

## Urban-rural geographies of political violence in North and West Africa

Steven M. Radil<sup>1\*</sup>  
Olivier Walther<sup>2</sup>  
Nicholas Dorward<sup>3</sup>  
Matthew Pflaum<sup>2</sup>

<sup>1</sup> Department of Economics and Geosciences, U.S. Air Force Academy

<sup>2</sup> Department of Geography, University of Florida

<sup>3</sup> School of Geographical Sciences, University of Bristol

\*Corresponding author: [steven.radil@afacademy.af.edu](mailto:steven.radil@afacademy.af.edu)

**Abstract:** This paper assesses the relationship between population density and political violence within North and West Africa. We find that while the plurality of violence has occurred in lower density areas, violence is indeed spatially associated with urban areas, occurring most-frequently near cities and urbanized places. Using disaggregated data for 21 states across 22 years, our analysis shows that while only 31% of all violent events occurred in locations designated as urban, nearly 50% occurred within just 10 km an urban area, suggesting there may indeed be an urban dimension of violence in the region. This relationship therefore exhibits a classic distance-decay effect. The paper also suggests that North and West Africa have followed a divergent evolution. Conflicts are becoming increasingly rural in West Africa due to the emergence of Jihadist organizations, while urban violence was more common overall in the highly urbanized states in North Africa. There are also important differences in the relationship between violence and distance to urban areas across states as some states with major conflicts, such as Nigeria and Libya exhibit a clear distance decay pattern, while others, such as Mali, do not. Our findings therefore provide mixed evidence for the typical ‘urbanization of conflict’ discourse in the literature.

**Keywords:** political violence, conflict, cities, urbanization, North and West Africa

**Disclaimer:** The views expressed in this manuscript are those of the authors and do not necessarily reflect the official policy or position of the United States Air Force Academy, the Air Force, the Department of Defense, or the U.S. Government.

**Funding Acknowledgement:** This work was supported by OECD Sahel and West Africa Club under grant number AWD09867.

## Introduction

Cities have long been synonymous with warfare, insurgency, and many other forms of politically motivated violence. For instance, Graham (2011: 10) notes that many of the world's cities originated in part, "as military constructions ... [and] critical sites of militarized power and control." Because cities are often understood as 'nerve center' locations where political and economic power congregate (Waxman, 1999), they are historically fought over (Bishop and Clancey, 2012) and within (Nedal et al., 2020). In recent years, the crucial importance of cities and urban areas as sites of conflict has attracted increasing attention in the context of the global trend toward urbanization.

In Africa, especially, urbanization is accelerating, with half of the continent's population residing within an urban area in 2015, up from 15% in 1960 (OECD/SWAC, 2020a). There is also a great deal of spatial variability in urbanization, ranging from nearly 80% of the population in North African countries to 46% in West African states. Given the rapid and still ongoing urban transformations across many parts of Africa and the deepening crisis of political violence that has subsumed numerous states across North and West Africa in recent years (OECD/SWAC, 2020b, 2021), the question of the relationships across the region between urban areas and the expression of such violence is both salient and urgent.

There are notable examples of political violence carried out both by state and non-state actors that are illustrative of the potential for conflict to be highly urbanized within the region (e.g., Walther et al., 2021). In January 2017, for example, a fragile peace between the Malian military and Tuareg rebels was disrupted when a suicide bomber with Al Qaeda in the Islamic Maghreb attacked the joint French-United Nations (UN) military base in Gao, a commercial hub along the Niger river of more than 100,000 people and the once-presumptive capital city of the

breakaway Azawad region. The attack killed 77 and injured more than 100 others and remains the deadliest suicide bombing in Mali. The base, still used by UN peacekeeping forces, lies adjacent to several residential districts and remains a magnet for insurgent attacks, including several so far in 2021 (ACLED, 2022).

A different example is found in the origins of the Boko Haram insurgency in Maiduguri, Nigeria, a regional capital in the northeast of nearly 800,000. In July 2009, Nigerian security forces asked a group of men affiliated with the Boko Haram sect to comply with a law mandating that motorcyclists wear helmets. The men refused to comply and, in the confrontation that followed, Nigerian security forces opened fire, injuring 17 people. Clashes between security forces and Boko Haram members spread across northern Nigeria, culminating in the arrest and extrajudicial killing of Mohammed Yussuf, the founder of Boko Haram (Thurston, 2017). Between 27 to 30 July 2009, an estimated 800 people were killed in Maiduguri alone. The uprising marked the transformation of Boko Haram into one of the deadliest extremist organizations in Africa. As the sect became increasingly violent, it shifted its activities from the urban areas around Maiduguri to rural areas, where security forces were far less capable of disrupting their activities.

Both cases illustrate some of the potential dynamics at play between urban areas and political violence. For instance, cities are where state power and military force tends to be visibly present and where many other social, political, and economic currents co-mingle to shape daily life. The cases also point toward the potential dynamism involved as armed groups may alternatively seek to target cities on the one hand while seeking to avoid them, when possible, on the other. Yet, the scientific study of the relationship between cities and violence as well as the various consequences of this process in the region remain quite under-studied (for an

exception, see Dorward, 2022). As such, it remains unclear whether increased urbanization in North and West Africa has led to a corresponding increase in conflict in urban areas. This is the fundamental question we seek to answer in this paper.

The paper proceeds as follows. The next section examines the “urbanization of conflict” hypothesis and discusses the factors that can explain why conflicts would concentrate in urban or rural areas. Next, we present our methodological approach based on a regional analysis of spatially disaggregated conflict and population data. The empirical section analyzes how political violence varies according to distance to cities, both regionally, nationally and over time. The last section concludes with a discussion of our findings and their implications for future research.

### **Cities and conflicts in Africa**

The literature highlights the tendency of armed conflicts to concentrate around areas with distinctly urban attributes including high population densities and good infrastructure (Buhaug and Rød, 2006; Raleigh and Hegre, 2009). “The roots of revolts in most African countries lie in the cities”, argues Mkandawire (2002: 207). African cities represent significant territories as symbols of state authority and house key state institutions (Büscher, 2018; Goodfellow and Jackman, 2020). Since colonial times, they play important roles within the economies of many African states as nodes in (trans)national economic networks and sites of capital accumulation and extraction (Beall et al., 2013).

While the nature of cities may prevent the mobilization of large ethno-regional groups characteristic of rural rebellions, they are thought to be particularly susceptible to different modes of ‘social violence’ (Fox and Hoelscher, 2012). Conflicts involving ethnic intra-elite competition, or ‘urban malaise’, originate in cities and spillover into the countryside where they

can be sustained (Mkandawire, 2002). For this reason, it is argued that recent political-institutional shifts underway across the continent have led to cities becoming the new locus of violent contention (Raleigh, 2015). Rather than being in decline, conflicts have experienced a fundamental transformation in their nature, forms, and locations that are more variegated and diffuse in character. Conventional forms of rural armed conflict have shifted towards alternative modes of (often) political violence including riots, demonstrations, and ‘civic conflict’ that are distinctly urban in character. This has led many to claim that the nature and geography of violence is undergoing a shift from rural to urban areas in Africa and beyond (Kaldor and Sassen, 2020).

Furthermore, it is argued that Africa’s recent transition towards multiparty politics has redrawn the continent’s political boundaries and turned its cities into key political battlegrounds (Raleigh, 2015). The political-institution changes adopted by countries undergoing democratic transitions are thought to have fermented uniquely urban grievances, that motivate political and intercommunal forms of violence. For example, democratization, with elections that are neither free nor fair, has disenfranchised urban residents, contributing to the proliferation of urban poverty, slums, and political marginalization (Golooba-Mutebi and Sjögren, 2017; Harding, 2020). This has been compounded by a widespread failure to provide security, welfare, and employment in urban areas (Beall et al., 2013).

Within the partially democratic context, urbanization in Africa is associated with new models of political and civil society organization that allow politically motivated and highly educated urban residents to organize, harnessing ideas and resource to sustain collective action (Straus, 2012). While levels of education are robustly associated with protests (Dahlum and Wig, 2021), it is not clear what the implications of highly educated and politically dissatisfied urban

populations will mean for violence on the continent. As electoral competition takes hold, national capitals and major cities are also places where opposition parties can gain and build long term support, particularly from the urban poor (Resnick, 2014), with implications for the types of political violence produced.

The density and size of urban settlements are of primary interest here. First, it has been argued that greater social proximity associated with urban density will lead to increased violence by lowering the space-time and coordination costs constraining collective action (Sewel, 2001). Furthermore, urban density is likely to bring antagonistic social groups into closer proximity within multi-ethnic cities, increasing the probability that disputes will turn violent (Buhaug and Urdal, 2013). The frequency of violent riots in Jos, a city within Nigeria's ethnically heterogeneous Middle Belt, lends credibility to this view (Krause, 2018). The absolute size of the urban population may also lead to increased levels of violence in urban areas. Larger cities provide more recruits for collective action and, particularly in those composed primarily of disaffected youths, may represent favorable recruitment pools for social and protest movements (Urdal and Hoelscher, 2012; Menashe-Oren, 2020). Furthermore, as urban governments will face amplified challenges of scale in the provision of public goods and services, conflict inducing grievances may be allowed to take root among the population (Fox and Bell, 2016).

