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35/2020

22 April 2020

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The implications of water as a strategic resource: Water stress and conflict in the Sahel region

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Abstract:

The threat posed by climate change is multiplied in countries that do not have the necessary infrastructure to promote the resilience of their population. In the Sahel region, water stress resulting from poor government and structural marginalization of rural areas, has strained the previous socioeconomic grievances of those communities. As a result, this situation generates certain regional dynamics which allow the emergence of non-state armed groups. This paper will study the increasingly complex relationship between water scarcity and social instability, leading in some cases to the rise of terrorist groups. Finally, the paradigmatic cases of Boko Haram in Nigeria, the AQIM settlement in Mali and the Darfur conflict in Sudan will be analysed.

Keywords:

Natural resources, geopolitics of water, social instability, terrorism, Sahel.

How to quote:

MONTERO BLANCO, Marta. *The implications of water as a strategic resource; Water stress and conflict in the Sahel region*. Opinion Paper. IEEE 35/2020.
http://www.ieeee.es/Galerias/fichero/docs_opinion/2020/DIEEEO35_2020MARMON_agua-ENG.pdf and/or [link bie](#)³ (accessed on the web day/month/year)

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Introduction

Over the last two decades, climate change has been considered a major threat to humankind. Indeed, there are several situations that deeply affects human health in broad levels due to the warming of the atmosphere, going from air pollution to the rise of sea level. The urgency of rethinking the human way of living has also been incorporated within the International Relations (IR) theories and as a result, a sub-tendency of thought called Green Theories, has been progressively gaining followers. The main argument defended by these scholars is that throughout classical theories such as Realism and Liberalism, a gap between society and environment has been constructed, displacing out humans from nature and removing the imaginary of human beings as inherently linked to natural world¹. Therefore, a change within societies about the instrumental relationship with natural resources becomes quite needed².

One of the most significant impacts of global warming on the usual development of human activity is the alteration in meteorological conditions and environmental degradation, leading to a huge contrast in weather phenomena such as long drought periods or unstable rainfall cycles. Poorest countries do not usually have the required infrastructures to face the effects of this kind of variations, so they are the most affected by climate change. The most visible effect is water stress and in the worst scenario, water scarcity. In fact, livelihood of more than a 75 percent of the inhabitants of regions such as Lake Chad Basin or the Darfur region in Sudan, rely on environmental resources, mainly water related^{3,4}.

¹ SMITH, R. (2017): *The Water Scarcity-Conflict Nexus: The Case of Darfur* (unpublished master thesis). Stellenbosch University. Stellenbosch, South Africa. p.11.

² Ibidem. p. 22.

³ Ibidem. p. 83.

⁴ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and Organised Crime in a Warming Climate: Analysing the Links Between Climate Change and Non-State Armed Groups*. Berlin, Germany: Climate Diplomacy. p. 17.

Water, indeed, has a strategic value that usually creates the feeling of urgency⁵ since it is irreplaceable⁶, and therefore the stress or scarcity of this resource involves security concerns⁷, and both political and socio-economic instability, leading most of the times to violent conflicts and the emergence of non-state armed groups. Nevertheless, climate change is just a risk multiplier⁸, since environmental pressures strain previous political, social or economic grievances that eventually contribute to the flourishing of armed groups across the region⁹. As Lukas Rüttinger stressed: 'Climate change does not create terrorists, but climate change changes the context in which these groups operate and contributes to creating the conditions in which those groups can thrive'¹⁰.

The main purpose of this paper is to define the effects of climate change in the Sahel region and the implications of water scarcity in delving the socioeconomic grievances of their inhabitants, usually placed in rural areas, and lastly leading to conflict and the emergence of non-state armed groups. For that matter, the paper will address first the huge relation between climate change impact in the region management of water and the growing social instability within its inhabitants along with the emerge of terrorist groups, and finally different real cases will be exposed: Boko Haram in Nigeria, AQIM in Mali and the conflict in the Darfur region in Sudan.

⁵ CNA (2017): *The Role of Water Stress in Instability and Conflict*. CNA Analysis & Solutions. p. 11.

⁶ KYUNGME, K. and SWAIN, A. (2017): *Crime, Corruption, Terrorism and Beyond: A Typology of Water Crime*. In Delaeminck, D., Adeel, Z. and Sandford, R. (Eds.), *The Human Face of Water Security*. Switzerland: Springer. p. 96.

⁷ CNA (2017): *The Role of Water ...* ref. p. 7.

