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West African Studies

Roads and Conflicts in North and West Africa

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Foreword

The Sahel and West Africa are at a crossroads, facing mounting challenges that test governance, development and regional unity. Rising terrorist violence, the spread of armed groups and political instability have shaken the region, leaving states and communities grappling with insecurity and uncertainty. Addressing these complex issues requires more than surface-level solutions—it demands nuanced, data-driven insights that help decision makers navigate an interconnected and ever-evolving landscape.

Recognising this need, in 2022, Ministers of the Coalition for the Sahel called for a broader perspective—one that extends beyond the Sahel to encompass North, Central and West Africa. They emphasised the importance of an expanded vision to address systemic challenges that cut across local, national and regional levels. This need has only grown more urgent as rising global instability disrupts regional and multilateral frameworks in the Sahel. These shifts reinforce the need for sustained monitoring and analysis of the evolving set of transnational and crosscutting issues that threaten stability across the region.

This report, *Roads and Conflicts in North and West Africa*, takes up that challenge by examining how transport networks influence violence, governance and resilience. Roads, railways and ports play a critical role in enabling the movement of people and goods, facilitating economic activity, and connecting communities. Yet these same networks often become battlegrounds, targeted by insurgent groups seeking to destabilise states, isolate communities and expand their influence. The data paints a stark picture: 70% of violent events and 65% of fatalities in North and West Africa occur within just one kilometre of a road. In the Central Sahel, the Lake Chad basin and western Cameroon, critical corridors have become epicentres of violence. Attacks on these routes disrupt trade, sever connections and undermine governance. Meanwhile, insurgents are adapting tactics, increasingly operating in remote and less-connected areas, destabilising rural regions where state presence is already limited.

This shift in violence extends beyond traditional hotspots. Coastal countries like Benin, Côte d'Ivoire, Ghana and Togo are facing sporadic attacks. This spread of violence underscores the expanding nature of conflict and the urgency of co-ordinated regional responses. As the report reveals, once conflict takes root, it becomes deeply entrenched, making efforts to restore peace and security even more challenging.

Transport networks are more than physical infrastructure—they are strategic assets. They enable governments to project power, provide essential services and foster cohesion. Without reliable infrastructure, marginalised communities remain isolated, economic opportunities dwindle and states struggle to maintain control.

Strengthening these networks is crucial for building resilience and stability across the region.

As the region undergoes significant geopolitical shifts, this report offers critical insights to guide policy makers. Safeguarding transport routes, investing in infrastructure and fostering cross-border co-operation are vital steps to reduce violence, support economic integration and enable sustainable development. The stakes are high, but with strategic action, the opportunities to build resilience, restore trust and promote cohesion are within reach.

H.E. Mr. Hamadi Meimou
High Representative
Coalition for the Sahel

The team and acknowledgments

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Disclaimer: The views expressed are those of the author(s) and do not reflect the official policy or position of the United States Air Force Academy, United States Air Force, Department of Defense, or the United States Government.

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Abbreviations and acronyms

ACLED	Armed Conflict Location & Event Data
ANN	Average nearest neighbour
CC	Conflict concentration
CI	Conflict intensity
CIPLEV	Inter-Ministerial Committee for the Prevention and Fight against Violent Extremism
ECOWAS	Economic Community of West African States
FAMa	Malian Armed Forces
GNA	Government of National Accord (Libya)
GRIP	Global Roads Inventory Project
ISGS	Islamic State in the Greater Sahara
ISWAP	Islamic State West Africa Province
ISSP	Islamic State Sahel Province
IED	Improvised explosive device
JAS	*Jama'tu Ahlis Sunna Lidda'awati wal-Jihad* (Boko Haram)
JNIM	*Jama'a Nusrat ul-Islam wa al-Muslimin* (Group for Supporting Islam and Muslims)
LNA	Libyan National Army
OECD/SWAC	Sahel and West Africa Club
OSM	OpenStreetMap
SCDi	Spatial Conflict Dynamics indicator
SNIM	*Société Nationale Industrielle et Minière*
WAP	W-Arly-Pendjari
VDP	Volunteer for Defense of Homeland

Executive summary

Over the past 24 years, transport infrastructure in North and West Africa has emerged as both a strategic asset and a contested battleground. Since the late 2000s, violence targeting transport systems has surged, driven by jihadist insurgencies and rebellions in West Africa and in the aftermath of the First Libyan Civil War in North Africa. This report, *Roads and Conflicts in North and West Africa*, examines the links between transport infrastructure and violence, demonstrating how these systems are deeply intertwined with social, economic and political stability. Building on the OECD/SWAC's commitment to multi-scale analyses, it offers a comprehensive 24-year examination of these dynamics across 21 countries, drawing insights from over 70 000 violent events and 230 000 fatalities from the Armed Conflict Location & Event Data (ACLED) project.

Five key messages emerge from the report:

1. Transport infrastructure is both a strategic asset and a target

Transport infrastructure plays a dual role in the region's conflicts: it supports governance, economic activity, and state authority, while also serving as a frequent target for non-state violent actors. Roads, railways and transport corridors enable governments to deploy troops, deliver services and maintain control. Yet these same networks are exploited by violent actors to disrupt governance, destabilise regions and isolate communities. In North Africa, denser and better maintained transport networks enhance state sovereignty by limiting insurgent footholds. In contrast, West African countries face significant challenges, where insufficient infrastructure leaves gaps for insurgents to exploit using mobile and agile tactics.

2. Violence concentrates near roads

Around 70% of violent events and 65% of fatalities in North and West Africa occur within just one kilometre of a road. This pattern holds across all road types but is most pronounced near highways and primary roads. The impacts are most severe in the Central Sahel, the Lake Chad basin and western Cameroon, where sparse networks and poor road conditions make transport infrastructure highly vulnerable to attacks. Civilians are particularly exposed to the consequences of violence targeting roads, facing ambushes, kidnappings and blockades.

3. A shift towards remote violence

In West Africa, insurgents are increasingly shifting their operations to remote areas and small urban centres, destabilising rural regions and expanding their influence. This trend is reflected in a decrease in the proportion of violent events occurring within one kilometre of a road, dropping from 86% in 2011 to 61% in 2023. In North Africa, however, over 80% of violent events still occur near roads, reflecting the more urban nature of conflicts in the region. Despite this shift towards remote violence in West Africa, roads remain strategically important, with many conflict hotspots lying within one to four kilometres of key transport routes.

4. Key transport routes are hotspots of violence

Major transport corridors in conflict-affected regions such as the Central Sahel, the Lake Chad basin and western Cameroon, have become epicentres of violence. These routes, vital for trade and connectivity, are repeatedly targeted, resulting in disrupting trade, isolated communities and weakened state authority. These conflict hotspots underscore the dual role of transport routes as both lifelines for communities and critical battlegrounds in ongoing conflicts. Their strategic importance highlights the urgent need for co-ordinated efforts to safeguard these corridors and mitigate their vulnerability to violence.

5. Mobile warfare is reshaping conflict dynamics

Jihadist groups increasingly rely on motorbikes and light vehicles to navigate challenging terrain and outmanoeuvre slower, heavily armoured state forces. This tactical mobility enables insurgents to exploit vulnerabilities in transport networks, ambush key routes and evade military responses. Conversely, state forces' reliance on fixed bases and predictable transport routes makes them vulnerable to highly mobile tactics.

The findings of this report underscore the pivotal role of transport infrastructure in influencing conflict dynamics and fostering stability in North and West Africa. Strengthening security and building resilience require strategies that prioritise investments in robust transport networks, protection of civilian populations and targeted support to peripheral regions. A holistic approach, combining security measures with infrastructure development, cross-border co-operation and economic integration, is essential to address vulnerabilities. This approach could unlock the potential of transport systems to drive stability and sustainable development in conflict-affected areas.

This need is particularly urgent as conflicts continue to expand into coastal countries like Benin, Côte d'Ivoire, Ghana and Togo. As the report illustrates, once conflict takes hold, it tends to persist and entrench instability over time. These trends emphasise the critical importance of co-ordinated regional efforts to safeguard transport infrastructure, address systemic vulnerabilities and tackle the underlying drivers of instability. By doing so, the region can lay the groundwork for lasting peace and prosperity.

Chapter 1

Securing roads amid conflict for stronger regional cohesion

Chapter 1 analyses the role of transport infrastructure as both a facilitator and target of violence in North and West Africa. Combining conflict and infrastructure data from 2000 to 2024, the chapter examines how the competition for the control of transport infrastructure between state and non-state actors produces various patterns of violence. It shows that violence tends to be highly clustered near transport infrastructure: 70% of violent events and 65% of fatalities occurred within one kilometre of a road. Violence decreases sharply with distance from all categories of roads, suggesting that transport infrastructure is a strong predictor of violence. The chapter also confirms that violence has become less clustered near roads over time. This trend is explained by the ruralisation of violence observed in West Africa. Finally, the chapter suggests that violence against transport infrastructure is very unevenly distributed across North and West Africa. Ambushes, kidnappings, remote violence, blockades and destruction of transport infrastructure are particularly intense in the Central Sahel, the Lake Chad basin, and western Cameroon. The sparsity and poor conditions of the road network make government forces vulnerable to attacks by irregular forces, who can move undetected across rural areas. Rebels' and jihadists' agility on the ground is only partially counterbalanced by the increasing use of airpower. Improving security necessarily involves improving transport infrastructures and protecting civilians, who bear the full brunt of armed conflicts.

KEY MESSAGES

- **Transport infrastructure has become a critical element in the competition for political power in North and West Africa over the last 24 years.**
- **Violent events tend to cluster near transport infrastructure and decrease sharply with the distance from roads.**
- **Violence against transport infrastructure is concentrated along a few road corridors in the Central Sahel, the Lake Chad basin, and western Cameroon.**
- **Government forces are vulnerable to attacks along road corridors and are unable to project military power over long distances.**
- **Improving security necessarily involves improving transport infrastructures, particularly the density and condition of the road network, which remains the dominant mode of transport.**
- **Civilians are highly vulnerable to attacks against road infrastructure.**

Control of transport infrastructure has always been a critical issue in armed conflicts. States are naturally inclined to secure air, surface, and maritime systems to control the territory defined by their borders. A dense and extensive infrastructure system promotes national security by allowing the state to deploy troops, provide services to the civilian population, and defeat insurgents in a timely manner. Yet, the benefits of improved infrastructure are double-edged for the government, since transport infrastructure itself can become a major target for rebel

groups, militias and other violent non-state actors. Protecting airports, roads, and ports from militant attacks necessitates large, fixed investments that many governments can ill afford. This is particularly true in regions where the population is sparsely distributed, cities are separated by long distances, and transport systems are poorly maintained, as in the West African Sahel today (Map 1.1).

The strategic importance of transport infrastructure explains why some of the most violent incidents of the last two decades have occurred along major road corridors in North and West Africa. The Central Sahel is particularly affected by this evolution. On 18 August 2021, militants affiliated with the jihadist group Ansaroul Islam ambushed a civilian convoy traveling between Dori and Arbinda in northeastern Burkina Faso. An estimated 135 people were killed in the attack, including at least 60 civilians who had sought the protection of the gendarmerie and the Defence of the Homeland (VDPs) militia. In the Lake Chad region as well, transport corridors have been the object of violent clashes between government troops and Jihadist militants since the late 2000s. On 24 July 2022, for instance, the Nigerian Defence headquarters claimed to have killed 30 Boko Haram militants who had ambushed soldiers patrolling along Kubwa-Bwari road, north of the federal capital of Abuja.

These examples reflect a larger dynamic where transport infrastructure is being actively disputed between government forces and various militant groups. South of the Sahara, where this evolution is most concerning, states have responded by launching a series of military campaigns that rely more on airstrikes, mobile patrols, and heavily armed convoys than before. At the end of 2023, for example, air and drone strikes conducted by the Malian army were instrumental in reconquering the remote cities of Kidal and Tessalit, located more than 1 500 kilometres from Bamako, from Tuareg separatists. To better control mobility, West African states confronted with insurgencies have also restricted movements between cities, established more checkpoints along major roads, and imposed bans on motorcycles used by militants to conduct attacks. These measures have led to disappointing outcomes in terms of security and often contributed to disrupting local livelihoods and regional trade (Agbiboa, 2022).

Thus far, the role of transport infrastructure as both a facilitator and target of violence has received less attention in North and West Africa than in Central Africa, where state forces, rebel groups and local chiefs compete for the control of transport corridors (Schouten, 2022). The strategies used by state and non-state actors to control transport infrastructure have also been less documented than the potential benefits of road sector initiatives on economic growth, service provision to urban and peripheral regions, and governance (World Bank, 2011). Finally, while numerous incidents of violence related to roads, bridges, pipelines and other transport systems have been documented across North and West Africa, little is known about the factors that explain when, where and by whom transport infrastructure is targeted (Chapter 2).

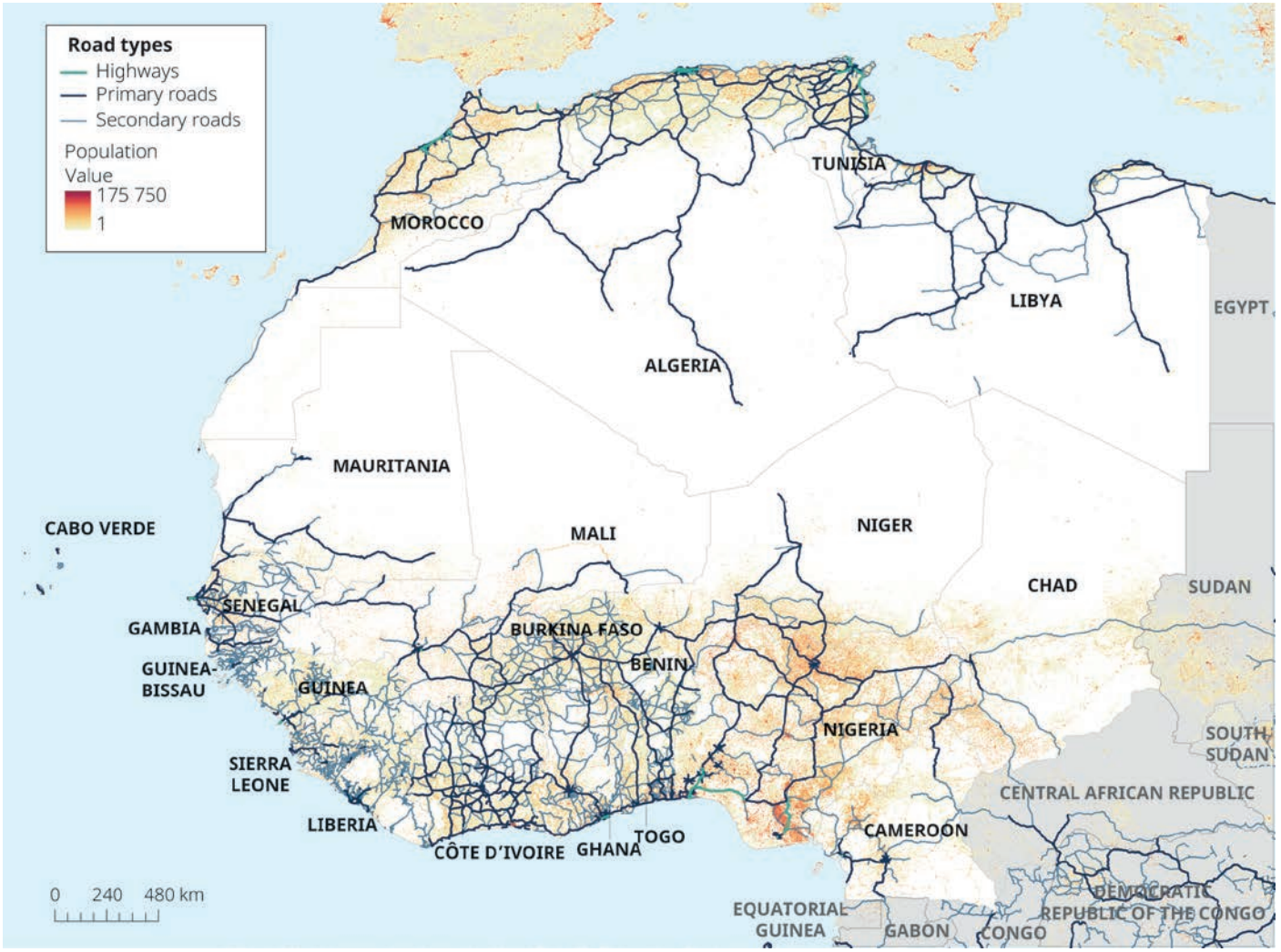
HOW TRANSPORT INFRASTRUCTURE SHAPES CONFLICTS

The critical importance of transport infrastructure calls for a systematic approach that can examine how the control of transport infrastructure shapes armed conflict in North and West Africa. The objective of this report is therefore to analyse the relationships between transport infrastructure and political violence in this vast region. The report documents how the competition for the control of transport infrastructure between state and non-state actors produces various patterns of violence. Using a multi-scalar approach, it also examines how these patterns have affected specific areas and populations differently over the last 24 years.

While the general topic of the report is transport infrastructure, particular attention is paid to the road network, which, in the absence of strong air, rail, or maritime links, is by far the dominant form of transport in the region. Three crucial questions for the future of North and West Africa are addressed: Do armed conflicts tend to cluster near transport infrastructure? Have armed

Map 1.1.

Population density and roads in North and West Africa

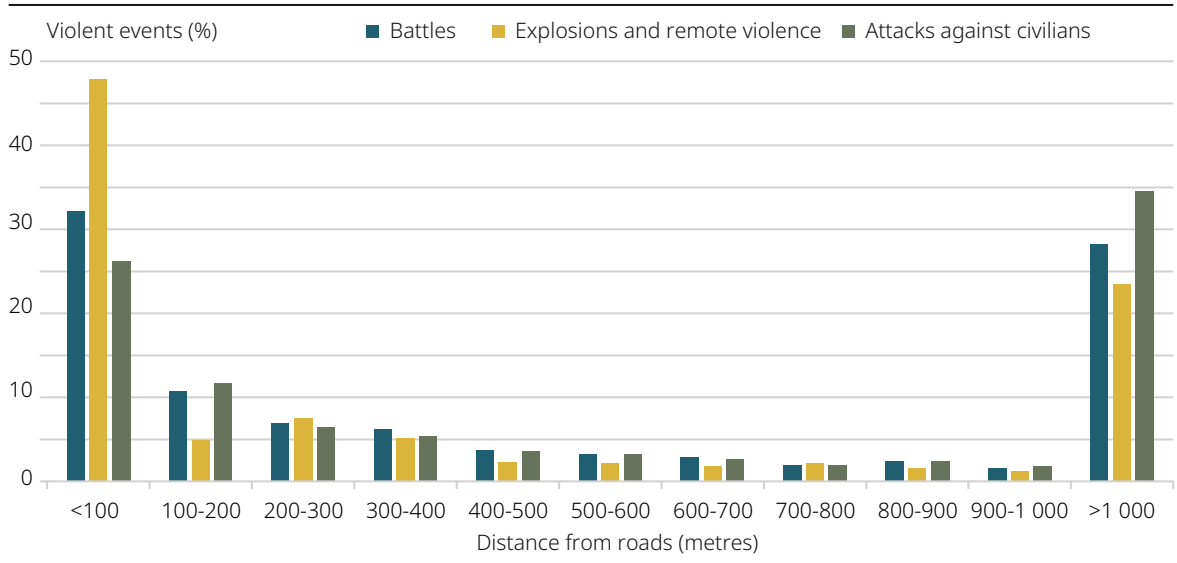


Note: Tertiary and local roads are not represented. Population densities are calculated for 2020. Road data aggregate several years from 2000 to 2018.

Sources: Authors, based on WorldPop (2024) and GRIP (Meijer et al., 2018) data.

Figure 1.1.

Types of violent events by distance from roads, in metres, 2000–24



Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors, based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

conflicts become increasingly focused on transport infrastructure over time? Where is transport infrastructure most affected by violence?

Violence tends to cluster near roads

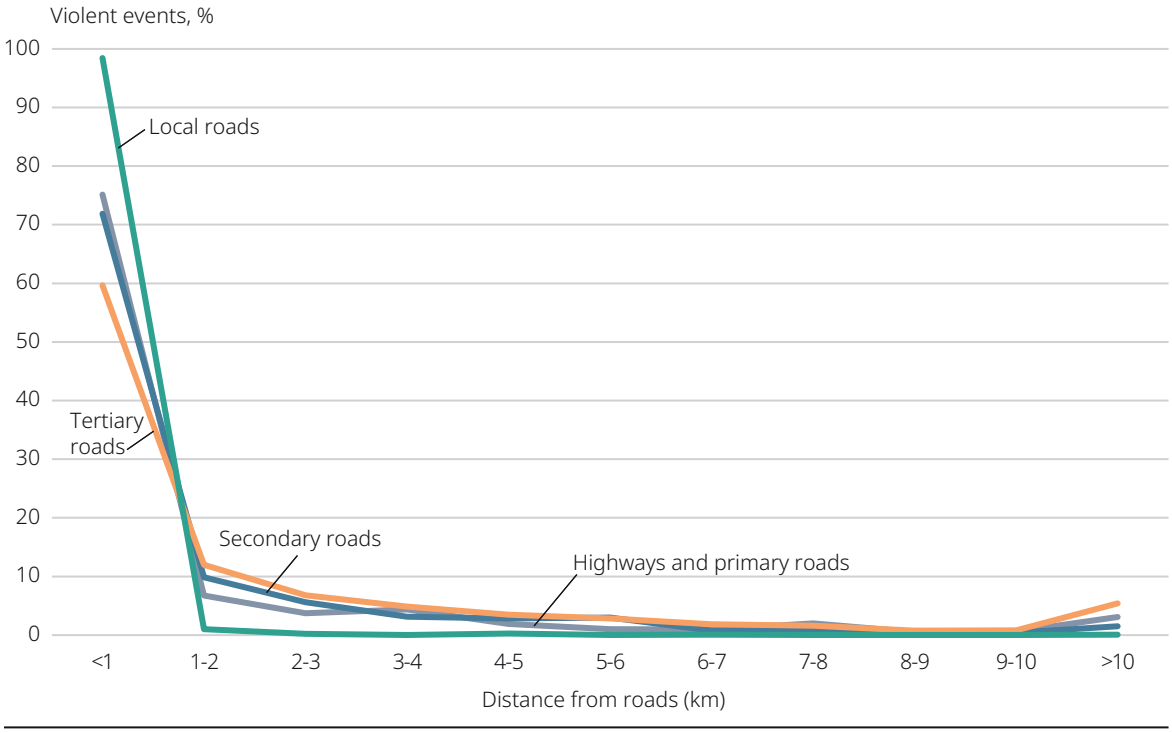
First the report examines whether violence is more clustered around transport infrastructure than in the rest of the region. Are regions located near transport corridors more violent than others? The analysis of 70 315 violent events and 233 850 fatalities from the Armed Conflict Location and Event Data project (ACLED, 2024) confirms that proximity to transport infrastructure is a strong predictor of violence in the region: from January 2000 to June 2024, 72% of all battles, 77% of remote violence, and 66% of violence against civilians are located within only one kilometre of a road.

A consistent relationship is observed between violence and transport infrastructure across all types of events: more battles, remote violence and explosions, and violence against civilians occur near roads than elsewhere in the region. For example, nearly half of the attacks involving improvised explosive devices (IEDs) are located within 100 metres of a road (Figure 1.1). Attacks against civilians occur more frequently at distances greater than one kilometre from a road than battles and explosions, which reflects the fact that human settlements are usually distributed farther from roads in rural areas.

The report also shows that violence tends to strongly decay with distance from roads: the further from a road, the fewer violent events are observed, both regionally, in North Africa, and in West Africa. Seventy percent of violent events and 65% of the people killed in the region between 2000 and 2024 were located within one kilometre of a road. These numbers reach 91% and 88% respectively, within five kilometres. The clustering of violence near roads is much more consistent than that near borders and cities (OECD/SWAC, 2022, 2023), for which variations were found between Sahelian and other countries.

The report also shows that transport infrastructure plays a significant role in shaping spatial patterns of violence irrespective of the nature of the road system itself. Violence decreases with distance from all types of roads and even secondary and tertiary roads attract a significant portion of violent events. Seventy-five percent of the violent events are located within one kilometre of a highway or a primary road, compared to 72% for secondary roads, and 60% for tertiary roads (Figure 1.2). In a region where

Figure 1.2.
Violent events according to their distance to different types of roads, in kilometres, 2000–24



Note: Only events for which the co-ordinates are precisely known are included.
Source: Authors, based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

roads are few and far apart, rebels and jihadist militants tend to rely on lightweight and versatile transport solutions, such as motorcycles, which can easily be used off the main transport routes, while heavily armed government forces are more constrained by the existing road network.

Violence against transport infrastructure is increasing

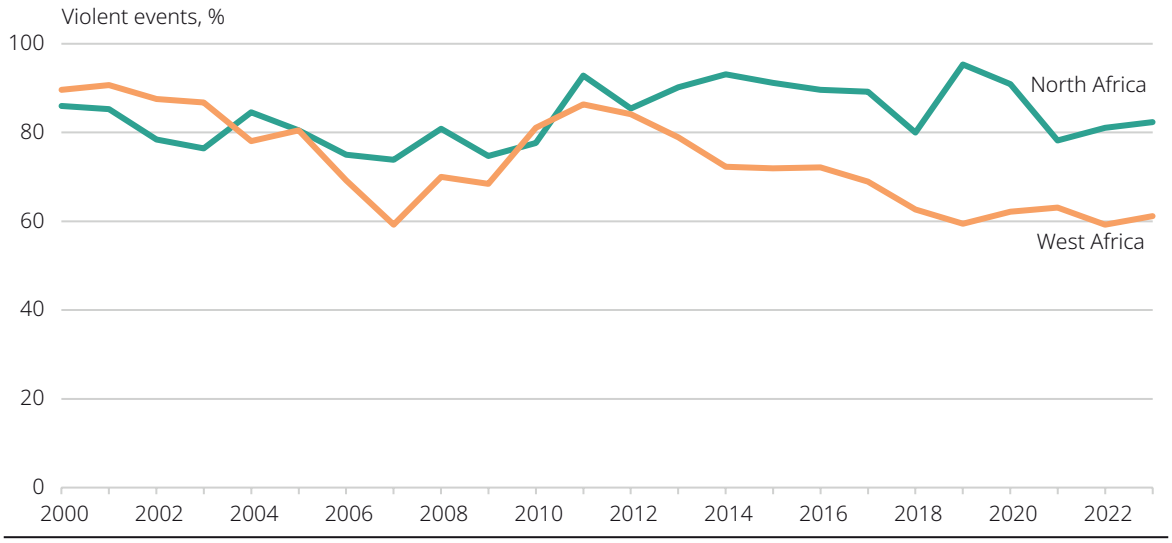
The report then studies how the geography of violence has changed in the last 24 years in relation to transport infrastructure. Have regions located near transport infrastructure become more violent than less connected regions? The report shows that violence against transport infrastructure has increased tremendously: all forms of transport-related violence have multiplied regionally since the beginning of the Boko Haram insurgency in the late 2000s in West Africa and the First Libyan Civil War in North Africa in 2011.

While the *amount* of violence targeting transport infrastructure has reached unprecedented levels, the report also highlights that the *share* of violence associated with roads has demonstrated important regional variations. Since 2011, the proportion of violent events located within one kilometre of roads has remained consistently over 80% in North Africa, a situation that contrasts with the relative de-concentration of violence observed in West Africa since the mid-2000s. In 2023, 61% of violent events were within one kilometre from West African roads, against 81% in 2010 and 90% in 2000 (Figure 1.3). This evolution reflects the ruralisation of conflict in West Africa. As Jihadist insurgents target rural areas and small towns more and more (OECD/SWAC, 2023), an increasing share of violent events also occurs far away from roads.

More generally, the report highlights that North and West Africa have followed a rather divergent evolution over the last two decades. North of the Sahara, political violence has reached an all-time low since the end of the Second Libyan Civil War (see Box 1.1). If current trends continue, Algeria, Libya, Morocco, and Tunisia will have experienced fewer than

Figure 1.3.

Violent events within one kilometre from roads by region, 2000–23



Source: Authors, based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Box 1.1.

Libya's civil wars

Libya has endured two bloody civil wars since Muammar Gaddafi's regime was toppled by an Arab Spring revolution in 2011. During the First Libyan Civil War, revolutionaries, led by defected elites who formed a National Transitional Council, generally set aside their differences. After the fall of Tripoli in August 2011, however, the revolution began to fragment, with groups dividing primarily along religious lines and geographic origin.

The lack of coherent leadership at a national level led to a second power vacuum where local and tribal leaders vied for national power, oftentimes accentuating the split between Gaddafi's clients among the nomadic tribes versus disenfranchised urban tribes. Disputes over election outcomes in 2014 resulted in the formation of a United Nations Security Council-recognised Government of National Accord (GNA) based in Tripoli, and a House of Representatives (HoR) based in Tobruk. The two sides could be roughly characterised as the more Islamist-friendly Tripoli faction versus the more secular Tobruk faction, the latter of which enjoyed the support of Khalifa Haftar's Libyan National Army (LNA).

The two governments became the main factions in the Second Libyan Civil War, which also saw the involvement of extremist militias affiliated with the Islamic State or Al Qaeda. One of the major events of the war was the unsuccessful attempt by the HoR-aligned LNA to capture the GNA-held western region of Libya with its capital, Tripoli. After 14 months of fighting, LNA forces withdrew from western Libya, and a ceasefire was signed between the LNA and the GNA in 2020.

While violence has considerably decreased in the country since 2021, the factors that led to Libya's Second Civil War have not been resolved. In particular, the institutionalisation of Libyan militias into the state apparatus mixes private with public interests and maintains divisions within the government based on ideology and tribal and geographic origin. These divisions mean that the potential for another outbreak of civil war remains.

Source: David Russell for this publication

200 violent events resulting in 220 deaths in 2024 in the region, against 1 540 events and 3 650 deaths a decade ago. All types of violence have declined significantly, including explosions and remote violence, which peaked just before the signature of a permanent cease fire between the two governments of Libya in 2020. Violence is mainly concentrated near urban areas and major road corridors in North Africa.

The opposite can be seen in West Africa where nearly 195 000 people have been killed since the beginning of the Boko Haram insurgency in 2009. West African conflicts are likely to cause 28 000 fatalities and 10 000 violent events in 2024 if the situation continues to deteriorate in Burkina Faso, Cameroon, Mali, Niger and Nigeria, where 94% of the regional violent events are recorded. Violence against civilians has become the most represented type of violence in West Africa, with more than 5 000 incidents in 2024, against 610 a decade ago. Much of the violence affects rural areas and small isolated towns rather than large cities.

Some roads are much more violent than others

Finally, the report analyses which segments of the transport system are the most affected by violence. Where are the most violent attacks against transport infrastructure located? The report shows that the geography of attacks is very uneven: some regions are particularly prone to infrastructure attacks. The highest levels of transport-related violence are found in western Cameroon, Nigeria, and Central Mali (Map 1.2). In these regions, violence against transport infrastructure takes many related forms: attacks against convoys, kidnappings, landmines and IEDs, blockades of cities, and destruction of the infrastructure itself (Figure 1.4).

Unsurprisingly, IEDs have the closest relationship with the road network, due to the nature of the remote explosives used in the attacks. A close correspondence is also observed between ambushes against convoys and the proximity to roads in rural areas, due to the opportunity of attacking mobile forces where they are the most vulnerable. As government forces become increasingly exposed to militant attacks, they tend to rely even more on heavily armed convoys to move their troops, protect traders along major transport corridors, and escort civilians who flee conflict regions. Kidnappings have the most complex relationship with mobility. They tend to occur both along transport corridors and in rural areas where Jihadist groups have implemented a predatory economy based on looting and ransoming civilians, as in the north of Cameroon.

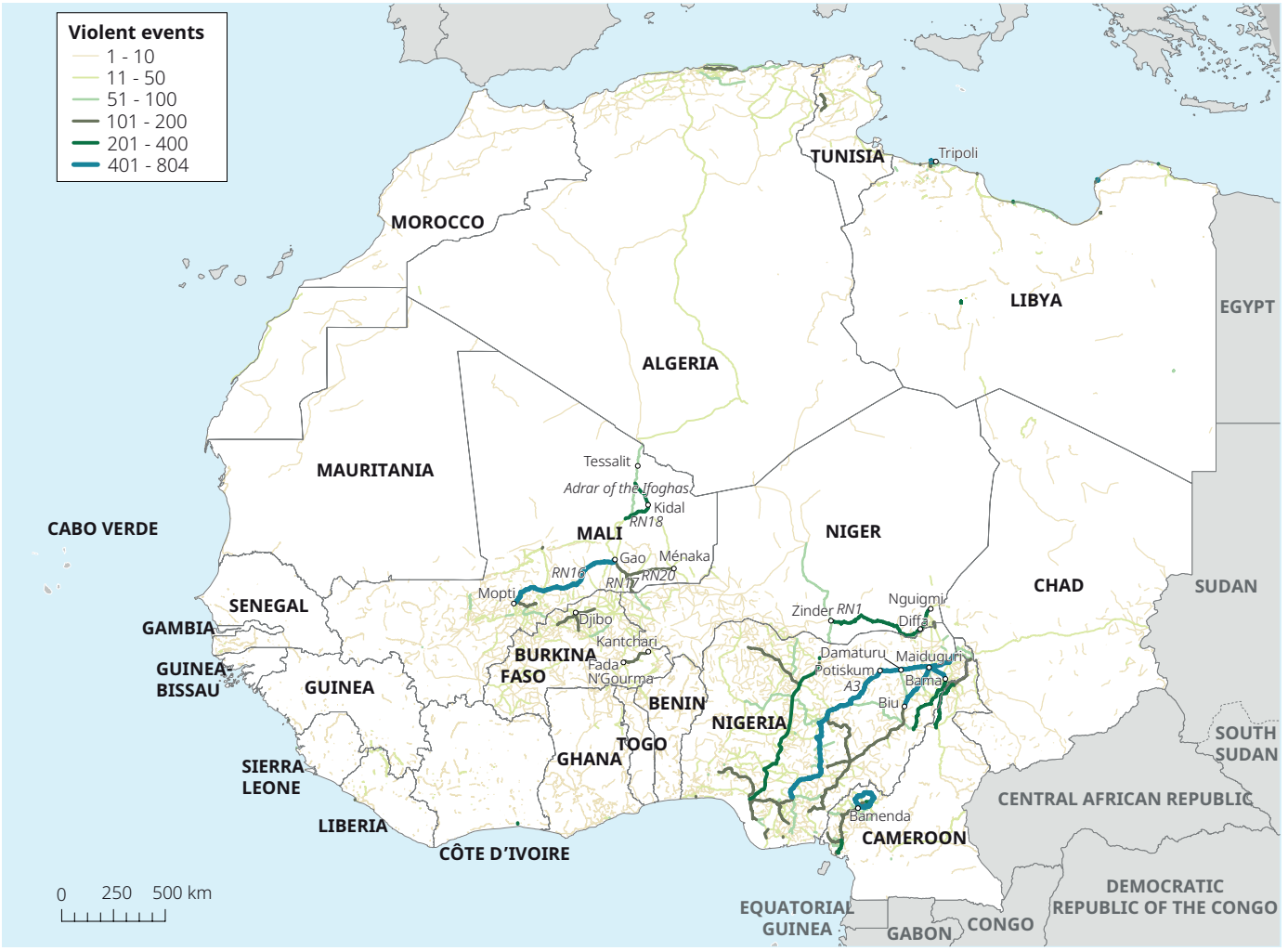
A MULTISCALAR APPROACH TO CONFLICT AND TRANSPORT

The study is part of a larger effort conducted by the OECD/SWAC (2014, 2020, 2022, 2023) to identify how geography affects the emergence and spatial diffusion of armed conflicts in 21 North and West Africa countries since the late 1990s (Map 1.3). The complex relationships between political violence and transport infrastructure necessitate to adopt a mixed-method approach that can not only identify temporal trends and regularities in the spatial distribution of violent events but also explain why the infrastructure is being targeted by specific groups in certain regions (Chapter 3).

The Organisation for Economic Co-operation and Development (OECD)'s Spatial Conflict Dynamics indicator (SCDi) is used to map recent shifts in the geography of violence at the regional level (Chapter 4). This indicator measures to what extent political violence is more or less intense and spatially clustered in specific regions (Walther et al., 2023). Using a uniform grid of 50 kilometres by 50 kilometres extending from Senegal to Chad, the indicator shows that violence has both intensified and expanded geographically since the mid-2010s. The SCDi has recently been updated with the addition of

Map 1.2.

The most dangerous roads of North and West Africa, 2000-24

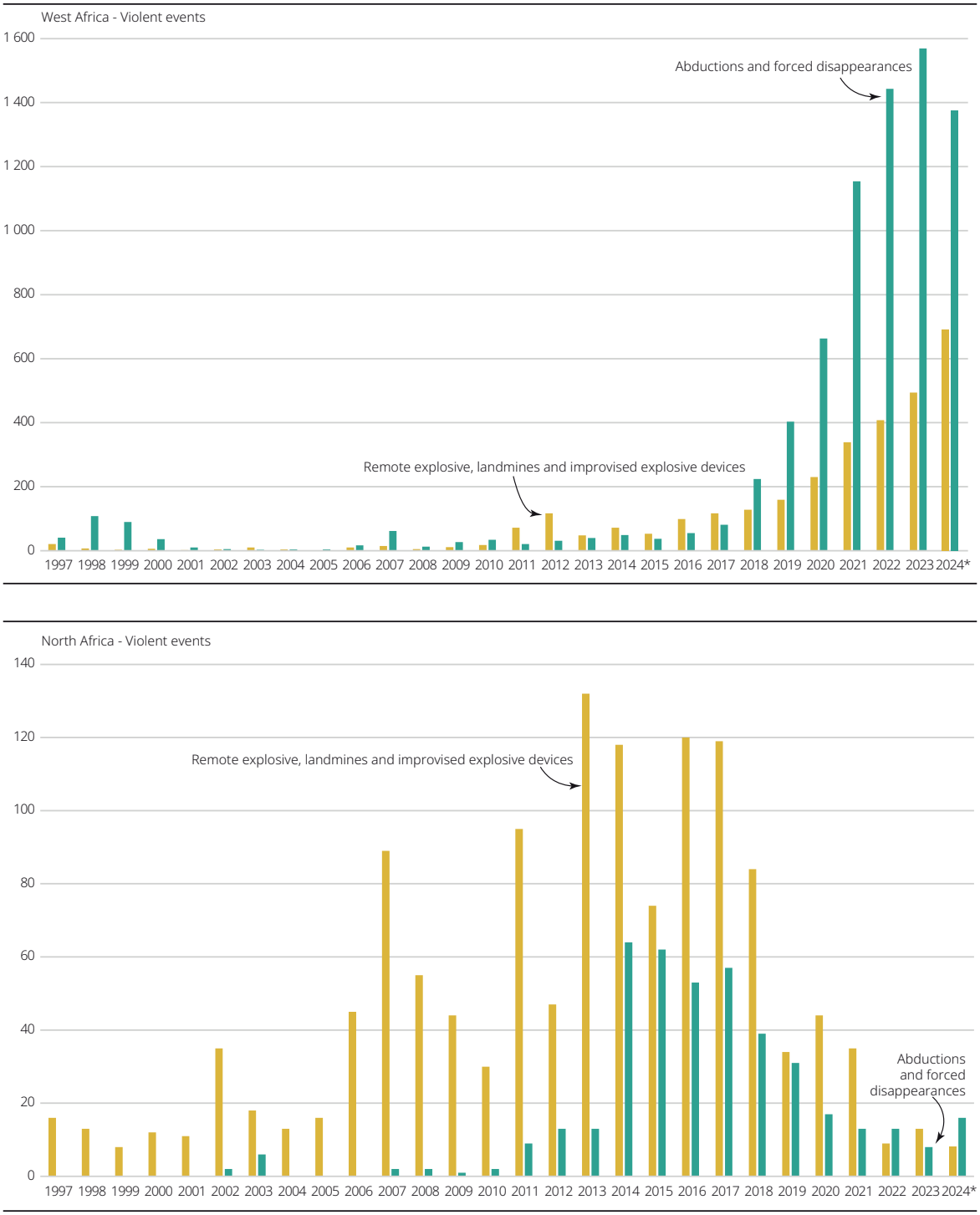


Note: To identify the most dangerous roads, the report mapped the location of all battles, remote violence and explosions, and violence against civilians that occurred from 2000-24. Each violent event was then assigned to the nearest road segment. Only the events for which the exact co-ordinates of a violent event are known with great precision are used.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Figure 1.4.

Abductions and remote violence by region, 2000-24



Note: *2024 data are estimates based on a doubling of events recorded through June 30.

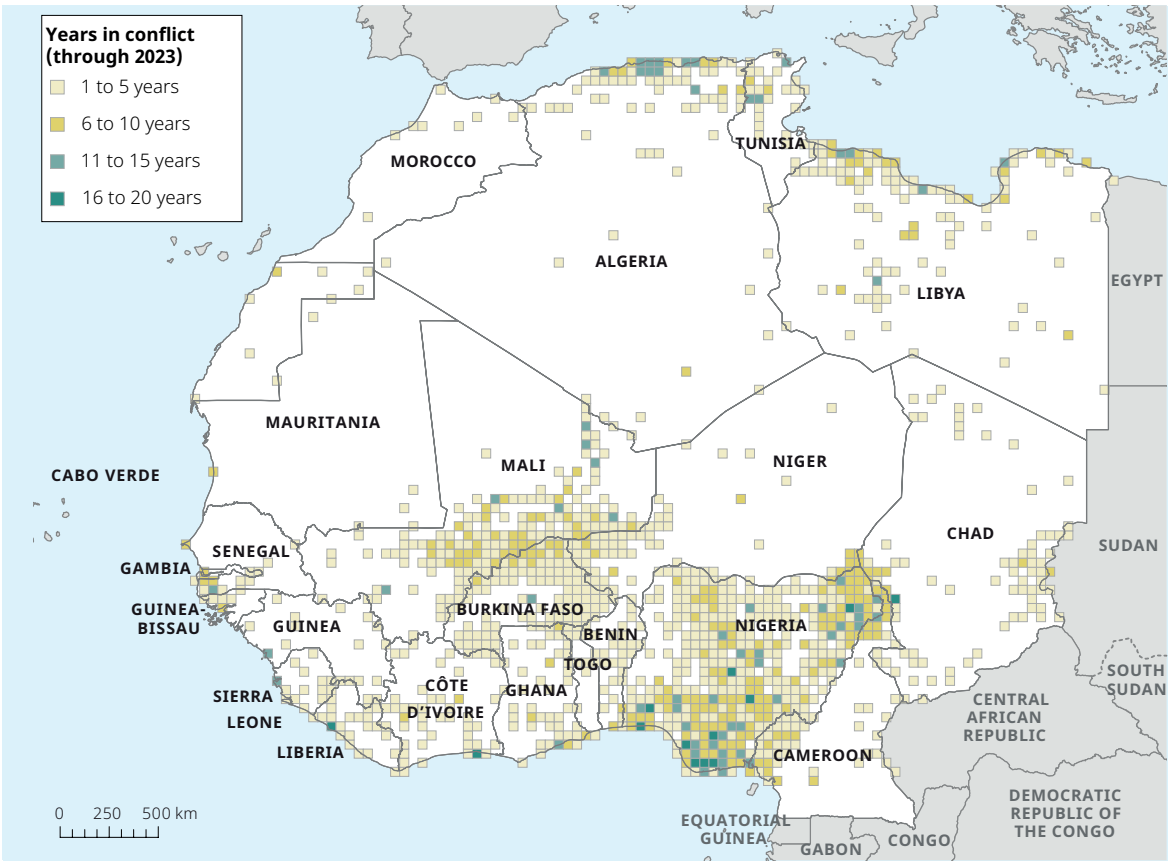
Source: Authors based on ACLED (2024) data. Data is publicly available.

Map 1.3.
Countries included in this report

Source: OECD/SWAC (2014).

Map 1.4.

Number of years in conflict by cell, 2023



Note: The map shows how many years in conflict has affected each cell between 2004-23.

Source: Authors based on ACLED (2024) data. Data is publicly available.

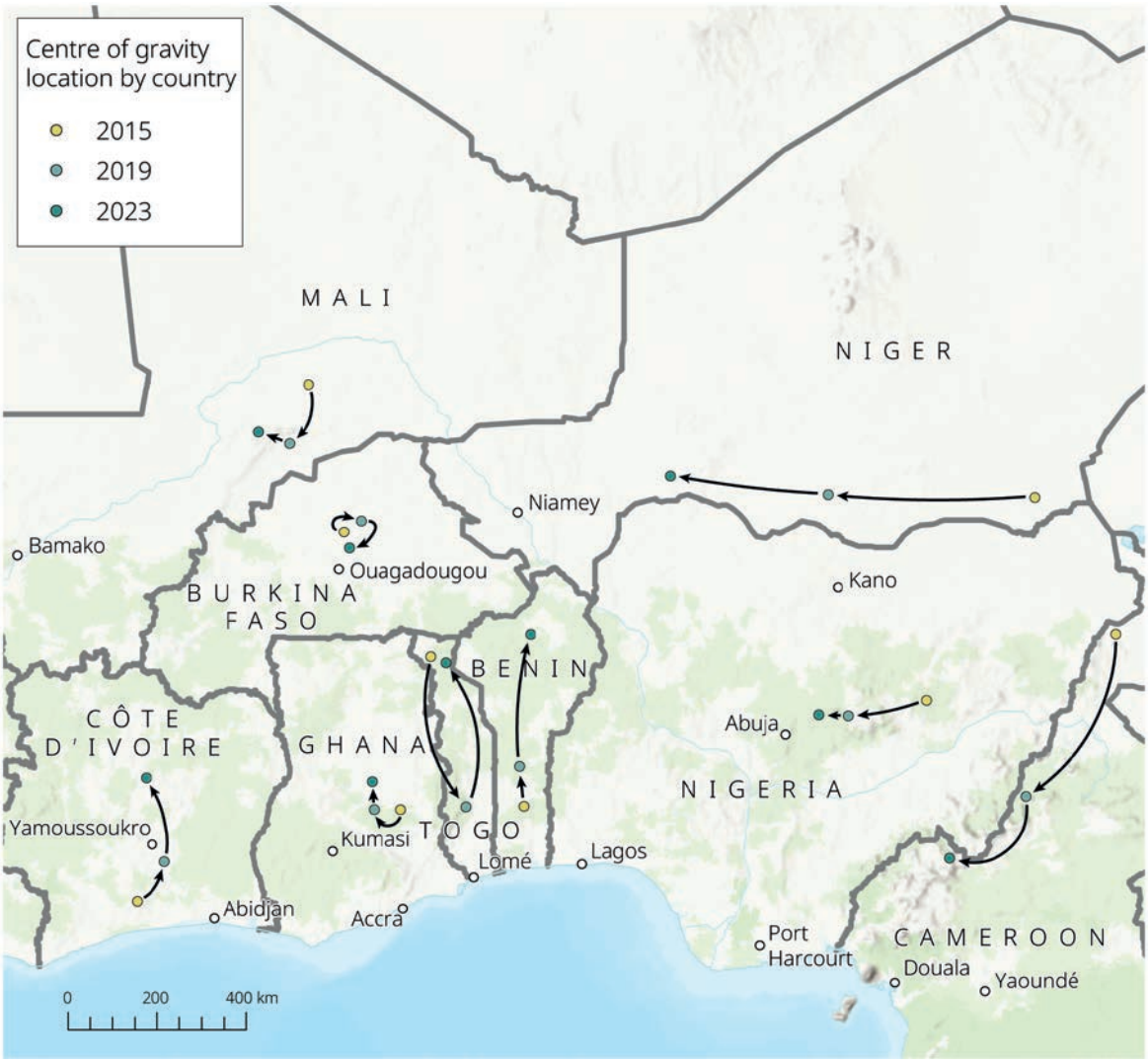
two new features to aid the identification of local conflict trends (Radil and Walther, 2024). These tools now identify regions that are newly entering into or exiting from conflict and characterise the current security conditions in a location as either worsening or improving, based on past conditions at the same location. Clusters of cells with more than a decade of conflicts are now evident in the Lake Chad region, across Nigeria's Middle Belt and Delta regions, in central Mali and northern Burkina Faso, and along the Libya and Algeria coasts (Map 1.4).

The report confirms that Sahelian jihadist organisations have expanded into coastal West African countries in recent years (Chapter 4). This expansion does not take the form of a unified front moving ineluctably from the Sahel to the Gulf of Guinea but through the gradual isolation of rural areas. This process, observed in multiple regions simultaneously, is highly dependent on local factors that are ruthlessly exploited by Jihadists. For this reason, significant differences can be observed in the intensity and forms of violence that are affecting the north of coastal countries, a region where not all violent events can be attributed to Jihadism. Attacks against civilians, armed clashes, and abductions of civilians are responsible for the largest number of incidents, while remote violence and explosions are extremely uncommon.

The expansion of Jihadist groups across West Africa has led to significant changes in the geography of armed conflicts. One way to represent these shifts is to map the centre of gravity of all the violent events observed in select countries since violent extremist groups started to expand transnationally in the mid-2010s (Map 1.5). A set of events recorded by ACLED can be mapped

Map 1.5.

Shifts in the centre of gravity of violent events, by country, 2015-23



Note: The centre of gravity represents the average location of violent events affecting Sahelian and Gulf of Guinea countries on an annual basis. For the sake of clarity, only three years are represented from 2015-2023.

Source: Authors based on ACLED (2024) data. Data is publicly available.

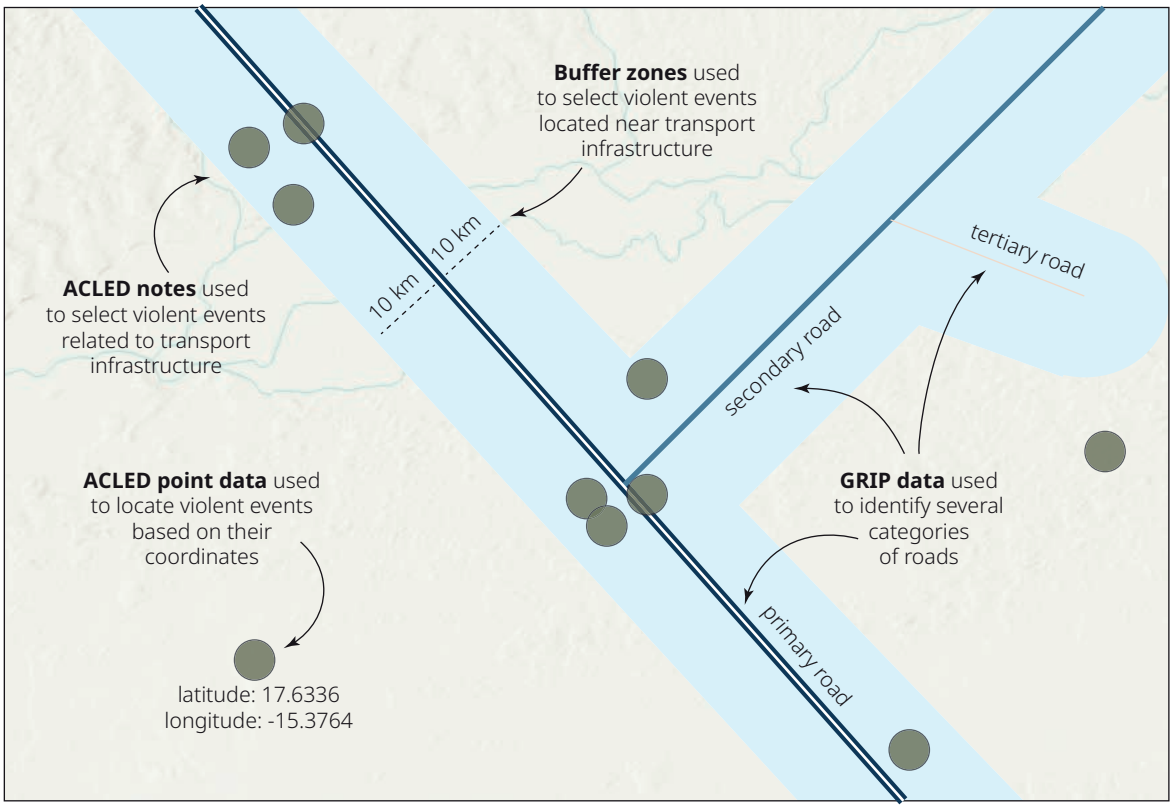
by a single point, which represents the average location of violence but not necessarily the most violent location in each country. This is a useful approach to summarise the complex spatial patterns of violence over time.

