



Nuovi Autoritarismi e Democrazie:
Diritto, Istituzioni, Società

Environment-Conflict Nexus in the Sahel Region: Lake Chad as a Case in Point

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Abstract

Lake Chad in the Sahel region has emerged as the epicenter of the widening conflict that is, in part, attributed to climate change-induced factors along with natural resource instability and intra-state pressures exacerbated by exploitative past colonial policies. The resulting environment-conflict nexus has given rise to violence, state fragility, communal breakdown, displacement of the local population, the proliferation of violent non-state actors, and a vicious cycle of poverty in countries surrounding Lake Chad. These factors, in turn, have made the individuation, establishing, and sustaining of institutions, and aid mechanisms to alleviate climate-change-related hardships extremely difficult. Furthermore, the environment-conflict nexus has disrupted inter- and intra-state migration patterns in Lake Chad, thereby adversely affecting agricultural yields and water resources. Additionally, there is a limited political representation and inadequate access to governmental services in the worst affected regions, which negatively accrue several contributing factors of the environment-conflict nexus.

Keywords: Environment – Conflict – Nexus – Sahel – Lake Chad.

SOMMARIO: 1. Introduction. 2. Facets of the Environment-Conflict Nexus within Environmental Security Research. 3. The Environment-Conflict Nexus in the Lake Chad Region. 4. Resolutions for the Environment-Conflict Nexus in the Lake Chad Region. 4.1 Resource Management. 4.2 Sustainable Development. 4.3 Women's Empowerment. 4.4 Localized Solutions. 5. Regional Stabilization Strategy. 6. Conclusions.

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1. Introduction

In recent years, the Sahel has been a hub for violent non-state actors. A rapidly developing regional environment-conflict nexus has nurtured such actors. Factors such as climate change, food shortages, «undernutrition, dependence on rainfed agricultural systems, and pre-existing political fragility»¹ coupled with the Sahel's inherent features such as a colonial legacy that dictates conflict along «social and cultural lines»² has shaped the environment-conflict nexus in the Lake Chad region³. Lake Chad's shrinking water supply has added to water scarcity and regional insecurity. The body of water has lost 90 percent of its water since the 1960s, underwriting the Sahel's categorization among the ten most water-impooverished locations in the world⁴. Lake Chad is also located in an endorheic basin, which means that «water storage is vulnerable to subtle flux perturbations, which are exacerbated by global warming and human activities»⁵.

However, the current situation has deep roots in longstanding challenges, such as widespread inequality, political marginalization, and a lack of confidence in government. Climate change-induced environmental stress exacerbates these problems. In addition, resource scarcity, employment insecurity, and extreme poverty have increased the ability of terrorist groups, such as Boko Haram, to recruit, fuelling armed conflict and population displacement⁶.

Since 2009, parts of Nigeria, Niger, Chad, and Cameroon that border Lake Chad, home to more than 17.4 million people, have been trapped in multiple and overlapping crises⁷. Consequently, 2.5 million people have been displaced with 37,500 people in the Lake Chad region from May 2011 to July 2020⁸. Furthermore, 3.6 million people suffer from food insecurity and diseases such as malaria are highly prevalent at a time when the COVID-19 pandemic has resulted in a «deprioritization of responses» to such illnesses⁹.

¹ M. Garfinkel, *The Climate Conflict Trap: Examining the Impact of Climate Change on Violent Conflict in Sub-Saharan Africa*, in *Flux: International Relations Review*, Vol. 11 No. 2, 2021, 20.

² *Ibidem*, 20.

³ *Ibidem*, 22.

⁴ L. Usigbe, *Drying Lake Chad Basin Gives Rise to Crisis*, in *Africa Renewal*, December 24, 2019, <https://tinyurl.com/29h6btzn>.

⁵ J. Wang, C. Song, J.T. Reager, F. Yao, J.S. Famiglietti, Y. Sheng, G.M. MacDonald, F. Brun, H. Müller Schmied, R.A. Marston, Y. Wada, *Nature Geoscien, Recent global decline in Endorheic Basin Water Storages*, in *Nature Geosci*, No. 11, 2018, 926–932.

⁶ A. Jideofor, *Explaining the Emergence of Boko Haram*, in *Brookings*, May 6th, 2014, brookings.edu/blog/africa-in-focus/2014/05/06/explaining-the-emergence-of-boko-haram/.

⁷ A. Mohanty, K. Robson, S. Ngueping, S. Swayam Nanda, *Climate change, Conflict: What Is Fuelling the Lake Chad Crisis*, in *Down to Earth*, February 23rd, 2021, downtoearth.org.in/blog/climate-change/climate-change-conflict-what-is-fuelling-the-lake-chad-crisis-75639.

⁸ Médecins Sans Frontières (report of), *Over 10 Million People Heavily Dependent on Aid For Survival*, January 14th, 2022, msf.org/lake-chad-crisis-depth.

⁹ *Ibidem*.

Using the environmental security paradigm, the article will assess the environment-conflict nexus in the Lake Chad region and will offer solutions to the regional problems created by the nexus.

2. Facets of the Environment-Conflict Nexus within Environmental Security Research

Scholars assert that since the end of the Cold War, the definition of security includes environmental factors¹⁰. The traditional conceptualization of security has not included elements such as ecosystem collapse, environmental degradation, resource scarcity, soil erosion, pollution, biodiversity damage, unsustainable waste generation, deforestation, global warming, and other environmental factors that contribute to or exacerbate existing conflicts, as these were not considered “hard security” issues. In recent years, intra-and-inter-migration have emerged as major issues of debate, and the implementation of adaptation and resilience strategies have become paramount. There are also linkages between the environment and conflict as resource security increases. Furthermore, the «relationships between the components of the nexus that include water, food and socio-economic factors»¹¹ are contingent on the environment and thus, by default, are subject to the changes wrought by climate change.

