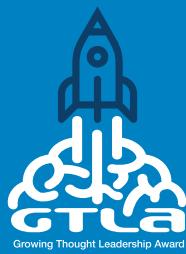


# Understanding the relationship between terrorism and climate change:

The case of Boko Haram activities and the environmental degradation of the Lake Chad Basin

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## Abstract

Climate change and extremism currently constitute the top two issues devastating the area of Lake Chad. Climatological grievances act as a threat multiplier in the Lake Chad basin and terrorist organizations – like Boko Haram – exploit such problems to survive. This paper questions the relationship between climatological grievances in the Lake Chad area and Boko Haram's activities by asking the following question: how does the existence of climatological grievances influences the existence of Boko Haram in the Lake Chad basin? In order to answer to this question, this research will outline the main academic discussions and define the basic concepts dealing with the topic. Later, it will offer an overview of Lake Chad's problems and Boko Haram's characteristics. In its main section, it will isolate the three main dynamics that explain how environmental matters fuel Boko Haram's success, namely, it will illuminate the relationship between (a) climate change, unemployment and terrorism (b) climate change, conflict and terrorism (c) climate change, state failure and terrorism. Lastly, this research will give a preliminary overview on future predictions and offer ideas on how to expand this academic arena. This analysis will ultimately contend that climate change helps Boko Haram's activities because it opens more recruiting opportunities for the organization to thrive by worsening employment conditions, by causing more conflict and violence and by limiting the ability of the local states to respond to the needs of its citizens. Overall, emphasizing the connection between climate change and terrorism is relevant to prioritize environmental protection as a matter of security that also potentially mitigates the issue of extremism.

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## Introduction

The Lake Chad is an essential source of biodiversity and employment opportunities for its inhabitants. Due to climate change, the area is suffering from extreme weather events and shortage of resources. Consequently, problems encompassing rising unemployment, decreased livelihood, increased displacement, poverty, hunger, malnutrition and violence are rampant in the region. This paper will investigate the ways in which terrorist organizations – like Boko Haram – take advantage of such grievances to thrive. In particular, it will focus on the state of Nigeria, being the country where the organization is the most active. After having analysed the academic arenas and concepts dealing with the topic, it will give an overview of the vicious cycle of issues affecting Lake Chad and of Boko Haram. Later, it will contend that climate change and terrorism are indirectly linked by examining the connection between (a) climate change, unemployment and terrorism (b) climate change, conflict and terrorism (c) climate change, state failure and terrorism. Furthermore, this work will suggest potential future research ideas and mention possible future risks. Because Boko Haram has exploited climate change-related matters to function, it will likely continue to do so, or other organizations will, since temperatures in the region are only expected to increase. Thus, securitizing environmental problems will serve also to mitigate the terrorist threat.

## Literature review

This research fits multiple literary arenas. Because of its connection to the environmental degradation of Lake Chad, it relies on scientific research on climate change (Change I.P.O.C., 2007; Houghton, 1990), but also on the theory of human security (Adger, 2014; Chandler and Hynek, 2010; Tadjbakhsh et al., 2007), which includes environmental security as part of the securitization process. Moreover, because it deals with Boko Haram, it joins the academic discussion on territorial violent non-state actors (Varin and Abubakar, 2017; Ward, 2021) and terrorist organizations (White and Clear, 2002; Whittaker, 2004), but also the broader conversation on the relationship between violence and natural resources (Humphreys, 2005; Kahl, 2002; Nillesen and Bulte, 2014). Overall, this exploration is relevant because it fills a literary gap within the academic conversation linking terrorism and climate change (Price and Elu, 2017; Telford, 2020), since it compares the relationship between Boko Haram's activities and Lake Chad degradation. Even if the two topics have been compared before (Archer, 2017; Nett and Rüttinger, 2016; Takwa, 2020), past works rarely discussed the link between Boko Haram's success and climate change as part of a vicious cycle or as part of three different dynamics involving unemployment, state failure, conflict and violence.

## Defining the terms

Before the start of this investigation, it is relevant to define the key terms dealing with it. These are either related with Boko Haram, as a violent non-state actors and a terrorist organization, or with Lake Chad, as affected by the problem of climate change. Ward defines non-state actors as entities other than states using military force in ways that has an impact on the international system (2021). They can be militias and paramilitary groups, insurgents and rebels, armed private contractors and terrorist organizations. Boko Haram fits this description as an armed extremist group operating in the region of Lake Chad, but also influencing global dynamics. The Islamist sect also matches the notion of terrorist organization, defined as a group who perpetrates "intentional use of violence against non-combatant civilians aimed at reaching political ends" (Whittaker, 2004: 6). Because in this analysis Boko Haram's activities will be explored in relation to environmental degradation, it is significant to also offer a definition of climate change. National Geographic Society presents it as "a long-term shift in global or regional climate patterns which often refers specifically to the rise in global temperatures from the mid-20th century to present" (2019). The consequences of climate change, together with the operations carried out by Boko Haram, will be investigated in the case of Lake Chad.

