



Sahel: Climate Change Challenge And Spread Of Terrorist Organizations

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ABSTRACT

Climate change in the Sahel represents one of the most dangerous threats of the XXI Century. The extreme weather conditions and the consequences produced upon cultivation and livestock have exacerbated the economic and social problems in the region, whose economy is mainly led by agriculture, farm animals and fishing. The environmental conditions have worsened the already critical local issues, like food insecurity and the humanitarian crisis, encouraging the diffusion of new conflicts and the spread of Salafi-Jihadi terrorist groups in the Sahel. Terrorist organizations try to take advantage of the unstable situation and attempt to acquire more power and control in the area. In order to tackle those problems, a joint action between the internal and external security forces is important, but the containment and the management of climate change impacts remain the major challenge and the most reasonable solution.

Table of Contents

Introduction.....	4
Social, Economic, Humanitarian and Environmental Crisis.....	5
The Correlation Between Climate Change And Terrorist Organizations.....	12
Case study: Fulani-Dogon Conflict.....	18
Political Response & Conclusion.....	19
Bibliography.....	32

Introduction

Extreme weather events, rising temperatures mainly caused by carbon emissions, Arctic ice sea melting, droughts, forest fires and intense storms are affecting the whole world ecosystem and they are influencing the wildlife populations and habitats. The Sahel has shown its high vulnerability to the environmental challenge, because extreme temperatures, unstable rainfall, long periods of droughts and storms can destroy cultivation, affect grazing patterns and reduce the availability of clean water for both animals and population. The social, economic and political conditions that characterize the area represent both the cause and the consequence of the critical situation that affects the region, and a terrible humanitarian crisis is spreading faster among the society. Additionally, food insecurity and local conflicts have increased over the years due to climate change's impact. In this complex portrait, one of the main threats and concerns is the presence of jihadist terrorist organizations in the region which have risen since 2015, a crucial year for the climate change's effects in the Sahel and the instauration of the Salafi-Jihadi ecosystem in the area. Is there a correlation between climate change and the spread of terrorism? The weakness of the local governments, the corruption and the vulnerability of the local communities, have facilitated the creation and the spread of terrorist groups. *En plein air* of food insecurity and humanitarian crisis, jihadists have acquired consensus by the local society, providing food, water and assistance when the local governments were absent regarding society's needs. They have exploited local disputes and conflicts in order to acquire a strong domain in the area.

The aim of this paper is to point out the nexus that exists between the spread of terrorist organizations and the climate change's effects in the Sahel's lands, which must be painted into a broader and more complex context. Environmental challenges are particularly pernicious in this region and they play into a fragile political, economic and social ecosystem, providing fertile ground for extremist groups claiming they can provide a solution for humanitarian crisis.

The analysis has been conducted through a combination of quantitative and qualitative research's methods. Database, trends and chart, together with case study, literature and official national documents have allowed the realization of this script.

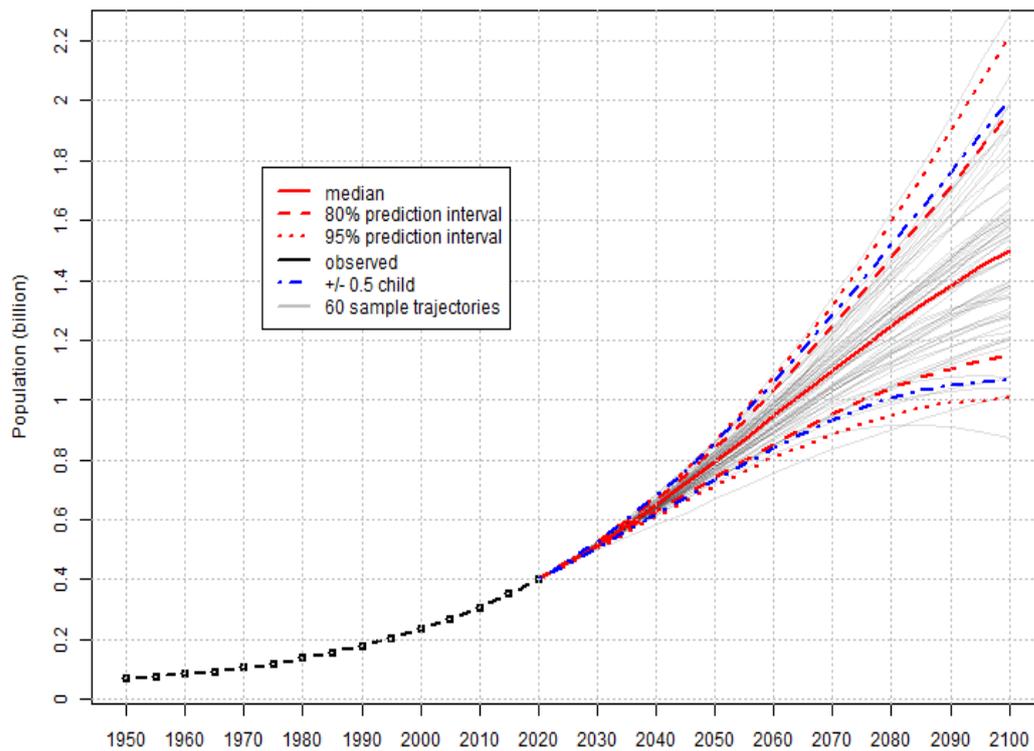
Social, economic, humanitarian and environmental crisis

The Sahel region is a huge semiarid area that extends from Western Africa up to Sudan. It includes northern Senegal, southern Mauritania, Mali, southern Niger, northern Burkina Faso, north-eastern Nigeria, central Chad and Sudan¹. The terrain is quite like that of the Savanna, and the area is full of thorny shrubs, acacia and baobab trees. As for the weather, eight months of the year it is dry, and it rains about 100-200mm chiefly in June, July and August. Some areas, like Niger, Nigeria and Mali are watered by the Niger river, while others like Senegal and Mauritania by the Senegal rivers². However, the necessity of clean water is the main problem that the region has faced. Diseases from dirty water and a lack of a proper sanitation system kill more people every year than all forms of war³. In the second half of the 20th century, the whole area was affected by the demographic growth, which caused a significant desertification. As a reaction, the demand upon the lands increased but due to the social and environmental changes, the cultivable lands' availability decreased⁴. The whole area has experienced long periods of drought, and a lot of people have died due to the lack of crops and basic commodities. Part of the population that lives in that lands region is constituted by nomadic herders and farmers, and nowadays the demographic growth rate is one of the highest in the whole world¹ and the population is also one of the poorest if compared with other African states and regions⁵. A long debate about the environmental, social and humanitarian problems occurring in Africa, especially in the Sahel area, has always been conducted considering the demographic evolution that characterizes that region. The demographic growth and the population density represent two significant features in order to understand the origins and evolution of the problem⁶. A graphic representation of the population growth between the 2020 and 2050 is shown in a chart provided by the UN - Department of Economic and Social Affairs– titled World Population Prospects 2019, which considers the population index only of some of the Sahel's Countries like Senegal, Mauritania, Mali, Niger, Chad, Burkina Faso and Nigeria.

United Nation experts have identified that the population of six of the eleven countries will jump from 90 million people to 240 million people by 2050⁷.

