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**DYNAMICS OF HUMAN SECURITY AND REGIONAL SOCIAL AND
ECONOMIC DEVELOPMENT: A CASE STUDY OF THE LAKE CHAD BASIN**

BY

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PROFESSOR MULUGETA F. DINBABO**

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DECLARATION

I hereby declare that the PhD thesis entitled *Dynamics of Human Security and Regional Social and Economic Development: A Case Study of the Lake Chad Basin* is my own work, that it has not been previously submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Signature.....

Adeyemi Saheed Badewa

September 2020



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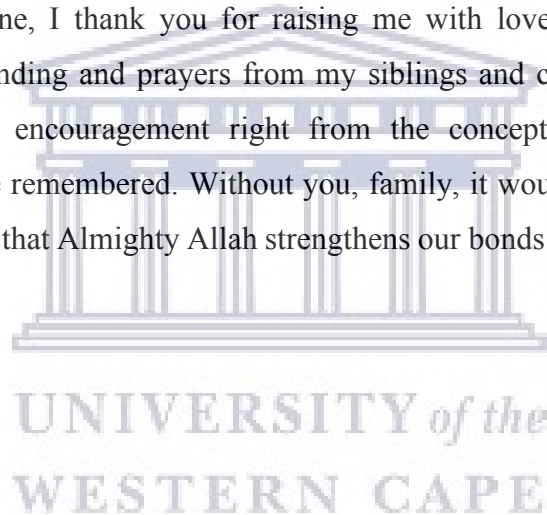
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DEDICATION

To the deprived and displaced persons of the Lake Chad basin, towards your resilience.



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ABSTRACT

Transboundary river basins (TRBs), and its array of biodiversity, have created a web of complex security, socio-economic and political interdependencies among populations, communities and multiplicity of actors across the world. However, the continuous degradation of these vital resources, resulting from natural and anthropogenic factors, has serious implications for global development, peace and security. Indeed, it further threatens regional resource base, induce livelihoods impairment, scarcities and conflicts over the utilisation and control of strategic resources, particularly in the Global South. The study explored the cause-effect analysis of the desiccation of Lake Chad basin and the dreadful Boko Haram crisis within the prisms of human security and regional development. It reflects on the interconnections among environmental change, human development, livelihoods, conflicts and the outcomes of interventions - military and humanitarian in reconstructing human security and regional development narratives in the Lake Chad Basin.

The research was contextualised within two theoretical frameworks: eco-violence, and the capability approach. This was conceived to provide an improved understanding of both the micro (individual or group interactions) and macro (large scale - national and multinational actors) development processes, the enablers and constraints of human security in the region. Their implications for regional development, security, sustainability and stabilisation process are also elucidated. Mixed-method research and a case study design was adopted to specifically study the Lake Chad impact area, covering 542,829 km², across the four riparian countries - Cameroon, Chad, Niger and Nigeria. Although, the conventional or active basin of the lake - an estimated 984,455 km² area was generally referenced. Purposive sampling was used to select participants for semi-structured interviews, focused group discussions (FGD) and document review. A total of 34 key informants, six (6) FGDs and 33 institutional documents (18 intervention and policy documents and 15 official bulletins) were utilised. These enable the substantiation of primary data with secondary data – qualitative and quantitative (derived from documents review). A thematic analysis of the causality of resource scarcities, livelihoods, and conflict relationships in the region was undertaken. This includes an assessment of the regional development process and the efficacies of security and humanitarian interventions in the Lake Chad Basin.

The study revealed that the desiccation of Lake Chad and the destructive Boko Haram crisis (since 2009) impede development in the region. The lake's shrinkage (estimated above 90

percent from 1963 till date), caused by environmental change and unsustainable human practices or exploitation of the basin's resources, have transboundary effects. These and the humanitarian catastrophes caused by Boko Haram menace have heightened human insecurity, and threaten communities' fragility and transborder cooperation in the region. While regional development processes and intervention have marginal impacts on the population and their resilience capacities. Indeed, the complexity of the challenges overlaps with inconsistencies in the region's development processes and the interventions regime – security and humanitarian management. Thus, addressing the consequences, while neglecting the root causes of human security threats in the Lake Chad Basin, further heightens the population's deprivations amidst challenges of resource curse, geopolitics and its alteration of regional political economy. The above underscores the dialectics between human security and regional development.

From these submissions, improved water resources and environmental management; inclusive development - to address the root causes of insecurity; monitoring and harnessing of national and regional development priorities; and integrated regional security-development strategy, against the military-led humanitarian approach, are recommended as critical solutions. These enhance a rethinking of human security and regional development matrix in the Lake Chad and other TRBs in the Global South. Therefore, the study highlighted the imperative of mediating exhaustive discourse on TRBs as Special Economic Zones (SEZ); constructive interactions between development processes and actors (stakeholders); the use of groundwater as a palliative; and the intrinsic mobility, multiactivity and multi-functionality of livelihoods in the Lake Chad Basin. These can be pondered in (future research and policy) discourses to enhance regional resilience, human security and sustainable development in the Lake Chad Basin.

KEYWORDS

- ❖ Boko Haram
- ❖ Capability
- ❖ Conflict
- ❖ Development
- ❖ Environment
- ❖ Human security
- ❖ Intervention
- ❖ Lake Chad
- ❖ Livelihood
- ❖ Sustainability



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TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENT.....	ii
DEDICATION.....	iv
ABSTRACT	v
KEYWORDS.....	vii
TABLE OF CONTENTS.....	viii
LIST OF ABBREVIATIONS	xii
LIST OF TABLES.....	xv
LIST OF FIGURES	xvi
CHAPTER 1	1
1 INTRODUCTION	1
1.1 Background of the study	1
1.2 Statement of the Problem.....	7
1.3 Research Questions.....	8
1.4 Research Hypothesis.....	8
1.5 Aim of the Research.....	8
1.6 Objectives of the Study.....	9
1.7 Justification of the Study.....	9
1.8 Delimitation of the Study.....	11
1.9 Structure of the Thesis.....	12
1.10 Chapter Summary.....	13
CHAPTER 2.....	15
2 LITERATURE REVIEW.....	15
2.1 Introduction	15
2.2 Human security and development discourse across the globe	15
2.3 Human security and development discourse on Africa	18
2.4 Human security and development discourse on the Lake Chad environs.....	22
2.5 Chapter Summary	26
CHAPTER 3.....	28
3 CONCEPTUAL AND THEORETICAL FRAMEWORK	28
3.1 Introduction	28
3.2 Conceptual Framework: Human Security and Regional Development.....	28
3.3 Theoretical Framework I: The Capability Approach.....	34
3.3.1 Operationalising the Capability Approach.....	39
3.4 Theoretical Framework II: Eco-violence Theory	46
3.5 Chapter Summary	51
CHAPTER 4.....	52
4 CASE STUDY DESCRIPTION: LAKE CHAD BASIN AND FEATURES.....	52

4.1	Introduction	52
4.2	Lake Chad: Geography and Hydrology	53
4.3	Climate and ecology	58
4.4	The Lake Chad Basin: Water resources and management.....	62
4.4.1	The major sub-basins of Lake Chad	63
4.4.2	The aquifers of Lake Chad Basin	68
4.4.3	The management of Lake Chad Basin and its resources	68
4.5	Lake Chad's population: History, Demography, Economy, and Conflict dynamics	70
4.5.1	Population dynamics of the Lake Chad Basin.....	71
4.5.2	Economy and economic activities of the Basin's population	73
4.5.3	Conflicts and regional security dynamics	78
4.6	Chapter Summary	80
CHAPTER 5		81
5	PHILOSOPHY AND METHODS OF RESEARCH	81
5.1	Introduction	81
5.2	Philosophy of Research: Critical Security Approach	81
5.3	Research Design	86
5.3.1	Case Study Methodology	86
5.3.2	Research Setting	89
5.3.3	Data Collection Method	91
5.3.4	Data analysis.....	98
5.3.5	Researcher's Factor and Reflexivity.....	100
5.4	Ethical Statement	101
5.5	Chapter Summary	102
CHAPTER 6.....		103
6	HUMAN SECURITY CHALLENGES IN THE LAKE CHAD BASIN: A CAUSE-EFFECT ANALYSIS	103
6.1	Introduction	103
6.2	Background	103
6.3	Analytical Framework.....	105
6.4	Research Findings and Discussions.....	106
6.4.1	The Desiccation of Lake Chad	107
6.4.2	Socio-political and economic development in the Lake Chad Basin: components and constraints	120
6.5	Chapter Summary	147
CHAPTER 7.....		149
7	BOKO HARAM CRISIS AND INSECURITY IN THE LAKE CHAD BASIN	149
7.1	Introduction	149
7.2	Threats to security in the Lake Chad Basin.....	149

7.2.1	The Al-Majiri System	153
7.3	The Boko Haram crisis	157
7.4	Implications of insecurity in the Lake Chad Basin: Eco-Violence Discourse	166
7.5	Chapter Summary	182
CHAPTER 8		184
8	REGIONAL DEVELOPMENT PROCESS IN THE LAKE CHAD BASIN: SUCCESS AND CHALLENGES	184
8.1	Introduction	184
8.2	Background	184
8.3	Analytical framework	186
8.4	Research Findings and Discussions	186
8.4.1	Regional development: multilateral governance and water resources management	187
8.4.2	National water management and development capacities	205
8.5	Transboundary river basins in the Global South: development and challenges	221
8.6	Chapter Summary	228
CHAPTER 9		230
9	HUMAN SECURITY INTERVENTIONS IN THE LAKE CHAD BASIN	230
9.1	Introduction	230
9.2	Military Interventions and counterterrorism in the Lake Chad Basin	230
9.2.1	National anti-terrorism measures in the LCBC countries	231
9.2.2	Regional Security Mechanism – Multilateral Approach to Counterterrorism	238
9.2.3	Success and challenges of MNJTF and regional counterterrorism	241
9.3	Humanitarian interventions in the Lake Chad Basin	245
9.3.1	Implications of the humanitarian regime in the Lake Chad Basin	254
9.4	Chapter Summary	258
CHAPTER 10		260
10	CONCLUSION, RECOMMENDATIONS AND FURTHER RESEARCH	260
10.1	Introduction	260
10.2	Conclusion of the study	260
10.2.1	Research Findings	267
10.3	Recommendations	273
10.3.1	Improving water resources governance and environmental management to safeguard the productive potentials of Lake Chad and mitigate the transboundary effects of its desiccation	273
10.3.2	Promoting inclusive development to address the roots of insecurity and Boko Haram menace in the Lake Chad basin	275
10.3.3	Harnessing regional development processes – national and multilateral, toward human security and sustainable development across the basin	280

10.3.4	Integrated security and humanitarian mechanisms towards sustainable peace and regional stability across the Lake Chad basin.....	285
10.4	Areas for Further Research	290
10.5	Contributions of the Thesis	291
10.6	Chapter Summary	293
	LIST OF REFERENCES	295
	APPENDICES.....	308



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LIST OF ABBREVIATIONS

ACEEN	Association for Environmental Education
AfCFTA	African Continental Free Trade Agreement
AFD	Agence Française de Développement (French Development Agency)
AfDB	African Development Bank
AFRICOM	(United States) African Command
AFROSAI	African Organization of Supreme Audit Institutions
AMCEN	African Ministers' Conference on the Environment
ANBO	African Network of Basin Organisations
AORs	Areas of Responsibilities
AQIM	Al-Qaeda in the Islamic Maghreb
ASEAN	Association of South East Asian Nations
AU	African Union
BADEA	Arab Bank for the Economic Development of Africa
BGR	German Federal Institute for Geosciences and Natural Resources
BHT	Boko Haram Terrorists (Groups)
BIOPALT	Biosphere and Heritage of Lake Chad
BIR	Brigade Intervention Rapide (Rapid Intervention Brigade)
BMZ	German Federal Ministry of Economic Cooperation and Development
CAADP	Comprehensive Africa Agricultural Development Programme
CBD	Convention on Biological Diversity
CBDA	Chad Basin Development Authority
CBT	Cash Based transfers
CCL	Centre for Coordination and Liaison
CEMAC	Economic and Monetary Community of Central Africa
CHS	Commission on Human Security
CICOS	International Congo-Ubangui-Sangha Commission
CIMIC	Civil and Military Cooperation
CJTF	Civilian Joint Task Force
CMA	Coordination of the Azawad Movement
COGEZOH	Contribution to Wetland Management Association
CSOs	Civil Society Organisations
DRC	Danish Refugee Council
ECA	Economic Commission for Africa
ECOMOG	ECOWAS Monitoring Group
ECOWAS	Economic Community of West African States
EOD	Explosive Ordnance Disposal
EU	European Union
EUCOM	(US) European Command
FAO	Food and Agriculture Organisation of the United Nations
FC-G5S	Force Conjointe du G5 Sahel (Group of Five - Sahel)
FGD	Focused Group Discussions
FYIP	Five-Years Investment Plan
GBV	Gender-Based Violence
GDP	Gross Domestic Product/per capita
GEF	Global Environment Facility
GERD	Grand Ethiopian Renaissance Dam
GHI	Global Hunger Index
GIZ/GTZ	Deutsche Gesellschaft für Internationale Zusammenarbeit

GNP	Gross National Product
GPS	Global Positioning System
HDI	Human Development Index
HDR	Human Development Report
HIPC	Heavily Indebted Poor Countries
HIV/AIDS	Human Immunodeficiency Virus, Acquired Immunodeficiency Syndrome
IBWT	Inter-basin Water Transfer Project
ICRC	International Committee of the Red Cross
ICT	Information and Communications Technology
IDB	Islamic Development
IDPs	Internally Displaced Persons
IEDs	Improvised Explosives Devices
IGOs	Inter-Governmental Organisations
IMC	International Medical Corps
IMF	International Monetary Fund
INBO	International Network of Basin Organisations
INGOs	International Nongovernmental Organisations
IOM	International Organisation for Migration
IRC	International Rescue Committee
ISWAP	Islamic State's West Africa Province
IUCN	International Union for the Conservation of Nature
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
LCBC	Lake Chad Basin Commission
LCDAP	Lake Chad Development Action Plan
LGA	Local Government Area
LPA	Lagos Plan of Action
MDAs	Ministries, Departments and Agencies
MIP	Minimum Integration Programme
MNJ	Movement for Justice
MNJTF	Multinational Joint Task Force
MPI	Multidimensional Poverty Index
MRAP	Mines Resistance Ambush Protected (Vehicle)
MSF	Médecins sans Frontières
MSRs	Main Supply Routes
MUJAO	West African Jihad Movement
NAP	National Action Plans
NBA	Nile Basin Authority
NBI	Nile Basin Initiative
NCF	Nigerian Conservation Foundation
NEDC	North-East Development Commission
NEMA	National Emergency Management Agency
NEPAD	New Partnership for Africa's Development
NFIs	Non-Food Items
NGOs	Non-Governmental Organisations
NJDT	Movement for Democracy and Justice
NPFS	National Programme for Food Security
NSAG	Non-State Armed Groups
NUFAS	National Union of Fishermen and Seafood Dealers
OCHA	(UN) Office for the Coordination of Humanitarian Affairs

OECD	Organisation for Economic Cooperation and Development
OHD	Humanitarian and Development Organisation
OP-LD	Operation Lafiya Dole
PACRC	Community Action Project for Climate Resilience
PADL-D	Diffa-Local Development Support Project
PADL-GRN	Support Programme for Local Development and Natural Resources Management
PIDA	Programme for Infrastructural Development in Africa
PINE	Presidential Initiative for the North East
PRESIBALT	Programme to Rehabilitate and Strengthen the Resilience of Lake Chad Basin Systems
PRODEBALT	Programme for the Sustainable Development of the Lake Chad Basin
RBDAs	River Basins Development Authorities
RSF	Regional Stabilisation Facility
RSS	Regional Stabilisation Strategy
SAP	Strategic Action Plan
SATG	Special Anti-Terrorism Group
SCIP	South Chad Irrigation Project
SDGs	Sustainable Development Goals
SEMA	State Emergency Management Agency
SEMYR	Société d'expansion et de modernisation de la riziculture de Yagoua
SEZ	Special Economic Zones
SODELAC	Société pour le Développement du Lac
TCCs	Troops Contributing Countries
TFPs	Technical and Financial Partners
TRBs	Transboundary river basins
UA	Unit of Account
UFDD	Union of Forces for Democracy and Development
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNHAS	United Nations Humanitarian Air Service
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VEOs	Violent Extremist Organisations
VSF	Victims Support Fund
WASH	Water Sanitation and Hygiene
WFP	World Food Programme
WMO	World Meteorological Organisation
WWF	World Wild Fund for Nature

LIST OF TABLES

TABLE 4.1: AVERAGE RAINFALL OVER LAKE CHAD BASIN AND THE CHARI RIVER FLOW SINCE 1950	59
TABLE 4.2: A RESULT OF THE COUNTRY STUDIES ON IRRIGATION POTENTIALS, WATER REQUIREMENTS AND AREAS UNDER IRRIGATIONS IN THE LAKE CHAD BASIN	66
TABLE 4.3: INCOME SOURCES OF HOUSEHOLDS IN THE LAKE CHAD REGION	75
TABLE 4.4: HEALTH AND EDUCATION INDICATORS OF THE LAKE CHAD BASIN	77
TABLE 5.1: SUMMARY OF DATA COLLECTION METHODS.....	92
TABLE 5.2: SUMMARY OF KEY INFORMANTS (INTERVIEW)	94
TABLE 5.3: DESCRIPTION AND IDENTIFICATION CODES FOR KEY INFORMANTS	95
TABLE 5.4: SUMMARY OF THE FOCUSED GROUP AND IDENTIFICATION CODES.....	96
TABLE 6.1: QUALITATIVE THEMES, CODES AND CATEGORIES ON HUMAN SECURITY	106
TABLE 6.2: THE CHARACTERISTICS OF LAKE CHAD IN ITS DIFFERENT STATES.....	109
TABLE 6.3: LIVESTOCK PER RIPARIAN COUNTRY OF THE LAKE CHAD, 2012.....	130
TABLE 6.4: SPECIES AND BREED OF LIVESTOCK REARED IN THE LAKE CHAD	130
TABLE 6.5: SOCIO-ECONOMIC PROFILE AND CRISIS IMPACTS OF THE LAKE CHAD.....	144
TABLE 8.1: QUALITATIVE THEMES, CODES AND CATEGORIES ON REGIONAL DEVELOPMENT....	186
TABLE 8.2: NATIONAL AGENCIES AND KEY MINISTRIES FOR WATER MANAGEMENT	206
TABLE 10.1: DIMENSIONS OF HUMAN INSECURITY AND PECULIAR ROOT CAUSES.....	261



UNIVERSITY *of the*
WESTERN CAPE

LIST OF FIGURES

FIGURE 1.1: OUTLINE OF THESIS CHAPTERS AND SUBTOPICS.....	14
FIGURE 3.1: HUMAN SECURITY CONCEPTUAL APPROACH	29
FIGURE 3.2: OUTLINE OF CORE FACTORS IN THE CAPABILITY APPROACH.....	36
FIGURE 3.3: THE CAUSAL LINK BETWEEN ENVIRONMENTAL SCARCITY AND CONFLICT	48
FIGURE 4.1: THE LAKE CHAD BASIN	54
FIGURE 4.2: HISTORICAL VARIATIONS OF LAKE CHAD 1865 -2005	56
FIGURE 4.3: A CHRONOLOGY OF THE LAKE CHAD VARIABILITY 1961-2000.....	57
FIGURE 4.4: CURRENT AND FUTURE 120-DAY GROWTH LINE AND LOSS OF FERTILE AGRICULTURAL AREAS IN THE LAKE CHAD	61
FIGURE 4.5: OUTLINE OF THE DRIVING INFLUENCE OF FRESHWATER SHORTAGE ON ALLIED ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS IN THE LAKE CHAD BASIN	66
FIGURE 4.6: PERCENTAGE OF IRRIGATED AREA PER COUNTRY IN THE LAKE CHAD BASIN	67
FIGURE 5.1: CASE STUDY RESEARCH: DESIGN AND PROCEDURE.....	87
FIGURE 5.2: MAP OF THE LAKE CHAD INDICATING THE RESEARCH SETTING.....	89
FIGURE 6.1: THE AVERAGE STATE OF LAKE CHAD - (THE SMALL STATE) 2010-2015	108
FIGURE 6.2: TRANSBOUNDARY FLOW OF AGRICULTURAL ACTIVITIES IN THE LAKE CHAD	120
FIGURE 6.3: AGRICULTURAL PRODUCTION IN THE LAKE CHAD BASIN.....	124
FIGURE 6.4: FISHING ACTIVITIES AROUND THE LAKE CHAD	126
FIGURE 6.5: MULTIPURPOSE NATURE OF THE LAKE CHAD'S SOCIO-ECONOMIC ACTIVITIES.....	134
FIGURE 6.6: GLOBAL HUNGER INDEX FOR RIPARIAN LCBC COUNTRIES (2019).....	135
FIGURE 6.7: SOCIO-POLITICAL FACTORS OF HUMAN INSECURITY IN THE LCB REGION	137
FIGURE 7.1: FACTORS OF INSECURITY IN THE LAKE CHAD BASIN	150
FIGURE 7.2: MAJOR PHASES IN THE GROWTH OF BOKO HARAM MOVEMENT (2013-2017).....	158
FIGURE 7.3: DISPLACEMENTS IN THE LCBC COUNTRIES - FACTORS AND COMPONENTS	168
FIGURE 7.4: BOKO HARAM INDUCED DISRUPTIONS OF SOCIO-ECONOMIC ACTIVITIES AND TRADE ROUTES IN THE LAKE CHAD BASIN.....	170
FIGURE 8.1: THE ORGANOGRAM OF THE LAKE CHAD BASIN COMMISSION.....	189
FIGURE 8.2: IRRIGATION PROJECT AROUND THE LAKE CHAD AREA (NIGERIA)	216
FIGURE 8.3: SOUTH CHAD IRRIGATION PROJECT (SCIP) – PHASES I-III	217

CHAPTER 1

INTRODUCTION

1.1 Background of the study

The world's water bodies - open oceans, lakes, rivers, aquifers and large marine ecosystems – and homes to immense proportions of biodiversity, support the livelihoods, wellbeing, socio-economic development and security of populations and communities throughout the world (Food and Agriculture Organisation, 1997, 2009; Lipchin *et al.*, 2007; Gleick *et al.*, 2014; Global Environment Facility, 2016). Invariably, most of these water bodies are transboundary (shared by two or more countries), and thus characterised by a web of complex security, environmental, political, and socio-economic interdependencies (GEF, 2016). In total, the 286 transboundary river basins (TRBs) of the world span 151 countries - covering 62 million km² (42 percent of Earth's total land area). They connect over 2.8 billion humans (about 42 percent of the global population) and provide an estimated 22 000 km³ of annual water discharge (nearly 54 percent of the global river flow) (GEF, 2016:2). Given the above features, TRBs are catalysts for dialogue, cooperation and conflicts among different entities across the world.

Continuously degraded by numerous natural and anthropogenic factors, management of TRBs are increasingly constrained by limited funding and technical expertise, particularly in the developing world. As a result, water scarcity threatens humanity and development with varying proportions across continents (GEF, 2016). The International Water Management Institute (IWMI), estimated that 1.2 billion people (almost 20 percent of the entire world's population) dwell in areas of physical water scarcity, where water availability for domestic use, agriculture and industry exceed 75 percent of river discharge. This in addition to some 500 million population living in places drifting into physical scarcity, another 1.6 billion populations are prone to economic water scarcity (Gleick *et al.*, 2014:2). Consequently, the high prevalence of human security threats in transboundary river basin areas has induced

conflicts among dependent populations, communities or other actors, with implications for livelihood loss, impairment of human capability and resilience. Indeed, economic migrations, food and nutrition insecurity, criminality and pollution amid population increase etc. continuously threaten peace, development and transborder cooperation across the world.

Nevertheless, broadening of security premise beyond the conventional military conception that dominated the Cold War era (1945-1990), has unearthed sophisticated and multifarious human security (non-military) issues conceived in terms of advancing the vital core of humanity - livelihood, freedoms and well-being (Buzan, 2003; Commission on Human Security, 2003; Roberts, 2005; Sheehan, 2005; Jolly and BasuRay, 2007; Newman, 2010). While global awareness in the 1970s had illustrated non-conventional environmental and water resource issues etc. as security matters, human security was popularised in the 1980s, notwithstanding the heightened Cold War tensions (Roberts, 2005; Jolly and BasuRay, 2007; Newman, 2010). As trends of globalization intensify, criticisms mounted against traditional conception of security as not reflecting its nature and complexity. A new wave of scholars including Barry Buzan, the Copenhagen school etc. promote a broader set of security agenda, distinct from the traditional realist conception. The new emphasis, from the Realist's bias on 'national security interests and power', with state as primary referent object, anarchy international system, and the military use or threat of force' shifted to 'human security'(Sheehan, 2005; Francis, 2006).

Therefore, human security, conceives security in furtherance of human rights, human development, purposely to protect against threats to individuals and communities and empowering them to act on their own (CHS, 2003). The 1994 Human Development Report (HDR) of the United Nations Development Programme (UNDP) added a significant leap toward the security redefinition process. In referencing individual (human) as an object of security, human security emphasized development as 'Freedom from Fear' and 'Freedom from Want', the two of four Freedoms (goals), articulated in 1941 during the Second World War

(1939 - 45) and later by the United Nations. The 'Freedom to live in dignity' earlier conceived in the Universal Declaration of Human Rights (UDHR) – 1948 was later included in the HDR to expatiate its premise. The HDR identified seven broad classifications of security: economic, personal, health, food, environmental, political and community security, with 'individual' as its focus (Hoogensen, 2004; Gasper, 2013).

In essence, human security advocates policy changes to improve people's welfare, its proponents argue that threats to human wellbeing and emancipation, such as internal conflicts, disease, hunger, environmental pollution or criminal violence, among others, constitute the greatest threats to 'security' and global development (Newman, 2010). The UN Commission on Human Security conceives the term – human security as protecting the vital core of all human lives, purposely to improve their freedoms and fulfilment (CHS, 2003). It believes, protecting the fundamental freedoms (basic freedoms of life) is the essence of human security. An idea premised on the processes (development) that build on the strengths and aspirations of people to protect them from critical and pervasive calamities. In broad terms, creating overall economic, social, political, military, environmental and cultural systems that enhance human survival, livelihoods and dignity (CHS, 2003).

In Africa, insecurities emanating from environmental degradation, resource scarcity, poverty, crime, illicit drugs' smuggling, ethno-religious/nationalist identity crises, epidemics such as malaria, HIV/AIDS and ebola, natural calamities such as flooding, famine, and migration among others have all threatened personal, societal and national security and survival across the continent (Francis, 2006). These threats, largely internal rather than external, emanate from a range of non-state, sub-state actors/factors. Also, they have transborder effects and indeed create conditions for conflict, violence and underdevelopment in several African societies.

The Lake Chad basin, like other parts of Africa, adds its peculiar threats to human security. Since 1963, the lake lost over two-thirds of its surface area due to climate change and

consequences of human activities, especially rainfall deficit and harmful irrigation practices (Lake Chad Basin Commission, 2016g). The resultant famine and crop failures often intensify conflicts over depleted resources (especially between farmers-herders) and disrupt populations' livelihoods (mostly fishery, farming and livestock production) and resilience capacities (Ifabiyi, 2013). Thus, poverty, unemployment and illiteracy coupled with religious extremism have induced insecurity including Boko Haram terrorism in the region. In effect, population displacements further exacerbate human insecurity in the Lake Chad Basin. How did the region arrive at this state? What are the effects of human security challenges on regional development and resilience? Why are regional efforts inadequate in responding to these threats? Finally, in what context(s) can this scenario be well evaluated?

The Lake Chad, one of Africa's major freshwater, is reduced in size by 95 percent - from 25,000 km² to 2,000 km² between 1963 and 2010 (LCBC, 2016:1). The lake, a remnant of a former quaternary that was 280 m in altitude and presently with 4 m depth, is covered by islands and suffers intense evaporation, with the possibility of outright disappearance by 2035 (LCBC, 2016:1). On 22 May 1964, the Lake Chad Basin Commission – an IGO was established by the four littoral countries of the lake, Cameroon, Chad, Niger and Nigeria, by the Fort-Lamy Convention (now N'Djamena) with a mandate of halting the increasing degeneration of Lake Chad and reclaim its resources toward regional cooperation and socio-economic development (LCBC, 2016). Despite the above, the desiccation of Lake Chad is worsened by repeated droughts of 1972-1973 and 1982-1984, and continuous desertification, threaten agriculture, livestock and fisheries and the basin's resource base, with negative consequences on regional development. However, the advent of LCBC also paved way for national and other multilateral initiatives, projects, programmes and investments across the basin to address the threats of environmental change and its effects on the basin's vital resources and the population's livelihood, wellbeing and security.

Given these efforts, Odada et al. (2006) pointed that water requirement for irrigation in the riparian Lake Chad basin countries increases about four-fold from 1963 to date, due to population growth - currently about 50 million (LCBC, 2017), and further drains the lake. The decrease in river flow degrades the lake Chad basin's hydrology and river channels. The accelerated siltation in the lake and weed growth, especially the *typha-australis*, threaten the lake's existence. This prevents the water flow from reaching the lower parts of the lake's catchments, particularly in the Hadejia-Jama'are-Yobe basin (Barchiesi *et al.*, 2014). Fortnam and Oguntola (2004) and Ifabiyi (2013) succinctly analyse the contributions of salinity, resulting from low water intake and erosion of fertile soil, to biodiversity loss and extinction of several species of plants and animals in the Chad basin. The effects include the contamination of safe water, revenue loss and deprivation. It has forced several fishermen into farming or other jobs, scarcity of safe water has also caused the outbreak of diseases including cholera, typhoid and diarrhea (Ifabiyi, 2013), a further threat to human security in the region. Oguntolu (2004) emphasises the challenges of pollution in the region. This phenomenon arises from sedimentation, solid wastes and chemical contaminations, with local and transboundary effects across the region. Also, it further argues that the downstream communities and its populations are negatively impacted by the upstream urban discharges and loads of irrigated nutrient. Thus, the crop residues generated after harvesting pollute the water bodies across the drainage basin.