⁸ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 8.

⁹ PIESE, M. (2017): *Boko Haram: Exacerbating and Benefiting from Food and Water Insecurity in the Lake Chad Basin*. *Independent Strategic Analysis of Australia's Global Interests*. p. 3.

¹⁰ DARBY, M. (2017): *Boko Haram terrorists thriving on climate crisis: report*. *Climate Home News*. (visited on 30/12/2019). Available at: <https://www.climatechangenews.com/2017/04/20/boko-haram-terrorists-thriving-climate-crisis-report/>

Water scarcity and conflict

Water is the most important resource that rules human evolution in every possible way and provides both food security and the correct development of economic activities — water is used massively in industry. During the last fifty years, severe droughts have hugely affected the Sahel region leading to the destruction of diverse human settlements along the area and causing the displacement of hundreds of people. Climate change has delved into the uncertainty felt by displaced communities since it constitutes a serious threat to their way of life. Massive population movements within and outside borders of Sahel countries together with the poor management of water infrastructures has led to an increasingly strain of social and ethnic tensions and a progressively more violent competition for the remaining natural resources¹¹.

In this section, the paper will try to address the complex relationship between climate change, water scarcity and the fragility of social structures that can lead ultimately to violent conflicts and the emergence of non-state armed groups.

The definition of water as a strategic resource: what are the consequences of climate change?

Water and water ecosystems support most of the socioeconomic activities of human beings, and if we focus on the Sahel region, water dependency is even higher. Within rural areas, the degradation of hydrological ecosystems could destroy traditional economic ways of production together with the progressive deterioration of the communities who benefit from this type of economy¹². Thus, climate change, as a source of alteration of meteorological events —rainy periods included—, constitutes a seriously threat for the way of living of those communities.

Firstly, a theoretical framework will be established in order to address and define a few concepts for the correct understanding of the paper's thesis. Since water stress can be a serious threat to the normal development of human beings, it is necessary to establish

¹¹ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 15.

¹² MAGALLÓN PORTOLÉS, C. (2008): *El agua, derecho humano y raíz de conflictos*. Gobierno de Aragón: Fundación Seminario de Investigación para la Paz. p. 12.

a link between water and security. Therefore, water security is defined by Grey and Sadoff as ‘the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environment and economies.’¹³ Once that water is pictured as a strategic resource for human security, there are two ways in which the quantity and quality of water can vary. Water stress appears when ‘the demand for water by people—where individuals, local communities, regions, even countries—exceeds the available supply during a certain period or when poor quality restricts its use’.¹⁴ However, when the average of available water is so scarce that it cannot sustained all sectors, it is named water scarcity¹⁵.

Finally, a last differentiation is required. There are two ways of picture the strategic value of water: as a conflict trigger or as a strategic resource during a conflict. In the first approach, water is contemplated as a root cause of different conflicts in which water stress can put even more pressure over social grievances and competition over resources. It can be labelled as the *géopolitique de l’eau*—or water geopolitics—inevitably connected with another geopolitical tensions within a region, as Lacoste stated in 2001¹⁶, and added to a huge list of factors that can cause direct or indirectly social instability¹⁷. On the other hand, water can be pointed out as a natural resource with certain strategic value during a conflict, since access to water during water stress periods can be used by non-state armed groups as an effective coerce and recruit tool to gain power within a region¹⁸. Thus, poison water resources like Boko Haram in Nigeria has done¹⁹ or attack water infrastructures as strategic assets²⁰ can be recurring actions for terrorist groups. Here, scholars have introduced the topic of environmental terrorism which refers to ‘the unlawful use of force against environmental resources or

¹³ KYUNGMEE, K. and SWAIN, A. (2017): *Crime, Corruption ...* ref. p. 97.

¹⁴ CNA (2017): *The Role of Water ...* ref. p. 1.

¹⁵ SMITH, R. (2017): *The Water Scarcity-Conflict ...* ref. p. 14.

¹⁶ LACOSTE, Y. (2001): *Géopolitique de l’eau. La Découverte*, 102. p. 5.

¹⁷ CNA (2017): *The Role of Water ...* ref. p. 21.

¹⁸ Ibidem. p. 30.

¹⁹ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 18.

²⁰ CNA (2017): *The Role of Water ...* ref. p. 30.

systems with the objective to harm individuals or deprive populations of environmental benefit(s) in the name of a political or social objective'²¹.