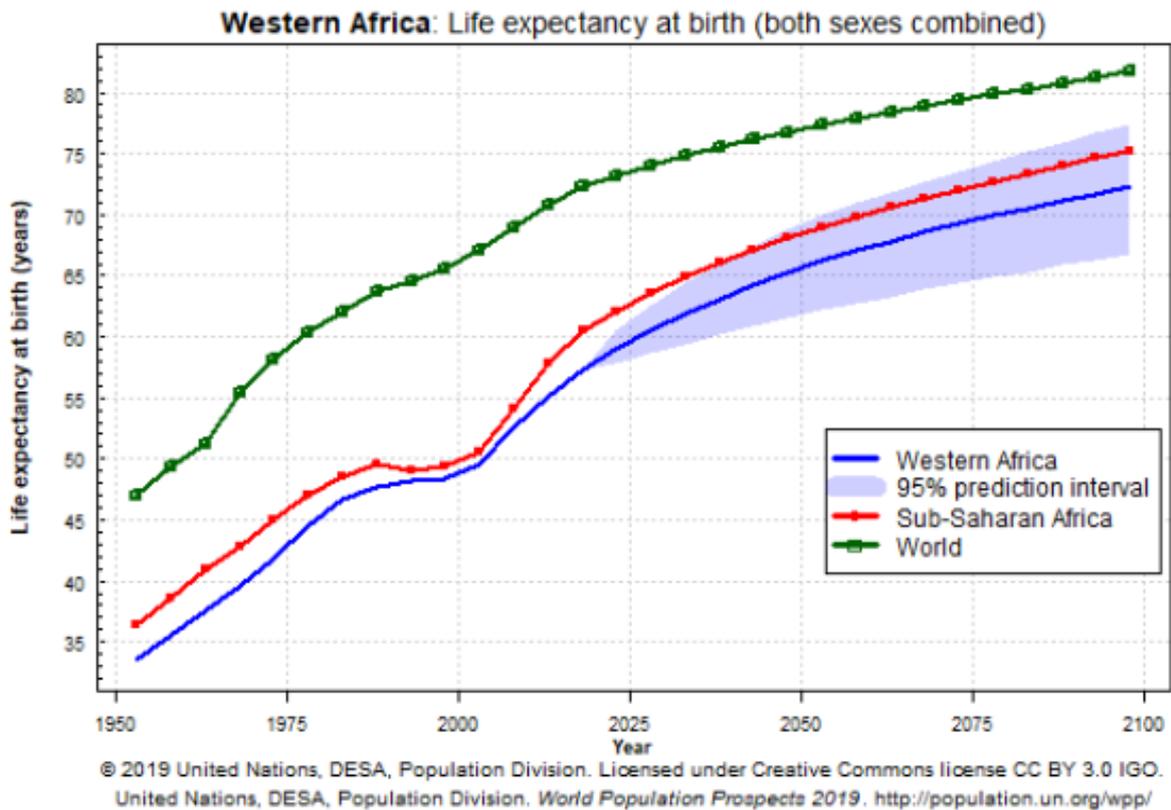
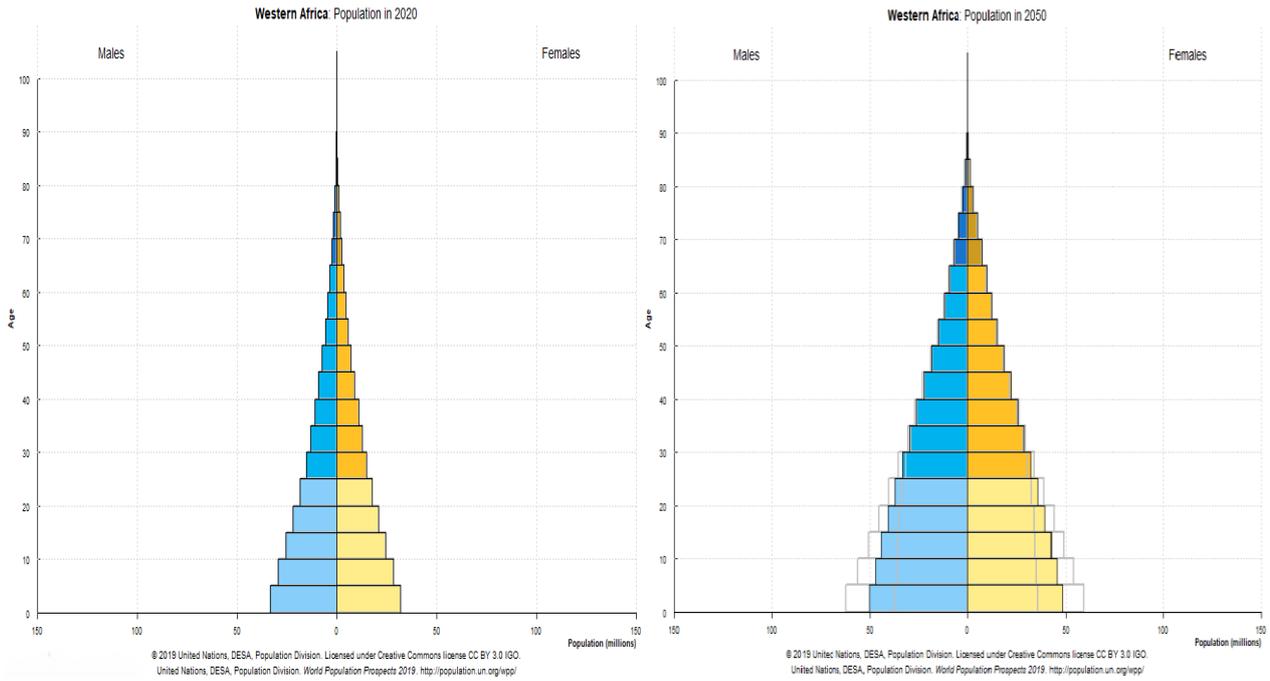
¹ According to the United Nation (UN) forecasts, ten of the eleven Countries in the Sahel will contribute to the global demographic growth from now to 2025 with a rate of change from 2% to 3% (UNDP, 2020).

Western Africa: Total Population



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United Nations, DESA, Population Division. *World Population Prospects 2019*. <http://population.un.org/wpp/>

In this chart, besides the previously listed Sahel region’s countries, other countries are also included: Gambia, Guinea, Sierra Leone, Liberia, Cote D’Ivoire, Ghana, Togo and Benin. However, despite the extended inclusion, data shows a clear and significant increment of inhabitants in that area. These forecasts are made considering the projections of total fertility and life expectancy at birth and, considering the probable median, the population total growth will be graduate and constant (almost +0.1 every 10 years)⁸. Moreover, considering the division per gender, the UN DESA 2019 projections about Population Division in Western Africa from 2020 to 2050, show a major increase of females’ gender rather than males’ gender and, additionally, an increase of births expectations:



This demographic change may undermine every education effort², worsen the supply of public services, compound the lack of job opportunities and exacerbate the food shortage in the whole area^{3 9}. However, the demographic development represents only one aspect of the more complex relationships that have been established between local communities and the environment, a topic that represents one of the main issues of the Sahel's region. The inadequate technical approaches adopted for the exploitation of natural resources⁴ and the disequilibrium between demand and supply, contribute to the exacerbation of the condition of poverty and deprivation in the area¹⁰. The various levels of land degradations⁵ that characterize the Sahel area make the restoration of the productivity capacity of that lands not so easy. However, a United Nations' study titled "*West Africa Thematic Report*", coordinated by Issifou Alfari, Chief of information at AGRHYMET Regional Centre - Niger, shows a clear painting of the productive capacity of the lands in the Sahel area¹¹. The study has collected data from 2003 to 2018 and it indicates that even if there has been a decline in terms of surface (m²) of forests and savannas in some regional southern areas, in some countries like Mali and Nigeria an increase of cultivable lands has been registered.