# The problems affecting the Lake Chad Basin

The Lake Chad is one of the largest and most biodiverse freshwater basin in the world, even if its size reduced of about 90% since 1963 (Gao et al., 2011). This body is in Central Africa – between Chad, Cameroon, Niger, and Nigeria – and is essential for the sustainment of more than 30 million people (Mohanty et al., 2021). In particular, the Lake supports land irrigation, fishing activities, access to drinking water and economic activities. Thus, it is especially important for pastoral, indigenous and farming communities inhabiting the region. Despite its unique biodiversity and its economical relevance, Lake Chad degradation is still a rampant problem, constituting one of the worst humanitarian and environmental crises in the world (Wakdok et al., 2021) because it fuels food insecurity for more than seven million people and displacement for more than two million people (Archer, 2017).

The environmental issues connected to climate change that are currently devastating the Lake Chad basin range from resource competition to water overexploitation, unstable weather conditions, population growth, rising urbanization, uneven economic development and ineffective climate policies (Nett and Rüttinger, 2016). These problems are part of a more complex cycle of grievances that are fuelling each

other in the region – namely – unemployment, violent conflict, decreased livelihood, economic instability, increased poverty, hunger, malnutrition, inequality, corruption, terrorism and organized crime. Because all these problems are interconnected, it is hard to isolate the single relationship between environmental degradation in the Lake Chad and Boko Haram's activities. However, it is possible to affirm that they are surely linked to each other as part of the vicious cycle<sup>1</sup> of matters.

Climate change seems to act as a threat multiplier, since it worsens every component of the cycle of issues harming the area of the Lake Chad (Figure 1). Resource overexploitation and unstable weather events – matched with ineffective climate policies – decreases available land and water, which worsens hunger and malnutrition while fuelling poverty for the people relying on them for employment opportunities. These conditions all decrease the quality of livelihood in the basin. Thus, they boost displacement, but they also lead to violent conflict over scarcity of resources. Ultimately, the inability of the government to respond to these matters<sup>2</sup> is the main source nourishing terrorism and organized crime, as these organizations offer an alternative to unemployment and poverty.

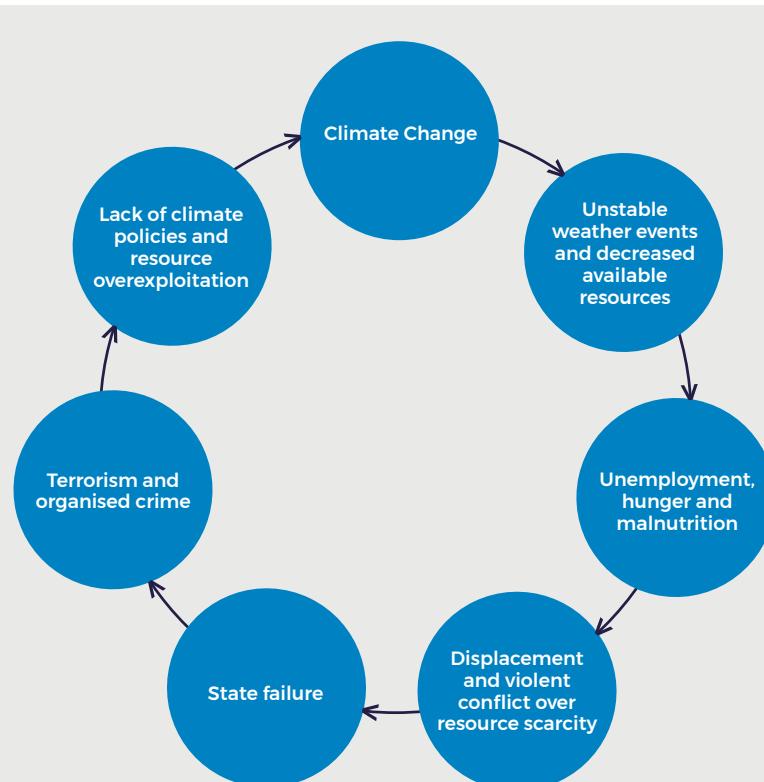


Figure 1: Vicious Cycle of Issues Harming the Area of the Lake Chad

<sup>1</sup> It is relevant to notice that the vicious cycle illustrated is a simplified version of what is a much more complex dynamic of issues, created for the sake of this examination.

<sup>2</sup> Also defined as state failure, the condition where governments are consumed by internal violence and stop providing political goods – primarily – security (Bates, 2008).

## Overview of Boko Haram

Among the multiple violent non-state actors that are active in the region, Boko Haram is a prominent extremist organization that is worth investigating in relation to the environmental problems irritating the Lake Chad region. Boko Haram (which means 'Western education is forbidden') is an Islamic terrorist group developed around the Lake Chad basin. The organization was founded in 2002 but started to carry out acts of terror in the area only in 2010 with the aim of creating a 'pure' Islamic State governed by sharia law. Primarily, the belief that northern Nigeria has been controlled by a group of corrupt Muslims motivated this goal (Walker, 2012). Because Nigeria is the main country where Boko Haram is active among all the ones bordering Lake Chad, this examination will mainly refer to it.