The southward expansion of Jihadist groups is clearly visible in the northward shift of violence in Benin, Côte d'Ivoire, Ghana and Togo. Even if not all violence should be attributed to Jihadist groups in these countries, the centre of gravity is moving north, a sure sign that more violence is recorded on their borders with Sahelian countries. In Mali, the centre of gravity has slightly shifted towards the Inner Delta of the Niger River, while it has remained largely centred north of Ouagadougou in Burkina Faso, where much of the western and eastern regions are now affected by insurgencies. In Cameroon and Niger, the centre of gravity has considerably shifted away from the Lake Chad basin, as violence related to the Ambazonian insurgency and the Islamic State-Sahel Province (ISSP) surged in western Cameroon and the Liptako-Gourma. Finally, shifts in the Nigerian centre of gravity reflect the increasing importance of banditry in the northwestern part of the country.

Spatial analysis is then used to study whether violence is clustered along transport

Figure 1.5.

Using conflict and road data to understand patterns of violence



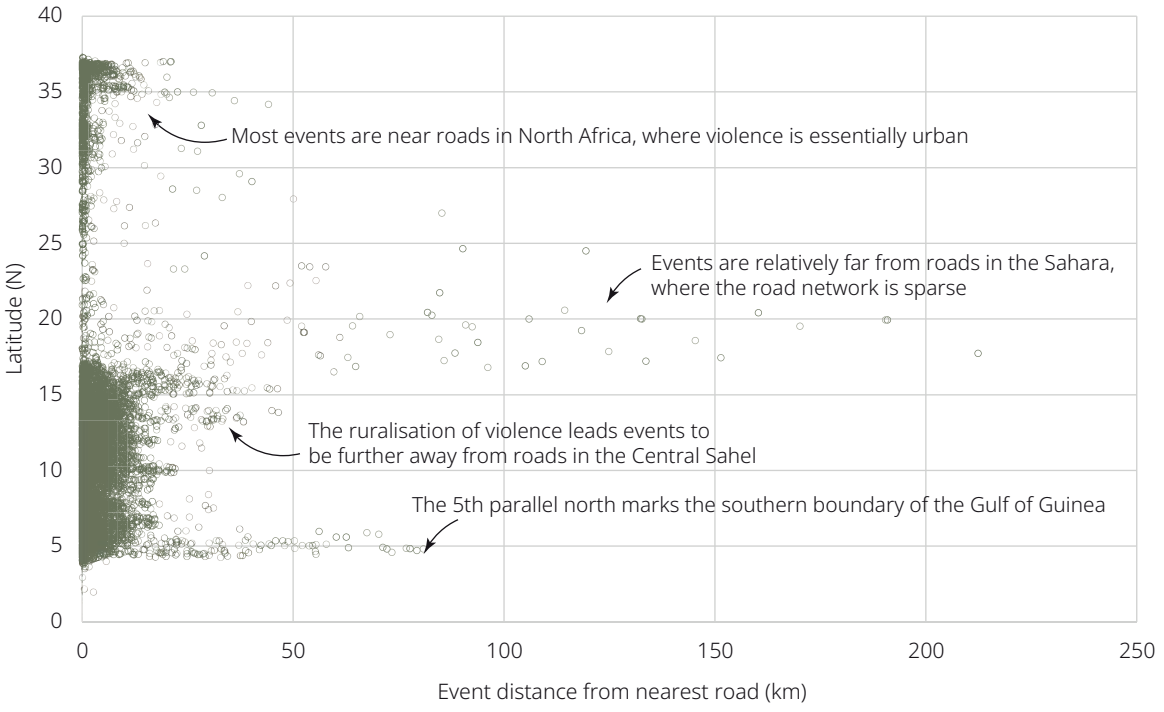
Note: each circle represents a violent event recorded by ACLED.

infrastructure, is becoming increasingly associated with such infrastructure, and which areas are the most affected by violence (Chapter 5). Conflict data from ACLED (2024) covers the period from January 2000 to June 2024 across the entire region. This long-term approach is necessary to monitor the security changes that have marked the region after the Cold War. It captures the end of the civil wars in the Gulf of Guinea in the early 2000s and the rise of religiously motivated extremism in the Sahel since the late 2000s. The analysis focuses on three different types of ACLED violent events that are particularly likely to affect transport infrastructure: battles between government and violent non-state actors, explosions and remote violence, and violence against civilians.

To study how violence affects transport infrastructure, the report uses the geographical co-ordinates of each violent event recorded by ACLED as indicated on Figure 1.5. The report then uses a harmonised dataset on road infrastructure collected by the Global Roads Inventory Project (GRIP) (Meijer et al., 2018) to match the location of each event to its proximity to the road infrastructure. Several buffer zones are created on both sides of the roads to calculate the distance between different types of violent events and different categories of roads.

The report also analyses the descriptive notes of each violent event to determine whether it was related to transport infrastructure. Ambushes against travellers and convoys, kidnappings and forced disappearances, city blockades, remote violence, and destruction of the transport infrastructure are included in the analysis. Finally, the spatial analysis of violent events and segments of roads is combined with a historical analysis of a selection of regions where violence against transport infrastructure has proved particularly intense in the last 15 years. While the quantitative analysis describes the background against which state and non-state actors compete for the control of mobility, the

Figure 1.6.
Event distance from nearest road by latitude, 2000-24



Source: Authors based on ACLED data (2024). Data is publicly available.

qualitative analysis contributes to unveiling their motivations and strategies.

The combination of conflict and road data highlights several important regional specificities, which would not be necessarily apparent if the spatial dimension of violence were not considered (Figure 1.6). Calculating the distance from violent events to the nearest road by latitude shows for example that most of the violence is concentrated near roads in North Africa (30-35 degrees North), where conflicts are mostly urban. This spatial distribution contrasts with the one observed in the Sahara (20-25 degrees North), where events are relatively further from roads due to the sparsity of the infrastructure network. The ruralisation of violence currently operating in the Central Sahel leads violent events to be located away from major roads around 15 degrees North.

UNLOCK THE PUZZLE OF THE RISE AND FALL OF VIOLENCE

The patterns of violence analysed in this report strongly suggest that transport infrastructure has become a critical element in the competition for political power in North and West Africa over more than two decades. This is particularly visible south of the Sahara, where violence has not only increased at an unprecedented rate since the early 2010s but also expanded to previously unaffected areas, both in the Central Sahel, the Lake Chad basin, western Cameroon, and the north of coastal countries. In these regions, roads represent a vital component of state's counterinsurgency strategies and a strategic target for local militants. This combined interest for transport infrastructure is unlikely to decrease in the coming years, as both state and non-state actors embrace even more mobile forms of warfare in their struggle for territorial control.

The duality of the transport infrastructure, as both a facilitator and target of violence, has put government forces in West Africa at a disadvantage, however. Regular forces are heavily

constrained by the sparsity and poor conditions of the road network, which makes them vulnerable to attacks without necessarily allowing them to project their military power over long distances. Violent events tend to be strongly associated with roads because regular forces (and civilians) have simply no alternative but to use the few transport corridors available to them. The reverse is true for irregular forces, who use motorbikes and light pick-up trucks in areas that have few roads in the first place and attack regular forces traveling in heavily armoured convoys with relative impunity (Table 1.1).

Rebel and Jihadist agility on the ground is only partially counterbalanced by the increasing use of airpower, notably drones, helicopters, and surveillance planes supplied to Sahelian countries by Türkiye and Russia. While these assets allow the military to strike rebels and violent extremists in remote regions, they have significant limitations given the vast extent of the conflict zones and the difficulty in distinguishing militants from non-combatants. Air strikes may help government forces maintain a certain pressure on terrorist groups, but air power alone is unlikely to bring a lasting solution to the conflicts that are tearing West Africa apart. Northern Nigeria is a good illustration of these difficulties. Despite the recurrent use of air strikes against Jihadist militants and bandits for over a decade, the intensity of the violence has only increased, with dramatic consequences for civilians.

Improving security involves improving transport infrastructure

The logical conclusion of this report is that improving security necessarily involves improving transport infrastructure. This is particularly true in West Africa, where the transport network is shorter, less dense, and less well maintained than in North Africa (Chapter 2). From this point of view, the results of this report are part of a long line of works that underline the key role played by infrastructure in the integration process. Five years ago, the Sahel and West Africa Club (OECD/SWAC) noted that the absence of a well-developed transport network was jeopardising the cohesion of Sahelian countries (OECD, 2019). The lack of public investment in health services, education, and transport infrastructure, noted OECD/SWAC, could potentially pose a major problem for national cohesion since "independence or terrorist movements often feed on the marginalisation – actual or perceived – of border areas to spread their ideas among local populations" (OECD, 2019: 12). This report confirms that this trend has unfortunately been reinforced in recent years.

Sixty years after the independence of many West African countries, accessibility remains elusive in the region. Peripheral cities such as Bardaï, Bilma, Kidal and Timbuktu, where rebel movements have historically developed, are still not connected to the national network by tarmac roads. Furthermore, important markets and vast rural areas are sorely lacking in road infrastructure that would enable them to contribute to the regional economy. This lack of accessibility is both an incentive for secessionist or extremist movements to develop and an impediment for government forces to operate in the peripheries of the state. Border regions have particularly suffered from this marginalisation (OECD/SWAC, 2022). Prevented from playing their role as commercial crossroads, both for petty trade and for major regional trade flows, these regions have experienced some of the highest levels of violence ever recorded in West Africa.

Build a new social contract in the peripheries of the state

More generally, the report suggests that transport infrastructure is largely ignored in discourses that emphasise the "return of the State" as a means of combating insecurity. The return of the state to poorly accessible regions requires that a new social contract be established between central governments and local populations. For this social contract to be productive in the long term, it must be based on real investment in local development on the part of peripheral regions. This has rarely been the case to date in the Sahel where state initiatives have taken on a more sovereigntist than developmentalist form. Rather than rehabilitating border markets, facilitating

Table 1.1.
The unequal competition for controlling mobility

	Transport infrastructure as a target of violence	Transport infrastructure as a facilitator of violence
Regular forces (government forces and their allied mercenaries and militias)	Vulnerable to ambushes, landmines, IEDs and blockades	Unable to project military power over long distance
Irregular forces (violent extremist organisations and rebels)	Able to attack convoys, use remote violence, kidnapping, and destroy key transport infrastructure	Able to move undetected or offroad across rural areas with motorbikes and light pick-up trucks

mobility, or building transport infrastructure, Sahelian states have focused on strengthening security. These aspects have largely taken precedence over developmental support for peripheral communities, who nonetheless withstand the worst of violence.

The military coups in Burkina Faso, Mali and Niger have further reinforced this militarisation of the state peripheries, with the creation of a joint force by the countries of the Alliance of Sahel States in the trinational area of the Liptako-Gourma. In the Lake Chad basin, too, the militarisation of borderlands conducted under the aegis of the Multinational Joint Task Force has yielded limited results in terms of regional co-ordination and has led to a massive increase in civilian casualties.

The primacy given to military action in both the Central Sahel and Lake Chad basin has led to the total collapse of the principles of cross-border co-operation and the idea of *pays-frontière* developed by former Malian President Alpha Oumar Konaré in the early 2000s to help local communities overcome the obstacles created by colonial partition. For President Konaré and the organisations involved in cross-border co-operation over the past 20 years, developing cross-border infrastructure and strengthening the role of local institutions both served to restore the economic centrality of peripheral regions. Little remains of this generous idea in the Sahel, where violence is particularly intense and clustered in regions that before the mid-2010s were recognised as having the greatest potential for cross-border co-operation (OECD/SWAC, 2017).

The Sahelian trend illustrates the limits of favouring military action to the detriment of cross-border co-operation and development. As Jihadist violence spreads towards the Gulf of Guinea, cross-border co-operation is more important than ever. President Konaré's vision that the destiny of the people of West Africa is to transcend their divisions remains the most enduring safeguard against religious extremism (Walther, 2024). If the state should return to the peripheries, it should be as a provider of local services, as a facilitator of economic exchanges, and as a guarantor of human rights.

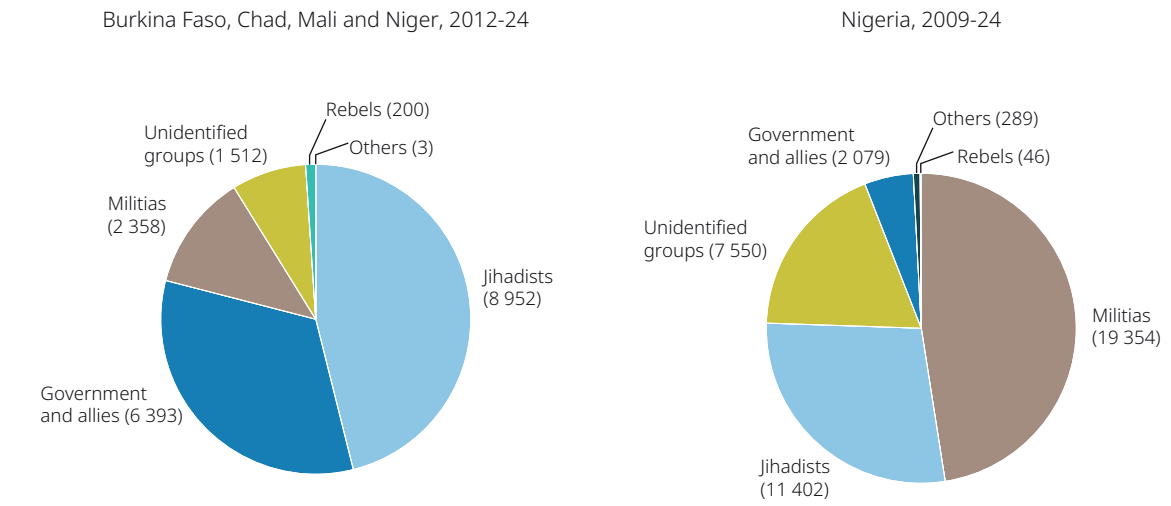
Focus on protecting civilians

This report has highlighted how vulnerable civilian populations are to attacks on transport infrastructure. Civilians are victims of ambushes along the road and kidnapped for loot or ransom when they work in their fields, collect wood, or go to the market. Nearly 1 600 people were abducted in West Africa in 2023 alone, fuelling a booming economy of predation in the regions controlled or under the influence of Jihadist groups. Civilians are also killed in high numbers by IEDs planted along their way, starved when their cities are blockaded, and prevented from doing business or visiting relatives by the destruction of the transport infrastructure.

More generally, this report and previous OECD/SWAC studies (2020, 2022, 2023) confirm that civilians pay an alarming cost in the region. Violence against civilians represents 45% of the events and 35% of the fatalities recorded in North and West Africa since detailed conflict data were available in the late 1990s. The vast majority of the 85 600 civilian deaths and nearly 33 000 incidents listed as "violence against

Figure 1.7.

Fatalities associated with main perpetrator involved in violence against civilians



Note: the figures show the number and share of fatalities recorded by ACLED as "violence against civilians" for which the identity of the main perpetrator, listed as actor1, is known. The data is available through 30 June 2024. "Jihadists" include violent extremist organisations affiliated with Al Qaeda or the Islamic State such as Boko Haram. "Government and allies" include military and police forces, pro-government militias such as the Imghad Tuareg Self-Defense Group and Allies, and mercenaries such as the Wagner Group. "Militias" include communal, ethnic and self-defence militias like the Burkinabe Volunteers for the Defence of the Homeland (VDP). "Rebels" include secessionist and autonomist movements, such as the Coordination of Movements of the Azawad.

Source: Authors based on ACLED data (2024). Data is publicly available.

civilians" by ACLED over this period are caused by direct attacks against unarmed populations. The situation is particularly worrying in West Africa, where violence against civilians is the most represented type of violent events since the late 2010s. If the situation continues to deteriorate, more than 5 000 incidents causing the death of more than 10 000 civilians will be reported in this region in 2024.

These catastrophic numbers suggest that civilians are not just caught in the crossfire between belligerents or mistakenly hit by air strikes. Rather, the control of the civilian population has become the major objective of both government forces and their opponents. As Figure 1.7 shows, both state and non-state actors target civilians in a rather systematic manner. In the most affected countries of the Sahel, one third of all fatalities listed under "violence against civilians" by ACLED are associated with government forces, their allied militias and mercenaries, and 46% with Jihadist groups. In Nigeria, civilians are mainly killed by communal, ethnic and self-defence militias (48%) and secondarily by Jihadist groups (28%). The shift towards military regimes, the support provided to militias, and the use of foreign mercenaries have amplified this trend in recent years.

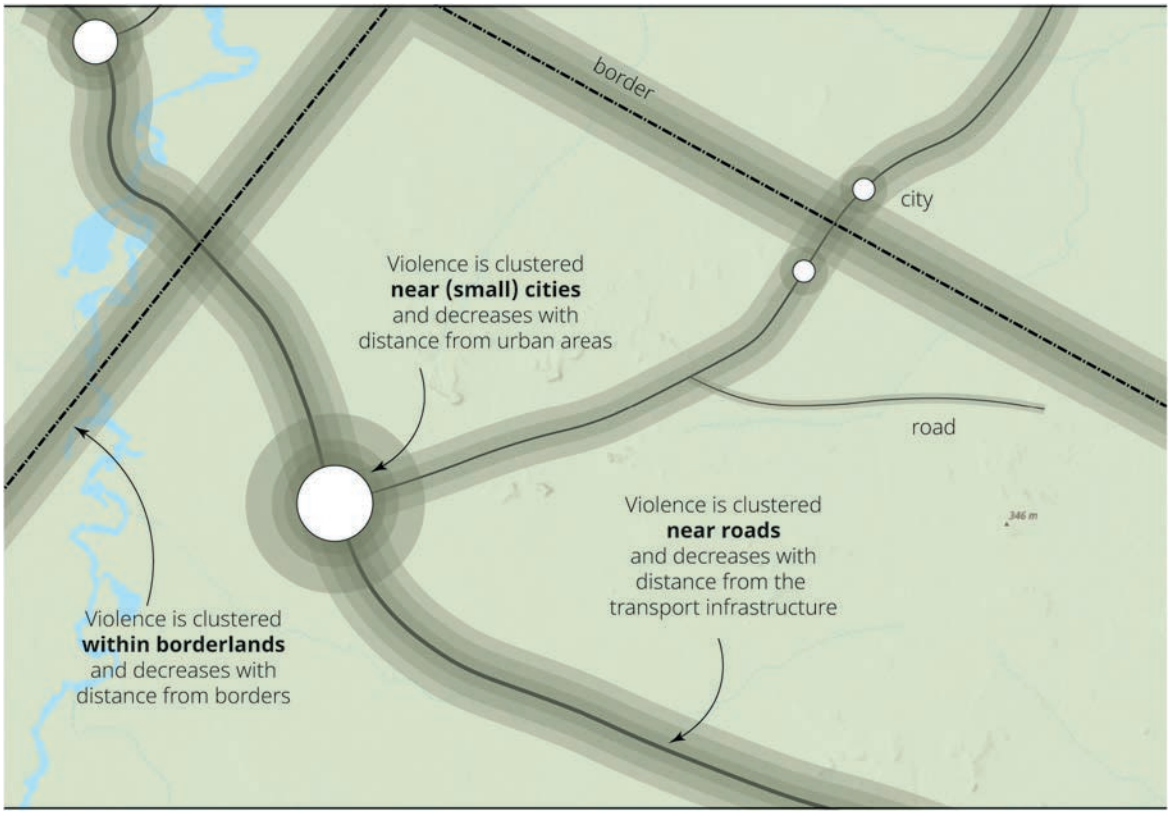
Develop an integrated spatial approach to political violence

Strong regularities can be observed in the way political violence is spatially distributed across North and West Africa. Violence is far from random: it is much more intense in certain places, from which it tends to expand following certain rules. Regionally, this report has demonstrated that violence is more intense near road corridors and decreases sharply as one moves away from the road infrastructure. These results echo previous studies that showed that violence also tends to decrease with distance from cities and borders (OECD/SWAC, 2022, 2023). The fact that militants avoid confrontations with military forces in major cities, use borderlands as safe havens, and focus their attacks on transport infrastructure suggests that cities, borders and roads are important predictors of violence in the region. In any given region, the potential of violence is likely to be a function of its combined proximity to these geographical features (Figure 1.8).

These general principles could be used in further research to build a simple model of how violence has diffused across the region over space and through time, without having

Figure 1.8.

Cities, borders and roads and their relations to political violence



to integrate numerous indicators that are often difficult to spatialise locally or to build out for the entire region due to data limitations. If the patterns observed in the past continue, violence should theoretically be more intense near international boundaries, urban centres, and major roads, and gradually decline from there.

The development of such a model is a priority for future efforts to better understand the spatial life cycle of violence in places. As noted in previous reports (OECD/SWAC, 2020), violence typically does not persist indefinitely in places. For example, many of the current epicentres of violence in West Africa were peaceful just 15-20 years ago while violence in North Africa continue to recede toward pre-2011 levels. Instead, violence exhibits a cyclic nature: it emerges, intensifies as it matures, and may have a repeated series of spikes or valleys before ultimately ending. The development of a concise model of the diffusion of violence would be an essential contribution to unlock the puzzle of the rise and fall of violence across the region.

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Chapter 2

Transport networks in North and West Africa

Chapter 2 discusses how transport infrastructure can be used both as a target for and a facilitator of violence by government forces and militants. The chapter first shows that, while the benefits of well-developed transport infrastructure are well recognised, they are not distributed equally across the region. North African countries and Cabo Verde have a longer, denser, more decentralised, and better-maintained road network than West African countries. The chapter then shows that the ability to move freely across long distances and control movement has become one of the key components of the armed conflicts affecting the region. Both state and non-state actors have established road checkpoints to conduct identity checks and extract resources from passengers. In such an asymmetrical conflict, jihadists have proved much more mobile and flexible than regular forces. However, governments' attempts to limit insurgent movements have often led to disastrous consequences for the local economy and food security. Mobile military campaigns based on drones and airstrikes have also inflicted civilian casualties in both the Central Sahel and the Lake Chad region.

KEY MESSAGES

- **North African countries and Cabo Verde have a longer, denser, more decentralised, and better maintained road network than West African countries.**
- **An extensive road network enhances sovereignty by allowing military forces to be projected far away from the main political centre, while preventing the development of safe havens in remote regions.**
- **The ability to move across long distances and control movement has become one of the key features of asymmetrical warfare in North and West Africa.**
- **Insurgents tend to rely on mobile and flexible vehicles and light weapons, while government forces increasingly use fixed military bases and heavily armed convoys.**

The analysis of the relationships between armed conflict and transport infrastructure must necessarily consider the historical conditions under which the current network has developed. The following sections argue that the structure of the North and West African transport networks has undergone major transformations since the beginning of the 20th century. For historical reasons, these networks have taken different forms on either side of the Sahara. The North African transport network is much denser, better maintained and less fragmented than that of West African countries, which remains particularly sparce. The regional specificities of the North and West African networks affect the competition for the control of transport infrastructure between state and non-state actors and contribute to the emergence of different patterns of violence.

THE ECONOMIC BENEFITS OF A WELL-DEVELOPED TRANSPORT SYSTEM

Transport infrastructure has long been recognised as a key factor in human development. A dense and extensive infrastructure network improves accessibility by providing equitable access to a wide range of social, health and economic services that would otherwise be out of reach of local populations (Neutens, 2015), both within and between urban agglomerations (Oviedo and Sabogal, 2020). Transport infrastructure benefits both rural and urban areas by enabling producers to reach agricultural markets in a timely manner and, in return, facilitating the distribution of seeds, fertilisers and other farm inputs in rural areas. Poor road accessibility, on the contrary, limits the ability of rural producers to sell their stocks at the most convenient time, seriously hindering social and economic development in rural areas and leading to higher prices for final consumers.

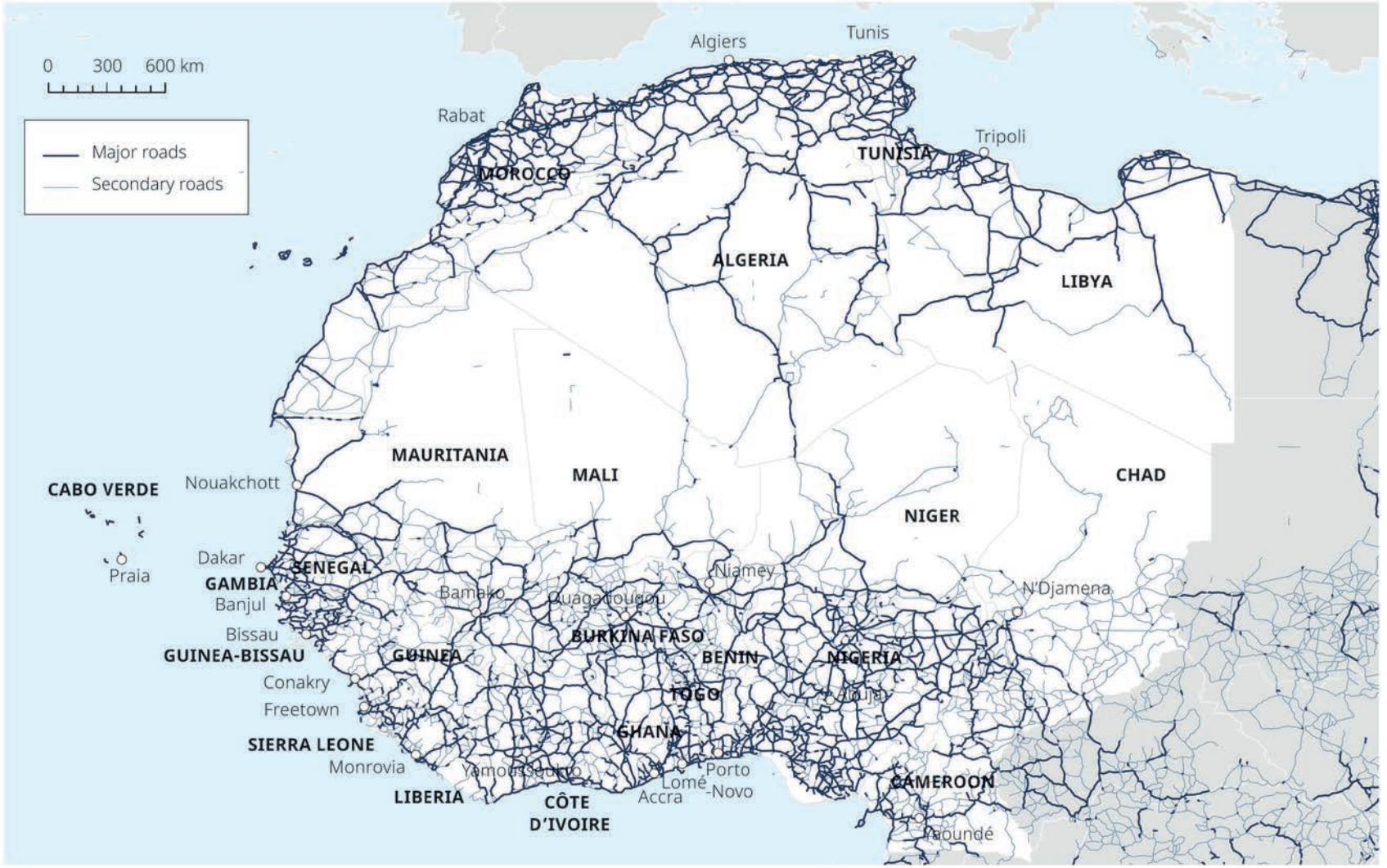
The key role of accessibility has sparked renewed policy interest in large transport infrastructure investments, contrasting with the scepticism towards transport that characterised much of the structural adjustment era in Africa (World Bank, 2010). This "re-enchantment with big infrastructure" (Nugent, 2018) is fuelled by a boom in primary commodity prices and the development of modern technologies that can reduce trade frictions and corruption, such as One Stop Border Posts implemented by regional organisations in several parts of Africa (OECD, 2019b).

While the benefits of a well-developed transport infrastructure are widely recognised, they are not distributed equally across North and West Africa. Significant differences can be observed in the length, density, structure and quality of road networks across countries (Map 2.1). North African countries and Cabo Verde have longer, denser, more decentralised, and better maintained road network than West African countries (Table 2.1). These variations correlate with their higher levels of human development and urbanisation. National variations may also reflect the unique shape, size, and population distribution of each country. Elongated countries with high population densities, such as Benin and Gambia are likely to have a dendritic network organised around a central trunk, unlike large and sparsely populated countries such as Chad.

Comparing countries based on their density of roads per square kilometre makes little sense where most of the population is either concentrated in cities or moves nomadically, as in Mauritania, Libya, and northern Mali, Niger, and Chad (OECD/SWAC, 2014). Rather, the most distinguishing factor to compare road networks is their condition. Poorly maintained roads increase transport costs, make agricultural products more perishable, shorten the operational life of trucks, cause more accidents and reduce social interactions between communities. Paved roads represent a much larger share of the national network in North African countries (83%) than in West African countries, where they remain scarce (17%). Significant variations can be observed across countries south of the Sahara (Figure 2.1). Paved roads represent at least 30% of the network in Cabo Verde, Senegal and Nigeria, but less than 10% in Sierra Leone, Benin, Côte d'Ivoire, Guinea, Mali, Cameroon and Chad. Nigeria may have the largest road network in West Africa with an estimated 195 000 kilometres of paved and unpaved roads in 2019, but a significant portion is currently deteriorated due to poor maintenance (ICRC, 2017). In Ghana, only 40% of the road network was considered to be in "good" condition by the Ministry of Roads and Highways in 2015, with the largest proportion of roads in "poor" condition located in the Brong Ahafo, Accra and Eastern Regions (Government of Ghana, 2019).

Map 2.1.

Major and minor roads in North and West Africa, 2017



Source: Authors based on Michelin data made available by Müller-Crepon et al. (2021).

Table 2.1.
Specificities of national road networks

Country	Total roads, km	Paved roads, km	Unpaved roads, km	Paved roads/ 100 sq. km	Year
Algeria	141 000	117 000	24 000	4.9	2023
Benin	16 000	1 400	14 600	1.2	2018
Burkina Faso	15 304	3 642	11 662	1.3	2014, 2017
Cabo Verde	1 350	932	418	23.1	2013
Cameroon	77 589	5 133	72 456	1.1	2019
Chad	40 000	870	39 130	0.1	2006
Côte d'Ivoire	81 996	6 502	75 494	2.0	2007
Gambia	2 977	518	2 459	5.1	2011
Ghana	72 380	16 998	55 382	7.5	2015
Guinea	44 301	3 346	40 955	1.4	2018
Guinea-Bissau	4 400	453	3 947	1.6	2016
Libya	37 000	34 000	3 000	1.9	2021
Mali	89 024	6 605	82 419	0.5	2020
Mauritania	12 253	3 988	8 265	0.4	unknown
Morocco	57 334	45 240	12 094	10.1	2018
Niger	18 949	3 979	14 969	0.3	2018
Nigeria	195 000	60 000	135 000	6.6	2019
Senegal	16 665	6 126	10 539	3.2	2017
Sierra Leone	11 701	1 051	10 650	1.5	2015
Togo	9 951	1 794	8 157	3.3	2018
Tunisia	20 000	16 000	4 000	10.3	2018
Total	965 174	335 577	629 596	2.7	
North Africa	*255 334*	*212 240*	*43 094*	*4.5*	
West Africa	*709 840*	*123 337*	*586 502*	*1.6*	

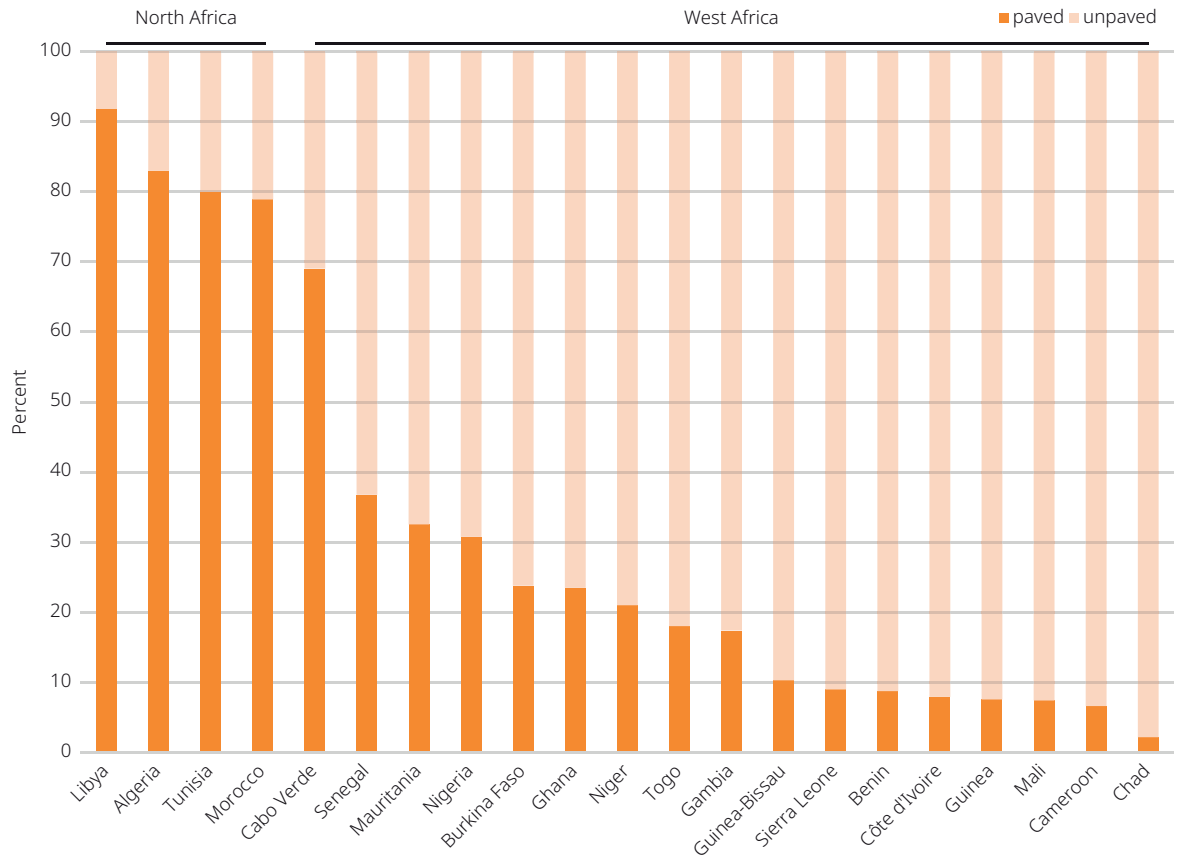
Source: CIA (2024).

WEST AFRICA: A SPARSE AND FRAGMENTED NETWORK

Colonisation radically transformed the transport architecture of West Africa following a well-known sequence of transportation development (Taaffe, Morrill and Gould, 1963). Building on a few scattered ports and trading posts along the Gulf of Guinea, colonial powers developed railway lines and roads from the seacoast to the interior of the continent (Debrie, 2010). These lines of penetration were designed for political and military control, mineral exploitation and agricultural production. Their expansion contributed to the rapid economic development of colonial cities such as Accra, Abidjan and Lagos, and to a process of port concentration, as colonial trade was channelled through a few ports such as Sekondi-Takoradi in Ghana or Port-Harcourt in Nigeria. Smaller feeder roads were built to reach agricultural and mining zones, both on the coast and in the hinterland, leading to the emergence of secondary urban centres,

Figure 2.1.

Share of paved and unpaved roads in North and West Africa



Source: CIA (2024). Various years.

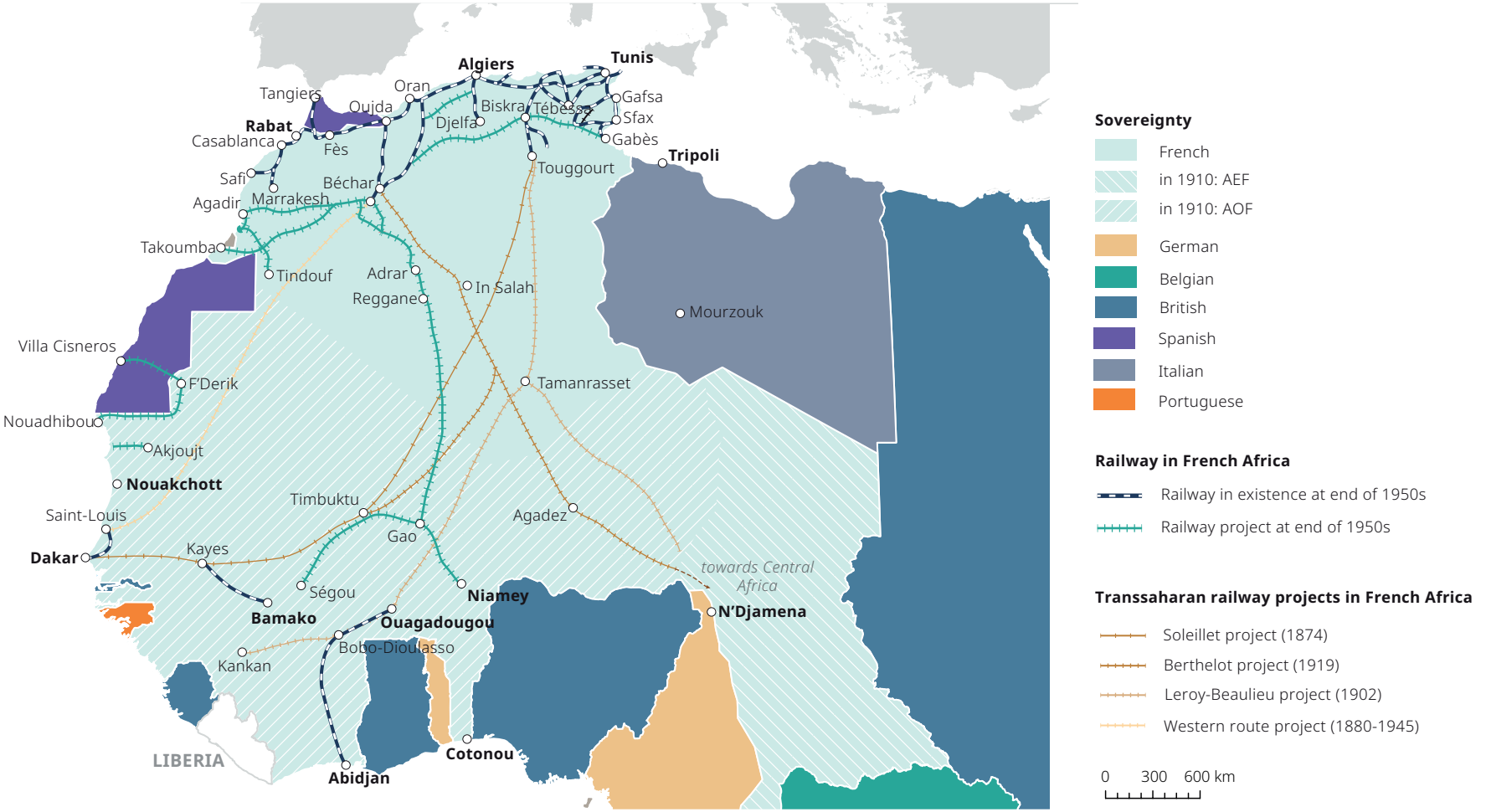
which often replaced less strategically situated precolonial markets (Howard and Shain, 2005). Numerous rail projects were designed from the late 19th century to the end of the Second World War to link the two shores of the Sahara across French Africa. However, none came to fruition (Map 2.2).

The territorial division of the region into competing colonies further encouraged the development of transport infrastructure for political motives, particularly between coastal and Sahelian countries. In the Sahel, France broke with older commercial logics by developing a major axis between Dosso in Niger and Kandi in Benin, which allowed to export cash crops produced in the east of the country through the port of Cotonou rather than through British-controlled Nigeria (Walther, 2008). Similar decisions were made in today's Ghana, where Britain extended the Eastern Trunk Road connecting Ho to Yendi and Bawku, following the 1956 British Togoland status plebiscite (Nugent, 2019). The colonial road network was deliberately reoriented towards Accra to prevent the diversion of cocoa produced in eastern Ghana through the port of Lomé in French-controlled Togo.

The postcolonial period did not radically depart from the transport logics implemented during the colonial era. Apart from Nigeria, where Kaduna has developed as a hub, the structure of the regional railway network remains dominated by single lines connecting the coast to the interior. Crucial international links, such as the one between Bamako, Ouagadougou, and Niamey have been abandoned or remain incomplete (Map 2.3). In Niger, the section built by the Bolloré Group from Niamey to Dosso in the mid-2010s (145 km) to connect with the coastal region through Parakou is not operational.

Map 2.2.

Railways and trans-Saharan projects before independence



Source: adapted from OECD/SWAC (2014) by the authors with permission.

Map 2.3.

Railroad network in North and West Africa, 2024

Source: OpenStreetMap (2024).

In some countries, the rail infrastructure inherited from the colonial period has slowly deteriorated. In Senegal, much of the recent investment has been directed towards developing a regional express train in the capital city region, discontinuing regional links between Dakar, Saint-Louis and Linguère, as well as international connections with Mali. While the Senegalese government announced a plan in 2022 to rehabilitate the first half of the line leading to Tambacounda (Government of Senegal, 2022), there have been no international passenger trains operating between Dakar and Bamako since 2010 (Figure 2.2). Further east, the Nigerian government has announced the construction of a rail link between Kano and Maradi in the Republic of Niger through Daura, Katsina, and Jibiya (284 km). This crucial infrastructure aims to connect two regions of Hausaland that share a long tradition of commercial relations but lack major transport corridors. The political crisis following the military coup in Niger in July 2023 does not seem to have slowed down the project. In March 2024, Nigeria's Ministry of Transportation announced that it had secured USD 1.3 billion to complete the project (Reuters, 2024).

Along the Gulf of Guinea, the road network was developed to support the expansion of agriculture frontiers, provide access to mining areas, and facilitate oil production. A dense network of feeder roads was built in Côte d'Ivoire, Ghana, and Nigeria to develop cash crop plantations in previously forested areas (Kalischek et al., 2023). The latest stage of this process is evident in Ghana today (Asibey et al., 2020), where the development of a dense network of small roads connecting major axes to plantations and mining sites has led to rapid deforestation in the Ashanti, Ahafo, and Western regions (Walther et al., 2020). Most of the road accessibility gains of the last decade are concentrated in these regions, contributing to deepening regional disparities between the rapidly developing south of Ghana and the north of the country (Map 2.4).

Accessibility remains a critical issue within urban agglomerations as well. In most countries in the region, rapid urbanisation has placed immense pressure on transport systems, leading to challenges such as increased emissions, pollution, and congestion (Stokenberga et al., 2024). As cities grow, residents who rely on public transportation struggle to access essential services such as markets, healthcare, and schools (Acheampong and Asabere, 2022). Those who can afford cars enjoy better access but at the cost of exacerbating environmental issues. In Ghana, recent studies indicate that accessibility to markets remains problematic for many urban dwellers living far from the core business areas and/or with limited means to dedicate to transportation (Anderson, 2024). In cities like Accra and Kumasi, addressing these challenges requires identifying accessibility gaps, bringing services closer to residents, improving infrastructure for mass transit and active modes, and integrating a gender lens in transport planning (Box 2.1).

Historically, the development of an integrated transport system in the Sahel was much slower due to the lack of roads and railways, long distances between cities, and low population densities. Sahelian countries tried to address these weaknesses by implementing three related sets of initiatives: the construction of a "unity" road connecting the capital to its eastern peripheries, the densification of the road network in the "valuable" southern regions, and the development of transport corridors towards the Gulf of Guinea (Debrie, 2007).

- *Unity roads*. The road network inherited from the colonial period remained primarily focused on capital cities in the decades following independence (Lombard and Ninot, 2010). In the late 1960s, very few paved roads connected Dakar, Nouakchott, Bamako, Ouagadougou, Niamey, and N'Djamena to other cities in the country (Map 2.6). Since French colonial conquest proceeded from the Atlantic Coast to Lake Chad in the east, the capital cities of the Sahel were in the western part of the colonies, leaving much of the rest of the country poorly connected (Debrie, 2007). The only exception was Burkina Faso, as its capital city, Ouagadougou—being the capital of the Mossi Empire—was located in the centre of the country prior to colonisation.
- To foster national cohesion after independence, Sahelian countries embarked on the

Figure 2.2.
Abandoned train stations in Kaffrine and Linguère, Senegal

Source: Steven Radil, 2024.

Map 2.4.

Accessibility gains in Ghana, 2010–19

Note: Green areas correspond to the regions accessible in less than 4 hours in 2019 and not in 2010.

Source: Walther et al. (2024), reproduced with permission.

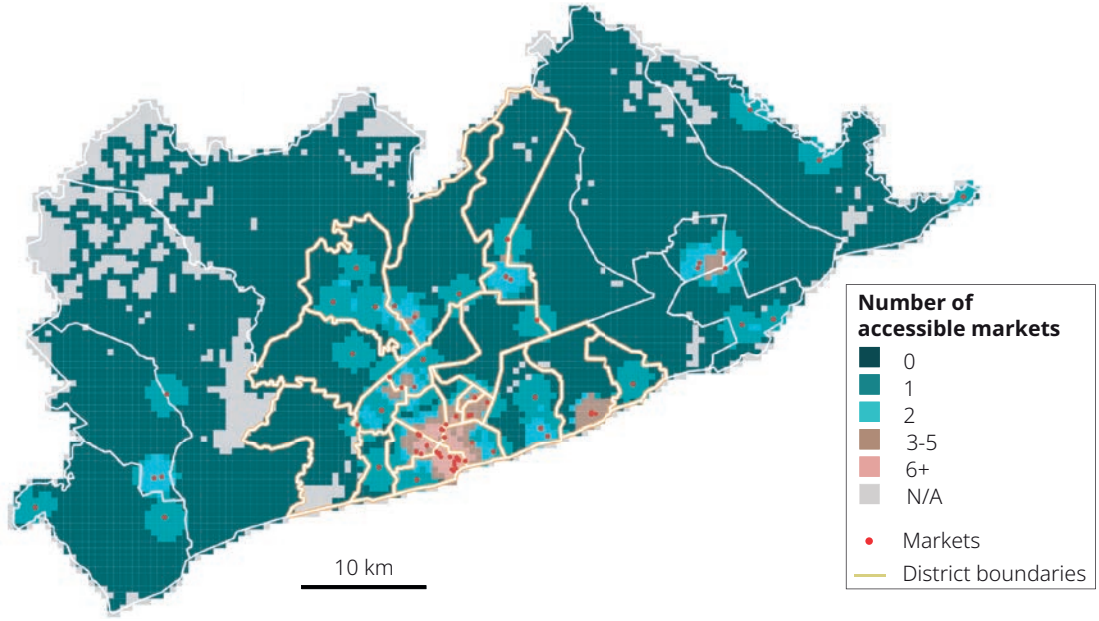
Box 2.1.
Transport systems in Accra (Ghana)

A significant portion of Accra's population cannot access essential services within a reasonable walking distance: 61% of residents live in areas where it is impossible to reach a market within a 30-minute walk (Map 2.5). Moreover, accessibility is far from homogenous across Accra's urban landscape, as seen with the variation in walking times to markets.

Identifying these gaps is a first step towards anticipating mobility challenges and planning future interventions. Additionally, the expansion of residential areas without the co-location of essential services, especially in peripheral areas, has widened accessibility gaps. Therefore, informal settlements located in the historic centre of Accra can often access some essential services within a 15-minute walk (e.g., healthcare facilities, primary schools, markets), while those in newly urbanised areas struggle. Better integration of transport and land-use planning is needed to ensure services are closer to where people live and to improve economic opportunities. Furthermore, most roads in peripheral areas are unpaved, hindering the extension of popular and public transport networks and making walking difficult. Investing in infrastructure for mass transit, walking, and cycling can improve accessibility and reduce road congestion. Finaly, women, particularly those in low-income groups, face greater mobility challenges, often chaining trips to fulfil professional and caregiving roles via walking and minibuses, which are, in many areas, the least accessible modes. Transport systems should be designed to accommodate these needs, for example, by placing bus stops near schools and offering fare structures that consider dependents.