The concerns of rising urban violence are often framed around the issue of rapid urban population growth (Goldstone, 2010). Africa is undergoing rapid urban transition in terms of the absolute size and proportion of people living in urban areas (Fox, 2017). Today, it is one of the world's fastest urbanizing regions, and by 2050 68% of its population are projected to be urban dwellers, up from 23% in 1970 (United Nations, 2019). Within Africa, the Sahel and West Africa region is one of the most rapidly urbanizing subregions (OECD/SWAC, 2020a;

OECD/UN ECA/AfDB, 2022). Rapid population growth may contribute to the absolute number of bodies added to an urban environment and contribute to urban conflict through the mechanisms outlined above. It is also thought to generate urban conflict by amplifying social strain and competition surrounding access to scarce urban resources and labor and housing markets (Østby, 2016; Gizelis et al., 2021).

However, empirical results surrounding the relationships between cities and conflict are ambiguous (Fox and Bell, 2016; Bahgat et al., 2018). While urbanization as a spatial-demographic process and conflict are related in complex ways within urban areas, this is not a straightforward association. Indeed, an important strand of the literature argues that armed conflicts, especially civil wars and rebellions, have traditionally been associated with rural areas. Access to features including rugged terrain (Hendrix, 2011), dense forests (Raleigh, 2010), and porous borders (Radil et al., 2022) are all thought to provide rebels with safe havens making rural and remote areas favorable settings for asymmetric conflicts between non-state groups and the state. This appeals to classical models of African state capacity where states are limited in their ability to project power and authority from the urban core into distant rural peripheries (Herbst, 2000). As a result, states are limited in their ability to conduct effective counterinsurgency in rural areas, giving rebels an advantage when operating far from the state's urban bastions of coercive power. Indeed, civil wars, particularly successionist conflicts, are more likely to be located far from a nation's capital and are typically longer in duration (Buhaug et al., 2009).

Thus far, the literature continues to lack a more systematic regional analysis that could provide a baseline against which to situate individual case studies. The goal of this paper is to contribute to filling this gap, by establishing the basic facts surrounding the urbanity of violence

in North and West Africa. We answer the question of whether the patterns of violence in the region are consistent with the argument for the urbanization of violence. Specifically, we answer whether violence displays an urban character; how this has changed over time; and how the rural-urban geography of violence varies within the region? We assume that cities should not only be seen as the passive settings for violence and armed conflict but as unique social contexts that are active in the creation and transformation of conflict and are shaped by it (Büscher, 2018).

### **Case study and methodology**

This paper combines population density and conflict data to examine spatial trends in urban violence in 21 North and West African 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. This configuration aligns with previous work on the geography of violence in the region (OECD/SWAC, 2020b; Radil et al., 2022; Walther et al., 2021) that tend to see the northern and southern “shores” of the Sahara as two related battle fields for states and non-state organizations. This regional approach also captures two of the continent’s major spatial ‘clusters’ of urban agglomerations: a North African cluster that extends along the Atlantic and Mediterranean coasts and a West African cluster along the Gulf of Guinea (OECD/SWAC, 2020a).

Since 2000, population growth has surged in the region and much of that growth has been located within cities and urban agglomerations. Between 2000 and 2015, the average increase in the population living in urban contexts in these 21 countries was just over 9%, ranging from a 22% increase in Togo (28% urbanized in 2000, 50% in 2015) to just a 1% increase in Libya (80%, 81%). The number of urban agglomerations with more than 10,000 people has surged



across the region as well. In 2000, there were just over 1,800 such agglomerations; by 2015, the number had risen to nearly 3,000, representing a 63% increase (OECD/SWAC 2020a).

To study how this demographic evolution is related to political violence, we used WorldPop (2022), one of the global gridded population datasets that performs the best in spatial accuracy and estimated errors (Yin et al., 2021). WorldPop is a residential dataset that generates population density by dividing the number of people in each pixel-by-pixel surface area, in the form of global mosaic rasters that are available annually since 2000. WorldPop was selected over alternative datasets such as Africapolis or Global Human Settlement Layer (GHSL) because its data has a high resolution (30 arc-seconds, or approximately 1 km at Equator), is the most comprehensive (2000 until present) and is the most temporally current.

Africapolis has a far more precise spatial definition of cities but data for North and West African urban agglomerations is unfortunately only available for 2015, which makes longitudinal analyses impossible. GHSL data impose a threshold of 50,000 inhabitants to define urban centers, which is poorly adapted to Africa, where 92% of all urban agglomerations have fewer than 100,000 inhabitants in 2015 (OECD/SWAC, 2020a). WorldPop also proved a better choice for our efforts than LandScan, another popular dataset that calculates a 24-hour average of where people are located depending on their commuting patterns. Both datasets show similar trends regarding urbanization across North and West Africa. However, the ambient population approach adopted by LandScan has the unfortunate consequence of reducing “the number and size of cities, especially in low-income countries” (Dijkstra et al., 2021: 15), which would be detrimental to our analysis.

WorldPop is a gridded density dataset and, as such, does not identify individual cities or urban areas. In order to classify WorldPop density data in different demographic categories, we

adopted the recent Degree of Urbanization definition established by the UN Statistical Commission (United Nations, 2020). The UN definition is based on population density, with categories based on counts per square km grids, which is also the size of the pixels generated by WorldPop, thus obviating any additional geoprocessing that could introduce errors to the rasters. Under the UN definition, cells of 1,500 or more people per square km are classified as urban, those between 300 and 1,499 are semi-urban, and those below 300 are rural (Table 1). WorldPop's estimate for 2020 is mapped in Figure 1 using the UN's Degree of Urbanization criteria which indicates the spatial clusters of urban populations previously described.

<b>Population density per km<sup>2</sup></b>	<b>Category</b>
≥ 1,500	Urban
300-1,499	Semi-urban
≤ 299	Rural

Table 1. Population density and demographic categories  
Sources: Dijkstra et al. (2021) and United Nations (2020).

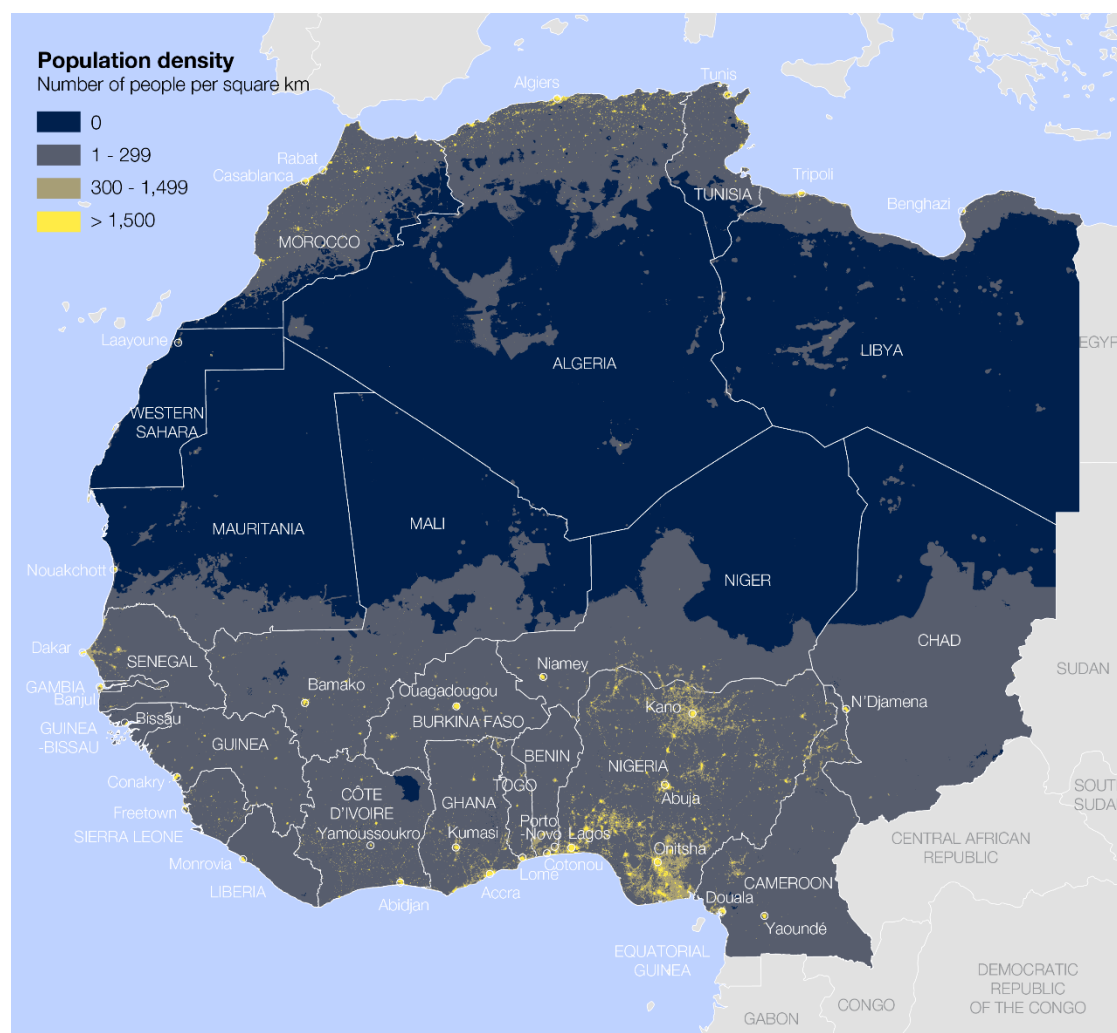


Figure 1. Population density in North and West Africa, 2020 mapped using the UN's Degree of Urbanization criteria. Populations densities of 1,500 per sq. km or greater are considered urban. Source: authors based on WorldPop (2022) data.