Since its start, Boko Haram was the cause of the death of more than 20,000 people (Uppsala Conflict Data Program, 2021) and the displacement of over 2.5 million people (Salleh et al., 2018). The territorial control of the extremist organization is large, encompassing over 18 local government zones in Nigeria alone and various key access points (Abubakar, 2015). Ultimately, the tight control of such relevant locations limits the transportation of humanitarian aid. Overall, the group is among the most dangerous actors operating in the Lake Chad basin as its actions exacerbated all the pre-existing conditions in the region.

# How climatological grievances in the Lake Chad Basin fuel Boko Haram activities

As climate change increases the power of Boko Haram is enhanced, since the organization exploits local grievances and people's desperation to thrive. Mainly, the governmental inability to respond to violence, poverty, unemployment and hunger, caused by land and water degradation, creates a suitable ground for the organization to rise. Other than on its religious reasons, the group relies on the long-time rooted sense of political and economic instability in the region and persuades potential recruits that Boko Haram fights such injustices. At the same time, the actor provides employment opportunities, thus, a solution to hunger and poverty. Even if the group funds itself through violent means — such as coercion, kidnapping, abduction, rape and execution — it is still a valid alternative for those who are, probably not sharing its ideology, but are dying from starvation (Meagher, 2014).

## Climate Change, unemployment and terrorism

Among the desperate people, young citizens are particularly vulnerable to the recruitment of the organization, as they are the most unemployed group within the communities living near Lake Chad. Thus, a study based on the analysis of 144 arrested Boko Haram members, shows that the median age of the group's members is thirty years (Onuoha, 2014). This survey also confirms that the youth is the main group engaging in religious-based violence because it is the most affected by poverty and unemployment, since many of the respondents identified these problems as the second most important factors motivating them after religious ideologies (Onuoha, 2014). As Komolafe also has argued, "the tendency to produce suicide bombers is greater in a community defined by mass misery and joblessness than the one in which basic needs of food, education, health, housing, and sanitation are met for the majority of the people" (2012). Hence, unemployment makes citizens — in particular younger generations — more susceptible to radicalization.

Even if climate change is not directly linked to terrorist recruitment, by emphasizing the causes of youth unemployment it is observable that the issue indirectly facilitates Boko Haram's activities by limiting employment opportunities. Researchers claim that climate change causes unemployment because it leaves Nigeria increasingly short of resources, as wind and rainstorms alone damaged or destroyed productive assets in twelve of Nigeria's thirty-six states that were worth at least 720 million dollars (Odjugo, 2009). Multiple scholars already established that environmental changes drive unemployment, since the country heavily relies on climate-sensitive occupations

— ranging from farming, fishing, and logging — which take up "70 percent of the workforce, contribute to over half of GDP and account for the majority of jobs created recently" (Sayne, 2011: 5). Therefore, climate change connects to the rise in local extremism by increasing unemployment, one of the major factors motivating young generations to engage in religious-based violence.

## Climate Change, conflict and terrorism

Multiple scholars suggest that conflict and violence are closely linked to natural resources (Humphreys, 2005; Kahl, 2002; Nillesen and Bulte, 2014). Researchers claim that this type of dynamic has been on the rise particularly in the recent years, being over 5 times the level it was about 10 years ago (Kishi, 2014). Studies motivate this increase by highlighting the rise of climate change as one of the main causes, since environmental issues drive riots, protest and competition over natural resources. According to the same analysis, Nigeria qualifies as the primary country where this violence can be witnessed, together with only few other countries.

Boko Haram exploits environmental degradation by taking advantage of the situations of violence created by climate change. Competition over natural resources — especially between pastoralists and agriculturalists — has been going on for years in the region (Takwa, 2020). However, reduced access to water, blocked viable roads and decreased arable land due to climate change intensified conflict between these people even more. Other than generating new violent acts, Boko Haram has been feeding from such pre-existing situations by carrying out recruiting operations during conflict peaks, when the population was more desperate, fragile and tempted to join the extremist group.

## Climate Change, state failure and terrorism

The extremist sect also exploits state failure to thrive. Studies confirm that the Nigerian State has been unable to ensure national prosperity, because it was unable to deal with the local challenges caused by climate change, and that this dynamic helped the development of violent extremism (Oko, Ufomba and Benjamin, 2018). In particular, measures implemented by governments in the area of Lake Chad:

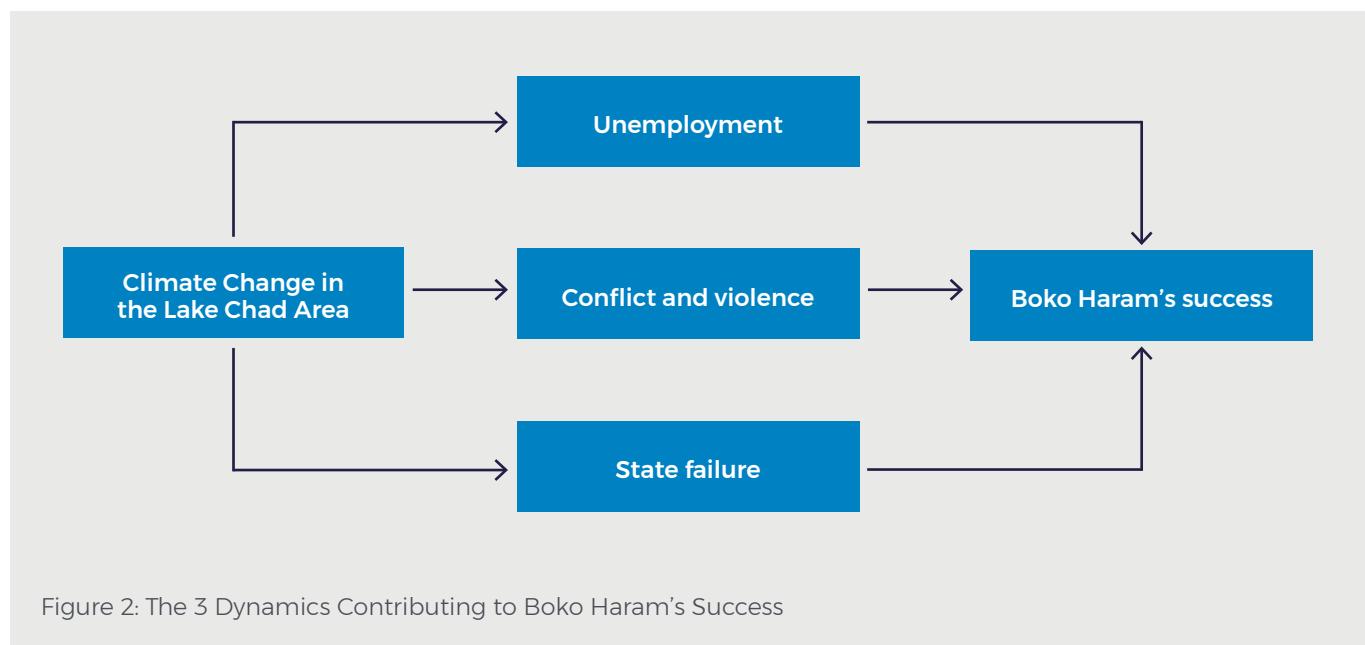
Have not addressed the root causes of the (climatological) crisis and, at times, were perceived as 'arbitrary and inconsistent.' Some security restrictions (...) have even had the opposite effects by negatively

### How climatological grievances in the Lake Chad Basin fuel Boko Haram activities continued

affecting people's livelihoods. Rural communities have been further disadvantaged by the restrictions imposed on the amount of land that can be used for farming and agricultural production. (Skah and Lyammouri, 2020: 23)

Thus, extremism more easily increased because local governments were a key factor in mitigating the security implications of climatological threats, but they have failed to do so. Boko Haram seemed to "offer an alternative to or a vent for those frustrated with the Nigerian government. The group has successfully exploited historical, religious, social, governance, economic and political injustices or gaps in order to create a support base in northern Nigeria" (Ewi and Salifu, 2017: 12). Likewise unemployment and conflict, climate change indirectly connects to terrorist success, in this case, by facilitating state failure. This is because environmental grievances obstacle the functioning of the state — which becomes unable to answer to the needs of its local citizens — and make it more accessible for Boko Haram to fill the gaps left by the government.

Overall, it can be argued that climatological grievances are one of the many factors that fuel Boko Haram activities in the Lake Chad basin. Even if it is challenging to establish a direct link between the two components, it is observable the existence of an indirect link between them. Within the vicious cycle of issues harming the area of the Lake Chad (Figure 1), it is relevant to isolate three dynamics (Figure 2). These emphasise that climate change in the Lake Chad area increased unemployment, state failure, conflict and violence, grievances which all contributed to the success of Boko Haram. Even if it is challenging to estimate the degree to which these three causes fuelled terrorist activity, it is possible to claim that they are – even if to a little extent – exacerbating the problem.



## What the numbers say

In order to claim a connection between climate change and terrorism, it is also relevant to look at the data regarding the dynamics explored. Thus, this section will emphasize how the peak of Boko Haram's activity in Lake Chad goes hand in hand with the peak of climatological grievances and will also illuminate how these two relate to statistics regarding unemployment, conflict and governmental efforts. The graphs that will be examined in this part of the analysis can be found below.

Figure 3 illustrates the number of total deaths related to Boko Haram activities, a study conducted by both the Nigeria Security Tracker (NST) and the Armed Conflict Location and Event Data Project (ACLED).

Both organizations identify the same progression, where 2014 and 2015 stand out as the peak years of terrorist attacks (Campbell and Harwood, 2018). Because this span of time is clearly the period where Boko Haram was the most active in the region, it will be taken in consideration as point of reference for the exploration that follows. By looking at the trend of average local temperatures from 1960 to 2016, it is also clear that the Nigerian climate reached its highest point of Celsius degrees in the years where Boko Haram activities peaked (Figure 4). Such data suggests a connection between the two variables, even if probably not a direct one, since terrorist activities in the region were thriving while temperatures reached its highest numbers.