Source: Anderson et al. (2024)

Map 2.5.
Number of markets accessible on foot within 30 minutes in Greater Accra

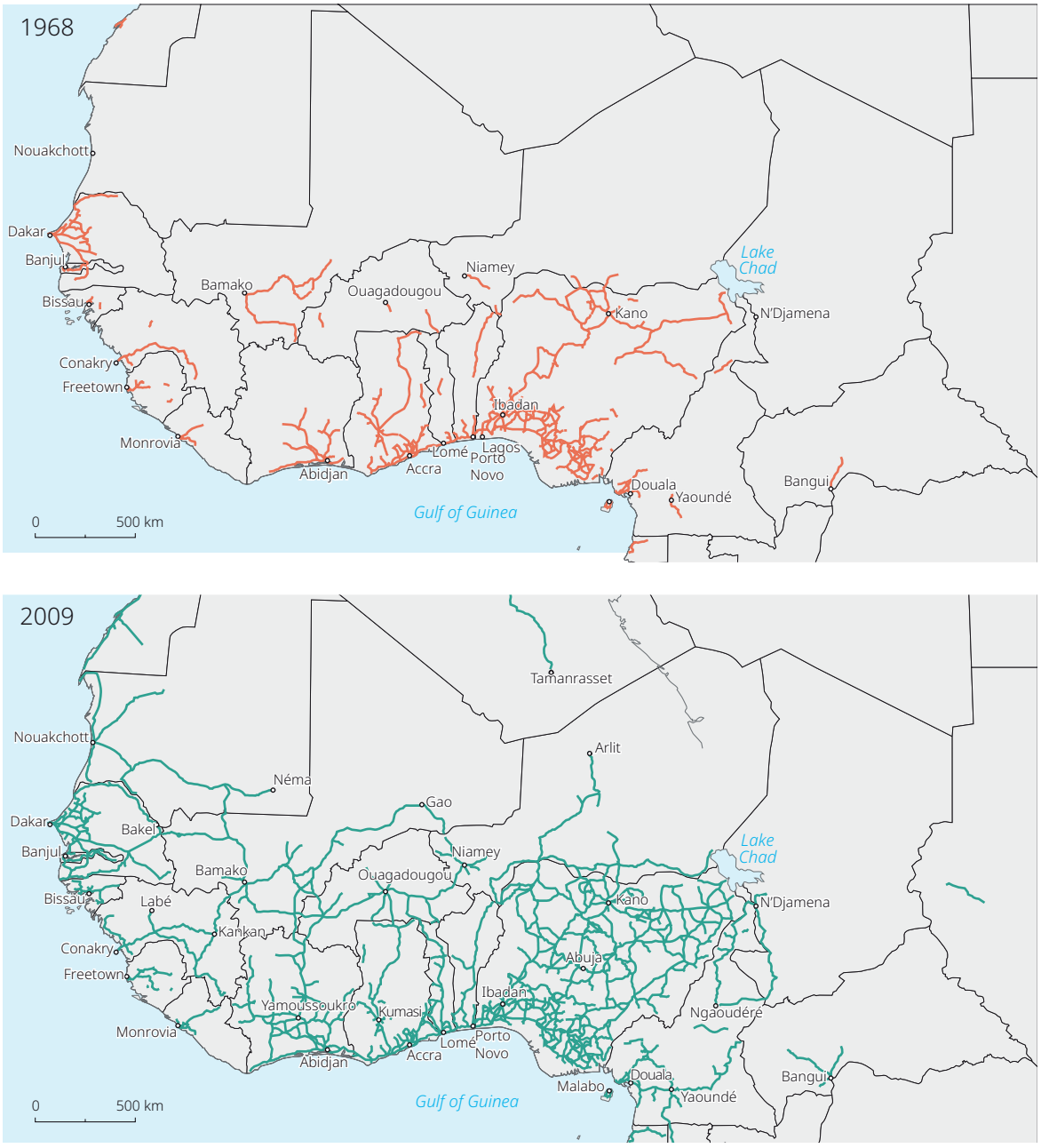


Note: Accra is divided into 500 metre grid cells. A dark green cell indicates that no markets can be reached within a 30-minute walk from that cell, considering the condition and connectivity of the road network. Conversely, lighter blues and pink indicate areas where individuals can reach one or more markets on foot within the designated 30-minute timeframe.

Source: Anderson et al. (2024), reproduced with permission.

Map 2.6.

Evolution of the West African hard surface road network, 1968-2009



Source: Lombard and Ninot (2010), using Michelin data. Adapted by the author and reproduced with permission.

construction of a series of road corridors connecting their capitals to their eastern peripheries. In the Western Sahel, Senegal connected Dakar to Matam on the Senegal River (530 km). Mauritania built the Route de l'Espoir (1 100 km) to connect Nouakchott with the secondary centres of Aleg, Kiffa, and Néma. This road, which bypassed the fertile region of the Senegal River, was primarily a political project to connect the Moorish populations of the Hodh region to Nouakchott (Antil and Choplin, 2003).

Its main impact has been to settle nomadic populations in new towns or relocate existing villages (Retaillé, 1995). Further east, Mali developed Route Nationale 16 between Sevaré and Gao in the late 1970s (570 km), while Niger built Route Nationale 1, also known as the Route de l'Unité, to link Niamey to the precolonial centres of Maradi and Zinder, ending in N'Guigmi in the Lake Chad region (1 200 km).

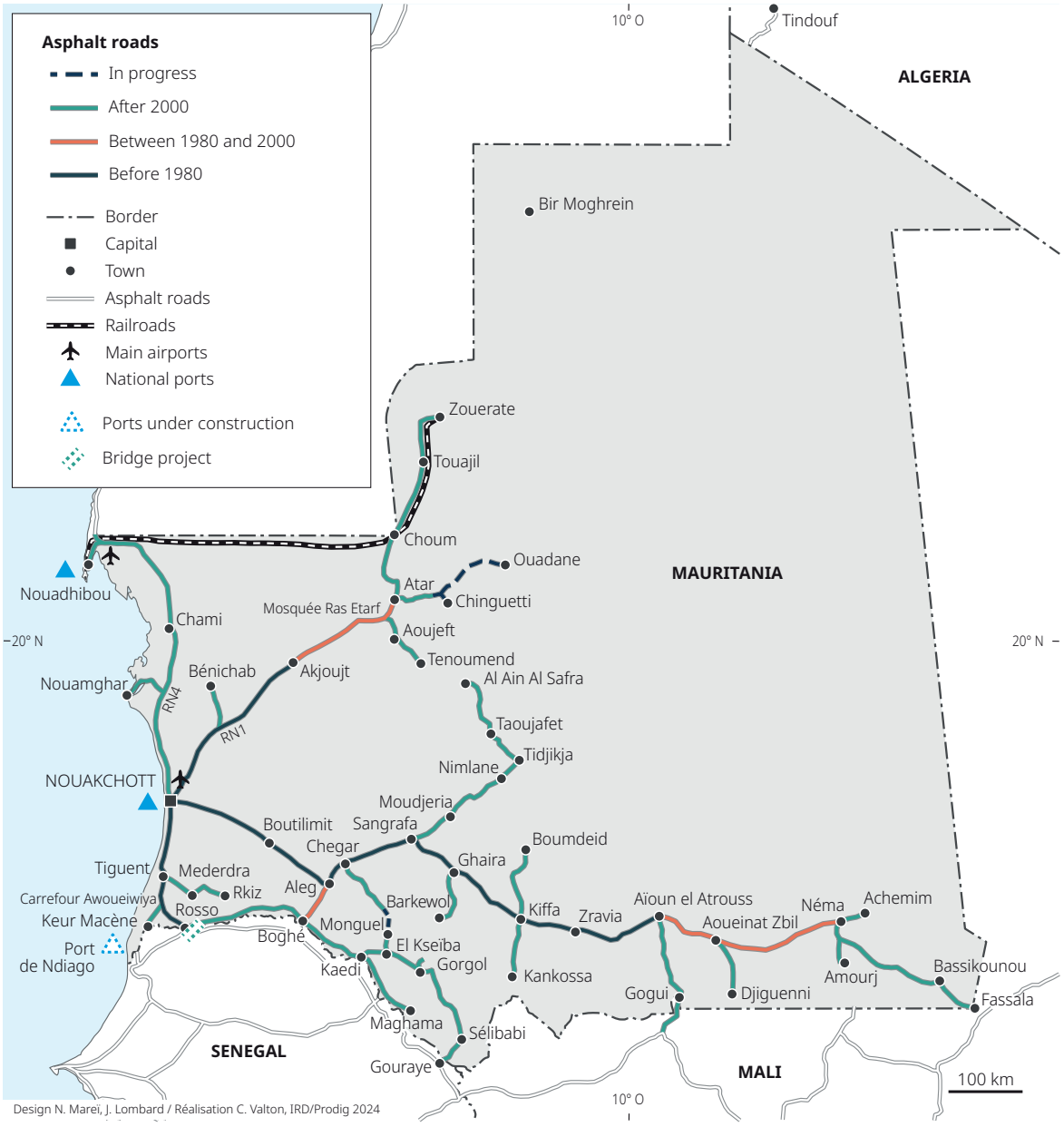
- *Develop "valuable" regions*. To promote economic development, Sahelian countries also invested in smaller roads, particularly in the most productive agricultural regions of the country, located in the south. These new roads usually bisected the west-east corridors of "national unity", as in the Maradi and Zinder regions in Niger or in the Senegal River Valley, where Mauritania started the construction of a paved road from Aleg to Bogué finally connecting Kaedi to the rest of the country in the 1990s. Several major roads were also built to exploit natural resources, as in Niger, where the Uranium Highway (RN25) connecting Arlit to Agadez was paved in the mid-1970s (240 km). Much of the investments went to roads rather than railways, except for the Nouadhibou-Zouerate railway in Mauritania.
- *New transport corridors*. The fact that Burkina Faso, Chad, Mali, and Niger are landlocked, and therefore highly dependent on coastal countries for their imports and exports, complicated the process of regional integration after independence. To encourage exports, Sahelian countries and regional economic organisations kept investing in major road corridors connecting their capital cities to the Gulf of Guinea. These investments contributed to stimulate the growth of dozens of border markets, such as Gaya and Malanville between Niger and Benin, which served as hubs for local agricultural products and manufactured goods. Countries such as Benin, Gambia, and Togo benefited from the development of regional trade and transformed into entrepôt economies, where a significant part of national imports was illegally re-exported to neighbouring countries (Golub, Mbaye and Igué, 2019).

Despite these investments, the West African road network remains sparse and fragmented. More than 60 years after the independence of Chad, Mali, and Niger, there are still no paved roads linking Bardaï, Kidal, Timbuktu, or Bilma to the rest of the country (OECD, 2019a). The structural adjustment faced by West African countries in the 1980s further exacerbated the lack of maintenance of transport infrastructure until the early 2000s. The upkeep of these emblematic stretches of road, and of the transport architecture, has long been a problem. In the absence of maintenance, many strategic roads remain in a state of serious disrepair, making Africa one of the most expensive regions in the world for conducting business (World Bank, 2020).

Route Nationale 7, for instance, through which Niger's uranium is exported, remained in a poor state for more than a decade from Dosso to the Benin border until it was rehabilitated in 2023. In Mauritania, it was not until the reopening of the border between Morocco and Mauritania in the early 2000s that the country's second-largest city, Nouadhibou, was finally connected to Nouakchott by a tarmac road in 2004 (Antil and Choplin, 2003, Map 2.7). The construction of this 470 km long road has led to a significant increase in the number of vehicles traveling between Mauritania's two largest cities and has encouraged the establishment of permanent settlements, thanks to the new economic opportunities and deep-water wells available along the route (Seneh and Steck, 2011) (see Box 2.2).

Map 2.7.

Historic evolution of the Mauritanian road network



Source: Mareï and Lombard (2024), reproduced with permission.

NORTH AFRICA: AN EXTENSIVE NETWORK SHAPED BY URBANISATION AND MINING

North African countries have embarked on ambitious sector-based infrastructure plans to develop their national road networks, modernise their ports and airports, and build rail links over recent decades. In Morocco, the government has heavily invested in a modern high-speed train network between Casablanca and Tangiers, a rapidly expanding highway network connecting most regions of the country, and major ports. Further east, Algeria has launched a highway

Box 2.2.

Mauritania: Roads to build the national territory

Over the past 60 years, infrastructure has served as the backbone of Mauritania's economic and territorial development (Map 2.7). In 1961, Nouakchott, the capital created at the time of independence, became the bridgehead of the national network. Very quickly, its port was used for national imports of manufactured and agricultural products, while the port of Nouadhibou was mainly used for fishing and the export of iron ore. From the new capital, the country's main roads run in three main directions.

A North-South coastal route forms the link between Morocco, Mauritania and Senegal. Four years after independence, the southern section linking Nouakchott to Rosso on the Senegal River was the first project financed by the World Bank in the country. At the time, it marked the hold of the Senegalese economy over Mauritania. In contrast, the northern section to Nouadhibou remained the missing link in the national network for a long time. Its asphalting was completed in 2004, paving the way for massive imports from Morocco. These flows are helping to diversify the Mauritanian diet, thanks to the fruit and vegetable shops and markets that have sprung up in Nouakchott.

The Route de l'Espoir crosses the south of the country from west to east, as far as the gateway to Mali. Boutilimit was reached in 1976, Kiffa in 1978 and Néma in 1981. The road underlines Mauritania's growing link with the Malian economy. Near the autonomous port of Nouakchott, two warehouses belonging to *Entrepôts Maliens en Mauritanie* manage the flow of goods between the two countries, in particular imports of food products such as wheat, palm oil and sugar, as well as exports of Malian cotton. The road has led to the displacement of populations towards the southern borders, where the main exploitable agricultural areas are located, and has enabled the Mauritanian state to stabilise the nomadic populations of the south. This route is also used to reach the Senegal River valley. From Aleg, on the Route de l'Espoir, the road joins the river at Boghé, then continues to Kaedi, Sélibabi and Maghama, and on to Rosso.

The road between Zouerate and Tindouf in Algeria is part of the country's economic and political history. Located at the northern tip of Mauritania, this new tarmac road passing through Bir Moghreïn could compete with the coastal route from Morocco and thus intensify trade with Algeria. At Zouerate, it joins the railway line linking the Kédia d'Idjil mines to Nouadhibou, operated by the *Société Anonyme des Mines de fer de Mauritanie*, which became the *Société nationale industrielle et minière (SNIM)* after its nationalisation in 1974.

The network of roads and their extension to the borders underline the power of transport infrastructure to structure the Mauritanian landscape, developed in line with political interests.

Author: Nora Mareï for this publication.

modernisation programme that includes a major corridor between the Moroccan and the Tunisian borders, completed in 2023 at a cost of USD 11 billion (East-West Highway, 1 216 km). Tunisia plans to modernise its rail network, with investments expected to reach USD 20 billion by 2030. A significant share of the allocated budget is dedicated to building a new suburban railway line in the Tunis area and improving train connections between the capital region and its peripheries (Railwaypro, 2023).

Most new road projects have been suspended in Libya since the early 2010s due to political instability and the security risks faced by construction companies. In particular, the project to develop a modern coastal road between Ras Jedir, on the border with Tunisia, and Musaid, on the border with Egypt (1 800 km), was put on hold. The Libyan Coastal Highway, which runs along the entire east-west length of the Libyan coast, was used and damaged by both government forces loyal to Gaddafi and anti-Gaddafi rebels during the

First Libyan Civil War (2011) to control Ajdabiya, Bin Jawad, Bregga, Sirte and Ra's Lanuf, among other coastal cities. This major axis closed in 2019 following Field Marshal Khalifa Haftar's offensive against Tripoli, which resulted in cutting off Sirte from Misrata, and only reopened with difficult in 2021. The disruption of the road network had significant consequences for the Libyan economy, leading to shortages of food supplies, medical equipment, and fuel. The absence of a functional coastal highway also forced travellers to seek alternative roads across the desert, where they faced long delays and the risk of being kidnapped or robbed by militias. In recent years, Italy has expressed interest in reviving the Friendship Treaty signed in 2008 with Libya and funding the construction of a modern coastal highway (Africa Confidential, 2023).

North African countries have also developed a well-maintained transport network in their Saharan peripheries, contrasting with the sparse network implemented by West African countries south of the Sahara. These investments are motivated by economic and political reasons. On the one hand, the Saharan peripheries of North African countries contain vast natural resources, often located in extremely remote areas, hundreds of kilometres from the coast (Map 2.8). Exploiting oil, natural gas, water, and phosphate requires the development of a transport system that combines roads, pipelines, airports, railways, and conveyer belts. On the other hand, transport projects are also being used by North African countries to assert their influence in the region, particularly vis-à-vis their southern neighbours, with whom they remain poorly connected.

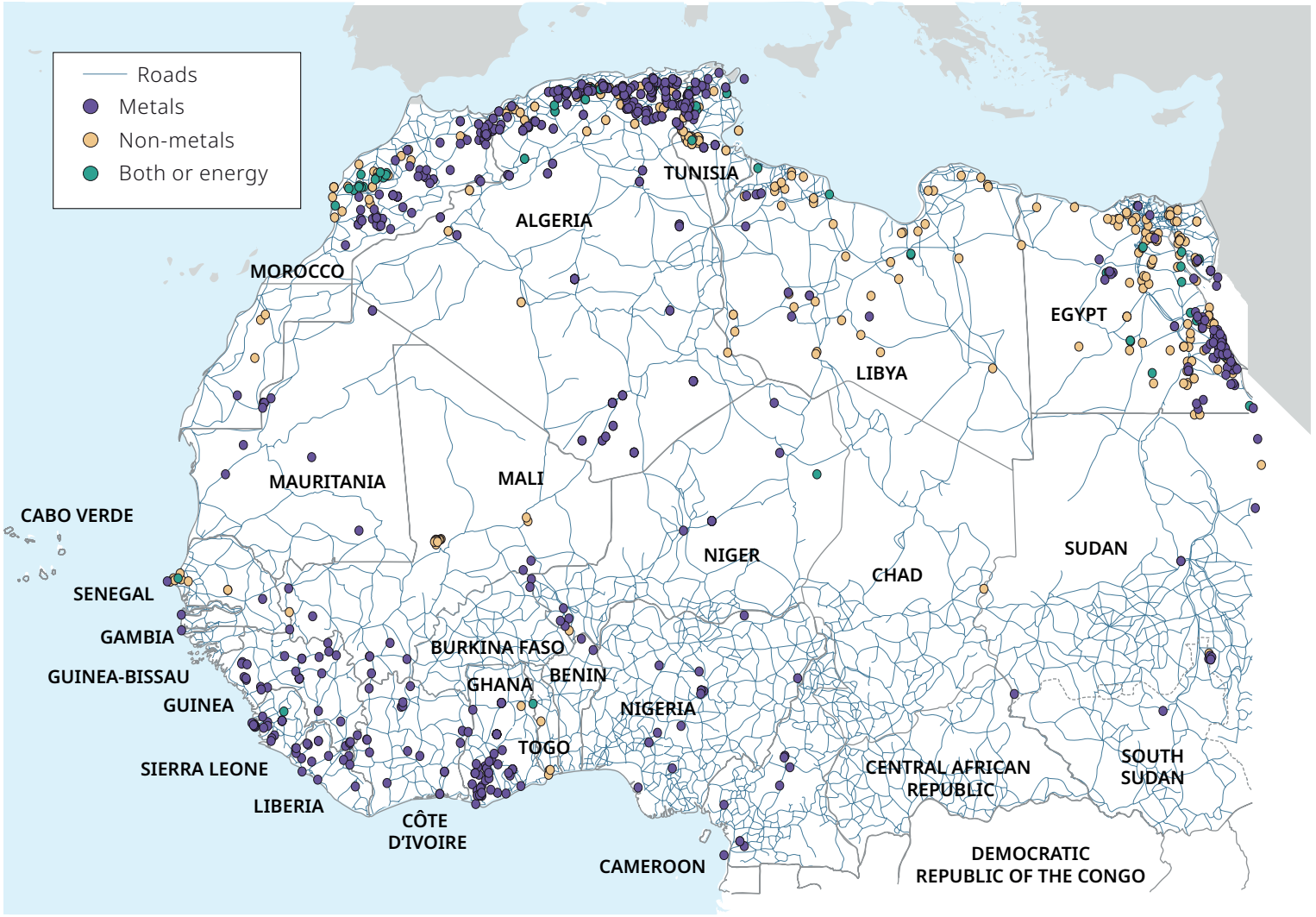
In Algeria, significant road investments have been made to connect the Mediterranean coast to the oilfields in the east. The impact of these Saharan projects on cities near mining infrastructure has been profound. In the oases between Ouargla and Toggourt, new markets have opened for garden produce and animal products due to their proximity to Hassi Messaoud. Algeria has also completed the first segment of the Trans-Saharan Highway through In-Guezzam on the Nigerien border (2 350 km). In March 2023, Algeria announced the construction of a road linking the town of Tindouf to the mining town of Zouerate, 890 km further south. Built by Algerian companies, this new axis will eventually connect Algiers to Nouakchott, competing with the coastal highway that links Algiers to Dakar. Once completed, this new road corridor, built across some of the most inhospitable regions of the world, will be one of only three trans-Saharan paved roads between the Atlantic Ocean and the Nile.

Transport infrastructure is not only a source of economic development. As the next section shows, it can also become both a target and a facilitator of political violence. On the one hand, militants often attack major roads, train stations, airports, and ports, to disrupt state forces and civilians. On the other hand, both state and non-state actors use transport infrastructure to project power and establish territorial control. The two dimensions of transport infrastructure are interrelated: an expanding transport infrastructure provides a growing number of potential targets for militants wishing to paralyse the state, while also offering the state further opportunities to reach previously remote regions and secure its territory. Military checkpoints established along major road axes illustrate this process: as the state builds more checkpoints to monitor and restrict the movement of militants, it also creates a growing number of stationary targets for their attacks (Russell and Radil, 2022).

TRANSPORT INFRASTRUCTURE AND POLITICAL VIOLENCE

Existing research on the diffusion of political violence suggests that access to the road network plays a crucial role in shaping the geography of both government and insurgent activities (Tollefsen and Buhaug, 2015; Müller-Crepon, Hunziker and Cederman, 2021). From the state's perspective, the existence of an extensive road network enables military power to be projected far from the main political centre (Buhaug and Rød, 2006). A dense network of roads helps

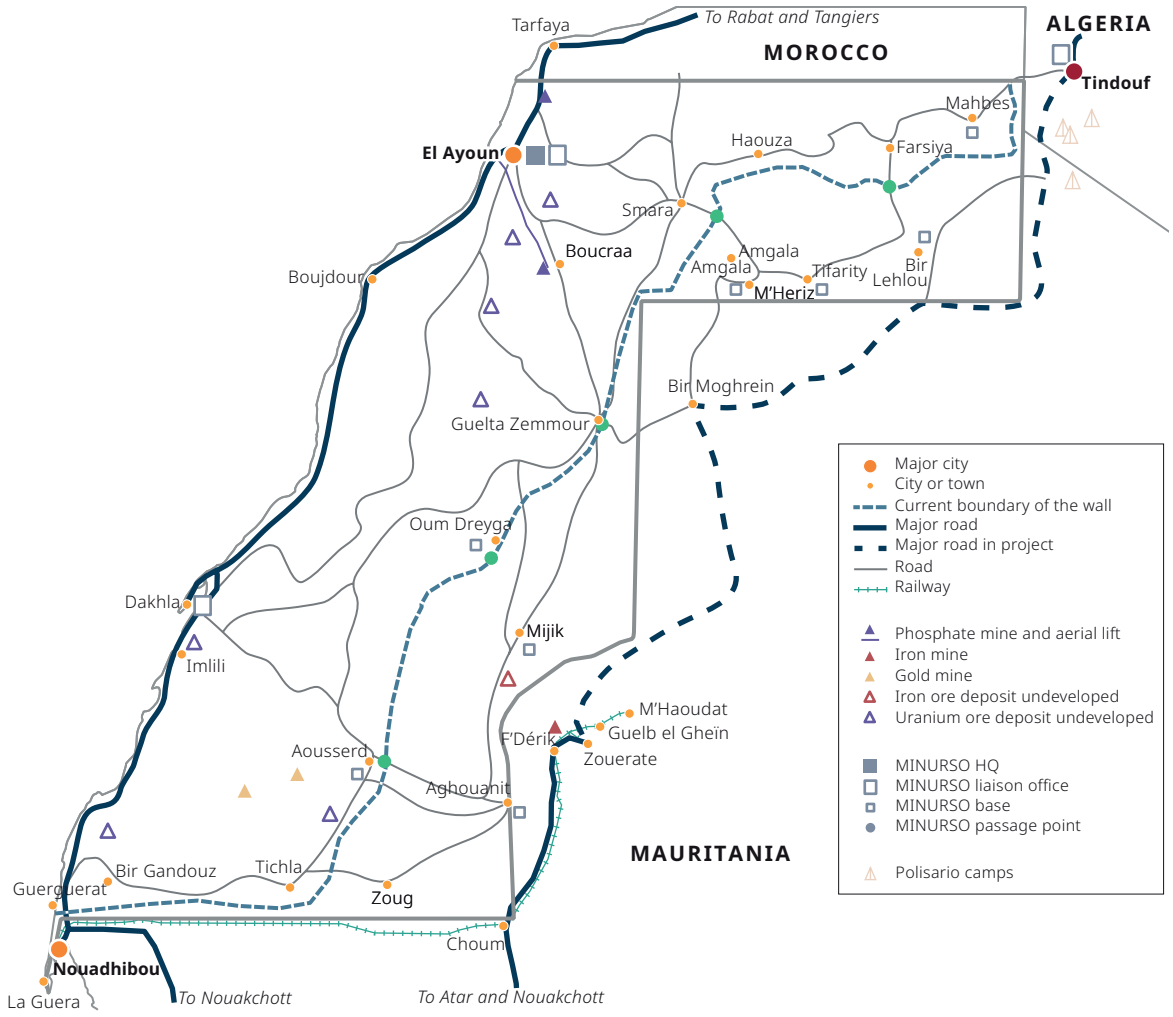
Map 2.8.
Metals, minerals and roads



Source: USGS, Mineral Resources Data System (2024).

Map 2.9.

Trans-Saharan roads in northwest Africa



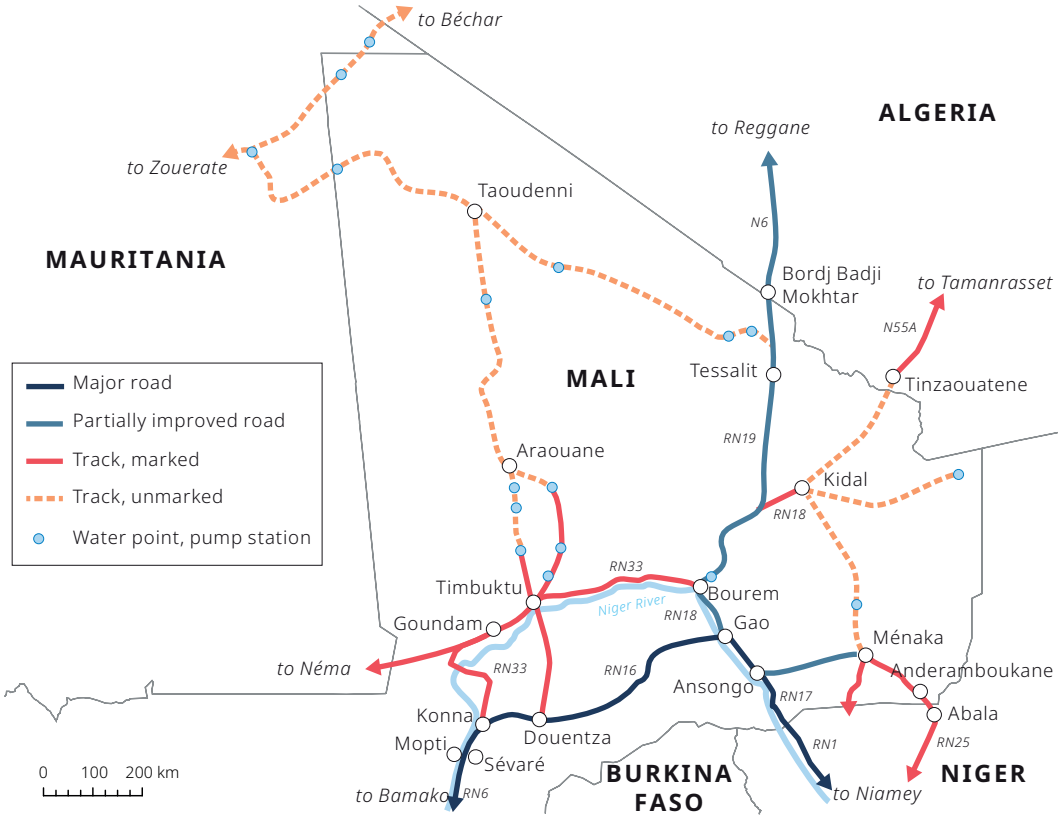
Source: adapted from SWAC/OECD (2014) by the authors.

to strengthen sovereignty by facilitating the movement of troops and equipment between military bases, while preventing the establishment of safe havens in the state's peripheries.

These ideal conditions are, however, rarely met in African countries, where low population densities, considerable distances between cities, and a fragmented transportation infrastructure inherited from the colonial era have long prevented the state from exerting effective territorial control. Only in the Great Lakes region and the Ethiopian highlands have states managed to exercise durable control over their peripheries (Herbst, 2014). The provision of transport infrastructure can become a major political issue in countries where voters hold the government accountable for its performance in providing reliable roads. In Ghana, local communities frequently protest against poor road conditions under the slogan "No Roads, No Vote" (Ghana Business News, 2023). Poor road conditions also significantly affect the government's ability to respond to an insurgency in a timely manner by slowing the movement of regular forces and making them more vulnerable to attack along road corridors.

Research in conflict studies has highlighted that the lack of an extensive road network can be detrimental to successfully countering insurgent movements and restoring peace (Unruh and

Map 2.10.
Roads and cities in northern Mali



Source: Adapted from OECD/SWAC (2014) by the authors.

Shalaby, 2012; Ali et al., 2015). In Sub-Saharan Africa, regions with poor road infrastructure are more likely to experience conflict following droughts compared to regions that benefit from a dense road network (Detges, 2016). In northern Mali, for example, the Tuareg rebellion and Jihadist insurgency that emerged in the early 2010s took control of the main cities and roads within weeks. These highly mobile fighters overcame Malian regular forces, who had long relied on fixed military bases and local tribes to supplement their lack of mobility (Pérouse de Montclos, 2021).

The fragile coalition of secessionist rebels and Jihadists that overtook northern Mali in 2012 relied on controlling a group of small cities and the routes connecting them, rather than seizing territory. The starting point of the Malian Touareg rebellions and the birthplace of Iyad Ag Ghaly, the current leader of the Group for the Support of Islam and Muslims (JNIM), was Kidal in Adrar des Ifoghas. While demographically small, Kidal is connected to Timbuktu, Bourem, Gao, and Ansongo along the Niger River, providing access to the trans-Saharan routes (Map 2.10). This network of cities is complemented by border towns such as Bordj Badji Mokhtar, al-Khalil, Tessalit, and Tin Zaouaten, which have long provided logistical support to northern traffickers, rebels, and religious extremists (Scheele, 2012; OECD/SWAC, 2014).

Insurgents can also exploit the road infrastructure to expand their territorial control. Dowd (2024) shows that proximity to roads correlates with violence against civilians by non-state actors in Africa. Roads facilitate insurgent relocations to isolated hot spots, while also increasing competition for military resources and targets between them (Zhukov, 2012). The

road infrastructure is also perceived as a target in itself by insurgents, who can more easily attack regular forces, destroy logistical convoys, detonate improvised explosive devices (IEDs), and impose embargoes on cities along road corridors (Iweze, 2020). Modelling the location of IEDs in Baghdad in the mid-2000s, Braithwaite and Johnson (2015) demonstrate that violence is most likely to occur in areas with a higher density of roads. In the Democratic Republic of the Congo, Salvi et al. (2020) show that over 62% of all battle events occur within 5 km of a major roadway. Anecdotal evidence suggests that Jihadist insurgents follow a similar logic in West Africa. In 2022, insurgents affiliated with Al Qaeda attacked a 150-vehicle convoy delivering supplies to the besieged city of Djibo, killing at least 37 people (van der Weide, 2022).

Another strand of the literature has explored how the structure of the road network itself could influence the extent to which it serves as a magnet or as a conduit for violent activities such as sabotage, terrorism, and insurgencies (Mattsson and Jenelius, 2015). This approach focuses on determining whether violent attacks are more likely to occur in locations connected through multiple road links or in locations that act as a bridge between disconnected parts of the network (Prieto-Curiel et al., 2022). Centralised transport networks organised around a few key nodes are typically more susceptible to disruption than decentralised networks that rely on multiple redundant connections (Zhang, Miller-Hooks and Denny, 2015). Figure 2.3 illustrates how removing a single node can potentially disrupt a highly centralised network, while leaving a decentralised network largely unaffected.

Transport networks in which inter-regional flows pass through a handful of cities are particularly vulnerable, as the nodes acting as gateways cannot be replaced. Using a global database covering 46 civil conflicts across 32 states between 1989 and 2015, Hammond (2018) shows that violence tends to concentrate in locations that have both a high degree and betweenness centrality in the road network. These nodes of the road network are heavily fought for because they control access to other regions within the state. In Africa, Prieto-Curiel et al. (2022) demonstrate that cities located on the periphery of the road network are disproportionately affected by political violence: civilians living in remote cities are four times more likely to die from a violent attack than those in central cities, where government forces can intervene more rapidly.

TRANSPORT INFRASTRUCTURE AS A RESOURCE

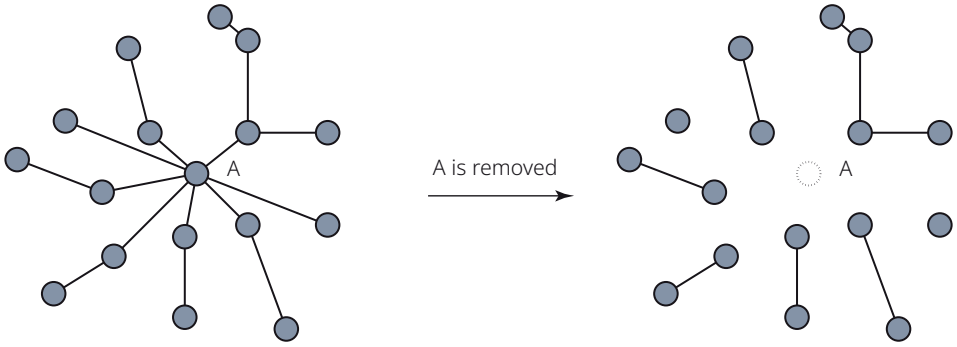
For both government forces and insurgents, roads represent a unique opportunity to tax goods and people (Schouten, 2022). Roadblocks and other impediments to trade are particularly numerous in "infrastructural frontiers" such as the Sahara and Congo basin, where myriad state and non-state actors compete for the control of the resources that transit through the road network (Schouten et al., 2022; Strazzari, 2015). In West Africa, checkpoints manned by customs agents, the police, municipal officials, and transport unions can be found along most roads (Choplin and Lombard, 2010), reducing road accessibility by up to 40% along certain trade corridors (Walther et al., 2020). In Nigeria, the proliferation of checkpoints observed on major road corridors in the last decade has also become an economic opportunity for corrupt officials to extract bribes under the pretext of fighting terrorism. State counterinsurgency forces have transformed into "highway robbers in the guise of neutralising Boko Haram's movements" (Agbiboa, 2022). Armed bandits have also multiplied the number of roadblocks in the hope of robbing and kidnapping traders, and steal agricultural products, which are resold on markets by intermediaries (ACLED and GITOC, 2024).

In the Central Sahel, Jihadist organisations have set up irregular checkpoints on major road corridors to conduct identity checks, loot private vehicles and extract bribes from passengers (Nsaibia, Beevor and Berger, 2023). Checkpoints

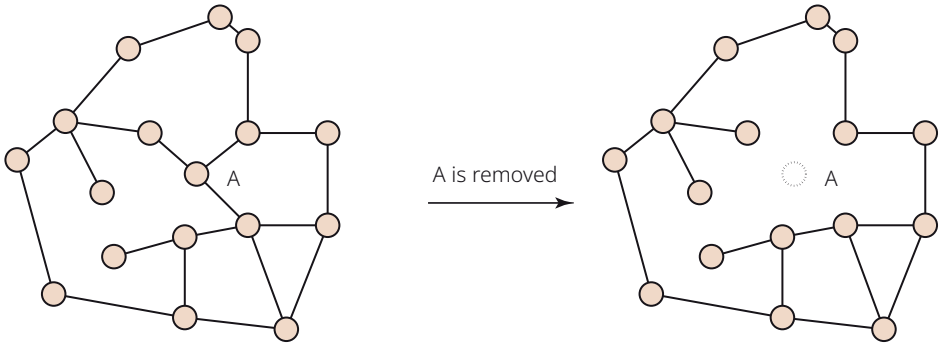
Figure 2.3.

How centralised and decentralised networks can be disrupted

Centralised networks are easily disrupted because they rely on a few key nodes. Removing node A breaks the network into several disconnected components



Decentralised networks are hard to disrupt because they contain many redundant ties. The network remains cohesive even after node A is removed.



Source: Authors.

can serve a dual function for jihadists – imposing their own checkpoints can provide sources of power and revenue, while removing other conflict actors' checkpoints established by security forces, or bandits could be a way of wooing civilians. By controlling roads, jihadists have opportunities to frighten, extort, and coerce civilians, and build state-like powers by providing alternative security, implementing predictable taxation schemes, and imposing themselves as regulators of movement and commerce.

In Nigeria, northern states introduced a ban on commercial and private motorcycles to prevent Boko Haram from conducting drive-by shootings. The ban affected the livelihoods of thousands of moto-taxis (*abacha*) drivers across the region, reduced the mobility of urban dwellers, and forced farmers to walk long distances to markets. Many of the young *abacha* drivers, in search of a living wage, joined Boko Haram or moved to other states, yet another example of mobility in this process. The decision to restrict movements between cities around Lake Chad to prevent violent attacks from Boko Haram also led to disastrous consequences for the local economy (Agbiboa, 2022). As fish, cattle, and cereals can no longer circulate across northern Nigeria and the surrounding countries, trade has been brought to a standstill, aggravating an already challenging food security situation around Lake Chad.

CONTROLLING MOBILITY

The ability to move freely across long distances and control movement has become one of the key components of the armed conflicts affecting the region (Retaillé and Walther, 2013; Beevor, 2023). From the government's perspective, counter-terrorism operations have adopted two contrasting approaches. In the years immediately following the start of the Boko Haram insurgency, the Nigerian forces adopted a resolute, mobile approach to the conflict. In 2015, they launched a series of military campaigns with the Multi-national Joint Task Force that relied heavily on airstrikes, mobile patrols, and control of the major road corridors. However, these heavily mechanised operations killed civilians without restoring peace in the region and resulted in a large and politically unacceptable number of soldier casualties.

In recent years, as troops' willingness to fight insurgents quickly declined, the Nigerian military withdrew its soldiers from forward posts and gathered thousands of troops and civilians in "supercamps," leaving Boko Haram and the Islamic State West Africa Province (ISWAP) to fill the void left by regular forces in the countryside. The conflict in Mali has followed a similar pattern. In 2013, the Serval Operation in Northern Mali by French forces was based on small and mobile military forces that quickly expelled or killed the Jihadists from their main strongholds. In the years following Serval, the Barkhane Operation led by France remained focused on monitoring, controlling, and preventing mobility. This approach was conditioned by the size of the region and the limited number of foreign troops involved, making it impossible to exert territorial control over such vast areas. In comparison, United Nations peace-keeping operations relied much more on stationary troops, large garrisons, and heavily armed convoys.

In such asymmetrical conflicts, the Jihadists have proven much more mobile and flexible than regular forces. Using motorbikes provides them with greater speed and agility compared to militaries that tend to travel by road in armoured vehicles, giving them the advantage of surprise. Key examples of such dynamics include attacks by the Islamic State in the Greater Sahara (IGSS, now know as the Islamic State - Sahel Province, or ISSP) on military camps at I-n-Delimane, Mali, in November 2019 and I-n-Atès, Niger, in December 2019. Both camps were in remote areas: I-n-Delimane is north of Mali's National Route 20, approximately 160 km east of Gao, and I-n-Atès is 5 km from the Malian border in the Tillabéri region, near the village of Tongo Tongo, where ISGS attacked Nigerien and U.S. forces in 2017 (Map 2.11).

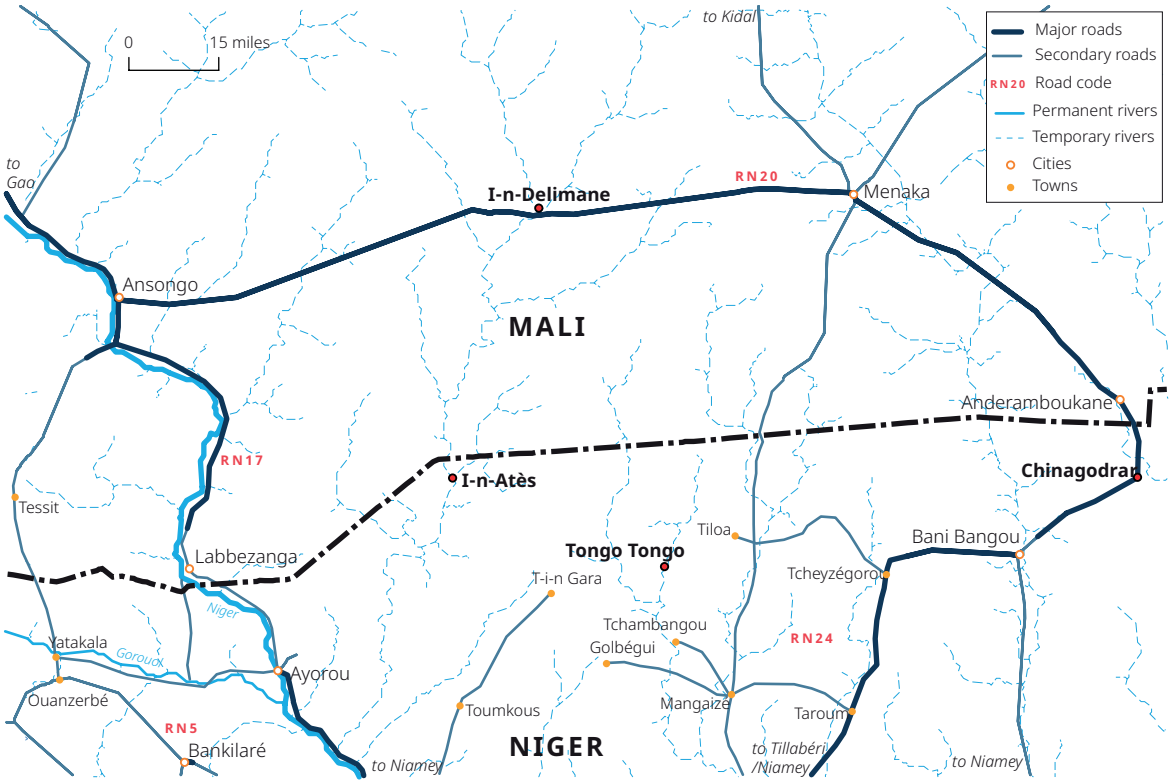
The geography appears to have given ISGS attackers on motorbikes and trucks a significant advantage. It is reported that 500 fighters arrived by motorbike and pickup truck to I-n-Atès in the evening, destroyed the camp's signal transmission centre, and then stormed the rest of the camp (Armstrong, 2019). To raise an alert and summon reinforcements, soldiers from I-n-Atès had to make their way to Ayorou, the nearest significant military base and administrative centre, 70 km away as the crow flies. The logistical and transportation difficulties involved in getting aid contributed to the high death toll at I-n-Atès – 71 soldiers – and the long duration of the attack (RFI, 2019). Such high-casualty attacks on the military, meanwhile, had national political repercussions, contributing to a nationwide sense of insecurity; the authors of the July 2023 coup in Niger cited I-n-Atès and other incidents as pretexts for their takeover. Such attacks also contributed, particularly on the Malian side of the border, to the broadening of the Islamic State's sway in the sub-region, as soldiers were targeted and intimidated.

To some extent, jihadists' agility on the ground is counterbalanced by militaries' advantage of airpower. An Islamic State attack on Chinagodrar, another Nigerien military outpost close to the Malian border, killed 89 soldiers in January 2020, coming as a bloody sequel to the I-n-Atès attack. The Chinagodrar assault was repelled in part with the help of French airpower (Le Monde, 2020). Chinagodrar is located on a main route, National Route 24, but this "better" location from a road infrastructure perspective did not prevent mass casualties.

At the same time, as the example of Chinagodrar shows, given jihadists' element of

Map 2.11.

The Menaka region between Mali and Niger



Sources: Authors based on Michelin and IGN maps.

surprise, air power often comes into play only once a ground attack is well underway, and thus may prevent some further casualties but does not necessarily prevent the attacks themselves. Meanwhile, airstrikes in general are often a blunt tool. As the military historian S.L.A. Marshall (2000) once wrote; "air power unsupported by the forces of the battlefield is a military means without an end".

Over the last 15 years, the Nigerian military has repeatedly targeted Boko Haram and ISWAP camps in the Lake Chad region without regaining deep control on the ground. Airstrikes can also produce unintended civilian casualties and corresponding political backlash, as the French learned when they mistakenly hit a wedding north of the Gandamia Massif in central in Mali in 2021 and killed 22 people (UN, 2021). Drone surveillance, meanwhile, continues to have significant limitations in the Central Sahel and the Lake Chad Basin given the vast extent of the conflict zones, the difficulty in distinguishing jihadists from non-combatants, and complications with intelligence-sharing among states. In August 2024, 21 people, including at least 11 children, were killed by drone strikes launched by the Malian army in the northern town of Tinzaouatene (Le Monde, 2024).

As the previous sections make clear, transport infrastructure is not only a critical part of economic development but also of political security. Furthermore, transport infrastructure can be both a target of and a facilitator for violence. This causality dilemma limits the value of conventional scientific analyses when it is unclear which factor should be considered the cause and which the effect. Nonetheless, there are approaches that offer promise in better understanding the interactions between transport infrastructure and political violence. Central to this report is the use of a spatial perspective to examine the variability of the relationships across the larger study region. In support of this approach, the report also seeks to disaggregate

this variability over time, by the types of actors, and by the types of transport infrastructure involved in the region's violence.

This report begins by addressing a central question: What is the overall spatial relationship between the locations of violence and the region's transport infrastructure? While it is expected that violent events are closely co-located with road networks, there may be significant variation between North and West Africa, or between Saharan, Sahelian, and coastal regions. The relationship between transport and violence can also vary across countries, between border and non-border areas, or between urban and rural settings, which a spatial perspective can uncover. Applying the principles of spatial analysis, the report describes these relationships across multiple scales and geographies, offering meaningful insight into why the typical cause-effect approach is not suited for this important policy issue.

Following from the spatial analysis described above, the report takes on several additional questions. For example, how do the relationships between infrastructure and violence change over time or by the type of infrastructure present? Which kinds of political actors have targeted infrastructure and how do their tactics vary by location and over time? And how have states responded to these challenges? These questions are addressed in the remaining chapters of this report and the answers form an important region-wide context for scientific and policy audiences interested in better understanding the complex relationships between political violence and transport infrastructure.

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Chapter 3

Data for mapping transport infrastructure and conflicts

Chapter 3 describes the methods used to analyse whether political violence is more clustered near transport infrastructure, how the intensity of transport-related violence has changed over time, and which regions are most affected by violence targeting infrastructure in North and West Africa. The spatial and temporal relationships between violence and transport infrastructure are examined using road data from the Global Roads Inventory Project (GRIP) and conflict data from the Armed Conflict & Location and Event Data (ACLED) project, covering the period from 2000 to 2024. Violent events are mapped according to their distance to several categories of roads over time. This quantitative analysis is complemented by a textual analysis of road-related incidents, documenting local dynamics of violence along road corridors and illustrated with selected cases of violent attacks targeting transport infrastructure in the region. The report also uses the Spatial Conflict Dynamics indicator (SCDi) developed by the Sahel and West Africa Club (OECD/SWAC), to identify major clusters of violence in the region.

KEY MESSAGES

- **Competition for control of roads, rail lines, and other transport networks among state and non-state actors drives diverse patterns of violence, fundamentally shaping the conflict landscape in North and West Africa.**
- **Violence near infrastructure is evolving. Over the past two decades, the intensity and proximity of violence to transport routes have shifted, highlighting how conflict actors adapt their strategies in response to infrastructure.**
- **Certain transport corridors, such as those in the Central Sahel and Lake Chad basin, experience recurrent attacks, illustrating how localised acts of violence are part of a broader, interconnected conflict dynamic.**
- **Combining spatial analysis with case studies of transport-related violence offers actionable knowledge to guide infrastructure protection and conflict mitigation strategies.**

As state and non-state actors compete for the control of roads, railways, and other means of transportation, they produce various patterns of violence that shape the North and West African conflict landscape. Assessing how this unique geography relates to the transport infrastructure is key to understand the spatial and temporal evolution of armed conflicts in the region. This report documents these relationships, by examining whether conflicts are predominantly clustered near transport infrastructure, how the intensity of transport-related violence has changed over time, and which regions are the most affected by violence targeting infrastructure (Table 3.1).

The objective of the first question is to determine whether violent events observed in North and West Africa from 2000 to 2024 tend to be primarily situated near transport infrastructure. In other words, are regions close to transport infrastructure more prone to violence than others? The report then investigates whether political violence has become more concentrated around transport infrastructure over the past

Table 3.1.

Questions, approaches and tools to assessing how violence is related to transport infrastructure

Questions	Approaches	Tools
1. Are regions located near transport infrastructure more violent than others?	Assess the relative number of violent events according to their distance to roads	Distance from each violent event to the nearest road
2. Has the intensity of violence near transport infrastructure increased over time?	Assess the changing proportion of violent events according to their distance to roads	Distance from each violent event to the nearest road
3. Are some transport corridors more violent than others?	Identify segments of roads that are particularly violent and contextualise the relationship between transport infrastructure and conflict	Textual analysis of transport-related incidents, illustrated with a selection of incidents related to road corridors

24 years. Finally, the third question examines which portions of the transport system are the most affected by violence. Are some transport corridors more violent than others?

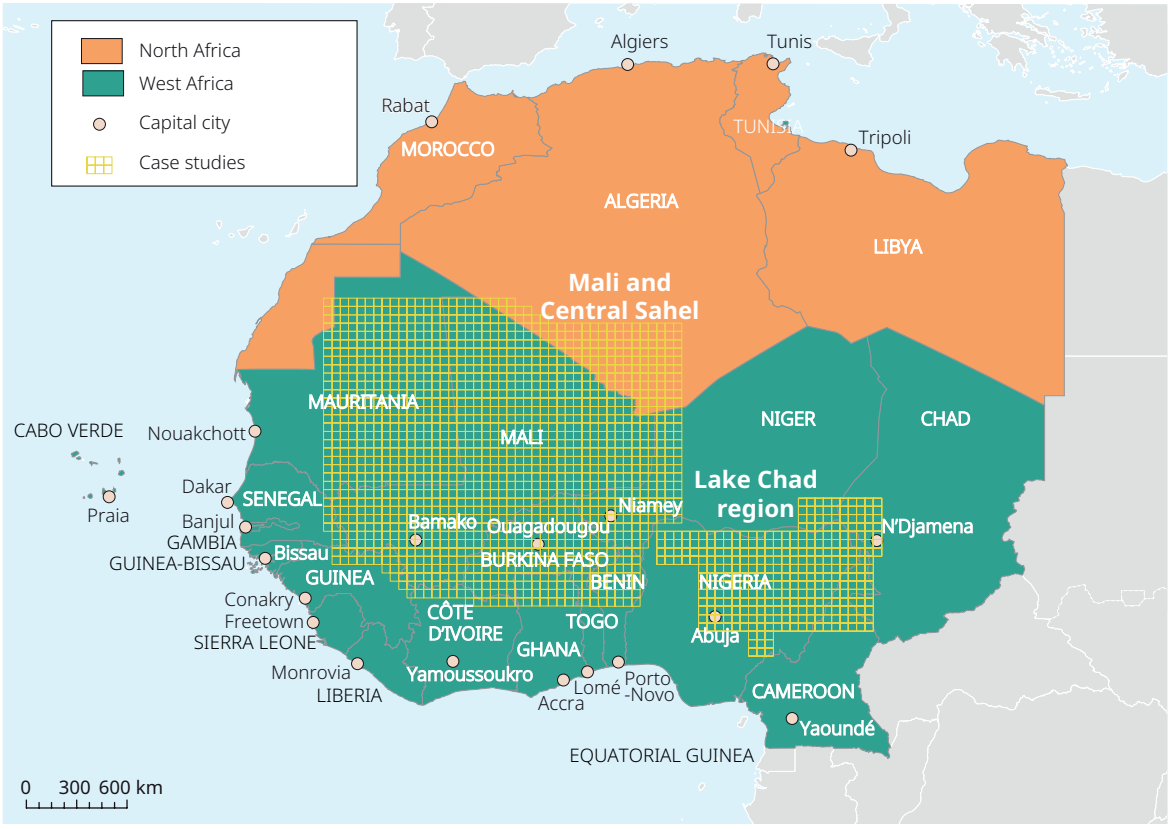
The methodological approaches to address these questions are similar to those used by OECD/SWAC (2022; 2023) to study the role of borders and cities in North and West Africa. These approaches combine quantitative analysis of conflict data with qualitative studies of specific conflict regions and events.