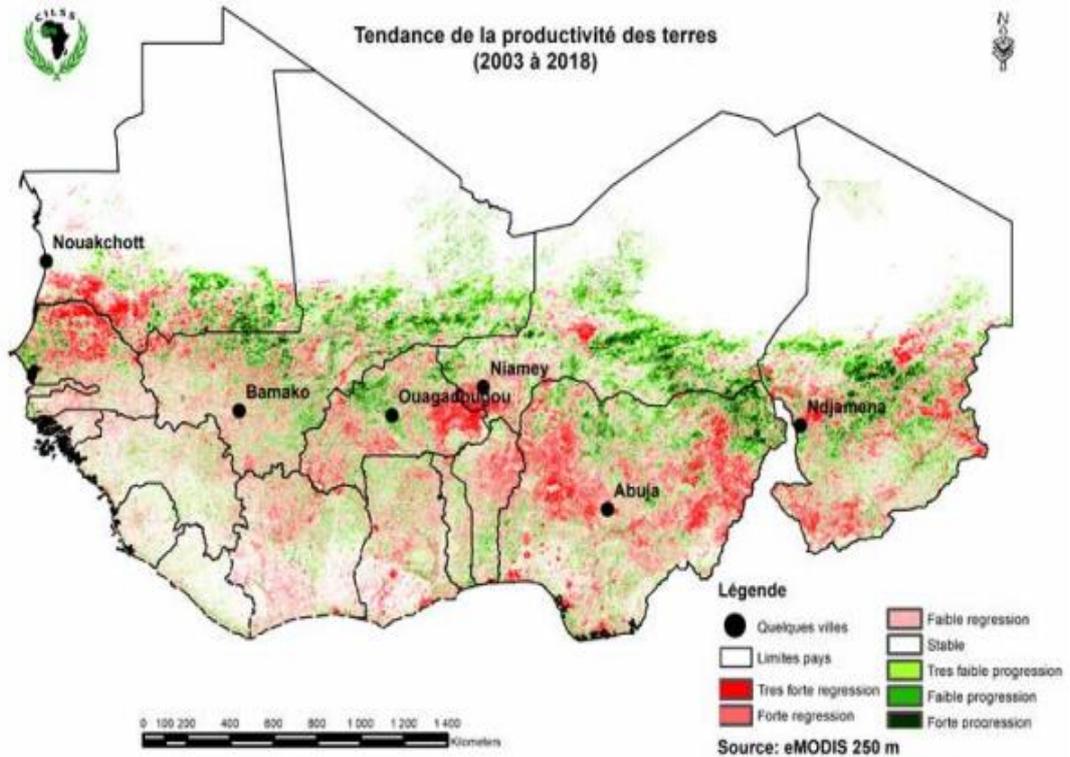
² According to a study conducted by the World Bank in 2016, giving incentives to education (e.g. conditional cash transfers, fee subsidies, transport vouchers) in the medium-term, and especially providing uniforms, school canteens and take-home food rations as short-term goals may contribute to define a genuine and well-structured education system, that is strong enough to face the democratic transition (Meera Shekar, 2016).

³ According to the FAO report "*The Sahel crisis*", the increase of humanitarian needs is strongly related to the insecurity and climate change' effects; both affect the land's productivity and the availability of clean water. "*As a result of Boko Haram-related violence, more than 6 million people were food insecure in the Lake Chad basin. Displaced people were deprived of their livelihoods and often rely on the limited food reserves and resources of their host communities.*" (FAO, 2020).

⁴ The predominance of pastoralism has allowed agriculture only in some areas where the access to water is guaranteed. However, the meeting of pastoralism and agriculture in some areas has generated significant conflicts over the years, which have been reinforced by the effects of drought. At the same time, some areas are orientated in the cultivation for subsistence and other for commercial production. However, the combination of the exploitation of natural resources and the population has been unbalanced over the years, rarely reaching the demand/supply goal (Raynaut, 2001).

⁵ Agriculture is the main economic activity in the Sahel region. The level of degradation, according to a study conducted by Professor Stephen Doso Jnr, an expert in natural resources management, is mainly caused by climate change. He stated: "*Land degradation in the Sahel is characterised by soil degradation, mainly due to wind erosion. This is favoured by climatic factors such as drought and diminishing rainfall, compounded by anthropogenic factors, including population growth, agricultural intensification and overgrazing. Climatic and anthropogenic factors may act independently or have effects on each other. These factors result in the reduction of vegetation cover, decrease in fallow periods and a reduction in the balance between fallow areas and cultivated fields, which are vital to maintaining soil fertility and reducing losses from erosion.*" (Jnr, 2014).

Figure 8: Balance of plant productivity in the study area between 2003 and 2018 (NDVI-MODIS, 250 m 2003-2018) / Maxima NDVI averages were calculated from 2003 to 2007 and from 2014 to 2018. The difference between these two averages ((2014 to 2018) - (2003 to 2007)) made it possible to map the trend between the two periods showing the areas with high and low productivity.



Despite some positives outcomes, oil pollution, demographic growth, urbanization and a significant poverty rank continue to contribute to the spread of land degradation. The reason is related to the increase of food demand, reduction of cultivation areas and pastoral fields which have been replaced by the creation of cities and the lack of employment and basic needs that contribute to raise the level of poverty in the region¹². In addition, a significant part of the population is left to its own devices, without receiving any kind of public education, health and social welfare services. More than 50% of the families are unable to provide health care for their children¹³. As for a political point of view, even if most governments are democratic, the fragility of the political framework⁶, the bureaucratic corruption and a favoritism system avoid the development of a transparent and trustable political framework. For example, Nigerien President Mahamadou Issoufou has collaborated with Malian armed groups, including Self-Defence Group of Imrad Tuareg and Allies (GATIA) and the Movement for the Salvation of Azawad (MSA). This relationship has aggravated the internal social tensions and hasn't guaranteed civilian protection. In parallel, in order to fight the extremist threat in Burkina Faso, the local security forces have committed abuses against the Fulani community, encouraging,

⁶ The fragility of the government is identified in the incapacity to respond to the needs of their own citizens, to provide social services and to improve the healthcare system. The political inability encourages the exacerbation of social tensions, grievances and facilitates the spread of violence (Steadman, 2020).

consequently, some members to take part in extremists' groups¹⁴. Jean-Pierre Oliver de Sardan, Professor of anthropology in France and Niger, has declared that this political situation has exacerbated the gap between privileged class and the rest of the population¹⁵. Richard Downie, Deputy Director of the Africa Program at the *Center for Strategic and International Studies* asserts that in Mali and Nigeria *"the ruling elites have governed operating unofficial networks and favoring special interest groups, whether regional or ethnic. Corruption has run rampant. Security forces have acted with impunity, protecting incumbent"*.¹⁶

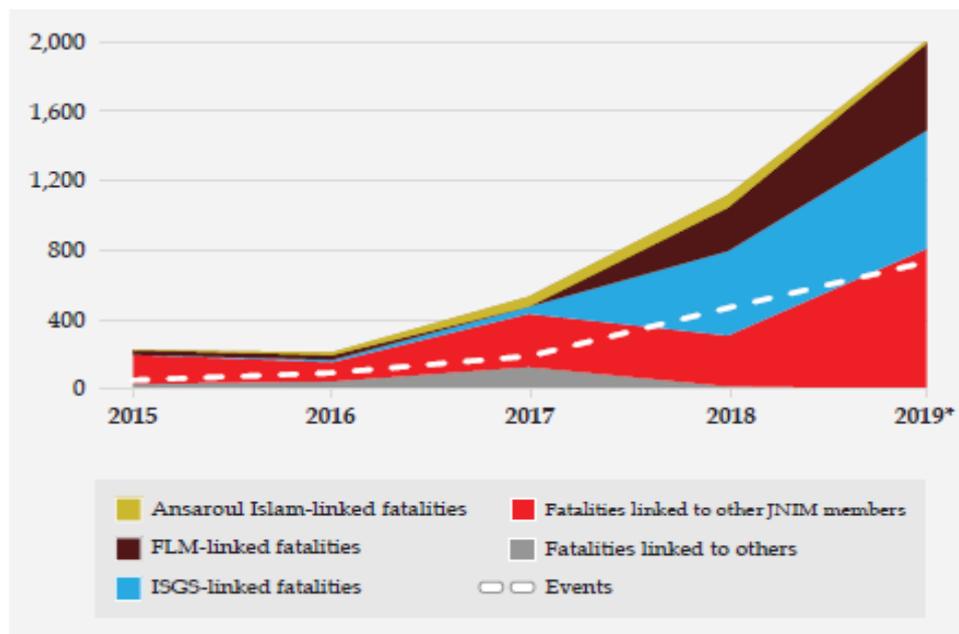
As a matter of fact, the World Bank forecasts (2014) illustrate that, considering the humanitarian crisis, social deprivation, extremism's spread and security problems, *"by 2050 more than 85 million sub-Saharan Africans are expected to be forced to emigrate"*¹⁷. Chris Nikoi, Regional Director of Southern Africa for the World Food Programme, declared: *"The impact of the crisis, in one of the world's most vulnerable regions, is dramatic [...] Millions of people have yet to recover from last year's food and nutrition crisis"*¹⁸. Instead of considering the migration as a sudden emergency, Luca Raineri and Alessandro Rossi sustain that: *"migratory flows from Africa to Europe represent a long-standing phenomenon with deep historical roots and rapidly changing patterns"*. It means that it doesn't need to be treated as an imminent security threat¹⁹. However, other scholars adopted the concept of *"securitization"* referring to the migration's issue. Nowadays, the violations of human rights, abuses and violence towards migrants are accompanied by the mistrust and the desperation of African citizens who blame their government to work for the EU instead of for their population, so people are forced to leave their lands. It seems that the migration already is and will become then, a problem of national and international security and stability²⁰.