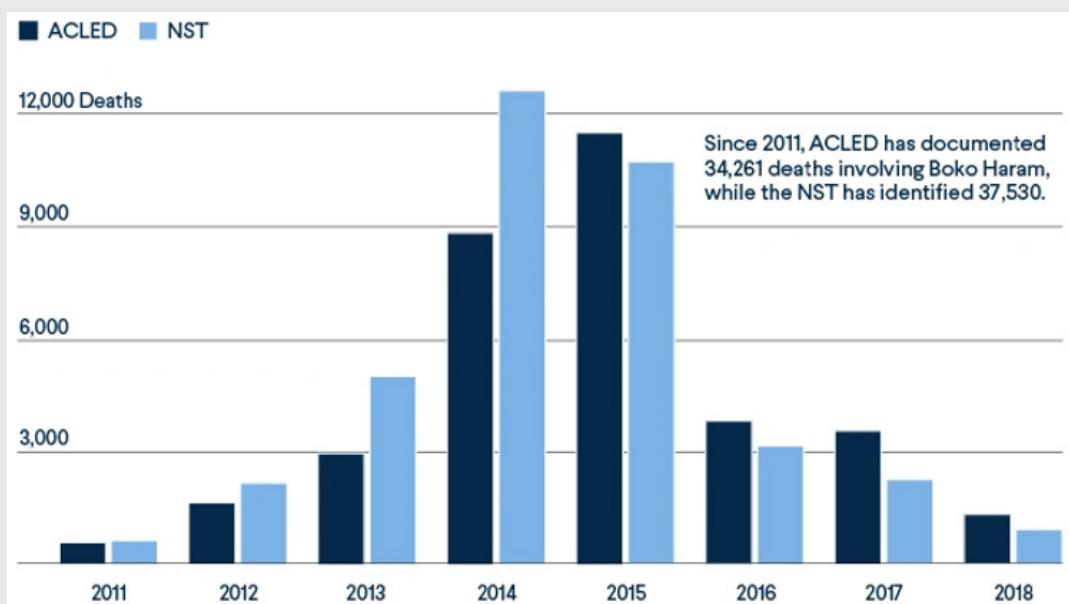


Figure 3: Total Deaths in Incidents Involving Boko Haram (Campbell and Harwood, 2018)

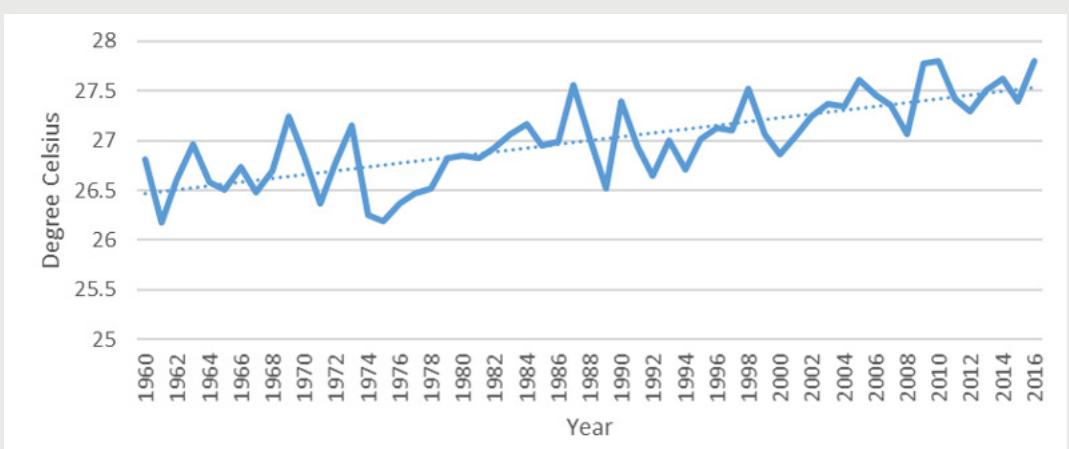


Figure 4: Average Temperature in Nigeria, 1960-2016 (Onanuga and Olakojo, 2020)

### What the numbers say continued

The statistics regarding unemployment, violence and state efforts in the region also hint to a potential connection between them, climate change and terrorism. Figure 5 shows the trend in youth unemployment in Nigeria from 1999 to 2019. This picture emphasizes that, before 2014, such issue reached its peak in 2013 with 9.84 percent of unemployed youth. In the following couple of years, this rate arrived at its lowest points with 8.41 percent in 2014 and 7.81 percent in 2015. This gradual growth, sudden decrease, which then follows a rapid rise in youth unemployment inversely matches the trend of terrorist activity in the region. Hence, while Boko Haram was conducting its highest number of actions, youth unemployment reduced, possibly suggesting that the former unemployed young groups joined the

organization' success was due also to the high rates of conflicts over natural resources that were taking place in the same years, being Boko Haram on the rise in 2014.