Thereafter, the recognition of the credibility of threats arising from climate change-induced factors led to “environmental security” gaining prominence alongside the environment-security nexus. Another important feature of environmental security has been an environmental conflict that is described as «violence caused by human-induced disturbances to the natural rate of resource regeneration»¹². Notably, cotemporary research that environmental scarcity as an independent variable and violent conflict as a dependent variable while environmental scarcity is a tripartite variable that encompasses the dilapidation or exhaustion of the resource, the amplified need for the resource owing to population growth or «increased per capita consumption» and «changes in access to the resource per capita consumption (demand-induced scarcity), and changes in access to the resource due to skewed distribution among social groups»¹³. Resource capture occurs when the degradation and diminution of a renewable resource are coupled with population expansion, which results in the emergence of elite factions that limit access to resources to the larger populace.

¹⁰ T. Deligiannis, *The Evolution of Qualitative Environment Conflict Research*, in R. Floyd, R.A. Matthew (Eds.), *Environmental Security Approaches and Issues*, Routledge, 2013, 78-97.

¹¹ S. Mpandeli, L. Nhamo, S. Hlahla, D. Naidoo, S. Liphadzi, A.T. Modi, T. Mabhaudhi, *Migration Under Climate Change in Southern Africa: A Nexus Planning Perspective*, in *Sustainability*, Vol. 12 No. 11, 2020, 4722.

¹² A.S. Wilner, *The Environment-Conflict Nexus Developing Consensus on Theory And Methodology*, in *International Journal*, Vol. 62 No. 1, 2006, 169-188.

¹³ T. Deligiannis, *The Evolution of Qualitative Environment Conflict Research*, cit, 38.

Ecological marginalization has also occurred that «entails the take-over of local natural resources by powerful private and/or state interests, and the gradual or immediate disorganization of the ecosystem via withdrawals and additions»¹⁴. Consequently, ecological marginalization has been frequently linked to resource capture, and this results in an increase in the exodus of the local population to «ecologically fragile regions»¹⁵ that, in turn, perpetuates the environment-conflict nexus by contributing to scarcity. As Lake Chad shrinks, it moves the local population ever closer together with no regional consensus on sustainable management practices in place¹⁶. The non-existence of grievance addressed mechanisms intensifies the contest for natural resources.

3. The Environment-Conflict Nexus in the Lake Chad Region

Lake Chad Basin is an area that constitutes nearly 8% of the African continent and is beset by environmental degradation, pro-secessionist mobilization, violent non-state actors, refugees from conflicts in adjacent Sudan and the Central African Republic as well as internal conflicts within communities such as the Tuareg community. Lake Chad, which is critical to regional trade networks and value chains, is being endangered by military strategies that are exacerbating environmental challenges such as restricting or destroying high-growing crops like maize as part of counterinsurgency campaigns¹⁷. This factor, coupled with deforestation has led to major and multiple displacements, thereby diminishing severely the ability of the local population to survive future pressures.

Subsequently, Lake Chad region has been referred to as «'Ground Zero' in Africa's war on terrorism»¹⁸. «Social and institutional variables», coupled with climate change, can extensively intensify the peril of «climate-induced» conflict¹⁹. Relations among violent non-state actors have been changing the social fabric of the region, thereby creating a recipe for the long-lasting environment-conflict nexus. Displacement, unemployment, lack of access to education, and food insecurity induced by climate change amid frayed community and familial ties have provided Boko Haram with recruitment and radicalization opportunities,

¹⁴ M. Kousis, *Ecological Marginalization in Rural Areas: Actors, Impacts, Responses*, in *European Society for Rural Sociology - Sociologia Ruralis*, Vol. 38 No. 1, 1998, 86-108.

¹⁵ T. Deligiannis, *The Evolution of Qualitative Environment Conflict Research*, cit, 38.

¹⁶ United Nations (report of), *The Tale of A Disappearing Lake*, February 28th, 2018, unep.org/news-and-stories/story/tale-disappearing-lake.

¹⁷ B. Pohl, L. Rüttinger, J. Vivekananda, M. Wall, S. Wolfmaier, C. Nagarajan, F. Sylvestre, *Climate-Fragility Profile: Lake Chad Basin*, Adelphi, 2018, 9-27.

¹⁸ U.A. Tar, M. Mustapha, *The Emerging Architecture of a Regional Security Complex in the Lake Chad Basin*, in *Africa Development / Afrique et Développement*, Vol. 42 No. 3, 2017, 99-118.

¹⁹ N. Bodanac, D. Hyslop, R. Valente, Z. Nurmukhambetova, T. Colodenco, K. Calille, *Understanding the Climate-Conflict Nexus from A Humanitarian Perspective: A New Quantitative Approach*, in *OCHA Policy Development and Studies Branch*, 2016, unocha.org/sites/unocha/files/Understanding%20the%20climate-conflict%20nexus.pdf.

particularly targeted at youth²⁰. Additionally, weak governance of the Sahel's immense landscape has made the region susceptible to organized crime and trafficking of both illicit items and humans.

Lake Chad has experienced a decrease in rainfall and shrinkage, which are likely to produce higher temperatures according to current global warming trends²¹. The area is a site of intense «interplay between the movement of people, food security as well as traditional gender and governance roles»²² due to environmental factors that have aggravated conflict threatening the region²³. Four countries surround and are dependent on Lake Chad: Cameroon, Chad, Niger, and Nigeria. Due to the emerging environment-conflict nexus, there is «food insecurity, widespread violence, involuntary displacement, and the consequences of environmental degradation»²⁴. The environment-conflict nexus comprises a wide collection of «factors that endanger human security; and many anthropogenic processes combine with natural processes, environmental conditions to enable instability resulting from ignorance, accident, mismanagement, or design»²⁵.

Human security has emerged as a priority in the region, which requires comprehensive focus as it is a pre-condition for human development²⁶ and is concerned with human life and dignity²⁷. Human security contains universal, and culturally appropriate, material and non-material aspects that are essential and intended for subsistence, sustainable living, respect and dignity²⁸. Human security encompasses health security, which ensures access to healthcare, environmental security, wherein the importance of land, air, and water to every human being is highlighted, personal security, which includes a person's liberty from crime and violence, community security, related with cultural respect and inter-communal harmony, and political security inculcates defence against human rights

²⁰ United Nations (report of), *Root causes of Boko Haram threat in Lake Chad Basin Must Be Tackled – UN Political Chief*, July 27th, 2016, [un.org/counterterrorism/ar/node/13829](https://www.un.org/counterterrorism/ar/node/13829).