The by-product of environmental catastrophe includes water and food insecurity, poverty and loss of biodiversity. The migration of climate refugees whose livelihoods are disrupted propels conflicts over shared resources, encroachment on farmlands and grazing rights. Diseases and malnutrition rates in the Lake Chad communities also rise by fifteen percent above the emergency threshold (UNFPA, 2015:2). Also, Lyman (2008) reveals that drug trafficking, human trafficking, or illegal migration and smuggling of arms and related commodities increase in the region's under-governed areas. These, no doubt, threaten

communities' fragility, impede transborder cooperation and heighten conflict potentials. The loss of livelihood, despondency arising from environmental emergency and other socio-economic challenges – illiteracy, poverty and disaffection against government enhance the population's (mostly youths) vulnerability to terrorist recruitment, particularly Boko Haram amidst other criminalities (Onuoha, 2014; Magrin and De Montclos, 2018). Thus, the Boko Haram threats – insurgency, terrorist attacks, and forced displacement of populations are heightened by the spillover of armed conflicts in the neighbouring Sahel and the Maghreb etc. (UNFPA, 2015). Therefore, the resultant humanitarian catastrophe from these threats exacerbates human security-development crisis in the Lake Chad region.

Cognisance of the above scenario, the study interrogates the factor of human security threats in the Lake Chad basin's regional development process. It, however, reviews the array of regional development efforts using human security as a basic parameter. Specific emphasis is placed on the sustainable management of the Lake Chad's resources in addressing the threats to livelihood and resilience to environmental stress. The regional strategies for socio-economic development, peace and security are also examined. Essentially, its policy implications for sustainable development, regional integration and counter-terrorism strategies are further elicited. This is juxtaposed with inferences from related transboundary river basins in the Global South. The purpose is to reflect on the best mechanisms to manage the region's resources and transborder cooperation toward improving the population's wellbeing and regional development as encapsulated in the LCBC's Vision 2025 - Integrated River Basin Management. Also, regional development processes are contextualised within the broader "Agenda 2063" of the African Union (AU) and the Sustainable Development Goals (SDGs) of the United Nations (UN).

1.2 Statement of the Problem

Regional development as a catalyst for addressing socio-economic and security challenges has gained momentum across the world. However, development in the Lake Chad region is challenged by the desiccation of the Lake Chad basin and insecurity, mostly characterised by the Boko Haram crisis amid other forms of criminalities. Yet, mechanisms undertaken to address the above challenges and promoting regional adaptation to climate variability, socio-economic development and addressing the spillover of insecurity in the region have been top-down and state-centric. It also emphasises more critically the consequences of the problems instead of the root causes. Hence, Analyses of development challenges in Lake Chad region reflect on the water and food insecurity, poverty due to loss of livelihood and biodiversity birthed by the lake's recession (Ifabiyi, 2013; Okpara *et al.*, 2015; UNFPA, 2015). Additionally, studies also established that failings of regional security mechanisms have negative implications for communities' fragility, resilience and transborder cooperation across the region (Lyman, 2008; Okoli and Iortyer, 2014; Onuoha, 2014; Agbiboa, 2015).

However, there is a dearth of research on the “intersection of human security and regional development” in the Lake Chad basin and by extension, Africa. The major problem involves drawing a line between hard and soft security threats as the prevailing socio-economic realities in the basin riparian states contrasts most of the government's official reports, using the Human Development Index. It also includes the military-led security and humanitarian approach. Remarkably, the multiple dimensions of transboundary water resource potentials on human security-development remain fully unexplored. Hence, state-centric biases in security and regional development, privileging ‘high-politics’ above human security concerns on development approaches limit our understanding of this phenomenon. The research attempts to fill this gap, evaluating the transboundary effects of the desiccation of Lake Chad, human capability-vulnerability factors in socio-economic development and the cause-effects of

security threats in the Lake Chad basin from empirical, methodological (case study) and theoretical standpoints.

1.3 Research Questions

1. What are the peculiar human security challenges in the Lake Chad Basin and its effects on regional development?
2. What does the desiccation of the Lake Chad imply for livelihoods, food security, mobilities and transborder cooperation across the Lake Chad region?
3. How do conflicts, emergencies (insurgency and counterinsurgency) and geopolitics influence human security-development in the Lake Chad region?
4. How have interventions affected resilience and human security in the Lake Chad basin?
5. How can multilateral governance be integrated to enhance the sustainable development process in the Lake Chad Basin?

1.4 Research Hypothesis

The following are the research hypotheses

***Hypothesis 1:** Human security challenges are not adequately addressed in the Lake Chad basin, thereby constitute the major impediments to its development.*

***Hypothesis 2:** The desiccation of Lake Chad has impaired livelihoods and induce conflicts among resource dependents in the region.*

***Hypothesis 3:** Interconnectedness of Boko Haram menace, resource conflicts and socio-economic crisis impact negatively on regional development in the Lake Chad Basin.*

***Hypothesis 4:** Integrated interventions on security and humanitarianism are prerequisites for sustainable development and stability in the Lake Chad Basin.*

1.5 Aim of the Research

The study explores the inter-relations between the dynamics of human security outcomes and regional development processes in the Lake Chad Basin. It evaluates the causes of the

desiccation of Lake Chad basin and its effects on the environment, livelihood, resource sustenance and conflicts from the empirical, methodological and theoretical standpoints. It underscores the significance of human security and resilience to the regional development process.

1.6 Objectives of the Study

The objectives of the study are specifically stated below

1. To investigate the peculiar human security challenges in the Lake Chad Basin and effects on regional development.
2. To assess the implications of the desiccation of the Lake Chad on the livelihoods, food security, mobilities and transborder cooperation across the Lake Chad region.
3. To analyse the factor of conflicts/emergencies (insurgency and counterinsurgency) and geo-politics on human security-development in the Lake Chad region.
4. To assess the effects of 'interventions' on resilience and human security in the Lake Chad Basin.
5. To examine the level of multilateral governance towards integrated sustainable development processes in the Lake Chad Basin.

1.7 Justification of the Study

Two significant variables, continuous evaporation of the Lake Chad basin and violent conflicts, threaten human security in the Lake Chad region. Despite abundant human and natural resources including youthful population, hydrology, rich biodiversity and petroleum resources, bad governance and poor human development across the four riparian states of the basin exacerbate impoverishment, despondency and radicalisation among the region's populations. The study examines the nexus between the above variables. Why one reinforces the other - their effects on livelihood and security, and how addressing human security threats can bridge the development gap and catalyse regional integration in the basin area.

This further highlights the significance of the environment on security and development in three key areas: regional integration and peacebuilding; sustainable development and environmental resilience and population dynamics and human security. It maintains that water and natural resource scarcities are factors in regional conflicts, while climate change is a threat multiplier in the Lake Chad basin fragile societies. Yet environmental interdependence can stimulate cooperation and enhance peacebuilding. Secondly, addressing environmental change and climate impacts enhances sustainable development. Particularly, how poverty eradication and the empowerment of vulnerable populations enhance the environment and mitigate climate change. It further elicits best practices on natural resources preservation towards population empowerment and to stem the tides of conflicts, criminality and radicalisation. Thirdly, it emphasises the imperative of practical research and sustainability on environmental and demographic security. This enhances knowledge on the factors of demographic change on socio-economic patterns and effects on regional stability and development.

It is significant to emphasise that linkages between human security and development are less researched in African scholarship. The concept of Human security, when applied at the national level, enhances human development and instrumental in identifying policy measures to combat threats to livelihood, security, the environment and resilience (Jolly & BasuRay, 2007). The study adds to the critical security debate, particularly on issues as social justice, human development, environmental sustainability, regional integration and security in Africa. The study is significant for evidence-based policy, collaborative research and capacity building for regional and development institutions, NGOs and civil societies, on human security in Africa. Its empirical, methodological and theoretical contributions would be useful for research in development studies, economics, public policy, international relations and history etc. particularly its reflection on regional development, peace, security and multilateralism.

1.8 Delimitation of the Study

The study specifically focuses on human security and regional development processes in the areas contiguous to the Lake Chad Basin in the four riparian countries – Cameroon, Chad, Niger and Nigeria. The total surface area covers in the study are estimated at 542,829 km^2 , forming a part of the conventional basin of the Lake Chad, as against the entire hydrographic basin (full details in Chapter 5.4). This includes 149,695 km^2 in Nigeria's four (of the six) north-eastern states *i.e.* Adamawa, Borno, Gombe and Yobe, respectively; the total area of 163,851 km^2 in Chad, across 6 of its country's 23 regions: Kanem, Hadjer-Lamis, Lac, Chari-Baguirmi, Mayo-Kebbi Ouest and N'Djamena. Others are the 91,135 km^2 areas across two regions - extreme Nord (Far north) and Nord (North) - in Cameroon; and the 138,149 km^2 in Niger's Diffa region. The areas are critical to the development and security concerns in the region, particularly the activities of the Lake Chad Basin Commission (LCBC), resource management, conflicts, human mobility and investments etc.

The cause-effect analyses of the regional security-development issues emanating from the Lake Chad basin's recession since 1964 (when the Lake Chad Basin Commission was established) and the incessant insecurity occasioned by the emergence of the *Boko Haram* sect (from 2009 till date) across the region are considered. This reviews the factors of actors, policies and interventions on livelihoods, population's resilience and regional stabilisation in Lake Chad basin. In other words, patterns of human security, livelihoods and security across the four countries are not reviewed except for the unique concerns of common regional security-development and interventions across the riparian states. The data also preclude the examination of changes in national development indices and security strategies. For this reason, implications of the complex factor of the Lake Chad Basin's recession, resources and security crises on regional development are predominantly explored in the study.

1.9 Structure of the Thesis

The thesis is organised into ten chapters. **Chapter One** - the introduction, presents the general background of the study, research problem, research question and hypothesis. It also includes the aim and objectives of the study, justification of the study and its delimitations, structure of the thesis and a summary of the chapter.

Chapter Two provides a comprehensive review of literature in human security and regional development. The review explores dimensions and current thinking in human security and development along global, continental and (sub)regional - case study, specifics.

Chapter Three discusses the conceptual and theoretical frameworks. It operationalised key variables in the research. It elaborates theoretical premises, strengths and weaknesses, and the applicability of the Capability Approach and Eco-violence theory to the discourse.

Chapter Four describes the case study area in detail with proper contextualisation of the study. It discusses Lake Chad's geography and the basin extent; its geology; climate and ecology; water resources (components and management). Besides, the region's population dynamics, economy and traditional conflict factors are also illustrated.

Chapter Five illustrates the philosophy and methods of the research. The section explores the meta-theoretical significance of Critical Security Approach and its broader utility, as its research philosophy. A concise description of the research design clarifies the research processes, methods and assumptions used for the study. It also includes the data collection method, data analysis and the ethical statement necessary for the conduct of the research.

Chapter Six and Seven focus on empirical research, the presentation and discussion of qualitative findings on the dynamics of human security in the Lake Chad Basin. It explains the cause-effects of human security and development challenges in relation to the theoretical and conceptual frameworks of the study.

Chapter Eight and Nine present a comprehensive discussion on regional development: multilateral governance, security, interventions and humanitarianism in the Lake Chad Basin. The qualitative findings are substantiated with descriptive statistics of secondary data to assess the efficacies of regional development processes in addressing human security challenges.

Chapter Ten presents a detailed discussion of findings and explores the re-thinking of human security and regional development in the Lake Chad Basin. It provides the research and policy implications (and recommendations) relevant to the study's broad phenomenons, the areas for further research, and a suitable conclusion for the thesis.

1.10 Chapter Summary

The chapter presents an overview of the entire study - what it set out to accomplish and its structure. It introduces and contextualises the research by providing relevant background to the study. The statement of the problem of the study is explicitly presented and subsequently followed by the research question, aim of the study and its objectives. Furthermore, the justification of the study and the delimitation (boundaries) set for the study are also illustrated. The chapter concluded with a synopsis of the structure of the study i.e. the chapter outline and brief descriptions.

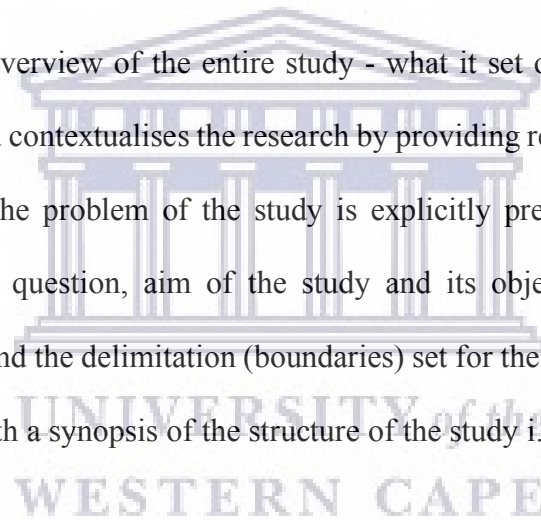
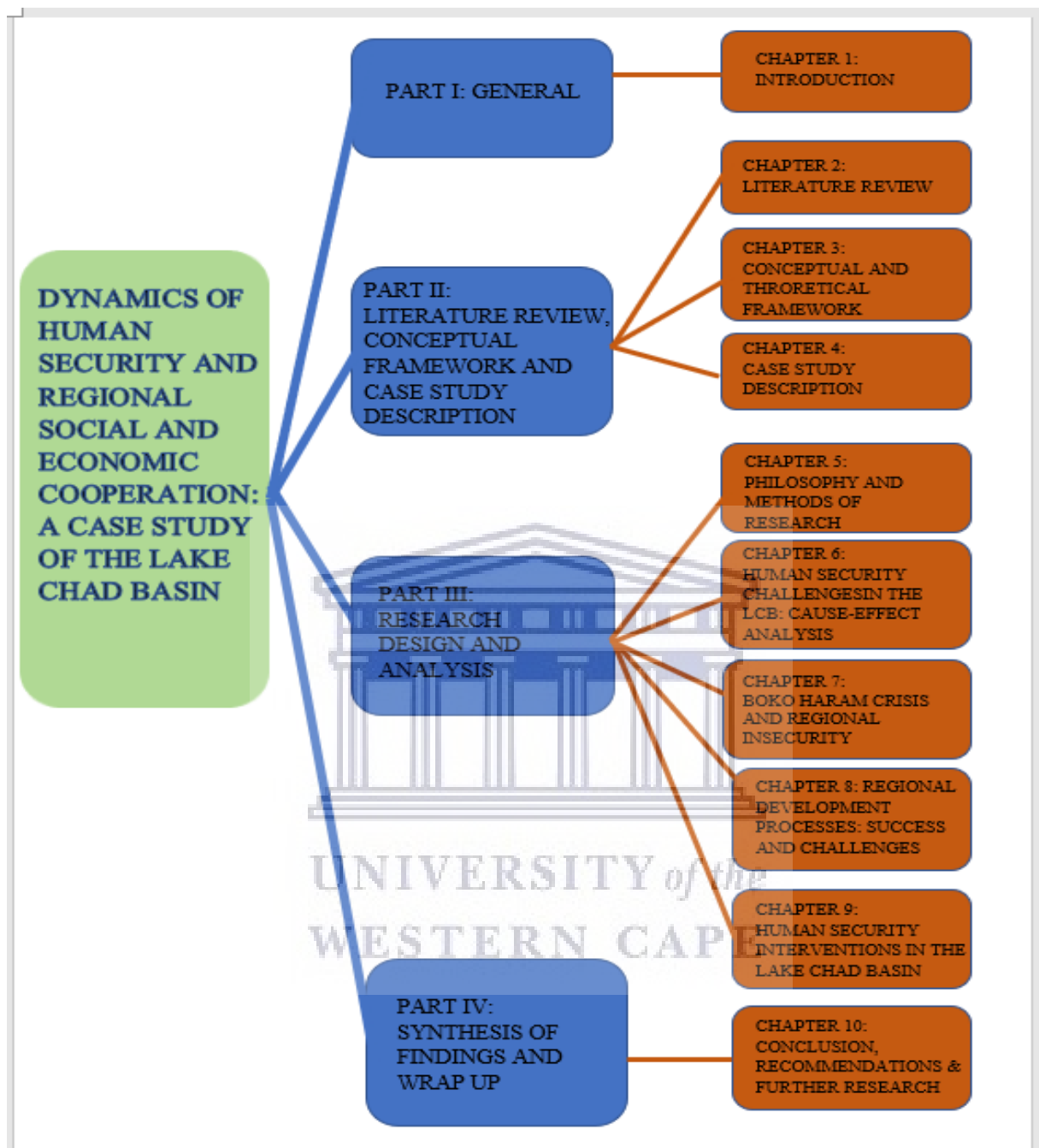


FIGURE 1.1: OUTLINE OF THESIS CHAPTERS AND SUBTOPICS



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Transborder river basins, their utilisation and management have warranted critical interests globally. The principal concerns include not only their potentials for cooperation and development but connections to security and conflicts among parties whose livelihoods are dependent on them. The scarcity of freshwater resources, due to climate change and anthropogenic factors, has generated debates among development practitioners and researchers. The case of sub-Saharan Africa (SSA) is acute with approximately one-quarter of its population conditioned to water-stressed areas (Freitas, 2013). Because of its significance to human existence and development, extensive studies have been advanced to explain the potentials of water or transborder river basins for development and cooperation on the one hand. Their potentials for conflicts, disruptions and disagreements among individuals, communities, states and other actors have also been explored on the other hand. Some relevant literature examined in this study is hereby discussed thematically within their global, continental and local contexts as peculiar to the Lake Chad Basin region.

2.2 Human security and development discourse across the globe

There is an enormity of scholarly analyses on global human security and development trends and challenges - both in the developed and developing countries. Critical studies highlight the significance of transboundary river basins to livelihood and development, society's resilience to shocks etc. The studies also emphasised great predispositions for the sustainability of water supplies, environmental preservation and equity in water distribution among riparian countries. Hence, reflections from this theme include the direct and indirect impacts of climate change on human security, earth resilience and global biosphere integrity in relations to man-made ecological hazard and socio-demographic problem (Barnett and Adger, 2007; Brooks, 2007;

Vidic *et al.*, 2013; Gleick *et al.*, 2014; Steffen *et al.*, 2015; Nesgovorova *et al.*, 2016). In the same vein, perspectives on human security in relation to violent extremism and transnational crime and their multidimensional effects on global peace, security and development, especially in the academic and policy domains reflects in Miles *et al.* (2008); Walther and Retaille (2014); Filippov, Abashidze and Melshina (2016); Howe and Park (2017). While the analysis of development-security narratives influenced by globalisation and the necessity of people-centred development strategies are also advanced in understanding social progress and human security advancement across the world (Jones and Kumssa, 2008; Gomez, Gasper and Mine, 2015).

For instance, insights on the direct and indirect impacts of climate change on human security, as a risk and multiplier of violent conflict has been thoroughly investigated (Barnett and Adger, 2007). Some critical interest review issues of environmental risk related to regional water quality and the imperative of reducing reliance on energy imports (Vidic *et al.*, 2013). Another sustainable technique explores the integration of development in human societies to the maintenance of the Earth's resilience system as a means of reducing human perturbations. It explores the framework for planetary boundary purposely on regional and global biosphere integrity (Steffen *et al.*, 2015). Other related approaches consider the regional ecological hazard and socio-demographic problem to advance solutions on unsustainable man-environment relations through the development of a public culture of ecological safety for example in Kazan region of Russia (Nesgovorova *et al.*, 2016).

Equally, the discourse on rivers as the most common water sources in the arid and complex environment offers another dimension to the development scholarship. In the Middle East and North Africa, which currently grapple with shortages of water supply emanating from the threats of high evaporation and low precipitation. This menace is aggravated by climate change and socio-economic factors such as high populations and incomes despite the existence of two of the world's largest rivers - the Nile and the Tigris-Euphrates, in the regions (Brooks,

2007). Concerns over water scarcity, its distribution and quality across the communities in the regions as worsened by climate change were highlighted as major factors of livelihood and development challenges, and socio-political upheaval, particularly that which greeted the wave of Arab Spring in Syria (Gleick *et al.*, 2014). The absence of regional joint management of transboundary river basin in the Middle East has hampered inter-governmental negotiation, technical cooperation and joint investment in development projects in the region. This submission underscores the importance of hydrological and meteorological data and information exchange in the Tigris-Euphrates and by extension the entire Middle East toward conflict resolution, resilience building and human security in the region.

Human security can also be considered in relation to violent extremism and transnational crime and their multidimensional effects on peace, security and development. Howe & Park (2017), inquires the centrality of strategic mechanisms toward regional cooperation and human security by exploring ASEAN's evolution from state-centrism and non-interference to the notion of people-centricity as an intrinsic part of contemporary understanding of the "ASEAN Way". The submissions highlight the imperative of global trend to develop, measure and disseminate evidence-based information on community and regional wellbeing as a mechanism to influence decision making and community development from below (Miles *et al.*, 2008). The former emphasises on integrating public policies to address poverty, human rights and cooperation in solving transnational threats to peace and development at the regional level. Miles *et al.* (2008) case study analysis of Queensland and the assessment of specific local government needs from global literature reviews present critical thoughts linking human wellbeing to local and regional level's security and development.

Moreover, clarifications on the global war on violent extremism and the process of international rule-making against it is revealed through proper considerations of legal framework and analysis of foreign policy initiatives across the world (Filippov, Abashidze &

Melshina, 2016). The necessity of unifying approaches on counterterrorism, cooperation and multidisciplinary studies to aid a scientific development of the extremism concept and determination of its qualifying features were discovered in the analysis through dialectics, generalisation, methods of analysis and synthesis. This lend credence to the need to develop new tools that take cognizance of the fundamentally dynamic nature of contemporary cross-border flows as reflected by globalisation (Walther & Retaille, 2014). A classical spatial analysis on points, lines and surfaces may be synthesized to represent the implications of cross-border movement on security and social interactions in measuring human security threats in a transborder area.

Using the Human Development Reports (national and regional) as an approach to examine and address human insecurity provides an alternative in understanding social problems or progress around the world (Gomez, Gasper & Mine, 2015). The studies reflect the disconnection that greeted the analytical matrix and the transformation of development and security narratives. Thus, a prevention-oriented analysis which also explores basic security questions can be specified toward human-centred development strategies. Likewise, arguing from Jones and Kumssa (2008) perspectives, the focus on human security training as a means of development and empowerment within the UN system and specifically for African youth and women are noteworthy. The emphasis on the instrumentality of multilateral institutions, multidisciplinary human security research and the various models presented in the seminal work is critical to the global discourse on human security and development.

2.3 Human security and development discourse on Africa

Significant studies on development in Africa have assessed the impacts of climate change, environmental degradation and the centrality of natural resources and transboundary water bodies on human security, resilience and livelihood, transborder cooperation and regional development, generally, across the continent (Paeth, Capo-Chichi and Endlicher, 2008;

Goulden, Conway and Persechino, 2009; Heinrigs and Trémolières, 2012; Sušnik *et al.*, 2014). Most studies in this regard attribute the pervasiveness of complex human security threats in Africa to underdevelopment, human vulnerabilities, marginalisation, social injustice and poor infrastructure. Accordingly, these have produced conflicts, insurgency and state failure or collapse across parts of Africa (Buur, Jensen and Stepputat, 2007; Larab and Kwaja, 2010; Raleigh and Dowd, 2013; Dowd, 2015; Walther and Leuprecht, 2015; Ogonnaya, 2016).

Like other parts of the world, the theme reveals that climate variability induces drought and famine, loss of freshwater cover in most transboundary river basins in the continent. This reflects its dire consequences on development, crop failures and loss of arable land, particularly in sub-Saharan Africa. The above phenomenon also increases poverty, worsens livelihoods and impairs resilience practices in most African societies (Paeth, Capo-Chichi and Endlicher, 2008; Benaim and Hanna, 2018). Meanwhile, analysis of the susceptibility of alimentary crops, cultivated in tropical Africa, to changing climatic conditions over the years have been attributed to increasing greenhouse-gas concentrations and continuous land degradation (Paeth, Capo-Chichi and Endlicher, 2008). The above study elicited the effects of climate change on food security using predictions from a regional climate model (output statistics) to transfer simulated climate variability to changing crop yield. It stresses the imperative of cultivating predominant less vulnerable crops such as manioc and yams as an appropriate adaptation strategy toward enhancing food security in Africa. This submission echoed suggestions that security is tackled in its expanded dimension to focus critically on human security, more on food security and optimising the consideration of climatic variability in future policies toward sustainable development (Heinrigs and Trémolières, 2012).

Climate induced-changes impact the hydrological cycle and water security negatively. The human security connection with possible hydro-climatic conflicts reveals how multiple issues can materialize from one driver. A case in point is sea-level rise across the Mediterranean which poses an unprecedented threat to the lower Nile Delta. Meanwhile, land subsidence,

saline intrusion, water supply overexploitation, land loss, job and housing insecurity have socio-economic and security effects with far-reaching challenges for regional development (Sušnik *et al.*, 2014). A rich understanding of this is critical for policy formulations toward mitigating climate and social change impacts in Africa. However, weak institutional capacity in water resource management is a multiplier of climate variability and regional scarcity in Africa. Managing transboundary river basins seems difficult owing to conflicts over its resources and differences among littoral states. Without appropriate cooperation, adaptation to climatic impacts may be limited and uneven. Positive adaptation outcomes and increased adaptive capacity of water management institutions are key to sustainable development and effective management of transboundary river basin in Africa (Goulden, Conway and Persechino, 2009).

The complexity of human security challenges reveals the influence of underdevelopment, marginalisation and injustice on conflict and insecurity. Conflicts calamities are costly in terms of eroding development opportunities, disintegrating and failing states and debasing human development (Buur, Jensen and Stepputat, 2007). Development intervention and regional sustainability efforts across parts of Africa are failing or hampered by the rising human security challenges. The Sahel region and most parts of the continent portray poverty, underdevelopment, and growing terrorists' 'safe havens' as security threats needing urgent attention. The 'failed' and 'ungoverned' spaces have been enmeshed in manipulations and profiteering by states and foreign actors across the Sahel, who avoid responsibility for the geopolitical and socio-economic processes within these spaces (Raleigh and Dowd, 2013). Contrary to the dominant narrative on 'ungoverned spaces', violence and crime in Africa are linked to two variables - agency and agendas of different actors, including biased regimes' complicity in escalating violence, and the state's induced instability through neglect, marginalization, injustice and corruption as influencer of insecurity and underdevelopment. Similarly, strategies of governance employed by states often shape the

emergence and mode of collective violence. Dowd (2015), proposes an understanding of Islamist violence in Kenya, Mali and Nigeria from the underlying factors of political exclusion, economic marginalisation and grievance-based violence, comparable to other forms of political violence. Using a widely tested cross-national comparison, it explains that nascent or local Islamist militants capitalise on, and reconfigure, grievances. Apart from the differences in organisation, Islamist violence thus operates under similar context or mechanism to other forms of violent conflicts.

Diverging from the above submissions, violent extremist organisations (VEOs) and local militancy in parts of Africa have been linked to the existence of power vacuum, particularly in Somalia and most North African states. Breakdown of governance in the aftermath of the Arab Spring (uprising against authoritarian regimes in the wake of popular demands for democratic governance and social justice by the people in most Arab countries, beginning with Tunisia in 2010) illustrates the North African narratives. Notwithstanding the existence of terror cells and militias undermining state sovereignty, purposely to establish an Islamic fundamentalist state most especially Al Qaeda in the Islamic Maghreb (AQIM) or the Islamic State elements, spatial analysis reveals an almost exclusive case of violence within Algeria between 1997 and 2004, while illegal cross-border movements have intensified in the wake of AQIM's concentration of terrorist havens in Mali in the mid-2000s (Walther and Leuprecht, 2015). This explains among other factors the spread of violent extremism to other parts of North Africa and its contiguous border areas from Southern Algeria to Northern Mali, Mauritania and other parts of the Sahel. Thus, the link between violence and criminality, illegal migration and smuggling in the Sahel can be juxtaposed from the above factors.

The human security situation in the horn of Africa is beset by the growing crime rate and maritime insecurity in the Gulf of Aden and state failure in Somalia. The security architecture in the Horn of Africa has been complicated by the growing threats of the Al-Shabaab terror group among others, has over the years facilitated piracy across the gulf and the

Indian ocean, oil theft and the proliferation of arms and violence in the region. Stemming from state collapse in Somalia where the breakdown of governance has been complicated by insurgency and secession crises. Thus, vulnerabilities and human security threats constitute setbacks for investment in infrastructure, health, education, and livelihood in the Gulf of Aden and entire East Africa (Larab and Kwaja, 2010). Therefore, a continental approach to counter the upsurge of militant fundamentalism and the spread of terrorism within Africa and its shores is long overdue. Meanwhile, the Agenda 2063 of the African Union - aimed towards the developmental needs of the African people through collective sustainable actions, needs a review to incorporate mechanisms to combat the root causes of terrorism and its allied human security threats. Such commitment may enhance development and regional cooperation in the continent (Ogbonnaya, 2016). This is indicative of the connections between development and violent conflict. Underdevelopment could trigger armed conflict, while conflicts impair development opportunities, livelihood and infrastructural growth. Thus, the consensus among the literature affirms the significance of multinational security and stability operations, where socio-economic development policies in Africa could enhance security challenges in all ramifications, averting states' failures and poor human development outcomes.