- To determine whether political violence is clustered near transport infrastructure, the report assesses the relative number of violent events according to their geographical distance to different categories of roads. If transport infrastructure is both a facilitator and a magnet of violence, as described in Chapter 2, then the highest concentration of violence should be observed near roads and decline significantly with distance from them.
- A similar approach is used to examine whether political violence has become increasingly clustered near infrastructure, using the changing proportion of violent events located at certain distances from different categories of roads. An increasing concentration of violence near roads could be the sign that government forces are trying to reconquer a rebellious region, or that militants are increasingly targeting convoys on certain road corridors. Conversely, violence could move away from transport infrastructure if militants increasingly expand their activities in rural regions.
- Finally, the report identifies several transport corridors along which political violence is particularly high. A textual analysis of road-related incidents provides a better understanding of the local dynamics of violence along those corridors. This quantitative analysis is illustrated with a selection of violent attacks that have targeted transport infrastructure in the region.

The report adopts a multiscalar approach to examine the relationship between transport infrastructure and violence in North and West Africa. At the regional level, the study covers 21 countries: Algeria, Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Togo, and Tunisia (Map 3.1). This regional focus is complemented with a study of two transnational regions in which transport infrastructure have been particularly affected by violent attacks since the early 2010s: Mali and the Central Sahel, and Nigeria and the Lake Chad region. Compared with earlier studies (OECD/SWAC, 2022; OECD/SWAC, 2023), the Central Sahel study area has been extended to the south to account for the expansion of jihadist groups towards the Gulf of Guinea (Box 3.1).

Map 3.1.

Regions, countries and case studies



TRANSPORT DATA

Reliable data on the evolution of transport infrastructure in Africa is difficult to find. The categorisation of roads, temporal availability, and spatial coverage used by existing datasets greatly varies (Table 3.2), making international comparisons extremely challenging. In some African countries, very limited information is available on the types and conditions of roads, two key factors that influence the average speeds reached by users of the transport infrastructure. Currently, no road dataset provides up-to-date information on the geographical extent and condition of the road network over the past 20 years.

Against this background, this study uses the Global Roads Inventory Project (GRIP) dataset, a comprehensive and harmonised global dataset suitable for cross-national studies on the African continent (Meijer et al., 2018). GRIP integrates urban, national, and supra-national road data from various sources and addresses discontinuities in road classifications within and between countries. GRIP classifies roads into only six categories, based on the United Nations Logistics Cluster classification, compared with eight categories for the Global Roads Open Access Data Set (gROADS) and 26 for OpenStreetMap (OSM). In a region where most roads are unpaved, this simplified categorisation facilitates the analysis of the distribution of violence. GRIP aggregates road data from 2000 to 2018, which significantly limits our ability to detect changes in the network over time. The fact that most of the road data were added after 2010 only partially compensates for this shortcoming.

The GRIP data is available both as a vector and raster datasets of road length and density at a 5- arcminutes resolution. This report uses

Box 3.1.
Sahelian and coastal countries?

The current expansion of violence in West Africa is often described as a shift from "Sahelian" to "coastal" countries (KAS, 2022). This categorisation must be treated with caution, given the strong geographical and historical links between the Sahel and the Gulf of Guinea coast.

While the Sahel is technically defined as a transition zone between the Sahara and the savannah, receiving between 200 and 600 millimetres of rain annually on average, rainfall variability makes any effort to use isohyets to define its boundaries challenging. All "Sahelian countries" transcend bioclimatic zones. A significant portion of Mauritania, Mali, Niger, and Chad is located within the Saharan domain, which receives less than 200 millimetres annual precipitation, while the south of Burkina Faso, Mali, and Senegal are typical of the Sudanese domain, characterised by precipitation between 600 and 1 300 millimetres. For this reason, the Sahel should be seen as "a space of circulation in which uncertainty has historically been overcome by mobility" (Walther and Retaillé, 2021: 15), rather than a bioclimatic zone or a series of countries.

The same is true for "coastal countries", which the literature on jihadism typically identifies as Benin, Côte d'Ivoire, Ghana, and Togo (Clark and Zenn, 2023; Financial Times, 2024), although there are concerns about jihadist encroachment on Senegal, renewed jihadist activity in Mauritania, and new forms of jihadist expansion in Nigeria. A significant portion of such "coastal countries" is located in regions that are climatically more similar to the Sahel than to the Guinean domain, which receives 1 300 millimetres of rain per year on average.

The Sahel has also long been connected to the Gulf of Guinea economically, socially, and religiously. The north of Benin, Côte d'Ivoire, Ghana, and Togo is punctuated with more than 20 large border markets, such as Malanville, Tingréla, Bawku, and Cinkansé, which facilitate the circulation of agricultural and manufactured goods across climatic zones (OECD/SWAC, 2017). In these regions located more than 600 kilometres north of the Gulf of Guinea, ethnic ties with the Sahel are extremely strong, as evidenced by seasonal and conjunctural movements of population. Several vehicular languages have developed throughout the region thanks to the influence of precolonial polities, trade networks, migration, or transnational pastoral groups. The Sahel and the north of coastal countries also share a common religious heritage, marked by the predominance of Sunni Islam and past episodes of jihad that have transcended climatic zones since the early 18th century (Miles, 2018).

the GRIP spatial vector dataset for the African continent, specifically for the 21 North and West African countries covered by the study. Eight different data sources were incorporated into the GRIP for these countries, with most using two or three data sources, ranging from OpenStreetMap to the United Nations' International Steering Committee for Global Mapping. The only exceptions were Gambia, Guinea-Bissau, and Liberia which had one source each (Vector Map of the World, Level 1).

The total road length for all countries in the GRIP dataset is just under 1 million kilometres, classified into one of five specified categories: highways (2 031 km), primary roads (58 155 km), secondary roads (98 295 km), tertiary roads (765 223 km), and local roads (74 568 km). Road length varies widely among the countries, ranging from a minimum of 4 769 km in Gambia to a maximum of 117 932 km in Libya (Table 3.3). For analysis against the locations of conflict event data, the GRIP dataset is projected using a conic equal area projection for Africa.

Other data sources on roads across the region were evaluated and found unsuitable for this project based on factors such as locational accuracy, road network completeness, cross-national consistency in attribute information, or

Table 3.2.
Comparison of global road datasets

	Global Roads Inventory Project (GRIP)	OpenStreetMap (OSM)	Global Roads Open Access Data Set, Version 1 (gROADSv1)
Spatial coverage	Global: standardised across countries; particularly effective at classifying local roads	Global: overrepresentation of North America and Europe; particularly effective at representing urban roads	Global
Road length	21.6 million km (2018)	95 million km (2021)	9.1 million km (2010)
Temporal coverage	2000-18 (aggregates several years); over half of roads added since 2010	Yearly since 2004	1980-2010 (aggregates several years)
Methodology	Integrates publicly available georeferenced road datasets; repairs discontinuities within and between countries	Crowdsourcing: data collected by volunteers	Retrieved from the Vector Map Level 0 (VMAP0) of the U.S. National Imagery and Mapping Agency
Road types	6 types: highway, primary, secondary, tertiary, local roads, unspecified; standardised types based on the United Nations Logistics Cluster classification	26 types: primary, secondary, tertiary, residential, path, track, trunk, service, footway, unclassified, etc.	8 types: highway, primary, secondary, tertiary, local/urban, trail, private, unspecified
Format	Vector and global raster datasets of road length and density at a 5 arcminutes resolution	Vector	Vector

Sources: Meijer et al. (2018), OpenStreetMap contributors (2024), CIESIN and ITOS (2013).

temporal coverage. For example, OpenStreetMap data lacked consistent spatial coverage beyond urban areas and had large gaps in its road attributes. The widely used gROADS dataset also had significant issues with mislocated roads and was outdated for studying the evolution of violence over the past two decades, as the data aggregates several years from 1980 to 2010.

Another data option evaluated was the commercial Michelin Maps, digitised from paper copies by Müller-Crepon (2023) and Müller-Crepon et al. (2021) between 1966 to 2017. The strength of the data set is the time-varying information and comparatively consistent coverage of the whole continent since the 1960s. In practice, however, such commercial road maps, drawn at a resolution of 1:4 000 000, are highly generalised for visual simplicity. As a result, the location of roads is less precise than in most high-resolution maps, with errors of around 5 kilometres expected when the data is georeferenced. This lack of spatial precision would have made calculating the distance between transport infrastructure and violent events problematic. Of the options available, the GRIP data presented the fewest overall issues.

Map 3.2 shows the distribution of highways, primary, and secondary roads across the region according to GRIP. It illustrates some of the major challenges faced by global road datasets:

- First, the GRIP categorisation of roads does not always reflect actual differences between road types. For instance, very few roads are classified as "highways", even in North Africa countries where the highway network is well developed. In Morocco, only the Casablanca-Rabat segment of the highway, completed in the late 1980s, is classified as a highway. Segments between Rabat and Tangier and between Casablanca and Marrakech, completed in the late 2000s, as well as recent extension of the highway network to Oujda,

Table 3.3.

Total km of road types by country according to GRIP, 2000 to 2018

Country	Highways	Primary	Secondary	Tertiary	Local	Total
Nigeria	761	6 803	8 096	67 812	8 233	91 705
Algeria	481	8 275	6 877	39 846	4 322	59 801
Tunisia	362	3 784	2 143	9 624	4 264	20 177
Morocco	328	4 581	2 993	33 483	4 224	45 609
Senegal	47	2 008	5 518	64 653	2 977	75 203
Ghana	27	2 120	8 035	12 898	5 021	28 101
Cameroon	14	1 584	3 557	64 478	2 905	72 538
Guinea	11	467	8 542	90 792	2 066	10 1878
Libya	0	7 261	5 600	81 523	23 548	11 7932
Côte d'Ivoire	0	7 003	7 251	28 120	2 231	44 605
Mali	0	3 432	3 265	49 419	4 233	60 349
Niger	0	2 817	2 352	38 257	1 155	44 581
Benin	0	2 176	5 121	13 577	679	21 553
Burkina Faso	0	2 010	9 880	15 697	3 191	30 778
Mauritania	0	1 738	2 165	43 068	929	47 900
Togo	0	817	904	2 501	2 634	6 856
Liberia	0	443	4 589	19 567	1	24 600
Sierra Leone	0	419	4 796	27 169	850	33 234
Chad	0	280	1 963	49 183	1 083	52 509
Guinea-Bissau	0	71	3 286	10 230	7	13 594
Gambia	0	66	1 362	3 326	15	4 769
Total	2 031	58 155	98 295	76 5223	74 568	998 272

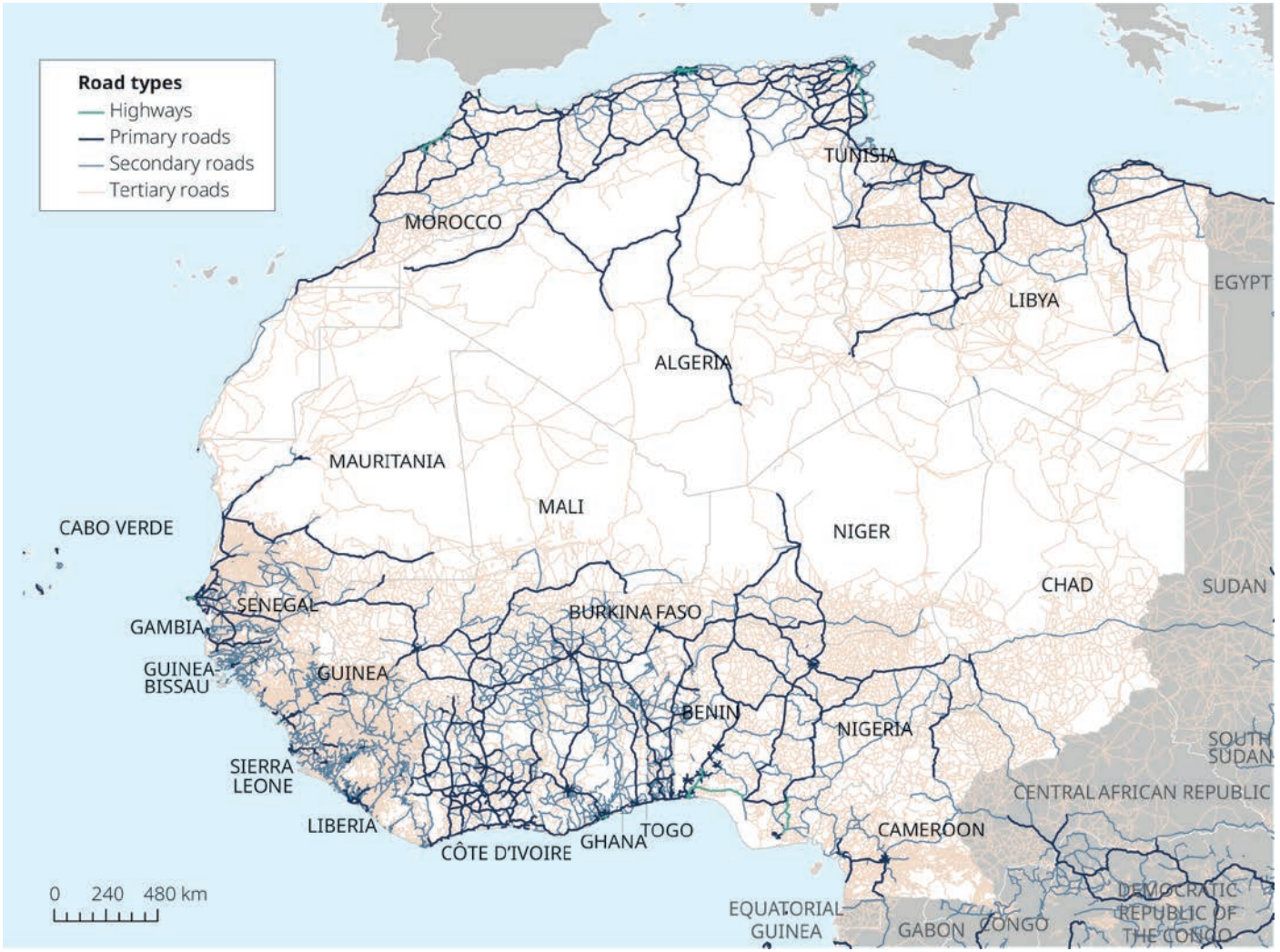
Source: GRIP data, (Meijer et al., 2018).

Beni Mellal, and Safi are missing. In Algeria, much of the recent extension of the highway network, spanning from the Moroccan to the Tunisian border, is also missing. This suggests that highways are often categorised as "primary roads" by GRIP.

- Second, recent additions to the road network are not always visible, reflecting the fact that GRIP aggregates datasets from 2000 to 2018. Several important primary roads built in the last 20 years are still categorised as secondary or tertiary roads, such as the Nouakchott-Nouadhibou road inaugurated in 2004.
- Third, spatial coverage varies greatly across countries. Senegal, Guinea, Liberia and Sierra Leone appear to have a very dense network of tertiary roads, while neighbouring countries relatively few. These differences most likely reflect a lack of regional harmonisation across several road datasets; some tertiary roads listed by GRIP should probably be reclassified as local roads, especially in heavily forested areas of Guinea, Liberia, and Sierra Leone. For these reasons, the report's analysis does not focus heavily on the relationship between violence and road categories.

Map 3.2.

North and West African roads according to GRIP, 2000 to 2018



Note: To improve visibility, local and unspecified roads are not represented.

Source: GRIP data, (Meijer et al., 2018). Cartography by the authors.

Table 3.4.

Actors involved in violent events in North and West Africa, by category, 1997-2024

Name	Number	Examples
State forces	167	Military forces of Ghana, Police forces of Nigeria
Rebels	128	Group for Supporting Islam and Muslims (JNIM), Coordination of Azawad Movements (CMA)
Political militias	557	Civilian Joint Task Force (CJTF), Imghad Tuareg Self-Defense Group and Allies (GATIA)
Identity militias	2 407	Kanuri Ethnic Militia (Nigeria), Abeche Communal Militia (Chad)
Rioters and protesters	11	Rioters (Nigeria)
Civilians	965	Civilians (Guinea-Bissau)
External forces	104	United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA), G5 Sahel Force (G5S)
Others and unknown	87	Nigeria Petroleum Development Company
Total	4 425	

Notes: ACLED uses different names for state forces according to the regime they have served and the unit that participated in a violent event. These names were merged in the above table, except for Libya, where "military forces of Libya", "military forces of Libya Haftar Faction" and "military forces of Libya Government of National Accord" are represented as separate entities. ACLED also identifies numerous categories of civilians, such as fishermen, farmers, health workers, teachers and women. These actors are regarded as "civilians" in this report and merged into a single category by country. These changes explain why the number of state and civilian actors is smaller than in previous studies (OECD/SWAC, 2020; OECD/SWAC, 2023). Source: Authors, based on data from ACLED (2024) available through 24 May 2024. Data is publicly available.

CONFLICT DATA AND THE SPATIAL CONFLICT DYNAMICS INDICATOR

The report mobilises conflict data from the Armed Conflict Location & Event Data (ACLED) project to study the geography of political violence in the region. ACLED provides disaggregated, georeferenced information on violent events across Africa since 1997 (Raleigh et al., 2010). Building on previous work addressing the geography of conflict in North and West Africa by the OECD/SWAC (2020; 2021; 2022; 2023), this study identifies eight categories of actors based on their communal, ethnic, or political goals and structure, and, where possible, on their "spatial dimension and relationships to communities" (ACLED, 2023: 25).

Actors can be formal organisations involved in violent activities, informal groups of people, or non-combatant categories (Table 3.4). Formal organisations include "state forces," defined as collective actors that exercise de facto state sovereignty over a given territory, such as military and police forces from the region. Another type of formal organisation is "rebel groups", whose political agenda is to overthrow or secede from a given state. Violent extremist organisations affiliated with the Islamic State or Al Qaeda, such as the Islamic State West Africa Province or the Group for Supporting Islam and Muslims (JNIM) are coded in this category. Splinter groups or factions that emerge from a rebel group are recorded as distinct actors. For example, Ansar Dine, the Macina Liberation Front, Al-Mourabitoun and the Saharan branch of Al Qaeda in the Islamic Maghreb are each coded individually before they merged to form JNIM in 2017. Informal groups are defined based on their social, ethnic or regional attributes, such as "Fulani Ethnic Militias".

ACLED distinguishes between two types of militias, those defined by identity and those that pursue political objectives. "Identity militias" are a heterogeneous group of militants structured around ethnicity, religion, region, community and livelihood. They are often named after the locality or region where they operate, like the Borno Ethnic Militia in Nigeria. Self-defence groups such as the Volunteer for Defense of Homeland in Burkina Faso or Dan Na Ambassagou in Mali are coded as identity militias. "Political militias" are organisations whose goal is to influence

Table 3.5.
Violent events and fatalities in North and West Africa, by type, 1997-2024

Event type	Sub-event type	Events	Fatalities
Battles		*29 390*	*124 356*
	Armed clash	27 545	114 548
	Government regains territory	980	4 890
	Non-state actor overtakes territory	865	4 918
Explosions/Remote violence		*10 724*	*36 113*
	Air/drone strike	4 140	18 692
	Grenade	99	91
	Remote explosive/landmine/IED	4 131	10 359
	Shelling/artillery/missile attack	1 822	1 903
	Suicide bomb	532	5 068
Violence against civilians		*32 792*	*85 562*
	Abduction/forced disappearance	7 332	0
	Attack	25 108	84 553
	Sexual violence	352	1 009
Grand Total		72 906	246 031

Source: Authors, based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

and impact governance, security and policy in a given state through violent means, such as the Imghad Tuareg Self-Defense Group and Allies in Mali. Unlike rebel groups, political militias "are not seeking the removal of a national power, but are typically supported, armed by, or allied with a political elite and act towards a goal defined by these elites or larger political movements" (ACLED, 2023: 27).

Several categories of civilian actors are identified by ACLED. "Rioters" are unarmed individuals or groups engaged in disorganised violence against civilians, government forces or other armed groups during demonstrations, while "protesters" are unarmed demonstrators who engage in a public event without violence. Finally, "civilians" refer to the unarmed and unorganised victims of violent events identified by their country of origin. International organisations, foreign military forces, private security firms, and independent mercenaries engaged in violent events are coded as "external" and "other forces." It is important to note that the ACLED database does not distinguish between the perpetrators and the victims of an attack, except for civilians who are, by definition, unarmed and cannot engage in political violence.

The analysis focuses on three types of violent events representative of armed conflict in the region: battles between armed groups and/or state forces, explosions and remote violence, and violence against civilians (Table 3.5). Because the report focuses on politically motivated violence, nonviolent actions such as strategic developments are not considered.

- Battles are defined as "violent interactions between two politically organised armed groups at a particular time and location" (ACLED, 2023: 12). They can occur between any state and non-state actors and involve at least two armed and organised actors. This category is subdivided into three sub-event types, depending on whether non-state actors or government forces overtake territory or whether there is no territorial change. Battles caused more than 124 000 fatalities in the region from January 1997 through June 2024, during just under 30 000 events. Armed

clashes are by far the most represented type of battles, with more than 90% of fatalities. Battles are the deadliest type of violent event, with 4.2 people killed per event, rising to 5.7 victims per event when non-state actors retake territory.

- Explosions and remote violence are defined as "incidents in which one side uses weapon types that, by their nature, are at range and widely destructive." (ACLED, 2023: 16). These events can be carried out using bombs, grenades, improvised explosive devices (IEDs), artillery fire or shelling, missile attacks, heavy machine gun fire, air or drone strikes, or chemical weapons. They account for 15% of the events and fatalities recorded in North and West Africa since 1997. Explosions and remote violence have killed more than 36 000 people since 1997 in nearly 11 000 incidents. They cause 3.4 victims per event on average, and 9.5 victims per event for suicide bombings, the deadliest form of sub-event recorded in the database over the period of observation.
- Violence against civilians includes "violent events where an organized armed group inflicts violence upon unarmed non-combatants (…) The perpetrators of such acts include state forces and their affiliates, rebels, militias, and external/other forces" (ACLED, 2023: 18). Violence against civilians accounts for 45% of the events and 35% of the fatalities recorded in North and West Africa since the late 1990s. The vast majority of the 85 600 civilian deaths and nearly 33 000 incidents observed in the region are caused by direct attacks. On average, 2.6 civilians are killed per violent event in the region.

ACLED also tracks protests and riots, but these represent a fundamentally different political process from armed conflict. For this reason, protests or riots are not included in the main analysis of the report. The resulting data includes 72 906 violent events and 246 031 fatalities from 1 January 1997 to 30 June 2024. Because the GRIP road data has only been available since 2000, the analysis of the relationship between transport infrastructure and conflict is limited to the period between 1 January 2000 and 30 June 2024, in which 233 624 people were killed in 70 095 incidents (Box 3.2).

A Spatial Conflict Dynamic indicator (SCDi) is used in this report to assess the changing geography of violence, over space and through time (Walther et al., 2023). The SCDi combines two spatial properties of violence: the intensity of conflict across a region, and the distribution of conflict locations relative to each other. As presented in Figure 3.1, the patterning of violent events relative to each other is a different concern from conflict intensity: two regions may experience the same number of violent events but result in very different geographical patterns according to whether violence is rather spread or concentrated in a few places. The SCDi has been previously applied to all North and West Africa (OECD/SWAC, 2020; 2022; 2023) using a uniform grid of 50 by 50 kilometres to subdivide the study area. It is calculated annually for each of these grid cells since 1997 and is made available to the public on the Mapping Territorial Transformations in Africa platform run by OECD/SWAC (2024).

Measuring the intensity of violence

Conflict intensity (CI) is the first spatial property measured by the SCDi. This metric identifies the total number of events in a given 50 by 50 km grid cell, for a given year. This number of events is then divided by the area of the cell, to allow for comparisons between zones. The resulting CI metric has a lower threshold of 0 if there are no events within a given zone during a given year and no upper threshold. As the CI metric increases from 0, it reflects an increasing spatial intensity of violence within a zone (Figure 3.2).

In addition to calculating the raw CI score for each zone, the SCDi also classifies a grid cell as higher or lower than an expected CI value. The expected CI value for North and West Africa is called the CI "generational mean", the 20-year average conflict intensity between 1997 and 2016. The CI generational mean is 0.0017 events per square kilometre, or four events by cell. In this

Box 3.2.
Global conflict datasets and their limitations

In line with previous studies on the geography of armed conflict in the region, this report builds on disaggregated conflict data provided by ACLED (Raleigh et al., 2010). ACLED is currently the most widely used, comprehensive, and up-to-date conflict dataset available to researchers and policy makers alike.

ACLED is particularly adapted to study emerging forms of political violence in Africa, due to its adaptive definition of violence, and inclusion of a wide range of state and non-state actors. Violent events reported by newspapers, social media, reports, and other media sources are manually added to the database, described, and coded consistently over time (Raleigh, Kishi and Linke, 2023). The dataset is updated weekly based on over 13 600 sources in over 100 languages. ACLED has established numerous partnerships with local observatories and researchers around the world to minimize the number of false positive events, duplicates, and fake news that could artificially increase the number of violent events and deaths. These collaborations also ensure that most violent events observed in remote or poorly documented regions are reported.

While major progress has been achieved in producing geospatial data, there is no such thing as a perfect conflict dataset. All global datasets such as the Uppsala Conflict Data Project - Georeferenced Event Data or the Integrated Crisis Early Warning System come with limitations. One of the limitations of ACLED is that the directionality of attacks cannot be determined: the data cannot be used to identify the perpetrator and the victim of a violent incident, except for violence against civilians.

Another limitation is that violent events come with a "spatial precision code" that determines to what extent the geographical coordinates of an incident are precisely known. If the source material mentions a small part of a region (such as "the area of Tanwalbougou" in Burkina Faso), the event is assigned to a town that represents that area (Tanwalbougou). These events represent 36% of all violent events recorded by ACLED in North and West Africa since 1997. If a larger region (such as "Zamfara State" in Nigeria) is mentioned instead of a location, the event is assigned to the closest natural location noted in reporting or the nearest provincial city (the state capital of Gusau) (ACLED, 2023). Fortunately, these incidents represent only 1.5% of the total.

Finally, ACLED significantly improved its data collection process over time, which means that data collected in the late 1990s should be used with caution. More recently, military juntas have suspended several international media and threatened or imprisoned independent journalists in such countries as Burkina Faso, Mali and Niger. These authoritarian measures have turned certain regions into an "information desert", which negatively affects the coverage of violent incidents. This is particularly true when government forces are involved in atrocities against civilians or attacked by rebel groups, in which cases the exact number of fatalities is often hard to determine. For this reason, this report mainly builds on the number of violent events, which is less subject to political manipulation than the number of fatalities.

report, a zone is classified as high intensity if four or more events occur in a grid within a given year, and as low intensity otherwise.

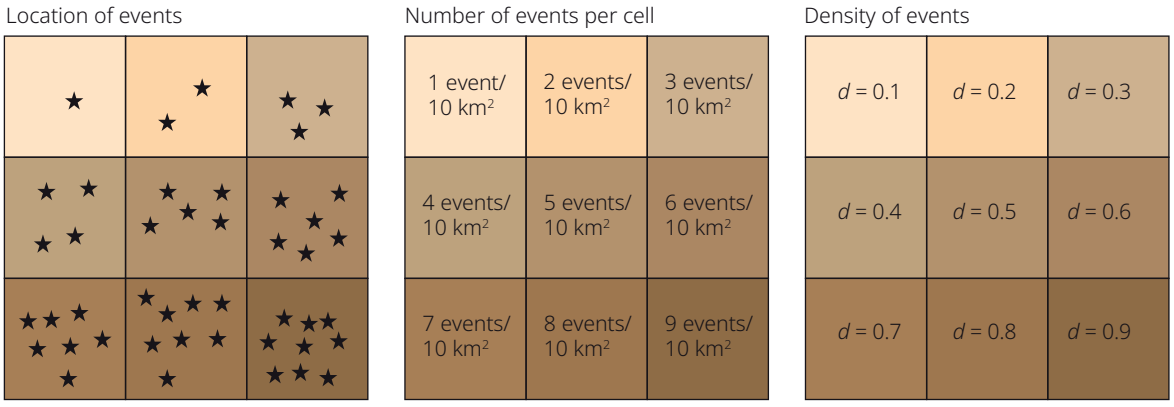
Measuring the concentration of violence

Conflict concentration (CC) is the second property measured by the SCDi. It refers to the distribution of conflict locations relative to each other. An average nearest neighbour (ANN) ratio is calculated to determine whether the patterns of violent events exhibit clustering or dispersion. The ANN ratio is calculated as the observed average distance among violent events in each zone, divided by the expected average distance obtained if the events had been distributed randomly (ESRI, 2019). Like CI, the CC metric has a lower threshold of 0, with no conceptual upper threshold. ANN ratios

Figure 3.1.
Identical density but different distribution of violent events

Source: OECD/SWAC (2020), *The Geography of Conflict in North and West Africa*, https://dx.doi.org/10.1787/02181039-en.

Figure 3.2.
Density of violent events



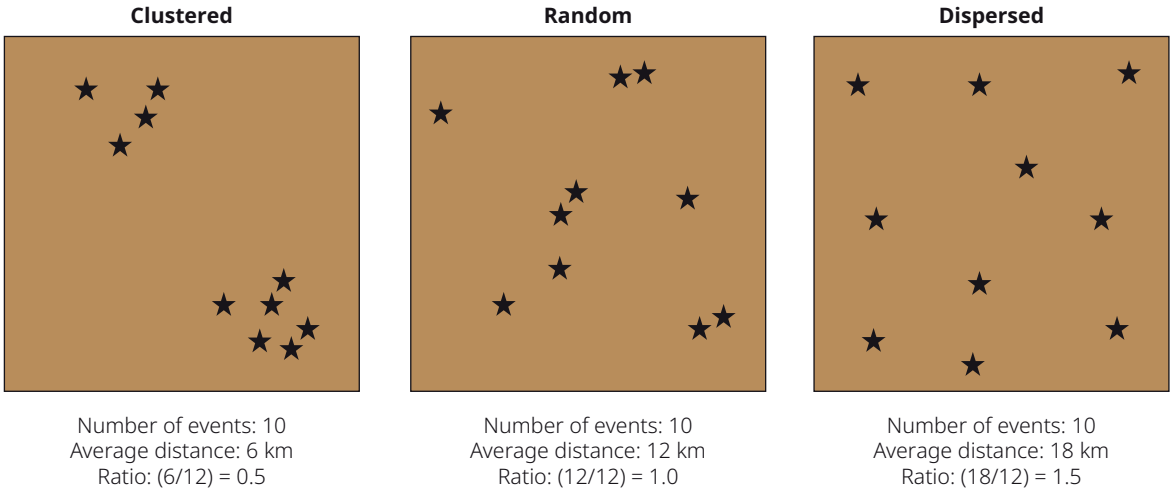
Source: OECD/SWAC (2020), *The Geography of Conflict in North and West Africa*, https://dx.doi.org/10.1787/02181039-en.

smaller than 1 indicate clustering, while ratios greater than 1 indicate dispersion. For example, the distribution of events represented on the left-hand side of Figure 3.3 is clustered, as shown by its ratio of 0.5. A random distribution of the same number of events has a ratio of 1 while a dispersed distribution, represented on the right-hand side, has a ratio of 1.5 (Figure 3.3).

Types and conflict life cycles

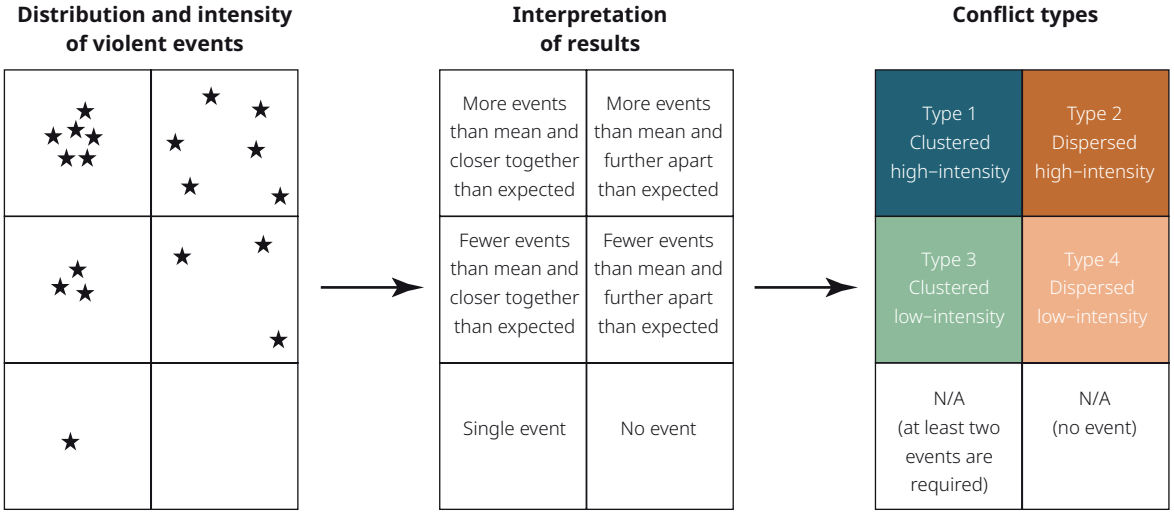
The SCDi identifies four types of conflict based on whether violent events are dispersed or clustered and are of high or low intensity (Figure 3.4). The first type are conflicts with an above-average intensity and a clustered distribution of violent events, suggesting that violence is intensifying locally. The second type are conflicts with a higher-than-average intensity and a dispersed distribution of events, indicating that the violence is accelerating. The third type applies to conflicts where there are fewer violent activities and most of them take place near each other, possibly indicating a decreasing range of violent groups. The fourth type, in which a lower-than-average intensity and a dispersed distribution of events are combined, suggests that a conflict is lingering, perhaps because opponents are highly mobile or unlikely to face protracted opposition.

Figure 3.3.
Distribution of events as measured by the average nearest neighbour (ANN) ratio



Source: OECD/SWAC (2020), *The Geography of Conflict in North and West Africa*, https://dx.doi.org/10.1787/02181039-en.

Figure 3.4.
Using event distribution and intensity to identify conflict types



Source: OECD/SWAC (2023), *Urbanisation and Conflicts in North and West Africa*, https://doi.org/10.1787/3fc68183-en.

These four types are indicative of different stages in the overall lifecycle of a conflict (Walther et al., 2023; Walther, Radil and Russell, 2024). For example, when the locations of violent events are dispersed from one another, this commonly happened when violence either first emerged or receded in an area. Conversely, in areas where conflict persisted for multiple years without abating, violent events were often closely clustered together. Similarly, long-running conflict zones are often characterised by 'hot spots' of high levels of spatial intensity of conflict events while areas with lower intensity levels are typically on the periphery of such hot spots, indicating the potential of low intensity violence to be a hallmark of spatial spread of a conflict. Taken together, the four

spatial types reveal insights about the dynamics of a typical conflict in North and West Africa. These are general trends, however, and not all sub-zones, places or localities will exhibit the same lifecycles between the SCDi types.

New local SCDi metrics

Since its launch in 2020, the SCDi has been regularly used to track key aspects of the geographies of violence in North and West Africa. The success of the SCDi as a conflict monitoring tool inspired the development of several new features (Walther, Radil and Russell, 2024). One of the new features in the SCDi is the ability to track and identify the histories of conflicts in cell locations, which provides several advantages. For example, the SCDi now calculates the number of years that a conflict of any type occurred in each cell, called the SCDi years-in-conflict metric. Accordingly, using this metric to map cells that experienced violence each year but have no recent history of violence can highlight the spread of violence to previously peaceful areas.

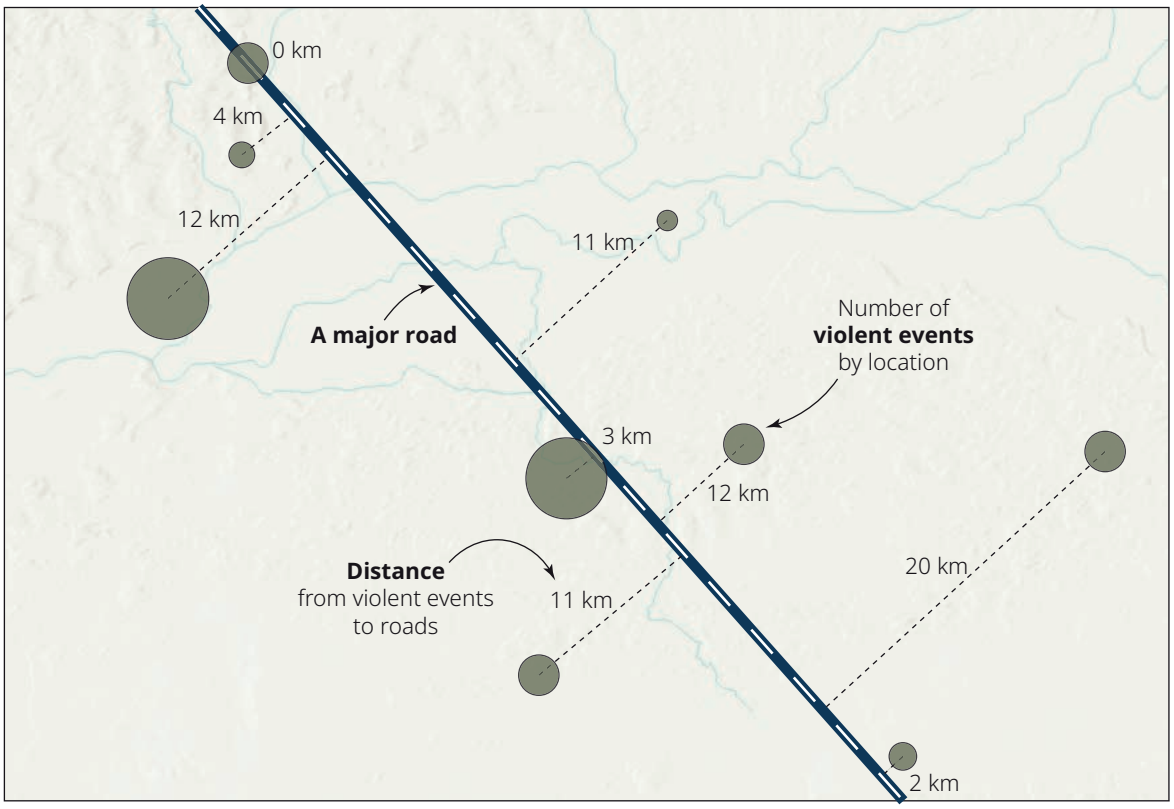
Another new local feature of the SCDi is the ability to compare current CI and CC scores against the historical norms in those cells. The SCDi now calculates the local intensity and distribution of violence by averaging the annual metrics using the years-in-conflict metric. Comparing a cell's current year score against the averaged local metric can indicate how violence is either intensifying/de-intensifying or clustering/dispersing. As with the years-in-conflict metric, mapping these trends can illustrate exactly where conditions are improving or destabilising, helping to identify where in the conflict lifecycle a cell may be (Chapter 4).

The relationships between transport infrastructure and armed conflicts are analysed using a geographic information system to associate the location of violent events with the existence of different categories of roads. Violent events recorded by ACLED each year are overlaid on the GRIP road dataset to examine how close politically motivated violence is to the road infrastructure at the regional level (Figure 3.5). The number of events observed in the region is then represented according to their relative distance from transport infrastructure. If, as one assumes, violence tends to cluster near roads, then the results should exhibit a clear distance-decay effect. The patterns of violence observed in the region are then broken down by year to examine whether transport infrastructure is becoming more targeted. This evolution is analysed by representing how the share of violent events located at various distances from roads varies over time. Finally, the data representing the relationships between transport infrastructure and violence are disaggregated by country to highlight intra-regional variations.

In the Central Sahel and Lake Chad region, the description of each violent event generated by ACLED is used to identify transport-related incidents based on several keywords, such as "roads", "highway", "convoys", "ambush", or "vehicle", that are directly associated with transport infrastructure, the people who use it, or the vehicles used to move across the region. For example, ACLED notes that on 17 April 2024, a convoy of Malian Armed Forces (FAMa) forces struck an IED likely planted by JNIM militants on the road between Bandiagara and Bankass in the Mopti region (incident #MLI32366). These transport-related incidents are selected and mapped to provide a more detailed understanding of the strategies used by state and non-state actors to control mobility at the sub-regional level.

Figure 3.5.

Combining transport and conflict data



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Chapter 4

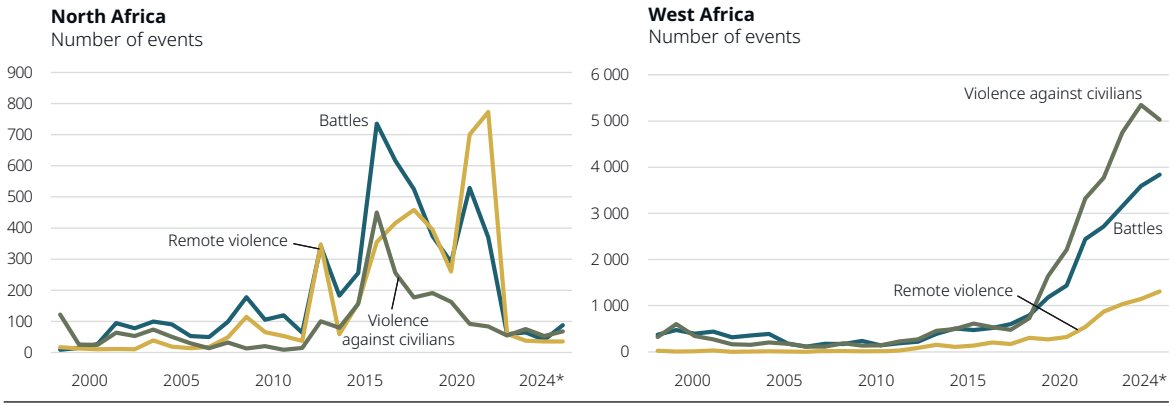
Changing geographies of violence in North and West Africa

Chapter 4 examines the changing geographies of violence in North and West Africa since 1997. The analysis of disaggregated conflict data from the Armed Conflict Location & Event Data (ACLED) project suggests that the region has experienced a contrasting evolution. While violence has plummeted north of the Sahara since the end of the Second Libyan War, West Africa is currently engulfed in an unprecedented wave of violence. Nearly 195 000 people have been killed in West Africa since the beginning of the Boko Haram insurgency in 2009. Much of the violence is concentrated in the Lake Chad region, across the Central Sahel (Mali, Burkina Faso, and western Niger), and in western Cameroon, where a poorly documented crisis has caused a record number of violent events in 2024. The Spatial Conflict Dynamics indicator (SCDi) developed by OECD/SWAC suggests that, while much of the violence remains clustered regionally, an increasing number of regions are affected by conflict, particularly in the Central Sahel. A new feature of the SCDi also shows that in just two years, one third of the conflict regions have experienced violence for the first time since the early 2000s and 8% have had ten or more years of conflict. This highlights how conflict is not only spreading to new locations in West Africa but also how persistent conflict can be once it has developed. The chapter also examines the current southward expansion of this violence from the Sahel to the north of coastal countries. In Benin, Côte d'Ivoire, Ghana, and Togo, sporadic attacks are targeting security forces and civilians, especially in border zones, without necessarily taking the form of a clear front. The lack of a clear escalatory trend in these countries may mean either that jihadists are still in a building and recruitment phase, or that they view the coastal countries more as rear bases and buffer zones than as military targets.

KEY MESSAGES

- **Violence has strongly declined in North Africa following the end of the Second Libyan War, while intensifying and spreading in West Africa**
- **Violence against civilians continues to increase in West Africa and should reach 10 000 victims in 2024 if the situation continues to deteriorate.**
- **The Central Sahel and the Lake Chad regions remain the main epicentres of violence. For the first time since 1997, Cameroon is the second most affected country in terms of violent events, due to the conflict between Ambazonian separatists and the government.**
- **The local SCDi metrics show that in just two years, one-third of the cells of the region experienced violence for the first time since the early 2000s and 8% have had ten or more years of conflict. This highlights how conflict is not just spreading to new locations but also how persistent conflict has tended to be over time in a place once it has developed.**
- **Jihadists' expansion to coastal countries does not take the form of a clear front progressing towards the Gulf of Guinea. Northern Benin and Togo appear particularly at risk, while northern Côte d'Ivoire and Ghana tend to be used as rear bases.**

Figure 4.1.
Violent events by type and sub-region, 1997-2024



Note: *2024 data are projections based on doubling of violent events through 30 June.
Source: Authors, based on ACLED data (2024). Data is publicly available.

Political violence in North and West Africa has experienced a contrasting trajectory over the last couple of years (Figure 4.1). North of the Sahara, violence has plummeted to one of its lowest levels since the end of the second civil war in Libya in 2020. Fewer than 200 violent events resulting in 220 deaths were recorded in 2024 in the region, compared with 1 540 events and 3 650 deaths a decade ago. All types of violence have declined dramatically, including explosions and remote violence, which had peaked just before the signing of a permanent ceasefire between the Libyan National Army and the Government of National Accord in 2020.

This evolution contrasts starkly with the one observed south of the Sahara, where violence has never been so intense since detailed data was collected by the Armed Conflict Location & Event Data (ACLED) project in 1997. Nearly 195 000 people have been killed in West Africa since the beginning of the Boko Haram insurgency in 2009. If the situation continues to deteriorate, the conflicts that tear West Africa apart will result in 28 000 fatalities and 10 000 violent events in 2024. Violence against civilians is the most represented type of violent events with more than 5 000 incidents in 2024, compared with 610 in 2014. More than 10 000 civilians died in 2024 because of violence exerted against them by state forces, violent extremist organisations, militias, mercenaries, and rebel groups.

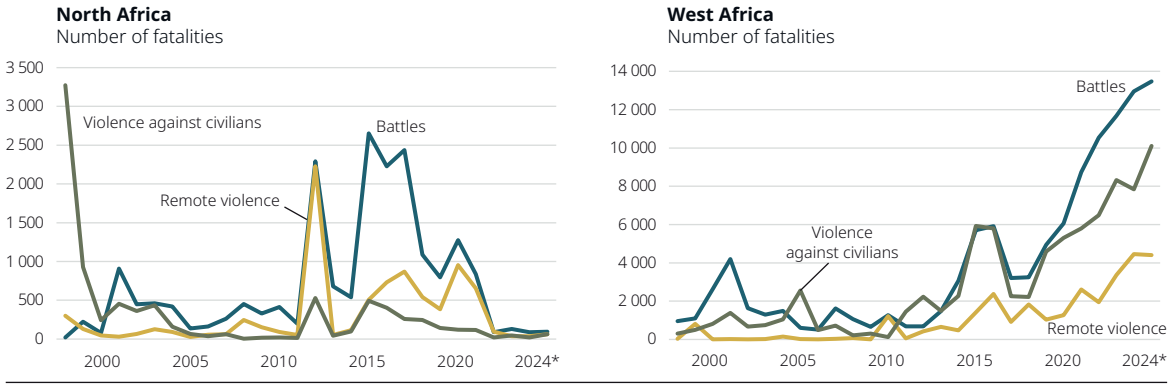
These catastrophic numbers suggest that the control of the civilian population has become the major objective of both government forces and their opponents. Battles between government and/or non-state actors are the deadliest form of violence with 13 482 victims in 2024—four times more than when the Group for the Support of Islam and Muslims (Jama'a Nusrat ul-Islam wa al-Muslimin, JNIM), the leading coalition of jihadist groups, was formed in 2017 (Figure 4.2). The last four years have also seen an increase in remote violence and explosions in West Africa, a type of violence that was historically more prevalent in North Africa. Air strikes, drone attacks, and Improvised Explosive Devices (IEDs) are now routinely used south of the Sahara.

TWO HOTSPOTS OF VIOLENCE

Violence is not just unevenly distributed across North and West Africa. In each region, violence tends to cluster in a few countries, reflecting the idiosyncratic nature of armed conflict and its local roots. 94% of violent events and 96% of fatalities observed from January 2023 through June 2024 occurred in just five countries: Nigeria, Cameroon, Burkina Faso, Mali, and Niger, all located in West Africa (Table 4.1).

Figure 4.2.

Fatalities by type and sub-region, 1997-2024



Note: 2024 data are projections based on doubling of fatalities through 30 June.

Source: Authors, based on ACLED data (2024a). Data is publicly available.

Table 4.1.

Violent events and fatalities by country, 2023-24

	Violent events		Fatalities		Population		Events (%) vs population (%)	Fatalities (%) vs population (%)
	Number	%	Number	%	Number	%	Ratio	Ratio
Nigeria	5 303	34.4	13 711	34.7	232 679 000	38.2	0.9	0.9
Cameroon	3 711	24.1	3 060	7.7	29 123 700	4.8	5.0	1.6
Burkina Faso	2 388	15.5	13 054	33.0	23 548 800	3.9	4.0	8.6
Mali	2 326	15.1	6 277	15.9	24 478 600	4.0	3.8	4.0
Niger	670	4.4	2 014	5.1	27 032 400	4.4	1.0	1.1
Benin	352	2.3	307	0.8	14 462 700	2.4	1.0	0.3
Libya	145	0.9	156	0.4	7 381 020	1.2	0.8	0.3
Chad	135	0.9	465	1.2	20 299 100	3.3	0.3	0.4
Others	366	2.4	465	1.2	230 691 834	37.8	0.1	0.0
Total	15 396	100.0	39 509	100.0	609 697 154	100.0	1.0	1.0

Notes: Data are available from 1 January 2023 through 30 June 2024. In countries with a ratio higher than 1, violence—measured in terms of violent events or fatalities—is higher than the share of the regional population would suggest. Population data are estimates as of 1 July 2024. While not formally part of the Economic Community of West African States, Cameroon is included in the analysis due to the conflict affecting its western region.

Sources: Authors, based on ACLED (2024) and United Nations (2024) data. ACLED (2024) data is publicly available.

The Central Sahel, which includes Mali, eastern Mauritania, western Niger, Burkina Faso, and the north of coastal countries (see Map 3.1), is the largest hotspot of violence in North and West Africa (Map 4.1). More than 21 000 people were killed in Burkina Faso, Mali and in the western part of Niger from 2023 to mid-2024, in 5 229 incidents. This represents more than half (53 %) of the victims and more than one-third (34%) of the incidents reported in the entire region. The three Sahelian countries most affected by the jihadist insurgencies have experienced a continuous increase in violence, which extends to a significant part of their national territory.

The most dramatic evolution is that of Burkina Faso, where more than 13 000 people were killed—nearly as many as in Nigeria over the same period, despite having a population ten times smaller. Violence is no longer limited to the Sahel, Est, and Centre-Nord Burkinabè

administrative regions, as in 2021–22, but has engulfed nearly the entire country, including the regions bordering Côte d'Ivoire, Ghana, and Togo in the south. In Niger, the jihadist insurgency is particularly intense in the Téra and Say Department situated west of the Niger River, and in the Tillabéri Department neighbouring Mali. The capital city of Niamey appears largely unaffected by violence, despite being increasingly surrounded. In Mali, the violence is particularly concentrated in the Inner Niger Delta and Dogon Country, as well as around Ménaka and Kidal.