²¹ K.C. Pattanayak, A.Y. Abdel-Lathif, K.V. Rathakrishnan, M. Singh, R. Dash, P. Maharana, *Changing Climate Over Chad: Is the Rainfall Over the Major Cities Recovering?*, in *Earth and Space Science*, Vol. 6 No. 7, 2019, 1149-1160.

²² B. Pohl, L. Rüttinger, J. Vivekananda, M. Wall, S. Wolfmaier, C. Nagarajan, F. Sylvestre, *Climate-Fragility Profile: Lake Chad Basin*, cit, V.

²³ *Ibidem*, VI.

²⁴ R. Munayer, S. Schaller, *Lake Chad Crisis - Knowledge Hub*, in *Climate Diplomacy*, January 1st, 2018, climate-diplomacy.org/magazine/conflict/lake-chad-crisis-knowledge-hub.

²⁵ F. Galgano, *The Environment–Conflict Nexus*, in *The Environment-Conflict Nexus. Advances in Military Geosciences*, Springer, 2019.

²⁶ S. Tadjbakhsh, *Human Security: Concepts and Implications with an Application to Post-Intervention Challenges in Afghanistan*, in *Centre D'études Et De Recherches Internationales*, September 2005, sciencespo.fr/ceri/sites/sciencespo.fr.ceri/files/etude117_118.pdf.

²⁷ A. Acharya, *Human security*, in J. Baylis, S. Smith, P. Owens (Eds.), *The Globalization of World Politics*, Oxford University Press, 2020, 449-462.

²⁸ M. Behnassi, A. Elia, M. Grillakis, E. Turhan and Koubi. V, *Human security*, in W Cramer, J Guiot, K Marini (Eds.), *Climate and Environmental Change in the Mediterranean Basin – Current Situation and Risks for the Future*, First Mediterranean Assessment Report, 2020, 23.

contraventions²⁹. In Lake Chad, human security issues have been proliferating that are exacerbated by conflict and environmental degradation such as compounded poverty resulting from state governance shortcomings coupled with environmental dilapidation that tie in with food and water shortage predicaments³⁰ that contribute to diseases that are mushrooming in the region such as Cholera³¹. Deficiencies in health security due to lack of funds and de-prioritization remain an impediment to recovery in the region, particularly after the COVID-19 pandemic.

Conflict in Lake Chad has led to environmental destruction that in turn has contributed to inequality and governance issues. As Lake Chad receded, fishery stocks saw a decline which till the 1960s had been a staple³². In the 1970s and 1980s, Lake Chad was subject to severe droughts in part due to the colonial mega-dam project, extreme variability in rainfall, rising desertification, and a migration crisis that heightened demands on regional resources and competition between farmers, fisher folk, and pastoralists, along with conflict along ethno-religious lines that disturb community security. Moreover, extreme droughts also wrought changes in the ecosystem that comprised plummeting groundwater tables, vanishing of certain plant varieties and wildlife, the decline in canopy cover that contributed to rising temperatures, and soil erosion that gave way to food insecurity³³. These events have resulted in an increase in crime such as cattle hustling that aggravates conflict between various groups.

Limited resources and disruption in «fisheries, small scale agriculture, pastoralism, and trade» had further contributed to conflict leading to human security concerns that were worsened by the government-imposed restrictions on movements that became an obstacle on the path to self-sufficiency and impacted the economic security of the people³⁴.

As Lake Chad's hydrography that comprises the tangible aspects of water and adjoining land areas transform due to the endorheic basin, it bares additional possibilities for «militarized actors to establish and retain control». There are also tensions simmering between people at the periphery and core in different countries

²⁹ V. Menon Sudha, *Human security: Concept and practice*, in *Munich Personal RePEc Archive*, March 31st, 2007, mpra.ub.uni-muenchen.de/2478/.

³⁰ European Commission (report of), *Food Crisis: the EU takes Action to support Africa's Sahel and Lake Chad Regions*, April 6th, 2022, ec.europa.eu/commission/presscorner/detail/en/IP_22_2245.

³¹ United Nations International Children's Emergency Fund, World Health Organization and United Nations Office for the Coordination of Humanitarian Affairs (report of), *Lake Chad Basin Cholera Outbreak - Key Messages*, in *OCHA*, October 5th, 2018, reliefweb.int/report/nigeria/lake-chad-basin-cholera-outbreak-key-messages-september-2018#:~:text=Attachments&text=The%20Lake%20Chad%20Basin%20is,over%20the%20past%20four%20years.

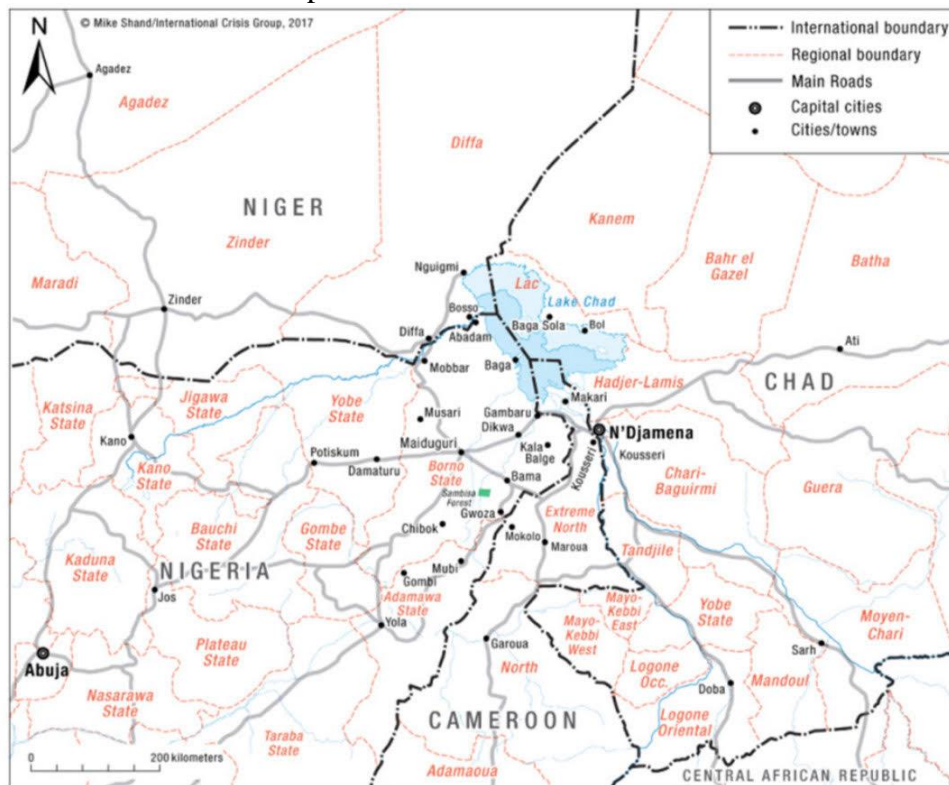
³² United Nations (report of), *The Tale of a Disappearing Lake*, February 2nd, 2018, unep.org/news-and-stories/story/tale-disappearing-lake.