2.4 Human security and development discourse on the Lake Chad environs

A particular line of argument on human security and regional development in the Lake Chad area reflects on the importance of transboundary water management in fostering cooperation and conflict prevention amid climate change and socio-economic development challenges confronting the region (Odada, Oyebande and Oguntola, 2004; Onuoha, 2008; Hall, 2009; Ifabiyi, 2013; Gusikit and Lar, 2014; Asah, 2015; Okpara *et al.*, 2015; Magrin, 2016). The discourse on conflicts and security threats to development, peace and stability in the Lake Chad region focus on the tensions and complex emergencies. Thus, resource conflicts, terrorism, armed banditry and militancy have a deep-rooted historical, political, socio-economic and

strategic peculiarity in the Lake Chad and environs (Bamidele, 2013; Oyewole, 2013; Okoli and Iortyer, 2014; Agbiboa, 2015; Akinola, 2015; Sulemana and Azeez, 2015; Sambo, Othman and Omar, 2017; Magrin and De Montclos, 2018).

The challenges of equitable water allocation and distributions of social-ecological costs and benefits, intersect security issues, coupled with the differential evolution of state capabilities, spill into hydro-security complex within the basin (Asah, 2015). This reinforces the claim that the shortage of water in the Lake Chad basin is a threat to regional economic development and the livelihood of its population. Conflict, not only looms from manmade water catchment projects but violence among resource users has become recurring amid population increase, climate change and desertification (Onuoha, 2008; Hall, 2009; Magrin, 2016). Meanwhile, internal conflicts among resource dependants may escalate into water wars between countries in the Lake Chad and Niger River basins. This seemed likely as identity problems, migration of environmental refugees in search of pastures and other economic opportunities propelled by worsened livelihood, constitute security threats particularly in Northern Nigeria (Gusikit and Lar, 2014).

Climate variability and human activities induce environmental catastrophe. According to Okpara et al., (2015), the outcome of environmental change is a threat to the foundations of livelihood sustenance, reduces access to, and the quality of, the natural resources that support human well-being in the Lake Chad. Hence, threats to regional development in the basin emanate from the consequences of the lake's desiccation on hydrological regimes, water pollution, biodiversity loss, the well-being of population and communities, and indeed regional stability (Ifabiyi, 2013; Magrin, 2016; Magrin and De Montclos, 2018). The region's inability to respond to natural resource scarcity-based threats to its environment and inhabitant's socio-economic well-being has increased vulnerability, conflicts and underdevelopment. Sustainable management of the Lake can be built around the water transfer project from Ubangi river in the Congo basin. This underscores the priority for alleviating the water deficits needed for

socio-economic development, regional cooperation, stability and a sustainable environment in the basin region.

Studies also reveal the imperative of establishing regional water allocation processes, policy options covering river channel upgrading, conservation techniques and sustainable agricultural practices across the drainage basin. Odada, Oyebande and Oguntolu (2005) and Ifabiyi (2013) highlight the relevance of environmental NGOs, sustainable development advocacies and empowerment that reaches out to the grassroots. Therefore, the studies in their context specifications underscore the complexities of environmental change and its relationship to livelihood, vulnerability and security, as well as regional resilience and sustainable development efforts across the transborder river basin.

Discourse on conflicts and security threats to development in the Lake Chad region largely centres on the pervasive criminality and extremism of the oil militancy in the Niger-Delta, and Boko Haram in north-east Nigeria. The persistence of such threats has been attributed to two factors; the use of terror tactics by the Niger Delta militants and Boko Haram, and the profiteering of elites involved in criminal, religious and political entrepreneurialism (Omale, 2013). The historical narratives of the Fulani Jihad in pre-colonial Nigeria, the entrenchment of Sharia system and the struggle for power in Northern Nigeria have been contextualised through the lens of Islamic fundamentalism, politics, and poverty to explain the birth and growth of Boko Haram in Nigeria. A causality of widespread socio-economic deprivation and decadent human development index - poverty and youth unemployment - adduced as harbingers of terrorism in the region (Akinola, 2015). The above view has been linked with an explanation on social identity to buttress the factor of religion as a mobilisation force and identity marker in Nigeria's politics, governance and treatment of Boko Haram insurgency in Agbibo (2015), thus resonating the social dynamics of poverty and deprivation in north-eastern Nigeria. An agreement among the literature is that countering terrorism involves understanding the connections between extremism and criminality in the political and

socio-religious contexts. Hence, successful counterterrorism requires a combination of socio-economic, military and psychological measures.

Insurgency in Nigeria's northeast and Lake Chad region generally and its links with terrorist networks in the Sahel and elsewhere in sub-Saharan Africa are illustrated to determine its operational capabilities. Abusive responses from the Nigerian security forces worsen the human rights conditions of victims of Boko Haram, while the sect's purported alliance with other terrorist groups threatens peace and stability in sub-Saharan Africa (Bamidele, 2013). Accordingly, an understanding of the localised reasons for terrorism is essential to address and challenge the enduring views about the nature of governance, ungoverned spaces and state's failure in the region. This rationalises Sulemana & Azeez (2015) synthesis of the Sahel's unique socio-cultural history and contemporary geopolitics as the factors sustaining the decadence of Salafi jihadism in the region. It attributes Islamism as a case of ideational resuscitation of historical events and religious memories. As the networks of Nigeria's Boko Haram, Mali's *Ansar Dine* and the MUJAO - West African Jihad Movement - threaten regimes, security and socio-economic development in Nigeria, Mali, Niger and Chad, the role of ECOWAS Monitoring Group (ECOMOG) was highlighted in peace enforcement and restoration of order in the conflict-ridden area owing to its past successful engagements in Liberia, Sierra-Leone and Cote d'Ivoire (Sambo, Othman & Omar, 2017). The above further underscores the need for a homegrown multinational joint task force to safeguard the sub-region from the growing transnational terrorist activities in the sub-region.

Variants of counter-terrorism measures are presented in response to the complex threats of the Boko Haram sect in the socio-political landscape of Nigeria. The anti-insurgent campaign against the sect is dominated by hard politics and military mobilisation in Nigeria's quest to boost its strategic importance in the Global War on Terror (Oyewole, 2013). Beyond public insecurity and livelihood threats attributed to it, humanitarian catastrophe - death tolls, human right abuses, population displacement and refugee debacle - emanating from Boko

Haram portends negative outcomes for national security sustenance in Nigeria and neighbouring states (Okoli and Iortyer, 2014). A strategic paradigm shifts from anti-terrorism to counter-terrorism, a soft approach in the form of a political-justice model aimed at life-saving, enduring peace and socio-economic reforms is suggested as alternatives to ending the crisis (Oyewole, 2013; Okoli & Iortyer, 2014). The relationship between discrete forms of violence in relations to politics and governance across the Sahel is critically evaluated. A consensus also reflects on the significance of multilateral security and stability operations and the imperative of social justice approach to security in the Lake Chad, West Africa or the Sahel region in general.

2.5 Chapter Summary

From arrays of human security development literature, three essential linkages between transborder river basin and conflict can be adduced. First, regional hydrology is crucial to livelihood sustenance, environmental stability and human capability. Water can be a source of development and socio-economic impairment, while livelihood loss can trigger poverty, a traditional driver of conflict among resource dependents (Thomas, 2000; Onuoha, 2008; Okpara *et al.*, 2015). Secondly, the transboundary river basin is a potential security factor; both as a cause or effect of conflict. For instance, a decline in water quantity or quality can cause economic migration, with attendant social and political effects on destination communities or countries thus causing instability or disruptions and criminality. Conversely, the effect of access to and allocation of water resources among dependants, even its abundance can trigger local or regional tensions (Asah, 2015). This leads to the third issue on regional development and threats to transborder cooperation. Power relations and inadequate water management are potential conflict factors, especially, in Africa where transborder river bodies often lack technical, material and institutional capacities (Goulden, Conway & Persechino, 2009; Susnik

et al., 2014). These factors altogether stall regional integration and sustainable development processes particularly in conflict-prone or complex security environments.

Notably, most of the previous studies exhibit traditional state-centric biases on security and regional development, privileging ‘high politics’ above human concerns and insecurity. Hence, multiple dimensions of transboundary water resource potentials on human security-capability remain fully unexplored, while the negative consequences of multilateral interventions have not been factored to managing regional commons and addressing critical human security challenges. This study acknowledges the limited attention accorded to the causality of human security in socio-economic development as a major gap in development scholarship. It, however, attempts to fill this gap, focusing on human capability and vulnerability-resilience factors in regional socio-economic development crisis in the Lake Chad Basin. This highlights the synthesis required among global, continental, regional as well as local policies in addressing human security challenges. From a multi-dimensional perspective, the study seeks to enhance understanding and responsive policy on regional development and resilience capacities, particularly in complex emergencies.

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CHAPTER 3

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.1 Introduction

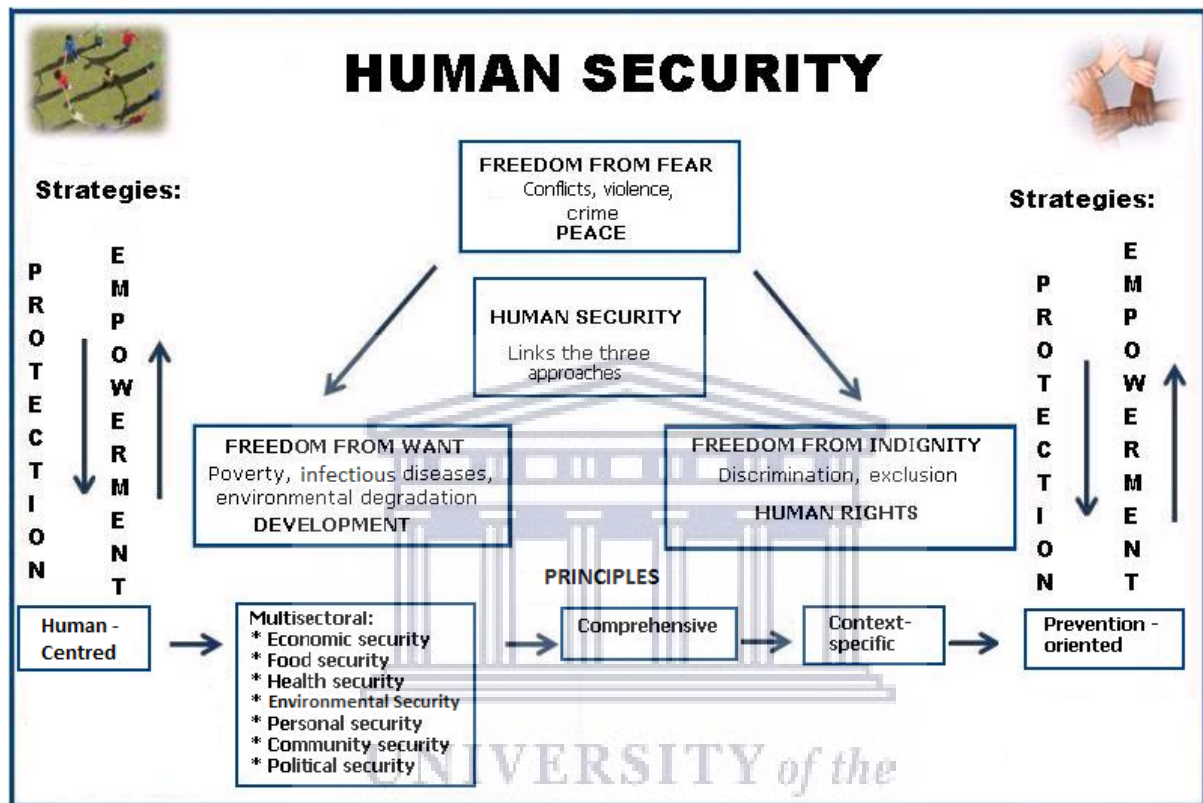
The chapter provides an overview of the conceptual framework of the study and its theoretical underpinnings. The proposed conceptual context articulates the linkage between human security and regional socio-economic development. In addition, two bodies of theoretical constructs adapted to underpin the study include the “Capability Approach” and “Eco-violence Theory”. The rationale is to frame and place the study’s analysis in critical perspective and to provide a better understanding of the socio-political, economic and environmental processes on human security and the factors of actors, geopolitics and interventions on regional security-development. The theoretical explanations are well conceived in the subsequent sub-sections.

3.2 Conceptual Framework: Human Security and Regional Development

The concept of ‘human security’ (Figure 3.1 below) is proposed to illustrate the causality, trends and challenges of development in the Lake Chad Basin. Human security was introduced on the global development agenda, specifically the United Nations Development Programme’s (UNDP) Human Development Reports (HDRs), since 1994. Its proponents humanise security with elaborate clarifications of the elements of state and individual security. Accordingly, the primary responsibility of the state is the protection and promotion of the core values of humanity, while the international legitimacy of the state’s sovereignty rests not only on territorial control but upon fulfilling specific human rights standards and citizens’ welfare (Gomez et al., 2015). The concept defines individual security as beyond the physical safety of lives but more broadly as the human ability to secure and access basic goods (well-being). In acknowledging humans instead of the state as the object of security, the HDR advances three freedoms, namely ‘freedom from fear,’ ‘freedom from wants’ and ‘freedoms to live in dignity’ as fundamental elements of well-being, growth and development. These freedoms further

embrace seven categories of security (figure 3.1), viz.: economic, political, environmental, health, food, community and personal security as key components of the process of human development (Hoogensen, 2004; Gasper, 2013).

FIGURE 3.1: HUMAN SECURITY CONCEPTUAL APPROACH



Source: Inter-American Institute of Human Rights (IIHR), 2010:4

From the above premise, best practices and standards of addressing human insecurity through regional and national HDRs may be synthesised, including human development frameworks at the national, regional and global levels (Gasper, 2007). The approach contextualises critical understanding of security toward appropriate policy responses on human development. The term human development, according to the UNDP (1994), offers an efficient and effective policy framework for local, regional and global policymakers in addressing human security threats. This includes enhancing people’s freedoms and creating opportunities toward improving their well-being and removing obstacles to human emancipation such as

illiteracy, ill health, lack of access to resources, or lack of civil and political freedoms. However, in a transboundary river basin where the loss of water and its allied resources negatively impacts human security, with dire consequences on hydrological regimes, environment and biodiversity, population's well-being and regional stability (Odada, Oyebande & Oguntola, 2004; Ifabiyi, 2013; Okpara *et al.*, 2015) a regional development approach is crucial to human security.

The broad human security approach is a normative plan to address issues that undermine human life and well-being, such as poverty, diseases and the effects of environmental change. Hence, any security approach disregarding this reality is deemed as conceptually, ethically and empirically defective. The second preoccupation reflects on the human effects of armed conflicts and the menace of repressive governments and state failure, leading to victimisation and displacement of civilians, especially children and women. The third aspect, from a policy conception and policy-based research perspective, approaches human security from a gamut of 'non-traditional' security matters. Its objective is to gather resources and measures to tackle security concerns such as terrorism, drugs, HIV/AIDS, trafficking in humans and illegal substances, criminality and small arms (Newman, 2010: 79). While the literature on human security questions the sources of insecurity, the nature of security providing institutions, and the interests they serve, hence, re-categorising the neglected security challenges helps broaden the understanding and visibility of their nature and magnitude. It also influences advocacies and policy responses against them.

The concept's popularity since the 1990s is attributed to the United Nations System, particularly the United Nations Development Programme (UNDP), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations University. Several human security initiatives were led by government-sponsored agencies such as the Commission on Human Security, and the Human Security Trust Fund, while activists and academics have promoted human security in terms of 'justice and dignity'

(Newman, 2010). This underscores its significance to this study particularly its policy relevance and appeals to human-centred development strategies, which address the sources of insecurity and ‘underdevelopment’ in ‘progressive and sustainable’ ways.

The Lake Chad basin region, like other regions in Africa, is highly vulnerable to human insecurity. Climate variability, environmental resource loss, infrastructural deficit, and protracted conflicts of different dimensions not only incapacitate regional cooperation but worsen livelihoods in the Lake Chad Basin. **Worsened livelihood** is conceived as the impediments to individuals’ capability, increase poverty and informality. This includes job loss mostly fishery and farming, poor harvest resulting crop failure and water shortage for irrigation which also inhibits people’s resilience capacities and heightens potentials for violent conflicts among the basin’s population. **Violent conflict** is thus perceived as hostilities among resource dependents or users over scarcity. Its influence on criminality, economic migration and conflict over shared environmental resources (particularly crisis overgrazing between nomads and pastoralists).

Secondly, the growth of Boko Haram terrorism and its recruitment of illiterate, poor youths and children for insurgent operation is also conceptualised as aggravated by socio-economic factors. The attendant destruction of lives and properties and population displacement by Boko Haram menace has heightened human insecurity in the region (Onuoha, 2014; LCBC, 2016a). The terms terrorism and insurgency are used interchangeably in the study to describe Boko Haram menace. **Terrorism**, complex and controversial, is simply defined as “the systematic use of coercive intimidation, usually to serve political ends. It is often employed to infuse and exploit a climate of fear among a wider target group than the immediate victims of the violence and to publicise a cause, as well as to coerce a target into yielding to the terrorist aims” (Wilkinson, 2007:72). The act may be perpetrated separately or as part of extensive unconventional warfare particularly either by weak and desperate minorities, political organisations, nationalistic or religious groups, revolutionaries, and even state

institutions - police, armed forces, and intelligence services. Typical modes of modern terrorism include explosive and incendiary bombings, assassinations and shooting attacks, hijacking and hostage-taking or kidnapping etc.

Insurgency, on the other hand, is operationalised to reflect the selective use of violence against people, groups or authorities who do not comply with the inclinations of rebels or socio-political organisations (Dasgupta, 2002). The primary victims of insurgency are often potential government collaborators and the moderates in the society. Although government's aggressions are purposely applied selectively against rebels and its supporters in counter-insurgency operations, it is often less discriminate due to inadequate local awareness, and the information battle is usually more even. Hence, terrorism is indiscriminate while insurgency is selective. However, both terrorists and insurgents engage in asymmetric warfare.

Environmental insecurity or degradation in Lake Chad is considered from two perspectives natural (climate change) and anthropogenic factors and their effects. Desertification and drought caused by climate change have exacerbated famine, food insecurity and loss of livelihood. While anthropogenic factors resulting from unsustainable irrigation practices and pollution has furthered land degradation, resource depletion, and conflicts among resource dependents. This scenario critiques the region's mitigation policies and practices as well as environmental funding particularly its access and utilisation of the Global Environment Facility (GEF). A diverse perspective on assessing human security threats and pathways to the sustainable management of the Lake Chad basin and its resources is conceived as a solution to these multitudes of challenges. Its purpose is to review the narratives of the population's livelihood and capabilities' challenges and catalyse regional development efforts and integration thus accepting human agency and direction in security matters and human development.

Regional Development: The capacities toward addressing regional socio-economic and political problems via multilateral development interventions including local (national) complements in the Lake Chad basin are thus conceptualised in the study as regional development. It ponders on regional integrated and strategic approaches to resource management, environmental protection, infrastructural development, often involving regional actors and international development partners in the region. Studies from (Odada, Oyebande & Oguntola, 2004; Ifabiyi, 2013; Onuoha, 2014; Okpara *et al.*, 2015) among others in their context specifications underscore the complexities of environmental change and its relationship to livelihood, vulnerability and security, as well as regional resilience and sustainable development efforts across the transboundary river basin.

Furthermore, factors of institutions (formal and informal) in improving or constraining individual/groups freedom in the Lake Chad basin can be reviewed from the comparisons of inter-and intra-country progress against inequalities among disadvantaged groups/individuals. It addresses the inadequacies of surveys and national statistics in capturing human security and assessing wellbeing. The significance of this approach lies in its capacity for regional integration with prospects for functional commitments on hydrology, agriculture, mining and exploration of vital resources such as solid minerals and petroleum, transborder cooperation and foreign direct investment. It also considers the prospect of lifting structural/institutional barriers contributing to human ‘unfreedom.’ It thus advances the human security agenda with priority for human-driven socio-economic development that eliminates the barriers to trade, human mobilities, capabilities and scholarship. The two factors above are instrumental to enhancing human development, food security and interest areas, crucial to regional integration and human capability expansion such as Free Trade Agreements, Custom Unions and collective security mechanisms against terrorism and transborder crime.

It should be noted that regional development and human security in the Lake Chad Basin are beset with challenges. Firstly, potentials for disputes exist among riparian member

states due to inconsistencies in regional policies and national socio-economic priorities. This is the result of the asymmetries in economic, and socio-political conditions and the colonial orientations of the member states. Secondly, obligations and commitments to the regional agenda are also challenged by the problem of complementarities in the national (member states) and regional development policies and programmes. Conflicting statistics on human security challenges and regional human development index among the Lake Chad Basin Commission (LCBC) member states, international development institutions and the riparian governments constitute a fundamental problem. This illustrates the correlations between the concepts and their significance to the study. Therefore, a well-conceived regional development intervention may produce multiple effects (direct and indirect) on the environment, human wellbeing, security and regional development in the Lake Chad Basin. Linking human security to regional development highlights the primacy of human agency in individual freedom and their connections to certain structures of human society and leveraging opportunities.

3.3 Theoretical Framework I: The Capability Approach

Different schools of thought have produced various theoretical viewpoints on human security concerns and approached development from multidimensional premises. This is basically because what constitutes human security is broad and that cannot be subjected to narrow interpretations. As such, the Capability Approach adopts a comprehensive framework for designing and assessing development. It was first articulated in the 1980s and closely linked to the Indian economist and philosopher Amartya Sen as well as Martha C. Nussbaum, an American professor of Philosophy and Law. It gained significant attention from scholars, institutions and policymakers because of its freedom-oriented approach to development, intercultural and interpersonal variations, and emphasis on social justice, public debate and deliberative democracy. It puts humans at the centre of development discourse and conceives people as not only the means but ends of development. Accordingly, the development process

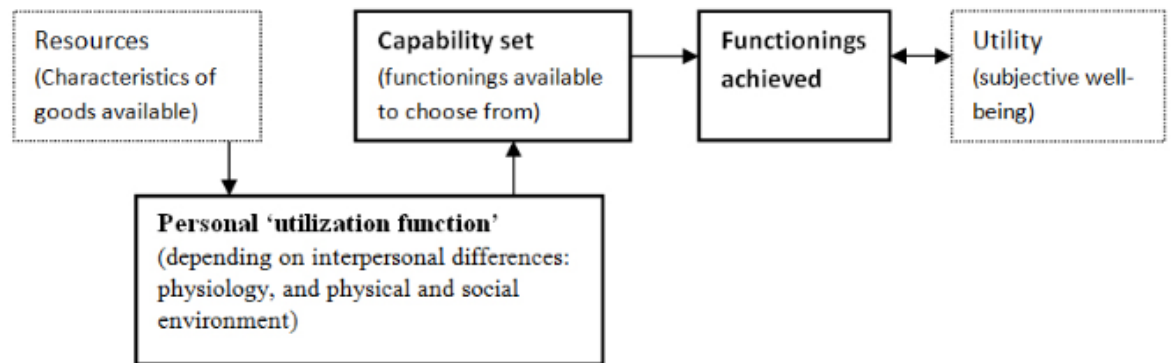
is conceptualised as the expansion of the choices and capabilities of the people to enable them achieve the kind of lives they desire or have reasons to value (Sen, 1999).

The approach was inspired by early works from Adam Smith and Karl Marx, including those of Aristotle. The latter considers the “function of man” in relation to the “good of human beings” while analysing “life in the sense of activity” as he inquired about the problem of “political distribution” (Sen, 2002: 43). This is an argument for the quality of life in relation to valued activities and the capability to achieve them. Such an ambitious view of human nature, conceived from the notion of objective goodness, was broadened in terms of relevance and application by some succeeding classical political economists. Adam Smith and Karl Marx explained the significance of functioning and the capability to function as determinants of well-being. Marx takes it further in his reformulation of the foundations of political economy to portray the success of human life as a fulfilment of the needed human activities (Sen, 2002).

The Capability sees the well-being of a person in terms of the quality (‘well-ness’) of his or her being. It maintains that living consists of a set of interrelated ‘functionings’, premised on beings and doings, while a person’s achievement is juxtaposed as the vector of his or her functionings. Hence, the functionings are typical of essential qualities such as well nourishment, healthy living, protection from escapable morbidity and early mortality, among others to more complex attainments such as happiness, self-respect and community engagement etc. (Sen, 1992). Similarly, functionings are essentials of a person’s wellbeing, and its evaluation must take cognisance of an assessment of these integral elements. The relevance of a person’s capability to his or her well-being are factors of two distinct but inter-related considerations - the ‘well-being freedom’, (i.e. the alternative combinations of functionings a person can choose to have) and the capability of making the achieved well-being to function – availability of opportunities (Sen, 1992), (Figure 3.2). The Capability Approach has been widely applied in the context of human development, as an alternative to narrow

economic index such as a rise in GDP per capita. Hence, poverty is implied as deprivation in the capability to enjoy a good life and development as capability expansion (Sen, 1992).

FIGURE 3.2: OUTLINE OF CORE FACTORS IN THE CAPABILITY APPROACH



Source: IEP, 2017:7

Capability Approach conceives development as a process of expanding the real freedoms enjoyed by humans. A clear departure from narrow development views, prioritising improvement in gross national product, personal income, technological advancement, industrialization, and social wellbeing. Although the growth of GNP and individual incomes are vital elements in expanding human freedoms across societies, freedoms, however, need other determinants, such as social and economic measures (e.g., education and health care) and political and civil rights (e.g., the liberty to participate in public discussion and scrutiny) (Sen, 1999). Again, other factors such as industrialization, technological advancement as well as social modernization substantially influence human freedom expansion. Fundamentally, development is deemed contingent on the removal of major sources of ‘unfreedom’. This includes poverty, poor economic opportunities and public infrastructure neglect. Others include systematic social deprivation, tyranny, intolerance and excessive state domination which constrain human freedom and participation in the society’s socio-cultural, economic and political life, and further threaten local peace and security (Sen, 1999).

Sen (1999) argues that a free and sustainable agency is the fulcrum of development. Free agency is not only an essential part of development it strengthens other free agencies as well. This illustrates that economic opportunities, political and social liberties, basic education and conditions of sound health underpin human development. Opportunities in this regard are conditioned by institutional mechanisms in advancing people's freedom such as their rights to social choices and public decisions (Sen, 1999; Ibrahim, 2014). Deneulin (2006) highlights the need to prioritise elements of human wellbeing in policy action, stressing the complex linkage between individual and socio-historical agency in removing 'unfreedom'.

Capability Approach highlights that substantive freedoms not only have indirect contributions to the growth of GNP or industrialisation but economic progress and development. Hence, the inconsistencies in income per head and variations in wealth distributions or intergroup disparities contribute to 'unfreedom'. Sen argues for the role of freedom of economic exchange in social life where market mechanism embraces human freedom to free participation in exchange - words, goods, and gifts - as crucial for economic growth. This accordingly, also prioritises the lifting of traditional impediments such as labour inability to access the open labour market and access denial to product markets of subsistence and small producers (Sen, 1999).

Towards investigating an inclusive development process that integrates social, economic and political considerations, the Capability Approach underscores the significance of institutions, including markets and market-related organisations, all tiers of government, educational bodies, civil societies and open forums, as well as social values in the process of development (Sen, 1999). In stressing the above, Sen observes,

Shared norms influence social features such as gender equity, childcare system, family size and fertility patterns, the environment conditions among other provisions and results. Prevailing values and social mores... affect the level of corruption, and the role of trust in economic, social or political relationships. The

exercise of freedom is mediated by values, but the values in turn are influenced by public discussions and social interactions, which are themselves influenced by participatory freedoms (Sen, 1999: 4).

The Capability approach not only underscores the significance of markets but underscores the factor of other economic, social, and political freedoms in enhancing the lives humans can lead across societies. The Capability subsumes five discrete but complementary sets of freedom in Sen's empirical analysis of general human capability, to include political freedoms, social wellbeing, economic opportunities, protective security and transparency guarantees (Sen, 1999). These, it contends, form the thrust of human development and prerequisites for their emancipation across societies, meanwhile, integrating these substantive freedoms to public policy is central to fostering human capabilities and sustainable development.

Adding to this thought, Nussbaum develops a systematic and extensive capability theory of justice based on dignity, a list of fundamental capabilities, and a threshold – which forms a neutral proposal with regards to the particular notion of the good (Nussbaum, 2011). Her propositions on international feminism argue for an ethical foundation of well-conceived development strategies and public policy, anchored on justice in the real existence of the poor women's struggles. Moving beyond mere economic and philosophical generalisations, she advances the cause of women's poor health and nourishment compared to men, and women's vulnerability to physical violence and sexual abuse. Nussbaum, therefore, clamours for the sensitivity of the international political and economic thoughts to gender disparity as a problem of justice, where feminist thinking is also enhanced to address the plights of women particularly in the Third World (Nussbaum, 2000). The work ideally embraced philosophical support for basic constitutional procedures respected and adopted by governments and to serve as a tool of measuring the quality of life across the world. From the capabilities point of view, it reveals

what humans are capable of achieving and against the backdrop of all universals' insensitivities to regional and cultural specificity especially sex equality clash with religious and family claims (Nussbaum, 2000). Nussbaum's radical explanations about understanding "quality of life" and governments' basic responsibilities to its people is a relevant description of philosophical arguments on justice and its practical relevance to public policy concerns.

Given some divergences in Sen and Nussbaum's opinions on capabilities, Martins (2006) argues that Sen's approach is primarily concerned with clarifications on significant social and economic categories such as choice, rationalities, freedoms, agency, well-being and capabilities from a philosophical standpoint. While encouraging new perspectives on economic analysis, Sen's radical departure from the mainstream economics and dominant welfare economics presents 'an ontological classification of causal power leading to an open system conception of reality', the author emphasised the ethical utility of the capability approach, particularly its informational value in assessing equality. In furtherance to this claim, Martin (2006) concludes that capabilities, like causal powers, are not actualities but realisable potentials that may be actualised or not, based on the underlying psychological, biological, physical, or social structures which enhance or hinder a particular achievement or functioning. Beyond outlining the significant contribution of the Capability Approach to development thinking, the divergent ways in which it has been operationalised and its significance to this research are subsequently discussed.