The second hotspot of violence is in Nigeria (Map 4.1 and 4.2), with more than 5 300 events and 13 700 fatalities from January 2023 through June 2024. More than one-third of the events and fatalities observed in North and West Africa occur in this country. Nigeria is affected by several conflicts, including the Lake Chad insurgency led by Boko Haram and the Islamic State West Africa Province (ISWAP) since the late 2000s, communal violence around the Middle Belt, violence against the government and oil companies in the Delta, and, increasingly, organised violence and banditry in the North-West (Madueke, 2024; Ojewale, 2024). Due to the insurgency waged by Boko Haram and ISWAP, Borno remains by far the most affected state in Nigeria, with 28 % of the national fatalities, the same proportion as the Northwestern states of Kaduna, Katsina and Zamfara combined.

This geography of violence mirrors the one observed in recent years, with one exception. For the first time since detailed data were collected in the late 1990s, Cameroon is the second most affected country in terms of violent events, with more than 3 700 incidents reported from January 2023 to June 2024. The country is facing two major conflicts: the jihadist insurgency led by Boko Haram and ISWAP around Lake Chad, and the so-called Anglophone Crisis, which pits the Cameroonian government against the Ambazonian separatist movement (ACLED, 2024b). This poorly documented conflict is highly concentrated in the English-speaking Northwest and Southwest regions of the country (Map 4.3), which represent 71 % of the violent events and 64 % of the fatalities recorded by ACLED in Cameroon from 2023-24. Cameroon is a rare example of conflict where the distribution of violence corresponds exactly to linguistic borders. While the number of incidents related to the Cameroon Crisis is very high, this conflict does not have the same intensity as other major conflicts in West Africa: the number of people killed (3 060) remains much lower than in Burkina Faso (13 054) and Mali (nearly 6 300) between January 2023 and June 2024.

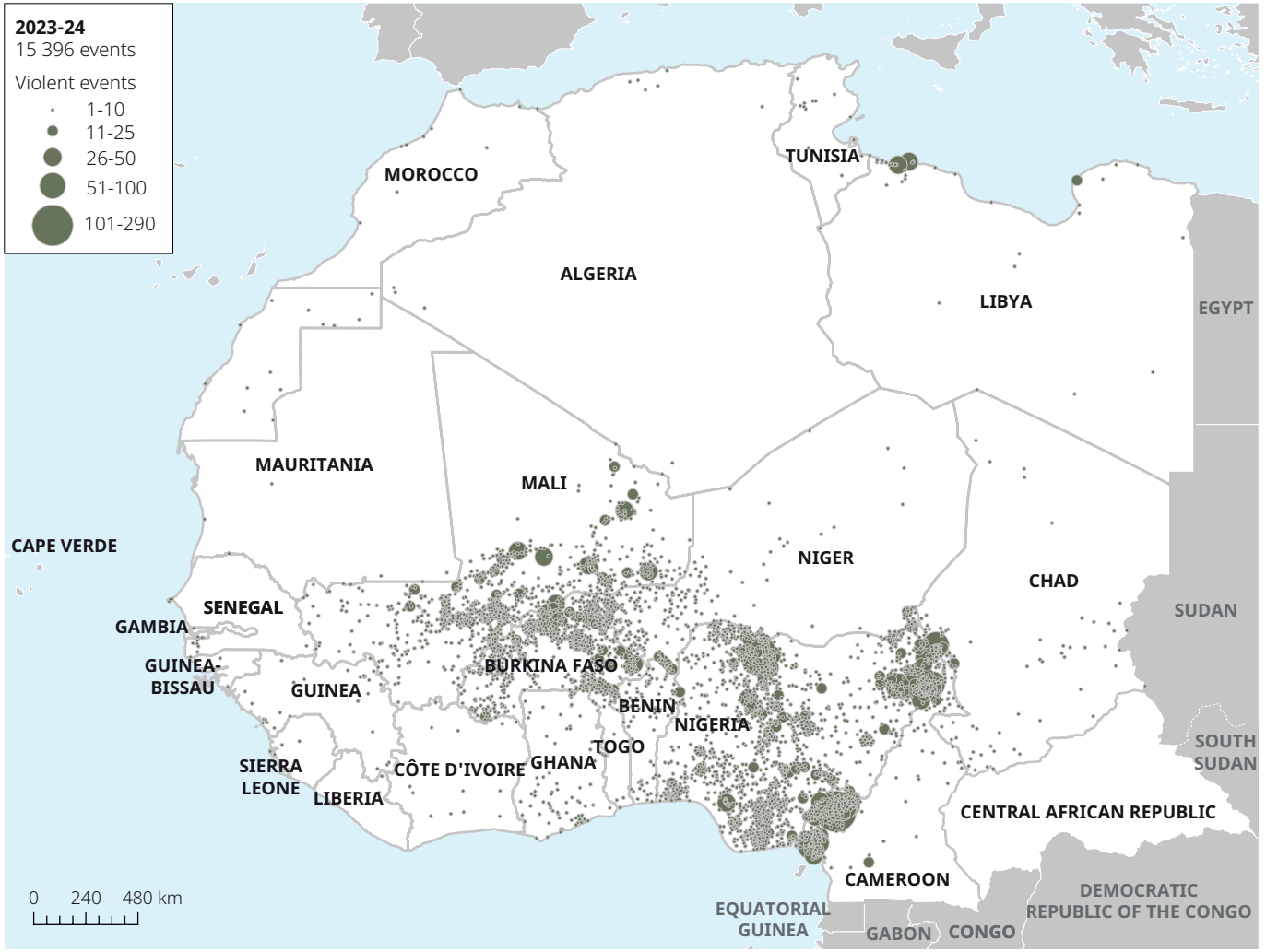
The intensity of violence imperfectly correlates with the size of the population of each country. In other words, the most populated countries are not always the most violent, as evidenced in Table 4.1, which calculates the ratio between the proportion of events and fatalities in eight countries and their share of the regional population. A ratio above one indicates that more violence is observed in the country than what its population would suggest. The most dramatic examples of this evolution are Cameroon, Burkina Faso, and Mali, where events and fatalities are far more numerous than should be observed according to their population. Nigeria is, once again, an exception. In the most populated country of Africa, violence is slightly lower than what one would expect considering its population. These results must nonetheless be taken with caution, since the overall size of the Nigerian population is subject to uncertainty (the last census was conducted in 2006).

INTENSIFICATION AND SPREAD OF VIOLENCE THROUGH BORDERS

The expansion and intensification of armed conflicts in some parts of North and West Africa is examined using the Spatial Conflict Dynamics indicator (SCDi) that monitors the changing geography of violence in the region since the late 1990s (OECD/SWAC, 2020; Walther et al., 2023a). This indicator measures the intensity and spatial distribution of violence affecting each of

Map 4.1.

Violent events in North and West Africa, January 2023–June 2024

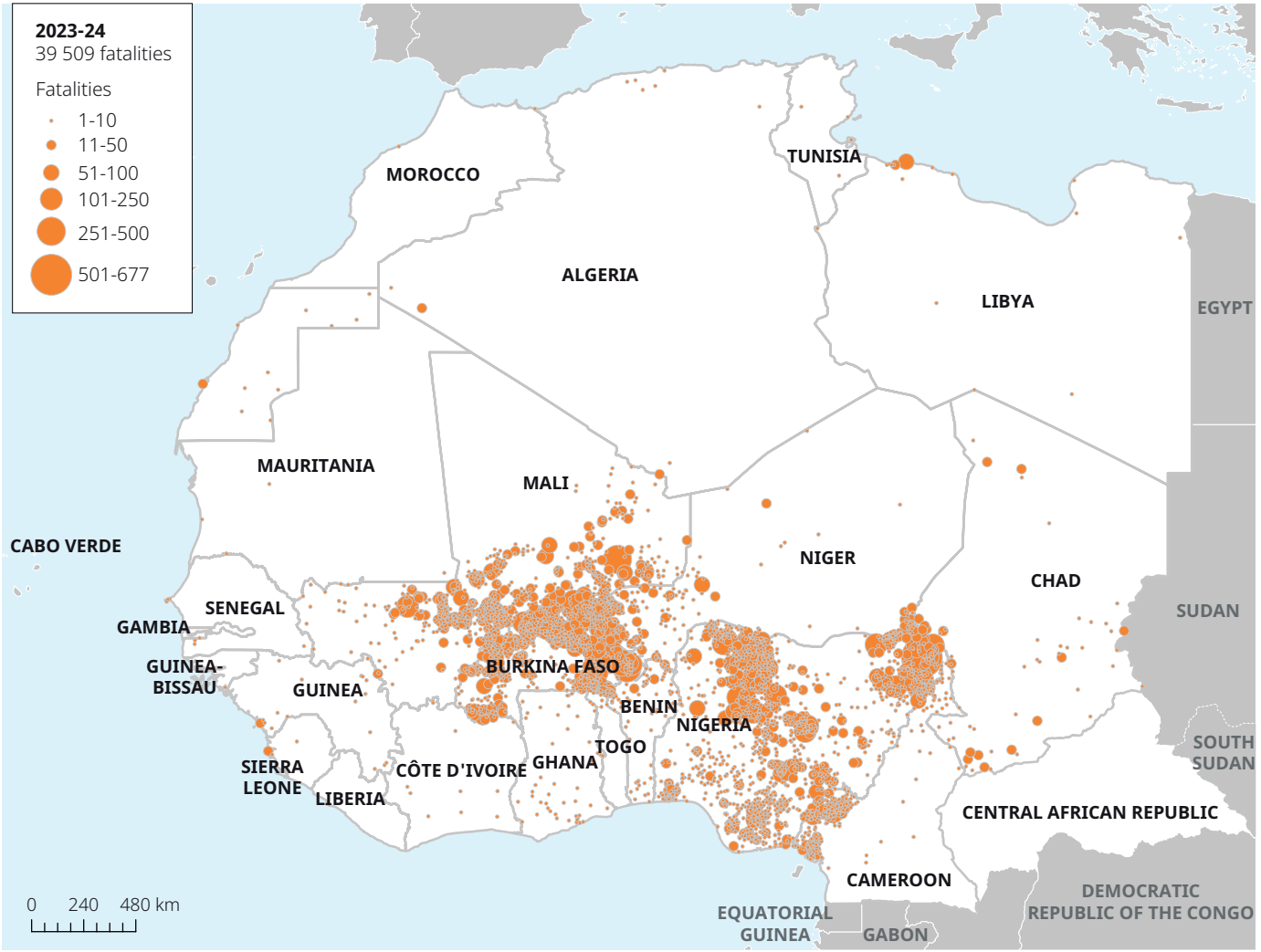


Note: Data is available through 30 June 2024.

Source: Authors, based on ACLED data (2024). Data is publicly available.

Map 4.2.

Fatalities in North and West Africa, January 2023–June 2024

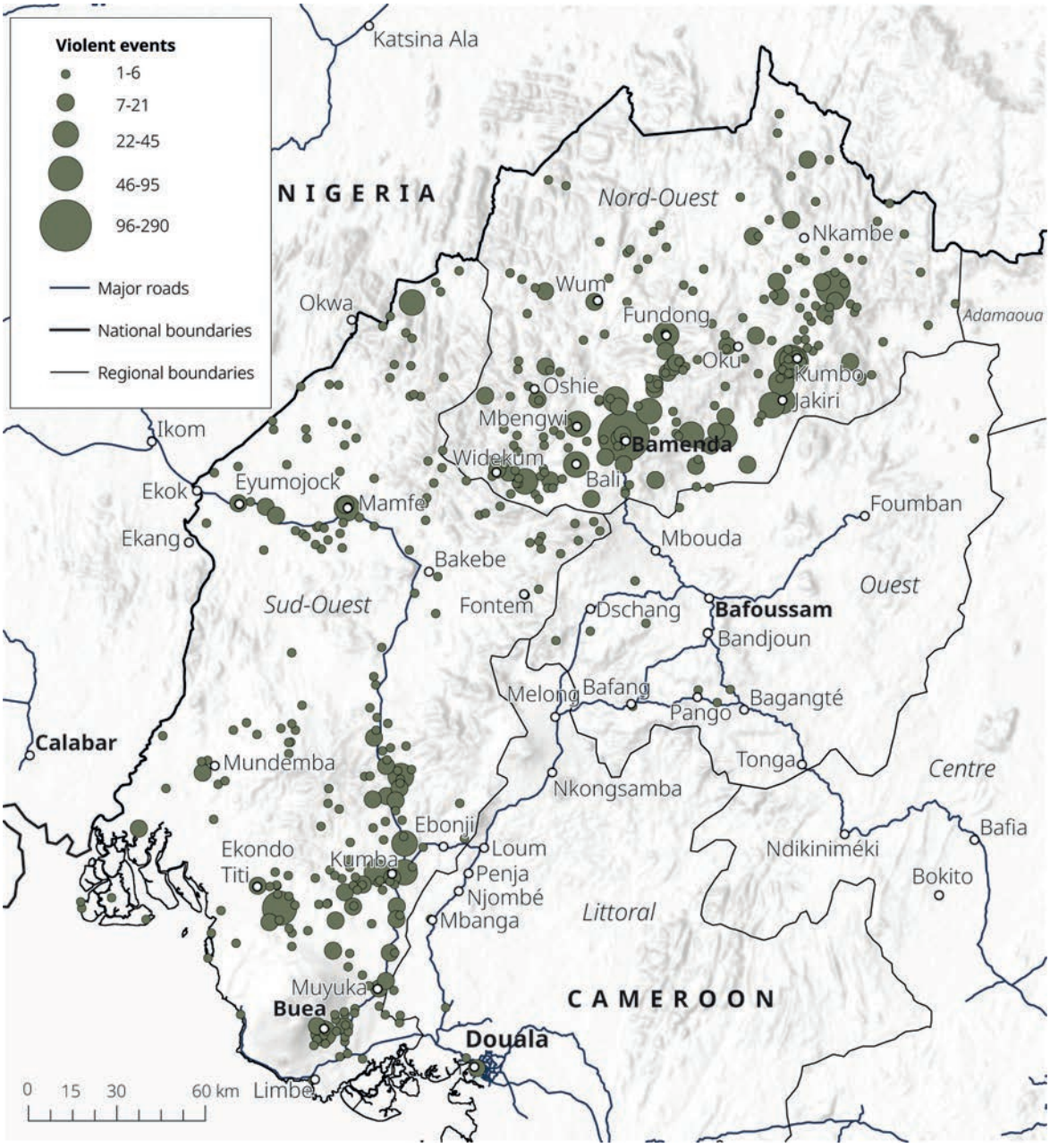


Note: Data is available through 30 June 2024.

Source: Authors, based on ACLED data (2024). Data is publicly available.

Map 4.3.

Violent events in western Cameroon, January 2023–June 2024



Note: Data is available through 30 June 2024.

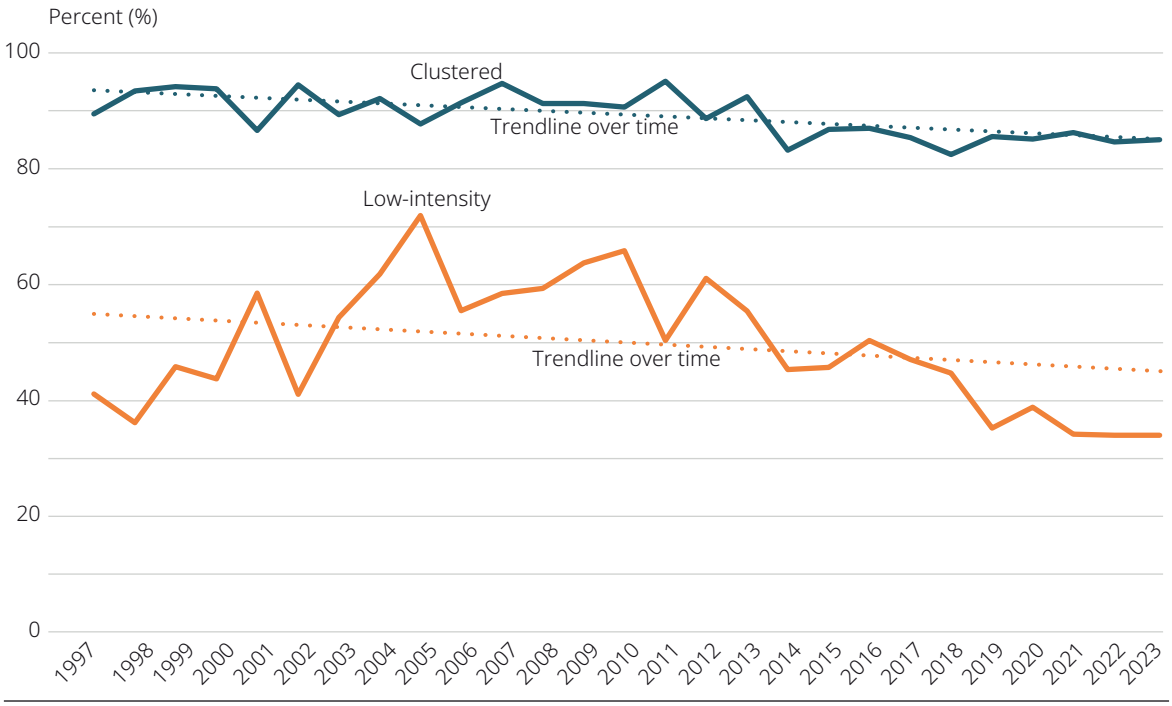
Source: Authors, based on ACLED data (2024). Data is publicly available.

the 6 540 cells of 50 km by 50 km that make up the region (Chapter 3). Cells can experience various levels of violence and a more or less clustered distribution of events, resulting in four types of conflicts: clustered high intensity, dispersed high intensity, clustered low intensity, and dispersed low intensity.

The SCDi shows that the number of cells classified as in conflict has continued to rise steadily between 2016 and 2022. In 2022, 706 cells were classified into one of the four SCDi conflict types, a 16% increase from 2021. In 2023, 685 cells were in conflict, a 3% decrease from 2022 (Radil and Walther, 2024). The SCDi also suggests

Figure 4.3.

Cells classified as clustered and low-intensity in North and West Africa, 1997-2023



Source: Authors, based on ACLED data (2024a). Data is publicly available.

that much of the violence observed regionally is strongly clustered. The Arab Spring in North Africa marked the beginning of an overall downward trend in the proportion of clustered conflict cells, from 95 % in 2011 to 83% in 2023 (Figure 4.3). Yet, most of the violence still repeatedly occurs at similar locations, suggesting that violence has become entrenched across West Africa.

Another worrying sign is that violence is becoming more intense regionally as it expands to previously unaffected areas: the proportion of cells that experience a low intensity of violence has declined from its peak of 70% in 2005 to 34 % in both 2022 and 2023. These results highlight the ongoing importance of low-intensity conflict as a marker of the spread of violence to new locations in West Africa. However, 66% of the 383 cells that experienced violence in 2022 or 2023 but were without violence the previous year were low intensity. In other words, when a cell fell into violence for the first time during these years, it typically did so by initially exhibiting low intensity event patterns within it. These new locations are situated on the edges of existing clusters of conflict cells in West Africa, especially in the Central Sahel and Nigeria, as well as in coastal countries along the Gulf of Guinea, most notably in Ghana and northern Benin. This confirms that the region's conflicts expanded geographically in 2022 and 2023.

The SCDi reveals important findings regarding the geography of violence in the region.

- The most dramatic situation can be found in regions where violence is both very intense and very clustered (Type 1). This is typical of the core of conflict regions, such as the Inner Niger Delta in Mali, Burkina Faso, and much of northwest, eastern and southern Nigeria. It has largely disappeared from Libya. It is in these areas that the largest number of civilian and military fatalities are reported.
- Some regions are surrounded by areas where violence is still intense but less spatially clustered (Type 2). The western bank of the Niger River, between Ayorou and

Say in Niger, is characteristic of this conflict type: jihadist groups are progressing in this region by attacking multiple locations. Other regions include the east of Ouagadougou in Burkina Faso, some parts of the Lake Chad basin and of the Niger Delta in Nigeria.

- Low-intensity and clustered violence is typical of regions in transition (Type 3), in which conflict can either dissipate or intensify. Episodes of violence are usually short-lived and followed by months or years of inactivity, as in the far periphery of major conflict regions (north of the Middle Belt in Nigeria for example).
- Finally, in some regions, violence is both of low intensity and dispersed, which could mean that a conflict is lingering (Type 4). Outside Nigeria, this conflict type is usually found in isolation.

In the Central Sahel, the SCDi highlights that much of the political violence has moved from the Sahara, where the Malian conflict started, to the southern peripheries of the Sahel (Map 4.4). Most of Burkina Faso and a significant portion of western Niger are now affected by intense and highly clustered violence. Rural regions and small urban centres experience the most violence, while large regional centres and capital cities are spared (Radil et al., 2023). The ruralisation of violence in West Africa contributes to creating an archipelago of large cities between which communication is increasingly difficult for government forces (OECD/SWAC, 2023). In turn, the increasing isolation of large cities creates opportunities for violent extremist organisations to attack transport infrastructure. The fragmentation of the national territory of Burkina Faso, Mali, and Niger that results from this evolution reinforces the gap between the largest urban centres, where the political elite and most economic activities are located, and the rest of the country.

The SCDi also highlights that the diffusion of violence from the Sahel to the north of coastal countries is not random. It follows national boundaries very closely, particularly in northern Benin, Côte d'Ivoire, Ghana and Togo, a region characterised by low population densities and an abundance of natural parks (Map 4.5). Border regions offer favourable conditions for extremist groups to spread south. In addition to being sparsely populated, these regions have also been historically marginalised by the state, both economically and politically. Jihadist groups exploit these weaknesses skilfully, by instrumentalising community grievances, settling local disputes, and regulating commercial flows. Their movement towards the south affects several regions simultaneously, depending on the local resources provided by each side of the border. In the Bawku region, for example, jihadist groups use the Ghanaian side of the border as a haven and commit their attacks in Burkina Faso (Salifu, Walther and Tanko, 2023).

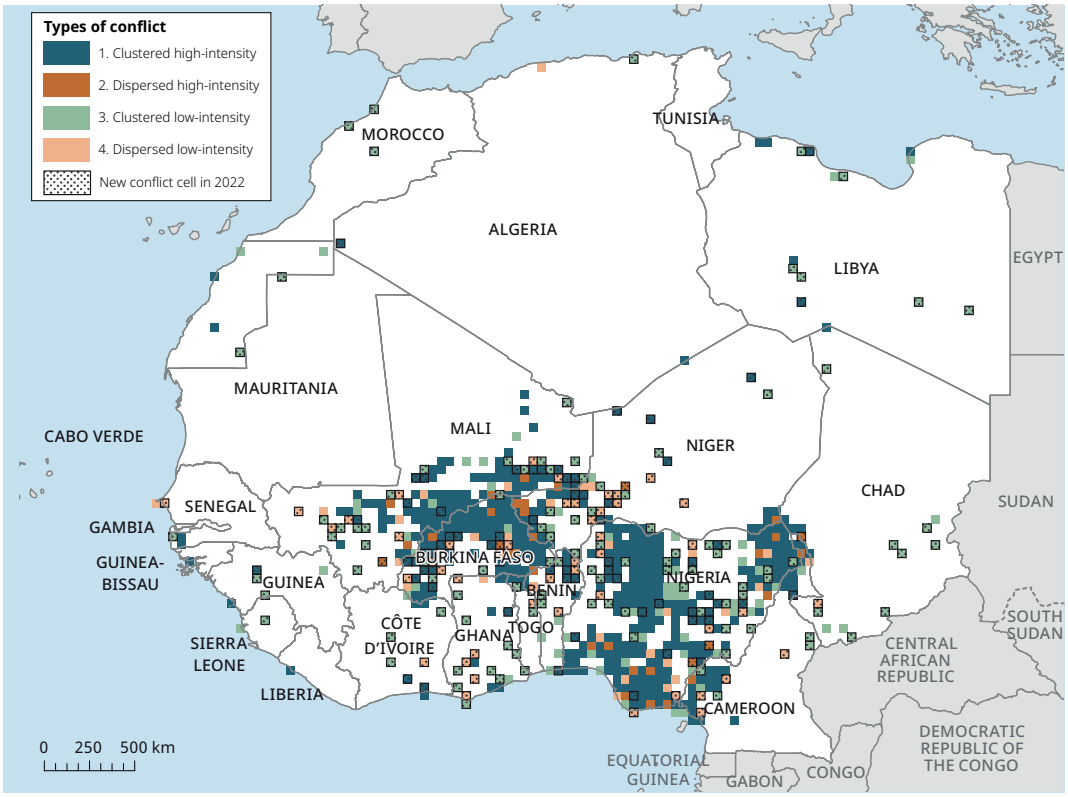
The recent evolution of the SCDi also confirms that the conflict zones that have emerged in the Middle Belt, Delta, Northwest, and Lake Chad Basin since the 1990s have coalesced. In 2023, these conflict regions formed one gigantic cluster of violence that covers more than half of the country (Map 4.6). Violence is particularly intense and clustered in the core of the Nigerian conflict zones, such as between Abuja and Gusau, between Warri and Enugu, and around Maiduguri. These hotspots are surrounded by a ring of clustered and low-intensity conflict zones where violence could intensify. In the Lake Chad region, intense and clustered violence has spread across national borders from N'Guigmi in Niger to Maroua in Cameroon due to the Boko Haram/ISWAP insurgency. In the south, the Cameroon Crisis, while contiguous to conflict regions in Nigeria, has developed for internal reasons and is contained by national and linguistic borders.

Overall, the recent evolution in West Africa reflects a continuation of the recent trajectories of violence (Figure 4.4). Clustered high-intensity (Type 1) cells remain the dominant type of SCDi category in 2023, with 62% of cells, followed by clustered low-intensity cells (Type 3, 21%). Dispersed low-intensity (Type 4, 13%) and dispersed high-intensity (Type 2, 4%) cells are far less represented. These results indicate that political violence is localised in the region and often driven by very local factors, such as political disputes between communities, access to shared natural resources or community grievances. If "all politics is local" in general, the SCDi suggests that it is especially true in West Africa (Radil and Walther, 2024).

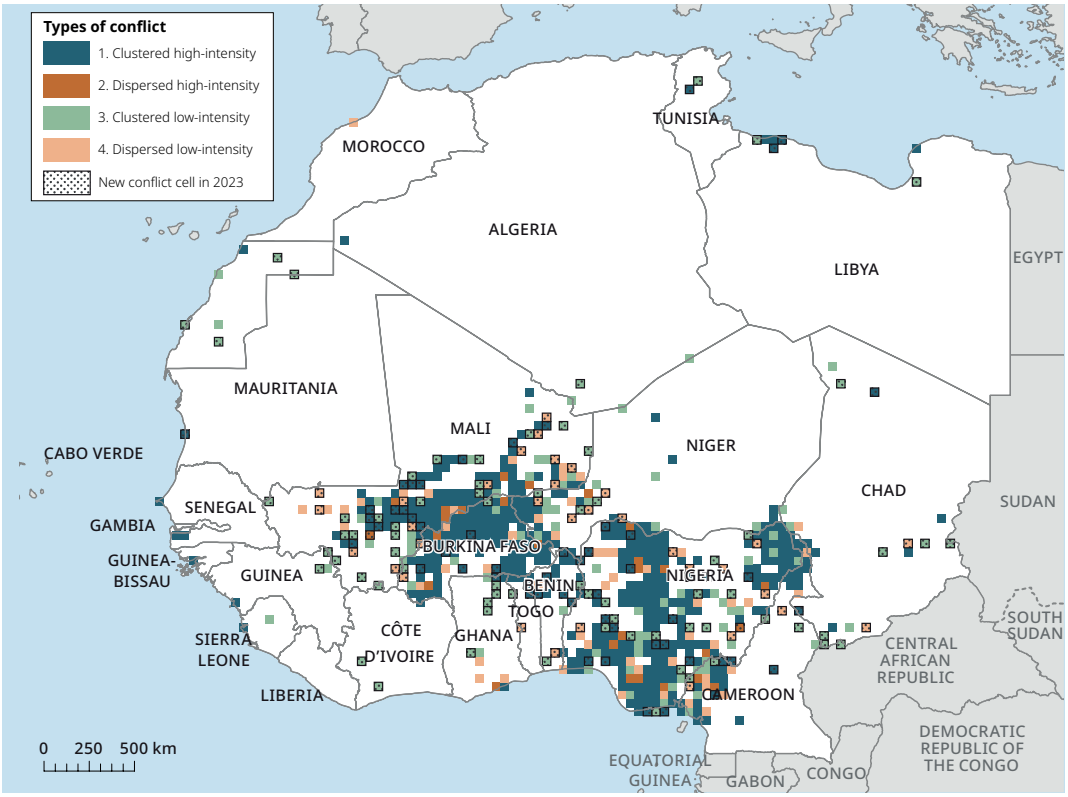
Map 4.4.

Spatial Conflict Dynamics indicator (SCDi) in North and West Africa, 2022 and 2023

2022



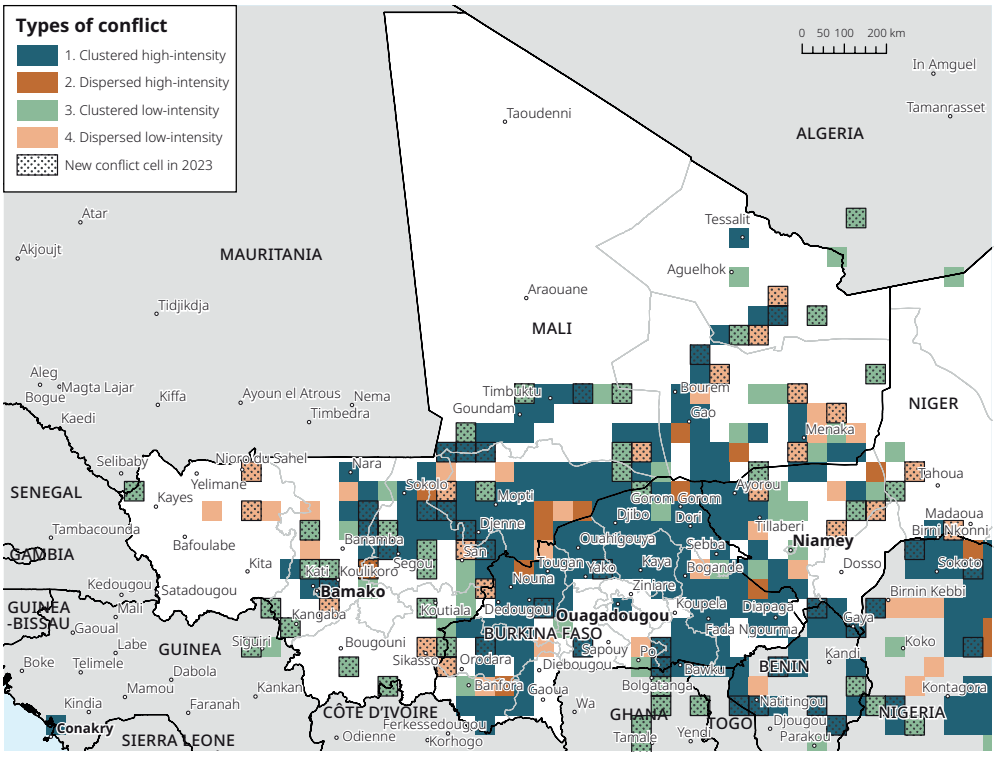
2023



Source: Authors, based on ACLED data (2024a). Data is publicly available.

Map 4.5.

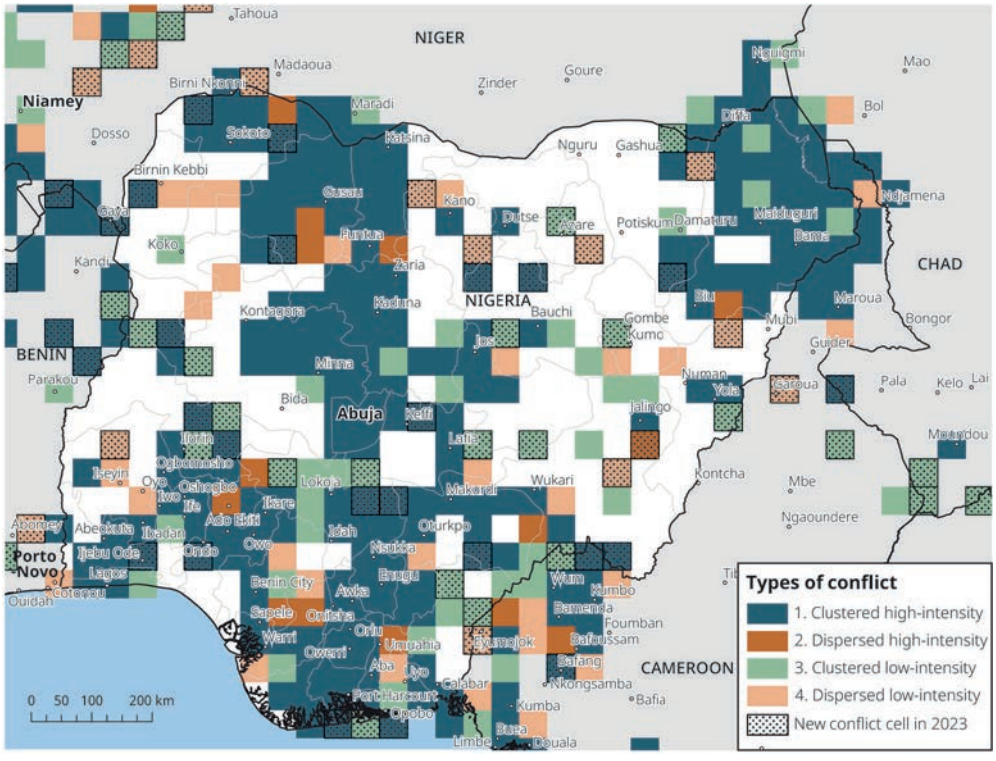
Spatial Conflict Dynamics indicator (SCDi) in Mali and Central Sahel, 2023



Source: Authors, based on ACLED data (2024a). Data is publicly available.

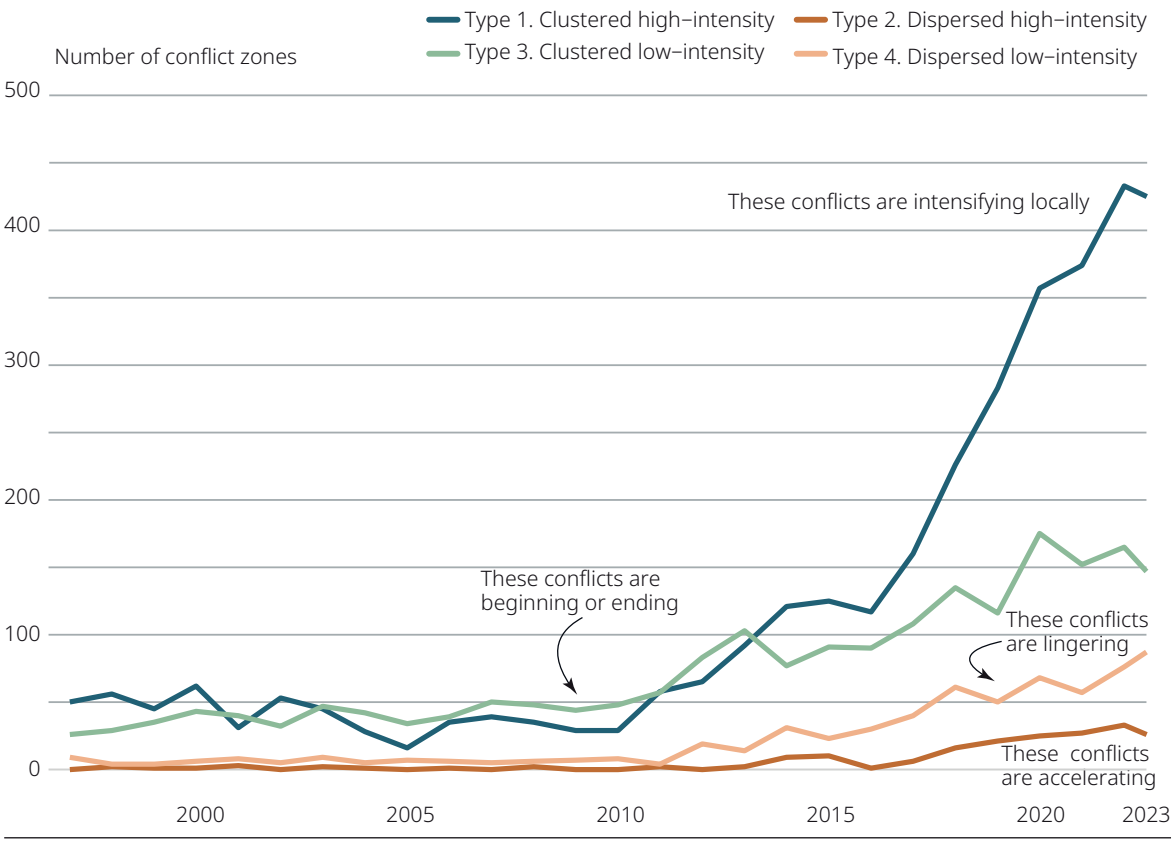
Map 4.6.

Spatial Conflict Dynamics indicator (SCDi) in Nigeria and the Lake Chad region, 2023



Source: Authors, based on ACLED data (2024a). Data is publicly available.

Figure 4.4.
Number of conflict zones in North and West Africa by type, 1997-2023



Source: Authors, based on ACLED data (2024a). Data is publicly available.

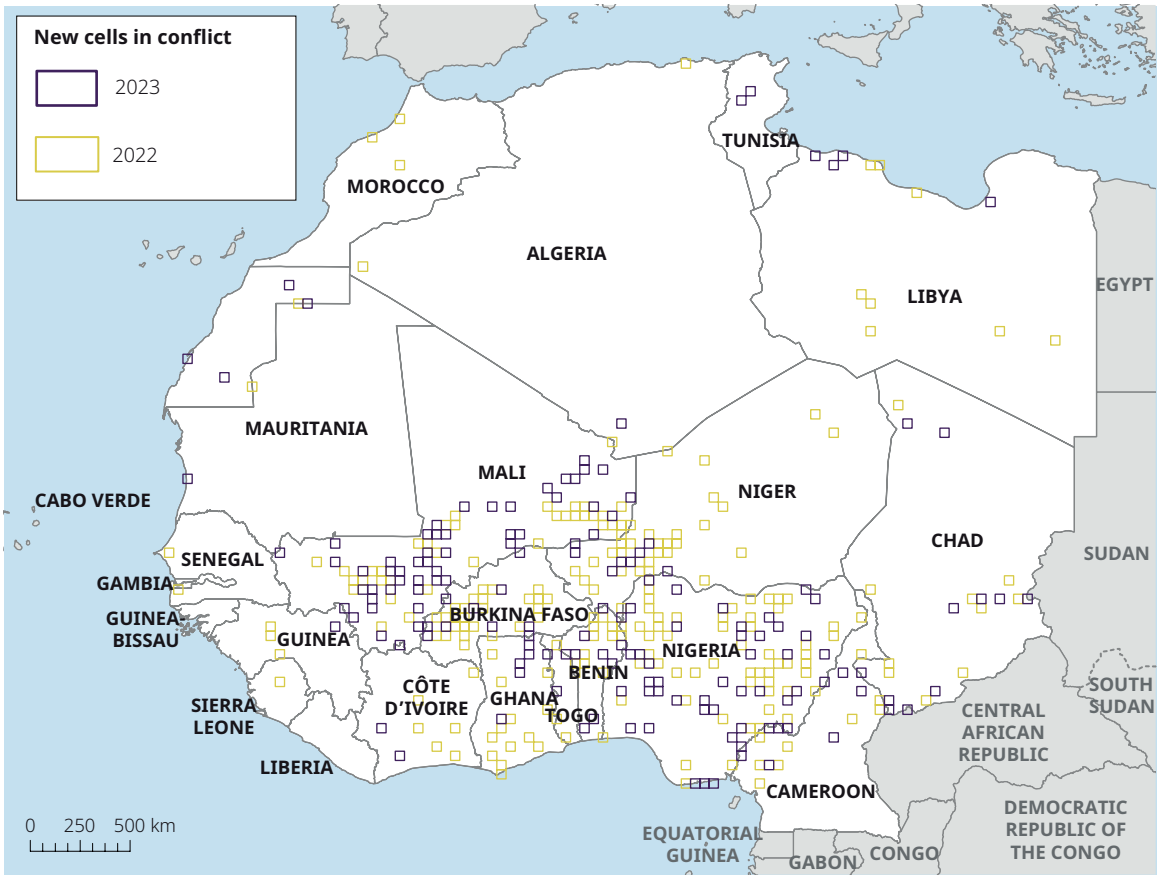
IDENTIFYING LOCAL CONFLICT TRENDS

One of the new features in the SCDi is the ability to track how conflicts have evolved in specific locations. The indicator can now easily identify locations that have become newly violent, including those experiencing violence for the first time in a generation. For example, out of the 685 cells recorded in one of the four SCDi conflict categories in 2023, 160 (23%) had shifted into conflict since the previous year. For 2022, the percentage was higher, at 32%. This means that over just two years, 383 cells fell into violence. As all but 26 of these new conflict cells were in West African states, this reflects the region's ongoing and disturbing spread of violence in 2022 and 2023. The SCDi's new years-in-conflict metric, which tracks how many of the past 20 years a cell has received an SCDi classification, shows an even more troubling trend: 16% of the cells in conflict in 2022 or in 2023 had no record of violence for the previous 20 years. In other words, the local SCDi metrics show that in just two years, one-third (32%) of the cells of the region experienced violence for the first time since the early 2000s.

These new conflict cells are not randomly or evenly distributed in West Africa. Map 4.7 shows that 260 (68%) of these locations are associated with ongoing conflicts in just four countries: Burkina Faso, Mali, Niger, and Nigeria. However, 56 (11%) of these cells are located in five littoral states along the Gulf of Guinea. Of these, Benin and Ghana (20 cells each) recorded violence in the highest number of new locations, followed by Côte d'Ivoire (8), and Guinea and Togo (4 each). Most of the violent events in these five states from 2022 through 2023 were attacks against civilians

Map 4.7.

New conflict cells in 2022 or 2023 with no violence in the preceding year



Note: The map shows cells in which conflict was observed for the first time in 2022 or 2023 that had not been conflictual the preceding year.

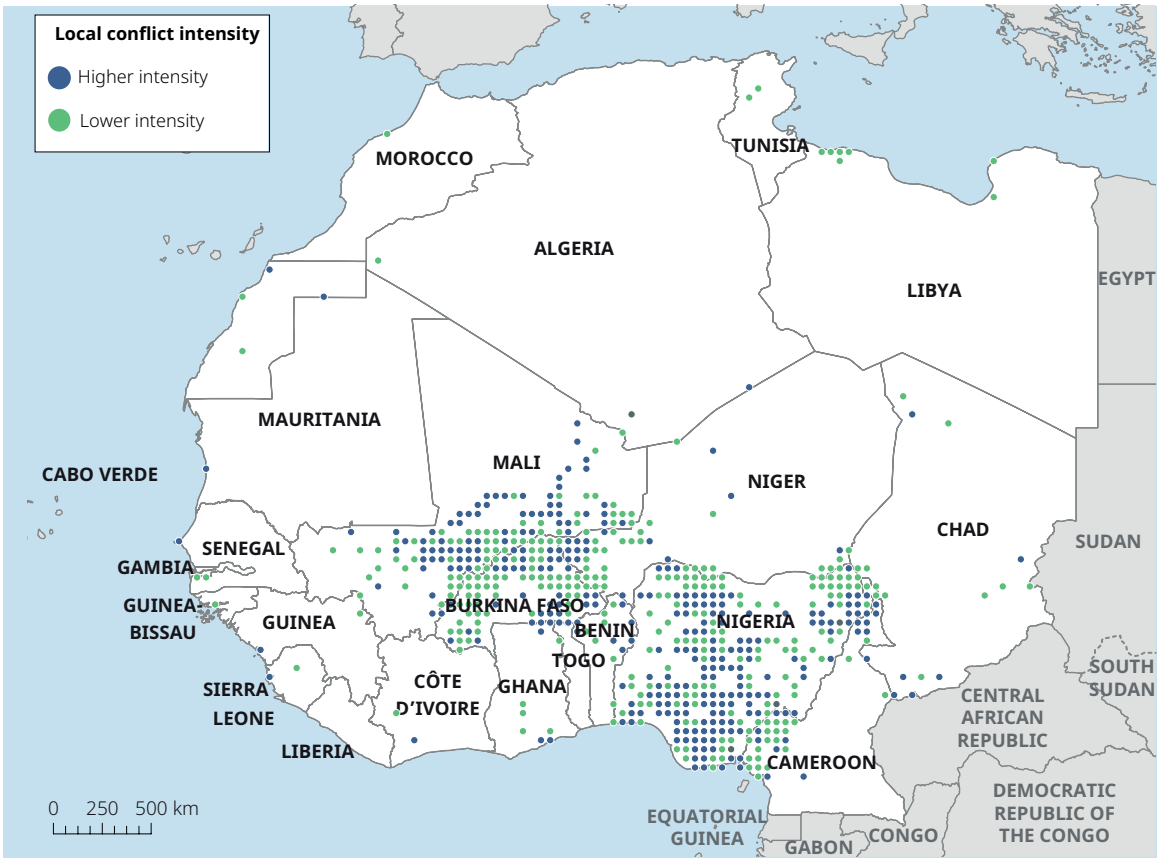
Source: Authors, based on ACLED data (2024a). Data is publicly available.

(67%) followed by battles between armed groups (29%) and explosions or other forms of remote violence (4%). This is a disturbing trend given the ongoing concerns about the potential for violence to spread south from the Sahel to coastal states.

Another feature of the new local SCDi metrics is the ability to consider whether conflict intensity and conflict concentration have increased against the historical norms in each cell. Map 4.8 and Map 4.9 show the 619 cells that had one or more years of conflict between 2003 and 2022. The local SCDi is calculated by comparing the intensity of violence in the most recent year (2023) with the average of the last 20 years, irrespective of whether violence has waxed and waned in each of the cell. The map highlights current conflicts, rather than past episodes of violence, such as the civil wars in Sierra Leone or Liberia, which have been very intense in the 1990s and early 2000s. In 2023, conflict intensity was higher than it was historically in 56% of the cells. This indicates that where violence was present in 2023, it intensified in that location when compared to past episodes of violence. The spatial distribution of the cells reflects the dynamics of armed conflicts: cells that experience a higher intensity of violence than their historical average demonstrate the localised nature of armed conflicts in the region (Map 4.7). In the Central Sahel, higher intensity can be found in regions such as the Liptako-Gourma and the Dogon Country that have been disputed for a long time, as well as in previously peaceful regions, on the periphery of major conflict zones, such as in Burkina Faso. In the Lake Chad region, much of the higher intensity zones are in rural and border regions, including in Niger and Chad. In Nigeria,

Map 4.8.

Local conflict intensity in 2023 compared to 20-year average



Note: The map shows cells that have a higher or lower intensity of conflict in 2023 than the average recorded locally from 2003-22.

Source: Authors, based on ACLED data (2024a). Data is publicly available.

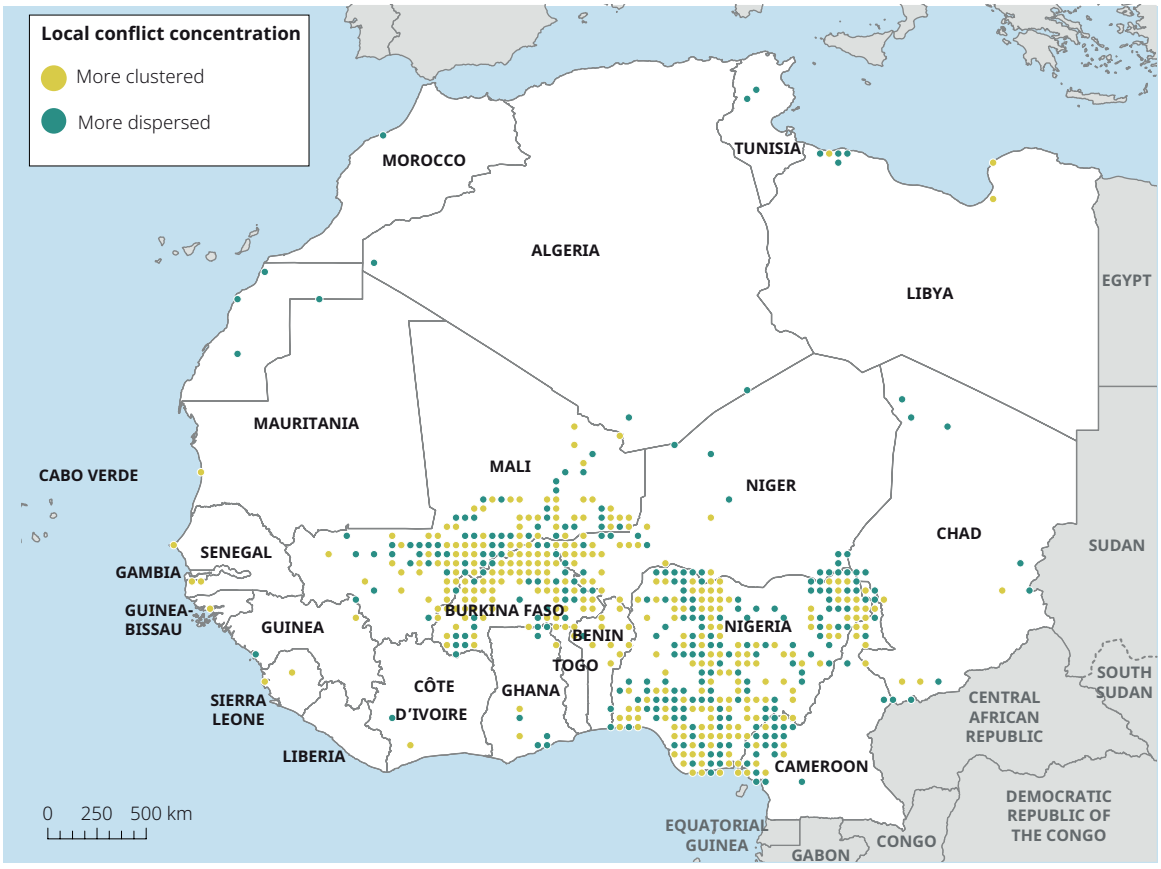
the Middle Belt continues to be characterised by an increase in conflict intensity, as does the centre of the Delta region.

The local conflict concentration metric for 2023 trended towards more clustering than more dispersion: 54% of these cells had higher than average levels of clustering. This indicates that where violence was present in 2023, it was slightly more likely to be clustered in that location than in the past. The spatial distribution of conflict concentration follows a more obvious centre-periphery pattern than conflict intensity does. In the core of major conflict regions, violent events are more clustered than they were historically, while the expansion of armed conflicts is visible through dispersed patterns of violent activities (Map 4.9).

The study of conflict intensity and concentration highlights the long-term persistence of conflict over many years in these locations, especially in the core conflict regions spanning the Central Sahel and Nigeria. In combination with the base SCDi metrics, the new local features highlight how conflict is not just spreading to new locations in West Africa but also how persistent conflict has tended to be over time in places once it has developed. Between 2004 and 2023, most cells in the region have experienced five or fewer years of conflict events as measured by the SCDi's new years-in-conflict metric, while 82 cells (8%) have had ten or more years previously recorded in conflict (Map 1.4). However, 12 cells, all in West Africa, have over 16 years of conflict events. These include major cities in countries that have experienced repeated cycles of violence, including Monrovia (Liberia), Abidjan (Côte d'Ivoire), N'Djamena (Chad), and Lagos, Ibadan, Port Harcourt, Abuja, and Maiduguri (Nigeria).