Lastly, environmental grievances constitute a problem for local governments, which need to implement always more climate-adaptation initiatives. The inability of states to conduct such projects in the years of reference of this research (2014-2015) reflects the increased ability of Boko Haram to conduct violent attacks. Hence, while the budget allocated for climate-adaptation programs was 10.75 (Naira Billion) in 2013, in the following two years it decreased to the point of reaching 0.24 (Naira Billion) (Figure 7). Such inadequate response to the needs of the citizens, suffering from climatological issues, represents a failure in governmental efforts.

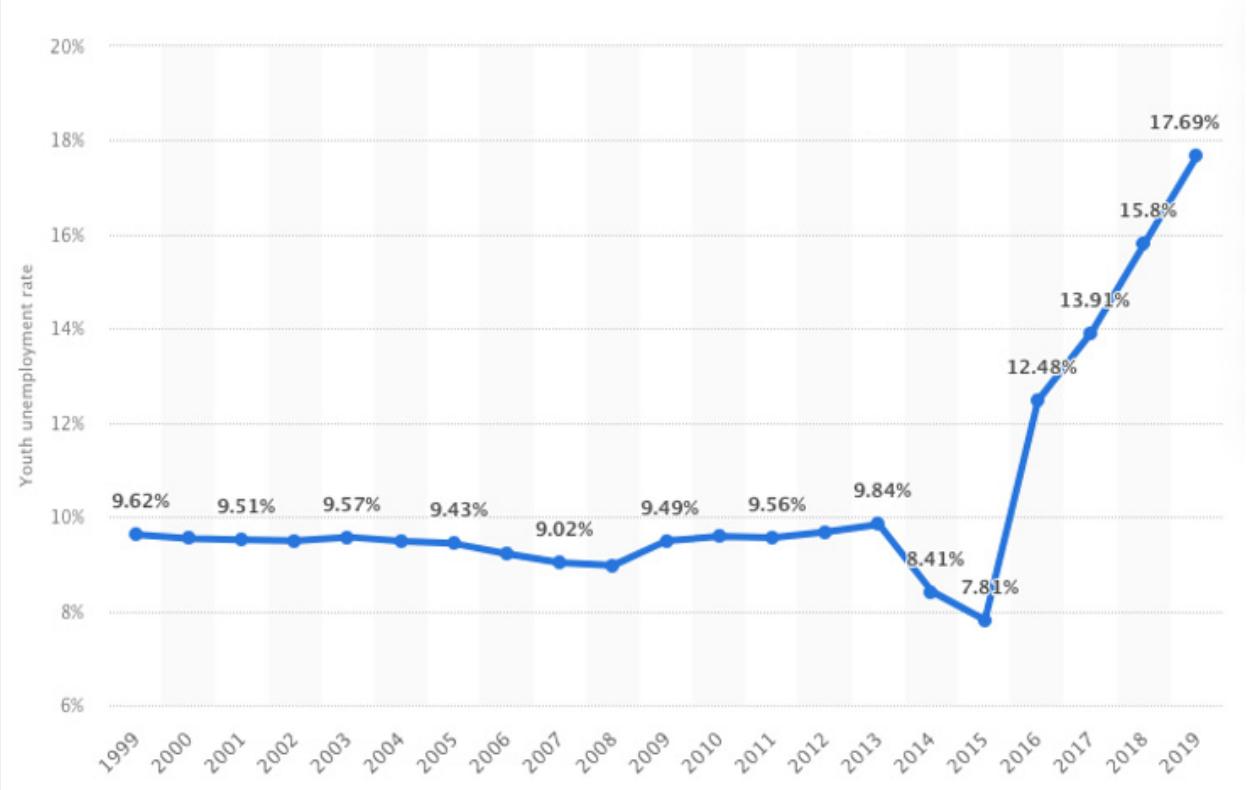


Figure 5: Youth Unemployment Rate from 1999 to 2019 in Nigeria (O'Neill, 2022)

activities of the extremism. The two components also inevitably connect to climate change, as the main driver of youth unemployment.

Similarly to unemployment rates, the peak of terrorist activities and climate change also potentially links to violence. Thus, resource-related conflicts in Africa reached their peak in 2013 and 2014 (Figure 6). Such violence reflects a result of resource overexploitation and scarcity – caused by climate change – but also represents an opportunity for extremism to exploit local desperation to thrive. Indeed, it is possible that the

Furthermore, it hints that Boko Haram took advantage of the years where climate projects lacked to carry out its highest numbers of activities.