³³ S. Babajide Owonikoko, J.A. Momodu, *Environmental Degradation, Livelihood, and the Stability of Chad Basin Region*, in *Small Wars and Insurgencies*, Vol. 31 No. 6, 2020, 1295-1322.

³⁴ Climate Diplomacy (report of), *Local Conflicts over Resources around Lake Chad*, in *Climate Diplomacy*, January 1st, 1970, climate-diplomacy.org/case-studies/local-conflicts-over-resources-around-lake-chad.

around Lake Chad that provide a fertile ground for terror groups to exploit. These threats to human security are also augmented across different countries due to Lake Chad being a distinctive transboundary natural body that comprises multiple «wet zones, deserts, open-water areas». Furthermore, Lake Chad has witnessed climate change underwriting the drivers of various tensions simmering in and around its vicinity whereas these tensions add to conflicts that impose constraints on climate adaptation measures³⁵.

IMG. 1 – Lake Chad Map³⁶



Attempts to resolve the environment-climate nexus have brought forth various institutional and organizational frameworks such as the United Nations Security Council that issued a Presidential Statement regarding the Sahel, the Hague Declaration that aims to build a climate security risk assessment in Lake Chad, discussions at the Planetary Security Conference that provided six recommendations for actions and a briefing regarding climate-fragility-related threats in Lake Chad at the G7 Working Group on Climate Change and Fragility³⁷.

³⁵ T.E. Griffin, *Lake Chad Changing Hydrography, Violent Extremism, and Climate-Conflict Intersection*, in Marine Corps University Press, July 27th, 2020, usmcu.edu/Outreach/Marine-Corps-University-Press/Expeditions-with-MCUP-digital-journal/Lake-Chad/.

³⁶ B. Pohl, L. Rüttinger, et.al., *Lake Chad [map]*, in B. Pohl, L. Rüttinger, J. Vivekananda, M. Wall, S. Wolfmaier, C. Nagarajan, F. Sylvestre, *Climate-Fragility Profile: Lake Chad Basin*, cit, 9.

³⁷ R. Munayer, S. Schaller, *Lake Chad Crisis - Knowledge Hub*, cit.

This is in addition to the Lake Chad Basin Commission, a transboundary organization that supervises a considerable portion of Lake Chad. This altogether emphasizes the recognition of the conflict severity in Lake Chad.

Lake Chad is in “terminal depression”. Inadequate educational opportunities and governmental services have undermined the national government to the benefit of the Islamic State of West Africa Province (IISWAP). Competition for services and resources has increased intercommunal conflict and State fragility, which has then been exploited by violent non-state actors such as IISWAP³⁸. It has exacerbated socio-economic conditions and given more ground opportunities for the expansion of the terrorist organization, Boko Haram, now known as Boko Haram and IISWAP³⁹. Various political, social, economic, and ecological interlinkages have resulted in IISWAP strongholds in the Lake Chad region. IISWAP has plugged «gaps in governance and service delivery» resulting in fostering support in the region⁴⁰. IISWAP controls «Lac Province, which encompasses all Chadian territory around and across the lake»⁴¹.

Military responses have also led to an insufficient focus on other components and have levied unprecedented restrictions on commerce and mobility. There have been «disruptions to fisheries, small-scale agriculture, pastoralism, and trade intensified competition». For example, a reduction in small-scale agriculture near the lake weakens the stability of «agro-pastoral and subsistence agriculture systems»⁴².

Policy postures to resolve these issues are influenced by factors such as the reluctance of Nigeria, where IISWAP originated, to take a leadership role, hindering corporations in Lake Chad. This is indicative of the geopolitical imperatives of influential regional players in hydrocarbons as well as the political necessities of regimes in the region⁴³. Other international actors including France, have been identified as having played a part in the prolongation of the environment-conflict nexus by providing defence equipment to regional actors to curry favour

³⁸ World Bank (report of), *Lake Chad Regional Economic Memorandum: Development for Peace*, November 15th, 2021, worldbank.org/en/region/aftr/publication/lake-chad-regional-economic-memorandum-development-for-peace.

³⁹ M. Momoh, *Changing Climate Threatens Livelihoods in Lake Chad Basin*, in *Nation*, August 15th, 2020, nation.africa/kenya/news/africa/changing-climate-threatens-livelihoods-in-lake-chad-basin-1919398.

⁴⁰ Crisis Group (report of), *Facing the Challenge of the Islamic State in West Africa Province*, in *Africa Report*, No. 273, May 16th, 2019, crisisgroup.org/africa/west-africa/nigeria/273-facing-challenge-islamic-state-west-africa-province.

⁴¹ D. Eizenga, *Chad's Escalating Fight against Boko Haram*, in *Africa Center*, April 20th, 2020, africacenter.org/spotlight/chad-escalating-fight-against-boko-haram.

⁴² J. Vivekananda, C. Born, *Lake Chad Region – Climate-Related Security Risk Assessment*, in *Climate Diplomacy*, climate-diplomacy.org/magazine/conflict/lake-chad-region-climate-related-security-risk-assessment.

⁴³ S. Omotuyi, *Pax-Nigeriana and Nigeria's Conflict Management in Africa in the Twenty-First Century*, in *Asian People Journal*, Vol. 3 No. 1, 2020, 186-200.

with regional actors⁴⁴. Furthermore, Francophone and Anglophone countries around Lake Chad have a «history of mistrust»⁴⁵ that hinders cooperation and contributes to widespread inequality along with political marginalization.