3.3.1 Operationalising the Capability Approach

The Capability Approach highlights the multidimensional factor of human well-being and the complexity of its valuation especially the recognition of freedom and choice as a significant process of development. This enabled Sen's emphasis on the factor of public engagement and deliberative democracy in capabilities' identification and policy formulation. The approach has had a critical impact on human development processes both in policy formulation and

implementation, locally and multilaterally. A significant factor is its adoption by the United Nations Development Programme in its Human Development Report as well as its inputs to other regional and national development strategies, thus reflecting its centrality to human emancipation (Fukuda-Par, 2003). The practical relevance of the capability to development institutions and practitioners cannot be overemphasised. Its evaluation of living standards, the analyses of gender disparities, measurement of poverty and inequalities, and the focus on human rights across geographical and cultural contexts reveals its preponderance in diverse policy areas (Comim, 2008). The categories below illustrate some of its practical relevance.

A. Participatory Approach to Capability Expansion

The participatory approach to capability expansion features in the works of Alkire (2002, 2008); Frediani (2010); Conradie (2013); Conradie and Robeyns, (2013). Alkire's philosophical grounded framework for participatory poverty valuation, evaluates development as capability enhancement, beyond the standard cost-benefit assessment of the financial terms of development interventions (Alkire, 2002, 2008). Its two-categories approach of micro-project assessment embraces a systematic identification of valued changes in individuals' capability sets. This involves, first, a uniform theoretical phase of philosophical application of practical reason to identifying the essential categories of value and secondly, a local participatory scheme involving deliberations between members of social groups and a facilitating agency committed to their needs through empowerment and how best to achieve that. In the philosophical category, the suitability of John Finni's practical reasoning approach was employed to identify the essential dimensions of people's wellbeing. This was proposed to produce a substantial and objective analysis of basic and unranked dimensions of human freedom, which allows for the specifications of the content and relative importance of participatory process according to the historical, socio-cultural and personal values of the groups. The relevance of what people, the beneficiary of development - considers valuable

instead of external preferences of the sponsor or observers, was elicited in the empirical study of Oxfam's women empowerment/income generation activities in Pakistan - goat-rearing, rose cultivation and adult literacy was conducted using the capability templates (Alkire, 2002). It alluded to the fact that development falters from its negative impacts on socio-cultural dimensions deeply valued by the poor (Alkire, 2002, 2008).

Multidimensional development strategies and participatory poverty initiatives have the potentials to enhance human capabilities, especially through the emphasis on institutional empowerment (Frediani, 2010; Conradie and Robeyns, 2013). The latter work's field report on a women's group in Khayelitsha township, Cape Town, South Africa, confirms the function of aspirations in enhancing both the capabilities-selection and the agency-unlocking roles in small-scale human development interventions. While acknowledging the threats adaptation to adverse circumstances and unjust social structures posed to aspirations, Conradie and Robeyns (2013), argue such is surmounted when aspirations are formulated within a public discussion milieu, awareness-creation, and commitment to action. Meanwhile, a normative framework to guide and radicalise development practices proposed in Frediani (2010) emphasised on power relations dynamics and instrumentality of participatory methods. Hence, structural and conversion factors influence the capability space, and cognizant human differences such as personal, locational and social factors, are potentials for converting goods into valuable capability achievements (Frediani, 2010).

The significant dimensions illustrated by this method, such as life, knowledge, practical reasons, religion, social participation, aesthetic experience and play, further explains the significance of human values and inclusiveness in capability expansion. The process of systematic identification, collection and processing of relevant information on human development capability is unique for poverty reduction strategies at the microeconomic level (Alkire, 2002, 2008; Frediani, 2010; Conradie, 2013; Conradie and Robeyns, 2013). It is also a significant instrument for development practitioners in articulating human voices towards

capability expansion. Hence, a periodic action programme or intervention, conceptualised on the marginalised capabilities in relation to their local priorities, enhances opportunities for fulfilling aspirations and expression of the beneficiaries' agency (Conradie, 2013).

B. Justice as equal capability of democratic citizenship and gender inequality

Robeyns (2003, 2016) proposes a procedural model of capabilities' selection in the evaluation of gender inequality from the Capability standpoint. She argues in favour of valuation procedures including explicit formulation, methodological justification, contextual relevance, empirical feasibility to public policy and inclusiveness as criteria to test epistemic, academic and political validity in the empirical evaluation of capability. The theory of justice, as elaborated in Anderson (1999), centres on the equal capability of democratic citizenship and the purpose of integrating freedom from domination into the capabilities. The focal point of Anderson's egalitarian theory of justice is on 'equality in social interactions among every citizen of democratic space', in which social conditions for equality are its capability which needs to be advanced. It further maintained that democratic citizenship has a far-reaching effect on equality among citizens in the society, apparently because it influences other capabilities - education, personal liberty, healthy living, economic justice and self-respect. In her views, humans are entitled to whatever forms of capabilities required to free them from oppressive and unjust social relationships. Conversely, it is also their right to access whatever capabilities needed to function as equal citizens in a democratic environment.

The above premises underscore the essence of a capability theory of justice whose ultimate mainspring is concerned with autonomy and human dignity. Robeyns justifies this principle from Dworkin's theoretical conception of egalitarian justice - a meta-principle of equal respect and concern. This, nevertheless, reflects a distribution of burdens and benefits sensitive to people's ambitions instead of their unequal natural endowments with which they are born (Robeyns, 2016). Therefore, assessing injustices in terms of both 'functionings' and

‘capabilities’, the author agrees with Fleurbaey (2002) on the view to take capabilities into account based on ‘refined functionings’. It therefore maintained, justice is done if all enjoy equal genuine opportunities, or attain a minimum threshold of capability levels.

C. Capability as freedom against deprivation and domination

From the premise that development constitutes both ability to promote human capabilities and the processes of generating capabilities (Fukuda-Par, 2003), Buchardt and Vizard (2014) analyse the relationships between outcomes and processes. The theme identifies the relevance of three dimensions of capability as the ‘outcome’, ‘treatment’ and ‘autonomy’, to achieving wellbeing and human development. For instance, the treatment or support for the elderly, disabled, and underprivileged or informal sector people against deprivation is conceived with a special focus on their health choices and aspirations. The significant effect of dynamic power relations to development processes argues for which capabilities can be achieved? whose capabilities are expanded? and the capability conception of freedom as non-domination. It proposes an integration of domination into capability evaluation purposely to arrest the backlash of capability deprivation particularly social norms limiting women’s freedom of movement and employment, and the marginalised. It strongly believed that capability deprived individuals are usually the poorest and weakest in every society, thereby, more vulnerable to further exploitation. Its argument that capability approach expatiates its commitment to real freedom in republican terms embracing the standard liberal egalitarian theory of justice where freedom is conceived as the absence of constraints (Alexander, 2008). Emphasis on freedom from domination represents a strong normative interpretation of the cause of capability failure.

D. Institutions, Capability and exclusion

Concerns for human development, wellbeing and capability expansion through interventions to promote equality, freedom of choice and inclusion reflect in the submissions from Deneulin (2006), Chopra and Duraiappah (2008) and Devereux and Conradie (2016). Deneulin (2006),

Chopra & Duraiappah (2008) and Devereux and Conradie (2016). While, Deneulin (2006) argues that clientelism or rent-seeking inhibits the wellbeing and capability of the majority, Chopra & Duraiappah, (2008) inquire the underlying dynamics of institutions and their use by privileged individuals or groups in the pursuit of rent capturing and exclusion of the masses. Similarly, Devereux and Conradie (2016) problematised the exclusion of vulnerable groups - informal and low-income formal sector workers, from formal social protection systems as key constraints to national development processes and capability enhancement in South Africa.

From case study analysis of the crisis over the citizen's rejection of the privatization of state-owned electricity and telecommunications in Costa Rica and the challenges of clientelistic practices in the Dominican Republic, Deneulin (2006) reveals how Sen's Capability approach can be strengthened by socio-historical narratives to understand the complex limitations to individual agency. Accordingly, individual freedom and human agency are connected to certain structures of human coexistence in the society, therefore, processes of social construction and historical factors on current actions in a society can be aggregated in assessing capability and removing unfreedoms. The author argues that priorities for certain elements of human wellbeing in policy action should reflect human choice and value toward addressing the limitations of democratic practice, such as external constraints, power inequalities and conflicting interests, in distorting human values (Deneulin, 2006).

A case study of Palamau district (threatened by decadent poverty and land degradation) and Udaipur region (confronted by distress migration resulting from excessive land and water degeneration) both in India is illustrated in Chopra and Duraiappah (2008) to analyse the existence of complex dependency of the masses on the 'powerful minority' who by its influence over the prevailing institutions expropriates their freedoms. While this complex trajectory constrains people with low or poor initial conditions, exacerbating poverty, destitution and deprivation, the authors argue it violates Sen's equality of freedom. The study submits that policy interventions against a differentiated system of freedom is essential for

addressing inequality and enhancing capability. Its significance entails the factor of institutions (formal and informal) in the promotion or constraint of individual/group freedom (development), creation of opportunities and utilisation of resources.

Devereux and Conradie (2016) found the exclusion of informal and low-income formal workers from social security coverage in South Africa as a threat to their wellbeing and the country's human development. From the combined analysis of desk review of relevant literature and accounts of key stakeholders and observers, the authors argue for a review of the structural economic inequality perpetuated by the past apartheid, and a mix of social insurance and social security supports that is cognizant of their income level and backed by labour market activation policies as solutions to the exclusions of informal and low-income workers in social security coverage. The submissions, are relevant for poverty alleviation, bridging inequality gap, enhancing market opportunities, capability and individual choices, and informal sector's inclusiveness and social security coverage critical for sustainable development.

The relevance of this approach lies among others in its instrument of freedom which was used to measure the role of institutions (formal and informal) in improving or constraining individual/group freedom in the Lake Chad Basin. Due to inadequacies in identifying and measuring human capabilities, surveys and extant national data are less suited for capturing human security and capabilities. The disaggregated datasets on the capabilities dimensions of human well-being are suitable for inter-and intra-country comparisons for expanding capabilities and discovering cases of inequalities, disadvantaged groups/individuals (Ibrahim, 2014). Moreover, owing to the capability's focus on human diversity, operationalising it in the study will enhance policies that address the plight of the marginalised and subaltern groups.

Notwithstanding the deliberate incompleteness of the capability approach, as pointed by Sen's followers, the relevance of its application can be accentuated contextually, through deliberative processes and public debates (Ibrahim, 2014). Hence, diverse constraints to human development and livelihoods are peculiar to the case study area, the capability's emphasis on

the expansion of human freedoms, choices and well-being (Sen, 1999, 2002; Alkire, 2002) are instrumental to the study. The references on removing the major sources of ‘unfreedom’ such as injustice, inequality, systematic social deprivation among others are critical to development policies formulation and programme(s) assessment as amplified by several capability scholars.

3.4 Theoretical Framework II: Eco-violence Theory

Most studies on ‘eco-violence’ theorise the impact of human pressure on natural resources, the patterns of exploitation and utilisation of resources on a society’s material well-being as well as its potential source for conflicts among resource dependents (Gleick, 1993; Homer-Dixon, 1994, 1999; Gleditsch, 1998). The theory explores the nexus and the cyclical model of causality between environmentally induced scarcity and violent conflicts, that is civil instead of inter-state, including its transboundary nature (Deligiannis, 2012). This is because environmental concerns are fast becoming matters of “high politics” and debates over resource scarcity continue to dominate the discourse on regional security and development. Hence, the transboundary nature of many of the world’s large rivers and growing scarcity of water also stimulate discourse on its potentials for conflict or the environmental scarcity-conflict relations in broader terms (Gleick, 1993; Homer-Dixon, 1994, 1999; Gleditsch, 1998).

Impacts of climate change on environmental degradation and security particularly its relations to violent conflicts at international or sub-national levels also influence the discourse on eco-violence (Gleick, 1989; Barnett and Adger, 2007). Problems of environmental stress as a determinant of conflict or violence are largely conditioned to degradation and scarcity of resources (Percival and Homer-Dixon, 1998). On the other hand, pervasive armed conflicts and ferocious crises mostly in developing or poor societies, reflecting a combination of environmental scarcities and an array of socio-political and economic factors have also been conceived within the same eco-violence theoretical model (de Soysa, 2002). The Toronto School led by Thomas Homer-Dixon presents parts of the main thoughts on resource scarcities.

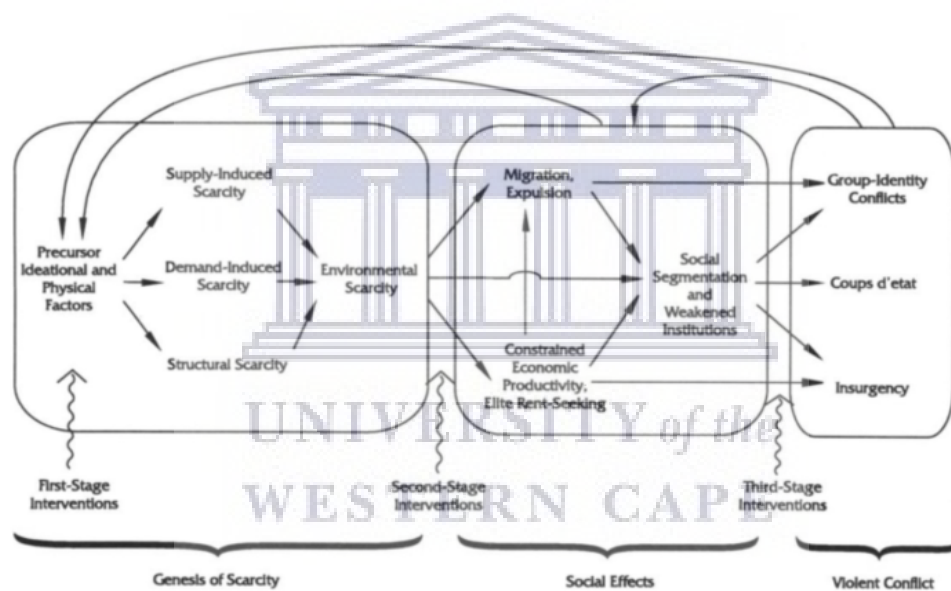
It links environmental scarcity to conflict indirectly as “ingenuity gap” that develops within poor countries because of the scarcity of resources. Seeing resources as the “causal mechanism” of present-day conflicts, eco-violence theorists assert that scarcity is a barrier against the production of ingenuity and adaptation to economic hardship (de Soysa, 2002). The lack of ingenuity prevents economic growth and institutional change, required in turn to overcome the debilitating effects of environmental scarcity.

This notion, connected to new growth theories, reveals that lack of natural resources limits social (institutional) and technical innovation, thus, heightens conditions that generate conflicts. Hence, Barbier and Homer-Dixon (1996), believes resource scarcity incapacitates the capability of poor societies to adapt to socio-economic pressure due to its apparent constraints on growth and impediments on effective social investment. Malthus’s privileging of population increase as the dominant cause of poverty, scarcity and conflicts underscores the link between environmental stress and conflict (Hartmann, 2014). Eco-violence theorists drew inspirations from radical perceptions of neo-Malthus concerns about “the population explosion” and the “coming anarchy” (de Soysa, 2002). Malthus believes that population grows geometrically and food production arithmetically if left unchecked. “the races of plants and animals shrink under this great restrictive law,” he submits, “and man cannot by any efforts of reason escape from it.” Only the resultant effects of the misery of hunger, poverty, disease and war keep human population growth in check by increasing death rates..., (Hartmann, 2014: 758).

Theoretically, the nexus between environmental scarcity and violent conflict vary in context and the cases are peculiar in comparison to each other. The prevailing contexts are differentiated by milieus such as the level and vulnerability of environmental resources, patterns of social relationship, nature of the state, the political power arrangement, and the structure of economic interactions among social groups (Percival and Homer-Dixon, 1998). Homer-Dixon conceives environmental scarcity as a composite of three factors in its preliminary model of explaining the conditions and linkages of the scarcity-violence processes

(Figure 3.3). The tripartite variables of environmental scarcity include ‘Supply-induced scarcity’, caused by degradation and depletion of environmental resources such as erosion of cropland. Second is ‘Demand-induced scarcity’ occasioned by population increase within a geographical area or rise in per capita consumption of a (particular) resource with heightened demand. The third is ‘Structural scarcity’ arising from changes in access to resources caused by the uneven distribution of resources among social groups. In other words, such skewed distribution of resources favours few individuals at the expense of the deprived masses, confronted with shortages of resources (Homer-Dixon, 1999:47-52).

FIGURE 3.3: THE CAUSAL LINK BETWEEN ENVIRONMENTAL SCARCITY AND CONFLICT



Source: DELIGIANNIS, 2012:82

The common patterns of interaction among the three forms of scarcity are resource capture and ecological marginalisation (Percival and Homer-Dixon, 1998). Resource capture happens when increases consumption of a resource coincides with its depletion. In this way, powerful groups in the society, predicting imminent shortages, shift resource distribution in their favour, subjecting most of the population to scarcity. While ecological marginalisation surfaces when increase consumption of a resource coincides with structural inequalities in distribution denies access to resource use, and migration of weaker groups to ecologically

fragile zones that become degraded afterwards (Homer-Dixon, 1994). Social consequences of scarcity include poor agricultural productivity, migrations from scarcity affected region and weakened institutions (Homer-Dixon, 1994). Environmental scarcity threatens the peaceful coexistence of individuals, social interactions and state-society relationships. Dwindling agricultural production, migrations and economic contraction in resource depleted regions induce hardship, which in turn increases the burden on the state and cause reduction of its revenue at the benefits of rent-seekers (Percival and Homer-Dixon, 1998).

The linkage between environmental stress and violent conflicts illustrates society's struggle to attain collective goods, economic progress and innovation, and adjustment to threats of resource depletion or scarcities. Meanwhile, the ingenuity of society is paramount to arresting scarcity, but scarcities of social ingenuity hinder innovation (de Soysa, 2002). As emphasised by the theorists, "an ingenuity" emanates from the society's inability to address environmental scarcity, thus escalating social disruption and conflicts particularly among (poor) resource dependents. In considering this linkage, the eco-violence theory explains the scarcities of resources, social effects emanating from it and its concomitant violence. The theory is applied to explain the nexus between the desiccation of the Lake Chad basin and conflicts among resource dependents. Considering in totality of the nexus between environmental pressure, human capability, it presents a diverse set of explanations on conflict debate and human security-development narratives in the Lake Chad Basin.

Beyond the scarcities of essential resources, eco-violence is also concerned about resource abundance. In this way how it induces conflicts, marginalisation by powerful few and its undermining of state power and regional security. An empirical analysis of conflict linking natural resource capture with large-scale insurgency has been conducted from a microeconomic theoretical standpoint (Collier and Hoeffler, 1998; Collier, 2000; de Soysa, 2002). These studies are premised on the strong argument that vital natural resources stimulate destructive and greedy activities and permit the funding of rebellions. Bearing in mind other variables,

stakes of primary products in total exports has a strong effect on civil wars. This is apparent because natural resources exported as primary products most times serve as incentives to rebel groups and warlords in loot captures and funding rebellions. This, in most cases, has generated violent conflicts, particularly in the Third World. For instance, the struggle for the control of diamond mines, oil, timber, copper etc. in Africa have led to tough and lasting conflicts in countries such as Sierra Leone, Liberia, Democratic Republic of Congo, and Angola same way as profits from illicit trade commodities - drugs, weapons, hardwood timber fuelled organised crime and conflicts in Asia and Latin America (de Soysa, 2002).

It is argued that resources are “honey pot” that provide incentives for the profit-seeking individual(s) to perpetuate violence (de Soysa, 2002). Hence, Collier (2000) justifies this to imply that not the loud voices of grievance but silent force(s) of greed instigate rebellion or civil wars. He further explains that ethnic heterogeneity and income inequality are not the real factors of conflict but primary goods export and poor education of the male population. It thus rationalises the dimensions of “loot seeking” explanations of conflict in a resource-rich milieu (Collier, 2000; de Soysa, 2002). Beyond the direct measure of scarcity/abundance of natural resources on armed conflicts, eco-violence theorists have used dependence on exports of primary products as an indicator of environmental vulnerability and the relationship between the environment and socio-political development (Barbier and Homer-Dixon, 1996).

Eco-violence theoretical premises on “resource scarcity” illustrate threats of environmental change, and “resource curse” warranted by the struggle to capture resources as conflicts determinants among resource dependants and or by powerful actors at the international or sub-national levels (Homer-Dixon, 1994, 1999; Percival and Homer-Dixon, 1998; de Soysa, 2002). This provides another relevant tool to contextualise environmental problems as regional security-development threats. With resources viewed as “causal mechanism” of present-day conflicts, eco-violence maintained that scarcity hinders the capability of poor societies’ resilience against socio-economic and environmental threats.

Therefore, its constraints on growth and effective social investment and technical innovation (Barbier and Homer-Dixon, 1999) are salient to the narratives in the Lake Chad Basin.

3.5 Chapter Summary

The study's conceptual outline contextualised human security and human development as critical to regional security-development processes in the Lake Chad Basin. The theoretical approaches demonstrate the basic parameters to assess human security challenges, and the application of multilateral development strategies/interventions to address the threats to the population's well-being and development tensions based on international standards. As evident above, the Capability influenced the human development processes both in policy formulation and implementation, the Human Development Reports as well as development studies. This, nevertheless, is a useful tool to review human security challenges and advance regional and national development progress in complex terrain such as the Lake Chad Basin, where a combination of diverse environmental, socio-economic and political factors intersects to shape regional security-development trajectories.

Eco-violence thus contextualised the preponderance of critical resources to human security and regional development. The scarcity induced by environmental change on the exploitation and utilisation of limited natural resources such as water resources and arable land, and the struggle to control or capture abundant or essential commodities such as uranium, gold, petroleum and water system have become contentious among the multiplicity of actors. The above therefore provide relevant explanations on the concepts and theories utilities to reconstruct the human security and regional development narratives in the Lake Chad Basin. Hence, the inferences drawn from other Third World regions such as the Senegal River Valley, the Middle East and the Horn of Africa etc. enhanced its critical explanations.

CHAPTER 4

CASE STUDY DESCRIPTION: LAKE CHAD BASIN AND FEATURES

4.1 Introduction

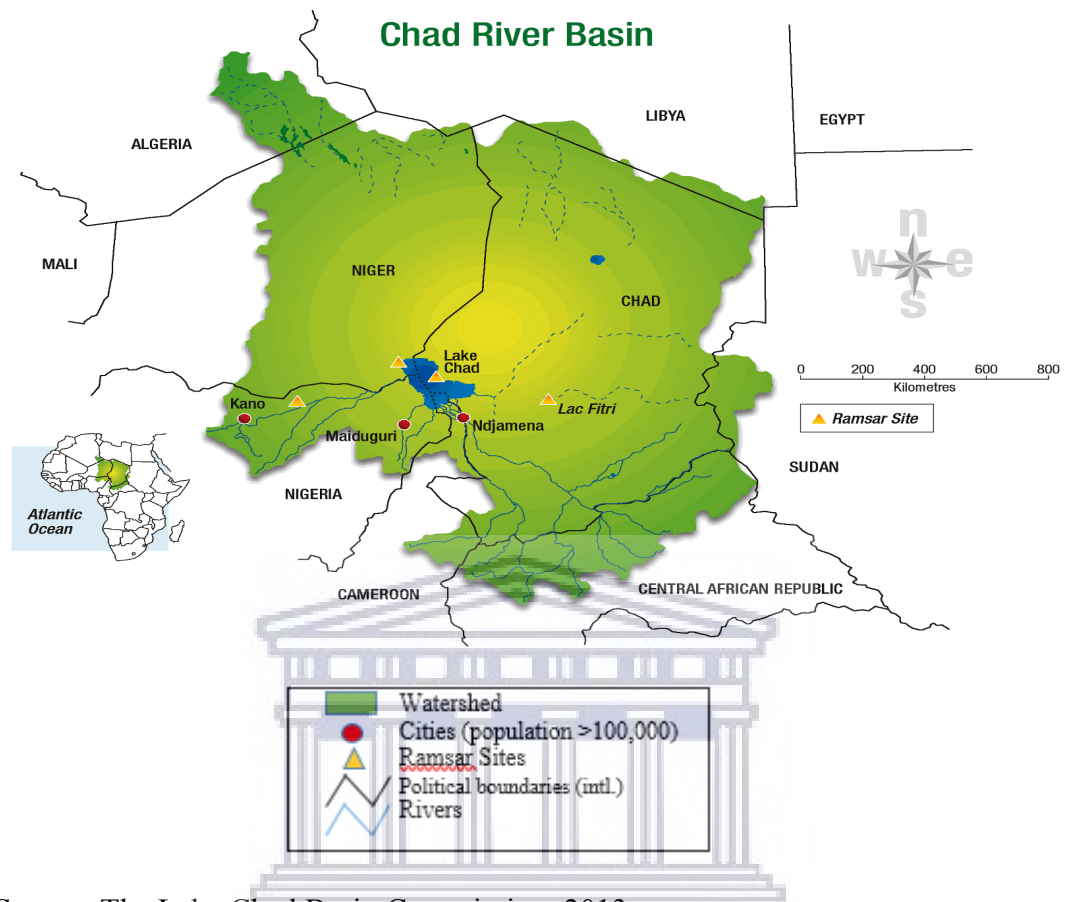
The significance and sustainability of transboundary river basins to the survival and well-being of people and communities across regions has long been investigated (Food and Agriculture Organisation, 1997, 2009; Lipchin *et al.*, 2007; Bdiya and Bloxom, 2008; Baba Gana and Herbert, 2014). However, the potential impacts of transboundary rivers on human security and development have yet received little interest, particularly in the Global South. The section critically describes the salient components of the riparian archipelago of the Lake Chad conventional basin as the case study of the research in respect to the human security-development concerns in the region, although in cognizance of its entire drainage basin area (Figure 4). The “Lake Chad basin area” in context is the geographical landscape bordering the four riparian states of the Lake Chad Basin Commission i.e. Cameroon, Chad, Niger and Nigeria that have been severely impacted by the desiccation of Lake Chad basin, particularly between the early 1960s till present. The area traverses parts of Northeast Nigeria, the North and the Far North regions of Cameroon, the South-east of Niger (mostly Diffa Region), and the most parts of western Chad (UNHCR & The World Bank, 2016). Meanwhile, the Lake Chad water and resources are sources of the institutional framework for regional development, resource management, conflicts and insecurity in the Lake Chad basin area. A detailed description of the features of the Lake Chad is thus considered to enhance a better understanding of its significance to regional development and (human) security outcomes in the basin. The fundamental characteristics include its geography; geology; climate and ecology; water resources (rivers, aquifers) and management. Others are the people (history, population dynamics and economy) as well as the conflict and security settings.

4.2 Lake Chad: Geography and Hydrology

The Lake Chad is Africa's fourth-largest lake after Lakes Victoria, Tanganyika and Nyassa respectively and one of the continent's biggest bodies of freshwater (UNEP, 2004; AFROSAI, 2015). Situated on the edge of the Sahara Desert and the Sahel zone in Central Africa between the latitude 6° and 24° N and longitude 8° and 24° E, Lake Chad is an endorheic (limited drainage that retains water and allows no outflow to external water bodies or ocean) with large desert areas or semi-arid savannah. Its surface area of 25,000 km² in 1963, an altitude of 280m with a depth limit of 4m is currently about 2,000 km² (Odada, Oyebande and Oguntola, 2004: 308; Baba Gana and Herbert, 2014: 279; LCBC, 2016b:1). The lake is bordered by four riparian states - the Republic of Chad (50%) to the east, the Federal Republic of Nigeria (25%) to the west, the Republic of Niger (17%) to the northwest, and the Republic of Cameroon (8%) to the south (AFROSAI, 2015:5; LCBC, 2016b:1).

The hydrographic (drainage) basin of the Lake Chad, covering 2,434,000 km², approximately eight percent of entire Africa's land surface (Figure 4.1), is shared by eight countries - the four riparian countries (above) and the Central African Republic, Libya, Sudan and Algeria (GIZ, 2015:5; LCBC, 2016b:1). Its conventional or active basin currently stretches at 984,455 km² (AFROSAI, 2015:5) - (Figure 4.1), depicts the geographic boundary of the Lake Chad Basin Commission (LCBC) established under the framework of the Fort-Lamy (now N'Djamena) Convention that birthed the LCBC in 1964 (Odada, Oyebande & Oguntola, 2004; LCBC, 2016c). The Lake Chad and its ecosystem are of strategic importance to the region, having supported the development of its populations including the flora, and fauna for thousand years.

FIGURE 4.1: THE LAKE CHAD BASIN



Source: The Lake Chad Basin Commission, 2013.

The Lake Chad (thick blue at the frontiers of the riparian republics of Cameroon, Chad, Niger and Nigeria), its conventional basin (green) and tributaries of its two major subbasins (tiny blue lines) - the Komadugu-Yobe (Nigeria) and the Chari-Logone (Central African Republic, Cameroon and Chad) with surface flow into the Lake. (Source: LCBC, 2013).