The exacerbation of intra-state conflicts and the spread of criminal organizations and terrorism have contributed to aggravate the complex and problematic social and humanitarian conditions in the region. Data report that, since 2015, the occurrence of violent episodes correlated to the Islamist groups has doubled over the year²¹. The Salafi-jihadi groups are active in the area of Western Sahara since 2015; since 2016 are operating in Burkina Faso, Mali and Niger, and their terrorist attacks intentionally exacerbated the conflict between local communities in the region. Nowadays, JNIM, ISGS, and Ansar al Islam work jointly in the Sahel's area, with the aim to weaken the state and remove

the Western influence⁷, in order to establish shari’a-based governance²². Furthermore, local grievancies and food insecurity issues must also be considered crucial factors that facilitated the birth and spread of terrorist groups in the region.

According to the study conducted by Pauline Le Roux, titled “Responding to the Rise in Violent Extremism in the Sahel”, only in 2019 there have been more than 700 violent episodes related to these groups. (Graph 1) She stated: “Fatalities linked to these events have increased from 225 to 2,000 during the same period. This surge in violence has uprooted more than 900,000 people, including 500,000 in Burkina Faso in 2019 alone”²³. Additionally, the top-down strategy⁸ carried out during 2015 to establish some ISIS enclaves in the Sahel’s region, exacerbated the local social conditions and the security issues in the whole area. Boko Haram, affiliated with ISIS, in 2015 changed the name from Nigeria to “the West African province”.

Trends in militant Islamist group activity in the Sahel



[GRAPH 1 Source: “Responding to the Rise in Violent Extremism in the Sahel” Pauline Le Roux (2019), from: Armed Conflict Location & Event Data Project (ACLED)]

⁷ However, it is important to point out that, besides the interest of these groups to expand their presence in the region, and to pursue common political and religion aims, each of them has its own shifting interests, motivations and territorial influence, considering local contexts and situations. (Eizenga and Williams, 2020).

⁸ The expression top-down strategy means that the intention of the Caliphate in 2015 was to send individuals in the North and in the Sahel’s region in order to establish new enclaves. However, it happened that local extremists and criminal groups settled in the area declared their loyalty to Al-Baghdadi, and consequently their spontaneous affiliation to ISIS (Crone, 2017).

The continuous attacks by terrorist organizations (like FLM, Ansaroul Islam or ISGS) towards security forces, teachers, community employees and public workers have created gaps in the political system that have influenced the incapability of the government to respond to the citizens' needs²⁴. Additionally, Marie Roger Biloa⁹ and Stig Jarle Hansen¹⁰, in an interview realized to Al Jazeera, pointed out that beyond the incapability of the governments to respond to the citizen's needs, a significant problem is the disorganization of local security forces and the lack of equipment for the army, which have facilitated the spread of jihadists in the Sahel's area, without the possibility to counter the spread of the phenomenon. So, without the involvement of local authorities and security forces to solve local disputes and local conflicts, it appears to be harder to counter and fight the extremists' groups that acquired power in the area²⁵.

The UN Department of Political Affairs declared: *"the region continues to be threatened by cyclical instability, state fragility and recurring humanitarian crises. Limited capacity in the region to effectively deliver basic services and foster dialogue and citizen participation contributes to grievances, leaving a vacuum exploited by terrorist and criminal groups. Efforts to stabilise Mali and prevent further destabilization in the Sahel are threatened by the continuing activity of terrorist and criminal groups, as well as the spread of violent ideology across the Sahel region"*.²⁶

In this complex and multi-colored scenario, the environmental conditions, the lack of fields' fecundity, the strong climatic variations and the irregular rainfalls are considered the main obstacles for food security and poverty reduction in the area²⁷.

The correlation between Climate Change and Terrorist Organizations

The semiarid narrow strip that separates the Sahara from the Savannahs, is one of the areas most affected by climate change²⁸. Some consequences of climate change that might be pointed out in order to understand the negative implications that they produce in the Sahel's area are: the rise of temperatures, the changes in flora and fauna, the increase of drought, wildfires, lost crops and lack of clean water²⁹. The region is experiencing, for several years, changes in temperature, fluctuating rainfall and droughts. These natural phenomena have had a negative impact on the lands, reducing water supply and changing grazing patterns³⁰. As for the water supply, it represents a crucial need for the field's irrigation and one of the main concerns for food security. Some potential risks of

⁹ Marie-Roger Biloa is the President and CEO of Africa International Media Group.

¹⁰ Stig Jarle Hansen is a Professor in International Relations at the Norwegian University of Life Sciences.

climate change related to water resources are the increase of evaporation of surface water, the decrease of runoff and the growth of conflicts over limited water resources³¹. Lake Chad, for instance, since the 1970s has seen a reduction of more than 50% of the water level. The lake has always been the primary source for fishers, farmers and herders, and that decrease has had dramatic consequences for their economy and has led to conflict between fishing communities and migrant fishers³².