The purpose of this paper is to create a link between water stress and the emergence of different conflicts along the Sahel region so it will be focus in the *géopolitique de l'eau* and water as a strategic source of instability within social structures, lastly leading to conflict.

The relationship between climate change and social instability

The Sahel region is disproportionately affected by high variabilities within climate change impact. In fact, temperatures in that area are rising 1.5 percent faster than the global average²², causing instability and uncertainty among population and deeply damaging traditional ways of production²³. Among the Sahel region, rural settlements depend on activities that rely mainly in climate-sensitive agriculture^{24,25}. Therefore, small variations within rain patterns can ruin their ways of living, leading to food insecurity and reducing the resilience of these communities²⁶. Those economic activities used to involve high degrees of mobility but changes in base resources have affected patterns of migrations²⁷ along with the uncertainty of rainfall periods that contributes to the progressive loss of previous capacity of dealing with resource shocks²⁸.

²¹ GLEICK, P. H. (2006): Water and Terrorism. *Water Policy*, 8. p. 484.

²² LUENGO CABRERA, J. and MUGGAH, R. (2019): The Sahel is engulfed by violence. Climate change, food insecurity and extremists are largely to blame. *World Economic Forum*.(visited on 30/12/2019), available at: <https://www.weforum.org/agenda/2019/01/all-the-warning-signs-are-showing-in-the-sahel-we-must-act-now/>

²³ MAGALLÓN PORTOLÉS, C. (2008): *El agua, derecho ...* ref. p. 109.

²⁴ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 11.

²⁵ KORTLAND, J. (2019): Water, Peace and Security partnership: Addressing human security risks related to water in Mali. *Wetlands International*. (visited on 28/12/2019), available at: <https://www.wetlands.org/news/water-peace-security-partnership-addressing-human-security-risksrelated-water-mali/>

²⁶ VIVEKANANDA, J., WALL, M, SYLVESTRE, F. and NAGARAJAN, C. (2019): *Shoring Up Stability: Addressing Climate and Fragility Risks in the Lake Chad Region*. Berlin, Germany: Adelphi. p. 43.

²⁷ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 15.

²⁸ VIVEKANANDA, J. *et al.* (2019): *Shoring Up Stability ...* ref. p. 43.

Climate change constitutes a huge threat to fragile structures along Sahel rural regions since situations of water stress can exacerbate previous tensions between pastoralist, farmers and fishers²⁹ in the competition for remaining resources —water decrease also include the reduction of fish stocks and the loss of vegetation³⁰. Rather than a defining cause, climate change is a risk multiplier³¹ that intensifies resource competition and add more pressure to previous socioeconomic grievances such as poor governance or weak institutions, languishing economies, marginalization or spiking migration³².

Weak governmental institutions and the systematic marginalization of affected areas has led to a poor management of water and water infrastructure, deteriorating even more resource competition due to the severe droughts that have devastated those territories. In fact, most of water scarcity problems have been related to poor management of water or to the total absence of water infrastructures³³. For instance, every case exposed in this paper presents a poor management of water by governmental institutions. In Nigeria, water stress is not a geographical problem but the distortion between rural and urban supply caused that only the 19 percent of Nigerians has access to safe drink water³⁴. Another example can be found in the Darfur region in Sudan. In Northern Darfur there are large acquirers of water, but they are so far from populated areas that have not been set up into useable sources³⁵.

The relationship between water scarcity and conflict

The absence of an appropriate management of natural resources and the scarce implication in rural areas have caused the lack of legitimacy of governmental institutions and central power. This absence of protection usually creates, among rural communities

²⁹ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism and ...* ref. p. 10.

³⁰ Ibidem. p. 15.

³¹ Ibidem. p. 8.

³² LUENGO CABRERA, J. and MUGGAH, R. (2019): *The Sahel is engulfed ...* ref.

³³ CNA (2017): *The Role of Water ...* ref. p. 3.

³⁴ ODUME, N. and SLAUGHTER, A. (2017): *How Nigeria is wasting its rich water resources. The Conversation.* (visited 15/01/2020), available at: <https://theconversation.com/how-nigeria-is-wasting-its-rich-water-resources-83110>

³⁵ SMITH, R. (2017): *The Water Scarcity-Conflict ...* ref. p. 82.

of those areas, the sense of frustration or marginalization³⁶. Climate change can create a great sense of urgency³⁷, leading to a search for another protection groups that can go from self-defence groups to terrorist organizations³⁸ and creating an appropriate environment for the emergence of terrorist groups³⁹. Environmental pressures, thus, added to wider political and social strains contribute to the prevalence of non-state armed groups across the region⁴⁰.