The Lake Chad is 275 metres (902 ft) above sea level (LCBC, 2016a:1). It is surrounded by high mountain ranges up to the highland of the North Equatorial Plateau (the Asande Barrier). This includes areas of the Adamawa Plateau in the west and the Bongo Massif in the east. The Chad Basin extends to 3,088 metres (10,131 ft) to the east in the Darfur's high Jebel Marra. At the basin's northeast lies the Ennedi Plateau - 1,450 metres rise (4,760 ft). The volcanic Tibesti Mountains, including the 3,415-metre (11,204 ft) Emi Koussi (the Sahara's highest point) link the north basin, while the Djado Plateau lies to the west. By extension, it also includes the Tassili n'Ajjer mountains in Algeria - 2,158 meters (7,080 ft) in the northwest border, the Aïr Mountains and the Termit Massif in Niger to the western boundary. Others are

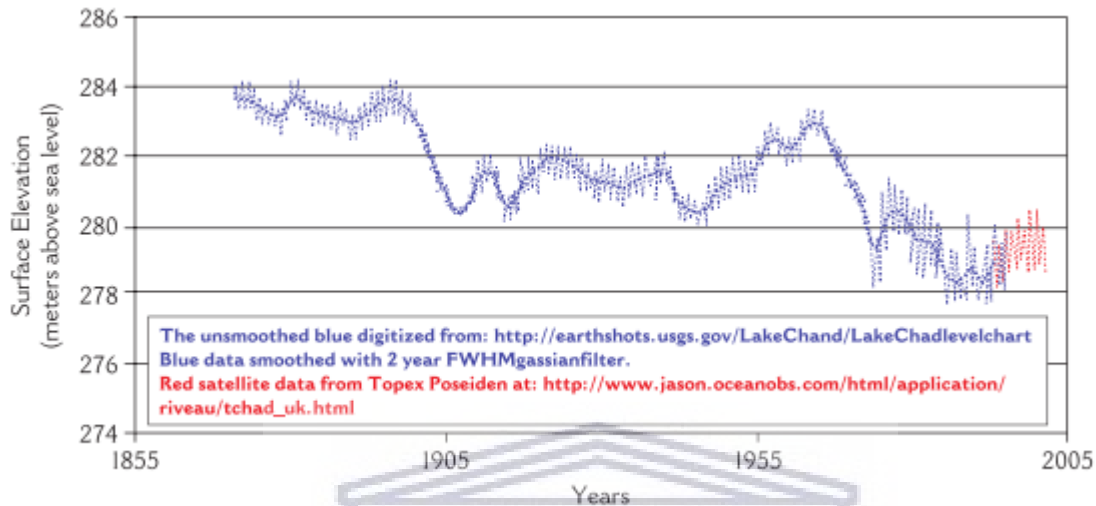
the Jos and Biu Plateaus, and the Mandara Mountains in the south-western Chad Basin geographical boundary, as well as the Bodélé Depression in the centre Chad Basin. The basin's deepest part is at 155 metres above sea level (LCBC, 2016a:1).

The Lake Chad's geological basin consists of Phanerozoic sedimentary deposits. Although lesser in quantity than its drainage basin, the sedimentary basin formed as a result of a plate divergence opening the South Atlantic Ocean (Baba Gana & Herbert, 2014:281). A deep basin of well-watered plain, rivers and water bodies, replenished by rich biodiversity was the features of the Chad basin during the most parts of the Quaternary - over 2.6 million years ago. However, an encumbrance of drier climate at the twilight of this era resulted in eolianite sand dunes in its north basin about 20,000 - 40,000 years back. Meanwhile, during the Holocene - past 11,000 years till about recent times, a giant "Lake Mega-Chad" of 350,000 km² (140,000 sq. mi) was envisaged to drain across the Benue River into the Atlantic Ocean (Schuster et al., 2005). Analysis of Stratigraphic records suggested the "Mega-Chad" reach its peak about 2,300 years ago. While the Lake Chad varies in size as the climate changed, remains of fish and molluscs from this era are retrievable in the presently desert areas of the basin (Baba Gana & Herbert, 2014:281).

Moreover, the basin is separated westward by a watershed from the River Niger, a basement dome from the River Benue to the south, and watersheds further east detach it from the Nile and the Congo Basin (Haruna *et al.*, 2012). Tributaries of the lake include the Chari-Logone, El-Beid, Komadugu-Yobe, Yedseram, Serbewel, Taf-Taf and Ngadda rivers. Indeed, Lake Chad is mainly supplied by two major sub-basins - the Chari-Logone River, originating from the Central African plateau, supplying about ninety percent of water into the lake's southern basin. The Komadugu-Yobe (from northern Nigeria), supplies less than five percent of its water resources. The El Beid and Yedseram combine with other minor rivers including direct rainfall on the lake contribute the rest (AFROSAI, 2015; Asah, 2015; Okpara *et al.*, 2015; LCBC, 2016d). Thus, the two basins filling the Lake Chad - south and north - are separated by

shoals or “Great Barrier Reef”. Its water areas extend between 1,500 and 14,000 km², including peripheral belts with vast wetlands (GIZ, 2015:8; LCBC, 2016a:1).

FIGURE 4.2: HISTORICAL VARIATIONS OF LAKE CHAD 1865 -2005



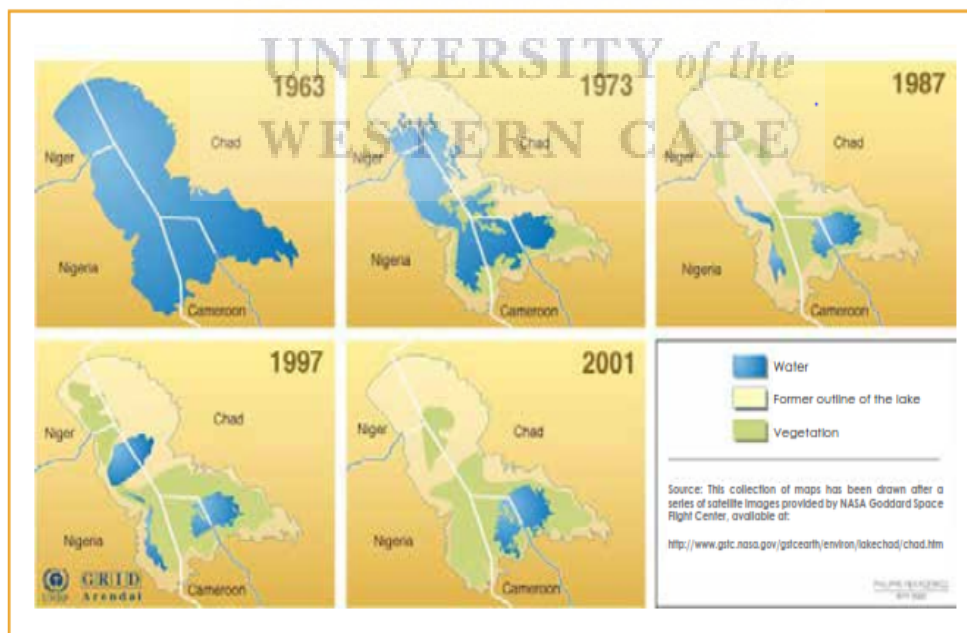
Source: UNEP, 2004:20.

Consequently, variations in the level of the Lake Chad as recorded over the years include: (i) a “great Lake Chad” of 25,000 km² open water with a 284 m coast before 1973; (ii) a “medium Lake Chad,” of 15,000 – 20,000 km² open water, an aggregate of 282 m coast by 1990, a single body or two basins divisions, which peaks through as an archipelago of 2,000 islands (Figure 4.2). A variant of water level at 0.7 m from December-January (high water phase) to August (the low water phase) and a “small Lake Chad”, currently characterised by a coast that is below 280 m deep. Similarly, the Lake Chad follows an annual cycle in which the commencement of the rainy season (May-June) in the upper basin increases flooding (August-September) replenish the lake (GIZ, 2015:6-8; LCBC, 2016a:1). By October-January, evaporation at the end of the flooding often compels a decline in the lake’s water level. For instance, the Chari-Logone rivers’ contribution is mostly affected by single to double inputs or worse at some times in proportion with Sahelian rainfall patterns. The current lake is an ordinary “small Lake Chad”, thus, no major changes have been witnessed since the dawn of

the Sahelian drought (the 1970s and 1980s), but little seasonal and inter-annual fluctuations, typical of its normal condition (LCBC, 2016a:1).

While currently reduced in size by 95 percent - from 25,000 km² to 2,000 km² between 1963 and 2010 (LCBC, 2016a:1), the circumstances behind the Lake Chad shrinkage has become a major reference point till date. The lake cannot adequately support the livelihood of its inhabitants with spillover effects on all aspects of development including threats to its flora and fauna. Then known as “Mega-Chad Lake”, the basin was a vastly bigger water system at the Quaternary period, covering about 340,000 km² and almost 160 m deep several (thousand) years than it was in the 1960s (LCBC, 2016a:1; Okpara *et al.*, 2015). The Lake, a remnant of a former quaternary sea, an altitude of 160m is presently at 3 metres depth. Its highest level in the entire 20th Century was attained between 1960 and 1963 (Figure 4.3). Hence, Lake Chad is covered by islands and suffers intense evaporation with possible disappearance by 2035 (LCBC, 2016a).

FIGURE 4.3: A CHRONOLOGY OF THE LAKE CHAD VARIABILITY 1961-2000



Source: GIZ, 2015:8.

The Lake Chad's hydrological and biophysical alterations emanate from natural climatic variability and various unsustainable human practices threatening the Lake Chad basin, yet, its resource base and biodiversity remain strategic to the general wellbeing of its ecosystem and populations' livelihood patterns (UNEP, 2004; Okpara *et al.*, 2015; LCBC, 2016a). Such desiccation, worsened by repeated harsh droughts in 1972-1973 and 1982-1984, and the desert encroachment, threaten irrigated agricultural and small scale fishing practices including the research for petroleum resources provided by Lake Chad. The decline of agriculture, livestock and fisheries also impede regional social and economic development and its inhabitants' capabilities.

The size and level of Lake Chad fluctuate persistently in the proportion of water inflows from its tributaries, studies have also proven that the lake amplifies rainfall variation, thus, significantly affecting regional environmental, social and economic dynamics (AFROSAI, 2015; LCBC, 2016a; UNHCR & The World Bank, 2016). Lake Chad has a magnitude of peripheral wetlands, its susceptibility to pollution has been multiplied by improper use of agricultural pesticides and unsustainable exploitation of hydrocarbons (UNHCR & The World Bank, 2016). A forecast of the impact of climate change in the Lake Chad basin may be inconceivable due to insufficient data. Hence, an increase in global temperatures and reduction in rainfalls have drastically caused a decrease in its size and loss of resources, particularly since 1963. As presented below (Figure 4.5), the upsurge trend is likely to continue amid other anthropogenic factors and growing human security challenges.

4.3 Climate and ecology

Situated in the Sahel zone, the Lake Chad basin and its catchment area is an extremely sensitive ecosystem with high vulnerability to climate change. Precipitations in weather conditions affect its entire population of about 50 million inhabitants, whose main source of sustenance, agriculture, fisheries and livestock breeding largely depends on the Chad water resources in a

subsistence economy (GIZ, 2015). Nevertheless, the region's enormous economic and ecological substance particularly for the littoral states - Chad, Nigeria, Niger and Cameroon, are derived from its vast pastures, arable land, fertile flood plains and fish stocks including hydrocarbons deposited in its sedimentary basins.

According to the Food and Agriculture Organisation (FAO, 2009), high temperatures, strong winds, high evapo-transpiration (about 2,200 mm/annum) and unstable rainfall patterns are the recurrent climatic conditions in the Lake Chad region. Thus, spatial rainfall variation precipitated from about 1,400 mm around the southern pools to about 150 mm less in the northern area (Odada, Oyebande and Oguntola, 2004; Okpara *et al.*, 2015). Droughts necessitated by unstable rainfall patterns from the mid-1960s (Table 4.1) occasioned grim environmental stress in the Chad basin. Consequently, intermittent drop in rainfalls supported by the 1972-75 droughts caused the Lake Chad's recession to 10,700 km², while the repeat droughts 1982-85, shrunk the basin to 1,410 km², its record lowest surface level ever (UNEP, 2004; Onuoha, 2008).

TABLE 4.1: AVERAGE RAINFALL OVER LAKE CHAD BASIN AND THE CHARI RIVER FLOW SINCE 1950

Period	Basin rainfall (mm)	Flow	
		Km ³ /year	m ³ /year
1950-59	1114	42.1	1334
1960-69	1059	40.3	1278
1970-79	928	27.3	866
1980-89	877	17.7	688
1990-99	974	21.7	672
2000-09		21.2	672

Source: GIZ, (2015:8)

The Lake Chad Basin is an ecosystem whose variety of habitats, include deserts, lakes, savannahs, forests, shrub steppes, mountains and wetlands. Almost half of its northern basin area is desert - the Ténéré, Erg du Bilma and Erg du Djourab. The southern belt of the Sahel desert – forming a part of the basin, is covered with thorny scrub and dry savannahs. Similarly, dry and riparian forests including flooding savannas exist along rivers Chari, Logone in the far

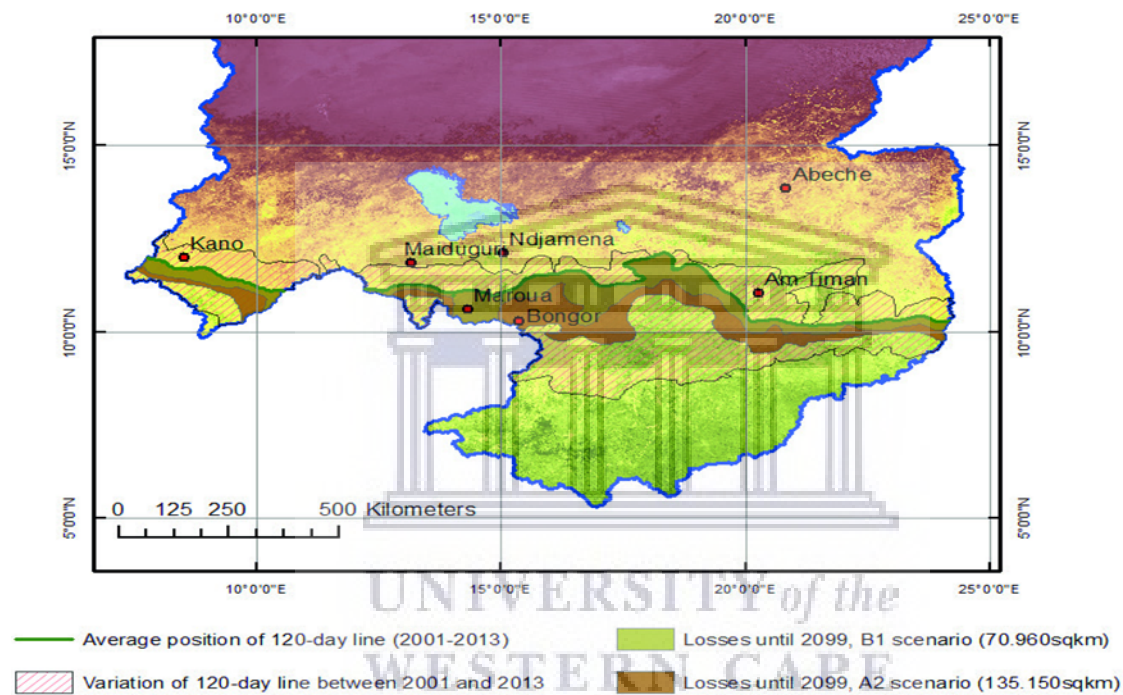
south, and the Komadougou-Yobe (west) of the river basin. While large wetland areas such as the Massenya, Sategui-Deressia floodplains in Chad, the Grand Yaeres (Cameroon/Chad frontiers), and the Hadejia-Nguru wetlands (Nigeria) are in flooding areas along the basin's major river systems (LCBC, 2016a). Thus, Lake Chad's rich and diversified fauna includes elephant, lion, mantee of Lake Lere, the Eland derby and hosts of migratory birds. However, species such as black rhinoceros, dama gazelles, the Addax and the Oryx have all vanished from the basin (LCBC, 2016a). Apart from races of camels, horses, donkeys, cattle, caprine, sheep, pigs and chicken which represent the basin's large and small livestock, the "Kouri cow"-peculiar to the Lake Chad pasture has become endangered. The *Kouri* is renowned with daily milk production ranging from 4 to 6 litres, as against the average 1-2 litres daily production of the whole system (LCBC, 2016a).

The rich biodiversity of the Chad basin includes several species of great international interest (migratory animals, endemic species). In the Chad basin floodplains, herbaceous vegetation growing on hydromorphic soil supports the livelihood and local development of its population mostly fishing, grazing and agriculture (LCBC, 2016a). As observed in the field exploration to the Lake's source basin areas, its rich pastures feed grazing animals in the counter season while its plains, flooded in the rainy season, are often used for cultivation of rice and sorghum etc. The flood plains also support rich terrestrial and aquatic fauna with over 120 species of fish earlier recorded but now in decline (Baba Gana & Herbert, 2014; LCBC, 2016c). Significantly, the Chad basin is included in the *Ramsar* List of Wetlands of International Importance (Figure 1). Hence, movements of some seventy species of migratory birds recorded as having stopovers in the basin en route to Europe, Africa and Asia is a testimony of its rich biodiversity.

Although efforts such as agroforestry vegetation, protection of critical sites have enhanced biological diversification in the region, climate variability (mostly severe droughts) have triggered the loss of ecosystem and fertile agricultural through desertification (Figure 4.4).

As such, uncontrolled human encroachments exacerbate degradation of the basin environment. The major threats to biodiversity conservation in the Chad basin manifest through deforestation, stray animals, poaching and multiplication of fishing channels. Others include disruptions of water regimes by the construction of major hydraulic works and rapid population growth which increases pressures of limited resources and pollution (LCBC, 2016g).

FIGURE 4.4: CURRENT AND FUTURE 120-DAY GROWTH LINE AND LOSS OF FERTILE AGRICULTURAL AREAS IN THE LAKE CHAD



Source: GIZ/AHT 2015:17

The impacts of climate variability on the region’s environment and its resources as well as the population’s livelihood are not far-fetched, particularly in the aspects of farming, fisheries and livestock breeding as well as forestry. A significant rise in temperature from 1973 to 2013, was 6°C in the eastern Lake Chad Basin, and a further rise in temperature to 2-4°C by 2099 (Figure 4.4) has been predicted (GIZ/AHT, 2015:7). Such a 100 years’ assessment of past climate scenarios and future climate development forecasts for the Lake Chad basin suggests a severe trend with dire socio-economic consequences for the basin. The capability of the population and their livelihoods may be further constrained by a decline in water resources by

4-10 percent due to increased evaporation; loss of arable land for agriculture, an estimated 70,000 - 130,000 km² across the Chad Basin; and unpredictable precipitation and severe weather (droughts, flooding) (GIZ/AHT, 2015:7). Meanwhile, the region currently witnesses increased migration of people southward, even beyond the basin areas due to loss of arable land for agriculture and the raging violent conflicts which have contributed to impair human livelihood and capabilities. In cognisance of Eco-violence theoretical assumptions, scarcity of natural resources (water, land) have forced the change of livelihood (sometimes conflictual) among fishermen, sedentary farmers and pastoralists, and large scale conflicts in the region, perpetrated by powerful transnational actors and local beneficiaries heighten tensions in the Lake Chad basin already fragile societies.

4.4 The Lake Chad Basin: Water resources and management

Transboundary river basins are a source of conflicts and catalysts for dialogue or cooperation among peoples, communities and political authorities across the world. Due to the significance of water to many uses, livelihoods of large numbers of people and communities are dependent on freshwater bodies, whose availability is often limited, hence the need for their joint management and sustainable utilisation. The Lake Chad is a huge inland basin, its approximate 2,388,700 km² terminal depression covers the most of Chad Republic (1,091,500 km²), areas in Nigeria (180,200 km²), Niger (674,000 km²) and Cameroon (46,800 km²) respectively. The basin areas include in the Central African Republic (218,600 km²), Libya (4,600 km²), Algeria (90,000 km²) and Sudan (82,800 km²) (LCBC, 2016d:1). Among these, only four are in direct contact with the lake - Cameroon, Chad, Niger and Nigeria - the riparian states (FAO, 1997:1-2). The Lake Chad's tributaries – the Chari-Logone, El-Beid, Komadugu-Yobe, Yedseram, Serbewel, Ngadda, Taf-taf rivers are situated across the lake's conventional basin. As emphasised above, two major sub-basins – the Chari-Logone and the Komadugu-Yobe, the

Chari-Logone and the Komadugu-Yobe, mainly supply the lake (Okpara *et al.*, 2015; LCBC, 2016g).

The Chari-Logone Rivers originate from the Central African plateau. The rivers traverse the Central African Republic, Cameroon and Chad, and supply more than ninety percent of the Lake Chad water input. The Komadugu-Yobe from northern Nigeria and parts of Niger supplies about five percent of its water resources (AFROSAI, 2015; Asah, 2015; Okpara *et al.*, 2015; LCBC, 2016g) The two major sub-basins, Chari-Logone and Komadugu-Yobe are highly transboundary, however, water diversion and stream-flow modification inherent in the major irrigation and water development projects constructed along them affect the Lake Chad condition (UNEP, 2004; Okpara *et al.*, 2015). The two sub-basins are analysed in relation to the freshwater shortage largely determined by their discharge to the Lake Chad water inputs.

4.4.1 The major sub-basins of Lake Chad

The Chari-Logone sub-basin: The Chari-Logone sub-system occupies approximately 650,000 km area, the rivers supply the majority of the Lake Chad freshwater inputs, therefore, its level highly correlates the rivers' discharge (UNEP, 2004:80). The Chari River constitutes the headwater region and stretches about 1,400 km in length in the Central African Republic. Its main tributary the Ouham (C.A.R.), joins the Bahr Aouk catchments, the Bamingui and Bangoran rivers across northern CAR through to the Bahr Sara in Chad, its confluence is found at the Sahr downstream. The floodplain tributaries of the Chari mainly flow through and impact particularly by rain – of July-September season (FAO, 1997; UNEP, 2004).

The Logone River intersects the Cameroon and Chad borders down to N'Djamena (the Chadian Capital) from where it flows northward with the Chari into Lake Chad. The Chari-Logone have a tropical regime, and its single flood occurrence follows the August-November rain season (FAO, 1997). It then feeds the massive Waza-Logone floodplains in Cameroon's

Far North region (UNEP, 2004:80). The quantity of water flows from the major rivers into Lake Chad, estimated at 33 km³ annually in the 1970s dro more drastically over 75 percent up till early 2000 (UNEP, 2004:80-81). This is due to irregular inter-annual flows and huge water loss - nearly 5 km³ per annum, necessitated by the flooding of the Yaere lowlands in Chad and Cameroon etc. Hence, an estimated 8000 km² of flooded areas are exploited for pasture, fishing, flood recession cropping and flooded rice production (FAO, 1997; UNEP, 2004; Okpara *et al.*, 2015). Meanwhile, a decline in the lake level has prompted the construction of a 2,400 km-long canal to recharge it with water from the Congo/Zaire basin, however, this is beset by some technical, political and economic circumstances.

The Komadugu-Yobe sub-basin is a basin area of 148 000 km², with about 2.5 percent supply rate of its overall river inflow to the Lake Chad (UNEP, 2004:88; LCBC, 2016g:1). The Komadugu-Yobe River adjoins Nigeria - Niger border, stretches over 160 km, and the only perennial water inflow to Lake Chad's northern pool. The sub-basin is supplied by tributaries, predominantly, the Hadejia and Jama'are Rivers, with sources from the Kano and Jos Plateau region in Nigeria respectively. The Misau River from Bauchi north in Nigeria also links the Komadugu-Yobe River at about 120 km from Lake Chad (UNEP, 2004; LCBC, 2016g). Extensive shallow flooding results from peak inflow to the Jama'are and the Hadejia wetlands around late August every year. The mean annual rainfall varies from 1,000 mm in the upstream catchment areas to nearly 500 mm in the Hadejia Nguru wetlands to less than 300 mm near the Lake Chad in the June-October annual season (UNEP, 2004; Bdliya and Bloxom, 2008).

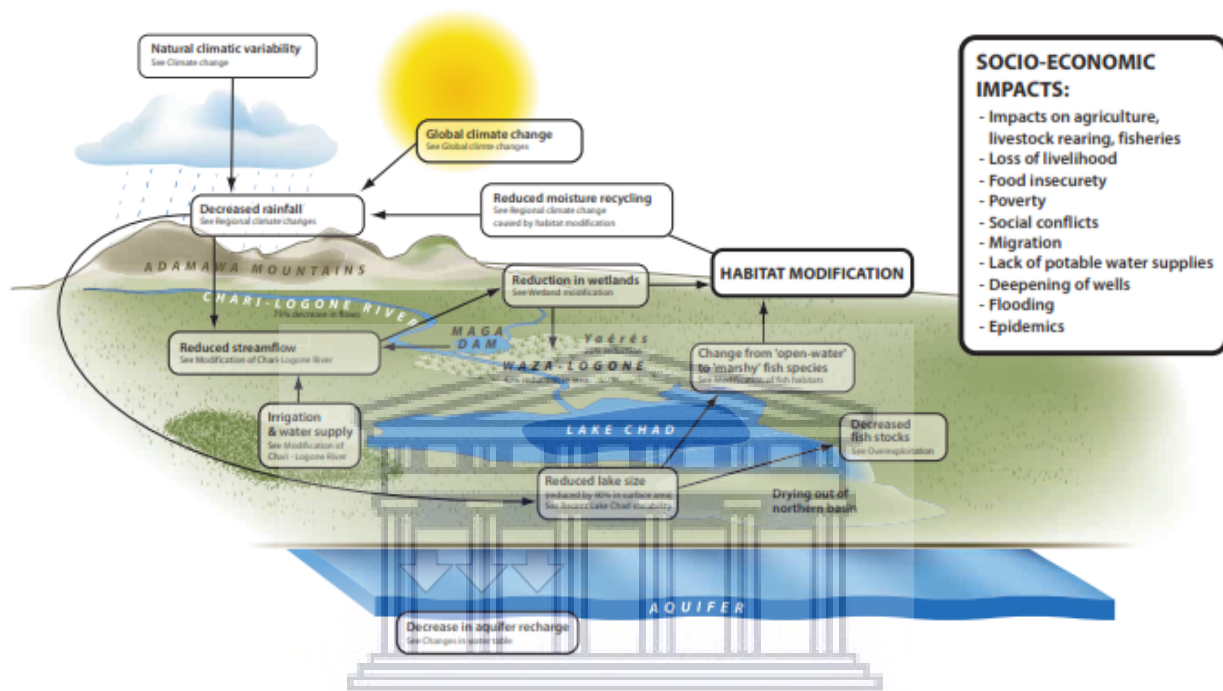
As a result, farming in the Komadugu-Yobe Basin particularly the cultivation of traditional crops such as cowpea, sorghum and millet are largely rain-fed. Also, farming in the Hadejia-Nguru wetlands along the Yobe River is practically flood farming (rice) and recession farming (cassava). As low rainfalls threaten farming in the downstream region, water needs are immensely sourced from river flow. The Tiga and Challawa Gorge – the two major dams in

the area provide large irrigation around Kano and Hadejia (UNEP, 2004; Okpara *et al.*, 2015). While agriculture (especially flood cropping and small-scale irrigation) consumes the largest water in the Basin, water from the rivers serves domestic, industrial, livestock, fisheries and ecological purposes, as well as large irrigation projects (such as the Kano River Irrigation Project) Nigeria (UNEP, 2004:89). On the contrary, Poverty is dominant in the basin, its population doubles in three decades to over 23 million and 2.5% annual rate. At the same time, while supplying about 10 percent of water to the Lake Chad some three decades ago, the Komadugu-Yobe has declined by 35% in water flow, due to the effects of climate change and water abstraction for large-scale irrigation from the two large dams constructed in the 1970s. For instance, the Komadugu Gana tributary, no longer flows into the Yobe River, thus contributing just about 1-2 percent water inflow to Lake Chad (Barchiesi *et al.*, 2014).

In general, the availability and replenishment of freshwater in the Chari-Logone and Komadugu-Yobe sub-basins is pivotal to regional socio-economic wellbeing in the Chad basin. However, alteration of the stream-flow resulting from human stream diversion and climatic variability has left terrible environmental and socio-economic outcomes. Figure 4.5 (below) outlines some of the driving influence of freshwater shortage on the environmental and socio-economic impacts in the Lake Chad Basin. Available studies on the basin reveal that the modification of streamflow and diversion of its inbound water, resulting from the construction of massive irrigation and water development schemes along these two sub-basins, have immensely accelerated the Lake Chad shrinkage mostly between 1970-2013 (UNEP, 2004; United States Geological Survey, 2014). Projects such as the construction of Maga Dam, Dyke and Yagou-Tekele in Chad, along the Chari-Logone River, including the Alau, Tiga and Yeders dams along the Komadugu-Yobe River (Nigeria) have impacted immensely on the Lake Chad water surface (Onuoha, 2008; Okpara *et al.*, 2015). The average water flows in 1970 - 1990 from the Chari-Logone sub-basin to the Lake Chad declined to 55 percent compared to the 1950–1970 level. While the diversion of water for irrigation and hydropower surged from the

1980s (GIWA, 2004), about a third of the water discharge from the Chari-Logone were also diverted in the CAR before reaching the lake Chad over the same period (UNEP, 2004; Okpara *et al.*, 2015).