In the Sahel, there are already seeds of conflict originating from the scarcity of water and an overreliance on rain-based agricultural practices. This situation, coupled with the region's political volatility and, proneness to drought, makes it especially vulnerable to climate change. «Increasing temperature, higher precipitation variability, and extended population growth» that is fixated around sustenance farming while the area itself has become warmer with as much as three times the global mean⁴⁶. Mass migration «could socially and politically destabilize destination states»⁴⁷. Further limitations concerning limited economic development could deteriorate living standards and increase resource competition⁴⁸. These developments can result in instability and conflict arising between different worker groups such as herders and farmers, particularly as the population increases and the ability of the land to support crops and livestock decreases. These factors have made the region dependent on food aid as well⁴⁹.

4. Resolutions for the Environment-Conflict Nexus in the Lake Chad Region

Analysts have drawn attention to the importance of «water cooperation, co-development in migration, and a renewable power grid»⁵⁰ for the resolution of an environment-conflict nexus. The Sahel is one of the world's youngest regions, thereby making demographic dividend prioritization an imperative along with other development goals⁵¹. However, the states in the region have had to finance defence priorities to deter violent non-state actors, thus, taking attention and resources away from youth-focused initiatives. This may in turn result in the widening of non-state actors' spheres of influence and operations in the region. However, these initiatives such as the Multinational Joint Task Force and Regional Stabilization Facility for

⁴⁴ International Crisis Group (report of), *Fighting Boko Haram in Chad: Beyond Military Measures*, March 8th, 2017, [crisisgroup.org/africa/central-africa/chad/246-fighting-boko-haram-chad-beyond-military-measures](https://www.crisisgroup.org/africa/central-africa/chad/246-fighting-boko-haram-chad-beyond-military-measures).

⁴⁵ J. Vivekananda, C. Born, *Lake Chad Region – Climate-Related Security Risk Assessment*, July 2018, cit.

⁴⁶ P.M. Link, T. Brücher, M. Claussen, J.S.A. Link, J. Scheffran, *The Nexus of Climate Change, Land Use and Conflict*, in *American Meteorological Society*, September 2015, mpimet.mpg.de/en/staff/tim-bruecher/climate-land-use-and-conflict/agenda.html.

⁴⁷ U.T. Okpara et al., *Conflicts About Water in Lake Chad: Are Environmental, Vulnerability and Security Issues Linked?*, in *Progress In Development Studies*, Vol. 15 No. 4, 2015, 308–325.

⁴⁸ Vision of Humanity (report of), *The Sahel Faces 3 Issues: Climate, Conflict & Overpopulation*, in *Vision of Humanity*, April 16th, 2021, [visionofhumanity.org/challenges-facing-the-sahel-climate-conflict-and-overpopulation/](https://www.visionofhumanity.org/challenges-facing-the-sahel-climate-conflict-and-overpopulation/).

⁴⁹ R. Cincotta, S. Smith, *What Future for the Western Sahel?*, in *The Atlantic Council*, 2021, atlanticcouncil.org/wp-content/uploads/2021/11/AC_What-future-for-the-Western-Sahel.pdf.

⁵⁰ P.M. Link, T. Brücher, M. Claussen, J.S.A. Link, J. Scheffran, *The Nexus of Climate Change, Land Use and Conflict*, cit.

⁵¹ United Nations (report of), *The Sahel: Land of Opportunities*, [un.org/africarenewal/sahel](https://www.un.org/africarenewal/sahel).

Lake Chad are wide-ranging and expansive⁵² wherein the focus is on military responses equivalent to solving the symptoms of the environment-conflict nexus instead of its root cause. Experts have crafted strategies to halt the environment-conflict nexus in Lake Chad while being cognizant of the inherent limitations of state and resources in the region such as resource management, sustainable development strategies, women's empowerment, localized solutions, and regional stabilization strategies for the environment-conflict nexus.

4.1 *Resource Management*

Variability in precipitation combined with unpredictable weather may bring about extreme strain on policy, land use planning, and negotiations. This could be aggravated by and result in more pressure on Lake Chad as more people come to be dependent on its resources due to climate change⁵³. To that end, resource management becomes critical to avoid conflict and create a more equitable distribution of resources.

To alleviate hardship through efficient resource management, the Lake Chad Basin Commission has cooperated with the Power China International Group for a water transfer agreement that would transport «50 billion cubic meters of water annually» to Lake Chad from the Republic of Congo and the Central African Republic⁵⁴. The project persists in the «planning and feasibility study stage»⁵⁵ due to fierce opposition from the Democratic Republic of Congo. However, the project has sparked deliberations on the role of private sector resolutions in Lake Chad that might facilitate better resource management in the region. Likewise, the «[i]mproving Lake Chad management through building climate change resilience and reducing ecosystem stress through the implementation of the Strategic Action Programme for the Lake Chad basin» project, which focuses on resource management as well⁵⁶.

⁵² C. Casola, *Multinational Joint Task Force: Security Cooperation in the Lake Chad Basin*, in *Italian Institute for International Political Studies*, March 19th, 2020, ispionline.it/en/pubblicazione/multinational-joint-task-force-security-cooperation-lake-chad-basin-25448.

⁵³ Climate Diplomacy (report of), *Climate and Fragility Risks in the Lake Chad Region*, in *Climate Diplomacy*, January 1st, 1970, climate-diplomacy.org/case-studies/climate-and-fragility-risks-lake-chad-region.

⁵⁴ United Nations (report of), *Improving Lake Chad management through building climate change resilience and reducing ecosystem stress through implementation of the Strategic Action Programme for the Lake Chad basin*, sustainabledevelopment.un.org/partnership/?p=38049.

⁵⁵ R. Caner Sayan, N. Nagabhatla, *How the Private Sector is Shaping the Future of Lake Chad and the Congo Basin*, in *The Conversation*, June 22nd, 2021, theconversation.com/how-the-private-sector-is-shaping-the-future-of-lake-chad-and-the-congo-basin-162532.