Map 4.9.

Local conflict concentration in 2023 compared to 20-year average



Note: The map shows cells that have a more clustered or more dispersed pattern of conflict in 2023 than the average recorded locally from 2003–22.

Source: Authors, based on ACLED data (2024a). Data is publicly available.

Further, clusters of cells with 11 to 15 years of conflict events are now evident in the Lake Chad region, across Nigeria's Middle Belt and Delta regions, in central Mali and northern Burkina Faso, and along the Libya and Algeria coasts. In West Africa, these patterns will only be reinforced as conflicts persist in Sahelian countries and Nigeria.

JIHADISTS' EXPANSION TO COASTAL COUNTRIES

An expansion driven by localised factors

Sahelian jihadist organisations such as JNIM and the Islamic State Sahel Province (ISSP) have expanded into coastal West African countries in recent years (USIP, 2022). In March 2024, for example, JNIM claimed to kill ten soldiers in an attack on an army post at Danderesso in Mali's Sikasso region, close to the border with Côte d'Ivoire (RFI, 2024). Jihadists expand faster in areas that share similar characteristics to those with the Sahel region. These include weaknesses in security forces, alliances with pre-existing illegal activities, economic incentives, and political instability, all of which contribute to the spread of various forms of religious extremism in the region. In southwestern Burkina Faso, where their expansion has been the fastest, "militants seized the opportunity to attack amid local instability and potential confusion among security forces" (Nsaibia, 2019).

For many years, the southward expansion of extremist groups has been facilitated by the fact that security forces were either unprepared to counter them, or because their abuses led the civilian population to side with the insurgents (Amnesty International, 2022). The military coups of 2020-23 have worsened the situation, by undermining intelligence and security co-operation between Sahelian and coastal countries and causing civilian casualties during military operations (Eizenga and Gnanguênon, 2024).

In some regions, the southward expansion of jihadist groups has also benefited from pre-existing criminal activities (Barnett and Rufa'i, 2023). A "jihadisation of banditry" is currently underway in some parts of the Sahel, such as southwestern Burkina Faso, where "militants may co-opt existing criminal networks by providing more advanced and heavy weaponry and hard currency to make inroads where they have a limited support base and presence" (Nsaibia, 2019). A similar convergence between criminal groups and violent extremists has been observed in northwestern Nigeria (Madueke, 2024) (Box 4.1).

As jihadists move to previously unaffected areas, they also better control the resources that transit across the region or are locally produced. In the Sahel, such resources include agricultural crops, gold, and especially cattle, which are particularly easy to move and resell. In the Mali-Burkina Faso-Côte d'Ivoire tri-border zone, these revenue streams have made extremist organisations more self-reliant (Eizenga and Gnanguênon, 2024). Economic influence can create governance opportunities for jihadist organisations such as JNIM, which tend to deploy benevolent-seeming governance in areas where they have dominance, while resorting more to repression and brutality in contested areas (Nsaibia, Beevor and Berger, 2023).

The factors that fuel this expansion defy generalisation at the regional level, however. They relate to very localised issues, such as land exploitation or political disputes over chieftaincies, which can easily be manipulated by Islamist groups (Soufan Center, 2023). Therefore, the current expansion of jihadist groups does not take the form of a unified front moving ineluctably from the Sahel to the Gulf of Guinea. Rather, the diffusion of violent extremism occurs in a context characterised by multiple forms of insecurity.

Because the southward expansion of jihadist groups is a recent phenomenon, some potential factors remain poorly documented. For example, it remains unclear whether national politics – for example, dissent against longtime rulers – are key factors driving expansion. This silence is probably accurate, considering that the motivation to join extremist groups appears to be primarily local in nature rather than national. Second, the degree to which religiosity drives the expansion of violence remains poorly understood in this region, where jihadism is primarily a vehicle for conversion to a particular worldview rather than a venture focused on profit and governance.

A southward expansion that varies across countries

The analysis of conflict data from ACLED over the last decade suggests an absence of a clear escalation in attacks across coastal countries. Sporadic attacks are targeting security forces and civilians, especially in border zones, against the backdrop of a deepening jihadist presence in the northern regions of coastal countries. The lack of a clear escalatory trend may mean either that jihadists are still primarily in a building and recruitment phase, or that they view the coastal countries as more useful as rear bases and buffer zones than military targets.

Significant differences can be observed in the intensity and forms of violence that have affected coastal countries in the last decade. Compared with the Central Sahel or the Lake Chad region, the number of violent events observed in coastal countries is still comparatively low and not all of them should be attributed to jihadism. Only 357 violent events were recorded in the most affected coastal countries in 2023, including 241 in Benin, 79 in Ghana, 12 in Côte d'Ivoire, and 25 in Togo. Estimates based on a doubling of violent events recorded through 30 June suggest that these countries will experience roughly 350 violent events in 2024, or seven times fewer than in Burkina Faso during the same period (Figure 4.5).

Box 4.1.

Political violence or banditry?

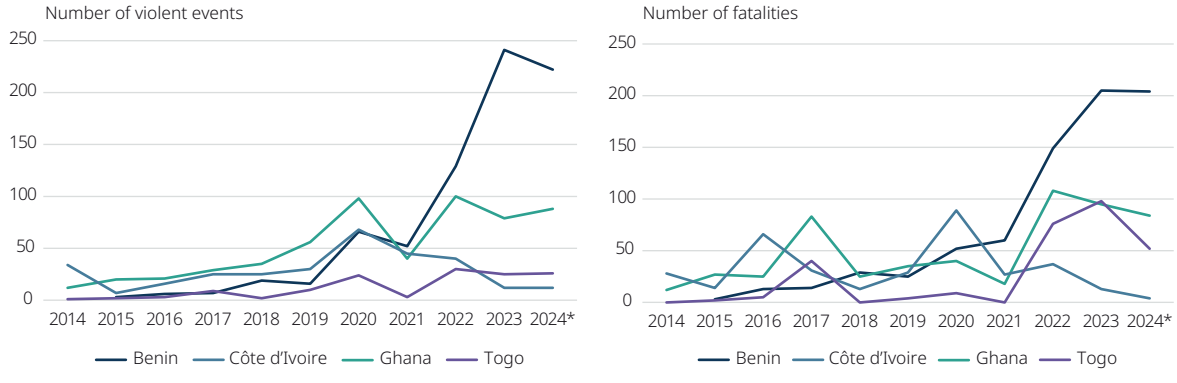
In the current context of West Africa, it is not always easy to identify whether violent events are motivated by ideology or greed. Jihadists and bandits are not always allies, however. In central and southern Mali, JNIM expanded in part by defending loggers against bandits, which helped make the jihadist group palatable to local communities (Ani, 2024). In Nigeria, too, bandits involved in criminal activities are reluctant to take orders from jihadists or to be associated with global jihadism (Barnett, Rufa'i and Abdulaziz, 2022) while in Mali, Burkina Faso, and Côte d'Ivoire, alliances with jihadists could be a liability for artisanal gold miners (Hunter, 2022). The lack of a clear nexus between crime and terror is explained by the fact that criminals are fundamentally motivated by different values than violent extremists. While the former use violence to enrich themselves, the latter seek to impose an ideology, religion, or ethnic identity through violent means.

For these reasons, the distinction between *profit-driven organisations* and *value-driven organisations* remains a valid one in West Africa (OECD/SWAC, 2021). Even more importantly, policy responses to crime and political violence should build on different principles since the ultimate motivation to resort to violence for criminals and extremists has different roots. In other words, an insurgency motivated by the desire for sovereignty, or a new social order cannot be countered using the same tools as an organised movement fuelled by greed. This principle is not sufficiently taken into account in the responses adopted, such as the air campaign against armed bandits in northwestern Nigeria, which is not very effective against criminals but is also extremely deadly for civilians (HRW, 2023).

Alliances between organisations motivated by greed and values occur in very localised conditions —for example, where criminals already control the local economy (Petrich, 2021). Such alliances are more often temporary and opportunistic than symbiotic. Notwithstanding ideological differences, the potential for convergence of criminal and extremist groups depends on the possibility that they can both gain from combined operations, while simultaneously being able to control their own operational security. This appears very unlikely over the long term, since politically motivated groups seek legitimacy and/or political dominance, while criminal groups seek optimal "business" environments.

Figure 4.5.

Violent events and fatalities in coastal countries, 2014-24



Note: *2024 data are projections based on doubling of violent events through 30 June.

Source: Authors, based on ACLED data (2024a). Data is publicly available.

In Benin, Côte d'Ivoire, Ghana, and Togo, only three subtypes of violence have caused more than 100 events since 2014: attacks against civilians (922 events), armed clashes (580), and abductions of civilians (183) (Figure 4.6). Remote violence and explosions are extremely uncommon. Furthermore, politically motivated violence, as recorded by ACLED, is a new phenomenon: nearly 80% of all violent events (1 400 out of 1 788) have occurred since 2020.

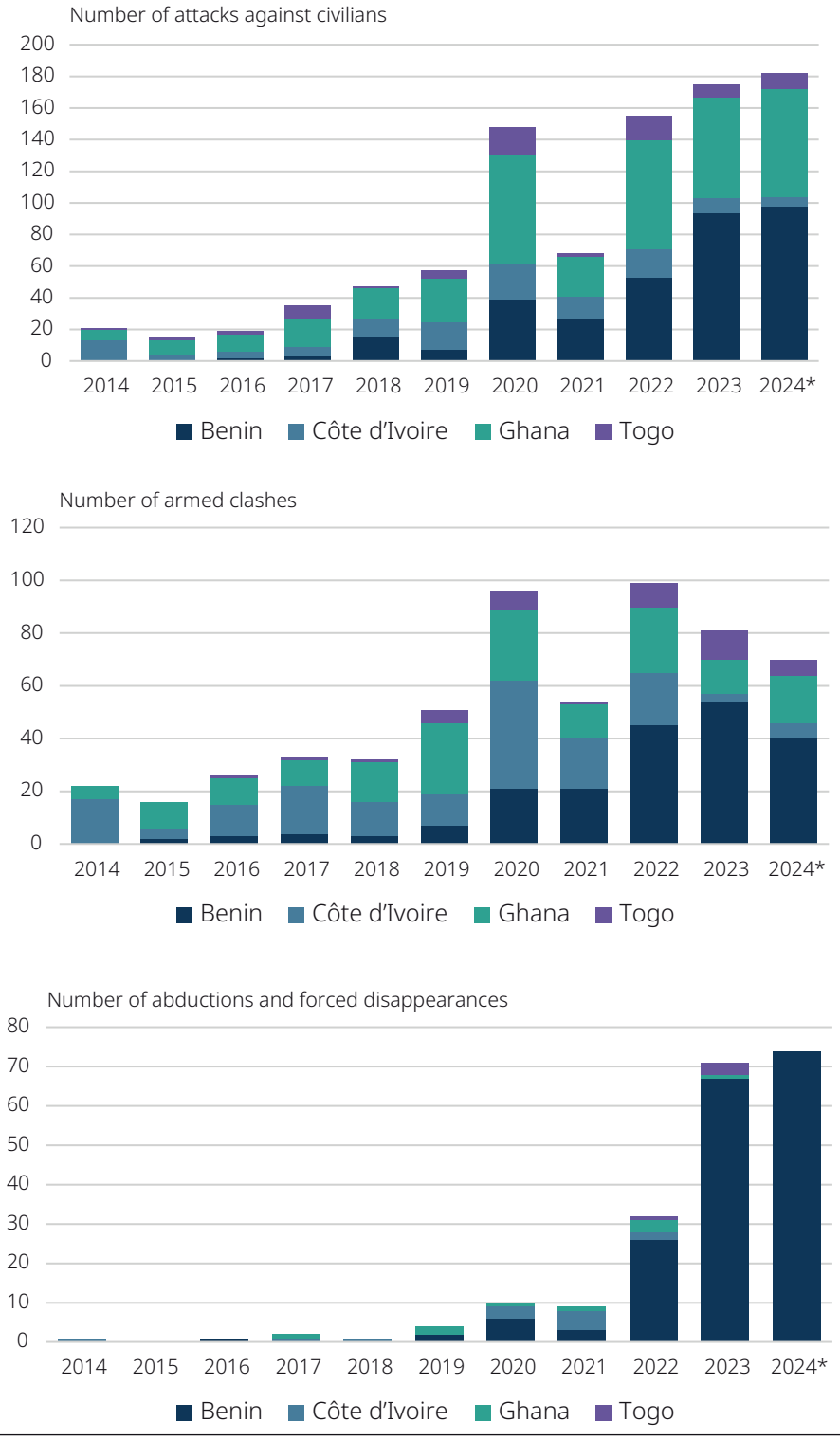
- Attacks against civilians have increased over the last decade, principally in Benin and Ghana. This evolution masks significant differences across countries, however. In Benin, civilians are mainly targeted by jihadist militants operating in the departments of Alibori and Atacora, close to the border with Niger and Togo, where 68% of all violent events and 64% of all violence against civilians was observed from 2014-24. In Ghana, attacks against civilians are not particularly concentrated in the north. The four northern regions, which include Upper West, Upper East, Northeast and Northern, account for only 31% of the total number of violent events and only 24% of violence against civilians observed since 2014. Violence against civilians is unrelated to jihadism: it results from chieftaincy disputes (as in the Bawku region), ethnic militias, violence committed by armed bandits in the Greater Accra region, and violence perpetrated by the police and the military.
- The recent decline in the number of armed clashes in coastal countries is principally explained by the improvement in the security situation in Côte d'Ivoire. Militant violence has decreased in the northern part of this country following the government's decision to strengthen security and promote social projects intended to alleviate poverty and youth unemployment (ICG, 2023a). Northern Benin is currently the region that experiences the largest number of clashes between government forces and jihadist groups, particularly in the broader complex of natural parks called W-Arly-Pendjari (WAP).
- Benin is by far the most affected country in terms of abductions, especially in the northern departments of Alibori and Atacora, which record nearly 80% of all such incidents since 2022. This evolution is primarily due to JNIM, which is involved in 59% of the abductions in Benin. The jihadist group has established a lucrative business of kidnapping that targets farmers, fishermen, imams, shopkeepers, and pastoralists. Civilians are kidnapped when they refuse to join JNIM, when found working in their fields, fishing in the rivers, hunting illegally in the natural parks, or travelling between markets. Civilians are also kidnapped because they are accused of collaborating with the authorities or for ransom. This latter case mainly concerns wealthy pastoralists, who can regain their freedom by asking their families to sell a few animals.

Jihadist strategies towards coastal countries

In Benin, jihadist attacks appear as an outgrowth of JNIM's ambitions for territorial control in eastern Burkina Faso. As of early 2022, "the goal appeared to be to diminish the Beninese capacity to threaten JNIM's Burkinabe bases," but this goal soon shifted – "rather than pushing back the Beninese military, the [new] goal seems to be to create a giant buffer zone" (de Bruijne, 2022: 12). Meanwhile, JNIM has reinforced its activities along the Niger-Benin border and in W National Park, a forest preserve spanning Burkina Faso, Benin, and Niger (Map 4.10 and Map 4.11). The park has proven vulnerable to jihadist expansion because of its topography but also because of opportunities to profit from resources such as gold and livestock, and to intervene in inter-communal and state-community conflicts over resource management (ICG, 2023a). A confluence of interests can be observed between JNIM and smugglers in the WAP complex, with smugglers providing intelligence to JNIM so that the latter can target state agents and, in the process, give smugglers a freer hand (Nsaibia, Beevor and Berger, 2023). Throughout the Sahel and the northern zones of coastal countries, JNIM's purchases sometimes provide an influx of cash and elevate prices for fuel and motorbikes.

Figure 4.6.

Violent events in select coastal countries by sub-types, 2014-24

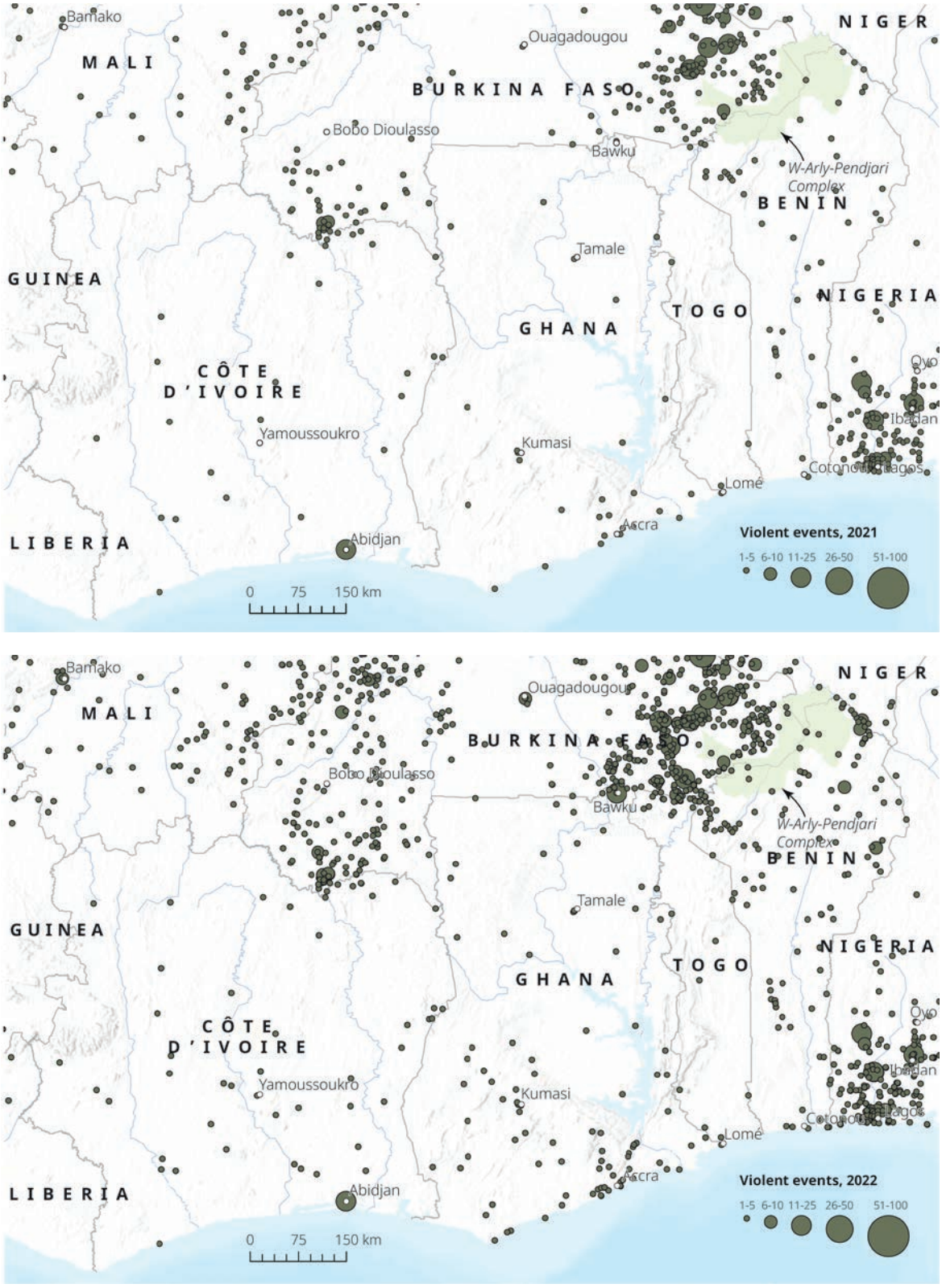


Note: *2024 data are projections based on doubling of violent events through 30 June.

Source: Authors, based on publicly available ACLED data (2024a).

Map 4.10.

Violent events in the southern Sahel and coastal countries, 2021 and 2022



Source: Authors based on ACLED (2024a) and UNEP-WCMC and IUCN (2024) data. ACLED (2024a) data is publicly available.

It is still unclear whether jihadist expansion through Benin could spill over into northwestern Nigeria. De Bruijne and Gehrling (2024: 3) note that "there are clear social links that facilitate cross-border exchange and real livelihood needs that create vulnerabilities to recruitment" between the two countries. Barnett and Rufa'i (2023) similarly find that JNIM fighters are crossing into northwestern Nigeria through or from Benin and that some militants have relocated from northeastern Nigeria to the northwest. Caution should be used when describing jihadist goals and modes of operation in this region, however, with some devolving into opportunistic criminality —either instead of, or sometimes alongside, their militancy. Thus far, these alleged movements have not led to an increase in the number of violent events along the northern portion of the Benin-Nigeria border, which remains far less affected by violence than the south of Nigeria (Map 4.11 and Map 4.12).

Further west, northern Togo is also confronted with increasing Jihadism activities, as clearly shown on Map 4.12. In July 2023, a suspected JNIM attack killed at least twelve soldiers patrolling in the village of Sankortchagou, near the border with Burkina Faso (Lepidi, 2023). This expansion remains less documented than in the other three coastal countries. Much writing echoes the factors mentioned for the coastal countries overall, including banditry, gold, drugs, arms, and fuel smuggling, which have the potential to aggravate the security situation and provide resources to militants (Africa Defense Forum, 2024). Togo seems to function primarily as a transit zone for jihadists (KAS, 2022).

Regarding Ghana, as of mid-2024, no actual jihadist attacks have occurred there. An attempted bridge bombing near Bawku in February 2024 was attributed to "criminals" but raised concerns about jihadist involvement (France24/AFP, 2024). Caution should be exercised when assuming a robust jihadist presence there. The Bawku interethnic conflict, for example, is described by residents and local leaders as "a dispute with deep historical and political roots being fueled by partisanship, social media, and weapons proliferation" rather than creeping jihadism (Courtright, 2023, see Map 4.11 and Map 4.12). Similarly, jihadist presence in Ghana appears mainly connected to their military activities in Burkina Faso and it has been argued that "insurgents see their access to the country as a safe haven and smuggling route as too useful to destabilize with direct attacks" (Tanko and Courtright, 2024). Meanwhile, "terrorism" is often framed by Ghanaian media as an external problem that is heading towards Ghana from the Sahel (Dan Suleiman, 2023). Ghana being Anglophone may diminish JNIM's recruitment prospects there (Moody, 2022); that argument echoes hypotheses that the Francophone West Africa is more susceptible to jihadist mobilisation than other parts of the region (McCants and Meserole, 2016).

Jihadist incursions into Côte d'Ivoire occurred against the backdrop of long-term economic growth, postwar recovery after the civil war that ended in 2011, and ties between President Ouattara and northern communities. This "relative calm" should not blind Ivoirian authorities to continued jihadist activities, for example involvement in gold mining and other illegal/irregular economic activities at Comoé Park (Assanvo, 2023).

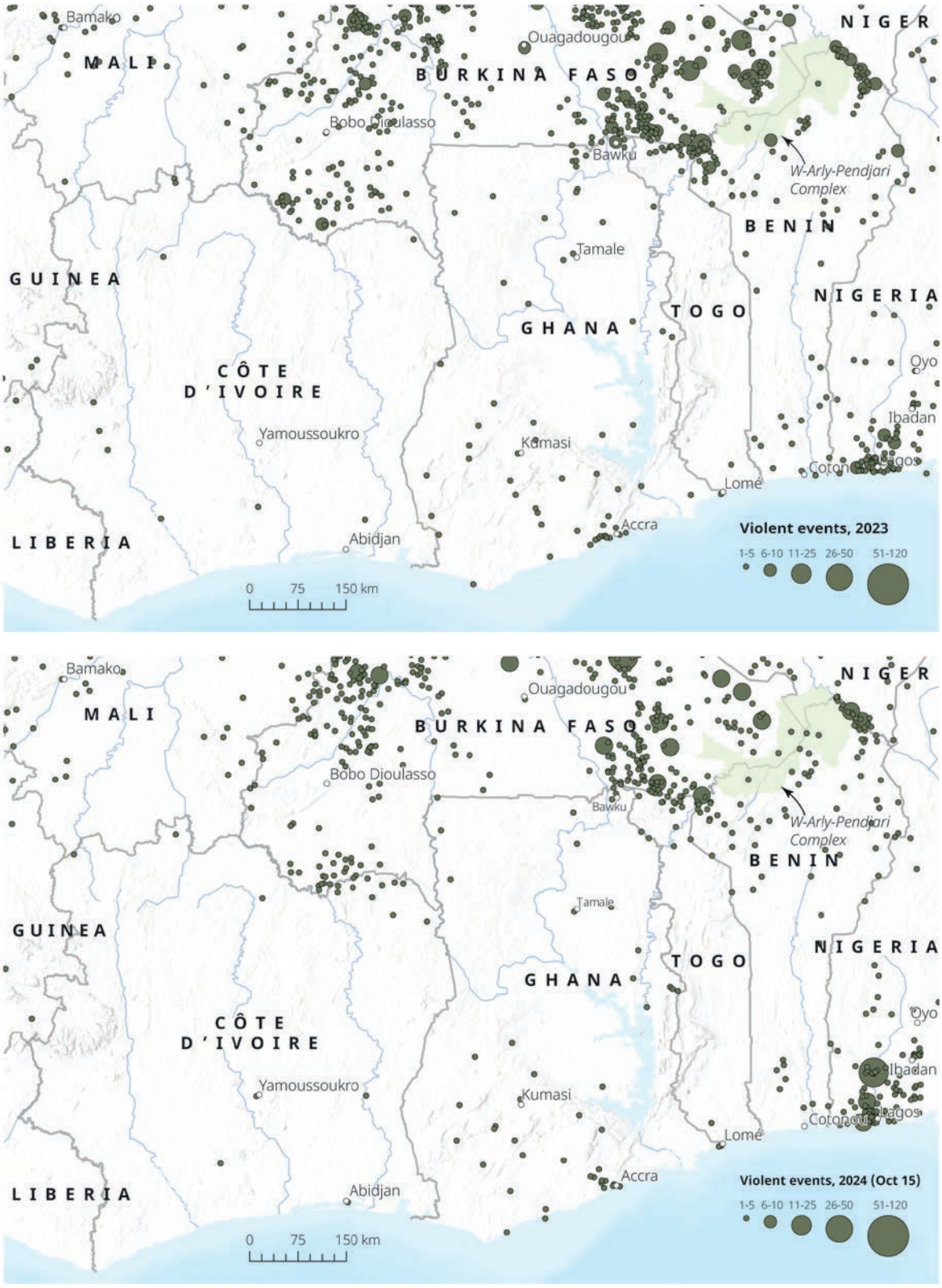
How far south will the Jihadists go?

The southward expansion of jihadists towards the Gulf of Guinea is a rather new phenomenon in West Africa, where most of the jihads that have developed historically since the early 18th century have been largely contained within the Sahel region (Miles, 2018). While past jihads never reached the shores of the Gulf of Guinea, this historical reality hardly suggests that there is an enduring "jihad zone" that cannot affect modern coastal states.

The most vulnerable region to jihadist expansion appears to be the wide belt that extends from the west of Kankan in Guinea to Parakou in Benin. This vast periphery has few cities and low densities of population compared to both the Sahel and the Gulf of Guinea (Map 4.13), a specificity explained by the fact that it was historically used as a reservoir of slaves by coastal and Sahelian precolonial entities. This sparsely populated region is scattered with national parks

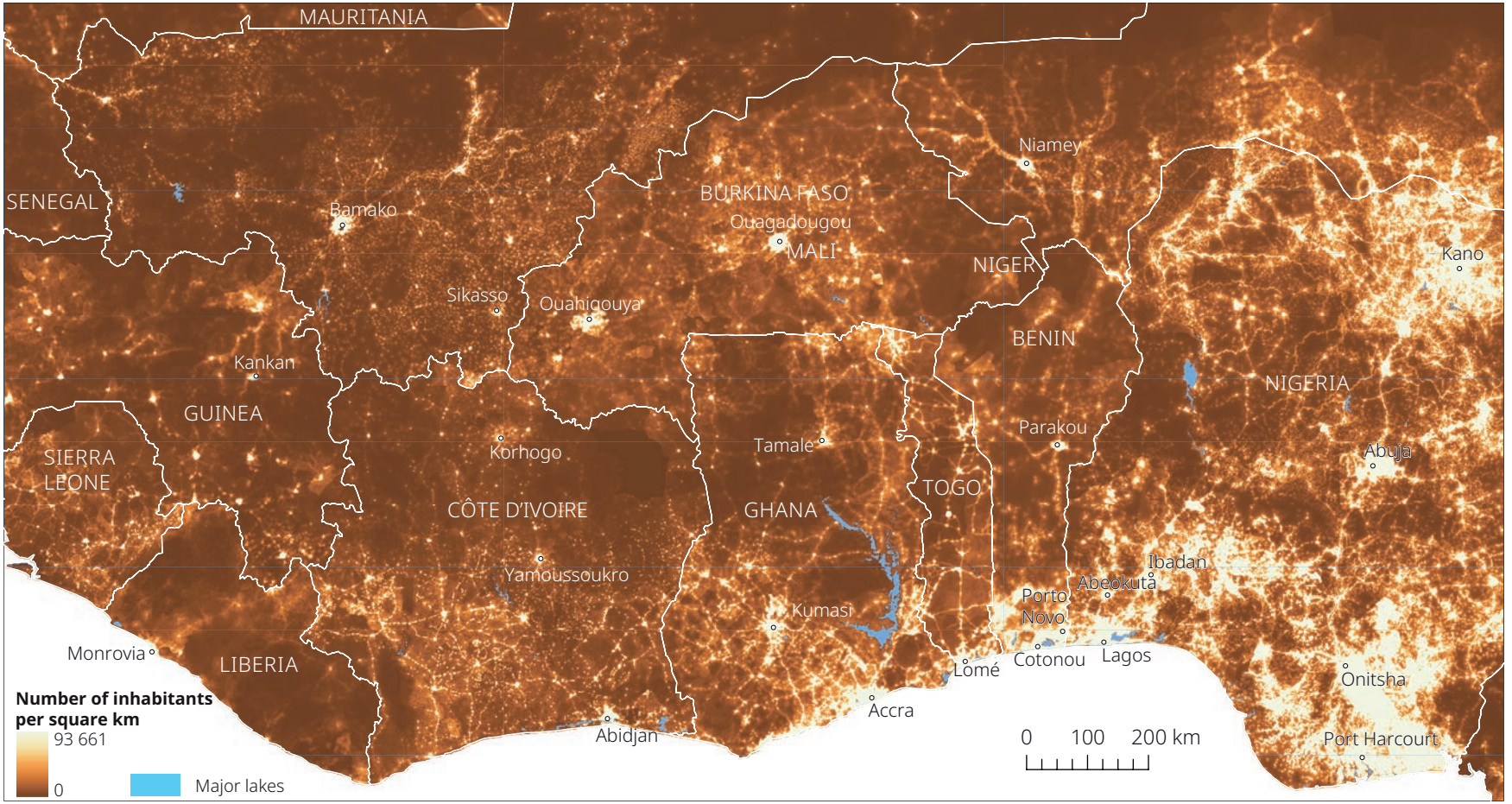
Map 4.11.

Violent events in the southern Sahel and coastal countries, 2023 and 2024



Source: Authors, based on ACLED (2024a) and UNEP-WCMC and IUCN (2024) data. ACLED (2024a) data is publicly available.

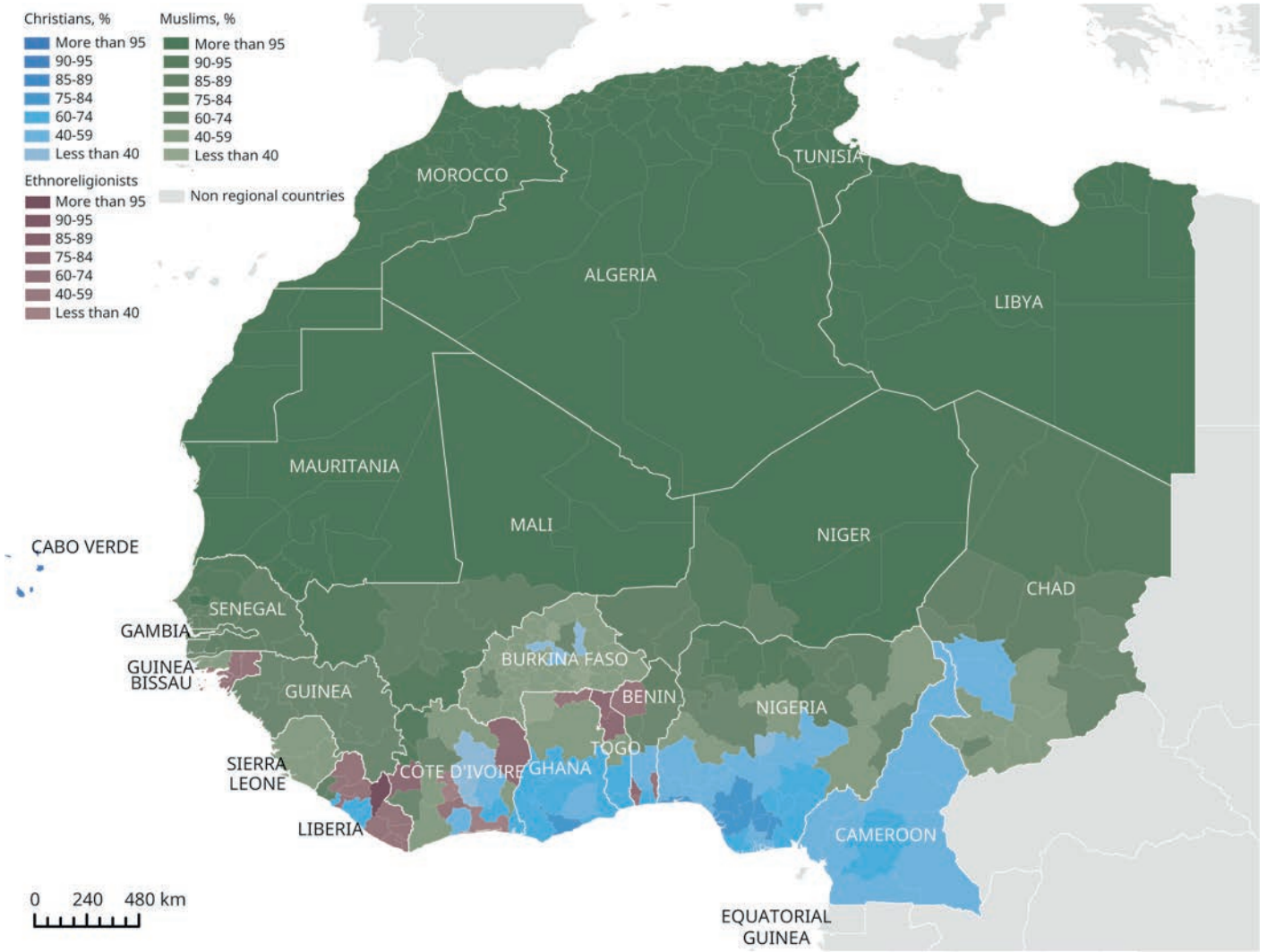
Map 4.12.
Population densities in West Africa



Source: Authors based on WorldPop (2020).

Map 4.13.

Religions in North and West Africa



Source: Authors based on Johnson and Grim (2008).

which could provide safe havens for violent extremists. The local population is predominantly Muslim (Map 4.14) and well connected to the Sahel, both culturally and economically, through numerous border markets and long-distance trade networks (Walther, 2015).

Further, despite its strategic location, the north of coastal countries remains poorly connected to the ports of the Gulf of Guinea. Investment in the transportation, education, and health sectors, for example, have historically been much lower than in the densely populated south (Walther, Nugent and Goewey, 2025; OECD, 2019). If instrumentalised by jihadists, this lack of national integration between the north and south of coastal countries could become a threat to national security, especially if local stigmatisation pushes some Salafis and Fulani into jihadist arms, as observed in Central Mali today (Benjaminsen and Ba, 2019).

Several factors could make the progression of jihadist groups more difficult further south, however, starting with the necessity of building local alliances. Jihadist groups are numerically small and rarely able to hold territory. One of their main strengths is the alliances they can establish locally, by persuasion, threat, or violence, with local leaders and marginalised communities (Thurston, 2020). The extremists affiliated with Al Qaeda in the Islamic Maghreb who relocated from northern Algeria in the early 2000s developed extensive networks with local tribes in northern Mali, a process that took years and was facilitated by cultural, linguistic, and religious affinities across the two "shores" of the Sahara.

It is uncertain how this could be replicated along the Gulf of Guinea, a region that is vastly different from the Sahel from a linguistic and religious perspective. As jihadist groups move south, they will lose much of their ability to move undetected within the local population. Even in areas with a high share of Muslim population, ethno-cultural connections are not easily undone by jihadi rhetoric and propaganda. South of the Sahel, it is common to have families or larger groups where Christian and Muslim identities are mixed. Establishing durable bases and getting the support of villagers in regions that are predominantly Christian, or have a significant proportion of traditional animists, will remain an even more formidable challenge (Map 4.14).

In the southern region of coastal countries, the most likely scenario is a diffuse presence of isolated groups, involved in hit-and-run attacks against poorly defended civilians, rather than steady territorial expansion, as currently observed in the Sahel. This scenario would lead jihadists to expand south rurally without consolidating any serious urban areas and progressively contribute to forming a patchwork insurgency, rather than a single zone of dominance.

Governments' responses

Ultimately, the expansion of jihadist groups deep in the south will depend on the timely and appropriate set of initiatives taken by coastal countries (Brottem, 2023; Wilen, 2025). Coastal countries are comparatively more capable of countering insurgents militarily than Sahelian countries and are in the process of establishing the foundations of a co-ordinated response to transnational terrorism. The most ambitious of these initiatives is the Accra Initiative established in 2017 (Birikorang and Abdallah, 2023) between Benin, Burkina Faso, Côte d'Ivoire, Ghana, and Togo (Mali and Niger are observers). More recently, the region has also been the focus of an Integrated Border Stability Mechanism for West Africa supported by the United Nations (2023).

These initiatives necessitate to implement reforms in the ways West African governments build and train their security forces, interact with civilians, and co-ordinate their counter-insurgency initiatives regionally (Boukhars, 2024). The last couple of years show that this process is under way in the region: from Côte d'Ivoire to Togo, West African coastal states have adopted political, legislative, and operational frameworks to improve synergies between security forces, civil society organisations and populations, and local authorities (Box 4.2). As the Côte d'Ivoire example suggests, balancing military and social responses may be the very first step to adopt along the Gulf of Guinea to prevent, and contain, violent extremism.

Box 4.2.

West African coastal states' responses to Jihadist expansion

In Benin, the government initiated in 2019 the process of developing a National Strategy for the Prevention of Violent Extremism. Since then, state authorities have established the High-Level Committee in charge of preventing violent extremism and the fight against border insecurity in 2019 and the Presidential Committee for External Inspection of the defence and security forces. They have also reinforced the capacity of the Agency for the Integrated Management of Border Areas, which creates income-generating activities and construct schools, and the National Peace Coalition. Benin has also launched several initiatives to improve economic and health conditions of communities in some of the most peripheral areas of the country. Finally, the African Parks Network has made efforts to address resentments by some local communities who see the network's measures to safeguard biodiversity as detrimental to their livelihood.

Côte d'Ivoire has received the most praise for its response to the jihadist threat. The state has deployed an effective two-pronged approach focusing on security and development, allowing authorities to blunt the initial tempo of attacks that occurred in 2020-22 (ICG, 2023b). Amid escalating tensions between Fulani herdsmen and the Coulango, Lobi, and Malinké, the Prefects were entrusted with creating framework for dialogue between the different populations. These include the Civil-Military Cells, Ethics Advisory Committees, and the Departmental Security Committees, which assemble military and prefects, local authorities, and community representatives.

In 2019, Ghana launched its National Framework for Preventing and Countering Violent Extremism and Terrorism. The Framework builds on a four-tier strategy dedicated to preventing attacks, protecting civilians and responding to violent extremism. In 2020, Ghana also developed a National Security Strategy to identify threats and their security responses. These efforts have contributed to facilitate the co-ordination of the many actors involved in security in the country, from the Ministry of National Security to the municipal and district levels. Since then, Ghanaian authorities have deployed a multifaceted strategy that includes border control, regional co-ordination, special economic assistance to the north, and support to pastoralists. This comprehensive response to Jihadism appears to have helped prevent attacks (KAS, 2022).

Ghana has also been very active on the regional and international scene. The Accra Initiative, which aims to prevent spillover of violent extremism and organised crime is headquartered in Accra and it is in the Ghanaian capital city that the United States and Germany announced a USD 40 million Coastal States Stability Mechanism to strengthen stability in Benin, Togo, and Ghana in October 2024 (B&FT, 2024).

In Togo, the government established the Inter-Ministerial Committee for the Prevention and Fight against Violent Extremism (CIPLEV) in 2019 as a model for co-ordinated effort among various ministries and representatives from the security forces, civil society, religious leaders, and local authorities. In 2021, the government initiated a National Strategy for the Prevention and Fight against Violent Extremism. CIPLEV, along with the prefectural and communal Committees for the Prevention and Fight against Violent Extremism, provides a practical opportunity to enhance community dialogues among security forces, local authorities, municipal actors, and young citizens as well as enhance nascent early warning systems.

Source: adapted with permission from Boukhars (2024).

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Chapter 5

Violence on the road in North and West Africa

Chapter 5 examines the relationship between political violence and transport infrastructure in North and West Africa from 2000-24. The analysis demonstrates a strong correlation between violence and road infrastructure, with violent events occurring more frequently near roads than in other areas of the region. Using disaggregated data from the Armed Conflict Location & Event Data (ACLED) project, the chapter shows that 70% of violent events occurred within one kilometre of a road axis. These results are nearly invariant across the main types of roads identified by the Global Roads Inventory Project (GRIP) and the types of violent events identified by ACLED. The second part of the chapter shows that violence has become less clustered near transport infrastructure since 2011, a trend that could be due to the ruralisation of violence (notably close to small urban centres) adopted by Jihadist groups in West Africa. Finally, the chapter confirms that some transport corridors are more violent than others. Violence associated with transport infrastructure is primarily clustered in the Central Sahel, Lake Chad basin, and western Cameroon. Jihadists have used roads to conduct attacks in five ways: by ambushing convoys, kidnapping travellers, using landmines and improvised explosive devices, enforcing blockades, and destroying key infrastructure. These violent incidents fit into a larger strategy to control mobility.

KEY MESSAGES

- **Violence decreases sharply with distance from roads: 70% of violent events and 65% of fatalities are located within one kilometre of a road.**
- **Violent events have become slightly less clustered near roads since 2011, a trend that could be explained by the ruralisation of violence adopted by jihadist groups in West Africa.**
- **Transport-related violence is very unevenly distributed across the region. The most violent road segments are in Nigeria, western Cameroon, and Central Mali.**
- **Jihadists use several strategies to target transport infrastructure, including attacks on convoys, kidnapping, explosives, blockades, and destruction of key infrastructure.**
- **The clustering of violence near roads is much more consistent across countries than the one between violence and borders, and between violence and cities.**
- **Transport infrastructure is at the very heart of the struggle between state and non-state actors to control mobility.**

In August 2024, jihadist militants affiliated with Jama'at Nusrat al-Islam wal-Muslimin (JNIM) ambushed a food supplies convoy traveling between Kantchari and Diapaga in eastern Burkina Faso. Around 150 soldiers and militias and 50 civilians were killed in the attack. The convoy was returning from the Partiaga region, near the W National Park, which has increasingly been used by jihadists as a rear base in their recent expansion towards coastal countries.

This attack is representative of a larger trend in West Africa, in which violent extremist organisations target security forces, self-defence groups, and civilian populations using

transport infrastructure. While most attacks take place along roads, airports are targeted too, particularly those that provide supplies to remote military bases. In September 2023, JNIM militants attacked Malian Armed Forces (FAMa) and Wagner positions at Gao Airport using suicide car bombs and commandos tactics. An estimated 19 FAMa soldiers, JNIM suicide bombers, and raiders were killed, eight vehicles burned, and two aircrafts damaged.

This chapter examines the changing geography of such violence over the last 24 years. Using disaggregated data from the Armed Conflict Location & Event Data (ACLED, 2024) project, the chapter suggests that violence is indeed more intense near transport infrastructure and has strongly increased since the beginning of the jihadist insurgencies in the Sahel and the Libyan civil wars. Yet, conflict data also show that the relative share of violent events located near roads has declined since 2011, a trend that accompanies the ruralisation of violence observed in West Africa (OECD/SWAC, 2023).

The strong relationship between transport infrastructure and violence is particularly obvious in the Central Sahel and the Lake Chad region, where the most common forms of violence are roadside ambushes, kidnappings, landmines, blockades of cities, and the destruction of the transport infrastructure itself. The main aim of this strategy is to disrupt and control state and civilians' mobility.

VIOLENCE DECREASES WITH DISTANCE FROM ROADS

In North and West Africa, violence tends to decrease sharply with distance from roads. Seven out of 10 violent events and 65% of the people killed in the region between 2000 and 2024 were located within one kilometre of a road (Figure 5.1). No secondary peak of activity is observed within the first 10 kilometres away from a road, which roughly corresponds to the area that can potentially be influenced by a transport axis in the region. The sharp distance decay from roads is even more pronounced than the one observed with distance from borders and cities in previous studies (OECD/SWAC, 2022; 2023). These results suggest that the geography of violence follows certain regularities in North and West Africa: people located near roads are far more likely to experience violence than those who live in other areas.

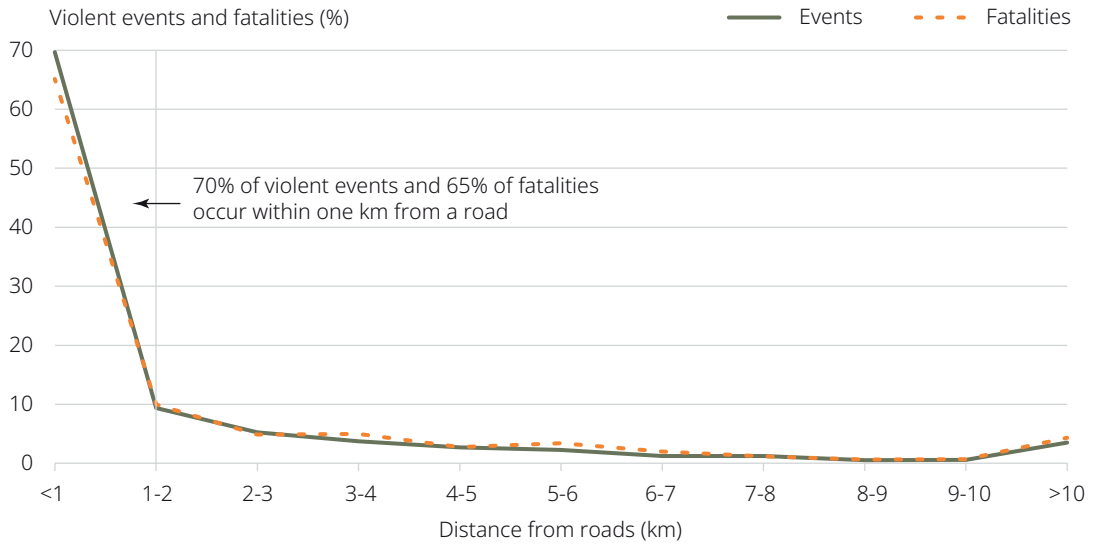
The strong relationship between violence and transport infrastructure remains valid, regardless of the road category considered: a vast majority of the violent incidents recorded over the last 24 years are near a highway, secondary, tertiary, or local road (Figure 5.2). The more important the road, the more clustered the violence near transport infrastructure: 75% of the violent events are within one kilometre of a highway or a primary road, compared to 72% for secondary roads, and 60% for tertiary roads (Map 5.1, Map 5.2). Using violent events rather than fatalities ensures a higher degree of accuracy in this analysis, since the number of people killed is often subject to debate, while the occurrence of an event is rarely disputed (see Chapter 3).

Most of the roads classified as "local" by the Global Roads Inventory Project (GRIP) are located within urban agglomerations (Map 5.3). The high density of such roads in urban settings explains why the percentage of transport-related incidents within one km of road is so high for this category (98%) on Figure 5.2. The only exception is Libya, where "local" roads are present both in large urban regions such as Tripoli, and in rural regions such as the Al Wahat district south of Benghazi. The fact that most of the violence observed in North and West Africa since the end of the Second Libyan war affects rural areas and small towns (OECD/SWAC, 2023) makes the "local" road category of little assistance to this report.

The strong relationship between violence and transport is nearly invariant across the main types of violent events identified by ACLED. In other words, violence occurs at a far greater frequency near roads than anywhere else in the region, irrespective of the nature of violent events observed locally (Figure 5.3). Attacks against civilians are slightly less represented within one kilometre of a road (66%) than battles (72%) and remote violence and explosions (77%). Yet, the pattern observed at

Figure 5.1.

Violent events and fatalities by distance from roads in North and West Africa, 2000-24



Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

the regional level is very consistent across different forms of violence, which is another indication that the proximity to transport infrastructure is a strong predictor of conflict.

Explosions and remote violence are the type of violence most clustered near roads (Figure 5.3), which is not surprising considering that improvised explosive devices (IEDs) must be placed directly on the road to make the maximum number of victims. Nearly half of the attacks involving IEDs are located within 100 metres of a road. Attacks against civilians occur more frequently at more than one kilometre from a road than battles and explosions, which reflects the fact that human settlements are usually distributed at a distance from roads in rural areas.