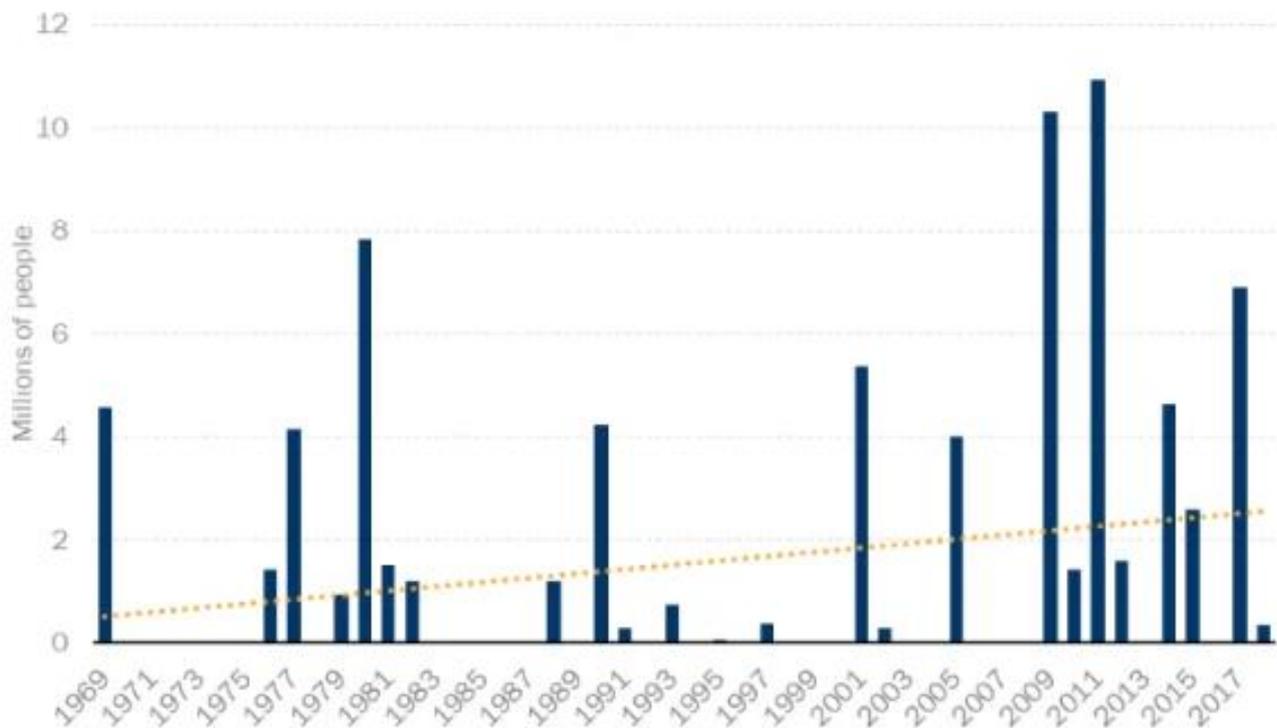
In Mali, for example, Fulani herdsmen are mainly dependent on transhumance, but hostile weather, not flourishing vegetation and a shortage of water have fostered a crisis in the pastoral communities³³. Furthermore, during the 2018, the Country has experienced intensive conflicts between herders and farmers and approximately 24 million of people required food assistance in the whole region³⁴. Additionally, the majority of annual precipitation in these lands arrive from the West Africa Monsoon (WAM) system, which, recently, has registered variability in of 300-800 mm in seasonal precipitation accumulation, data that affected significantly the sea surface temperature in the Atlantic, Pacific and Indian Oceans basins³⁵. The surface temperatures have increased over the last 50 years and if the number of cold days and cold nights has decreased, the number of warm days and nights has increased since the second half of the XX century³⁶. According to National Geographic report: *“Since 1906, the global average surface temperature has increased by more than 1.6 degrees Fahrenheit (0.9 degrees Celsius)”*³⁷. Additionally, a study conducted by Christian Bodewing, a program leader for Inclusive Growth in European Union Member States, based in Brussels, indicates that droughts in the Sahel region have become more frequent and are impacting the local population’s life. Rainy seasons are becoming shorter and the forecasts of temperatures by 2030 record *“over 4 degrees Celsius higher than pre-industrial levels if no dramatic shift happens”*³⁸.

	Temperature (increase)	Precipitation ⁴¹	Rainfall pattern	Extreme Events
Burkina Faso ⁴²	3-4°C (2080-2099) ⁴³ Temperatures will increase in the north at a relatively higher rate than in the south.	Models inconsistent; likely less rainfall;	Increase in climate variability; longer dry periods and drought	Increase in temperature and drought conditions
Chad ⁴⁴	1.0-3.4°C by 2060s 1.6-5.4°C by 2090s ⁴⁵	-15 mm to +9 mm per month by the 2090s ⁴⁶	The amount of rain that falls in 'heavy' rainfall events is projected to increase in southern Chad but decrease in northern Chad; increase in drought	Heat wave durations to increase over all of Chad by 2065 and 2100 with central-northern Chad to experience the largest increases in the length of heat waves
Mali ⁴⁷	1.2 to 3.6°C (2060) 1.8 to 5.9°C (2090) ⁴⁸	Models inconsistent; likely less rainfall	Erratic rainfall	More frequent and longer droughts
Mauritania ⁴⁹	0.5 to 2°C (2040)	Models inconsistent; likely less rainfall in eastern areas	Erratic rainfall	Increase in sea level rise and flooding; coastal erosion; increased saline intrusion, largest cities at risk
Niger ⁵⁰	1°-1.6°C between 2020-2049 ⁵¹ 2.3°-2.6°C between 2020-2049	Models inconsistent	Rainfall is projected to begin later in the rainy season	Increase in drought frequency; Heat wave duration increase by middle and late 21 st century
Nigeria (North/Northeastern) ⁵²	1.1°-2.5° C by the 2060s 1.4°-4.6° C by the 2090s ⁵³ warming will be greater in the northern part of Nigeria.	Models inconsistent; north and south variability with drier north; ⁵⁴	Lower and erratic rainfall in the north	Heat wave duration projected to increase by middle (2046-2065) and late 21 st century (2081-2100); largest increase in length of heat waves in northern Nigeria

[Source: *“Climate Change Profile West Africa Sahel”* Ministry of Foreign Affairs, Bangladesh. April 2018]

This table realized by the Ministry of Foreign Affairs of Bangladesh in the publication *“Climate Change Profile West Africa Sahel”*, represents a summary of climate change effects in six Countries of the Sahel regions. In the same study, the Sahel region has been defined as *“a region of rapidly growing populations, poverty, food insecurity, gender inequality, illiteracy, conflict, and political instability.”* As analyzed before, those characteristics are a significant outcome of socio-economic and political factors which have been exacerbated by the environmental changes³⁹. Over the years, the disruption of agricultural production has generated a huge problem related to food security. Farmers are exploiting lands that were used for livestock, trying to reach areas with water sources and wells for the vegetables’ cultivation⁴⁰. At the same time, a lot of children are affected by malnutrition and the necessity to find human capitals to exploit the few lands available to produce a minimal quantity of food, push families to withdraw their children from school, in order to have additional help for the “food research”. The humanitarian emergency in the whole region has registered a significant number of deaths, generally affected by the consequences caused by the long period of droughts⁴¹.

Total number of people affected by droughts (1969-2018)

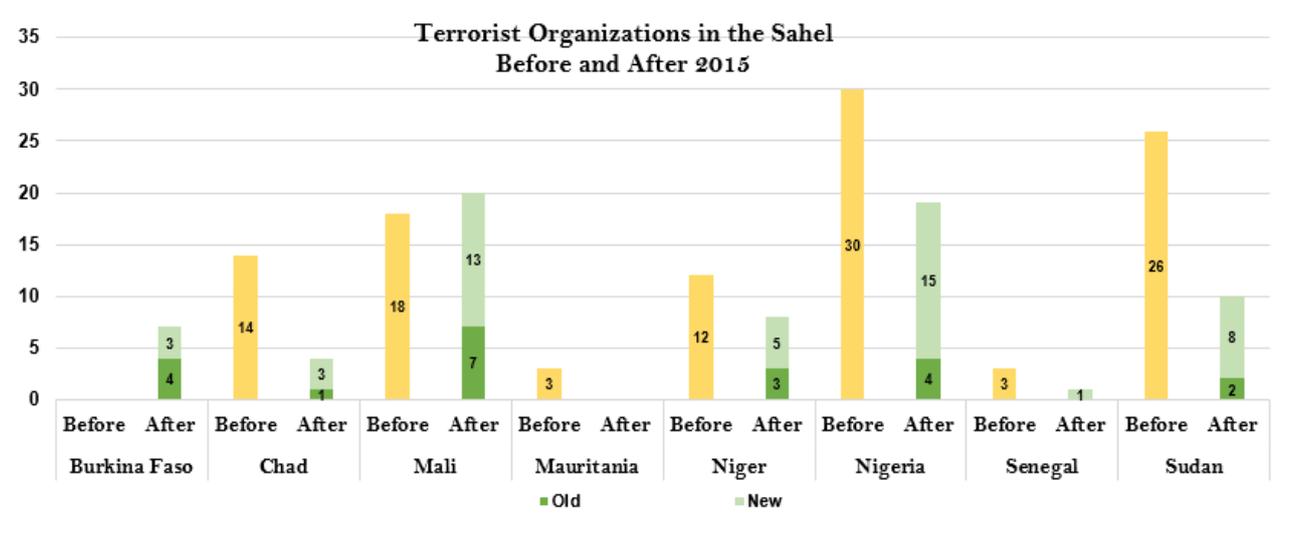


[Source: "Climate change in the Sahel: How can cash transfers help protect the poor?", Christian Bodewing, Brookings, December 2019]

This data reported by Christian Bodewing in his study has been realized by the EM-DAT, International Disaster Database, and they refer to six countries of the whole region: Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal. The bar chart clearly shows that the trend of deaths is increasing, and even if in some years haven't been registered victims, the prospect draws, however, a dramatic painting⁴².