The geography of political violence was studied using the Armed Conflict Location & Event Data (ACLED) project, which provides disaggregated georeferenced information on violent events since 1997 (Raleigh et al., 2010). Building on previous work addressing the geography of conflict in North and West Africa (OECD/SWAC, 2020b, 2021, 2022), the analysis focuses on three event types that are representative of armed conflicts in the region: battles between armed groups and/or state forces, explosions and remote violence, and violence against unarmed civilians. Though ACLED also tracks protests and riots, these are highly

urbanized and represented a fundamentally different type of political process than does armed conflict. For that reason, we did not include protests or riots in our analysis. The resulting data involved 44,049 events and 168,144 fatalities from 1 January 2000 to 31 December 2021 (Table 2).

Table 2. Violent events and fatalities per year and event types, 2000-2021

Year	Violent events				Fatalities			
	Battles	Explosions, Remote violence	Violence against civilians	Total	Battles	Explosions, Remote violence	Violence against civilians	Total
2000	538	40	348	926	5090	54	1855	6999
2001	399	13	221	633	2087	68	1034	3189
2002	454	47	224	725	1749	153	1179	3081
2003	490	32	258	780	1905	238	1207	3350
2004	237	20	206	463	742	45	2626	3413
2005	161	19	131	311	681	57	531	1269
2006	274	68	143	485	1881	90	782	2753
2007	350	133	198	681	1517	315	225	2057
2008	342	75	156	573	980	161	318	1459
2009	261	70	154	485	1683	1308	142	3133
2010	253	64	242	559	879	109	1468	2456
2011	563	438	376	1377	2976	2663	2767	8406
2012	572	211	533	1316	2152	709	1532	4393
2013	762	264	649	1675	3602	586	2365	6553
2014	1205	489	1062	2756	8364	1924	6420	16708
2015	1134	621	790	2545	8149	3102	6210	17461
2016	1126	628	654	2408	5645	1793	2521	9959
2017	1168	697	920	2785	4333	2372	2457	9162
2018	1471	531	1792	3794	5801	1415	4726	11942
2019	1889	1015	2183	5087	7038	2180	5229	14447
2020	2614	1307	3105	7026	9200	3229	5628	18057
2021	2376	912	3371	6659	9833	2092	5972	17897
<b>Total</b>	<b>18639</b>	<b>7694</b>	<b>17716</b>	<b>44049</b>	<b>86287</b>	<b>24663</b>	<b>57194</b>	<b>168144</b>

Source: ACLED (2022).

The ACLED data show that political violence has surged in the region: more than half (56%) of violent events have occurred since 2011 and a full quarter (26%) between 2019 and 2021 alone. The geographic distribution of this violence is quite uneven, reflecting differing dynamics of violence based on a mix of rebellions, jihadist insurgencies, coups d'état, protest movements, and foreign military interventions (Walther and Miles, 2018). Because of the limited ability of some governments in the region to fully control their borders, many armed groups can and do easily move from state to state, creating pathways for violence to spread to new settings (Radil et al., 2022). This means that few states in the region have been spared and many are confronted with violence that continues to spill across international boundaries.

Just as there are spatial clusters of urban agglomerations, there are also clusters of violence (Figure 2). First is the series of overlapping conflicts in Nigeria, including the jihadist insurgency led by Boko Haram and the Islamic State in West Africa Province (ISWAP) in the Lake Chad region, violence carried out by armed groups in the Niger River Delta against the federal government and international oil companies, and communal violence between pastoral herders and farmers in the Middle Belt. Second is the anti-government violence related to the civil unrest in Algeria and Tunisia following the Arab Spring and the series of civil wars in Libya related to the overthrow of the Gaddafi regime in 2011. Third is violence in the central part of the West African Sahel, a region characterized by Tuareg rebellion and coups d'état in Mali, and the ongoing communal strife in Burkina Faso and Niger exacerbated by the actions of Islamist extremist groups.

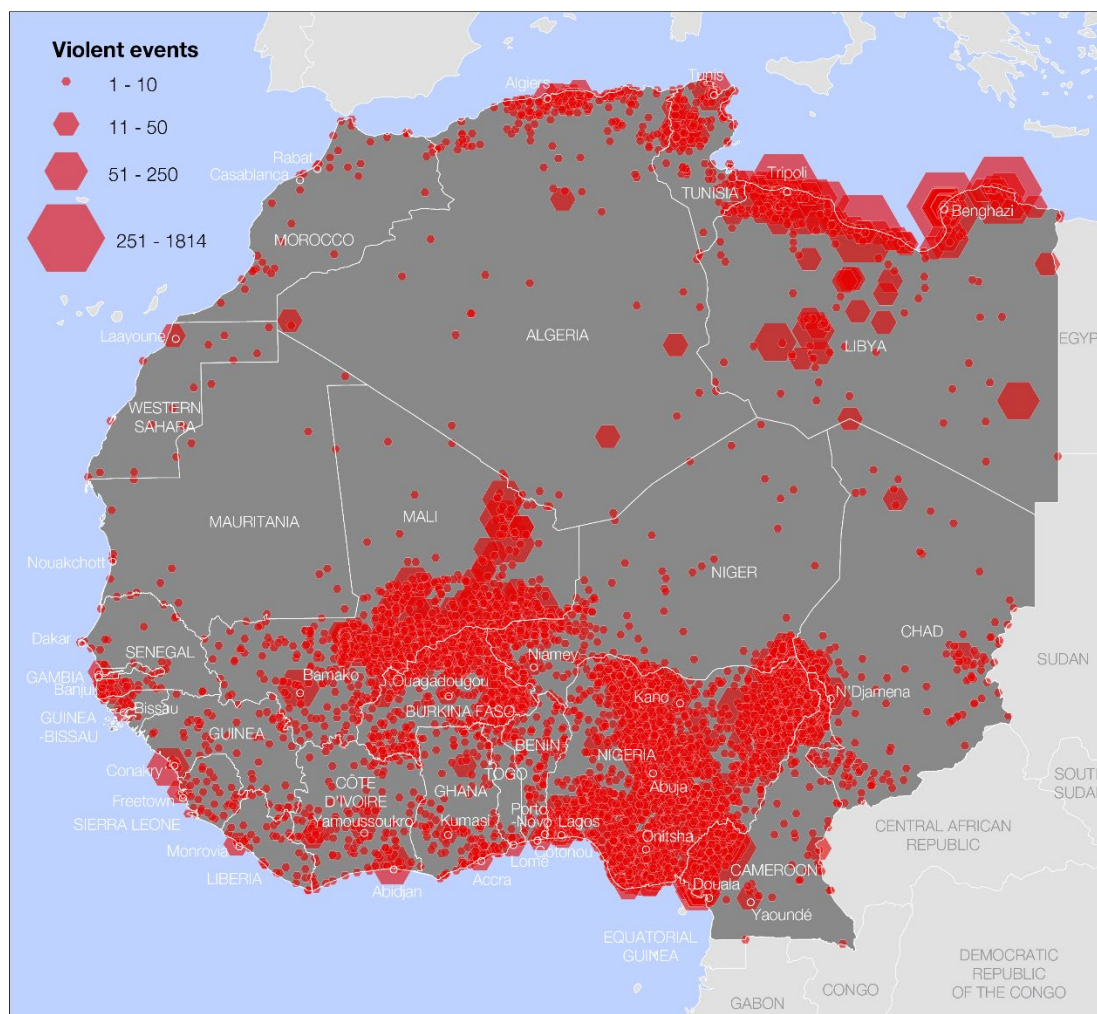


Figure 2. Violent events in North and West Africa, 2011-2021. Event clusters are found in the central Sahel, in Nigeria, and along the Mediterranean coast.

Source: authors based on ACLED (2022) data.

This current set of interrelated conflicts is at the heart of UN Secretary General António Guterres's recent comments that described a “degrading regional security environment” (United Nations, 2020b: 1). Nonetheless, the recent political violence is not new in the region, as episodes of rebellion, religiously motivated violence, coups d'état, state repression, and foreign interventions have occurred throughout history (Elischer, 2019). Neither, however, is the region especially conflict prone as armed conflicts are neither more frequent nor longer lasting than elsewhere. Further, open interstate conflict in the region is rare and civil wars are the most

frequent type of conflict, which mirrors the evolution of conflicts globally since the end of the Cold War (Carter and Straus, 2019). However, there is one characteristic of the region that is investigated here, which is the relationship between these conflicts and the region's rapid and ongoing urbanization.

