and surrounding land, not only between farmers and herders but also among farmers themselves. This is further exacerbated by the lack or deterioration of hydraulic infrastructure, which limits the ability to store and retain water for use during the dry season.
- Increasing soil aridity, matched with increasing numbers of cattle in region which have to do both with growing economic interest in livestock and with connections between the cattle economy and jihadist activities, may increase the opportunities for farmer-herder conflicts and force livestock to encroach on Comoé National Park, further straining conservation efforts.

- As soil becomes less fertile, farmers may rely more heavily on fertilizers, which could degrade soil quality over time. This, in turn, may increase the demand for more farmland, despite land scarcity.
- Declining agricultural productivity may push people – especially youth – toward artisanal gold mining, leading to greater competition and tensions over land control.
- Similarly, lower agricultural yields may drive some individuals toward other illicit activities, further destabilizing the region.
- The lengthening of the dry season, combined with overall declining rainfall, forces transhumant herders to migrate farther south, disrupting areas previously unaffected by seasonal cattle movements.
- Climate change’s impact on the security situation in the Sahel could exacerbate migration, pushing even more people into Côte d’Ivoire in search of better conditions, thereby increasing pressure on already scarce resources.

At the same time, our research has identified outstanding conflict drivers that contribute to the overall instability of the Bounkani region, which nevertheless exhibit no demonstrable linkage with climate change dynamics. Such findings concur with existing research suggesting that conflicts are primarily shaped by socio-political factors, with climate only potentially playing a secondary role. These factors include:

- The absence of hydraulic infrastructure to store water for use during the dry season remains a critical challenge. Following the dismantling of the *Société de Développement des Productions Animales* (SODEPRA) in the early 1990s due to structural adjustment policies, the supervision and maintenance of these systems ceased, leading to their gradual deterioration. While renovation projects have begun, significant efforts are still needed to restore and expand these essential resources.
- The uncontrolled expansion of cashew nut cultivation has progressively obstructed existing transhumance corridors, making it difficult for transhumant cattle not to encroach on cultivated fields. This trend, started in the early 2000s with the liberalisation of agricultural production chains, is aggravated by the growing cattle population in the wider region.
- The politicization of identity exacerbates conflicts over resource access, intensifying mistrust and deepening divisions between competing communities. This dynamic is rooted in historical patterns and perpetuated by contemporary Ivorian politicians, who frequently exploit ethnic identity for political gain.

3.4 Conflict resolution mechanisms

Given their susceptibility to the effects of climate change, this research focuses primarily on conflict resolution mechanisms related to farmer-herder disputes and land conflicts.

When such conflicts arise, village committees – composed of the village chief and representatives from both farming and herding communities, as well as women and youth – are responsible for mediating a negotiated settlement. Typically, the victim receives compensation, based on established assessment criteria, and mechanisms are in place to ensure payment even when the culprit’s identity is unknown.

An appeal mechanism also exists: if the village committee fails to broker an agreement, the case is escalated to the sub-prefectural committee, which includes the sub-prefect and regional representatives from the Ministry of Agriculture and the Ministry of Animal Resources. This committee deploys technical experts to assess damages and determine compensation. However, statutory committees at the sub-prefectural level often fail to conduct proper damage assessments: while they tend to attribute it to lack of resources, communities may perceive them as corrupt or biased, namely toward farmers.

In contrast, security forces (gendarmerie) are generally viewed as neutral and legitimate,

despite instances of stigmatization against the Fulani community. This finding is unexpected and contrasts with established wisdom. While further research may be warranted to corroborate this observation, local respondents pointed out the effectiveness of trust-building measures being deliberately undertaken to strengthen civil-military relations.

Overall, the relative legitimacy of both customary and modern dispute resolution mechanisms plays a key role in conflict mitigation in the region of Bounkani. While reasons for disagreements and conflicts are potentially widespread, violent escalations remain rare, and when they do occur, they most often result in retaliatory actions against livestock rather than direct violence between communities.

4. Conclusions

This research highlights how climate change can act as a threat multiplier in the conflict dynamics of the Bounkani region. Reduced water availability and declining land productivity, coupled with climate-induced migration, place additional pressure on natural resources, intensifying competition and deepening social divisions. While multiple conflict drivers coexist – including infrastructural deficiencies, polarized identities, and unsustainable agricultural and pastoral practices – our findings suggest that the current governance framework for natural resources plays a meaningful role in preventing conflict escalation. Consistent with recent research on the link between climate change and conflict, this study underscores the critical importance of effective governance mechanisms in mitigating tensions and fostering stability

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