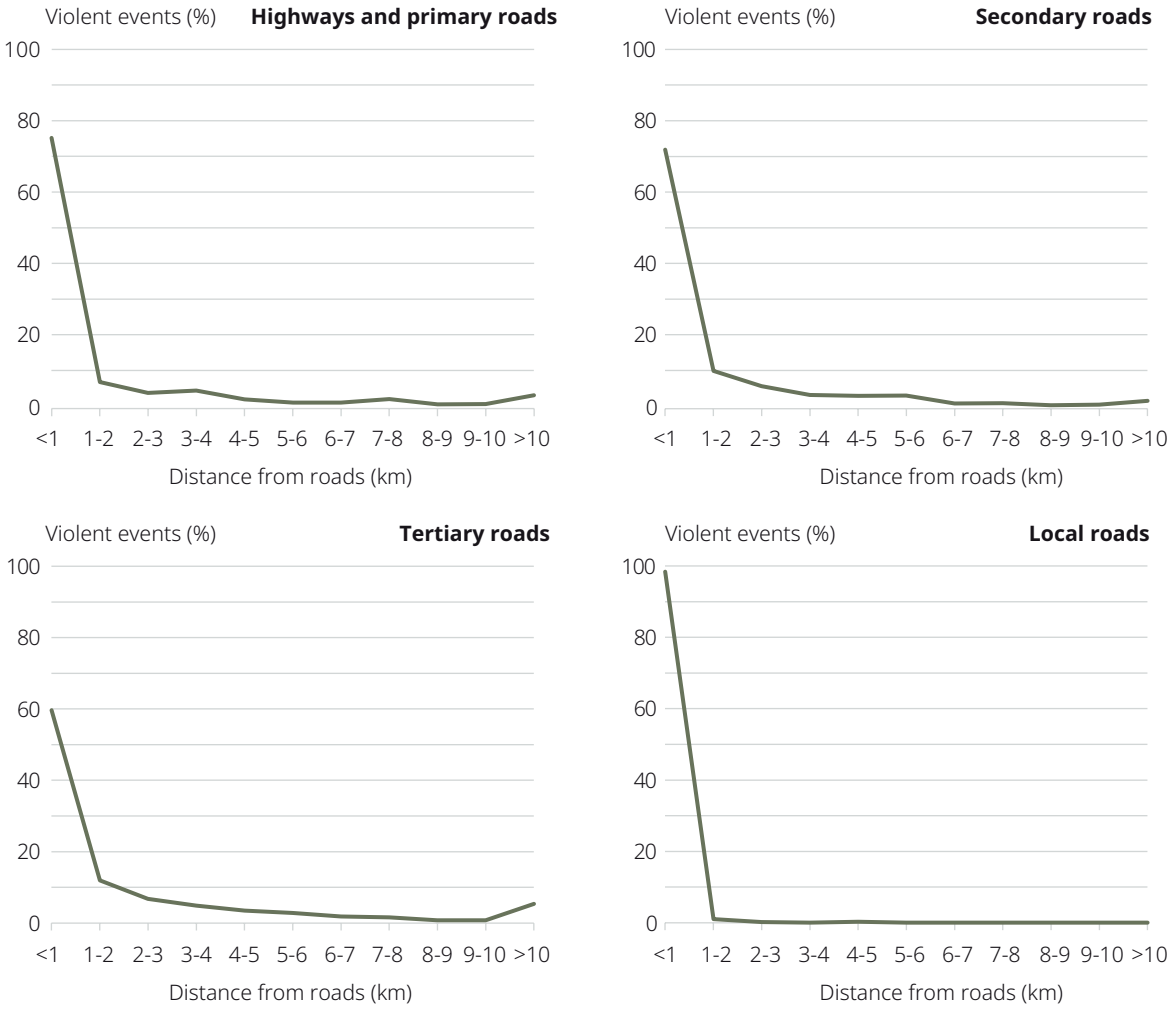
While the intensity of violence targeting transport infrastructure has increased tremendously in recent decades, violent events have become less concentrated near roads over time. In the last 15 years, the share of violent events located within one kilometre of a road has declined steadily, from 91% at its peak in 2011 to 59% in 2023 (Figure 5.4). This evolution reflects the current ruralisation of conflict in West Africa, a region where Jihadist insurgents have largely moved away from major urban centres to target rural areas and small towns (OECD/SWAC, 2023).

In 2011, when urban violence reached its peak in West Africa, 72% of violent events were in urban regions, compared to only 18% in 2022. The spatial distribution of violent events according to their distance to cities has followed a similar evolution as the one targeting road infrastructure during the same period. In West Africa, violence was the most clustered near roads in 2011, with 86% of all violent events located within one kilometre of a road, before declining to 61% in 2023 (see Figure 5.4).

As rural areas become more violent, more events occur in areas that are poorly connected to the transport system, and therefore the respective share of incidents located near roads tends to decline. The areas that have experienced a recent increase in violence are located between 1 and 4 kilometres, emphasising that proximity to roads remains key in explaining the distribution of violence across the region.

Similar results are obtained when a micro-approach to violence is adopted: violent events located within 100 metres of a road represent only 17% of the total in 2023, down from

Figure 5.2.
Violent events and distance to different types of roads, 2000-24



Note: Only events for which the co-ordinates are precisely known are included.
Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

70% in 2011 (Figure 5.5). The share of violent events located between 100 and 1 000 metres has remained constant, while the proportion of more distant events has increased, from less than 10% at the beginning of the First Libyan Civil War in 2011 to 41% in 2023.

DIVERGING PATTERNS OF TRANSPORT VIOLENCE

A rapid distance decay can be observed in all North and West African countries (Figure 5.6), indicating that the tendency for violence to cluster near roads is a regional feature. The clustering of violence near roads is much more consistent across countries than the one between violence and borders (OECD/SWAC, 2022), and between violence and cities (OECD/SWAC, 2023), for which variations were found between Sahelian and other countries. Nothing of the sort is observed with roads. Small or elongated countries like Benin and Togo present the same spatial distribution as large or compact countries such as Libya and Nigeria.

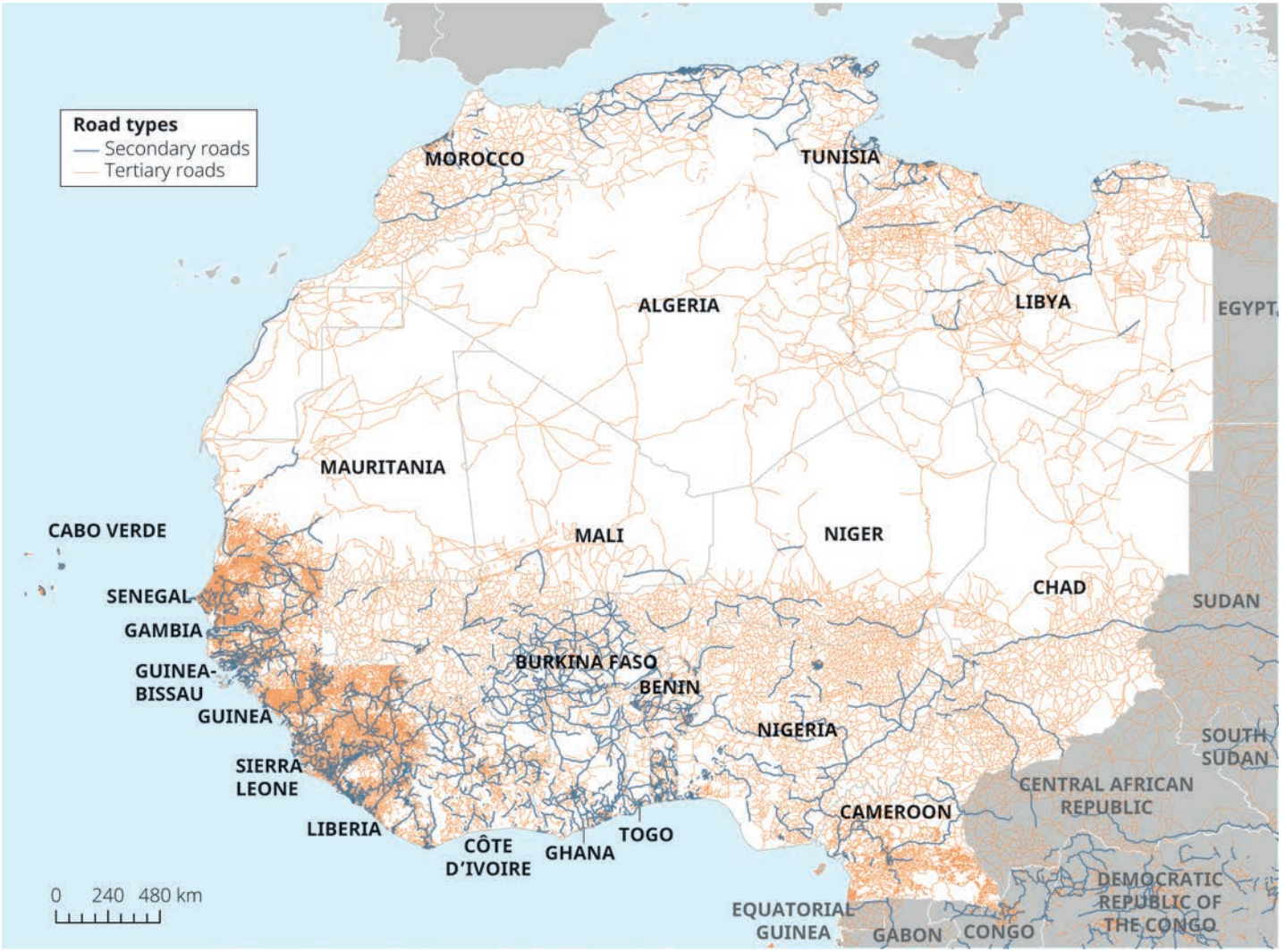
Map 5.1.

Highways and primary roads in North and West Africa, 2018

Source: GRIP data (Meijer et al., 2018). Cartography by the authors.

Map 5.2.

Secondary and tertiary roads in North and West Africa, 2018



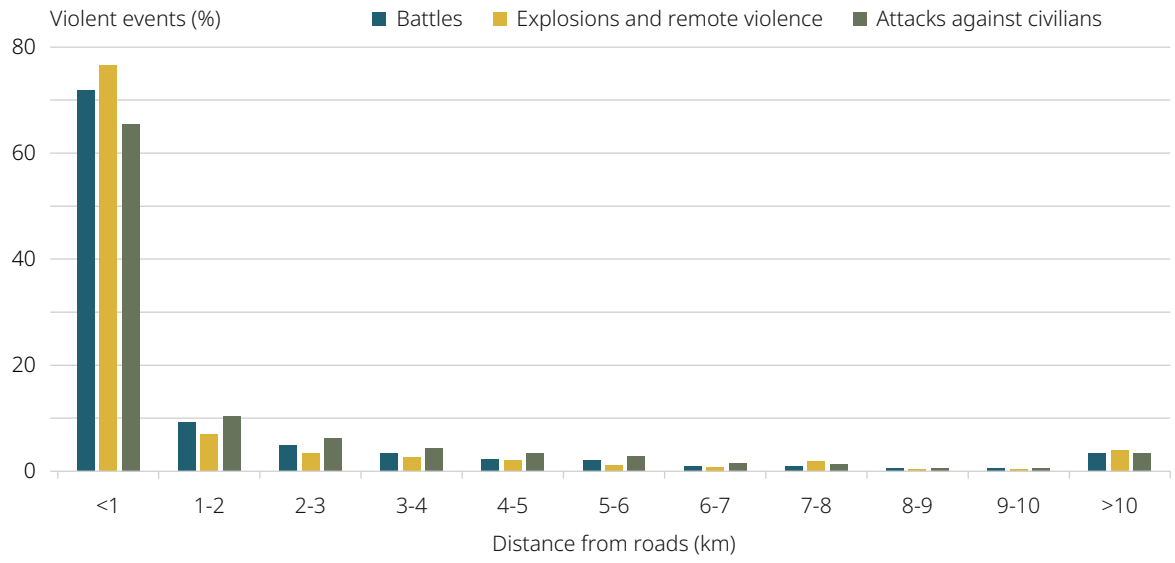
Source: GRIP data (Meijer et al., 2018). Cartography by the authors.

Map 5.3.
Local roads in North and West Africa, 2018

Source: GRIP data (Meijer et al., 2018). Cartography by the authors.

Figure 5.3.

Types of violent events by distance from roads, in kilometres, 2000-24

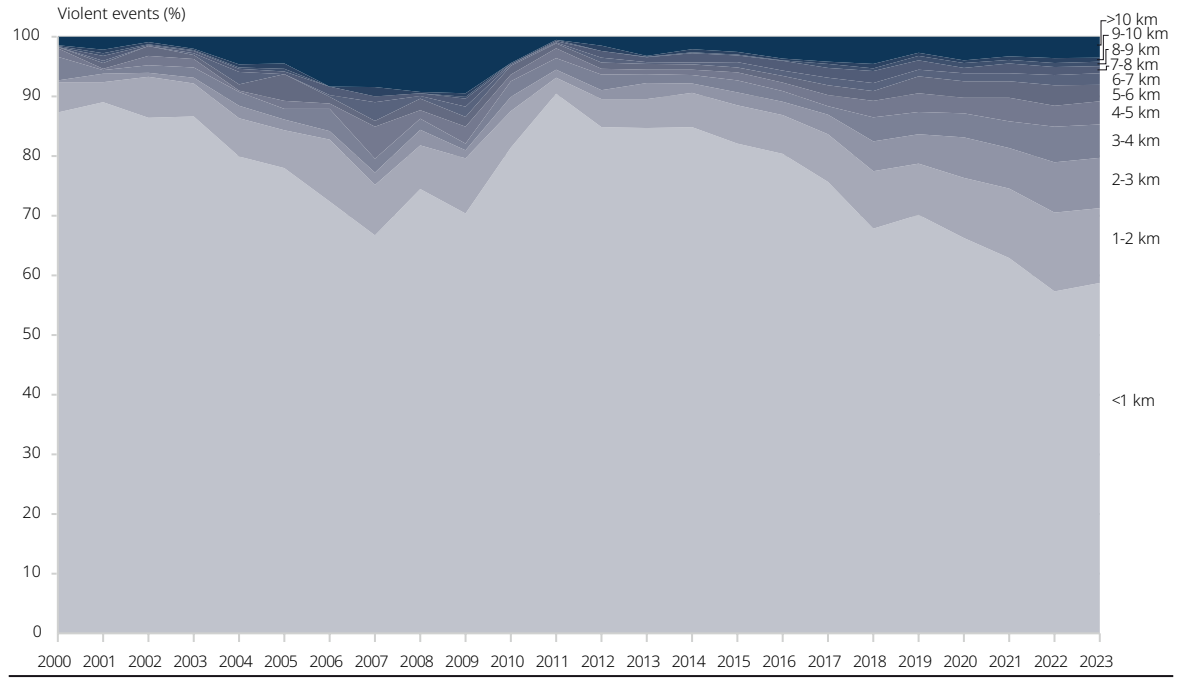


Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Figure 5.4.

Violent events according to their distance to roads, within 10 kilometres, 2000-24

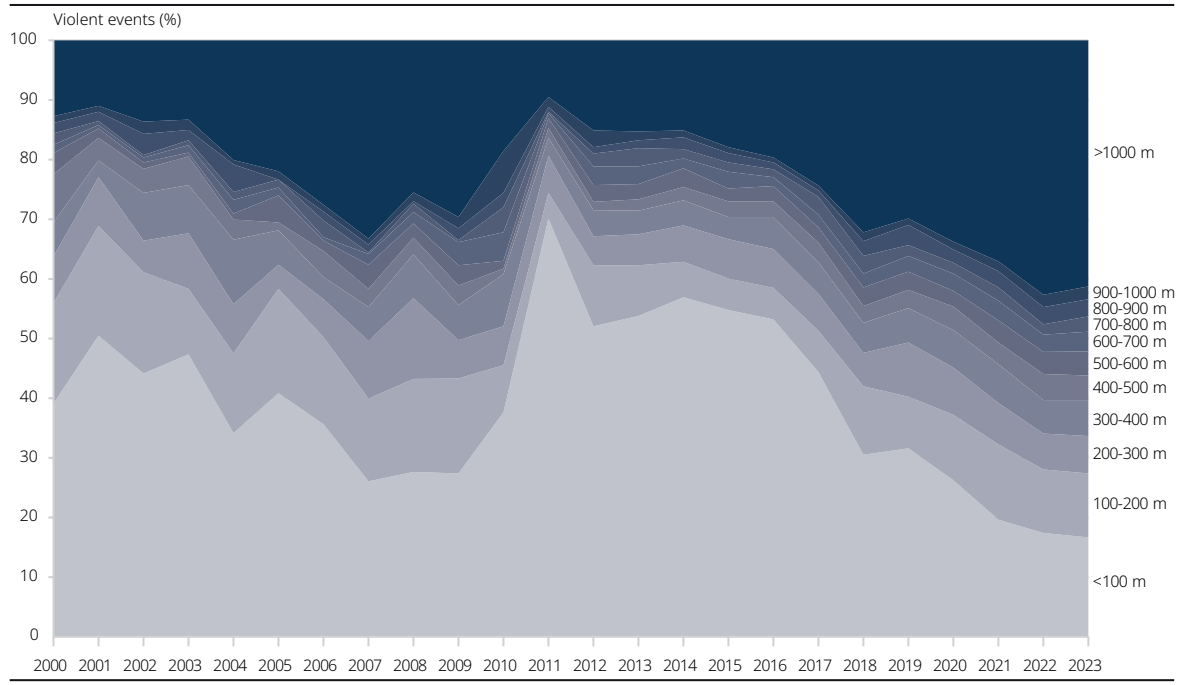


Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Figure 5.5.

Violent events according to their distance to roads, within 1 kilometre, 2000-24



Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

The distance decay is slightly less pronounced in countries that are currently affected by major insurgencies, such as Burkina Faso, Mali, Niger, and Nigeria, than in peaceful countries such as Senegal, but the difference is rather small. It is in Burkina Faso that violence tends to decay the least rapidly with distance from roads, which reflects the expansion of Jihadist groups in remote regions where there are few roads in the first place, such as the far east bordering Niger and Togo, or the southern border near Côte d'Ivoire. Tunisia is the only country where a significant peak of violence is observed a few kilometres from roads, a specificity explained by the fact that the few violent events experienced in the country have usually occurred in rural regions where roads are quite distant from each other.

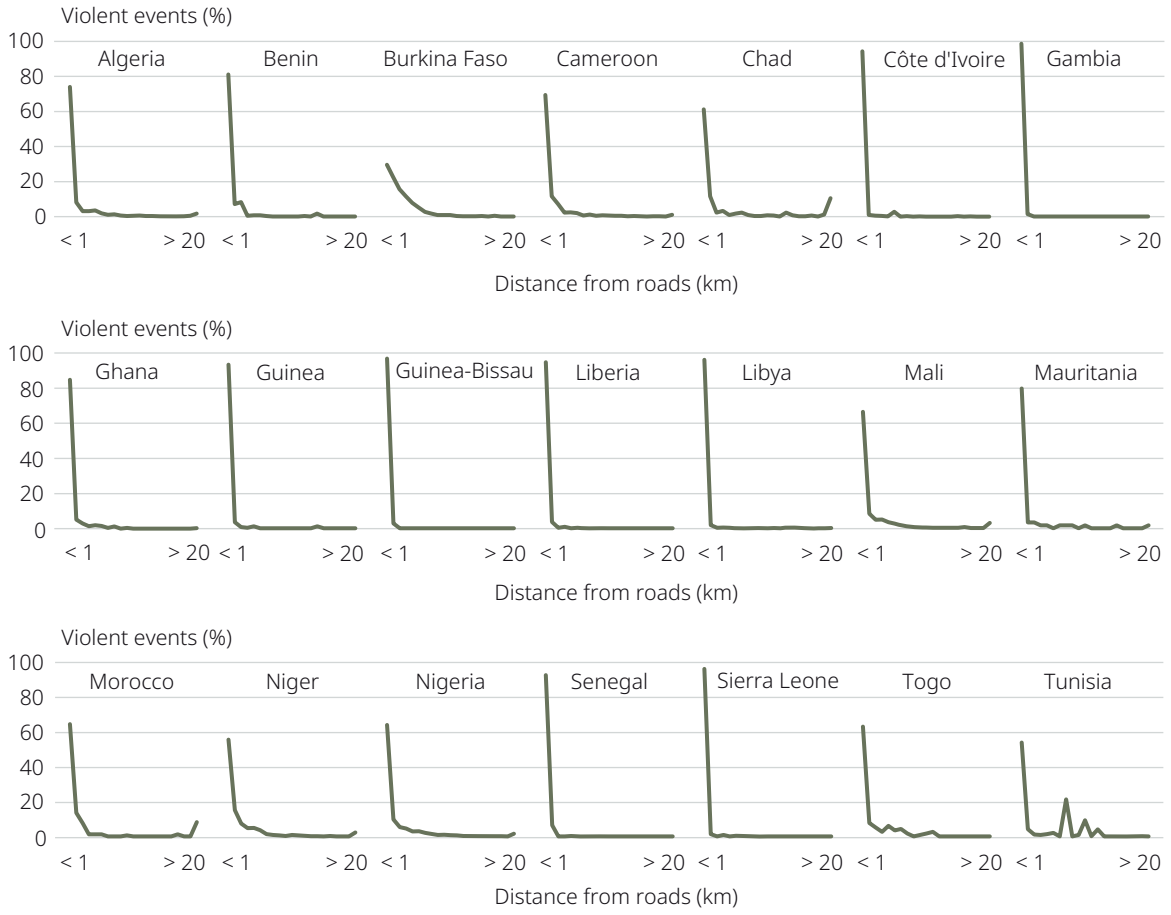
The robust relationship between violence and transport infrastructure observed at the regional and national levels masks substantial disparities within countries. Some segments of the road network are significantly more affected by violence than others. To identify the most dangerous roads in North and West Africa, the report first maps the locations of all battles, remote violence and explosions, and violence against civilians that occurred between 2000 and 2024. Each violent event is then assigned to the nearest road segment. Only events for which the exact co-ordinates are known with great precision are included (a geoprecision code of 1 according to ACLED, see Chapter 3).

This approach reveals that the highest levels of transport-related violence are concentrated in western Cameroon, Nigeria, and central Mali (Map 1.2). The 350-kilometre ring road linking the regional centre of Bamenda to Kumbo and Wum in the Anglophone Northwest region of Cameroon is the most violent road in North and West Africa, with 757 recorded events since 2018 (Map 5.4). The intensity of violence is attributed to the conflict between the Cameroonian government and the Ambazonian separatists.

In North Africa, the most violent road segments are located within the urban agglomeration of Tripoli, which has recorded up to 539 violent events since the start of the First Libyan Civil War in 2011. Capturing Tripoli was

Figure 5.6.

Violent events and distance from roads by country, 2000-24



Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

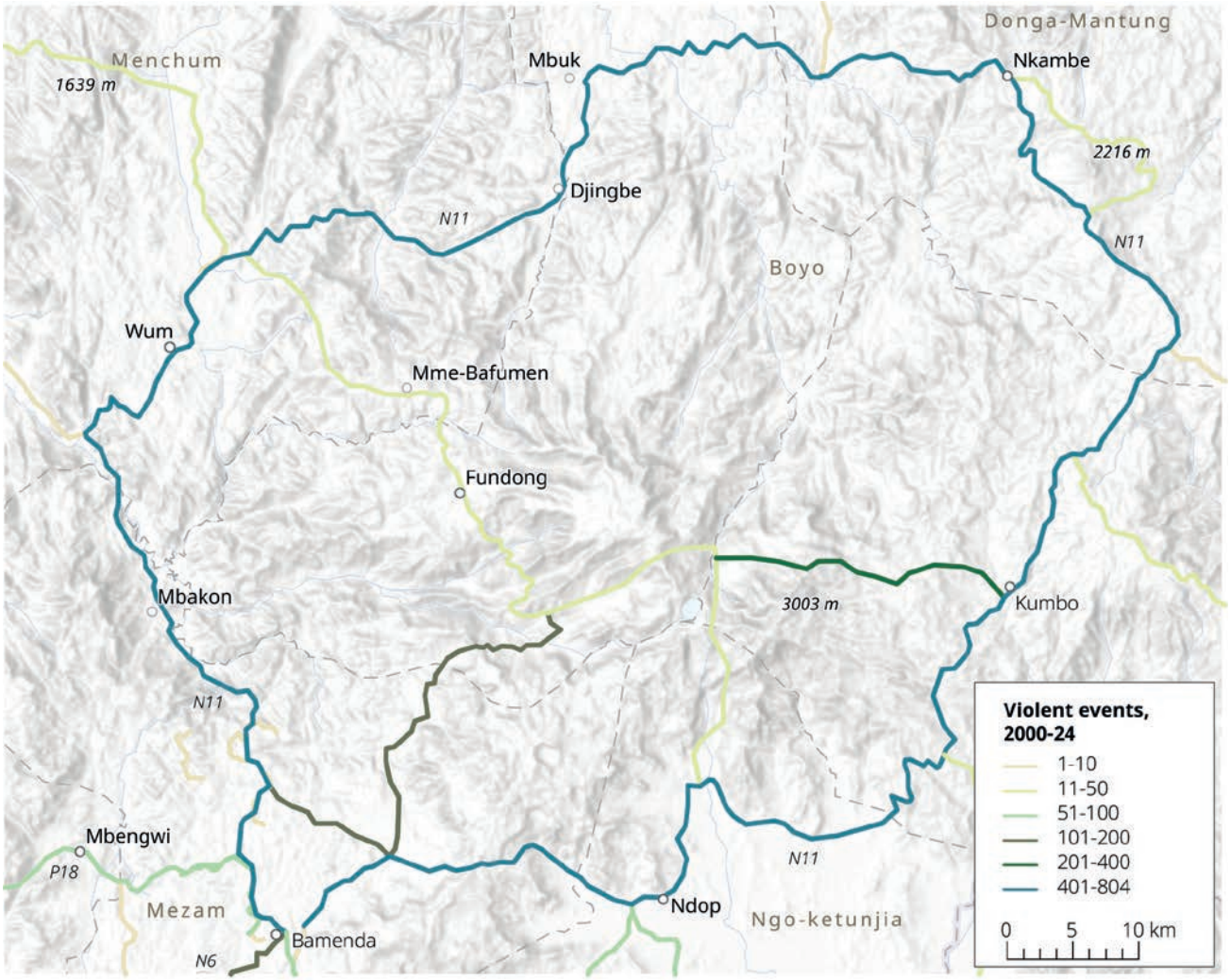
the goal of the Western Libya campaign launched by Field Marshal Khalifa Haftar in 2019 against the United Nations-recognised Government of National Accord.

In the Central Sahel, the National Road 16 (RN16) between Mopti/Sévaré and Gao is by far the most violent transport axis, with 433 events recorded since the beginning of the civil war in Mali in 2012 (Map 5.5). RN16 is the only paved road connecting eastern Mali to the rest of the country and has long represented a key logistical corridor for security forces intervening in the Gourma, Adrar of the Ifoghas, and Ménaka regions. Large military bases were built in Sévaré and Gao by the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA), and long military convoys were a regular sight in the region for more than a decade. In recent years, Malian forces and their Russian mercenaries have also been repeatedly ambushed along this road, such as in September 2023, when JNIM militants detonated a bridge and ambushed a convoy near Agoudoud. Twenty-two people were killed in the fighting that followed. In reprisal, FAMa and Wagner executed at least twelve people from the Arab, Fulani, and Tuareg communities traveling between Doro and Gossi.

South of Gao, National Road 17 (RN17) leading to the Nigerien border, and National Road 20 (RN20) heading toward Ménaka have experienced 177 and 139 events respectively since the Islamic

Map 5.4.

Violent events nearest road segments in western Cameroon, 2000-24



Note: Only events for which the co-ordinates are precisely known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Map 5.5.

The most dangerous roads of the Central Sahel, 2018-24

Note: Only events for which the co-ordinates are precisely known are included. Road segments must be close to at least one violent event to be included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

State – Sahel Province (ISSP), formerly known as Islamic State in the Greater Sahara (IGSS), intensified its activities in the region in 2017. South of the Malian border, all the roads leading to the town of Djibo in Burkina Faso have experienced high levels of violence due to the blockade established by JNIM and its allies in 2020 and 2022. Further east, National Road 4 (N4) between Fada N'Gourma and the border post of Kantchari is also among the most dangerous roads in the country. In September 2021, JNIM militants ambushed a logistics convoy near Doufouanou, killing six gendarmes and one member of Volunteer for the Defense of the Homeland (VDP).

In the Sahara, 232 violent events were recorded since 2012 near National Road 18 (RN18), which connects the Niger Bend to Kidal in the Adrar of the Ifoghas. Since the Tuareg rebellion of 2012 started in Kidal, intense fighting between rebels, jihadists, government forces, and their respective militias has occurred along this road corridor leading to the military base of Tessalit and the Algerian border at Bordj Badji Mokhtar.

The longest segments of dangerous roads are in Nigeria (Map 5.6). The roads closest to the largest number of violent events connect Maiduguri in Borno State to Damaturu and Potiskum (A3, with 542 events recorded since 2010), and Maiduguri to Biu and Bama (684 events recorded since 2010; see Map 5.7). Violent incidents targeting security forces and/or civilians travelling on these major road corridors occur with alarming frequency (ACSS, 2020). Between January 2023 and June 2024, 665 people were killed between Maiduguri and Bama, in 133 incidents.

Further north, in Niger, the road between N'Guigmi and Zinder through Diffa (RN1) has experienced 212 events since 2018. The intensity of violence recorded along these transport axes is attributed to the insurgency waged by Jama'tu Ahlis Sunna Lidda'awati wal-Jihad (JAS, often referred to as Boko Haram) and its splinter group, the Islamic State West Africa Province (ISWAP): hardly any violent events were recorded before JAS started its campaign of violence in 2009.

TRANSPORT-RELATED VIOLENCE IN THE CENTRAL SAHEL AND THE LAKE CHAD REGION

Jihadists affiliated with Al Qaeda or the Islamic State use roads to conduct attacks in at least five ways in the Central Sahel and the Lake Chad region. First, jihadists ambush military and civilian convoys and travellers in attacks designed to simultaneously kill rivals and challengers, claim control over transport routes, discourage military patrols, and intimidate civilians. Jihadist groups also target travellers for hostage-taking, focusing on ordinary people, traders, local officials, or foreign tourists. Such kidnappings allow jihadists to make political demands, extort ransoms, and inflict fear. In addition, jihadists employ landmines and IEDs to kill travellers, disrupt commerce, and deter military incursions into areas where armed groups hold sway. Jihadists also exert control over roads to enforce blockades and other forms of economic warfare on major towns, such as Timbuktu in Mali and Djibo in Burkina Faso. Finally, jihadists destroy key infrastructure, such as bridges, thereby weaponising blocked routes against communities or security forces. These road-based attacks are mutually compatible and can fit into a larger strategy by the region's many combatants to control the mobility of their opponents and civilians.

Ambushes on the road

Sahelian governments often deploy military convoys to guarantee the security of their troops when travelling over long distances, supplying remote regions with military equipment and food, or escorting civilians away from conflict areas. Insurgents have adapted to this practice by launching increasingly frequent and co-ordinated attacks against such convoys in the Central Sahel and the Lake Chad region, along major corridors and smaller rural roads. Ambushes help to compensate for insurgencies' smaller manpower in comparison to security

Map 5.6.

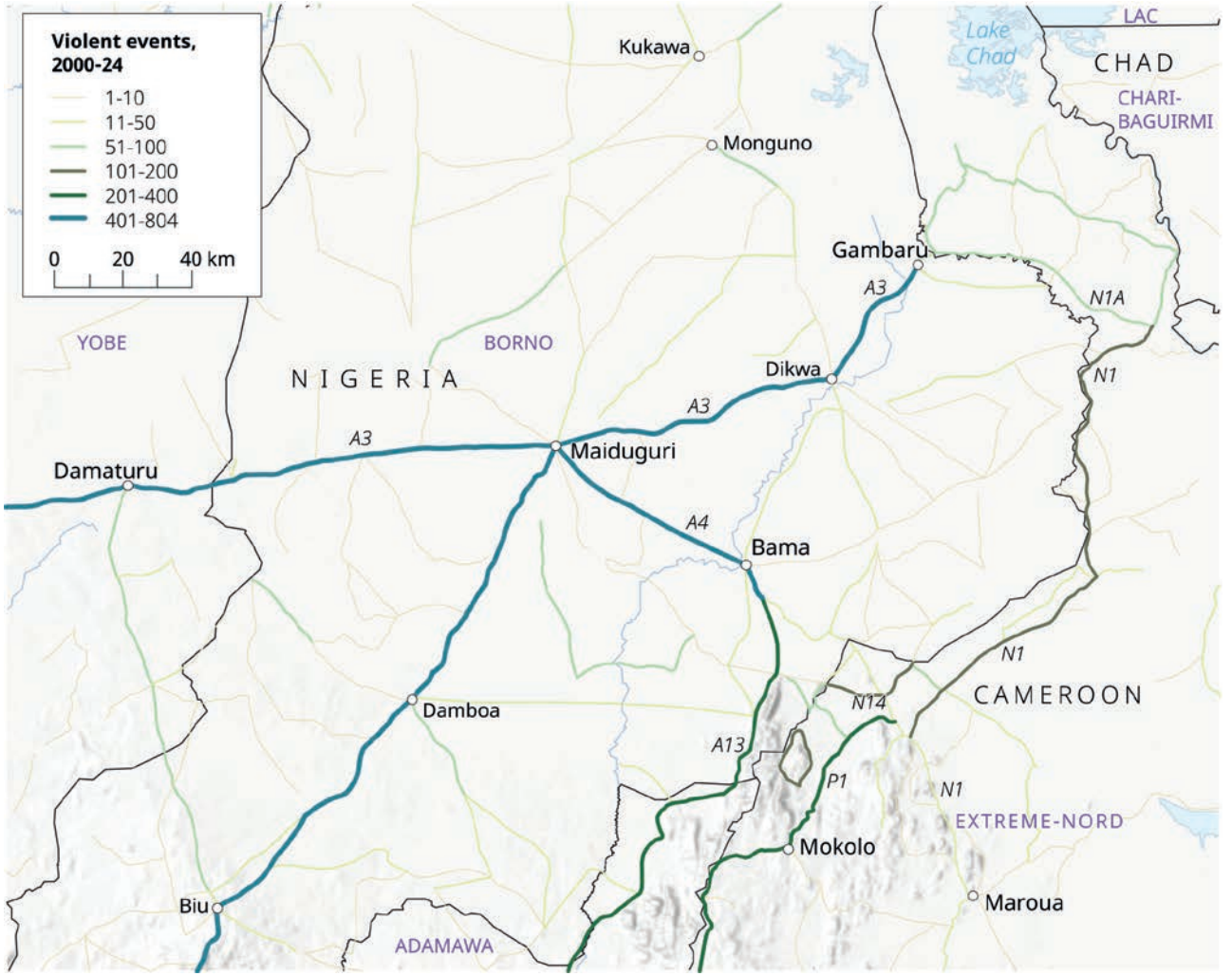
The most dangerous roads in Nigeria, western Cameroon, and the Lake Chad region, 2018-24

Note: Only events for which the co-ordinates are precisely known are included. Road segments must be close to at least one violent event to be included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024). Data is publicly available.

Map 5.7.

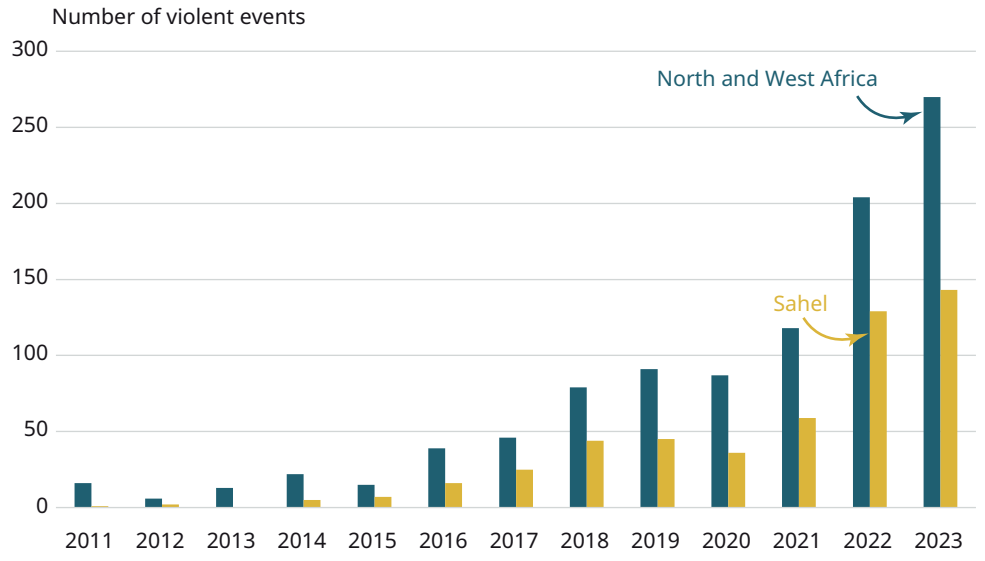
Violent events nearest road segments around Maiduguri, 2000-24



Note: Only violent events for which the exact location is known are included.

Source: Authors based on GRIP (Meijer et al., 2018) and ACLED (2024) data available through 30 June 2024. Data is publicly available.

Figure 5.7.
Ambushes against convoys by region, 2011-23



Note: Sahelian countries include Burkina Faso, Chad, Mali and Niger. Only violent events for which the exact location or the nearest town is known are included.

Source: Authors based on ACLED (2024). Data is publicly available.

forces. While each ambush inflicts casualties, it also sows fear, complicates the security forces' ability to plan, and enables insurgents to capture weapons, vehicles, and materiel. Additionally, when conducted on roads, ambushes disrupt the security forces' efforts to control vast spaces through patrols.

Ambushes were very uncommon in North and West Africa until the early 2010s: only 104 such events were reported for the whole region between 2000 and 2011 (Figure 5.7). In the last 14 years, ambushes have steadily increased, reaching 269 individual events in 2023 and resulting in 4 024 fatalities. The increase is even more dramatic in Sahelian countries, where ambushes were virtually unknown until recently: only 31 ambushes were reported by ACLED in Burkina Faso, Chad, Mali, and Niger between 2000 and 2015, compared to 497 recorded between 2016 and 2023. Over the last 24 years, attacks against convoys have been among the most lethal types of events, with an average of 4.0 victims per event in North and West Africa and 5.2 victims per event in the Sahel.

While ACLED data do not indicate the perpetrator of an attack, except for violence against civilians, the description accompanying each event can be used to identify the initiator of an ambush against a convoy. For example, if the description indicates that "presumed Ansaroul Islam (JNIM) militants ambushed a gendarmerie and VDP escorted convoy on the road between Boukouma and Gorgadji" (event #BFO5236), one can reasonably conclude that the ambush was initiated by a militant group rather than the government. The fact that an actor is identified as the initiator of an attack does not mean that it will have the upper hand during the fighting. Numerous examples exist of ambushes that were successfully repelled, such as in October 2023, when an attack on a military convoy in the region of Boni was repelled by Malian armed forced, who killed several JNIM militants and seized weapons and communication equipment (ACLED event #MLI30970). This approach suggests that militants initiate most attacks against convoys in the region (87.3%), while government forces usually respond to this type of violence. In less than 6% of the 1 142 events identified as an ambush, the identity of the actors in conflict is unclear, irrelevant, or neither militants nor the government are involved.

In the Central Sahel, attacks against convoys are clustered along a few road corridors. In

Mali, the largest number of events is recorded along RN16 between Mopti in the Inner Delta and Gao, and along the RN17 between Gao and the Nigerien border (Map 5.8). Attacks against convoys frequently occur in sparsely populated regions where convoys are vulnerable, such as around Boni in the Gourma Mounts, where JNIM conducted nine attacks against Malian forces and Wagner mercenaries between 2019 and 2024.

Further north, convoys travelling on the RN18 and RN19 from the Niger River to the Adrar of the Ifoghas and the Algerian border have also been repeatedly targeted. The worst attack took place in July 2024, when a convoy of Malian and Wagner forces was ambushed by fighters from the Strategic Framework for the Defense of the People of Azawad near Tin Zaouatene. During the three days of fighting, the rebels claimed to have killed 84 mercenaries and 47 FAMa soldiers and destroyed many armoured vehicles and weapons.

Further south, ambushes against convoys are particularly numerous between Ouagadougou and Djibo (N22), between Djibo and Dori, and between Ouagadougou and Ouahigouya (N2), due to the expansion of the Burkinabe insurgency to most northern regions of the country. All roads leading to the eastern peripheries of Burkina Faso are also subject to ambushes, particularly the crucial commercial axes between Fada N'Gourma and Kantchari, which lead to Niamey in Niger, and the corridor that runs through Bittou towards the Gulf of Guinea.

In the Lake Chad region, a striking correspondence between the road network and attacks against convoys is evident (Map 5.9). From January 2018 to June 2024, this type of violence has tended to be concentrated on the Nigerian side of the border, where it disrupts the movement of the security forces between towns, outposts, and bases, rendering operations more difficult across entire theatres. Such ambushes were one reason government forces adopted a "super camps" strategy in 2019 in northeastern Nigeria. This strategy, which prioritises the defence of big towns, has led to a substantial decrease in the number of casualties in the rank of the Nigerian military and the number of attacks conducted against JAS and ISWAP by government forces. However, it has also allowed insurgents greater freedom of movement in rural areas and contributed to an increase in the number of civilian casualties outside fortified camps (Prieto-Curiel, Walther and Davies, 2023).

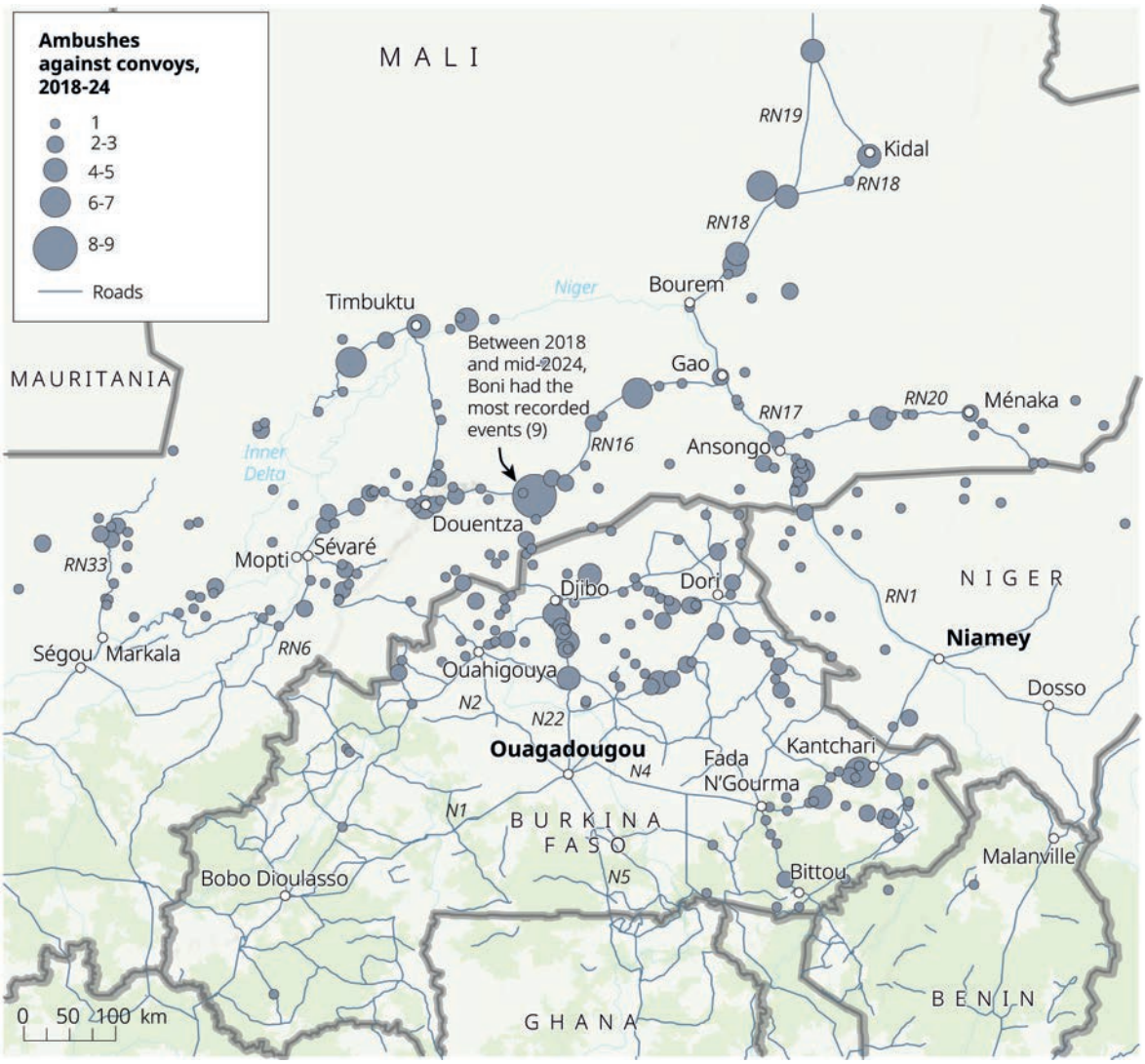
On-road ambushes also complicate the movements of politicians and security personnel, while giving insurgents opportunities for propaganda activities and undermining development initiatives. In September 2020, for example, Borno State Governor Babagana Zulum's convoy was attacked by ISWAP militants at Barwati, a village on the road between the towns of Monguno and Baga (ACLED event # NIG18324). The attack appeared intended to not just kill or intimidate the governor, but also discourage efforts – which the governor was spearheading – to resettle people who had earlier been displaced from Baga. The governor's convoy was ambushed again two days later, with insurgents first using an IED-laden donkey in the road to halt and distract the convoy, and then emerging from the bush to attack (BBC, 2020).

Kidnappings on the road

Abductions and forced disappearances have been central to the operations, financing, and terrorist character of several major insurgent groups in West Africa, where this activity is much more common than in North Africa (Figure 5.8). South of the Sahara, kidnappings have remained very rare until the late 2010s: fewer than 50 cases were recorded annually for the entire region from 2000-15. The expansion of the Malian conflict and the Boko Haram insurgency have led to a twenty-fold increase in the number of events observed from 2017-23. While more than 40% of all the kidnappings observed in West Africa since 2009 are in Nigeria, Sahelian countries such as Burkina Faso, Mali and Niger (and Cameroon) are increasingly concerned with this type of violence. In October 2024, for example, Burkinabe lawyers Gontran Somé and Christian Kaboré were abducted from their vehicle on National Road 10 (N10) between Dédougou and Bobo-Dioulasso. The militants affiliated with Al Qaeda responsible for this abduction released them after 26 days of captivity.

Map 5.8.

Ambushes against convoys in the Central Sahel, 2018-24



Note: Only violent events for which the exact location or the nearest town is known are included.

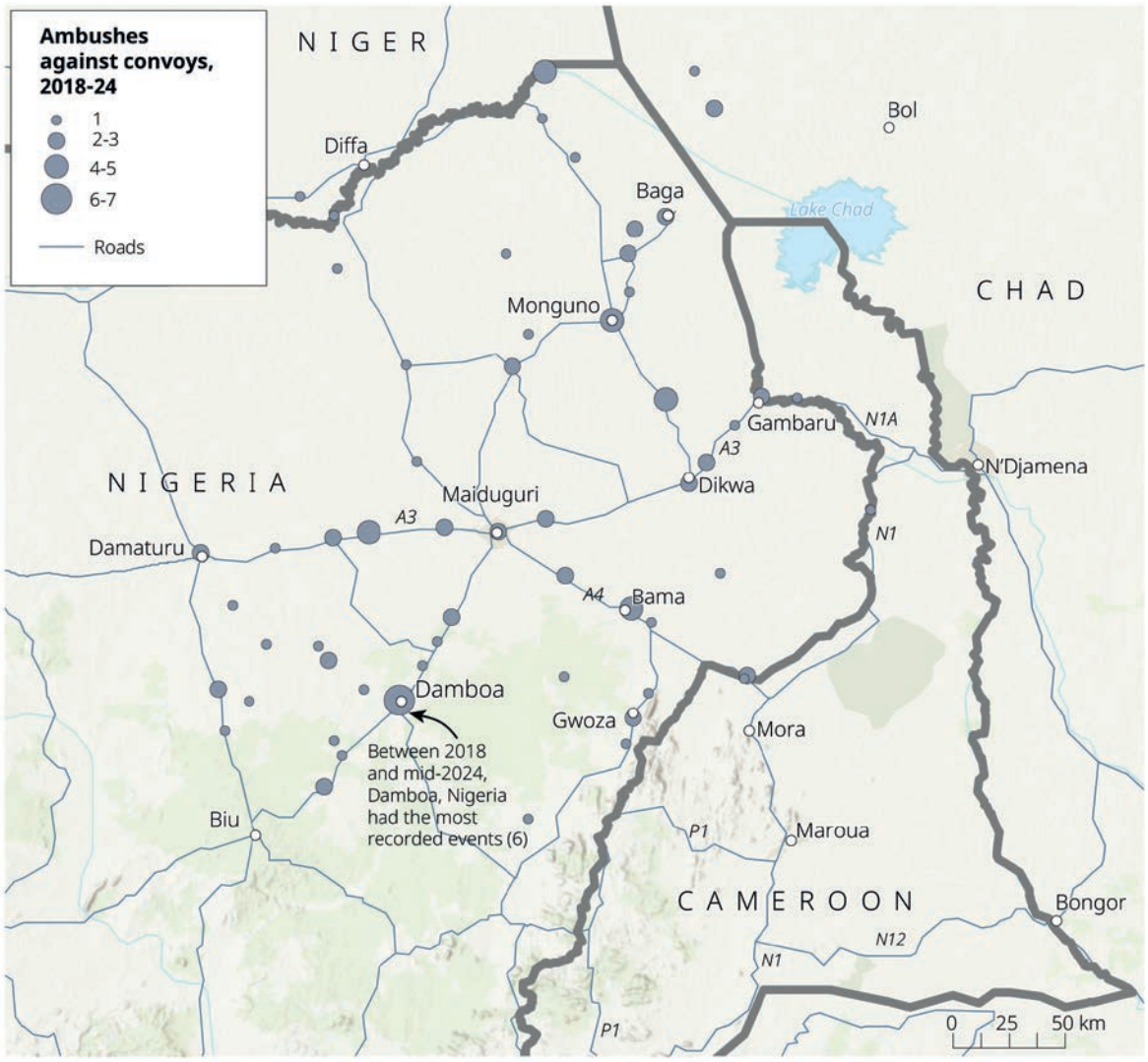
Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

A kidnapping economy, revolving around capturing and ransoming European tourists, provided a funding boon to Jihadist groups in the Sahel-Sahara between the early 2000s and mid-2010s. The most spectacular of these kidnappings was conducted by the Salafist Group for Predication and Combat, who abducted 32 European tourists in the Algerian Sahara in 2003 (Walther and Christopoulos, 2015). An estimated USD 125 million was paid by European countries to liberate hostages captured by Al Qaeda and its affiliates from 2008 to 2014 (Callimachi, 2014). This lucrative strategy fuelled the expansion of Jihadi groups from Algeria to the Sahara-Sahel and led to the total collapse of the tourism industry.

In absence of Western hostages, Jihadi militants turned to local targets and started abducting a growing number of civilians from the region. As a result, the kidnapping economy has largely moved south in the last decade (Map 5.10). In the north of the Sahelian region, kidnapping is still mainly associated with roads and major circulation axis: the RN33 north of

Map 5.9.

Ambushes against convoys in the Lake Chad region, 2018-24



Note: Only violent events for which the exact location or the nearest town is known are included.