This relationship was analyzed using a geographic information system to associate the locations of violence with an annual population density raster. Violence for each year was overlaid against that year's corresponding WorldPop raster to capture the population density at every event location, to classify each event as urban, semi-urban, or rural, and to calculate the distance from each violent event to the nearest urban cell. Finally, we recombined the annual event data into a larger dataset with three new variables for analysis: (1) the density of the location where a violent event occurred, expressed as the number of people per square km, (2) the classification of that event as urban, semi-urban, or rural, and (3) the proximity of violent events to urban areas expressed in km. We then undertook an exploratory spatial data analysis (e.g., Haining et al., 1998) to evaluate our research questions.

## **Analysis**

### *Violence decreases with distance from cities*

For our first research question about the overall relationship between political violence and urban areas throughout the region, we found that plurality of violence occurred in rural areas. As shown in Figure 3, 41% of all events and 42% of all fatalities occurred in areas with fewer than 300 people per square km. Urban areas, or those with at least 1,500 people per square km, contained 31% of all events and deaths while semi-urban areas that transition between rural and urban population densities, had the lowest proportions (27% of events and 26% of fatalities).

This finding stands in contrast with the expectations of the typical “urbanization of conflict” discourse in the literature.

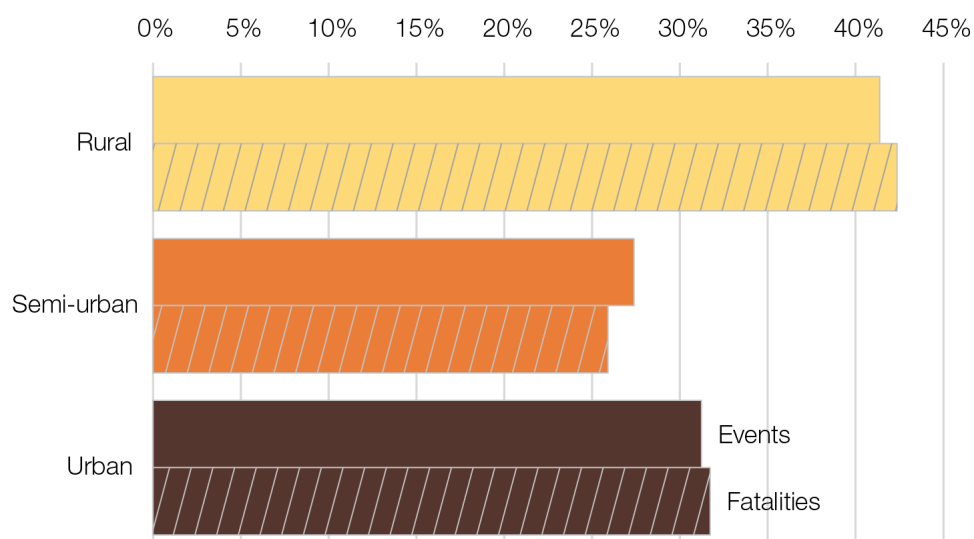


Figure 3. Violent events and fatalities by demographic categories in North and West Africa, 2000-2021.

Source: authors based on ACLED (2022) and WorldPop (2022) data.

The proportion of violence and fatalities per urbanization category shown in Figure 3 was also consistent across the main types of violence tracked by ACLED. One exception was noted with remote violence and explosions, however. While such urban areas contained 32% of these types of violence, they contained 38% of the fatalities from these events. This was the largest gap between the proportion of events and fatalities of any event type and the relatively high population density in the vicinity of these events within an urban setting is a reasonable explanation for this difference.

Beyond examining which events simply occurred within urban, semi-urban, and rural setting, we also examined the relative locational patterning of events to urban settings. Figure 4, which shows the proportion of events by distance to the nearest urban setting, indicates that while most events do not occur within urban spaces, there is a clear distance decay effect as



distance increases from urban locations. The relationship between urban areas and violence is much clearer when understood in this way: more than two thirds of all events (68%) occur within just 40 km of urban locations. As with the previous analysis, these patterns are nearly identical for percentage of fatalities and invariant across types of violence. This means that, while the majority of violence has not occurred within urban areas, the overwhelming majority has occurred relatively near to them.

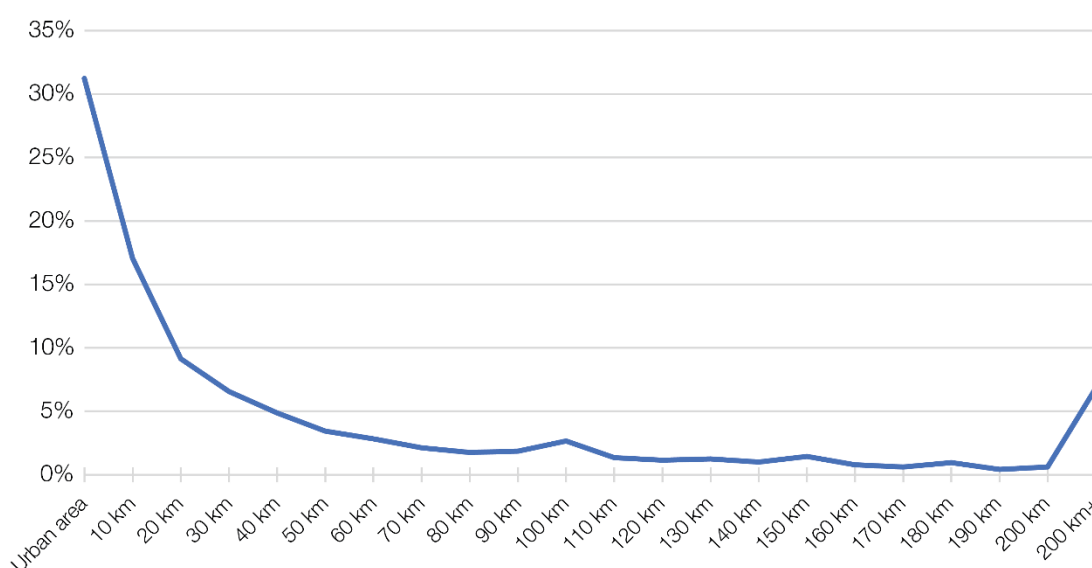


Figure 4. Violent events by distance from urban areas in North and West Africa, 2000-2021. Source: authors based on ACLED (2022) and WorldPop (2022) data.

There are several reasons why the aggregate findings in our study region offers mixed evidence in support of the urban conflict thesis. First, our study region is vast and includes several countries with high levels of conflict and relatively low levels of urbanization (Mali and Niger, for example) and countries with both high levels of urbanization and conflict, such as Nigeria and Libya. The question is not just a spatial one though, as we are studying conflict over 22 years, a relatively long duration. Across this era, conflicts have ended in some places, such as

Liberia and Sierra Leone, emerged or spilled over in others, such as Mali and Burkina Faso, and in still others been present to some degree throughout, such as Nigeria.

Given the relative vastness of the region and the long temporal range of our study, we further interrogated our initial findings in two interrelated ways. First, we disaggregated our data by year to consider if there were years with an annual pattern that diverged from the general one. Second, we disaggregated our data spatially by country to again consider how specific state contexts may yield outcomes different from the general pattern.

### *Violence is becoming increasingly rural*

Regarding annual patterns, we anticipated that the relationship of violent events to urban areas would vary significantly over time as discrete episodes of conflict have waxed and waned within the region, some of which have had clear rural elements, such as the civil wars in Liberia and Sierra Leone in the late 1990s and early 2000s. Accordingly, urbanized violence has not been constant over the 22 years of our study. Figure 5 summarizes the relationship between violent events and the UN's Degree of Urbanization categories between 2000 and 2021 for the three types of violence tracked by ACLED: battles between armed groups, remote violence and explosions, and attacks against unarmed civilians.

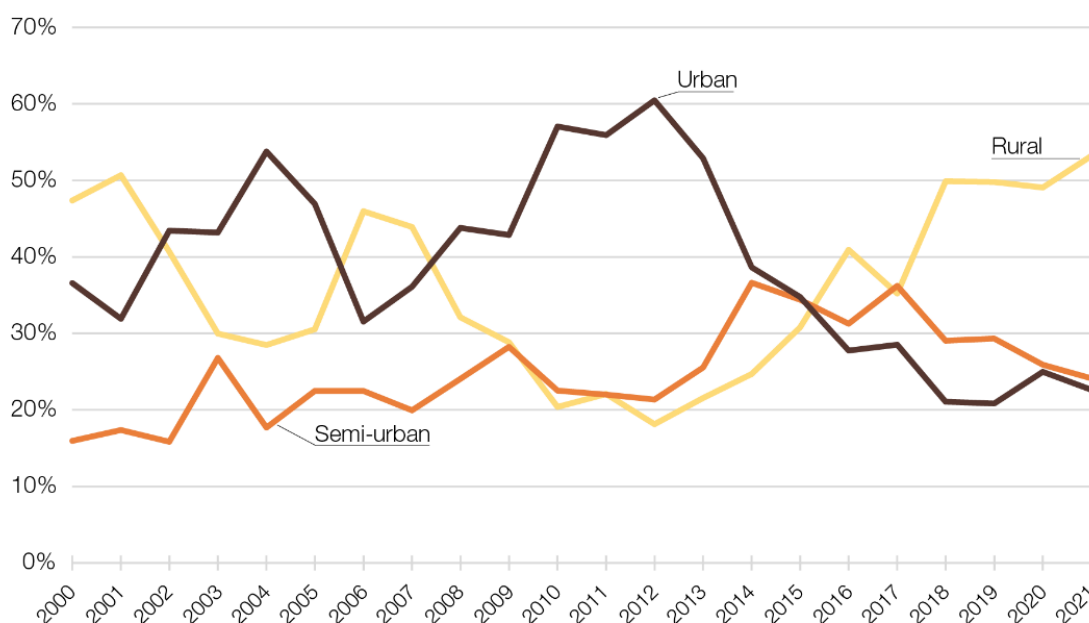


Figure 5. Violent events by demographic categories in North and West Africa, 2000-2021  
Source: authors based on ACLED (2022) and WorldPop (2022) data.