Inevitably, adverse environmental conditions caused especially by the climate change in the Sahel's region will encourage people to migrate in other areas⁴³. Considering the demographic trends, the economic conditions, the social issues and the humanitarian crisis, the other neighbor states won't be able to absorb the flows in the long-term, and that condition will lead to a new wave of migration⁴⁴. According to a study conducted by the World Meteorological Organizations, the period between 2015 and 2019 has been the warmest of any other ever recorder globally. According to the study: "Compared to the previous five-year assessment period 2011–2015, the current five-year period 2015–2019 has seen a continued increase in carbon dioxide (CO₂) emissions and an accelerated increase in the atmospheric concentration of major greenhouse gases (GHGs), with growth rates nearly 20% higher. The increase in the oceanic CO₂ concentration has increased the

ocean's acidity"⁴⁵. So, the year 2015 seems to be a crucial year for climate change effects in Sahel's region. Looking back to Graph1, reported by Pauline Le Roux, from 2015 the number of terrorist organizations that acted in the Sahel doubled. Is this a coincidence? The exacerbation of hunger and malnutrition caused by the extreme weather events and all the phenomena previously analyzed, related to the incapability of the local governments to provide social assistance, have consequently reduced the public trust towards the public administrations. The extremists' organizations, as preannounced before, take advantage from the mistrust in the political parties and from the desperation of young unemployed people, who don't even have any possibility to work in their own land, considering the field's unproductivity and the lack of further potential employments⁴⁶. For example, Boko Haram established its main control in Nigeria and Lake Chad, mainly because of governance's collapse in the North East and the lack of appropriate military response, and its members are mainly unemployed youths from that area.⁴⁷ The terrorist organization is often viewed as an insurgent group because besides its international affiliation to transnational terrorist organizations, it has shown several times its propensity to pursue local aims to subvert the secular government of Nigeria and replace it with an Islamic one. Additionally, besides the religious and political motivation, what drives the organization to pursue its activities in this area are also local social and economic grievances, exacerbated by climate conditions. Some local experts, for instance, believe that inter-ethnic disputes increase the revenge's desire in Boko Haram (e.g. the Kanuri-Borno Empire in the North-East of Nigeria, where the organization is established, is politically and economically marginalized).⁴⁸



[Source: START – GTD Database]

DESCRIPTION: The chart has been realized throughout the data provided by START – GTD Database, referring to the terror attacks conducted in the selected Sahel's countries. The research has been conducted in two phases: in the first phase I collected data from

1989 to 2014, filtering the research for each country and selecting the name of the terrorist perpetrators who carried out attacks in that period of time; in the second phase the process adopted has been the same, but editing the range of time: 2015-2018. The yellow bars represent the number of attacks conducted before 2015 and the green bars represent the attacks conducted after 2015. With the term “old” the reference is to terrorist perpetrators that were already active in the area. With the term “new” the reference is to terrorist organizations that originated between 2015 and 2018 (Appendix 1) (START, 2020).

The graphic representation shows that, despite the reduction of terrorist organizations in the majority of the Sahel’s countries (in most of them due to the unification among more extremists’ groups), from 2015 until 2018, 48 new terrorist groups have carried out terrorist attacks in different areas of the region (Appendix 1)⁴⁹. For example, according to a study conducted by Méryl Demuyneck and Julie Coleman J.D., in May 2015 Abu Walid al-Sahrawi¹¹ declared his alliance to the Islamic State and to Abu Bakr al-Baghdadi, creating “The Islamic State in the Greater Sahara” (EIGS). However, his “co-worker” Mokhtar Belmokhtar¹² rejected his proposal to join ISIS, reaffirming his loyalty to al-Qaeda, including the regional group AQIM. Despite the rivalry between the two organizations, the terrorist organizations that are active in the Sahel’s region hardly ever target each other. Rather, they cooperated indirectly in order to increase the insecurity in the region and take power. The enforcement of affiliations with two big extremists’ organizations as Al-Qaeda and ISIS, represented a turning point in the spread of jihadists’ movements in the whole area⁵⁰. Benjamin Schraven, a researcher in Environmental Governance at the German Development Institute, has declared in an interview for *Il Sole 24ore*, that *“the effects of climate changes are having some effects on the conflicts and to the general regional issues. Especially the conflict between farmers and shepherds, like in Nigeria, has a component that is linked to climate change”*⁵¹. Stig Jarle Hansen claims that local conflicts (e.g. conflict between farmers and nomadic Fulani in Mali or ethnic conflicts in Burkina Faso) have favored the foothold of terrorist organizations in the area, who took advantage from pre-existing conflicts⁵². Ángel Losada Fernández, the European Special Representative for the Sahel, has declared that the humanitarian, economic and environmental issues, additionally to the instable and breakable political framework, have allowed jihadist groups to define a strategic plan in the whole area, aimed to establish their power and presence in the villages, providing water and food, building schools, hospitals and mosques and acquiring consensus⁵³. Katherine Zimmerman, in her work *“Salafi-Jihadi Ecosystem in the Sahel”*, has analyzed the spread of Salafi-Jihadi terrorism in the Sahel,

¹¹ Abu Walid al-Sahrawi is a member of the Rguibat tribe and a senior commander of al-Mourabitoune, a jihadist group that originated by the unification of MUJAO (a terrorist group that he founded in 2011) and the terrorist group lead by Mokhtar Belmokhtar. When in May 2015 he announced the creation of the Islamic State in the Greater Sahara (EIGS), the immediate negative reaction of Mokhtar Belmokhtar broke the relationship between the two groups (Roger, 2020).

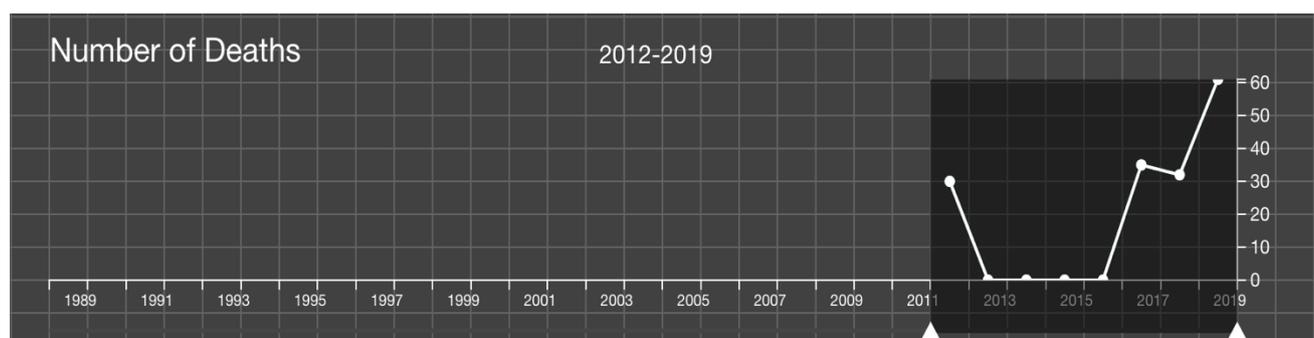
¹² Mokhtar Belmokhtar is a former Algerian soldier and a current commander of a jihadist group in the Sahel, affiliated with Al Qaeda (Zuloaga, 2020).

and she states: *“The Salafi-jihadi network’s ability to integrate into parts of the population and use local conflicts to insinuate itself further into communities has overlaid Salafi-jihadi influence and interests on the local dynamics”*⁵⁴. It seems so that, beyond the political, economic, social and humanitarian problems that exist in the Sahel’s region, the instability caused by the climate change and the serious consequences related to it (e.g. food insecurity¹³), had a significant impact in the spread of terrorist organizations in the whole area⁵⁵.