As Piasse has pointed out, 'non-state armed groups can offer an alternative livelihoods and economic incentives to these most affected by environmental stresses, and a satisfying response to political and socioeconomic grievances'⁴¹. Non-state organizations can replace weak governments or non-governments as service providers. They can supply safe access to water in case of need and therefore win supporters and followers⁴². Even economic and social frustrations can picture extremist ideologies of terrorist groups increasingly attractive⁴³ that together with poor understanding of Islam and a low level of education make youth vulnerable targets for radicalization⁴⁴.

As it has been already showed, climate change and water stress contribute to trigger conflicts but at the same time, conflict deeply affects people's adaptation capacities. Thus, 'violence has undermined communities' capacity to adapt to climate change while climate change has compounded core drivers of the conflict and deepened the humanitarian crisis'⁴⁵. This paradox is known as the conflict trap and states that those communities are facing at the same time the risks of both the rising of climate change and the on-going conflict⁴⁶.

³⁶ PIESSSE, M. (2017): Boko Haram: Exacerbating and Benefiting ... ref. p. 4.

³⁷ CNA (2017): *The Role of Water* ... ref. p.11.

³⁸ KORTLAND, J. (2019): Water, Peace and ... ref.

³⁹ DARBY, M. (2017): Boko Haram terrorists ... ref.

⁴⁰ PIESSSE, M. (2017): Boko Haram: Exacerbating and Benefiting ... ref. p. 3.

⁴¹ Ibidem. p. 4.

⁴² CNA (2017): *The Role of Water* ... ref. p. 35.

⁴³ NET, K. and RÜTTINGER, L. (2016): *Insurgency, Terrorism* ... ref. p. 17.

⁴⁴ Ibidem. p. 18.

⁴⁵ VIVEKANANDA, J. *et al.* (2019): *Shoring Up Stability* ... ref. p. 61.

⁴⁶ Ibidem. p. 46.

Paradigmatic cases in the Sahel

The Sahel region is situated in the middle of the African continent and it has suffered severe droughts since the 1970s, damaging the development of different rural communities along different countries and causing social instability that has led to several violent conflicts. In this section, three cases in which water stress has been an significant trigger to violent conflict and the emergence of terrorist groups will be analysed: the case of Boko Haram in Northern Nigeria, the consolidation of Al Qaeda in the Islamic Maghreb (AQIM) in Mopti region in Mali and the violent conflict in the Darfur region of Sudan.

Boko Haram and the Nigerian Case

The Security Council of the United Nations included climate change as a conflict driver of Nigerian conflict⁴⁷, linking the raise of Boko Haram to the tragic shrinking of Lake Chad. Therefore, the shrinking of Lake Chad and the following emerge of violence is one of the most graphic cases of this link between climate change and social conflict. The significantly decrease in Lake Chad since 1970 together with the bad management of natural resources by Nigerian government has delved social tensions and eroded the legitimacy of the government⁴⁸.

At the same time, massive movements of population were spreading along Lake Chad basin, creating and adding more conflict between local communities and regional communities⁴⁹. Lately, due to the emergence of Boko Haram and the proliferation of no-go areas have increased the competition over remaining fertile land between pastoralists and farmers⁵⁰. Although the relationship between water stress and conflict is increasingly complex, water stress due to the poor management of resources in the Nigerian case seems to be highly connected with social instability, the deepening in social grievances against central government and the exacerbation of ethnic differences, lastly leading to the emergence of Boko Haram group.

⁴⁷ DARBY, M. (2018): Climate change affecting ... ref.

⁴⁸ DARBY, M. (2017): Boko Haram terrorists ... ref.

⁴⁹ DARBY, M. (2018): Climate change affecting ... ref.

⁵⁰ LUENGO CABRERA, J. and MUGGAH, R. (2019): The Sahel is ... ref.

Terrorism in Mali

Mali is the second largest wetland in Africa but even so, thousands of people are trapped in violent conflicts between herders and farmers over natural resources⁵¹. The conflicts for land administration and several accusations of corruption has led to the discredit of the justice system creating a lot of frustration among vulnerable groups such as farmers and herders⁵². In this case, it is very important to focus at a local political context since the Mopti region join same features as Norther Nigeria: state institutions absent from rural areas and, in this case, AQIM replacing gradually the state as a security provider⁵³.