Overall, the statistics regarding the years where climate change was on the rise and where Boko Haram's attacks peaked (2014-2015) suggest a link between the two, that is mediated by a decrease in unemployment, a peak in conflict over natural resources and a decrease in government budgeting for climate-adaptation plans. Even if these graphs hint a connection between all these components, it would be too simplistic to

What the numbers say continued

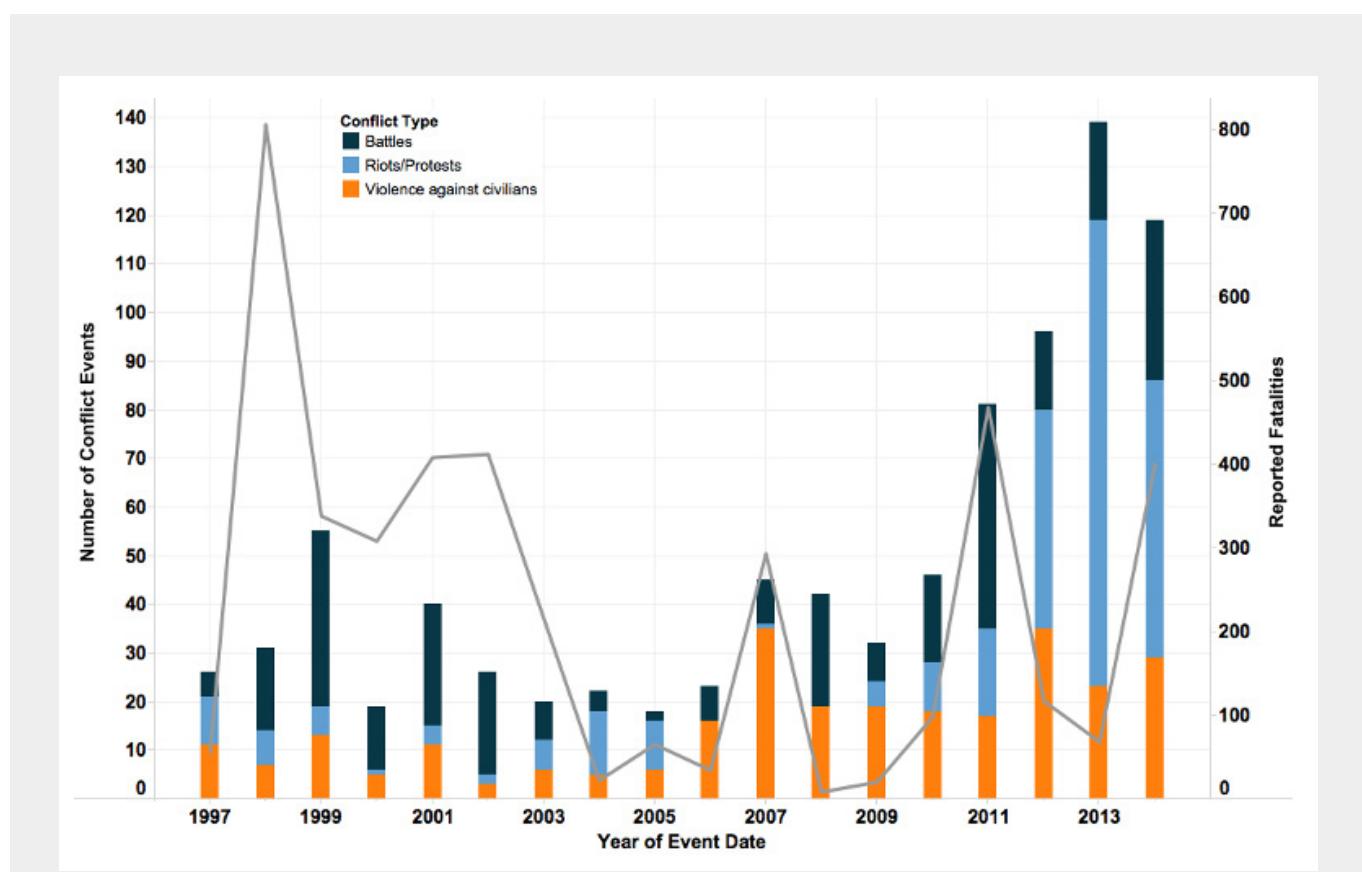


Figure 6: Resource-Related Conflict in Africa, 1997-2014 (Kishi, 2014)