Overall, violence in the region has become far less urban and far more rural over time even as urban populations continue to grow. Urban violence displayed two peaks, one in 2004 and again in 2012. The first peak is due to the First Ivorian Coast Civil War, during which the key cities of Korhogo, Bouaké and Abidjan recorded a high number of fatalities, and to religious violence in Yelwa and Kano that killed around 1700 people in May 2004. The second peak corresponds to the beginning of the Malian Civil War in 2012, during which a coalition of secessionist rebels and Jihadist groups took control of the key cities of northern Mali in a few weeks. Yet, urban violence was the most common setting of violence in only half of the 22 years in our study. Rural settings were the second most common, with the largest share of violence in 10 years. Semi-urban was the most common only once and even then, narrowly so, in 2017. Since its peak expression in 2012 at 60% of all events, urban violence decreased sharply to its nadir of just under 21% in 2019. This pattern holds true for each type of violence and for

fatalities as well. For instance, in 2021, 53% of all events and 56% of all fatalities occurred in rural areas.

Within the region, the insight that violence overall is associated with proximity to urban settings can be conditioned by the fact that the relationship is not fully consistent over time ranging from a high of 60% to a low of 21% of all events. We limited our analysis to annual differences, but there may be reasons to consider more finer intervals, a point we return to in the conclusion. Nonetheless, this temporal variability is also connected to the shifting geography of conflict over time. For example, within Nigeria, urban violence is the predominant category in all but a single year since 2000. The proportion of violent events in rural areas is however slowly increasing since the early 2010s, which correspond to the beginning of the Boko Haram insurgency around Lake Chad. Rural violence is predominant in Mali save just three years between 2011 and 2013, the peak years of the 2012 Tuareg rebellion (Figure 6). Therefore, it seems likely that as conflict waxes or wanes in one part of the region, so too does the importance of either rural or urban spaces to the belligerents. This speaks to the need to consider not just temporal variability of this regional pattern but its spatial variability as well.

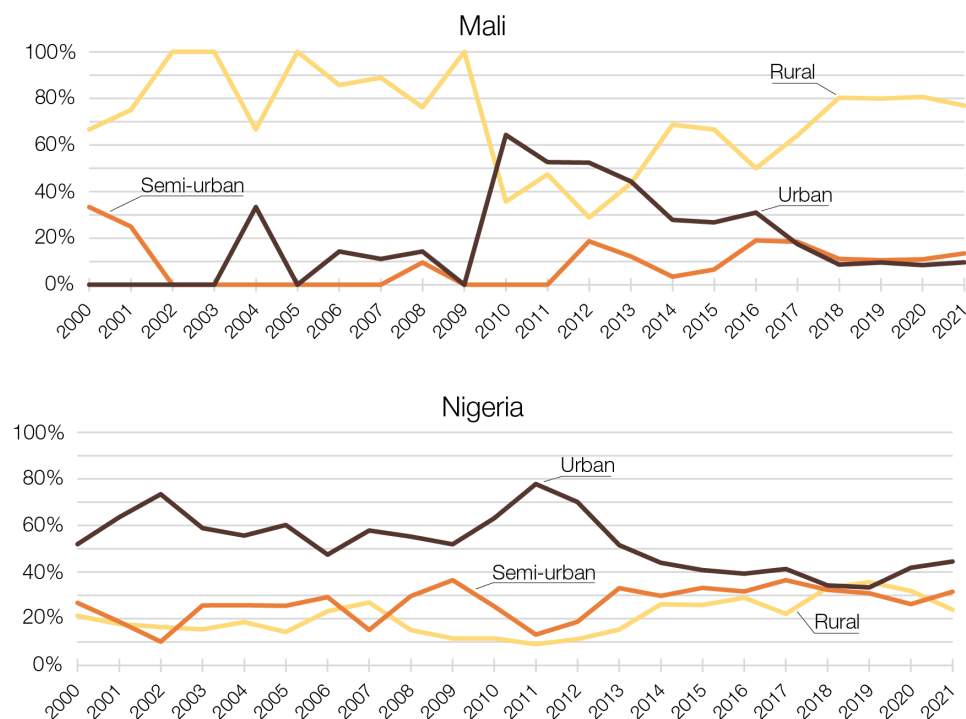


Figure 6. Violent events by demographic categories in Nigeria and Mali, 2000-2021.  
Source: authors based on ACLED (2022) and WorldPop (2022) data.

### *Urban violence varies across states and regions*

To address this final question, we first disaggregated events into two sub-regions, North Africa (comprised of Libya, Tunisia, Algeria, and Morocco) and West Africa (the remaining states) and examined the changing proportion of urban violence over time. North African states tend to have higher urbanization rates (79% in 2015) than do those in West Africa (46%) so there was reason to suspect that violence might be more urbanized in North Africa. It is indeed the case that urban violence was more common overall in North Africa during our study period (Figure 7). However, the rates closely tracked each other from 2003 to 2009 and again from 2013 through 2018. The latter era is particularly telling as major conflicts were occurring simultaneously in both regions: the Libyan Civil Wars (2011, 2014-2020) started only two years after the Boko Haram insurgency in 2009, and only one year before the Malian conflict (2012-).

Each region's conflicts were similarly urbanized with conflict actually more urbanized in West Africa between 2010 and 2012. This suggests that the notable regional differences in urbanized population cannot fully explain why conflict in both regions would be similarly urbanized.

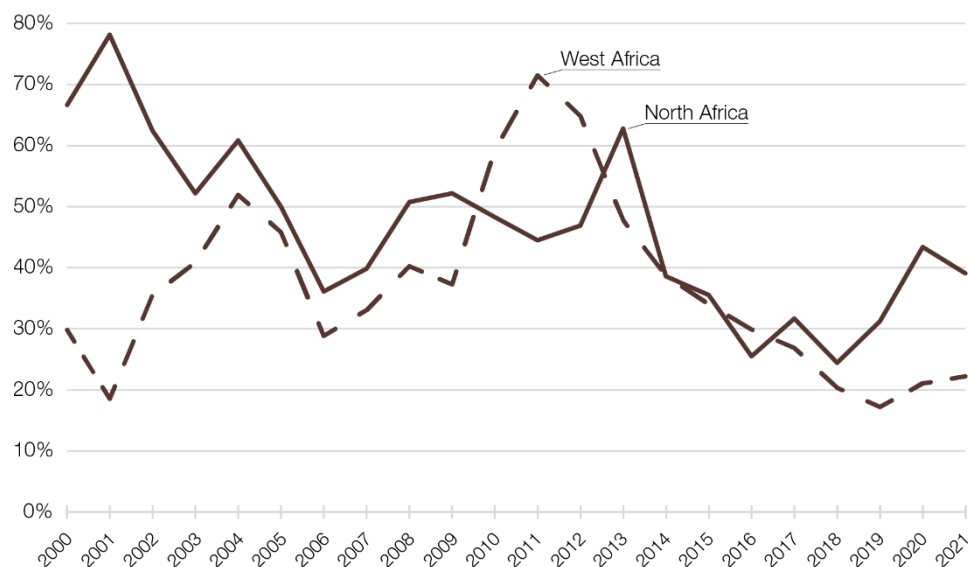


Figure 7. Violent events in urban areas per region, 2000-2021.

Source: authors based on ACLED (2022) and WorldPop (2022) data.

The second way we explored this was to further disaggregate the data to examine the distance to urban areas in each of the 21 states separately, as shown in Figure 8. Unsurprisingly, there are significant differences in the relationship between violence and distance to urban areas across both North and West African states. Several states exhibited a clear distance decay pattern including many with major conflict episodes that occurred during our study, such as Algeria, Cameroon, Libya, Nigeria, and Tunisia. The general pattern was also present though less marked in several additional states without major conflict episodes, such as Ghana and Ivory Coast. In a few other states, both with and without conflict episodes, the relationship was inconsistent with distance. Notably, the patterns for Mali, Burkina Faso, and Niger identify that the current overlapping conflicts there are largely rural in nature. When all three countries are taken

together, the highest share of events have occurred between 90 and 100 kilometers from the nearest urban area.