African jihadist movements are focused in local grievances and usually arise from local or social dynamics, so most of the times, marginal communities tolerate the presence of those armed groups⁵⁴. In the case of Mali, political marginalization has led inevitably to the emergence of jihadist groups and their following acceptance even support due to their anti-state or anti-elite discourse⁵⁵, mobilizing rural pastoralists. Finally, it cannot be ignored that there are not only hate reasoning behind massive cooperation with those groups, but some join them looking for protection for themselves and for their families and hers⁵⁶.

Conflict in Darfur region

The conflict in the Darfur region also involved bad management of resources. Again, competition over scarce water led to violent confrontations this time between Arab pastoralist and black African farmers⁵⁷. Since the last decades of the 20th century, the government of Mali has tried to stress the relation between those two ethnic groups and the combination of severe droughts affecting the Darfur region since 1970 and the

⁵¹ KORTLAND, J. (2019): Water, Peace and ... ref.

⁵² Ibidem.

⁵³ BENJAMINSEN, T. A. and BA, B. (2018): Why do Pastoralists in Mali join Jihadist Groups? A Political Ecological Explanation. *The Journal of Peasant Studies*, 46. p. 2.

⁵⁴ Ibidem. p. 3.

⁵⁵ Ibidem. p. 4.

⁵⁶ KORTLAND, J. (2019): Water, Peace and ... ref.

⁵⁷ SMITH, R. (2017): *The Water Scarcity ...* ref. p. 6.

unfairly distribution of resources, led in the beginning of the 2000s to a very violent conflict with water as one of the root causes⁵⁸.

Since the 1970s, the region had seen a progressive desertification that has led to a massive migration looking for fertile lands which allow them to develop their livelihood⁵⁹. The incrementation in population within certain areas increased the competition over water and land. Moreover, with the beginning of the conflict in 2003, the demand for water by cities rapidly increased leading to an even larger impact in Darfur's water sector⁶⁰. The combination of environmental degradation together with the poor management of water due to the marginalization of the area, left the Darfur region impoverished and it exacerbated the previous tensions between different groups.

Conclusion

During the last two decades, the international society has realized the serious threat that climate change is for human life. However, the impact of global warming could have different consequences depending in where it shows up. Governments of undeveloped countries will face more difficulties trying to address climate change threats due the lack of infrastructures. One of the most affected regions in the world is the Sahel region in which, as the UN has stated, global warming constitutes a serious threat for the development of several communities⁶¹.

Within climate change repercussions, water stress and rainfall uncertainty are highly related to social insecurity that lately can lead to violent conflict. Livelihood of Sahel communities such as the exposed in this paper, Northern Nigeria, Mali or the Darfur region, are highly reliant on climate sensitive activities, and little variation in rainfall patterns can produce massive migrations and even violent competition for the remaining natural resources. Therefore, although water scarcity is not a direct trigger of conflicts, it

⁵⁸ Ibidem. p 5-6.

⁵⁹ Ibidem. p. 81.

⁶⁰ Ibidem. p. 83.

⁶¹ DARBY, M. (2018): Climate change affecting stability across West Africa and Sahel: UN Security Council. *Climate Home News*. (visited on 30/12/2019), available at:

<https://www.climatechangenews.com/2018/01/31/climate-change-affecting-stability-across-west-africa-sahel-un-security-council/>

hugely acts as a stressor in previous ethnic, socioeconomic or political grievances, creating the sense of urgency and leading to possible violent confrontations between different groups. Most of the times, this social instability is found as a prolific background for the emergence of different terrorist groups that try to replace weak governmental institutions, and usually use water as a coerce tool and as an effective way of recruit. In this scenario, marginalized communities tend to look for protection and benefits joining extremist groups as Boko Haram or AQIM.

There are, however, different ways to address this problem and they are related to long term strategies for better off people's climate resilience⁶². It is necessary to provide a climate resilience perspective in the peace building process which can range from community level adaptations —promotion of job less reliant on water or the more effectively use of water— to investment in infrastructure⁶³. One thing is for sure, as water has been an important stress factor to trigger conflicts, water must be one of the most important peace instruments.

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⁶² SAUER, N. (2019): Lake Chad not shrinking, but climate is fueling terror groups: report. *Climate Home News*. (visited on 28/12/2019), available at: <https://www.climatechangenews.com/2019/05/16/lake-chad-not-shrinking-climate-fuelling-terror-groups-report/>

⁶³ DARBY, M. (2018): Climate change affecting ... ref.