FIGURE 4.5: OUTLINE OF THE DRIVING INFLUENCE OF FRESHWATER SHORTAGE ON ALLIED ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS IN THE LAKE CHAD BASIN



Source: UNEP, 2004: 75

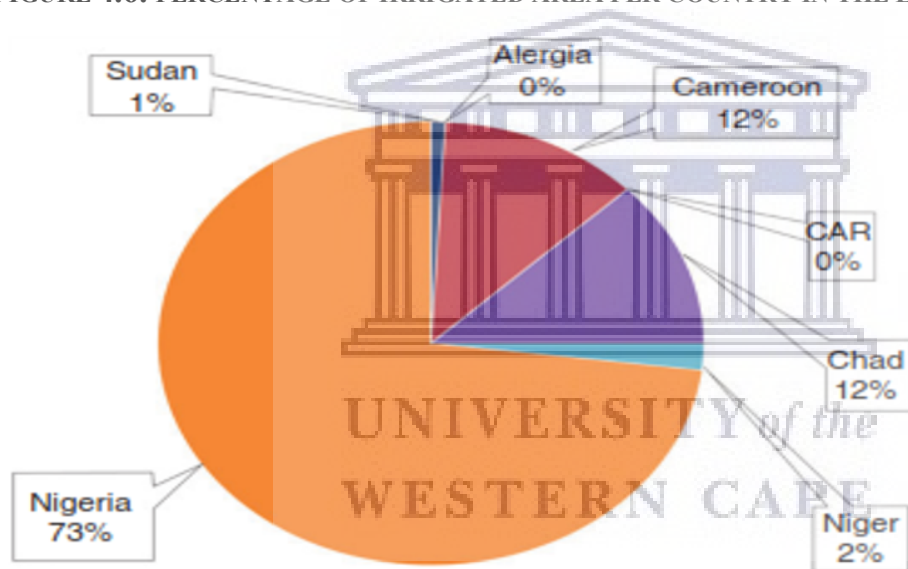
The inefficiency of these two sub-basins has induced an acute water shortage in the Chad basin. In 2000, the annual water supply per person in the basin was estimated at below 500 m amid population increase (Okpara *et al.*, 2015). The FAO (1997) estimated the region's irrigation potential to be above 1.1 million hectares while the already irrigated area is below 100,000 ha. Due to continuous reductions in its water level, developments of small-scale projects were conceived in the Lake Chad Conventional Basin Master Plan (1992) (UNEP, 2004; LCBC, 2013). Bearing this in mind, the average irrigation potential for the whole Lake Chad Basin Chad is presented below (Table 4.2). Also, Figure 4.6 illustrates the percentage of irrigated areas per country in the entire basin.

TABLE 4.2: A RESULT OF THE COUNTRY STUDIES ON IRRIGATION POTENTIALS, WATER REQUIREMENTS AND AREAS UNDER IRRIGATIONS IN THE LAKE CHAD BASIN

Country	Irrigation potential in the whole Lake Chad basin (ha)	Irrigation water requirement (km ³ /year)	Irrigation potential in the Conventional Lake Chad basin (ha)	Irrigation water requirement (km ³ /year)	Area under irrigation (ha)
Nigeria	502000	5.020	300000	3.000	82821
Niger	48000	0.936	40000	0.780	2000
Algeria	0	0			0
Sudan	4000	0.030			500
C.A.R.	500000	8.250			135
Chad	835000	12.525	700000	10.500	14020
Cameroon	100000	1.250	80000	1.000	13820
Total	1,989,000	28.011	1120000	15.280	113296

Source: FAO, (1997:3)

FIGURE 4.6: PERCENTAGE OF IRRIGATED AREA PER COUNTRY IN THE LAKE CHAD BASIN



Source: WIRES WATER, (2015:41).

By and large, unsustainable water diversion and human exploitation such as an increase in the cultivation of high-water-intensity food crops (*e.g.* rice), against the low-water-intensity food crops (*e.g.* wheat) have exacerbated the depletion of Lake Chad (Odada, Oyebande and Oguntola, 2004; Okpara *et al.*, 2015). With climate variability amplifying this menace, a surge in alkalinity has also exacerbated eutrophication (oxygen depletion) in the lake (Ifabiyi, 2013; Okpara *et al.*, 2015). Due to Lake Chad's historic vulnerability to severe droughts, water scarcity has alarmingly decreased its resource base, thus leading to several socio-economic

challenges including impairment of livelihoods across the riparian communities as depicted above (Figure 4.5).

4.4.2 The aquifers of Lake Chad Basin

The Lake Chad Basin is replete with massive areas of sedimentary formations (sand, sandstone), the continuous aquifer seats with three main classifications. They include the unconfined aquifers (“water table”); the deep or semi-captive aquifers (artesian under specific hydraulic or topographic forms); and the discontinuous layers deposited in the source areas (LCBC, 2016g). Accordingly, three-quarters of the entire basin’s area is made of Transboundary or Continuous aquifers; These include primary sandstone, Nubian sandstone, Systems of superimposed, and Cretaceous aquifers. Others are the Middle or Lower Pliocene, the Lower aquifers and the water table (LCBC, 2016g).

For instance, the lower Pliocene aquifer, located between 250 - 300m is exploited in Nigeria and Niger in the form of artesian boreholes. Thus, the (Lower Pliocene) consists of 200 m thick or deep clay sediments that isolate the Pliocene from the Quaternary aquifer, while the latter (quaternary aquifer) lying deeper under the lake at the depth of 50 - 180 m. It consists of a static depth level varying between 5 m and 80 m along the Chari River in the middle of the piezometric trough, with much of it (piezometric trough) found across the riparian countries of the lake. Yet, the water table - the main available resource exploited by the population, has a regional scope. It contains freshwater (1g/l) to highly mineralised (7g/l), and now in a continuous decline in the piezometric trough areas (Haruna *et al.*, 2012; Baba Gana & Herbert, 2014; LCBC, 2016a).

4.4.3 The management of Lake Chad Basin and its resources

The mandate of managing the Lake Chad and its entire basin areas including the shared water resources etc. is vested in the Lake Chad Basin Commission (LCBC). The LCBC is an intergovernmental organisation statutorily established at N’Djamena (the capital of Chad

Republic) where it is currently headquartered, on 22 May 1964 under the Fort-Lamy (now N'Djamena) Convention. The organisation was inaugurated by the pioneer Heads of State and Government of the riparian four countries bordering the Lake Chad – Cameroon, Chad, Nigeria and Niger. (LCBC, 2016g). The CAR was admitted as the fifth member state following the 8th Summit of the LCBC's Head of State and Government in March 1994, held at Abuja, Nigeria. This widens the conventional area of the basin to include the upper basins of the Chari and Logone Rivers and the Komadugu and Yobe Rivers or sub-basins to approximately 987,000 km² (UNEP, 2004; LCBC, 2016g). In 2008, Libya was admitted, while Egypt, the Democratic Republic of Congo (DRC), the Republic of Congo and Sudan hold observer status in the LCBC. Hence, the conventional basin currently stretches at 984,455 km² (AFROSAI, 2015), incorporating virtually all the river - tributaries supplying the lake, and the aquifers and floodplains in the entire basin areas.

Meanwhile, the LCBC's mandate is to manage the Lake Chad and other shared water resources of the basin sustainably and equitably; preserve the ecosystems of the Lake Chad conventional basin; and promote regional integration, peace and security across the region. Activities of major national institutions (ministries, departments and agencies) in the riparian countries also complement the LCBC in managing the Lake and the sustainable use of its resources. These include National institutions for coordinating the implementation of the LCBCs 'Action Programme 21' in Cameroon, Chad, Niger and Nigeria (UNEP, 2004) and relevant national environmental, water and agricultural resources related agencies etc.

The LCBC has further drawn up more ambitious plans. This includes a Master Plan which appraises the general state of the basin and identifies concerns, opportunities and constraints on regional conservation and development priorities. The LCBC Action Plans enumerated some 36 projects, in addition to the feasibility of inter-basin water transfer from the Ubangi River toward recharging the Lake Chad (LCBC, 2016g). The priority projects undertaken include Adaptation to Climate Change in the Lake Chad Basin (GIZ); Advice on

Groundwater Resources for the Lake Chad Basin Commission (BGR); The Inter-Basin Water Transfer (IBWT); The organisational Advisory Services for the LCBC; The Lake Chad Basin Initiative (LCBI); The Programme for the Sustainable Development of the Lake Chad Basin (PRODEBALT) etc. In addition to its commitment to the integrated water resources management and regional development processes, the LCBC facilitated the re-operationalisation of the erstwhile Joint Task Force in the region into a Multinational Joint Task Force in 2015. This was indeed reactivated to preserve the peace, security and stability of the region against the incessant menace of Boko Haram terrorism (LCBC, 2016g).

4.5 Lake Chad's population: History, Demography, Economy, and Conflict dynamics

The history of Lake Chad Basin is directly and intricately associated with the managing of its array of vital natural resources, a tale that reflects its uniqueness across ages. The Lake Chad Basin was a significant trading epicentre connecting the Northern and Central Africa, long since the heydays of great empires including the Kanem-Bornu, Baguirmi, Waddai and Mandara (LCBC, 2016e). The region is an important historical route in the trans-Saharan trade between the 8th and 17th Centuries. The connections among the region's populations and communities are characterised by a web of historical, economic and socio-political ties including religious, ethnic, cultural affinities, the people are interdependent across national borders. Migration – economic and religious, including seasonal transhumance (of livestock), is prevalent across the region. Thus, generations of mostly men from Niger, Cameroon, Chad and elsewhere have travelled to learning centres in Northern Nigeria, including Maiduguri for Islamic and Arabic Scholarships. Additionally, a network of transhumance routes exists where traders and pastoralists travel seasonally across the length and breadth of the region (UNHCR & The World Bank, 2016). This experience transcending contemporary national boundaries has strengthened the traditional or long-established bonds among the people of the Lake Chad

Basin. Hence, its peculiarity and vitality have manifested in the region's problems and its population's resilience and approaches to solving them.

The European explorations in the 19th Century attracted foreign lust to the basin, the 1884/85 Berlin Conference partitioned its communities into British, French and German colonies. In this way, the basin as an international space was opened to navigation as European powers carved out three spheres of influence in the region. However, the defeat of Germany in the First World War (1914-1918) and being part of the provisions of the Versailles Treaty (1919), the German space was divided between Britain and France, with more entrenched colonial development model for the region promulgated. Consequent upon decolonisation of most African territories in the 1960s, the independence of Cameroon, Nigeria, Chad and Niger provided an impetus by the riparian countries to address the challenges of water recession and environmental catastrophe in the basin. Thus, the emergence of LCBC marked a watershed in the history of Lake Chad Basin and the management of its natural resources (LCBC, 2016f).

4.5.1 Population dynamics of the Lake Chad Basin

Apart from its vital natural resources, Lake Chad Basin possesses abundant human resources. Between 1990 to 2003, the population across the basin rose from an estimated 11.7 million to 37.2 million (LCBC, 2016e: 2), The populations of the conventional basin across the four riparian states in 2013 was estimated at 30 million (AFROSAI, 2015:15). The current Lake Chad Basin's total population density is estimated at 50 million (LCBC, 2016e:1). The total population figure of the entire Lake Chad Impact areas across the riparian four countries is presented thus: Cameroon – 3,600,000, (General Census of Population and Housing – RGPH, 2008); Chad- 11, 175,915 (RGPH, 2009); Niger – 1,364,807 (National Institute of Statistics (INS), 2012); and Nigeria – 15,900,000 (National Population Commission (NPC) 2006) (GIZ, 2015:14). The statistics reflect the annual population growth rates of 2.5 to 3.0 percent, as projected by the World Shore (2002).

The basin's population is drawn from numerous ethnic groups or tribes. These include the Buduma, Kanuri, Mobbber, Kanembu, Haddad, Kotoko, Hausa, Fulani, Shuwa Arabs, Manga and Kuri. The main cities in the Lake Chad area are Maiduguri, Kano, Damaturu, N'Djamena, Diffa and Maroua etc. (LCBC, 2016e). Their livelihood is highly subsistence, with activities such as fishing, farming, hunting and animal husbandry and fuelwood collection prevalent and largely dependent on the basin's water resources.

In Nigeria's side of the lake, population density is very higher, while the more arid northern areas of the basin are sparsely populated. Meanwhile, rapid urbanisation, as well as destitute from rural communities migrating in search of greener pastures to the flooded southern basin of Lake Chad basin cities such as Kano and Maiduguri (Nigeria) and N'Djamena, Chad is also prevalent among the region's population. The World Shore, 2002 categorised the Lake Chad demography as youthful in terms of age composition, especially in the riparian southern states. For instance, almost fifty percent of the population of Niger Republic is below age fifteen and just two percent above age sixty-five (LCBC, 2016e:2). According to the LCBC (2015) analysis of the IMF (2013) figure, LCBC states situated farther north (i.e both the eastern and western fringes) of the northern outskirts of the basin are of higher population proportion above 65 years, with a demographic pattern less tilted towards youthful age group structure less skewed towards youthful age ranges. More equally, the population in the basin is largely rural. An example is Chad (occupying 46 percent of the basin's surface) with almost 80 percent rural inhabitants (LCBC, 2016e:2).

The transboundary diagnostic analysis of the basin carried out by the LCBC reveals that population distribution is uneven among the countries in the basin, with the highest population densities in Nigeria's Lake Chad basin area. For instance, Nigeria shelters an estimated 22 million people (about 59 percent) of the entire population living in the region. Conversely, the northern and eastern interiors in Algeria, Libya and Sudan, sharing almost 6% of the basin land area, contain about 2.7 million inhabitants (7 percent) within the basin area.

Similarly, the population of Cameroon's extreme northern city of Garoua has also rapidly increased between 1987 and 2003 from 122,600 to 287,000 (Bdliya & Bloxom, 2008; LCBC, 2015). The General Population and Housing Census (RGPH) of the CAR illustrate the population of Region 3 (adjoining the Lake Chad Basin), comprising both Ouaham Pende and Ouham Prefectures, consists of 606,339 inhabitants (AFROSAI, 2015; LCBC, 2016e).

The region's population growth rate has largely impacted on the receding Lake with enormous socio-economic and security implications for the entire region. Population pressures on the land resources have triggered a decline in pastureland and, to a considerable extent the narrowing of transit corridors for livestock - one of the region's major economic activities (see below). This has resulted in a further decrease in feed crop production, while the livestock population has also doubled, placing an additional burden on plant cover than can be naturally sustained (UNEP, 2004). The prevalence of this in Niger and Chad has triggered massive migration down south to the Lake areas and other villages in Nigeria to as far as Adamawa, Benue, Plateau and Nasarawa states etc., where nomadic herdsman and sedentary farmers conflict over grazing rights have constituted threats to national and communities' security.

4.5.2 Economy and economic activities of the Basin's population

From 2014, livelihoods of estimated 2.2 million populations directly depend on resources from the shores and islands of the Lake Chad, while about 50 million people live within its conventional basin (Lake Chad Basin Commission, 2016a; UNHCR & The World Bank, 2016: 28). Fishing, flood- recession agriculture, livestock herding and hunting feature prominently as primary sources of income to the region's inhabitants. The basin area has a rich agricultural potential which makes it a net food exporter and a source of seasonal occupations due to its relatively reliable source of water, food, fertile soil and rich biodiversity (Onuoha, 2008; UNHCR & The World Bank, 2016). However, the weakening of Lake Chad and its sub-basins due to rainfall deficit, desertification and harmful irrigation practices, leading to an estimated

loss of water resources in the basin areas, exacerbates human security threats in the region and environs amid other socio-economic predicaments (LCBC, 2016a). This is peculiar to transboundary water bodies in other world regions, especially in the Global South.

The Lake Chad Basin economy is predominated by the primary and tertiary sectors. With a very low technical progress in the tertiary sector, informal and low productivity is very high in the region (UNEP, 2004). In general, the region is less industrialised, the populations are primarily engaged in informal activities such as farming, fisheries and forestry, livestock production and herding, including other handicraft processing works (LCBC, 2016b). The primary sector accounts for the livelihood and employment of above 80 percent of Lake Chad's population, predominantly farming, fishing and pastoralism. Table 4.3 (below) illustrates the income base and some major socio-economic activities in the basin region. However, oil exploration in Chad since 2003 and Niger since 2009 has enhanced some level of industrial development. The petroleum resources purportedly discovered in Nigeria's sedimentary basin of the Lake Chad are yet to be exploited due to insecurity and other structural challenges.

Moreover, industries in the region vary in number and sizes per country, although there are largely few industries available in comparison with the rest of West Africa or non-basin areas in Cameroon, Niger and Nigeria. Recently, Agribusiness and medium scale industries including textiles and tanneries have been developed, while high-scale industries are still very few (World Bank, 2008). Most of the region's industries are concentrated in the urban areas, disproportionately sited with the most in north-eastern Nigeria and Cameroon (although moribund), the axis in Niger, Chad and CAR have minimal industries. Popular among the agro-industries include leather industry, cotton ginning, breweries, milling and food industry, etc. Mining activities include oil production and gold mining in Chad (LCBC, 2016g).

TABLE 4.3: INCOME SOURCES OF HOUSEHOLDS IN THE LAKE CHAD REGION

Activities	Million \$ US
Fisheries	45.1
Rain fed and flood recession agriculture	26.6
Animal husbandry	14.7
Small scale irrigation	10.8
Large scale irrigation	9.4

Source: Lake Chad Basin Commission, 2016e:1

Agriculture, practiced by over half of the basin's population, is the region's main economic activity. The estimate of land under cultivation is summed at over 2,800,000 hectares, distributed thus among the four adjoining states of the conventional basin: Nigeria - 560,000 hectares; Chad - 125,000 hectares; Cameroon - 44,500 hectares; and Niger - 2,010,000 hectares (AFROSAI, 2015:9). Meanwhile, cultivable land currently estimated above 7,000,000 hectares, increased due to water loss as the lake shrinks. As a result, flood recession agriculture, rain-fed agriculture, and irrigated farming are the main patterns of farming practiced by the basin's populations (AFROSAI, 2015:10; Lake Chad Basin Commission, 2016e:1). These contribute to the growth of irrigation projects as irrigation agriculture remains prevalent in the region (Table 4.2 and Figure 4.6 above).

Remarkably, the national governments have constructed a network of dams with water supply from the lake and its tributaries for irrigation, particularly in the 1970s and 1980s. For instance, about 20 are erected along the Komadugu-Yobe River in Nigeria including water catchment facilities, and illegal channels dug out by farmers along the river for water diversion to their farmlands (AFROSAI, 2015; LCBC, 2016g). The Chadian government in 1999 also built the Project *Mamdi*, a 1,200 hectare of polders in the Mamdi department, Bol, main town of Chad Republic's Lac-region, with assistance from the AfDB and donors. While Cameroon's SEMRY programme (Yagoua Association for the Expansion and Modernisation of Rice Culture), in its Extreme Nord region experimented with the Maga Dam in 1979 to aid a rice-producing public enterprise in the (UNEP, 2004; LCBC, 2016g). Although the bulk of

agricultural production in the region is for the inhabitant's subsistence, these efforts have improved the cultivation of cash crops such as cotton and rice in Cameroon and Chad, and peanuts in Niger and Nigeria. Other food items such as rice, maize, wheat, sorghum, potato, melon, tomato, capsicum, onion and garlic are cultivated to boost food security in the region.

Fishery, as a source of livelihood for the region's inhabitants, contributes to its peasant economy. Several fishermen and their families surround the lake's shores and islets, including Dabouroun, Kalom, Kindjera, Kika, Kofia, Ngelea and Tebour. This is because over 120 fish species have been recorded in the Lake while its flood plains sustain rich terrestrial and aquatic fauna. Unfortunately, fish sizes, varieties and quantities have been negatively impacted due to the lake's recession. For instance, annual fishing was reputed between 130, 000 - 141, 000 metric tons, a drastic reduction by 2014 to an estimated 50, 000 - 70, 000 tons (Baba Gana and Herbert, 2014:280). Notable species of fishes in the Lake include tilapia, silverside fish (*alestes baremoze spp.*), moon fish (*Citharinus citharus spp.*), African carp or ray-finned fishes (*Labeo coubie spp.*), butter catfishes (*Schilbe spp.*), African arowana (*Heterotis niloticus spp.*) and *Citharinops distichodoides spp.* etc. (UNEP, 2004; Baba Gana & Herbert, 2014). Small or young fishes are most left in the basin rivers compared to large varieties of the past, thus average local fishermen income has declined from about \$100 US a day to \$6 US (Baba Gana & Herbert, 2014:280). The reasons include the high mortality rate of aquatic animals, extinction of many open-water species, depleted biodiversity around the river system and decreased rainfall. Unsustainable fishing techniques have also exacerbated the decline.

Livestock or animal husbandry including the rearing of cattle, horses, camels, donkeys and sheep etc. by the locals and nomadic herdsmen is an important economic activity in the region. Meat from livestock constitute the major dietary needs of the population. For instance, in Chad, 83 percent of its working population combines crop production and livestock primarily for domestic sustenance. While only 25 percent of the land is cultivated, about 50 percent is grazed in Chad (UNEP, 2004:12). In Niger's Lake Chad basin area - the Diffa region,

its arid and semi-arid area bolstered by a Sahelian climate suited for livestock breeding. Animal husbandry contributes an annual estimate of 286 billion CFA francs in value to the region's economy (AFROSAI, 2015:10). Moreover, Nigeria's Borno state is renowned as West Africa's biggest livestock centre, cattle exports largely to Nigeria constitute substantial foreign earnings for the economies of other riparian countries (UNEP, 2004). A remarkable surge in the region's livestock production is attributed to the control of livestock diseases in the region and the conversion of a large proportion of fishermen to pastoralists as a result of the lake's decline (GIZ, 2015). Conversely, negative consequences of climate change often force most of the region's pastoralists to migrate with their herds in the rainy season, with serious security and socio-economic consequences for migrants, the sedentary farmers and their communities.

Despite the population's resilience, the region is confronted with human development challenges. For instance, Nigeria's north-east region has the least human capital development, the least literacy rate, living standard, employment rate and health care expenditure across the country (NBS, 2014). Given the disparity in the population's access to health care and education across the conventional basin, the health standard of the rural inhabitants is largely lower compared to urban inhabitants. Therefore, educational and health indicators illustrated below in (Table 4.4) provides the national statistics for aspects of human development in the four LCBC riparian countries.

TABLE 4.4: HEALTH AND EDUCATION INDICATORS OF THE LAKE CHAD BASIN

Indicators - Health & Education	Chad	Cameroon	Nigeria	Niger
Life expectancy (2000)	48	50	47	46
Infant mortality /1000 Live births (2000)	101	76	84	114
Under nourishment prevalence, % of pop (96-98)	38	19	8	46
Incidence of TB/100,000 people	270	335	301	252
Medical Doctors/1000 people (1990 – 1999)	>0.05	0.1	0.2	>0.05
Health care expenditure, % of GDP	2.9	5	2.8	2.6
Adult illiteracy, male, %: 15 & more (2000)	48	18	28	76
Adult illiteracy, female, %: 15 & more (2000)	66	31	44	92
Gross primary school enrolment rate, number of school age children (1998)	67	90	n.d.	31

SOURCE: LCBC, 2016E

4.5.3 Conflicts and regional security dynamics

In the Lake Chad, water utilisation and management are considerably managed among the riparian states, although water scarcity negatively impacts on human vulnerability and resilience capacities, thus stimulating conflict and social tensions across the region. Major drivers of conflict identified by previous researches include environmental change-induced scarcity of water resources, demographic expansion (above 100 individuals per m²), poverty amid dwindled GDP per capita (estimated below US 765 Dollar per person in a year), unsustainable water development projects/dams, inadequate water-governing agreement or treaties (Odada, Oyebande & Oguntola, 2004). The effects of climate variability such as rainfall shortages, frequent droughts, including the loss of river run-off have far-reaching consequences on the people's livelihood and regional security, the conditions in one riparian community bring adverse repercussions in another – due to spatial and temporal variations generated by environmental change.

Moreover, records of regional water crisis during the 1980s - 1990s droughts are replete with cases of militarised conflicts over water claims and migration of water dependents as the lake recedes. Meanwhile, some 60,000 fishermen, farmers and pastoralists mostly Nigerians followed the shrinking lake to Cameroon border and elsewhere in the basin between 1980 and 1994 in search of arable lands and pastures (Hall, 2009:25; Okpara *et al.*, 2015:314). In effect, hostilities among communities leading to loss of lives often occur when the diplomatic process in the receiving communities fail, with implications for regional security and development. Migration of pastoralists, mostly southward, in search of greener pastures occur with utter disregard for national boundaries and farmlands, while the resultant crises are often politicised.

The early refugee crisis in the region was due to the droughts across southern Mauritania, Niger, Burkina Faso, and Chad in the 1970s and 1980s. Other drivers of conflicts include politically active minority ethnic groups, social injustice, high illiteracy rate and violent extremism boosted by the spillover of crisis in Darfur, the CAR and Libya etc., including the

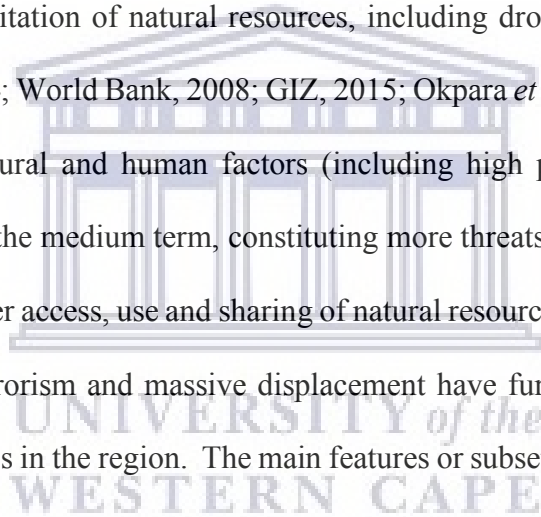
proliferation of light weapons and ammunition. Impairment of livelihoods (pastoralism and farming) mostly by environmental challenges across the River Niger and the Lake Chad Basin the Niger River and Lake Chad basin induce criminality. Accordingly, drug trafficking, illegal migration, smuggling and banditry is renowned in the region including among the Tuareg and other nomadic groups from Mali, Niger and Chad (Lyman, 2008). The second wave of regional conflict dynamic was warranted by civil disorder in Chad and Sudan, and recently Mali and Niger. This intersects with the desertification of the northern Sahel to exacerbate food insecurity and population displacement, particularly in the 1990s. Refugees displaced by the Sudan conflicts spill into Chad and further south. The World Food Programme (WFP) estimated 435,000 of them residing along Chad's borders, more than 3,000 and another 3,500 Chadian refugees crossing into Cameroon and Nigeria respectively in the 1990s and early 2000s (Hall, 2009).

Recently, conflict in the region (Lake Chad) is dominated by the threats of Boko Haram terrorism. The crisis erupted in 2009 from Northeast Nigeria with horrific attacks against civilians, extensive devastation of private and public amenities, killing and mass abductions. From 2014, the violence spreads to the adjoining LCBC member countries - Cameroon, Chad and Niger. Underlying the raging crisis is a history of political and socio-economic marginalisation, poverty, misgovernance and environmental degradation. The Boko Haram crisis imposed loss of lives, displacement of above 2.5 million persons (IDPs) etc. across the region (UNHCR and The World Bank, 2016). As observed since 2018, many of the region's population live in conflict-ridden localities, where aid or caregivers cannot reach. Most are confronted with desperate conditions such as lack or limited access to food or clean water, chronic hunger, malnutrition and diseases etc. These reveal the dominant security/conflict dynamics in the region.

4.6 Chapter Summary

From a critical illustration of the intrinsic features of the Lake Chad Basin, the environment and natural resources, shape the security and well-being of its population, allied flora and fauna. Thus, sustainable socio-economic development and transborder cooperation in the region revolve around its effective management (locally and multilaterally). Meanwhile, regional population dynamics worsened economic or livelihood patterns vis-à-vis conflicts and regional insecurities emanating from the evaporation of the Lake and allied resources, have significantly affected regional development and indeed human security in entire Lake Chad Basin.

Explanations above reveal the complex nature of Lake Chad environment, of which climate change, overexploitation of natural resources, including droughts and desertification are prevalent (UNEP, 2004; World Bank, 2008; GIZ, 2015; Okpara *et al.*, 2015). The combined phenomena such as natural and human factors (including high population growth) have affected the population in the medium term, constituting more threats to the region at large. In effect, several conflicts over access, use and sharing of natural resources in the basin, including migration, criminality, terrorism and massive displacement have further heightened regional security-development crises in the region. The main features or subsets of the Lake Chad basin such as its geography, climate and ecology, water resources and management including the source basins (tributaries) and aquifers, the history, demography, economy and conflict dynamics of its population etc. illustrated provides a background for deconstructing the dynamics of regional security and regional development outcomes across the case study areas. These are further synthesised into critical analyses against dominant narratives about human security in the case study area.



CHAPTER 5

PHILOSOPHY AND METHODS OF RESEARCH

5.1 Introduction

The chapter discusses the philosophical perspective and the methodological processes that guide the research. Critical Security was presented as a meta-theoretical abstraction that broadens security with the socio-economic, environmental and political domains. Its critical thoughts enable proper deconstruction and emphasis on causal explanations from qualitative explanations and quantitative assessment of human security-development and social structure. Additionally, the research design, sampling, data collection and analysis process including the procedures for its construct reliability, validity and reflexivity were elucidated in the chapter. The ethical considerations of the research were also outlined.

5.2 Philosophy of Research: Critical Security Approach

Critical security embodies a post-positivist thought drawing its theoretical origins in the Copenhagen school. Its emphasis on multi-sectoral approaches to security intersects economic, political, social and environmental domains. It critiques the traditional approach to security and proposes wide alternative thinking for operationalising security and its implementation in broad terms. Fundamentally, the approaches are underpinned by epistemological and ontological disparities which may not be reconciled, although similarities and relative utility exist among them through which synthesis can be drawn (Sheehan, 2005). Applying the basic ideas of critical theory to security demonstrates its usefulness in generating a unique understanding of the concept and enhances its broader utility (Jones, 1999).

Critics of the traditional approach put forward a wide range of issues to be incorporated into the security agenda. Scholars of differing theoretical realm subject security notions to unprecedented scrutiny and interpretation beyond the dominance of national security. An intellectual debate built around a tangible set of issues explored by several realists, neorealists,

poststructuralists, neoliberal institutionalists, and critical theorists manifest in different theoretical and metatheoretical discourse (Jones, 1999). A profound debate from the proponents of the broadening of security, particularly Barry Buzan and Ole Waever among other proponents of security broadening gave the securitization process a “metatheoretical” purpose, and classified security issues as necessities of political and social discourse (Sheehan, 2005).