Case study: Fulani-Dogon conflict

Fulani communities are nomadic herders and islam’s believers, mainly settled in Mali. They are the main characters of a long and complex conflict that is taking place in Mopti region since the 2012 against Dogon people, an indigenous group that is mainly committed into agriculture. The reasons behind the conflict are mainly related to accuses carried out by Dogon communities against Fulani communities regarding disruptions of their crops and cattle. Additionally, Dogon groups have accused Fulani of being an insurgent group, while Fulani have accused Dogon to have been armed by the Mali’s government.⁵⁶ The dispute exacerbated in 2015, when the region started to experience the drastic consequences of climate change and terrorist groups incremented their presence in the area¹⁴.

Fulani-Dogon Conflict Trend (2012-2019) in terms of Number of Deaths



[Number of deaths registered for the Fulani-Dogon Conflict between 2012-2019. SOURCE: UCDP]

¹³ The food insecurity in the Sahel is both a consequence of climate change and of the civil turmoils in the region. Some countries like Mali, Niger, Chad and Burkina Faso rely upon the natural resources of neighbors’ states (e.g. crude oil), like Nigeria. If the production and the economy collapse in the independent state, all the dependent states will receive repercussions both for internal and international markets. (Abderrahmane 2020)

¹⁴ Data posted by Global Terrorism Database – START, show that between 2012 and 2014, 157 terror incidents have been reported in Burkina Faso, Niger and Mali. However, between January 2015 and December 2015, an amount of 168 terror incidents have been registered in the same countries (START, 2020).

While the amount of clean water, rainfall and cultivable lands was decreasing, the number of farmers and herders that necessitated of those needs was raising.⁵⁷ Many Fulani have been forced to migrate from their villages, looking for new groundbaits, because the droughts decimated their herds.⁵⁸ In addition to these security issues, the relation between Fulani herders and Dogon farmers inflamed, and the second ethnic group accused the first one of being linked to the jihadists of the IS of Greater Sahara.⁵⁹ Actually, during those years, Jama'at Nasr al-Islam wal Muslimin (JNIM), Al-Qaeda fi Bilad al-Maghrib al-Islami (AQIM) and IS of Greater Sahara called Fulani to join their armed groups in exchange of protection and aids.⁶⁰ So, the perception that the Fulani were in league with terror groups entailed the governments' adoption of discriminatory security measures against this ethnic group, which claimed quite often food assistance and water shortage. Over the years, the local instability has guaranteed free access for terrorist groups and extremists which acquired control in the area. Additionally, the conflict spilled into neighbouring countries, like Burkina Faso and Niger, spreading new fear and instability in fragile nations.⁶¹ In 2020, numerous terrorist attacks have been carried out against both Dogon and Fulani villages, killing civilians, including women, children and elderly.⁶²

As highlighted before, the rise of violent extremisms and the spread of terrorist organizations in the central Sahel is mainly related to the fragility of governments, inability to provide national security and existence of local conflicts. Additionally, the climate change has intensified security issues and food insecurity in the whole area, creating fertile land for humanitarian crisis.

Political Response & Conclusion

The international response to the security threats and issues rooted in the region has been enhanced since the beginning of the XXI century. Recently, the European Union has organized a series of conferences and meetings in order to find a collaboration among different European members to tackle the insecurities that characterize the area. Ángel Losada Fernández states that a possible Sahel's coalition must be headed by four main pillars:

-Security and fight against terrorism, after the unification of Barkhane operations forces, G5 military forces, a new force called Takuba made by special forces and new military support from the State of Chad.

-*Capacity building*, through new measures of social assistance, construction of schools, administrative building, judiciary building, etc.

-*State-building*, according to democratic principles.

-*Economic development*⁶³.

On the opposite side, Marie-Roger Biloa believes that since the beginning the presence of foreign units didn't improve the local situation. A joint effort among Africans may be more efficient in order to solve the local issues. The declaration made by Marie-Roger Biloa seems to invoke a bottom-up strategy: building from a local level and allowing external help only to intervene once every country has solved its own internal troubles: reorganization of the army, solidification of the political system, economic development, social assistance⁶⁴.

However, the management of climate change remains a crucial duty. Trying to face the problems created by global warming and by the reduction of rain, may help significantly to face the threat of terrorism, to prevent and to reduce its spread. Climate change, in a context of instability and grievances, contributes to the creation of further fragilities and fertile ground for the rise of new terrorist organizations, which will try to obtain the domain and the control over the local natural resources⁶⁵. For this reasons, for example, a significant investment in climate adaptation for the agricultural sector, providing fertilizers and products that can help to produce the land fertility in the short-term, would be a relevant help for farmers and shepherds who will lose less livelihood and will be able to guarantee at least a minimum of production, useful to contrast the food insecurity⁶⁶. Therefore, the creation of alternative methods to prevent further catastrophic events caused by the climate change that can guarantee the fields' productivity¹⁵ and the basic social needs, must be considered a top point in the national and international agenda. It is not possible countering the extremist's threat, without providing a rapid and concrete response to humanitarian, social, political and economic dysfunctions that affect the Sahel's area.

¹⁵ The Sahel' s soil contains a lot of water. However, the alternative method to save, store and then use the water produced by violent rainfalls to irrigate the lands, might be a helpful solution instead of exploiting natural resources. The water availability, for example, it's a crucial need, and the state's control over this resource and the equal availability to the whole population of it may help to contrast the presence of terrorists groups in some areas (Silvestri, 2020).

Appendix 1

Terrorist Organizations Before and After 2015

LIST

Countries	Before 2015	After 2015	New Terrorist Organizations - After 2015
Burkina Faso	-	-	-
Chad	<ul style="list-style-type: none"> ▪ Boko Haram ▪ Freedom Eagles of Africa ▪ Justice and Equality Movement (JEM) ▪ National Alliance (Chad) ▪ Union of Forces for Democracy and Development (UFDD) 	<ul style="list-style-type: none"> ▪ Boko Haram ▪ Military Command Council for the Salvation of the Republic (CCSMR) 	<ul style="list-style-type: none"> ▪ Military Command Council for the Salvation of the Republic (CCSMR)
Mali	<ul style="list-style-type: none"> ▪ 23 May Democratic Alliance ▪ Al-Murabitun ▪ Ansar Dine ▪ AQIM 	<ul style="list-style-type: none"> ▪ Al-Mua'qi'oon Biddam Brigade ▪ Ansar al-Dine (Mali) 	<ul style="list-style-type: none"> ▪ Al-Mua'qi'oon Biddam Brigade ▪ Ansar al-Islam (Burkina Faso)