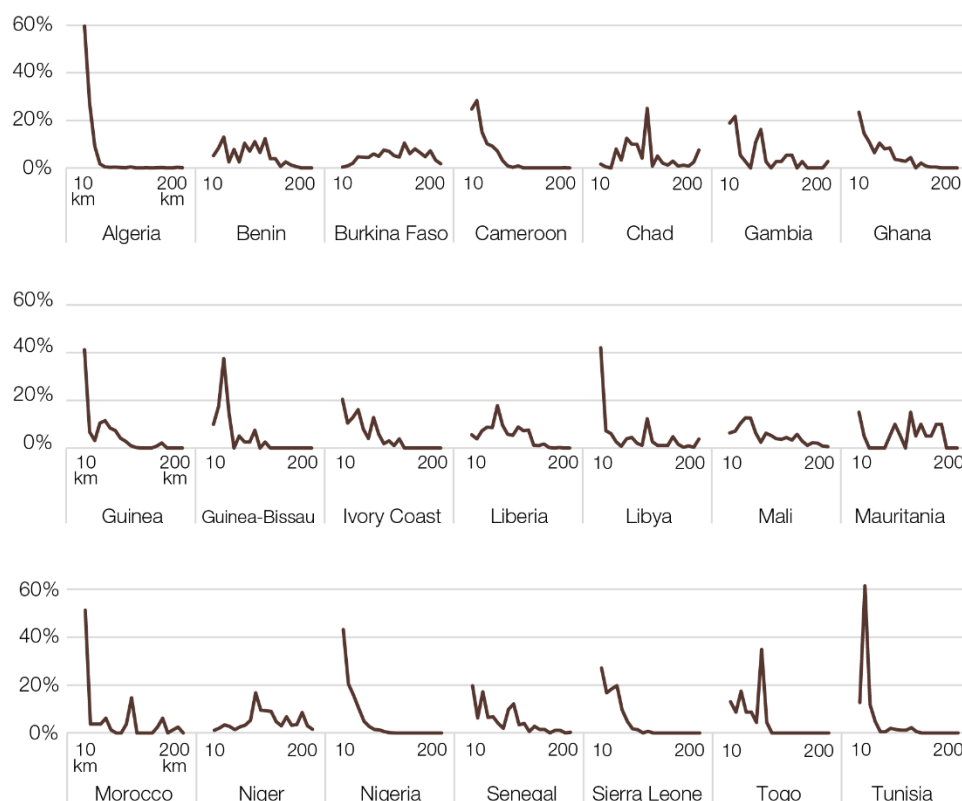


Figure 8. Violent events by distance from urban areas and by state, 2000-2021  
Source: authors based on ACLED (2022) and WorldPop (2022) data.

Nonetheless, even in this context, there is evidence of some degree of urbanization to the conflicts. Mapping events within the last two years serves to illustrate the point. Figure 9 shows that while only 22% (1,050 out of 4,732) of violent events in 2020 and 2021 have occurred within 40 km of an urban area, there are also event concentrations associated with many urban areas. For instance, the string of settlements running from northwest to southeast between Mopti in Mali and Ouahigouya in Burkina Faso have had 440 events within 40 km in just two years. Smaller event clusters have occurred near Maradi in Niger, and Douentza, Gao, and Niono in Mali. Notably, even as violence has intensified recently, clusters have not occurred proximate to

the national capitals of each country. To the extent that there is some evidence of conflict urbanization within an otherwise mostly rural context, it has been associated with smaller and perhaps more marginal cities, including several near international borders.

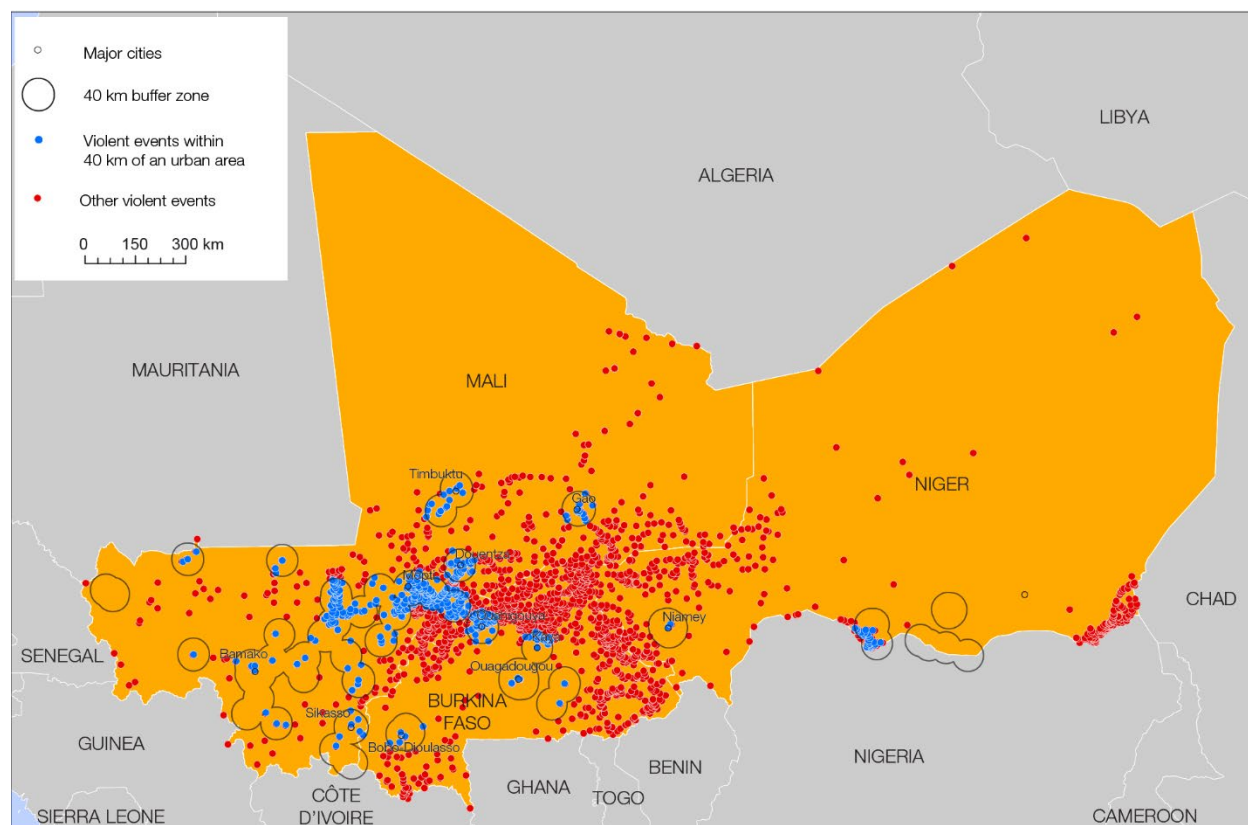


Figure 9. Violent events and urban areas in the Central Sahel, 2020-2021  
Source: authors based on ACLED (2022) and WorldPop (2022) data.

## Discussion

Our spatial analysis reveals that the relationship between population density and political violence varies considerably across and within states in North and West Africa. While the intensity of violence clearly decays with distance from urban areas at the regional level, some states exhibit a much stronger ruralization of conflict than others. In Burkina Faso, Mali and Niger, especially, most of the violent events are observed far away from urban areas, in the arid regions of the Sahara, for example, but also in peripheral regions where cities are few and far



apart such as the Seno Plain in eastern Mali. The fact that these three countries follow the same trend is hardly surprising, since all of them are currently confronted with major Jihadist insurgencies.

Since they emerged in the region in the 2000s, Jihadist organizations have entertained a rather peculiar relationship with cities. On the one hand, cities, with their large population of unemployed youth, provide ideal conditions for Jihadist organizations to flourish. In northern Nigeria, for example, the first members of the Boko Haram sect were radical youths from the Alhaji Muhammadu Ndimi Mosque in Maiduguri, many of them from the social upper class (Agbibo, 2022). The memory of precolonial entities based on strong cities, such as the Sokoto Caliphate in today's Nigeria is also routinely used by Jihadist organizations to justify their reformist agenda. In a region where Islamization has long been limited to a small urban elite of religious scholars and long-distance merchants, cities are closely associated with the diffusion of Islam and Koranic education (Last, 2013). In 2012, for example, AQIM and Ansar Dine advanced very quickly across northern Mali to seize Timbuktu and Gao, two commercial and religious centers inscribed on the UNESCO World Heritage List (Retaille and Walther, 2013). In these first years of the conflict, Jihadist organizations were primarily concentrated in the Sahara and its Sahelian peripheries, a sparsely populated region where political control can only be achieved through the control of cities and the roads that connect them. Figure 10 clearly shows that at that time, a majority of violent events involving Jihadist organizations affiliated with Al Qaeda or the Islamic State were occurring in or near urban areas.