Critical human security is a branch of the non-traditional security approach. It opposes the narrow orthodox state-centric conception of conventional security, premised upon military territorial defence against external threats. It also contradicts the neorealist premises and advocates a broadening of the security agenda by privileging individual as the referent of security discourse, to which policy attention should be redirected (Roberts, 2005; Sheehan, 2005). Critical security challenges to the neorealist orthodoxy is a more sophisticated theoretical shift beyond the conception of human security. It criticises the Neorealist emphasis on parsimony and coherence, which thus privileges the rational state-centric worldview that is premised on the pre-eminence of military power and an anarchic environment. It also rejects the neorealist views of order and predictability as positive values, without losing sights of rejecting the realist’s ontology and epistemology, its basic assumption of the fundamental aspects of the world, what should be studied and how reliable and legitimate knowledge can be generated (Newman, 2010). Critical approaches believe knowledge is socially contingent, it condemns positivist, claims of universal knowledge and value-free truths, insisting security is a subjective notion and far from being an objective or apolitical phenomenon. Consequently, critical approaches argue in favour of humans as a referent object of security. In recognising this fact Booth (2005) asserts that “the only trans-historical and permanent fixture in human society is the individual physical being, ...which is the ultimate reference in the security problematique.”

The Copenhagen School criticises the securitisation process for moving issues from ‘normal’ (democratic and accountable) politics to emergency politics, and strongly emphasises the need for a precise understanding of who securitises what issues (threats) for whom (its referent objects) why (reasons for securitising) with what results and under what conditions. Thus, it believes the essence of ‘desecuritisation’ provides incentives for cooperation and understanding. Some critical security theorists, therefore, assume that critical security should be adapted to the critical social theory of the Frankfurt School owing to its emancipatory potentials. Accordingly, from critical theory perspectives, Jurgen Habermas argues that knowledge should serve an emancipatory purpose. He proposes a combination of causal explanations and hermeneutics in critical theory in evaluating the problems and potentials of modern society, towards emancipating humanity (Bohman, 2016).

The Welsh (Aberystwyth) school adopts a strong normative conception of security as emancipation – enabling people’s freedom, individually or collectively, from a contingent or structural oppressions (Diskaya, 2013). In his critical explanations, Newman (2010) called this a self-conscious reflectivist epistemology and sees security as social and intersubjective construction, something contingent on power relations. Ken Booth and Richard Wyn Jones pioneering work shared the Aberystwyth School’s viewpoint. In reconceptualising security, they believe human emancipation is essential to ‘true’ human security. Hence, the realist’s conception of ‘power’ and ‘order’ cannot lead to ‘true’ security because the sovereign state is not the real source of security, but one of the major causes of insecurity (Booth, 1991, 2005; Jones, 1995). For Booth, true security is attained by individuals and groups will and commitment of not depriving each other’s security. Accordingly, emancipation “offers a theory of progress for politics, and provides for a politics of hope and gives guidance to a politics of resistance...” Thus security and emancipation are closely related and are two sides of the same coin (Booth, 1991).

Without accepting its conceptual sophistication, human security maintains the critical security's objective of de-essentialisation and deconstruction of prevailing security claims, (Williams and Krause, 1997). Disapproval of the conventional state-centric neorealist view of the military security model is embedded in the critical security approach. Human security reveals the link between development and conflict. Human security thinking is pragmatic about creating solutions to threats of human progress and emancipation. Despite contesting the primacy of the state, it concedes the reality of finding solutions to human threats to state power, although in concert with other actors and considerably influencing foreign policies. Human security's approach to dealing with the state is liberalism and unprejudiced in believing that if well oriented, the state can serve the purpose of humanity. This is a contrast to some critical security views.

Human security takes cognizance of the prevailing social relationships and its institutional settings as a framework for action and policy suggestions. It attempts to improve human conditions within the political, legal, and practical boundaries through policies without challenging the existing structures - gender, economic and political power arrangements (Newman, 2010). Understanding the factors enabling or constraining human progress gives an adequate response to such enablers or impediments and by extension rededicating state resources and actors' attention. By unravelling previously unidentified constraints on human progress, critical thinking highlights the imperative of knowledge not only as explanatory and descriptive but as critical, evaluative and emancipatory (Williams and Krause, 1997). Booth and Jones shared this view in emphasising the potential change in human relations while refusing the realist's determinism as a means to alternative security objectives (Newman, 2010).

Newman (2010) claims that human security remains emancipatory despite its inability to problematise ontology, in elevating individual as the referent object of security it advocates a strong state as an essential condition for individual security, this warranted many critical

security adherents to brand it as uncritical and unsophisticated. Therefore, the main argument of human security scholarship is to address prevailing human insecurity including but not limited to underdevelopment, environmental degradation, epidemics, migration and conflicts, in collaboration with existing institutions, anticipating that resources and attention would accumulate from securitising the threats when considered in reference to individuals. Hence, it is consequentialist and less fundamentally revisionist compared to critical security.

Adapting critical thoughts to a case study methodology research on human security and regional development enables proper deconstruction and analytical studies owing to its strong emphasis on causal explanations (positivism) and hermeneutics (textual interpretation). Roberts (2005) explains the usefulness of quantitative assessment of human wellbeing and measuring poverty resulting in a complex statistical formula beyond the qualitative influence of conflicts and social structure. A case study analysis of human agency can also explain the interactions between wealth, poverty and opportunities, a relevant theme essential to this research. Critical methodologies, such as discourse analysis, investigate or problematise the values and factors of institutions and actors. This was employed in constructing the narratives on human capability, security and regional development particularly in areas of policy initiatives and social relationships among the population (Newman, 2010).

Critical inquiry employs critical methods and usually interdisciplinary styles of explanation (Bohman, 2016). A multidimensional perspective from the combined strengths of quantitative methods to develop reliable descriptions and comparisons was crucial to illustrate effective patterns, examining causal mechanisms and its prevailing conditions. While qualitative open-ended lead and focus allow observable and unpredictable themes to clarify complex concepts and relationships, thus lending credence to multi-method triangulation, where information on the phenomenon is gathered from different methods to determine the convergence among variables and validity in research findings (Balzacq, 2014). The Critical security's post-positivist debate on de-essentialisation and deconstruction of conventional

state-centric neorealist view on security models provided a metatheoretical explanation and analytical evidence. These are essential for reconstructing the regional security-development narratives of the Lake Chad Basin. Therefore, an additional understanding of the case study's complex situations and socio-economic development matrix can thus be extrapolated with explanations from other parts of the Global South.

5.3 Research Design

Research design provides the framework or “logical structure” for conducting a specific study (De Vaus, 2001: 6). It conceives the plan and procedures to be adopted by the researcher in answering questions accurately, objectively, validly and economically. The main purpose is to explain how the researcher intends to find answers to the elicited questions (Kumar, 2010). The research design describes the methodology of the study, the processes, and tools for data collection and analysis.

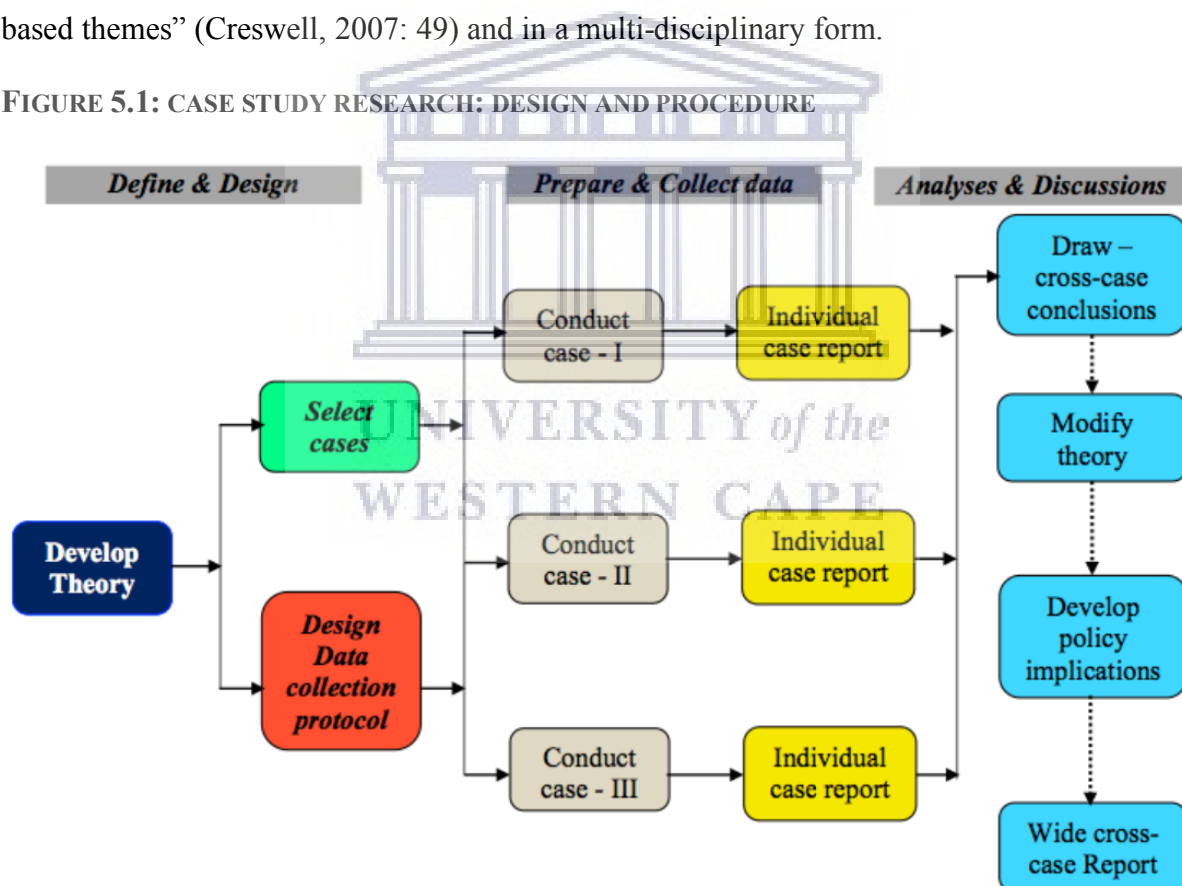
5.3.1 Case Study Methodology

The study is a Mixed Method Research, *i.e.* involved both qualitative and quantitative methods of data collection. A case study design (Figure 5.1) was used to investigate the trends and effects of human security issues and the desiccation of the Lake Chad basin on livelihoods, resource use and conflicts, as well as regional development outcomes and interventions in the Lake Chad. The case study method includes the utilisation of both qualitative (90%) and quantitative (10%) data and approach. It allows for flexibility and integration of secondary quantitative data to draw interpretations based on the combined strengths of both primary (qualitative) and secondary (quantitative) data, which may be inadequate if operationalised in one method (Morgan, 2014; Creswell, 2015).

Case study research exhaustively investigates one or a small set of cases by focusing on both the context and several details within each case's internal characteristics and the surrounding environment. The cases according to Neuman (2014: 42) can be individuals,

groups, organisations, events, movements, or geographic units. The case study also enables researchers to link the micro-level – actions of individual(s) to the macro-level (large-scale) social structures and processes (Vaughn,1992 cited in Neuman, 2014: 42)). The rationality of case study design, Walton (1992, cited in Neuman, 2014: 42) argues, is to reveal how causal explanation of general social forces determine and produce outcomes in a milieu (Figure 5.1). Creswell (2007) maintained that “ a Case Study design explores a bounded system (a case) or multiple bounded systems over time, through detailed, in-depth data collection involving multiple sources of information (such as observations, interviews, focused group discussions, official documents report and audio-visual materials) and reports a case description and case-based themes” (Creswell, 2007: 49) and in a multi-disciplinary form.

FIGURE 5.1: CASE STUDY RESEARCH: DESIGN AND PROCEDURE



Source: (Yin, 2009: 50)

Moreover, it investigates contemporary, less historical and more observational issue(s) or event(s) within its real-life context, particularly when the boundaries connecting the phenomenon and context are not seemingly evident. Scientifically, it stresses the symbiotic

relationship between theory and data and does not require control over events. The theoretical orientation of the design shape data collection and critical for answering “how” and “why” (explanatory and descriptive) questions, while to a certain degree applicable to a “What” research question, especially for a relativist/subjective approach (Yin, 2009: 10). The case study method is stimulating to study a phenomenon that is less clearly or sufficiently theorised, or complex (several actors, issues, processes, goals, and effects, etc.). Its adaptability to different types of research questions and setting enable researchers to keep pace with contemporary and changing phenomenon/field. The focus on multiple sources of evidence enables the triangulation of findings and accessibility of the study to a wider readership. Nevertheless, a case study can be very demanding, concerns for selection bias (i.e. choice of case biases) and its unsuitability for statistical generalisation (i.e. the challenges of experimental and statistical control) are some potential weaknesses. The case study methodology is prevalent in qualitative research, its broad paradigmatic flexibility, theory-testing and theory-building capability etc. are largely suitable in a mixed methodology approach (Babbie and Mouton, 2001:159).

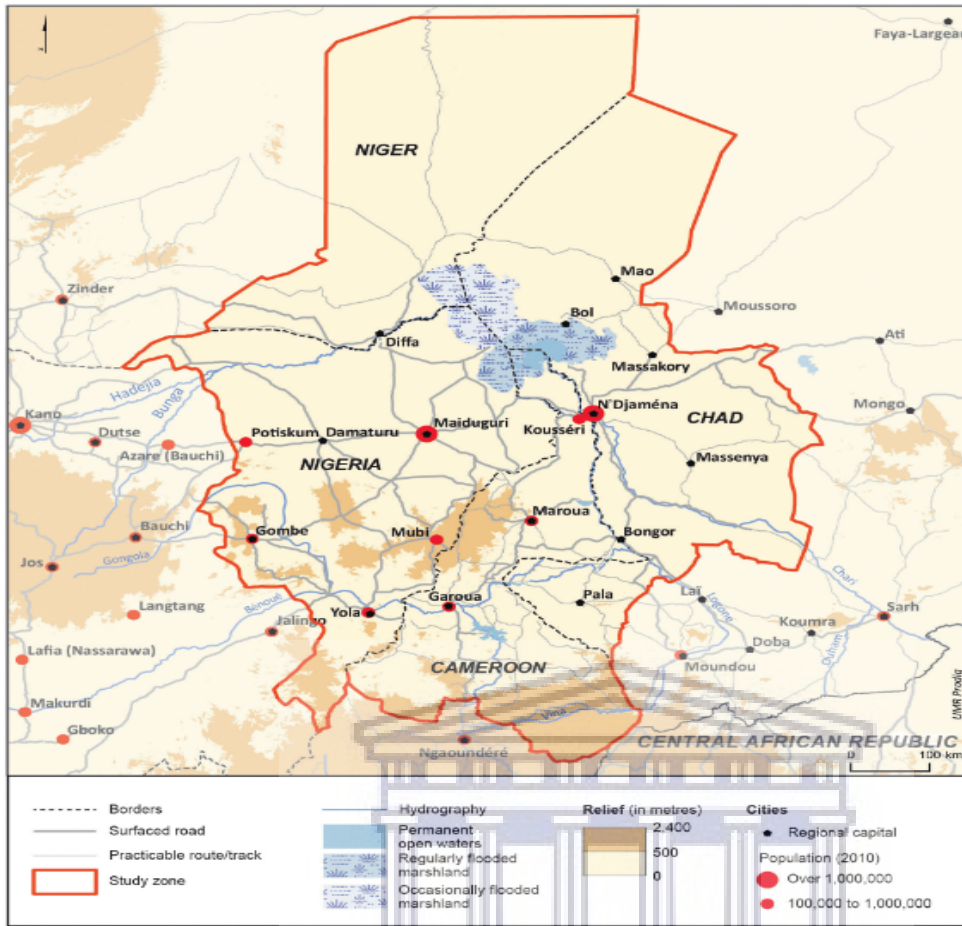
Consequently, the cause-effect analyses of human security and development challenges were conceived thematically within the case study context - the Lake Chad basin and its peculiar features. Secondly, the process of regional development and efficacies of interventions were conceived in relation to the official reports of significant actors involved (groups, institutions - local and multilateral) and testimonies of the population as (beneficiaries). This is aggregated thus:(i) human security challenges - factors and effects (ii) Development policies/programmes and security interventions; (iii) (effects on) the beneficiary’s (population) wellbeing, communities and resources. The case study’s analytical tools - qualitative interviews with key informants, focused group discussions, institutional documents review and the researcher’s field observations, thus place the emerging human security and regional

development issues, regional development capacities and interventions in critical perspectives (Figure 5.1) Therefore, the study's analysis and submissions were more opinion-based than statistically generalised. Data were collated into manageable forms to construct narratives. While component cases were treated individually, cross-case conclusions were also drawn to provoke reasoned debate.

5.3.2 Research Setting

The Lake Chad Basin is situated at the periphery of the Sahara Desert and the semi-arid savannah of the Sahel in West-Central Africa. It lies between the latitude 6° and 24° and the longitude 8° and 24° E. Its surface area was $25,000 \text{ km}^2$ in 1963, with an altitude of 280m of and a depth limit of 4m is currently $2,000 \text{ km}^2$ (Odada, Oyebande and Oguntola, 2004: 308; Baba Gana and Herbert, 2014: 279; LCBC, 2016b:1) with multitude implications for regional development. The study specifically offers critical analyses of human security and regional development narratives across the riparian (four) countries of the Lake Chad - Cameroon, Chad, Nigeria and Niger. The entire surface area covered is limited to the $542,829 \text{ km}^2$ areas (see Figure 5.2) directly bordering Lake Chad in the four countries (Magrin and De Montclos, 2018: 14). This includes an estimated $149,695 \text{ km}^2$ in Nigeria across four of its six north-eastern states *i.e.* Adamawa - $30,805 \text{ km}^2$; Borno - $60,567 \text{ km}^2$; Gombe - $16,461 \text{ km}^2$; and Yobe - $41,861 \text{ km}^2$ respectively. A total area of $163,851 \text{ km}^2$ in Chad across six of the country's 23 regions: Kanem - $63,855 \text{ km}^2$; Lac - $18,449 \text{ km}^2$; Hadjer-Lamis - $28,000 \text{ km}^2$; Chari-Baguirmi - $42,023 \text{ km}^2$; Mayo-Kebbi Ouest - $11,163 \text{ km}^2$; and N'Djamena - 361 km^2 . The rest are $91,135 \text{ km}^2$ areas in Cameroon across two regions: extreme Nord (Far north) - $31,591 \text{ km}^2$ and Nord (North) $59,543 \text{ km}^2$ respectively, and finally $138,149 \text{ km}^2$ in Niger's Diffa region.

FIGURE 5.2: MAP OF THE LAKE CHAD INDICATING THE RESEARCH SETTING



Source: Magrin and De Montclos (2018: 13).

Besides, general reference is made to the conventional or active basin of the Lake Chad currently stretches $984,455 \text{ km}^2$ (AFROSAI, 2015:5). This depicts the geographic boundary of the LCBC established under the framework of the Fort-Lamy Convention (now N'Djamena) at its emergence in 1964 (Odada, Oyebande & Oguntola, 2004; LCBC, 2016c) as against the entire drainage or hydrographic basin. Significantly, the cause-effect analyses of human security and regional development challenges emanating from the Lake Chad basin's recession since 1964 (when the LCBC was established) and the incessant Boko Haram crisis (from 2009 till date) were considered. These were conceived about the factors of the actors involved, policies and interventions on the livelihoods, population's resilience and regional stabilisation in the Lake Chad region.

The above is significant because the Lake Chad system's internal diversity is currently configured around three strategic core: the Lake Chad, a wetland inhabited by over two million population with rich agro-halieuetic-pastoral resources; two major metropolises – N'Djamena, the Chadian capital, and Maiduguri, Nigeria's Borno state capital - serving as heads to networks of secondary urban centres and local markets, with huge population densities. Hence the development issues (agriculture, trade, investment and migration) and security system across the four riparian states revolve on the one hand around these hubs, and their interdependence with highly productive, commercial and resource-based rural areas in the region on the other. The utilisation of case study thus limits the research to a defined geographical area and arrays of issues centred on human security and regional development which were explored contextually and comprehensively from theoretical (the Capability Approach and Eco-Violence theory) and empirical standpoints.

5.3.3 Data Collection Method

The fact cannot be overemphasised that case study research, enables collection of varied, detailed and extensive data through various sources, including primary and secondary (Ragin, 1994: 92, cited in Neuman, 1997). A combination of primary and secondary data was collected and structured around the themes deduced from the research objectives (see above). A preliminary study earlier undertaken during the proposal development included the use of related data from the LCBC via its officials and website, project coordinators in Nigeria and Chad, and field (military) operation command headquarters. Others include the IDPs coordinators in Northeast Nigeria, the International Union for Conservation of Nature (IUCN) studies on the Lake Chad, and contacts with development research institutes as well as literature on critical issues on the region.

The primary data were based on empirical findings collected through a semi-structured interview (among 34 key informants), focused group discussions (six groups – four and two

respectively from Maiduguri and N'Djamena), official records (of key national, regional or multilateral institutions- development and security), observations and archival records, etc. Secondary data from the literature review and the theoretical framework include government documents, policy documents, official bulletin, progress reports, organisational or project documentation, etc. were also utilised. A multi-data source, relevant for a multidisciplinary study of this nature significantly helped in addressing the research questions. Data captured from this study were specific to the key target groups: village heads/representatives, smallholder farmers, humanitarian service providers, programme coordinators and relevant institutions etc.

TABLE 5.1: SUMMARY OF DATA COLLECTION METHODS

Sample of Participants	Study Population	Number sampled	Sampling Method	Data collection method	Instrument
Key Informants	Agencies, resource persons (public and private), Multilateral Institutions, INGOs & CSOs	34	Purposive	In-depth interview	Semi-Structured Guide
FGDs	Resource dependents, agricultural cooperatives, multisectoral emergency coordination teams, and interest groups.	6	Purposive	Interview/discussion	FGD Interview Guide
Document Review	Intervention and policy documents	18	Purposive	Systematic data collection	Institutional Document Review Guide
	Official bulletin & reports.	15			

Source: Author's creation

The very key obstacle to data collection in the study area is centred on the region's volatility to insecurity particularly Boko Haram threats. This constrained access to some sites, projects and specific informants, but accessing secondary data from the LCBC, development institutions and government departments offer alternatives. While the choice of accessing primary qualitative data using focused groups and key informants helped solve other secondary obstacles such as low literacy level of most of the population, language barrier, perceived hostilities to strangers, etc. Fortunately, the study leverages on the researcher's good command

of both English and French languages, the official languages used in the river basin area. In some cases, pidgin (indigenised) English language and the use of local interpreters aided in obtaining information from key informants. The following data were utilised in achieving the research objectives.

5.3.3.1 Institutional Document Review

Record or document review entails a systematic data collection from an extant institutional database. Institutional records on capacity building collected for analysis include financial documents, programme reports, activity logs, institutional surveys, and policy briefs. Others are official bulletin, participant's handbook, conference reports etc. The advantage of using institutional/official records provide for ease of data collection and cost-effective. Meanwhile, the relevant data accessed, provided a veritable benchmark to critically explore the phenomenons where outcomes are deduced from the relationships among variables. Therefore, official records or programme reports were sourced from the LCBC, UNDP, AfDB, key agencies and parastatals in the riparian states, and the security agencies particularly the Multinational Joint Task Force (MNJTF) and other national security operations in the region.

5.3.3.2 Literature Review

A literature review constitutes an evaluation of extant studies on the research topic. Accordingly, the literature review does not only build on the available body of knowledge, it helps researchers place their work in proper context while avoiding duplication (Babbie and Mouton, 2001). This provides a reference point through which analysis and submissions of the study are juxtaposed. Literature review forms an essential part of this study, empirically and theoretically, toward addressing the underlying issues and concepts. The review is collated from several academic sources including peer-reviewed journal articles, book chapters, conference presentations, and on-line materials. Others are reports, documentary papers as well as relevant project documentation from the LCBC, development institutions, and official

government bulletins, etc. The empirical literature is thematically categorised into global, continental, and local (case study area) analyses; and theoretically into development, and security-conflict discourses.

5.3.3.3 Semi-structured interviews

Semi-structured interviews are verbal interchange between the interviewer and the respondent where the former attempts to gather relevant information from the latter by posing questions (Longhurst, 2010). Similarly, Morgan, (2014: 54) believes it is beneficial for the researcher to pursue topical issues emanating from the conversation. By the study’s objectives, semi-structured interviews with key informants were conducted with the aid of a recorder in gathering information on the experiences of the people in relations to human security challenges resulting from the environment-development challenges, the desiccation of the Lake Chad and the efficacy of the policies and programmes of the LCBC, national agencies and other relevant organisations towards addressing them.

TABLE 5.2: SUMMARY OF KEY INFORMANTS (INTERVIEW)

Case	Government officials	Private individuals	Multilateral Institutions	NGOs	Total
Cameroon	1				1
Chad	1		7		4
Niger	1				3
Nigeria	11	7	3	3	27
Total	14	7	10	3	34

Source: Author’s creation

The key informants contacted include village heads, residents, inter-governmental organisations, private school proprietors, local Non-governmental organisations (NGOs), relief agencies and Chambers of Commerce and Industries, etc. In each of the units or project areas opinions from relevant local government authorities and development partners were also sought. Thirty-four (34) key informants in the case study area were interviewed for oral testimonies on the issues of the study (Table 5.2 above). The informants were purposively selected based on their abilities to provide relevant information and accessibility. In accordance

with the University of the Western Cape’s ethical standards of research, key informants were referred to in the study based on the identification codes presented below (Table 5.3).

TABLE 5.3: DESCRIPTION AND IDENTIFICATION CODES FOR KEY INFORMANTS

Description	Identification Codes
Government of Cameroon Official	GCO 1
Government of Chad (Tchad) Official	GTO 1
Government of Niger Official	GNRO 1
Government of Nigeria Official	GNGO 1-11
Private Individual/Organisation, Nigeria	PING 1-7
Multilateral Institution’s Official, Chad	MIOT 1-7
Multilateral Institution’s Official, Nigeria	MIONG 1-3
NGO official, Nigeria	NGONG 1-3

Source: Author’s creation

5.3.3.4 Focused group discussion

A Focus group is an important qualitative research methodology derived from a small group discussion based on a defined area of concern (Berg, 2001). The selection of individuals or groups assembled by researchers to discuss the critical phenomena under investigation, from their own experience(s), this provides the researcher with a deep understanding of the issue(s) and its direct impact on the groups’ members individually and collectively (Marshall & Rossman, 2006: 114). By stimulating debate refreshing memories on a phenomenon, focus groups are designed to allow discussants deliberate on the topics and share their opinions. FGD is useful in gaining balanced accounts by validating reports and statistics of interventions from the institutions and governmental agencies. FGD specific to this study targeted environmental resources dependents in the case study area and the beneficiaries of the agencies’ interventions. This includes agricultural cooperatives – farmers, livestock breeders, fishermen, and traders’ associations. Six (6) focused group discussions across the study area conducted on a variety of local terms and first-hand information. This helped to address secondary obstacles such as low literacy level of informants from among the population, language barrier, and possible hostilities against strangers, etc. Without jeopardising the ethical standards of research, brief details of the groups are classified with identification codes as presented below (Table 5.4).

TABLE 5.4: SUMMARY OF THE FOCUSED GROUP AND IDENTIFICATION CODES

Focused Group Description	Location	Identification Codes
Cattle Breeders Association	Maiduguri Nigeria	FGD 1
Farmers Association	Maiduguri Nigeria	FGD 2
Emergency Coordination and Management Teams	Maiduguri Nigeria	FGD 3
Lake Chad Basin Fish Producers and Marketers	Maiduguri Nigeria	FGD 4
Community Interest Groups	Maiduguri Nigeria	FGD 5
Lake Chad Smallholder farmers and fishermen	Guitté Chad	FGD 6

Source: Author's creation

5.3.3.5 Observation

Observation is considered a vital instrument in qualitative field data through which first-hand, spontaneous, and impartial information can be sourced. It helps in furthering the depth of the issue under investigation (Neuman, 1997:361). Its purpose was to collect non-verbalised data e.g. physical features of the case study area, non-verbal communication of informants, actions, as well as the surrounding environment which were recorded and used appropriately in the analysis. The researcher attended social gatherings of selected occupational groups among the resource dependents in the case study area (Lake Chad Basin). This acquainted the researcher with information about the forums, the individuals' attitude and their perceptions to the dominant issues elicited in the research.

5.3.3.6 Sampling method

Sampling may be conceived as the procedure for selecting cases and their systematic inclusion in the study or research project. This, allows a researcher to evaluate or measure variables on the smaller sets of cases toward accurately generalising outcomes to the cases (Neuman, 1997: 201). Accordingly, a purposeful sampling method was used to derive necessary information from the participants – individuals, focused groups, and key institutions, crucial to the implementation of regional human security and development strategies. Three key samples conceived in the study design include (i) the institutions (Lake Chad Basin Commission and national development agencies in the riparian (four) countries – Cameroon, Chad, Nigeria and

Niger, as well as their multilateral partners – the UNDP, FAO, WFP, OCHA, World Bank, AfDB, etc. (ii) the policies and programme (water management, sustainable livelihoods, irrigation projects, human development, security, and humanitarian interventions, etc.) and (iii) the beneficiaries’ (communities, resource users and local populations) testimonies on the efficacies of the latter in relations to resource utilisation and management, adaptation strategies and regional security. The samples were conceived for its significance to the research objectives, accessibility of data, cost efficiency, and suitability to the region’s chaotic environment.

5.3.3.7 Reliability and Validity in Case Study Mixed Method Research

Validity in research entails the process of ensuring the accuracy of research findings through the application of certain procedures. Reliability suggests the consistency of the researcher’s approaches with regards to related research or projects. According to Creswell (2009), the core of validity is to determine accuracy in research findings from the researcher’s viewpoints, the reader or participants. Hence validity in research can be attained if it is “credible, defensible, plausible and trustworthy” (Johnson, 1997: 282). In this regard, validity refers to the suitability of the data, tools and processes, these are critical ingredients of determining the degree of the ‘truth’ value in the research.