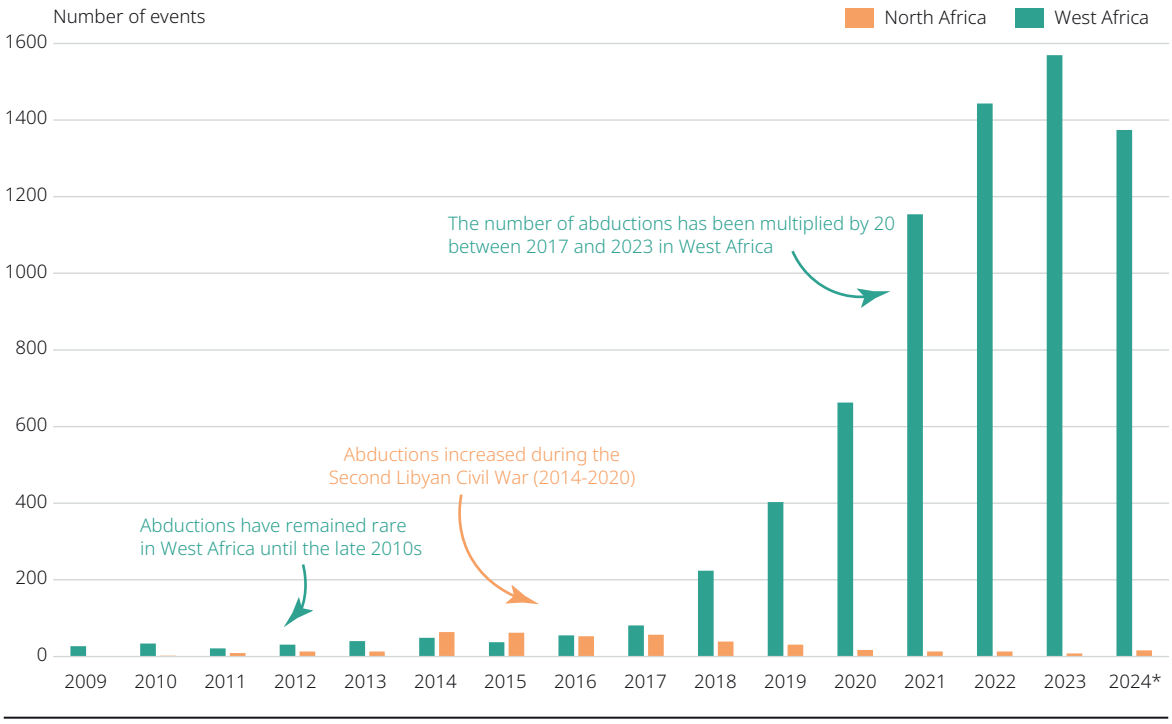
Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

Markala, the Niger Bend, and the RN17 between Gao and Ansongo. Further south, the kidnapping economy has spread to most rural areas and affects a large and nearly continuous region from the south of the Wagadou forest in Mali to the W National Park at the border between Burkina Faso, Benin and Niger. The main hotspots include the Dogon Country east of Mopti, the northern half of Burkina around Djibo and Dori, and the region of Bittou near the border with Benin and Togo.

In Nigeria, the kidnapping of the Chibok girls in 2014 made JAS an international sensation. Since then, the group and its offshoots have conducted numerous other mass kidnappings in exchange for ransom. The fact that the media reports upon which most ACLED events are recorded rarely distinguish between the various factions of the insurgency does not allow to determine to which extend ISWAP has established a more conciliatory approach to civilians than JAS, as suggested by ICG (2024). Kidnapping is widespread everywhere JAS and ISWAP are operating.

In recent years, JAS has multiplied the number of abductions and forced disappearances in the plains north of their stronghold of the Mandara mountains (Map 5.11). The strongest concentration of such events is recorded in the Mayo-Sava

Figure 5.8.
Abductions and forced disappearances by region, 2009-24



Note: *2024 data are estimates based on a doubling of events recorded through 30 June 2024.
Source: Authors based on ACLED (2024). Data is publicly available.

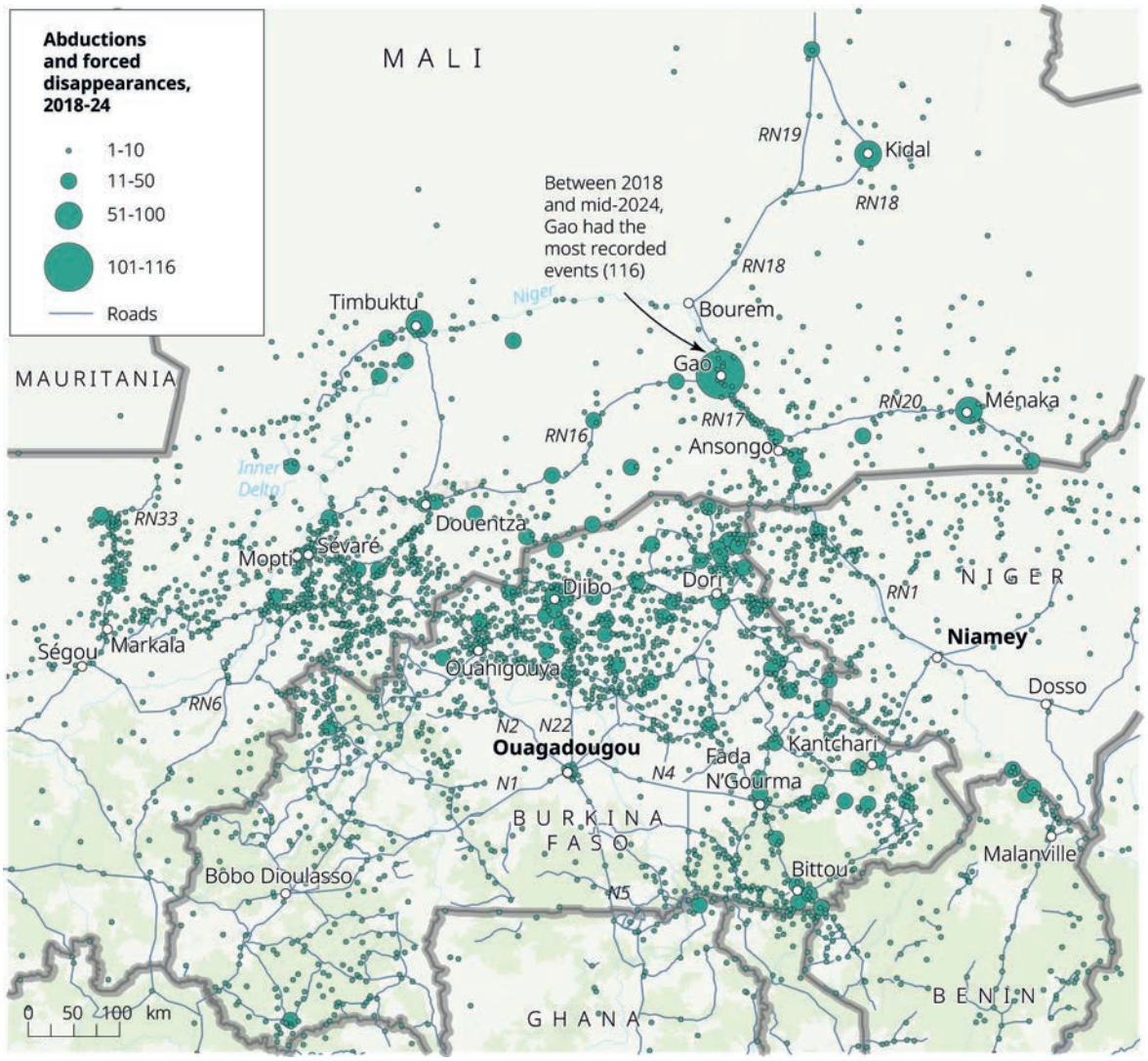
Department of Cameroon, northwest of Maroua, near Banki. In this region, JAS militants kidnap civilians indiscriminately, including farmers on their way to the fields, school children, travellers, shepherds, or villagers collecting wood. About a third of the events involve abductions of girls and women, who can be forced to enter coerced marriages with fighters. Civilians are usually released unharmed shortly after their motorbikes, food items, phones, and animals have been looted, or ransom has been paid. A similar strategy was implemented in the extreme tip of Cameroon close to the shores of the Lake, where JAS has consolidated its hold.

In the Diffa region, west of Lake Chad, where ISWAP is allegedly the strongest, conflict data suggest that civilians are frequently abducted all along the Niger-Nigeria border. While Nigerien and Nigerian fighters take part in the attacks, cross-border raids are co-ordinated from across the Komadougou River in Nigeria (Mohammed, 2020). The patterns are very similar to the ones observed further south with JAS: pastoralists, women and children, students, customary chiefs, technicians, and travellers are abducted as they work or travel across the region and usually released shortly afterwards. Very little information is available as to where exactly the victims are taken. Since the victims appear to be mostly ordinary people and the ransom demands target their families and communities, the kidnappers might be holding the victims within the Diffa region or around Lake Chad.

Abductions and forced disappearances are the only type of violence studied in this chapter for which the Nigerian side of the border is less affected than the Cameroonian, Chadian, and Nigerien side. This discrepancy illustrates the versatile role played by international boundaries in the region and the fact that violence observed in Chad, Cameroon and Niger is a spillover from the Nigerian conflict. On the Nigeria-Cameroon border, the Mandara mountains have been used as a refuge by JAS for more than a decade (Seignobos, 2014), from which kidnappings can be conducted in the surrounding plains. No such

Map 5.10.

Kidnappings in the Central Sahel, 2018-24



Note: Only violent events for which the exact location or the nearest town are known are included.

Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

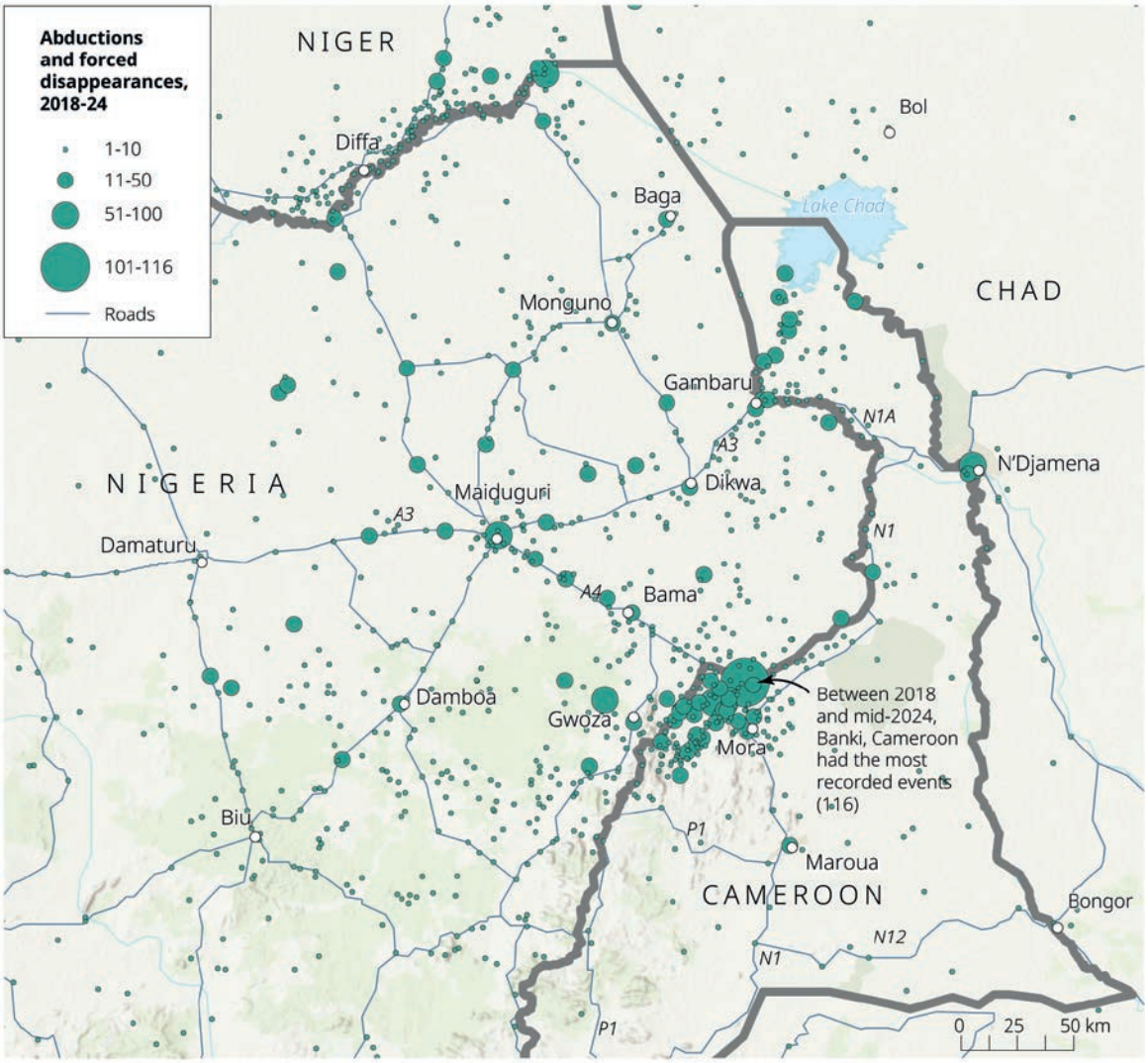
refuge can be found in the Diffa region. JAS and/or ISWAP tend to commit more kidnappings on the Nigerien side of the border even though the response to the insurgency was rather similar in Niger and Nigeria (state of emergency, forced displacements, bans on motorcycles and on the fish and pepper trade).

The success of kidnapping has inspired bandits and others to replicate the mass kidnapping tactic, contributing to overall instability in northwest Nigeria (ACLED and GITOC, 2024; Ojewale, 2024). Many high-profile kidnappings have involved attacks on fixed targets such as schools, but the ability to use both roads and offroad mobility has been key to successfully perpetrating kidnappings and then hiding the hostages. Not just roads are affected. In March 2022, a train carrying nearly 1 000 people travelling between Abuja and Kaduna was attacked and derailed by a militia at Katari, Kaduna State (ACLED event # NIG24245). Between 8 and 9 civilians were killed, 22 to 41 others were wounded and at least 68 were abducted. Abductees were released from June through October, sometimes in return for the release of the children of the assailants.

At other times, kidnappings have targeted road travellers directly, a major trend in Mali

Map 5.11.

Kidnappings in the Lake Chad region, 2018-24



Note: Only violent events for which the exact location or the nearest town are known are included.

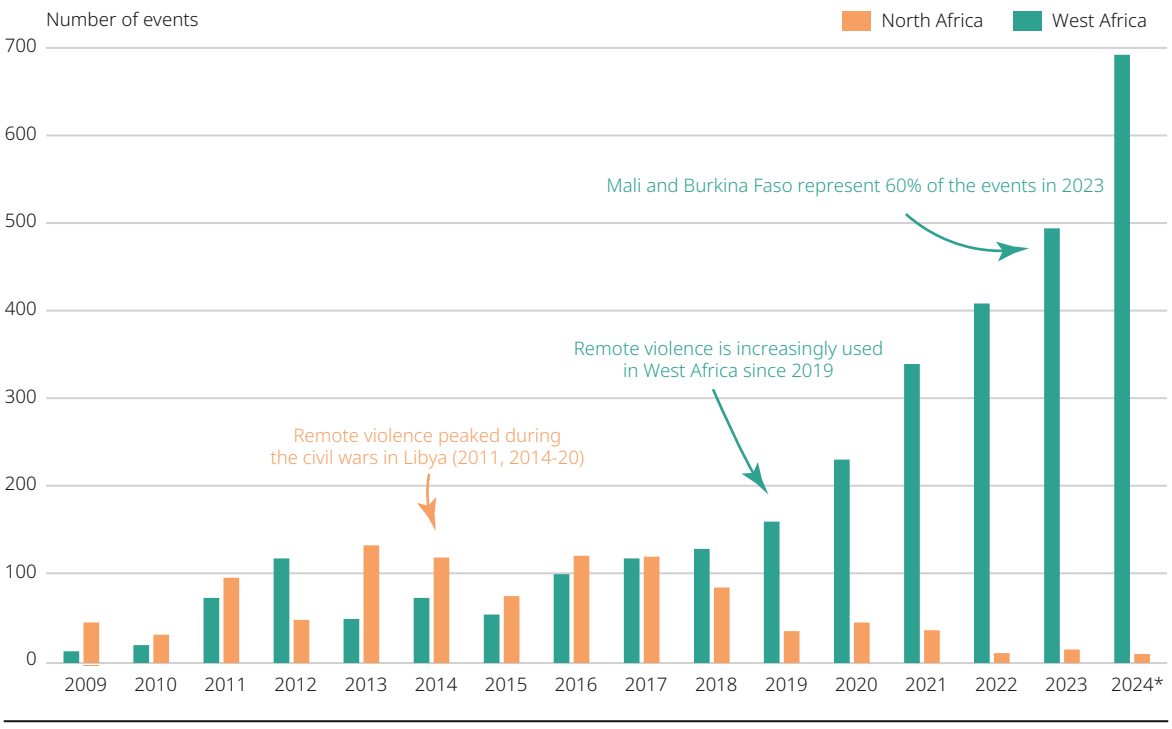
Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

and Burkina Faso. In April 2024, presumed JNIM fighters kidnapped an estimated 110 civilians travelling on two Bamako-bound passenger buses on RN15 between Bankass and Bandiagara. The Jihadists blocked a bridge, forced passengers to descend, separated men and women, and then reloaded the buses and forced the drivers to take the group to a wooded area. Some hostages, hailing from communities that had signed accords with JNIM, were released (Maillard, 2024). The kidnapping, one of many in the zone, evoked substantial protests from locals, demanding that authorities do more to secure RN15 and to free the hostages. Notably, protesters temporarily closed the road in an act of "civil disobedience" (Sahelien, 2024), highlighting how road closures were a tool for multiple conflict parties.

Another example of how a road-based kidnapping can have serious political effects was the March 2020 Jihadist abduction of Soumaïla Cissé, at the time Mali's most prominent opposition politician, while he was campaigning in the Timbuktu region in the lead-up to legislative elections. Cissé's release was eventually negotiated, along with several long-held European hostages, in October 2020, in what became the most high-profile prisoner exchange in Mali's

Figure 5.9.

Remote explosive, landmines and improvised explosive devices by region, 2009-24



Note: *2024 data are estimates based on a doubling of events recorded through June 30.

Source: Authors based on ACLED (2024). Data is publicly available.

history. Cissé's kidnapping was also a vivid illustration that no one was safe on the road in Mali's conflict zones, and that normal electoral politics was being severely disrupted by violence.

Remote explosive, landmines and improvised explosive devices

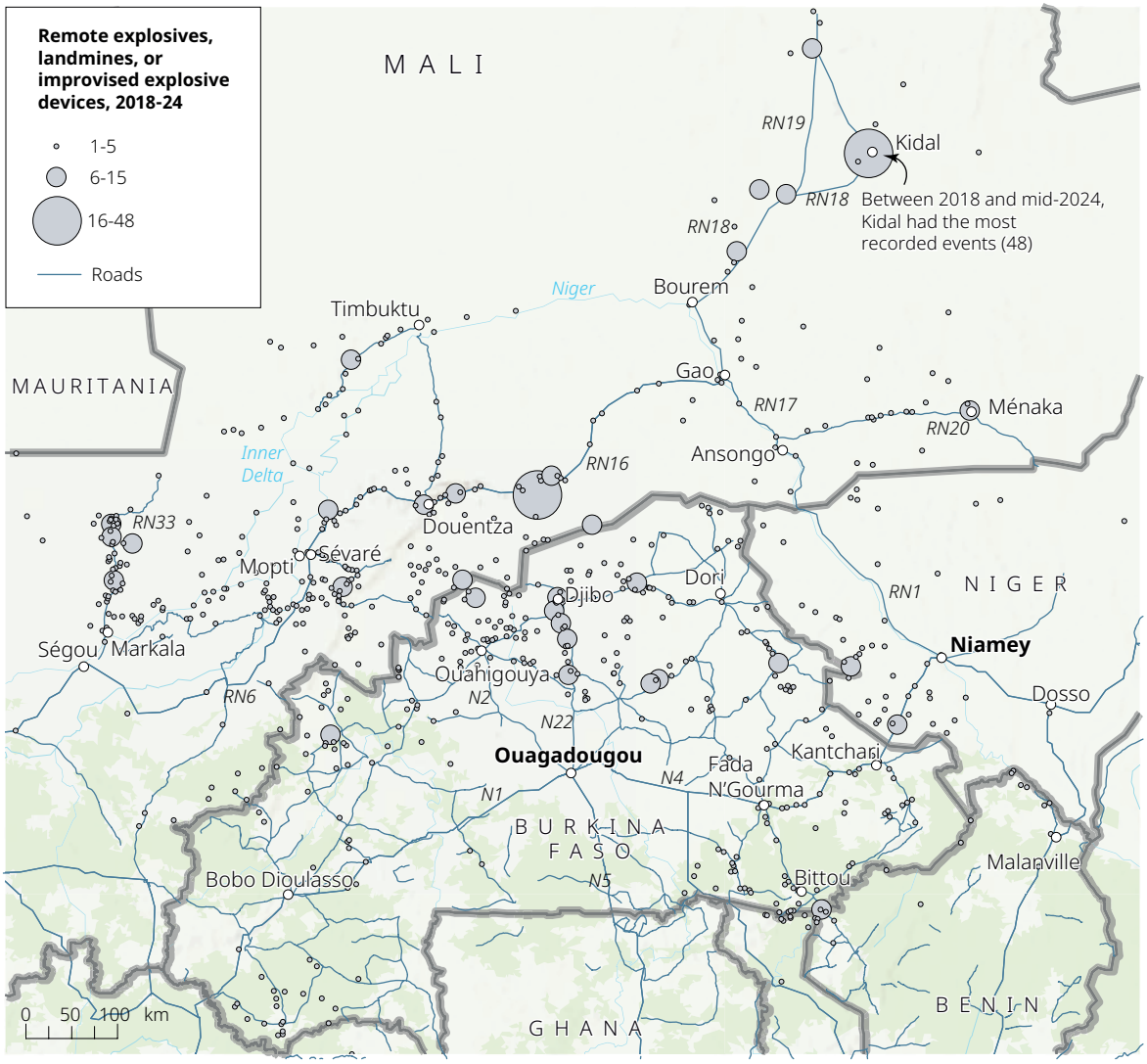
Remote explosive, landmines and IEDs can cause considerable disruption on government forces by killing soldiers, destroying equipment, and creating a pervasive sense of insecurity that hinders the morale of security forces. In addition, IEDs can severely affect the provision of health and education services, and disrupt economic activities, by discouraging agricultural producers from exploiting their fields, and killing traders going to markets.

The use of these types of violent devices has increased during the civil wars in Libya (2011, 2014-20) and since the end of the 2010s in West Africa (Figure 5.9). More than 100 such events have been recorded every year in Mali since 2021 and in Burkina Faso since 2022. In September 2022, for example, a military-escorted convoy hit an IED likely planted by JNIM militants in the village of Mentao off N22 in Burkina Faso, killing 35 civilians (ACLED event #BFO7972). Explosive devices are also widely used in northern Nigeria, east and west of Niger and in western Cameroon.

Because remote explosives, landmines and IEDs must be placed close to vehicles and travellers, a strong correspondence is observed between the locations of the incidents and the structure of the road network. In the Central Sahel, the attacks follow the layout of the main and secondary roads (Map 5.12). While a few locations, such as Kidal, Boni, and Djibo are repeatedly hit, the general pattern of violence is made of hundreds of isolated incidents spread across the region. The RN16 between Douentza and Hombori (147 km) was attacked on 11 separate locations between January 2018 and

Map 5.12.

Remote explosive, landmines and improvised explosive devices in the Central Sahel, 2018-24



Note: Only violent events for which the exact location or the nearest town are known are included.

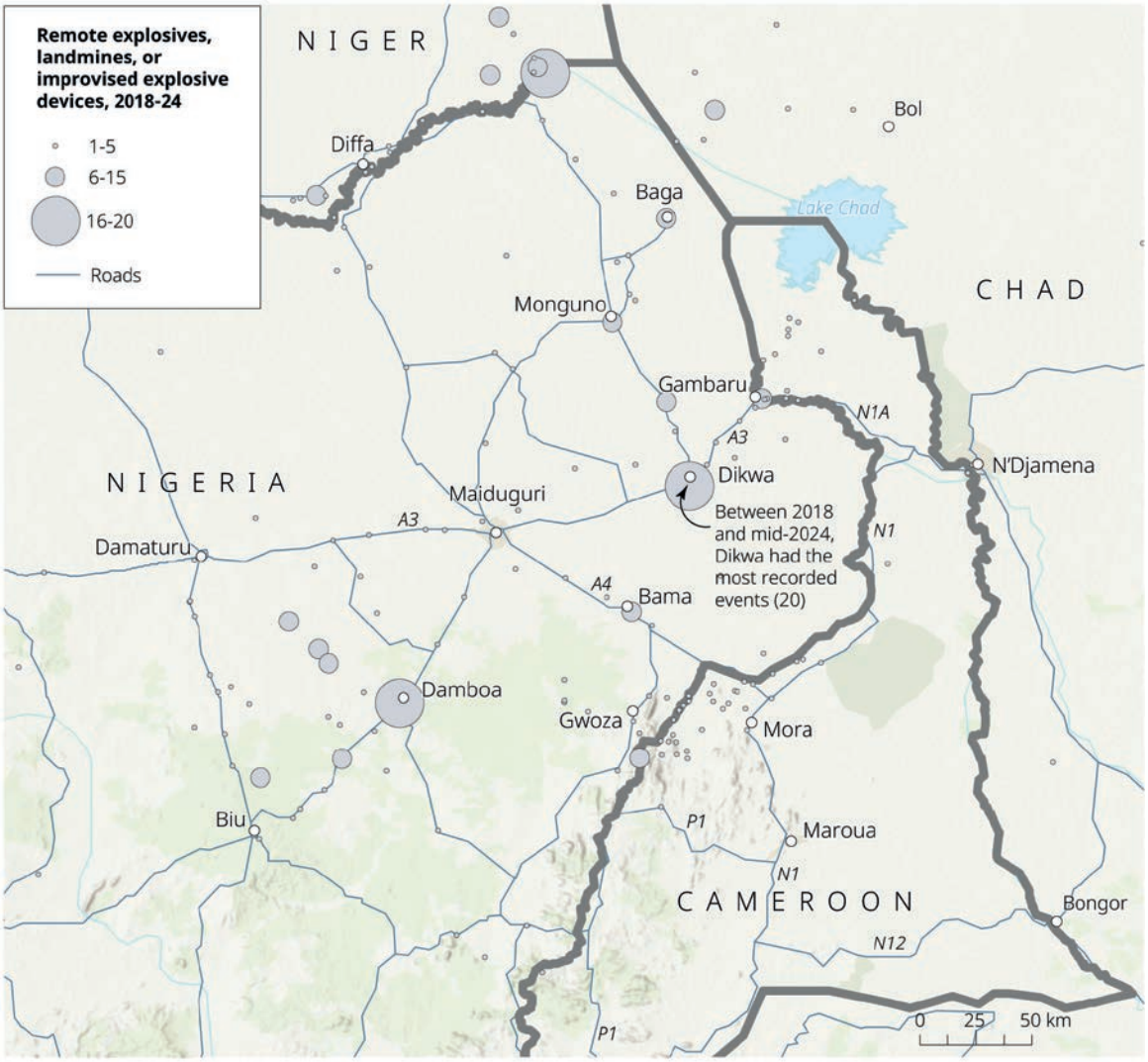
Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

June 2024, while the RN20 between Ansongo and Menaka (220 km) was attacked on 9 separate locations.

Landmines planted alongside roads have remained a significant problem in the Lake Chad region, particularly across the Nigerian state of Borno (Map 5.13). In May 2024, eleven members of the state-backed Civilian Joint Task Force vigilante group were killed on the Dikwa-Gamboru highway, while five civilians died after their vehicle drove over a landmine planted by ISWAP militants on the Maiduguri-Monguno road near Gajiram. Although the security forces claimed that the IED and landmine attacks were a result of ISWAP taking casualties and growing weaker and more desperate, civilians recounted that the mines were stoking fear and undermining commerce and commuting in the state. Security source gave insight into the interaction between bad roads and the challenge of landmines: "Due to the poor state of road infrastructure, it takes a long time to patrol and scan for mines, instead of a few hours. These criminals take advantage of the cratered loose sands to easily plant mines at night" (Haruna, 2024). Even on their own, then, IEDs and landmines on roads can cause death, destruction, fear, and expense.

Map 5.13.

Remote explosive, landmines and improvised explosive devices in the Lake Chad region, 2018-24



Note: Only violent events for which the exact location or the nearest town are known are included.

Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

Blockades

Insurgents in the Sahel, particularly JNIM, have blockaded both large and small towns. Targets of such blockades include Farabougou and Timbuktu in Mali, and Djibo in Burkina Faso. Blockades fit into a larger pattern of economic warfare by JNIM that aims at disrupting state forces and controlling civilian populations. In addition to causing tremendous hardship for civilian populations, blockades "fragilizes relations between the population and authorities due to the latter's inability to provide basic services with the potential of sparking civil unrest" (Nsaibia, 2023). JNIM's blockades have sometimes lasted for months, although JNIM will temporarily or permanently abandon a blockade if it meets substantial resistance or if it achieves the goal of rendering the population more compliant.

Djibo offers an instructive case study of a long-running blockade. For several months in 2020 and then again beginning in early 2022, JNIM and its allies in Ansaroul Islam worked to isolate the administrative capital of Burkina Faso's Soum Province. The blockades came amid regular attacks in Soum, which produced mass insecurity and displacement, swelling Djibo's

population from an estimated 60,000 people in 2019 to 350 000 by the time the 2022 siege began (Faivre, 2022). The siege of Djibo was accompanied by blockades and economic warfare against numerous other towns in Burkina Faso such as Arbinda, located 89 kilometres east of Djibo (Amnesty International, 2023). These events contributed to make Djibo the most violent location in Burkina Faso, with 149 violent events and 563 fatalities observed from January 2017 to June 2024, against 64 events and 293 fatalities in Arbinda.

Two major roads intersect in Djibo. The first is the N22, which runs west from Djibo and then turns north and into Mali, and proceeds south from Djibo, connecting the town to Ouagadougou, some 200 kilometres away. The 14th Inter-Arms Regiment, created in 2020 to respond to the degradation of the security situation in Soum Province, is headquartered a short distance west of town, along the N22. The second major road is the R6, which runs east from Djibo to Dori, another major northern town and the administrative capital of the Sahel region of which Soum is a part (Map 5.14). JNIM and Ansaroul Islam proved particularly effective at controlling the N22 between Djibo and Bourzanga, some 53 kilometres south.

The blockades were enforced through a combination of measures. The insurgents killed both prominent people and ordinary people who travelled by road, including Djibo's grand imam, kidnapped while returning from Ouagadougou to Djibo in August 2020 and then found dead several days later (Jeune Afrique, 2020). To cut the city from its hinterland, they also destroyed bridges, stopped and threatened drivers, and ambushed convoys that could have provided military and food supplies or allowed civilians to escape (Laplace, 2022). By late 2022, the roads became so dangerous that Djibo could only be resupplied by air, suggesting that even significant towns may be left quite vulnerable to blockades.

The blockades of Djibo have had profound political effects in Burkina Faso, especially on two occasions. First, in mid-2020, the government of then-President Roch Kaboré reportedly brokered a secret deal with Jihadists that involved a release of prisoners, freer movement for Jihadists into Djibo, a lifting of the blockade, and peaceful conduct of the presidential elections in November 2020 (Mednick, 2021). The combination of Jihadist pressure on Djibo and the political imperative for Kaboré of holding elections thus resulted in negotiations and substantial concessions to Jihadists. The breakthrough proved temporary, however: in January 2022, once election season passed, Kaboré was overthrown in a military coup and the idea of negotiating with the Jihadists disappeared.

Second, in September 2022, a massive 207-vehicle convoy carrying supplies for Djibo, and escorted by the military, was attacked by JNIM at Gaskindé, approximately 26 kilometres south of Djibo along the N22 road (van der Weide, 2022). The massive ambush, according to one eyewitness, lasted several hours, involving both motorbikes and trucks with mounted machine guns. A drone strike helped to staunch the losses, but the military lost 27 soldiers amid varying reports of how many civilian deaths occurred. The attack was not only a devastating loss for the military and a blow to the hopes of desperate civilians in Djibo, but also became a trigger for the second military coup of 2022, which occurred just days after the Gaskindé attack as frustrated soldiers lashed out at their superiors (TV5 Monde, 2022).

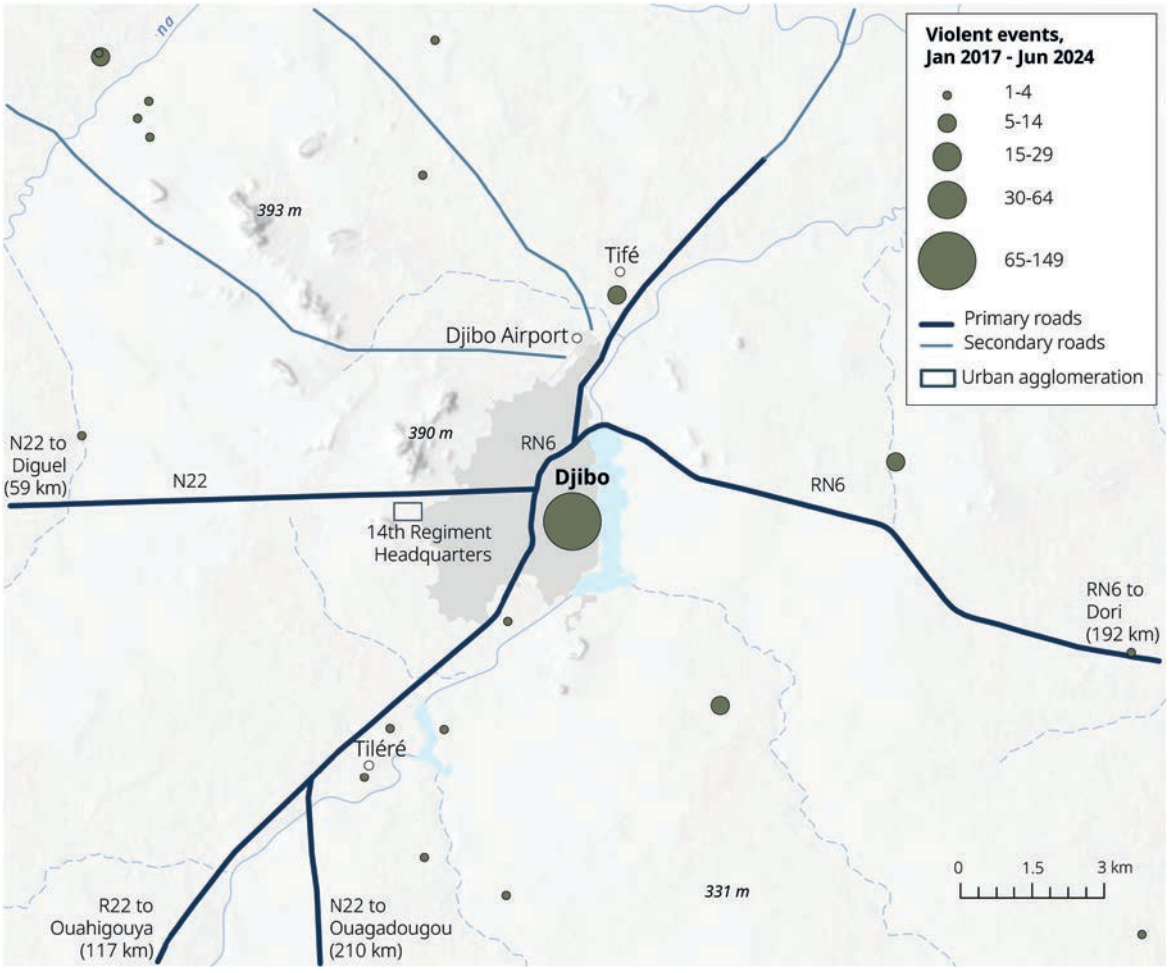
Destroying road infrastructure and bridges

Although mobility is essential to insurgents as to state forces, Jihadists sometimes strategically destroy infrastructure to disrupt state forces' mobility, punish populations, or enhance their own advantages in terms of off-road mobility. Destroying transport infrastructure contributes to the increasing isolation of some cities, which find themselves cut off from the rest of the country. This strategy has major implications for the spatial distribution of violence since people living in small towns and rural areas are significantly more likely to experience violence than those living in major urban centres (OECD/SWAC, 2023).

Recent studies also suggest that violence is strongly associated with the number of connections a city has to other urban agglomerations and how much time it takes to travel

Map 5.14.

Roads and violent events around Djibo in northern Burkina Faso, 2017-24



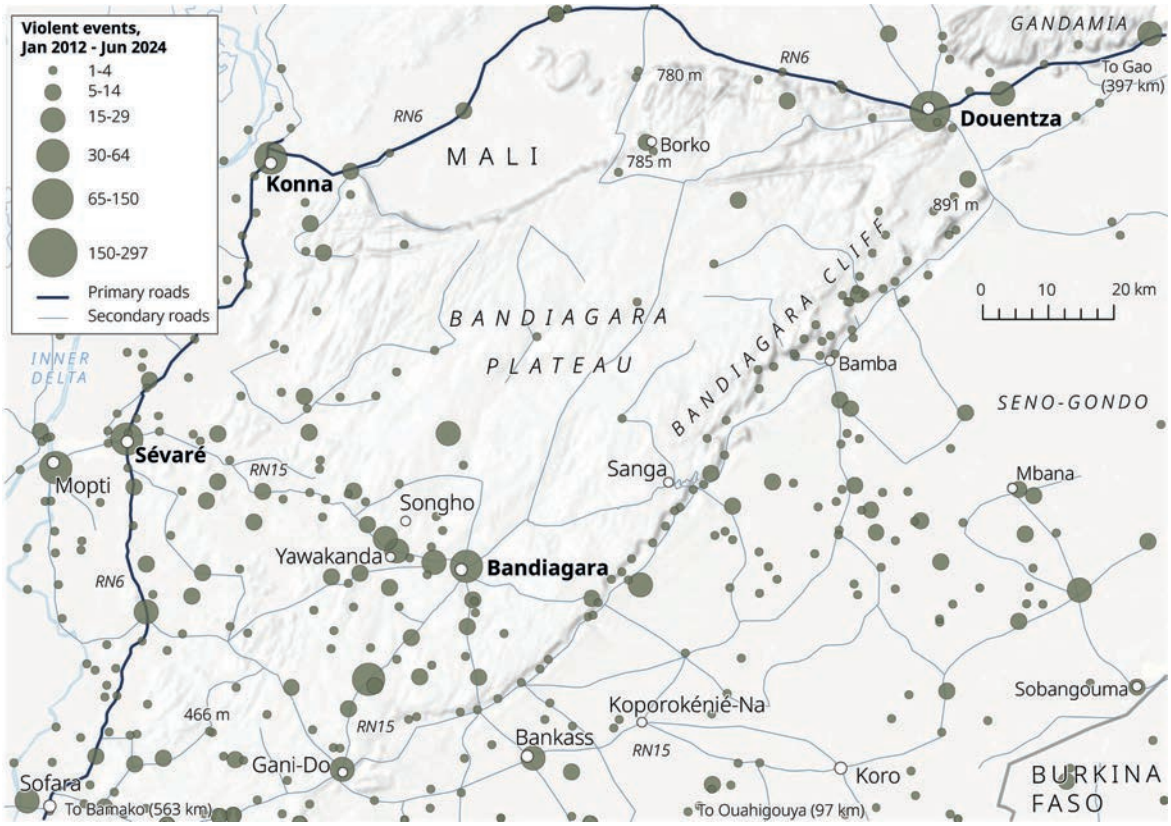
Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

between them. In Africa, people living in cities with limited connections and fewer accessible routes to other cities experience violence at a rate four to five times higher than those in more central, well-connected cities (Prieto-Curiel and Menezes, 2024). This trend has intensified in recent years, indicating that violence against civilians is becoming increasingly prevalent in isolated regions. By specifically targeting transport infrastructure, violent extremist organisations strategically exploit urban isolation to their advantage: remote areas provide these groups with easier protection and a population that can be more readily dominated. Additionally, poor accessibility means that state authorities have limited resources and capacity to control these regions effectively or intervene quickly when an attack is occurring (Prieto-Curiel and Menezes, 2024).

Destroying bridges seems to be the surest way to bring local traffic to a halt, especially in mountainous or hilly regions where off-road mobility is difficult. This is the strategy used by Jihadist groups in the Dogon Country east of Mopti, where a rocky plateau and a spectacular cliff limit the number of alternative roads that can be used by security forces and civilians between the Inner Delta of the River Niger in the west and the Séno-Gondo, a sandy plain that extends towards Burkina Faso in the east. This region has been one of the most violent theatres of the Sahelian conflict, with violence concentrating along the RN15 linking Sévaré with Bandiagara and Bankass (Map 5.15).

Map 5.15.

Violent events in the Dogon Country, Central Mali, 2012-24



Source: Authors based on ACLED (2024) data available through 30 June 2024. Data is publicly available.

Jihadists destroyed a bridge at Songho in March 2020 (Malijet, 2020) and another bridge at Yawakanda in August 2021 on the RN15, a few kilometres from Bandiagara. The latter act of destruction occurred just two days after the anti-Jihadist, Dogon hunter association Dan Na Ambassagou had met with local communities. Those communities had concluded survival pacts with Jihadists, and Dan Na Ambassagou was apparently lobbying villagers to dissolve the pacts. The destruction of the bridge thus came as apparent revenge, and a way of isolating and punishing the villagers of Yawakanda for interacting with Dan Na Ambassagou. Villagers rebuilt part of the bridge, but heavy trucks still had difficulty passing (Studio Tamani, 2022). The bridges at Songho and Yawakanda were not fully rebuilt until 2022, with the assistance of the United Nations (MINUSMA, 2022).

The development of religious extremism is not the only cause of violence in Central Mali. In the Séno-Gondo plain, east of the Bandiagara Cliff, violence is also fuelled by ethnic rivalries between Dogon and Fulani. In 2019, Dan Na Ambassagou killed 160 Fulani in the villages of Ogossagou and Welingara, south of Bankass, in what remains one of the worst massacres of the last 20 years in Mali. The expansion of the Fulani in the 19th century led Dogon farmers to withdraw from their villages on the plain and adopt defensive settlements in the Bandiagara Cliff. In the 20th century, the descendants of these farmers have moved eastwards towards the Séno-Gondo plain and have given rise to an agricultural front that they regard as their original lands. New crops have replaced the pastures of the Fulani, whose way of life is now threatened by a lack of investment in the pastoral sector and recurring droughts. This explosive context encourages ethnic militias such as Dan Na Ambassagou to capitalize on the fear of religious extremism to promote their local objectives.

SECURING ROADS TO FOSTER MOBILITY AND REGIONAL COHESION

The relationship between transport infrastructure and violence is very clear in North and West Africa. The road infrastructure, especially, attracts a disproportionate share of violent events and violence tends to decrease sharply as one moves away from transport corridors. This relationship remains largely invariant across the main types of roads and violent events observed in the region over the last 24 years. Violence clusters near roads both in the region in aggregate and among the 21 countries considered in this study.

Transport-related violence takes various forms in the areas most affected by conflicts. In both the Central Sahel and the Lake Chad basin, IEDs have the closest relationship with the road network, due to the nature of the remote explosives used in the attacks. A close correspondence is also observed between ambushes against convoys and the proximity to roads in rural areas, due to the opportunity of attacking mobile forces where they are the most vulnerable. Kidnappings have the most complex relationship with mobility, since they occur both along transport corridors and in rural areas where Jihadist groups have implemented a predatory economy.

The study suggests that the patterns of violence observed in North and West Africa can be explained by the duality of the transport infrastructure: roads are both a target and a facilitator of violence (see Chapter 2). This is particularly visible in the Sahara and Sahel, where remote violence, and violence against civilians tend to aggregate near roads because this is where insurgents can most easily attack military forces and civilians. Violence also tends to be associated with roads because transport corridors constitute the preferred way to project military power from fixed military bases and securitised cities. For these reasons, transport infrastructure is at the very heart of the struggle between state and non-state actors to control mobility. These results are consistent with earlier studies that suggested that the only feasible way to wage war in a sparsely populated region like the Sahara and Sahel is by controlling the population rather than holding territory (OECD/SWAC, 2014).

Jihadist groups are well on the way to achieving this objective in Central Mali, western Niger, and much of Burkina Faso. By multiplying the number of attacks along and near roads, JNIM, ISSP, JAS and ISWAP have considerably reduced the ability of government forces to respond to the security needs of the local populations in a timely manner. By making movement increasingly dangerous, they have also forced the Sahelian armies to travel in heavily armoured convoys between fortified camps. This evolution has left vast swathes of the countryside in the hands of Jihadist groups, who can then control rural populations without being present everywhere at once. This strategy explains why jihadism does not spread from the Sahel towards the Gulf of Guinea through a unified "front" but through the gradual isolation of rural areas. This process, observed in multiple regions simultaneously, is highly dependent on local factors that are ruthlessly exploited by Jihadists (Chapter 4).

The impressive concentration of violence observed near transport infrastructure in West Africa does not just reflect the current intensification and expansion of armed conflicts in the region. It is also shaped by the architecture of the road network itself. As noted in Chapter 2, the West African road network is far less dense, less extensive, and less well maintained that the one in North Africa. Poor accessibility has major consequences on the geography of violence: most attacks take place near roads because government forces and civilians have simply no alternative but to use the few transport corridors available to them. The sparsity of roads also means that cities that depend on a single transport corridor can easily be cut off from the national network by imposing a blockade or destroying a bridge, as in Djibo and Bandiagara.

Ultimately, the unprecedented levels of violence recorded near roads in West Africa are a manifestation of a deeper, structural problem that can only be addressed by developing or rehabilitating a much more cohesive transport network at the regional level. Such network would allow security forces to reach many places

simultaneously instead of constraining their movement to just a few corridors along which they are particularly vulnerable. An extensive transport network would also make it much harder for numerically small armed groups to assert power on rural populations by controlling their mobility. It would contribute to reinforce national cohesion and regional integration.

Integrate spatial data into policies

This study concludes a cycle of three OECD/SWAC flagship reports dedicated to better understanding the geography of armed conflict in North and West Africa. The analysis of 70 000 events having caused the death of more than 233 000 people over the last 24 years strongly suggest that the spatial evolution of armed conflicts is shaped by three fundamental elements: cities, roads, and borders. These elements are more than just points, lines, and areas on a map. They are inextricably linked: cities are the source or origin of human and physical networks tied together by roads within a particular region or country symbolised by its borders. Taken together, they shape the spatial dynamics observed in North and West Africa. Cites attract violence in specific locations because they represent a symbol of state authority and a military target that armed groups must conquer if they wish to overthrow the central government. Capital cities, in particular, play a strategic role in civil wars due to their large concentration of troops, institutions, formal enterprises, media, and other key infrastructure. As discussed in this report, roads also tend to attract violence because they organise flows of soldiers, weapons and refugees across countries. Finally, borders tend to be more violent than other regions because they provide the territorial framework upon which state power derives its legitimacy to wage war.

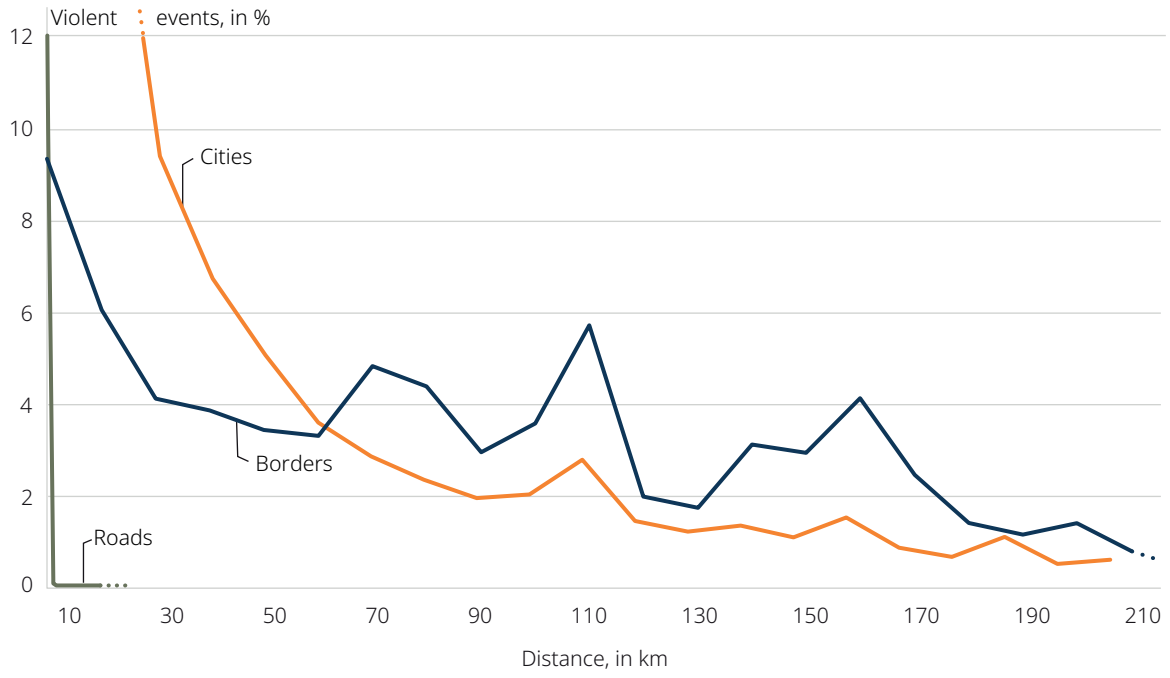
The fact that violence tends to strongly be associated with cities, roads, and borders (Figure 5.10) suggests that the geography of armed conflicts in North and West Africa is far from random. On the contrary, there are regularities in the way violence is spatially and temporally distributed across countries and subnational regions (Walther, Radil and Russell, 2024). Future studies should build on these regularities to develop a more comprehensive understanding of the trajectory of armed conflicts. The work conducted by OECD/SWAC on the geography of armed conflict in North and West Africa shows that by taking into account a few key geographical elements, it is possible to make sense of a very large number of often contradictory events.

In the same vein, the relationships observed between violence and cities, borders and roads can be used to anticipate the future evolution of the conflicts currently ravaging the region. Indeed, it is more than likely that regions close to towns, borders and roads will be the first to be affected by the expansion of the Sahelian conflict towards the Gulf of Guinea. This also suggests that these areas are essential ones that should receive attention from policymakers and other stakeholders interested in building a durable peace in the region.

The commonalities observed in North and West Africa should be central in moving toward more nuanced understandings of the ever-evolving geographies of conflict among policy makers. In a region confronted by rapidly evolving conflicts, mapping where violence emerges, spreads and eventually dissipates should help design space-based policies that are mindful of the local factors that encourage people to turn to political violence. If conflicts tend to be shaped by their proximity to cities, borders, and roads, then policy responses should be similarly tailored to the context in which violence develops. As noted in the predecessor reports to this one, the region's violence is both a consequence of uneven state-building projects that have left many places behind, and a barrier to additional developmental work aimed at building a peaceful, prosperous future (OECD/SWAC, 2022; 2023). Understanding the local factors that explain how violence has emerged in specific places is a necessary first step in ending the cycles of violence that now characterise the region.

Figure 5.10.

How violence decays with distance from cities, roads and borders in North and West Africa



Source: Authors and OECD/SWAC (2022; 2023).

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West African Studies

Roads and Conflicts in North and West Africa

This report explores the relationship between transport systems and conflict dynamics in North and West Africa over 24 years. Roads, railways, and ports are essential for economic development and the movement of goods and people, forming one of the cornerstones of regional integration. Because of this role, they are also frequent targets of attack and conflict. Since the late 2000s, transport-related violence has surged in West Africa, driven by jihadist insurgencies and rebellions. A similar trend has been observed in North Africa following the First Libyan Civil War in 2011.

The report highlights the dual dynamic of infrastructure as both a lifeline and a strategic target for attack. While on average 70% of violent incidents and 65% of victims occur within one kilometre of a road, there are major spatial disparities in North and West Africa. Ambushes, kidnappings, remote violence, blockades and destruction of transport infrastructure are intense in the Central Sahel, the Lake Chad basin and, more recently, western Cameroon. As transport systems are deeply tied to social, economic and political stability, addressing these challenges requires a more integrated, multiscale understanding and approach. Strengthening transport networks is vital for territorial development and national and regional cohesion given the increasingly complex dynamics of insecurity and the risk of territorial and institutional fragmentation.

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