	<ul style="list-style-type: none"> ▪ Association of Students and Pupils in Mali (AEEM) ▪ Azawad National Liberation Movement (MNLA) ▪ Black African Vigilantes ▪ Black Malian Group. ▪ Boko Haram ▪ Ganda Koi ▪ Islamic Arab Front of Azawad (FIAA) ▪ Jama'atu Ahlis Sunna Lidda'awati wal-Jihad ▪ MAA ▪ Military faction (Red Berets) ▪ MUJAO ▪ Salafist Group for Preaching and Fighting (GSPC) ▪ Signed-in-Blood Battalion ▪ Tuareg extremists 	<ul style="list-style-type: none"> ▪ Ansar al-Islam (Burkina Faso) ▪ AQIM ▪ Arab Movement of Azawad (MAA) ▪ Azawad National Liberation Movement (MNLA) ▪ Boko Haram ▪ Coordination of Azawad Movements (CMA) ▪ Dogon extremists ▪ Fulani extremists ▪ High Council for the Unity of Azawad (HCUA) ▪ Islamic State in the Greater Sahara (ISGS) ▪ Jamaat Nusrat al-Islam wal Muslimin (JNIM) ▪ Macina Liberation Front (FLM) 	<ul style="list-style-type: none"> ▪ Coordination of Azawad Movements (CMA) ▪ Dogon extremists ▪ Fulani extremists ▪ Islamic State in the Greater Sahara (ISGS) ▪ Jamaat Nusrat al-Islam wal Muslimin (JNIM) ▪ Macina Liberation Front (FLM) ▪ Movement for the Salvation of Azawad (MSA) ▪ Self-Defense Group of Imghad Tuaregs and Allies (GATIA) ▪ Youth Movement for the Total Liberation of Azawad
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		<ul style="list-style-type: none"> ▪ Movement for the Salvation of Azawad (MSA) ▪ MUJAO ▪ Self-Defense Group of Imghad Tuaregs and Allies (GATIA) ▪ Tuareg extremists ▪ Youth Movement for the Total Liberation of Azawad 	
Mauritania	<ul style="list-style-type: none"> ▪ AQIM ▪ Salafi Extremists ▪ Salafist Group for Preaching and Fighting (GSPC) 	-	-
Niger	<ul style="list-style-type: none"> ▪ Air and Azawak Liberation Front ▪ AQIM ▪ Boko Haram ▪ Democratic Front for Renewal (FDR) ▪ Hezbollah (1989) ▪ Movement of Niger People for Justice (MNJ) ▪ MUJAO 	<ul style="list-style-type: none"> ▪ Al-Qaida in the Islamic Maghreb (AQIM) ▪ Boko Haram ▪ Islamic State in the Greater Sahara (ISGS) (suspected) ▪ Jamaat Nusrat al-Islam wal 	<ul style="list-style-type: none"> ▪ Islamic State in the Greater Sahara (ISGS) ▪ Movement for the Salvation of Azawad (MSA) ▪ Self-Defense Group of Imghad

	<ul style="list-style-type: none"> ▪ Saharan Revolutionary Armed Front (FARS) ▪ Signed-in-Blood Battalion ▪ Tuareg extremists ▪ Zaghawa extremists 	<p>Muslimin (JNIM)</p> <ul style="list-style-type: none"> ▪ Movement for Oneness and Jihad in West Africa (MUJAO) ▪ Movement for the Salvation of Azawad (MSA) ▪ Self-Defense Group of Imghad Tuaregs and Allies (GATIA) 	<p>Tuaregs and Allies (GATIA)</p> <ul style="list-style-type: none"> ▪ Jamaat Nusrat al-Islam wal Muslimin (JNIM) ▪ Ansar al-Dine (Mali)
<p style="text-align: center;">Nigeria</p>	<ul style="list-style-type: none"> ▪ Ahlul Sunnah Jamaa ▪ Al-Sunna wal Jamma ▪ Ansaru ▪ AQIM ▪ Association of Mobil Spill Affected Communities (AMSAC) ▪ Bini-Oru ▪ Boko Haram ▪ Civilian Joint Task Force (JTF) 	<ul style="list-style-type: none"> ▪ Bachama extremists ▪ Berom Militants ▪ Boko Haram ▪ Concerned Militant Leaders (CML) ▪ Fulani extremists ▪ Ijaw extremists ▪ Indigenous People of Biafra (IPOB) 	<ul style="list-style-type: none"> ▪ Bachama extremists ▪ Berom Militants ▪ Concerned Militant Leaders (CML) ▪ Indigenous People of Biafra (IPOB) ▪ Islamic Movement (Nigeria)

	<ul style="list-style-type: none"> ▪ Delta Democratic Militia ▪ Egbema National Front ▪ Egbesu Youths of the Bayelsa ▪ Fulani ▪ Ijaw extremists ▪ Itsekiri ▪ Modakeke Ethnic Activists ▪ Movement for the Actualization of the Sovereign State of Biafra (MASSOB) ▪ Movement for the Emancipation of the Niger Delta (Mend) ▪ Movement of Niger People for Justice (MNJ) ▪ Niger Delta Freedom Fighters (NDDF) ▪ Niger Delta Liberation Force (NDLF)-Nigeria ▪ Niger Delta Patriotic Force 	<ul style="list-style-type: none"> ▪ Islamic Movement (Nigeria) ▪ Movement for the Emancipation of the Niger Delta (MEND) ▪ Niger Delta Avengers (NDA) ▪ Niger Delta extremists ▪ Niger Delta Forest Army (NDFA) ▪ Niger Delta Greenland Justice Mandate (NDGJM) ▪ Niger Delta Volunteers (NDV) ▪ Nyandan militia ▪ People's Democratic Party (PDP) ▪ Red Egbesu Water Lions 	<ul style="list-style-type: none"> ▪ Niger Delta Avengers (NDA) ▪ Niger Delta Forest Army (NDFA) ▪ Niger Delta Greenland Justice Mandate (NDGJM) ▪ Nyandan militia ▪ Red Egbesu Water Lions ▪ Red Scorpion
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	<ul style="list-style-type: none"> ▪ Niger Delta People's Volunteer Force (NDPVF) ▪ Niger Delta Vigilante (NDV) ▪ Odua Peoples' Congress ▪ Ombatse Cult ▪ People's Democratic Party (PDP) ▪ The Joint Revolutionary Council ▪ Urhobo Revolutionary Army 	<ul style="list-style-type: none"> ▪ Red Scorpion ▪ Urhobo Gbagbako. 	
Senegal	<ul style="list-style-type: none"> ▪ Casamance Separatists ▪ Dioulas tribal group ▪ Movement of Democratic Forces of Casamance 	<ul style="list-style-type: none"> ▪ Movement of Democratic Forces of Casamance 	-
Sudan	<ul style="list-style-type: none"> ▪ Bedouin Movement (Sudan) ▪ Beja Congress ▪ Eritrean Peoples Liberation Front. 	<ul style="list-style-type: none"> ▪ Abbala extremists ▪ Janjaweed ▪ Misseriya Arab Tribesmen. ▪ Sudan Liberation 	<ul style="list-style-type: none"> ▪ Abbala extremists ▪ Sudan Liberation Army - Transitional

	<ul style="list-style-type: none"> ▪ Hamza Combat Group against Atheism and Heresy ▪ Iraqi extremists ▪ Islamist Sufi Group ▪ Janjaweed ▪ Justice and Equality Movement (JEM) ▪ Liberation and Justice Movement (LJM) ▪ Lord's Resistance Army (LRA) ▪ Militia Members ▪ Misseriya Arab Tribesmen ▪ National Redemption Front ▪ People's Democratic Struggle Movement ▪ Shanty Dwellers ▪ South Sudan Liberation Army (SSLA) ▪ Sudan Liberation Army-Minni Minawi (SLA-MM) 	<p>Army - Transitional Council (SLA-TC)</p> <ul style="list-style-type: none"> ▪ Sudan Liberation Army-Minni Minawi (SLA-MM) ▪ Sudan Liberation Movement ▪ Sudan People's Liberation Movement – North ▪ Sudan Revolutionary Front (SRF) ▪ Tribesmen ▪ Zaghawa extremists 	<p>Council (SLA-TC)</p>
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	<ul style="list-style-type: none"> ▪ Sudan Liberation Movement ▪ Sudan People's Liberation Army (SPLA) ▪ Sudan People's Liberation Movement – North ▪ Sudan Revolutionary Front (SRF) ▪ Sudanese People's Front ▪ Supporters of Sultan Abd-al-Bagi ▪ Takfir wal-Hijra (Excommunication and Exodus) ▪ Tribesmen 		
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[SOURCE: START – GTD Database 2020]

The table contains the name of the terrorist perpetrators that have carried out terrorist attacks in the Sahel’s region, from the 1989 to the 2018 (START, 2020).

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