On the other hand, Jihadist organizations have also tended to reject cities and try to reform societies away from existing powers, in remote rural areas where the state is largely absent. In 2002, for example, members of what would become Boko Haram left Maiduguri after

declaring the establishment corrupt and moved to the small village of Kanam near the Nigerian border in Yobe State (Walker, 2012). This experience was short-lived, however, and after a local dispute over fishing rights with the police, they returned to Maiduguri. Later on, in the late 2000s, Boko Haram launched a massive uprising in the major cities of northern Nigeria, before being expelled from them by the Civilian Joint Task Force (CJTF), a vigilante group allied with the government. The same ambivalence is observed in Central Mali, where Katibat Macina, named after the theocratic state of Macina in the Niger Inner Delta in Mali, conducts most of its activities in rural areas, far away from the major cities of Mopti, Djenne or Ségou (Thurston, 2020).

This ruralizing trend, particularly visible on Figure 10 since 2012, is explained by several factors. First, much of the violence affecting West Africa has shifted from the Sahara to the Sahel and its southern margins (OECD/SWAC, 2022), making the control of cities less important than in the early years of the insurgencies. In the Sahel, Jihadist groups do not have to physically control cities to control civilians and have access to natural, mineral and agricultural resources. In the Inner Delta, for example, they impose embargoes on rural communities that refuse to let them rule or are protected by the military, and threaten to kill traders, politicians and civil society leaders who live in cities but have property in rural areas. This strategy of intimidation has led such group as Katibat Macina to gain control over large expanses of rural areas, impose local taxes on trade, and steal cattle on a large scale. Finally, Jihadists have an interest in maintaining cities “open” to trade and social exchanges; it is in cities that they get most of their supplies and have their own families.

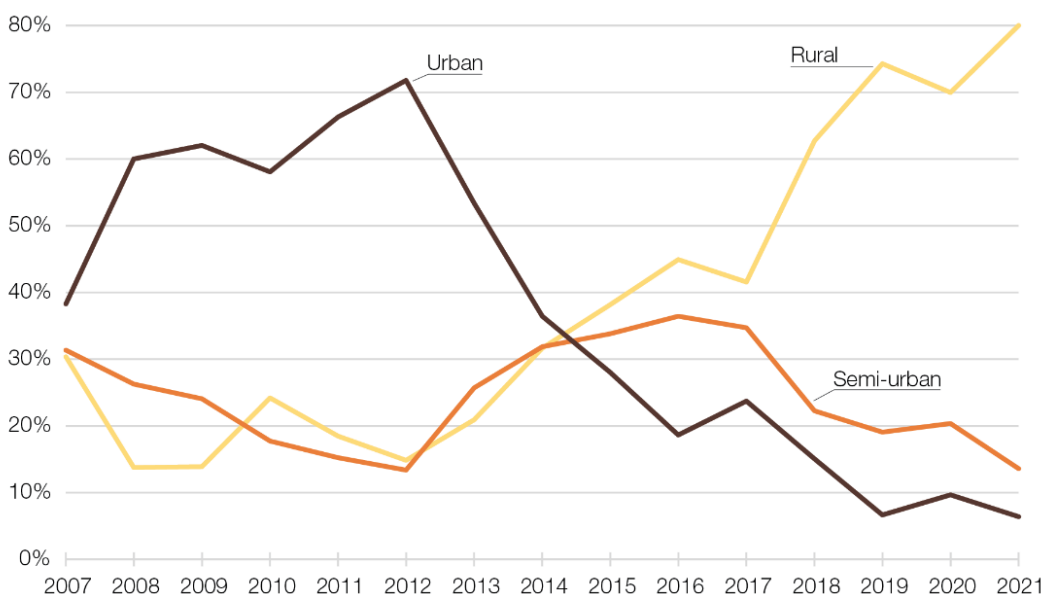


Figure 10. Violent events by Jihadist organizations, 2007-2021. The following organizations are taken into account: Al Qaeda in the Islamic Maghreb (AQIM), Ansar Dine, Ansaroul Islam, Boko Haram, Islamic State West Africa Province (ISWAP), Group for Supporting Islam and Muslims (JNIM), Katibat Macina.

Source: authors based on ACLED (2022) and WorldPop (2022) data.

## Conclusion

The objective of this paper was to provide an exploratory spatial analysis of the relationship between political violence and urban areas in North and West Africa. At the regional scale, our analysis gives some additional empirical weight to the discourse of the urbanization of political violence and reinforces what others have noted in individual cases. Further, for the first time in the literature, we have assessed the relationship between population density and political violence within a large multi-state region and found that while the plurality of violence has occurred in lower density areas, violence is indeed spatially associated with urban areas, occurring most-frequently near cities and urbanized places. Using ACLED's data for 21 states across 22 years, our analysis shows that while only 31% of all violent events occurred locations designated as urban, nearly 50% occurred within just 10 km an urban area, and 69% occurred

within just 40 km (25 miles). This relationship therefore exhibits a classic distance-decay effect: the further from an urban area, the fewer violent events are observed.

That this relationship is present is not a surprise given the importance of North and West African cities as sites of state authority, economic importance, religious education, and political control and contestation. However, the clarity of the relationship within this 21-state region and across multiple decades should not be mistaken for an immutable “law” of political geography that would necessarily be reflected in every national or local context and/or at any given moment in time. For example, the civil conflicts in Nigeria since 2000 have been consistently highly urbanized affairs, while the recent strife in Mali, Burkina Faso and Niger has been far less so. As our analysis shows, the regional relationship between urban areas and violence in this era has been highly variable over time: urbanized violence is predominant in only half the years in our study with peaks in occurring in 2004 and 2012. However, while urbanization has accelerated, especially in West Africa, since 2015 violence has actually become more rural in character.

This temporal variability has to do with the spatial ebbs and flows of violence in the region. For instance, the Libyan civil wars correspond to the most recent peak in the proportion of violence occurring in urban areas as Libya was already a highly urbanized country at the start of the violence. Now that violence has diminished there and emerged elsewhere, such as in still largely rural central Sahel, the overall locational trends in violence has shifted from rural to urban. However, this is not to say that cities and urban areas do not matter for these current conflicts. As we point out, even in states with low levels of urbanization such as in the Sahel, we can still detect the propensity for conflict to cluster near small or peripheral cities and towns.

It is important to recognize that the political and geographic processes that lead to this spatial and temporal patterning of violence within the region remain anchored in the efforts of

states to realize and manage sovereignty within their own borders and in the actions of various groups that seek to challenge, supplant, or somehow reconfigure the state. Given the importance of cities, towns, and other density populated settings to this process, urban areas will remain important focal points for further inquiry into political violence. With that in mind, our study points toward several future lines of inquiry that deserve attention. In particular, our analysis might be further disaggregated in space or time. For example, how might these patterns differ by climatic or environmental conditions? Does the relationship between violence and urban settings differ in littoral zones compared with the Sahel or perhaps vary by season? The large spatial and time scales covered by our data make such questions possible.

Similarly, our study did not explore the distinctions between types of cities or the urban hierarchy within the region. There are reasons to expect that national capitals might be targeted by more violence or that, alternatively, more peripheral cities might be seen as easier targets by some armed groups. Or perhaps population distribution or economic importance could be associated with some of the overall patterns we have uncovered. While we did not focus on these types of distinctions between urban areas, examining this in more detail could yield crucial insights and provide a better understanding of these relationships.

Lastly, and related to the previous point, other research into political violence in the region has identified borders and borderlands and important and related features (OECD/SWAC, 2022). What role might border cities and towns play in these findings? Are they more prone to violence as they tend to be remote from centers of state power? Given that borderlands as sites where alternative forms of identity can emerge, are they used as places of recruitment by those that would challenge the state? Or are they often bypassed by such groups in favor of rural areas, as suggested by the case of some Jihadist groups? Better understanding how the centrality of

cities interacts with the marginality of borders to produce some of the bloodiest and longest conflicts in the world is an important avenue of research that our exploratory effort here points toward.

Pursuing these and similar questions are important next steps in detangling the relationships between urbanization and violence and to critically considering policy narratives that present the relationship as monolithic over space and time. We expect that our analysis here is but an initial but essential foray towards a more nuanced understanding of how, why, when, and where cities, violence, and conflict come together.

### **Bibliography**

- ACLED (2022) Armed Conflict Location & Event Data Project, <https://acleddata.com>
- Agbiboa DE (2022) *Mobility, Mobilization, and Counter/Insurgency: The Routes of Terror in an African Context*. Ann Harbor: University of Michigan Press.
- Bahgat K, Buhaug H and Urdal H (2018) Urban Social Disorder: An Update. Oslo: PRIO.
- Beall J, Goodfellow T and Rodgers D (2013) Cities and conflict in fragile states in the developing world. *Urban Studies* 50(15): 3065–3083.
- Bishop R and Clancey G (2012) *The City as Target*. London: Routledge.
- Buhaug H and Rød JK (2006) Local determinants of African civil wars, 1970–2001. *Political Geography* 25(3): 315–335.
- Buhaug H, Gates S and Lujala P (2009) Geography, rebel capability, and the duration of civil conflict. *Journal of Conflict Resolution* 53(4): 544–569.
- Buhaug H and Urdal H (2013) An urbanization bomb? Population growth and social disorder in cities. *Global Environmental Change* 23(1): 1–10.
- Büscher K (2018) African cities and violent conflict: the urban dimension of conflict and post conflict dynamics in Central and Eastern Africa. *Journal of Eastern African Studies* 12(2): 193–210.
- Carter KM and Straus S (2019) Changing Patterns of Political Violence in Sub-Saharan Africa. In Carter KM and Straus S (eds) *Oxford Research Encyclopedia of Politics*. Oxford: Oxford University Press.
- Dahlum S and Wig T (2021) Chaos on campus: Universities and mass political protest. *Comparative Political Studies* 54(1): 3–32.
- Dijkstra L, Florczyk AJ, Freire S, Kemper T, Melchiorri M, Pesaresi M and Schiavina M (2021) Applying the degree of urbanisation to the globe: A new harmonised definition reveals a different picture of global urbanisation. *Journal of Urban Economics* 125: 103312.
- Dorward, N. (2022) *Essays on the geography of contentious collective action in Africa*. University of Bristol, unpublished PhD dissertation.
- Elscher S (2019) Contemporary civil-military relations in the Sahel, OECD West African Papers 19.