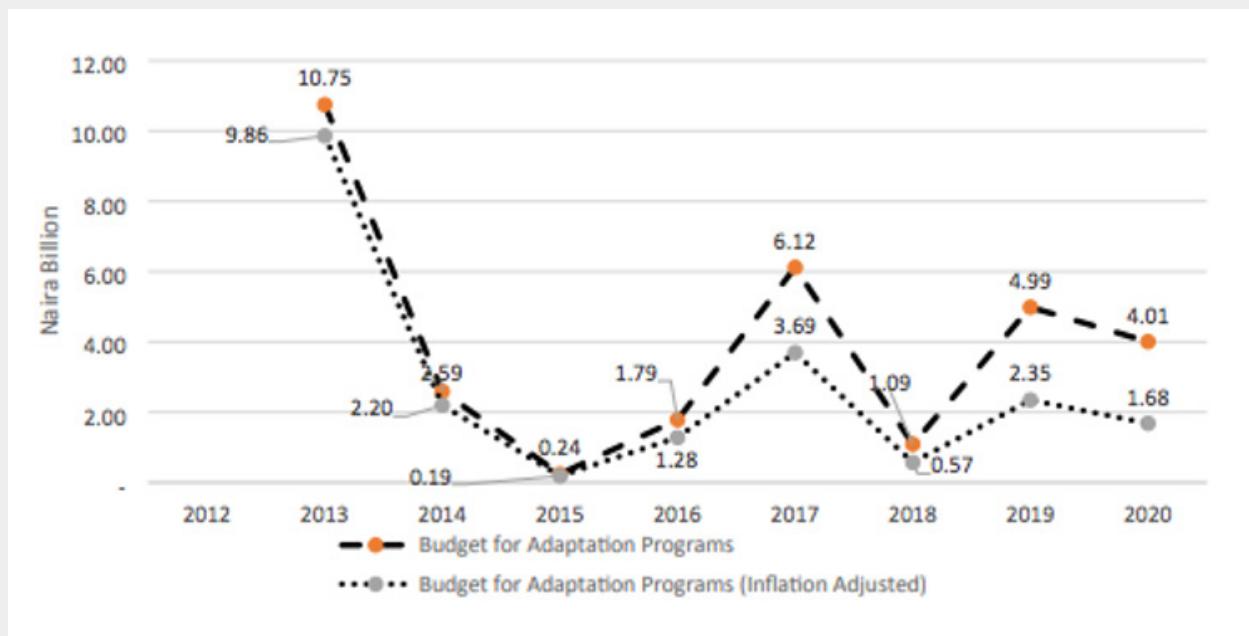


Figure 7: Nigerian Government's Climate-Adaptation Expenditures (Onyimadu, 2021)

### What the numbers say continued

state that these matters are all directly connected. Thus, it is essential to underline the complexity of the vicious cycle of issues affecting the area of Lake Chad in order not to be misleading. Given these warnings, it is equally relevant not to deny the existence of an indirect connection between climate change and terrorism, the first one as a driver of unemployment, conflict and state failure, and the second one as a beneficiary of these grievances. Hence, climate change does not directly create terrorist. Yet, it "contributes to creating the conditions in which those (terrorist) groups can thrive" (Darby, 2017). Such link was also publicly supported by former US President Obama (Sauer, 2019) and the Nigerian diplomat Bosah in the past (Darby, 2017). Overall, Boko Haram proved to be quite successful in its strategies, as it was able to adapt to changing circumstances, emphasize governmental failures and exploit climatological grievances for its advantages (Nett and Rüttinger, 2016).

## Looking ahead

Research regarding future environmental conditions in the Lake Chad area predicts that the effects of climate change will be felt more in the next years and even mentions that the Lake could completely disappear (Edmond, 2019). "If temperature follows the same rate in the basin then in the next 100 years, this region can face about 0.6-3.4 °C hotter climate relative to the current condition" (Mahmood and Jia, 2019:135). Thus, stronger heat waves and more extreme weather conditions will increasingly worsen water and land quality. Economic, food and employment conditions will be harmed even further, being the Lake Chad inhabitants mostly relying on fishing, farming and herding. This will contribute to the vicious cycle of problems affecting the area and it will continue facilitating Boko Haram's recruitment operations. Climatological grievances are not only expected to help the extremist sect but will also open more opportunities for new organizations to operate or to originate.

Depicting future perspectives of the region should motivate governments and international organizations to strengthen counterterrorist and environmental efforts in the area as a global matter of security. Possibly, they could include better dialogue and negotiation with the extremist group and enhanced reintegration of fighters. In addition, they should give emphasis on the gains that land protection will offer in terms of employment and sustainment with the goal of building more resilient communities. Future research on this topic could discuss recommendations involving the mitigation of the climate threat and its related issues to decrease the power of terrorist organizations. Furthermore, it could include the evaluation of how climate change is fuelled by Boko Haram activities, as their link is not unidirectional. This is because the extremist group contributes to resource overexploitation and global warming through the increase of global emissions caused by forced displacement (ACTED, 2015; Mixed Migration Platform, 2017; Takwa, 2020).

## Conclusion

This research contends that the situation in the Lake Chad is very complex, as multiple grievances fuel each other creating a vicious cycle of problems. Among them, terrorism and environmental degradation of the basin are indirectly connected, since climate change causes unemployment, increases conflict over resources and facilitates state failure, all issues that fuel Boko Haram activities. Data involving these matters also hints that, while Boko Haram was at its peak in 2014-2015 and climate change reached its highest levels, unemployment in the region was decreasing, while violent conflict was increasing, and state climate plans were weakening. These statistics potentially suggest that environmental degradation persuaded people to join the extremist organization by offering them an alternative to unemployment, by filling the gap left by the government and by taking advantage of situations of conflict to thrive. Because both terrorism and climate change in the region are responsible for one of the worse political, economic, humanitarian and environmental crises of the world — and could potentially increase even more in the future — the Lake Chad basin should be securitized better through enhanced counterterrorist and green efforts for the sake not only of the local inhabitants, but for the global community.

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