⁵⁶ United Nations Development Programme (Report by), *Regional Project for the Conservation and Sustainable Development of Lake Chad*, May 18th 2018, adaptation-undp.org/projects/regional-project-conservation-and-sustainable-development-lake-chad.

Lake Chad has a spatial tradition that «partially rejects the state rationale of clearly defined jurisdiction»⁵⁷. Other extra-regional players have made the matter murkier, for instance the region has seen exploration of the Agadem oil deposits by the China National Petroleum Company. Meanwhile, the main investors in the region include the African Development Bank, the European Union and Germany. Furthermore, the preservation of French strategic interests has led to there being a need to «give the impression of sufficient problems to justify international mobilization»⁵⁸. All these factors necessitate the input and collaboration of extra-regional players in resource management strategizing.

4.2 Sustainable Development

Rapid «global climate change, local extreme hydro-meteorological weather events and climate variability, and unsustainable resource-use practices»⁵⁹ have created an unsustainable situation in the Lake Chad region where the population is expected to increase. Experts have recommended steps such as nurturing the transformative capacity of states to make intentional change in order to mitigate the contributing factors of unsustainability. Sustainable development and management will, however, remain critical to reducing the effects of the environment-conflict nexus through «conflict-sensitive, holistic, multi-stakeholder approaches»⁶⁰. To that end, the Lake Chad Basin Sustainable Development Programme (PRODEBALT) has been implemented to bring about sustainable development over the next few years and protect the unique biodiversity of the region. The Biosphere and Heritage of Lake Chad (BIOPALT) project aims to foster sustainable development vis-à-vis the green economy. The Regional Project for the Conservation and Sustainable Development of Lake Chad has been initiated and encompasses enhanced basin-wide monitoring along with «data and information from the management information system for effective and sustainable land, water, and biodiversity resource management»⁶¹.

However, there are other factors at play as well, with agriculture being one of the most significant ones that have also contributed to conflict between farmers and growers. Agricultural practices that are sustainable are important to ensure the end of the environment-conflict nexus in the Sahel. «Large areas set up for irrigation and mechanized farming were abandoned. Modernized farming has not given the

⁵⁷ A. Iocchi, *Boko Haram's impact on Hybrid Governance on Lake Chad*, in Id., *Limited Statehood and Informal Governance in the Middle East and Africa*, Routledge, 2020, 123-141.

⁵⁸ G. Magrin, *The disappearance of Lake Chad: history of a myth*, in *Journal of Political Ecology*, No. 23, 2016, 205.

⁵⁹ H. Bourbeau, *Resilience for Sustainable Development in the Lake Chad Basin*, in *United Nations Development Programme*, August 31st, 2018, undp.org/publications/resilience-sustainable-development-lake-chad-basin.

⁶⁰ *Ibidem*.

⁶¹ Lake Chad Basin Commission, *Regional Project for the Conservation and Sustainable Development of Lake Chad*, June 23th 2021, cblt.org/regional-project-for-the-conservation-and-sustainable-development-of-lake-chad/.

expected results and the proximities implemented by the projects have been weakened». The people in the region have been working on different solutions, while more involvement from regional economic communities and the AU could make the process faster with better access to information on sustainable development. “Post-project” initiatives should be implemented so as to determine the efficacy of irrigation schemes within the local context⁶².

4.3 Women’s Empowerment

In the Sahel, there are certain «structural factors and inequalities» behind the exclusion of women from «processes, platforms, and discussions» concerning arbitration and resource allocation resulting in their disparate susceptibility to the environment-conflict nexus⁶³. Actions such as safety audits, micro-enterprise funding, awareness-raising, and advocacy⁶⁴ along with cross-national and regional exchanges⁶⁵ could empower women. These developments are likely to decrease state fragility by augmenting the coping capacity of communities through women’s enhanced participation in the workforce and political arena⁶⁶.

Women can be a “new paradigm” for peacebuilding and development in the region. This new understanding was witnessed in a joint UN-African Union (AU) delegation to the Sahel that was mainly comprised of women. The delegation met with women who had been brutalised by Boko Haram, women who are heads of their households in the absence of men, and «women religious leaders working to end child marriage and prevent radicalization via extremist ideology»⁶⁷.

Furthermore, women are instrumental in «peace-making, ecological peace-building» and environmental diplomacy that would also see dividends if women’s rights were prioritized by stakeholders in the Lake Chad region⁶⁸. These considerations have resulted in the African Development Bank (AfDB) initiative

⁶² M. Bertocin, A. Pase, D. Quatrida, *Large-Scale Sahelian Irrigation Projects And Proximity Dynamics*, Firenze University Press, 2013, pp. 402-409.

⁶³ J.M. Smith, L. Olosky, J. Grosman Fernández, *The Climate-Gender Conflict Nexus*, in *The Georgetown Institute for Women, Peace and Security*, 2021, giwps.georgetown.edu/resource/the-climate-gender-conflict-nexus/.

⁶⁴ E. Gordon, H.V. Jay, *Adolescent Girls in Crisis: Voices from the Lake Chad Basin*, in *Monash GPS and Plan International*, August 29th, 2018, research.monash.edu/en/publications/adolescent-girls-in-crisis-voices-from-the-lake-chad-basin.

⁶⁵ A. van Eerdewijk, M. Kamunyu, L. Nyirinkindi, R. Sow, M. Visser, E. Lodenstein, *The State of African Women Report*, in *State of African Women Project*, July, 2018, kit.nl/wp-content/uploads/2018/11/Key-Findings_State-of-African-Women-Report.pdf.

⁶⁶ A. Kohli, M. Steinemann, N. Denisov, *Fragility and Conflict. Climate Change & Environment Nexus Brief*, in *SDC Climate & Environment Network*, July 19th, 2018, zoinet.org/product/nexus-brief-climate-change-environment-x-fragility-and-conflict/.

⁶⁷ United Nations (report of), *Women vital for ‘New Paradigm’ in Africa’s Sahel Region, Security Council hears*, July 10th, 2018, <https://news.un.org/en/story/2018/07/1014341>.