- Fox S (2017) Mortality, migration, and rural transformation in Sub-Saharan Africa's urban transition. *Journal of Demographic Economics* 83(1): 13–30.
- Fox S and Hoelscher K (2012) Political order, development and social violence. *Journal of Peace Research* 49(3): 431–444.
- Fox S and Bell A (2016) Urban geography and protest mobilization in Africa. *Political Geography* 53: 54–64.
- Gizelis TI, Pickering S and Urdal H (2021) Conflict on the urban fringe: Urbanization, environmental stress, and urban unrest in Africa. *Political Geography* 86: 102357.
- Goldstone JA (2010) The new population bomb: the four megatrends that will change the world. *Foreign Affairs* 89 (1): 31–43.
- Golooba-Mutebi F and Sjögren A (2017) From rural rebellions to urban riots: political competition and changing patterns of violent political revolt in Uganda. *Commonwealth & Comparative Politics* 55(1): 22–40.
- Goodfellow T and Jackman D (2020) Control the capital: Cities and political dominance. Effective States and Inclusive Development Research Centre Working Paper 135.
- Graham S (2011) *Cities Under Siege: The New Military Urbanism*. London: Verso Books.
- Haining R, Wise S and Ma J (1998) Exploratory spatial data analysis. *Journal of the Royal Statistical Society: Series D (The Statistician)* 47(3): 457–469.
- Harding R (2020) Who is democracy good for? Elections, rural bias, and health and education outcomes in sub-Saharan Africa. *The Journal of Politics* 82(1): 241–254.
- Hendrix CS (2011) Head for the hills? Rough terrain, state capacity, and civil war onset. *Civil Wars* 13(4): 345–370.
- Herbst J (2000) *States and Power in Africa: Comparative Lessons in Authority and Control*. Princeton, NJ: Princeton University Press.
- Kaldor M and Sassen S (eds) (2020) *Cities at War: Global Insecurity and Urban Resistance*. New York: Columbia University Press.
- Krause J (2018) *Resilient communities: Non-violence and Civilian Agency in Communal War*. Cambridge: Cambridge University Press.
- Last M (2013) Contradictions in creating a Jihadi capital: Sokoto in the nineteenth century and its legacy. *African Studies Review* 56(2): 1–20.
- Menashe-Oren A (2020) Migrant-based youth bulges and social conflict in urban sub-Saharan Africa. *Demographic Research* 42: 57–98.
- Mkandawire T (2002) The terrible toll of post-colonial 'rebel movements' in Africa: towards an explanation of the violence against the peasantry. *The Journal of Modern African Studies* 40(2): 181–215.
- Nedal D, Stewart M and Weintraub M (2020) Urban concentration and civil war. *Journal of Conflict Resolution* 64(6): 1146–1171.
- OECD/SWAC (2020a) *Africa's Urbanisation Dynamics 2020: Africapolis, Mapping a New Urban Geography*. Paris: OECD Publishing.
- OECD/SWAC (2020b) *The Geography of Conflict in North and West Africa*. Paris: OECD Publishing.
- OECD/SWAC (2021) *Conflict Networks in North and West Africa*. Paris: OECD Publishing.
- OECD/SWAC (2022) *Borders and Conflicts in North and West Africa*. Paris: OECD Publishing.
- OECD/UN ECA/AfDB (2022) *Africa's Urbanisation Dynamics 2022: The Economic Power of Africa's Cities*. Paris: OECD Publishing.

- Østby G (2016) Rural–urban migration, inequality and urban social disorder: Evidence from African and Asian cities. *Conflict Management and Peace Science* 33(5): 491–515.
- Radil SM, Irmischer I and Walther OJ (2022) Contextualizing the relationship between borderlands and political violence: A dynamic space-time analysis in North and West Africa. *Journal of Borderlands Studies* 37(2): 253–271.
- Raleigh C (2010) Seeing the forest for the trees: Does physical geography affect a state’s conflict risk? *International Interactions* 36(4): 384–410.
- Raleigh C (2015) Urban violence patterns across African states. *International Studies Review* 17(1): 90–106.
- Raleigh C and Hegre H (2009) Population size, concentration, and civil war. A geographically disaggregated analysis. *Political Geography* 28(4): 224–238.
- Raleigh C, Linke A, Hegre H and Karlsen J (2010) Introducing ACLED: An armed conflict location and event dataset. *Journal of Peace Research* 47(5): 651–660.
- Resnick D (2014) *Urban Poverty and Party Populism in African Democracies*. Cambridge: Cambridge University Press.
- Retailé D and Walther O (2013) Conceptualizing the mobility of space through the Malian conflict. *Annales de Géographie* 694(6): 595–618.
- Sewell W (2001) Space in contentious politics. In Aminzade RR et al (eds) *Silence and Voice in the Study of Contentious Politics*. Cambridge: Cambridge University Press.
- Straus S (2012) Wars do end! Changing patterns of political violence in sub-Saharan Africa. *African Affairs* 111(443): 179–201.
- Thurston A (2017) *Boko Haram: The History of an African Jihadist Movement*. Princeton: Princeton University Press.
- Thurston A (2020) *Jihadists of North Africa and the Sahel: Local Politics and Rebel Groups*. Cambridge: Cambridge University Press.
- United Nations (2019) *World Urbanization Prospects: The 2018 Revision*. New York: United Nations Population Division.
- United Nations (2020a) *Report of the Secretary-General on implementation of the 2020 World Population and Housing Census Programme and the Methodology for Delineation of Urban and Rural Areas for International Statistical Comparison Purposes*. New York, United Nations Statistical Commission.
- United Nations (2020b) *Activities of the United Nations Office for West Africa and the Sahel: Report of the Secretary-General S/2020/585*. New York, United Nations Security Council.
- Urdal H and Hoelscher K (2012) Explaining urban social disorder and violence: An empirical study of event data from Asian and sub-Saharan African cities. *International Interactions* 38(4): 512–528.
- Walther OJ and Miles WF (2018) *African Border Disorders: Addressing Transnational Extremist Organizations*. New York: Routledge.
- Walther OJ, Radil SM and Russell DG (2021) Mapping the changing structure of conflict networks in North and West Africa. *African Security* 14(3): 211–238.
- Walker A (2012) What is Boko Haram? Washington, DC: US Institute of Peace Special Report 17.
- Waxman M (1999) Sieecraft and surrender: The law and strategy of cities and targets. *Virginia Journal of International Law* 39: 353–424.
- WorldPop (2022) WorldPop. University of Southampton, <https://www.worldpop.org>



Yin X, Li P, Feng Z, Yang Y, You Z and Xiao C (2021) Which gridded population data product is better? Evidences from mainland Southeast Asia (MSEA). *International Journal of Geo-Information* 10(10): 1–15.

## Author Bios

**Steven M. Radil** is an Assistant Professor of Geospatial Science in the Department of Economics and Geosciences, U.S. Air Force Academy. Dr. Radil is a political geographer and an expert in the geographies of non-state political violence and armed conflicts, including civil war, terrorism, and insurgency. He regularly consults on security issues for non-governmental organizations and has co-authored several reports and articles about conflict in North and West Africa.

**Olivier J. Walther** is an Assistant Professor in the Department of Geography at the University of Florida. His current research focuses on cross-border trade and transnational political violence in North and West Africa. Dr. Walther is an Editor of the *Journal of Borderlands Studies* (JBS) and of the Palgrave Series in African Borderlands, and a “chief” of the African Borderlands Research Network (ABORNE). Over the last 15 years, he has served as a lead investigator or partner on externally funded research projects from the OECD, the National Science Foundation, NASA, and the World Food Program.

**Nick Dorward** is a Lecturer in the School of Geographical Sciences at the University of Bristol. He is interested in topics at the intersection of political science, development studies, and political geography. The primary focus of his research surrounds modelling the causes and consequences of urbanization, conflict, and political change in African cities. He holds a Ph.D. in Human Geography from the University of Bristol.

**Matthew Pflaum** is a doctoral student in geography at the University of Florida researching security and responses in the Sahel along dimensions of borders, mobility, and livelihoods. He holds an MPH in global health from Emory University and an MSc in African studies and international development from University of Edinburgh.