⁶⁸ A. Maas, A. Carius, A. Wittich, *From Conflict to Cooperation? Environmental Cooperation as a Tool for Peace-Building*, in R. Floyd, R.A. Matthew (Eds.), *Environmental Security Approaches and Issues*, Routledge, 2013, 102-120.

embarking on a plan to empower women in the Sahel and Lake Chad Basin with the aim «to help women in these regions whose vulnerability is exacerbated by climate change»⁶⁹. The AfDB is also involved in other projects such as the Multinational Project for Women's Economic Empowerment in the Sahel Region, as a means to increase investment in women-led businesses to the benefit of the region.

Two other projects, the Climate Change, Agriculture And Food Security in Senegal, which focused on improving gendered access to climate information, and the Building Resilience And Adaptation To Climate Extremes And Disasters (BRACED) Project in Burkina Faso, which offered «a practitioner approach, development programming of gender transformative approaches to promote gender equity and climate resilience», could provide guidance on how to approach women empowerment in the Sahel⁷⁰.

4.4 Localized Solutions

To resolve climate-induced conflict, awareness of unique local circumstances, perspectives and stakeholders is essential to leveraging and efficiently mitigating the environment-conflict nexus, such as through consultation with traditional authorities and community leaders. A regional stabilization strategy has been constructed by the Lake Chad Basin Commission along with the African Union and the UN Development Programme (UNDP) that includes «education and skills acquisition, socio-economic recovery, environmental sustainability, and empowerment and inclusion of women»⁷¹. However, issues such as transboundary water disputes and sustained violence in the region owing to climate factors including climate-induced economic disruptions, low-level political violence and civil conflict have contributed to the nexus and make implementation of government policies difficult. Moreover, there appears to be no provision for transparency and accountability in the aforementioned government policy proposals.

Notably, tensions among the riparian states around Lake Chad caused by the construction of islands with indeterminate legal status as the lake recedes due to climate change, may catalyse a conflict. Additionally, probable future water shortage could rouse leaders to pursue further unilateral water-related ventures. Water development may cause water to resurface, thus further exacerbating tensions and, therefore, making established coping mechanisms essential. To that end, social capital and social integration which is acquired via an understanding of

⁶⁹ B. Souad, E.A. Aicha, *AfDB Launches Women's Empowerment Project in the Sahel and Lake Chad Basin*, in *Africa Women Experts*, DATE, africawomenexperts.com/Ing/en/2021/04/afdb-launches-womens-empowerment-project-in-the-sahel-and-lake-chad-basin/.

⁷⁰ C. McOmber, *Women and climate change in the Sahel*, in *West African Papers*, No. 27, 2020, 3.

⁷¹ Lake Chad Basin Commission, *Regional Stabilization Strategy*, June 23th, 2021, cblt.org/regional-strategy-stabilization/.

the local context including that of climate variability and change is required⁷². Moreover, synchronization of national climate adaptation policies by means of consultations with, as well as all-encompassing, the involvement of local populaces will be important for increased effectiveness⁷³.

Lately, efforts have been made to incorporate localized solutions to the problems that contribute to the environment-conflict nexus. These encompass a focus on the participation of civil society in the Lake Chad Basin to address the environment-conflict nexus, «capacitation of local actors through hands-on capacity development initiatives» and removing barriers that would facilitate inclusion and access for citizens of the Sahelian countries in the decision-making process through local/national organizations, including non-governmental organizations (NGOs)⁷⁴. The involvement of regional economic communities is important as well as they are able to provide early warnings of growing conflicts in member states. Regional organisations can be the vital link for «long-term, people-centred, innovative and inclusive measures to promote peace. Such bottom-up solutions, based on intimate knowledge of local areas, are key to success»⁷⁵. The implementation of localized solutions is impaired however due to poor governance that has been exacerbated by the presence of violent non-state actors such as the Odua People's Congress (OPC) and the Niger Delta militants. Any solutions must therefore take into account limitations and margins of error that might be necessitated as such.

5. Regional Stabilization Strategy

Geopolitically speaking, Lake Chad is in a «direct line between ISIS (Islamic State of Iraq and the Levant) in the north, Boko Haram in the south, and Al Qaeda in the west»⁷⁶. Climate adaptation strategies ought to be combined with counterterrorism strategies that would show a proactive stance by governmental authorities and would strengthen the civic spirit of the people impacted by the environment-conflict nexus. The 2017 conference on regional stabilization for areas affected by Boko Haram was convened by the Lake Chad Basin Commission and the African Union (AU) to implement strategies that take into account the aforementioned resolutions, demonstrating to regional leaders the need for

⁷² K. Burrows, P.L. Kinney, *Exploring the Climate Change, Migration and Conflict Nexus*, in *International Journal of Environmental Research and Public Health*, Vol. 13 No. 4, 2016, 443.

⁷³ O. Baffour Frimpong, *Climate Change and Fragility in the Lake Chad Basin*, in *Africa Up Close*, March 31st, 2021, africaupclose.wilsoncenter.org/climate-change-and-fragility-in-the-lake-chad-basin/.

⁷⁴ Norwegian Refugee Council (report of), *Evaluation Terms of Reference: Lake Chad Basin Localisation & Capacity Building Project*, August 3th, 2022, nrc.no/globalassets/pdf/tenders/norcap/evaluation-lake-chad/tor-lakechad_extended.pdf.

⁷⁵ C. Changwe Nshimbi, *The African Union has failed to 'silence the guns'*, in *ThePrint*, July 6th, 2020, theprint.in/world/the-african-union-has-failed-to-silence-the-guns/453097/.

⁷⁶ B. Taub, *Lake Chad: The World's Most Complex Humanitarian Disaster*, in *The New Yorker*, November 27th, 2017, [newyorker.com/magazine/2017/12/04/lake-chad-the-worlds-most-complex-humanitarian-disaster](https://www.newyorker.com/magazine/2017/12/04/lake-chad-the-worlds-most-complex-humanitarian-disaster).

collective action⁷⁷. This cooperation includes political collaboration through regional organizations such as the Economic Community of West African States (ECOWAS). However, implementation remains challenging as climate change intensifies, particularly exacerbating the vulnerability of outlying areas wherein border blockades executed by armed forces have fuelled competition and curtailed mobility⁷⁸.

One strategy to decrease such vulnerabilities includes adaptive migration in which new institutions for regulating environmental migration are established⁷⁹ to manage the expansion of the State's mandate and diminish core-periphery forms of development⁸⁰. The institutions can participate in «strategic adaptation»⁸¹, particularly in areas depending on agriculture that are adversely affected by any changes in Lake Chad and resulting in conflict along with the destruction of social cohesion⁸².

The European Union has provided the Linking Relief, Reconstruction and Development (LRRD) «efforts in areas particularly affected by the current environmental, socio-economic and security challenges» that could assist in stabilisation efforts. LRRD is expected to assist governments with border management, combat transnational trafficking and crime as well as terrorism⁸³. The German government, in tandem with the United Nations Development Programme (UNDP), has been supporting stabilisation efforts in the Lake Chad region since 2017. The focus has been on empowering local African-led stakeholders in order to achieve stabilisation in the region⁸⁴.

⁷⁷ United Nations (report of), *Climate Change 'Biggest Threat Modern Humans Have Ever Faced'*, *World-Renowned Naturalist Tells Security Council, Calls for Greater Global Cooperation*, February 23rd, 2021, un.org/press/en/2021/sc14445.doc.htm.

⁷⁸ C. Cater, *Toward new policies for the climate change and violent extremism nexus in Africa*, in *United Nations Development Programme* (issue brief of), June 16th, 2021, undp.org/content/oslo-governance-centre/en/home/library/toward-new-policies-for-the-climate-change-and-violent-extremism.html.

⁷⁹ C. von Soest, *A Heated, Debate: Climate Change and Conflict in Africa*, in *German Institute of Global and Area Studies*, No. 2, 2020, 8.

⁸⁰ Lake Chad Basin Commission and African Union Commission (report of), *Regional Strategy for the Stabilisation, recovery, resilience of the Boko Haram affected Areas of the Lake Chad Region*, August, 2018, peaceau.org/uploads/regional-stabilisation-recovery-and-resilience-strategy-rss-.pdf.

⁸¹ D. Pearson, P. Newman, *Climate Security and A Vulnerability Model Literature Review Focusing On African Conflict Prevention: A Systematic Agriculture*, in *Sustainable Earth*, Vol. 2 No. 2, 2019, 12.

⁸² C. de Coning, F. Krampe, *Multilateral Cooperation In The Area Of Climate-Related Security And Development Risks In Africa: Background Paper For UN75 Sub-regional Meeting on Multilateral Cooperation to Address Climate Related Security and Development Risks in Africa*, in *Norwegian Institute of International Affairs*, No. 27, 2020, 23-38, reliefweb.int/report/world/multilateral-cooperation-area-climate-related-security-and-development-risks-africa.

⁸³ European Commission (report of), *A two-fold approach for the Sahel and Lake Chad*, ec.europa.eu/trustfundforafrica/content/strategy/policy-approach-sahel-and-lake-chad_en.

⁸⁴ United Nations Office for the Coordination of Humanitarian Affairs (report of), *German Support for Stabilisation in the Lake Chad Region*, July 19th, 2019, reliefweb.int/report/nigeria/german-support-stabilisation-lake-chad-region.

A regional stabilisation strategy could encompass environmental diplomacy that can be conducted to resolve the environment-conflict nexus. This has manifested in the form of the Sahel Alliance itself. The Sahel Alliance comprises five Sahelian countries and coordinates developmental aid to projects spanning six priority fields: «agriculture, rural development, and food security» and «energy and climate»,⁸⁵ to prevent the subversion of authority and the acquisition of legitimacy by violent non-state actors. The Sahel Alliance, in the three years of its implementation, has bolstered relationships as well as dialogue within the Sahelian countries inside the framework of the security peace-development nexus. The alliance has also assisted in co-financing efforts of regional countries, on achieving consensus on intervention areas, private sector development, food security efforts through economic empowerment of women farmers, decentralization of public services, sustainable management of migration, and youth employability. Notably, the Sahel Alliance has given priority to «reciprocal and quality accountability»⁸⁶.

6. Conclusion

The environment-conflict nexus demonstrates the incompatibility of peaceful resolution efforts with the rapidly transforming needs of the national security landscape, particularly in highly stressed environments such as the Lake Chad region⁸⁷. Climate change has been referred to as the «crisis multiplier»⁸⁸ and an environment-conflict nexus is extremely detrimental to the fostering of regional stability and cooperation. The Lake Chad region has enormous potential for irrigated agriculture, sustainable energy development, and the leveraging of demographic dividend benefits.

However, significant challenges remain that fuel underdevelopment and mass urbanization, which, in turn, inadvertently propel the environment-conflict nexus. Solutions need to be formulated in grassroots-level spaces and through localized resolution mechanisms. These solutions have included the formulation of a regional stabilization strategy, diplomatic efforts such as the Sahel Alliance that are reinforced by promoting women's rights, and prudent resource management to halt the environment-conflict nexus. These actions will also reduce the influx of displaced people and restore trust in governments.

The governments in the Lake Chad region focus on excessive counterinsurgency at the expense of such climate change-related disasters. This has led to «reduced

⁸⁵ Sahel Alliance (report of) , Results Report 3 Years of the Sahel Alliance, January 19, 2021, alliance-sahel.org/wp-content/uploads/2021/01/AS_digital_EN.pdf.

⁸⁶ *Ibidem*,

⁸⁷ F. Galgano, *The Environment-Conflict Nexus: Climate Change and the Emergent National Security Landscape*, Springer, 2018, 1-19.

⁸⁸ K. Hubbard, *Global Warming Risks Increase in Conflicts*, in *US News and World Report*, October 29th, 2021, usnews.com/news/best-countries/articles/2021-10-29/how-climate-change-may-increase-global-conflicts.

revenues and destruction of infrastructure»⁸⁹, and conflicts in the region could be fuelled as no effort has been made to break the environment-conflict nexus. Active engagement in the resolution of the environment-conflict nexus in the Lake Chad region by international actors, regional stakeholders, and local shareholders is therefore essential.

⁸⁹ K. Ighobor, *Address Development Issues in the Lake Chad Basin*, December 19th, 2019, un.org/africarenewal/magazine/december-2019-march-2020/address-development-issues-lake-chad-basin.