Towards a construct validity of the study’s case study methodology, an array of approaches was applied in the research. Accordingly, Johnson (1997: 282) succinctly outlined, include triangulation of data (i.e. the collection of multiple sources data - observation, institutional document review, focused group, and key informants). The second element is the substantiation of institutional reports and official bulletin with testimonies and life experiences of key informants and Focused Group discussions. The qualitative report was reinforced by descriptive statistical summaries and representations. Also, the instrumentality of fellow doctoral students as peer reviewers for data analysis and presentation was explored. Moreover,

continuous engagement with the thesis supervisor was also critical to achieving validity. The use of low inference descriptors *i.e.* illustrations formulated along the participants' testimonies, in the form of direct quotations of participants as transcribed from the fieldwork reports. The above further represented a critical description of data with the use of rich verbatim transcripts. Above all, scholarly submission captured in the review of the literature including theory triangulation were integrated for proper interpretation and explanation of data. The researcher also exercised reflexivity to minimise or eliminate potential biases.

5.3.4 Data analysis

Data analysis is a critical aspect of research in which the diverse and separate raw data are converted to information following a careful inference from the empirical details (Neuman, 1997:419). Following systematic procedures, the researcher concludes by reasoning and simplifies the complexity in the data. In the study, data obtained from various sources were analysed using both quantitative and qualitative data analytical tools and procedures.

5.3.4.1 Qualitative data analysis

Qualitative research scholars have proposed a concurrent process of data collection and interpretation toward refining questions and further examination of opinions or evidence derived from the data collected (Creswell, 2009). The data derived for the research were transcribed while preliminary interpretation was performed to elicit patterns for further interrogation. The qualitative data (interviews, focused group discussions, institutional reports and observations) was analysed inductively. The inductive approach in data analysis, according to Gray (2014) requires proper identification of identified patterns that are indicative of relationships between/among variables. The above enhances the building of themes, categories and patterns from bottom up. While, the data was arranged into more abstract units of information (Creswell, 2009), meanings were deduced from an array of evidence. Hence, conclusions were based on a plurality of illustrations and instances against singular ones. An

iterative (back and forth) process, involving continuous reflection, interrogation and documentation toward finality in reconstructing the narratives on the subject matter.

Moreover, a thematic analysis (the process of identifying patterns or themes in data analysis) was carried out. The data collected were transcribed verbatim and reconciled with fieldnotes to prevent omission of salient information, categorised and analysed qualitatively through inductive coding technique. The scripts were edited and reviewed repetitively to enhance familiarisation with the data and further imported into ATLAS.ti version 8.4.23 software for analysis. The following procedures were undertaken in the process of analysis.

1. Initial codes were produced and assigned to systematically highlighted connecting ideas or themes from the general research questions.
2. The coding process included Open coding and In Vivo coding techniques using descriptive and explanatory codes (Saldaña, 2013), while documents were categorised according to groups -interviews, focused groups, institutional reports, literatures etc.
3. The codes generated were assigned into categories - code groups. The categories were further assigned into sub-themes, while related themes were merged into a larger category to represent the related themes.
4. The themes which illustrate the basis for aggregating meaning from the data were reviewed to rationalise the analysis and enhance coherence.
5. The quotations from the categories and themes were subsequently exported from ATLAS.ti software to produce reports.

Significantly, the thematic analysis is a flexible approach tied to the study's epistemological and theoretical perspectives (Clarke and Braun, 2013). The themes and patterns drawn were juxtaposed with quantitative data - findings from institutional records or document, to further an understanding of identified relationships between variables.

5.3.4.2 Quantitative data analysis

Secondary quantitative data were adapted from institutional records and reports of descriptive and inferential statistics. The descriptive statistics were adapted to summarise meaningfully what the data represents, using frequency distribution tables, cross-tabulations. Inferential statistics aided in reaching conclusions that extend beyond the immediate data itself. In other words, generalisations about the population from which samples are drawn were made in two ways - (i) the estimation of parameter(s) and (ii) testing of hypotheses (see chapter 1.4 above). In evaluating the efficacy of regional policies on socio-economic development in the Lake Chad region, a theory-based presumption is applied in the inferential assessment.

5.3.5 Researcher's Factor and Reflexivity

The researcher is an intrinsic element of the research. His critical role as an instrument of data collection, case selection *etc.* warrants the recognition from the outset of its personal beliefs, biases and values with potential effects on the research process and outcomes. It is imperative to be conscious of self in the research process, as Grbich (2004) critically asserts, “the self (encompass the transitional aggregation of an individual’s past and present as well as internal and external conversations. Hence, its ‘self’ desires, wishes, fantasies, social and cultural values, and understanding... are persistently adapted... in a range of contexts” (Grbich, 2004: 69). The first-hand information of dominant human security challenges in the Lake Chad Basin is advantageous in this study, having engaged with the people, their history, and being updated with the region’s current affairs. The errors in language use in some quotations are by no means omissions from the author but as narrated by informants. Therefore, my experience as a researcher, development knowledge facilitator and traveller across the region enhance my consciousness of reconstructing the region’s narratives with a global mindset and the participants’ viewpoints. Despite periodic engagement with key policy instruments, institutions and actors in the region, there exist elements of biases in the study from the researcher.

Nevertheless, a high level of objectivity was inculcated despite the researcher's biases on the opinions, understanding and interpretation of the data. Hence, reflexivity *i.e.* a process of critical self-awareness and reflection (Johnson, 1997) was utilised across the research processes by the researcher. The reflexive procedure, as captured in (Grbich, 2004: 71) encompassing a critical view of detaching oneself from the data collection and interpretation. This was conceived through internal dialogue and continuous critical assessment or scrutiny of "what" "How" and "Why" of the available evidence in the production of knowledge claims. Self-reflexivity, therefore, enhances the researcher's capacity to holistically view the worlds under study, and the participants engaged on the one hand and helped minimise the researcher's biases or sentiments that may render the study's outcome overly subjective.

5.4 Ethical Statement

Ethics of research reflects the moral principles that guide individual(s) behaviour or conduct in an inquiry, data collection, storage and utilisation etc. The study was carried out under the ethical standards of the University of the Western Cape, South Africa. As a result, the research was undertaken after approval was granted by the University's Senate Higher Degree Committee, the Economic and Management Sciences Faculty and the Institute for Social Development of the University of the Western Cape. Permission was also sought from the Lake Chad Basin Commission, its projects implementing agencies, partners, and beneficiaries across the riparian states of the Lake Chad basin and the Multinational Joint Task Force of the region. Moreover, all participants (informants, groups, institutions) involved in the research project were properly briefed, including the right to withdraw from the study at will, as participants and the researcher signed a consent form binding them to adhere to the terms. Consent to conduct interviews, group discussions and accessing declassified institutional information or records were sought using instruments in the Appendix below. Information sheets which

described the objectives and scope of the research and the participants' rights and obligations were also provided as captured in the Appendix below.

The study was not intended to harm any individual, group, or organisation involved. Hence, respondents' participation and cooperation were voluntary. In ensuring the anonymity of respondents, all information gathered was treated with confidentiality. The respondents and informants' personal information, including names and full addresses, were not disclosed to anyone, only pseudonyms were used in the final report and published works emanating from the thesis to protect privacy. The above were strictly adhered to throughout the entire process of the research. Finally, all materials consulted in the study were properly cited using the Harvard style of referencing, and appropriately acknowledged in the final reference list.

5.5 Chapter Summary

The chapter presents the study's philosophical perspective and its methodological processes. The Critical Security Approach is presented as a meta-theory that enables the deconstruction and causal explanations of human security-development and social structure based on qualitative explanations and quantitative assessments. Also, the research design, sampling, data collection and analytical process including the procedures for construct reliability, validity and reflexivity were elucidated, including the ethical considerations of the research.

The significance of Mixed Method research in explaining the study's central phenomena – human security and regional development - is highlighted. The case study research design presented above, indeed, provides the tool to investigate the trends and effects of environmental change on livelihood, resource use, conflicts and interventions on regional development in the Lake Chad Basin. The section also underscores the practicality between the Case Study design and theoretical explanations, specifically the application of the 'capability' and 'eco-violence' theoretical premises to narrow down the broad issues in the research into simple components of analyses.

CHAPTER 6

HUMAN SECURITY CHALLENGES IN THE LAKE CHAD BASIN: A CAUSE-EFFECT ANALYSIS

6.1 Introduction

Human security as an approach to identify and address prevalent and cross-cutting challenges against the wellbeing, survival and dignity of humans, is relevant to regional peace development and stability. The threats from environmental disasters, persistent poverty, protracted conflicts, criminality and economic recession etc. undermine global peace, security and sustainable development. Human security in the Lake Chad Basin, like most developing regions or countries, remain complex and overlap with development and humanitarian crisis. Its impairment on livelihoods, disruptions of communities' resilience and regional growth have transborder implications beyond the basin. Chapters six and seven present empirical inquiry and discussions of qualitative findings on the dynamics of human security in the Lake Chad Basin. This helps in understanding the root causes of the diverse human security challenges, and the consequences on regional development - populations' livelihoods, resilience and transborder cooperation, in the region. Hence, it provides the basis for reconstructing human security and development narratives of the region.

6.2 Background

Transboundary river basins, homes to rich biodiversity, provide a web of complex political, security and socio-economic interdependencies. These vital resources are catalysts for transborder cooperation dialogue and sources of conflicts among populations, communities and political authorities owing to their capacity for regional development, livelihoods and wellbeing of diverse populations (FAO, 1997, 2009; Lipchin *et al.*, 2007; Gleick *et al.*, 2014; GEF, 2016). A broadened security concern incorporating non-military issues including the environment and its resources advances the vital core of humanity - livelihoods, freedoms and

well-being (Buzan, 2003; CHS, 2003; Roberts, 2005; Sheehan, 2005; Jolly and BasuRay, 2007; Newman, 2010). As a result, human security became popularised in the 1980s amid the rising trends of globalization and geopolitics (Roberts, 2005; Sheehan, 2005; Francis, 2006; Jolly and BasuRay, 2007; Newman, 2010).

In furtherance of human rights and human development, the concept (human security) emphasised development in terms of 'Freedom from Fear', 'Freedom from Want', and 'Freedom to live in dignity' (CHS, 2003). Moreover, the 1994 Human Development Report (HDR) of the United Nations Development Programme (UNDP) identifies seven broad security categories: economic security, health security, environmental security, food security, political security, community security and personal security, with 'individual' and not state as its reference (Hoogensen, 2004; Gasper, 2013). In this vein, proponents of human security argue that threats to human wellbeing and emancipation, such as internal conflicts, disease, hunger, environmental pollution, or criminal violence, among others, constitute the greatest threats to 'security' and global development (Newman, 2010).

Similarly, peculiar human security threats in the Lake Chad region emanate from the desiccation of Lake Chad and the prevalence of conflicts in different manifestations. Since 1963, Lake Chad lost over two-thirds of its surface area due to climate change and anthropogenic factors, especially rainfall deficit, desertification and harmful irrigation practices, with threats to the population's livelihoods (Ifabiyi, 2013; Lake Chad Basin Commission, 2016g). Such threats often intensify conflicts over depleted resources (especially between sedentary farmers and nomads), disrupt livelihoods and resilience practices, while pervasive poverty, unemployment and illiteracy coupled with religious extremism further influence terrorism in the region (Oyewole, 2013; Okoli & Iortyer, 2014; Sulemana & Azeez, 2015; Sambo, Othman & Omar, 2017). Hence, the refugee influx and displacement of the population by Boko Haram crisis heightens human insecurity in the Lake Chad basin and the

Sahel. The resultant socio-economic crisis, exacerbates the region's dependence on humanitarian and security intervention, with dire consequences beyond the region (Walther and Leuprecht, 2015; D'Amato, 2018; World Food Programme, 2018).

The above underscores the imperative of investigating the peculiar human security challenges and the effects on regional development in the Lake Chad Basin. The implications of the desiccation of the Lake Chad on socio-economic development i.e. livelihoods, food security, mobilities and transborder cooperation are considered vis-à-vis the factor of conflicts over shared resources on human security-development across the Lake Chad region. Thus, the cause-effects analysis of environmental change, livelihoods, resource depletion and conflicts are examined from an empirical and theoretical point of view.

6.3 Analytical Framework

A qualitative case study methodology of human security in the Lake Chad Basin is adopted in this chapter. This emanated from the research design, data collection, and data analysis procedures presented in Chapter 5 (section 5.3) above. Besides, theoretical constructs were adapted from the "Capability Approach" and "Eco-violence Theory". This was conceived to place the study in a critical perspective and to provide a better understanding of the cause-effect analysis of human insecurity and development crisis in the Lake Chad Basin. Moreover, a thematic analysis was adopted, information derived across sources were categorised into themes for clarifications and synthesis. The ATLAS.ti software (version 8.0.43) for qualitative analysis, was used for manual categorisation, sorting, and thematic review. Sets of codes were employed to compress the oral and written evidence into manageable data for proper representation, chronology, logical structure and synthesis, of findings and analysis. Importantly, the analysis highlighted three (3) major themes, ten (10) categories (sub-themes) and sixty-one (61) codes. The summary is captured below (Table 6.1).

TABLE 6.1: QUALITATIVE THEMES, CODES AND CATEGORIES ON HUMAN SECURITY

Themes	Codes	Categories
Desiccation of the Lake Chad and implications for regional security-development	LCB geography; LCB hydrology; LCB recession; LCB Importance & potentials	Lake Chad Characteristics
	Biodiversity/ecosystem loss; Climate change; Deforestation; Desertification; Drought & famine; Rainfall variability	Environmental Change and the Lake Chad Basin
	Deforestation; Demographic change; Overfishing; Overgrazing; pollution/environmental degradation	Anthropogenic factors of the Lake recession
	Effect on Boko Haram crisis; job change and economic migration; Farmer-herdsmen conflict; Conflict management	Lake Chad recession and regional socio-economic development
Socio-economic development in the Lake Chad Basin: components and constraints	Farming; Fishing; Food security and challenges; Pastoralism; Trade; and Transborder relations; Economic migration; vulnerability and adaptation measures	Capability, food security and livelihoods
	Corruption; Demographic change; Governance, development and infrastructural crises; Illiteracy and ignorance; Poverty and Inequality; Social injustice / entrenched tensions; Socio-cultural constraints; and Unemployment	Socio-economic factors of human insecurity
Insecurity and Conflicts in the Lake Chad Basin	AlMajiri System; Armed rebellion; Banditry Criminality; Destitution; Ungoverned spaces	Enablers of Insecurity
	Environmental factor of BHT; Socio-cultural factor of BHT; BHT – Origin; BHT-radicalization; BHT - tactics and trends	Boko Haram Terrorism (BHT)
	Forced displacement; Livelihoods impairment; Livestock rustling; Looting & Market disruption; Loss of assets & income; Occupation of territories; Restriction of access to means of production; Restriction of movement, transport and trade	Implications of Insecurity
	Job change; Farmer-herders conflict; Livestock rustling; Resource capture; Resource conflict and competition; Resource scarcity/exploitation; Geopolitics; and Political economy of insurgency	Eco-violence

6.4 Research Findings and Discussions

The study found that the desiccation of Lake Chad is caused by inter-related factors - environmental change and unsustainable human activities. The threats emanating from these are transboundary, with negative effects on livelihoods, regional development and security, including the Boko Haram crisis directly and indirectly. Hence, findings on the cause-effects of the dynamics above are presented via three themes and ten categories, as highlighted above

(Table 6.1): The desiccation of Lake Chad; Socio-economic development in the Lake Chad Basin (components and constraints) both in chapter six; Boko Haram Crisis and insecurity in the Lake Chad Basin, subsequently in chapter seven.

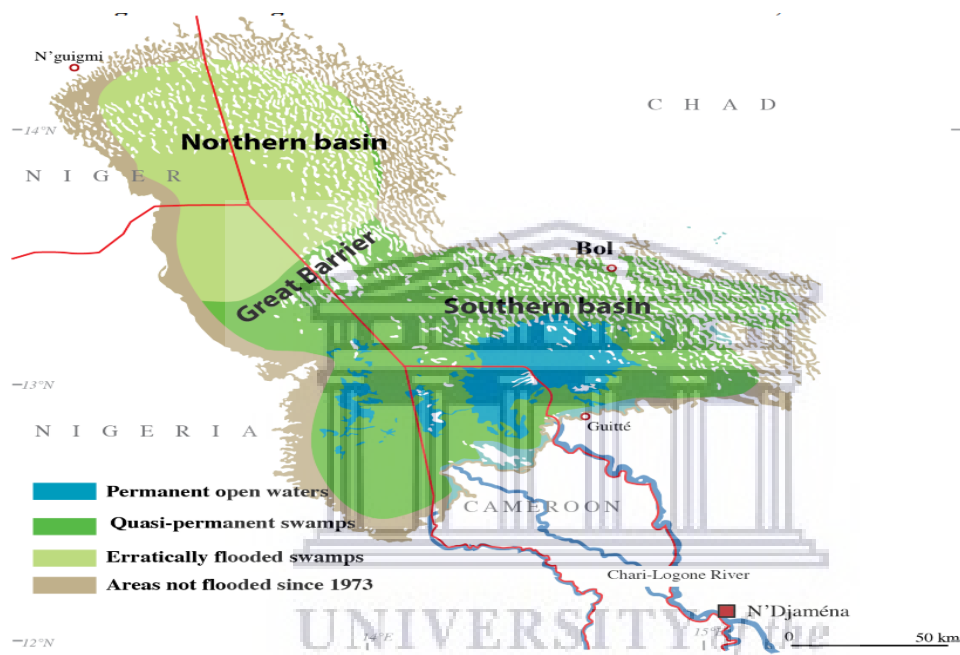
6.4.1 The Desiccation of Lake Chad

The significance of the Lake Chad basin to the survival and well-being of its populations and communities across the region has been investigated (Bdliya and Bloxom, 2008; GIZ, 2015; LCBC, 2016a, 2016c; Mekonnen, 2016). Past studies have shown that Lake Chad, in the Palaeolithic period, covered an area of 315,000 km² and stretched the whole south-east of the Sahara. A summary of the current landscape revealed its replacement by reed beds, sandbanks, muds, and over 300 islands due to dramatic shrinkage between 1963 and the 1990s (LCBC, 2016c:141). It slowly recovered between 2010 and 2012 covering almost 4,516 km² of open water. With an average depth of 4 m and about 275 to 284 m above sea level, the current size of the lake is presently less than 1% of the entire basin. Variations in the rainfall and runoff have severe consequences on Lake Chad, particularly a 10% variation in rainfall and a loss of 30% discharge from the Chari River (LCBC, 2016c:141).

The severe droughts of 1973 and 1985, exacerbated its shrinkage by 90%, decrease in the area from 25,000 km² in the 1960s to 1,600 km² in 2009 (LCBC, 2016c:141). The water flow rates from the Chari-Logone sub-basins have been constrained by a decline in rainfall, leading to the division of the Lake into three different sections: the irregularly flooded northern pool; the archipelago - comprised of islands of sand dune at the north-eastern edge of the lake; and the open waters of the southern pool. Thus, the Great barrier, depicted as a narrow ridge, divides the southern and the northern pools. Thus, water from the former, when it reaches a high level, can flow into the latter. Unfortunately, the Komadugu-Yobe River of sub-basin that used to flood Lake Chad from the western flank, although with a limited flow, is no more able to fill the northern pool on its own. The (northern pool) completely dried up in 1996 but re-

flooded in 1999 when rainfall increases (Figure 6.1). The Lake Chad's hydrological and biophysical alterations emanate from two causes, environmental change - climatic variability, and anthropogenic factors – unsustainable human practices (UNEP, 2004; Okpara *et al.*, 2015; LCBC, 2016a). The two factors (natural and anthropogenic) and the effects of the Lake's recession on human security in the region are considered below.

FIGURE 6.1: THE AVERAGE STATE OF LAKE CHAD - (THE SMALL STATE) 2010-2015



Source: LCBC, AFD and The World Bank, 2015:8

Firstly, the effects of climate change on Lake Chad seemed unquantifiable due to insufficient data. Lake Chad is one of the most severely affected by environmental change due to the variability in rainfalls and disrupted flow or discharge patterns from the river systems. Climate change, since the last century, has occasioned a 0.8°C rise in average global temperature. Scientific evidence attributed the direct effects of global warming to the upsurge in anthropogenic greenhouse gas emissions, mainly carbon dioxide. While the scientific model presaged rises in temperature in the long term, the rain forecast may also fluctuate. The average temperature of Lake Chad Basin has indeed risen between 1°C and 1.5°C since 1950, with a decline in the rainy season (LCBC, 2016c:195).

The size of Lake Chad and its water level fluctuated persistently in proportion to inflows from its tributaries along with rainfall variation. Thus, water discharge from the Chari River into Lake Chad is halved. The period of water flow from the Komadugu-Yobe River also reduced from nine to four months due to large abstractions from the river, increased groundwater withdrawal, and infiltration to the water table. These, no doubt, caused the Lake Chad's shrinkage from 25,000 km² to 2,000 km² between the 1960s and the 2000s. (AFROSAI, 2015; LCBC, 2016a; UNHCR and The World Bank, 2016). The lake's water balance is aggregated thus: precipitation (200-400 mm/annum), + river discharges (The Chari-Logone, the Komadugu-Yobe sub-basins including those from Yedseram, El-Beid and Ngadda), - water evaporation (2,000-3,000 mm/annum), - losses via infiltration into the ground, surface and groundwater abstractions. Since the 1990s, Lake Chad Basin's water balance has been negative despite minor rainfall increments from the late 1990s onward (LCBC, 2016c: 143). Table 6.2 represents the characteristics of the lake's different states.

TABLE 6.2: THE CHARACTERISTICS OF LAKE CHAD IN ITS DIFFERENT STATES

Lake Chad	<i>Dry Small</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>
Inflows from the Chari	< 15	15 – 34	35 -43	>43
Water level (m asl)	dry northern basin	different levels	280 - 282	>282.3
Number of water bodies	several	several	one	one
Total surface of the Lake	2000 - 6000	6000 -14000.	15000 -19000.	20000 - 25000.
Flooded area of the northern basin (km ²)	0	0 – 8000	9000	10000
Dominating landscape	swamps and savannas	swamps	dune archipelago	open water
Aquatic vegetation	++	+++	++	+

Source: LCBC, AFD and The World Bank, 2015: 6

The Lake Chad interacts properly with its underground aquifer, given its 281 m altitude above sea level (in the middle of Chad). This significantly reduces infiltration into the edges of Lake Chad and enhances the upper groundwater system. The isotopic analysis reveals the similarity of Lake Chad's oxygen-18 content to the groundwater presence in its shoreline

vicinity, consequently, recharging is due more to precipitation. For instance, the Chadian area of the Quaternary aquifer groundwater flows even at the low phase of the lake's water particularly from the Masenya wetlands northward; the Logone towards Lake Chad; the Lake Chad eastward; and Kanem to the south-west direction. From these processes, effective percolation enhances the high flow through the wetlands to recharge the aquifers of the lake and Logone River, yet the Kanem dunes are only recharged by direct percolation of rainfall (LCBC, 2016c). The threats of environmental change affect the lake with effects on human security and development in the region. The major manifestations of environmental change on the Lake Chad basin are water loss due to inadequate rainfall and pervasive desertification, with effects on agriculture and other human needs. This is further buttressed below:

Apart from the northern half of the basin where practically vegetation is non-existent, floodplains along the Chari and Logone Rivers - the Grand Yaere plain (Cameroon and Chad border), the Massenya floodplains, the Sategui plain, including the Hadejia-Nguru wetlands in Nigeria and Chad currently contain very few trees. Also, the grasslands and shrublands only change in the marshy depressions (MIOT-6; GNGO-3).

As population increases and lands remain unchanged, environmental degradation further worsens resource depletions, with negative consequences for human-nature relationships in the region. These have induced critical development challenges with increase exploitation of scarce resources and a decrease in natural productivity (GNGO-9).

For the most part, Chari River remained unconnected to the aquifer, due to droughts and immense water decline up till the 1990s, although little improvement occurred in the 2000s. The decline of groundwater levels, drying up of wells and boreholes have affected biodiversity and livelihoods of the basin's population. Notably, the aquifers lying underneath the dunes on the north-eastern flank of the lake is supplied by the rainfall in the wet season or occasionally by the lake in its high-water phase. Yet, at low water level in the dry season, evaporation of the

water deposited in the dunes while flowing towards the lake and interdunal depressions enhance its salinity (LCBC, AFD and The World Bank Group, 2015; LCBC, 2016c).

Sedimentation also affects Lake Chad including its rivers and reservoirs. A combination of wind and water erosion and sedimentation deposits, worsened by high rainfall has eroded large areas and stripped off vegetation in the basin. The region's sedimentation rate (0.5 - 4 mm annually), has negative effects on fishing activities and transport between the islands of Lake Chad. The sediments - typically clay and sand, are estimated at an annual average of 2.4 million tonnes of suspended solids (SS) deposited in the lake (LCBC, 2016c:184). The materials, usually conducted by stormwater runoff into the Lake's watersheds, solidifying when velocities reduce, form into sandbanks and limit the channel's hydraulic volume. The sediment loads conveyed, as a result, to the sub-basins - the Chari-Logone and Komadugu-Yobe Rivers reduce the lake's open water areas and intensify the flooding of the lake's islands during in the rainy seasons. The desiccation of Lake Chad, worsened by severe droughts particularly the 1972-1973 and 1982-1984 repeated droughts, desert encroachment and low rainfall have thus threatened the region's irrigated agriculture, small-scale farming and the research for petroleum resources, and the general population's livelihoods and biodiversity (Odada, Oyebande and Oguntola, 2004; Onuoha, 2008; Okpara *et al.*, 2015). Hence, environmental degradation (biodiversity, water quality, soil quality etc.) and its direct impacts on human health and ecosystem, is a human security threat in the region.

Secondly, anthropogenic factors of the desiccation of Lake Chad result from unsustainable human practices. Deforestation; demographic change; overfishing; overgrazing; pesticide/pollution etc. combine to degrade the Lake Chad environment with implication for the region's vital resources and livelihoods. The hydro systems of the Lake Chad, particularly the Chari and Logone rivers, are susceptible to anthropogenic pressures. Significantly, deforestation across the drainage basins has occasioned land degradation, siltation and

sedimentation of the watercourses, while the decline of river flows enhanced further recession of the Lake Chad. The rising demand for fuelwood in environments susceptible to low rainfalls, overgrazing and shifting cultivation impair the sustainability of the basin's biological resources across the riparian countries (LCBC, 2016c). For instance, the local population in towns, such as Maiduguri and N'Djamena travel between 300- 400 km away as the regeneration rate for vegetation cover is lesser than the exploitation rate. The production and sale of charcoal have endangered the African fan Palm and the locust bean tree species, while nearly 60,000 tonnes of charcoal are exported to N'Djamena from Northern Cameroon.

Similarly, the Lake Chad Basin experiences one of the highest population growth rates in the world, with heightening risks of overexploitation of natural resources and socio-political instability (LCBC, AFD and The World Bank Group, 2015). The population of the Lake Chad basin was estimated at 45 million in 2012 (from 37 million in 2002), the total fertility indicators of about seven children per woman, and a 1.5% to 3.7% annual population growth rate (LCBC, 2016c:74). With heterogeneous spread across the basin – there is huge population is concentrated in main urban – Maiduguri and N'Djamena, etc. and in the lakeside areas, with lower densities in the more arid areas of the northern basin. While the population of the conventional basin was projected to rise from 45 million in 2012 to nearly 130 million in 2050, the lakeside population might increase from 13 to 35 million within the same period (LCBC, 2016c:75). Demographic pressure exacerbates vulnerability among poor populations and their low access to basic services and infrastructure. The direct link between natural resources exploitation, environmental degradation and population growth manifested through over-farming, overfishing, and overgrazing, including the growth of shantytowns beset by inadequate sanitary infrastructures. Consequently, excessive water abstraction from the lake by further shrinks its size and induce disputes among its dependents - groups or individuals.

One of the implications of demographic change on the Lake Chad is the diversion of water from the basin - the Chari-Logone rivers, particularly in Cameroon, and its major tributaries - the Hadejia-Jamaare river basins, Komadugu-Yobe etc. for irrigations and into local dams across the riparian countries. These aspects constitute critical development crisis in the region and portend future dangers. Demographic change affects the human mobility and livelihoods of people and communities in the region. This manifests particularly from unsustainable practices or exploitation of the basin's resources such as overgrazing, overfishing, pollution and poor farming techniques etc. "Despite government regulations (which are less enforced), many recalcitrant populations among subsistence fishermen practice illegal fishing and obstruction of the fish passage using small holed fishing nets..." (FGD-4; FGD-6). Also, due to acute drought, "herders from remote areas often invade the lake shores with livestock, searching for pastures and water, they graze till situations improve in their local areas when grasses and crops germinate or due to rainfall" (FGD-1).

Moreover, Pollution is identified with the Lake Chad Basin, the regional economic dynamics, urban, industrial, hydrocarbons, oil exploration and other extractive sectors have enhanced pollution. The lake is vulnerable to receiving water from the whole basin due to its low depth, and agriculture near the water bodies account for most of the chemical pollution of surface water across the basin. The chemicals identified are those used on cotton crops in Cameroon, rice and peanut crops in Chad and Nigeria, and fish preservation, such as glyphosate, cypermethrin, diuron and atrazine. Huge amounts of chemicals are used for flood recession crops grown on the Lake Chad's alluvial plains (mostly for rice and cotton) and particularly around the Logone River and the Nigerian axis of the lake. The upstream of the Lake Chad's two feeder rivers (with higher rainfall), the intensive rain-fed agriculture practice in the area is predominantly slash-and-burn methods. Therefore, the denuded soil in the rainy season is covered by surface sealing and watershed erosion. The slash-and-burn agriculture,

chemical fertilisers and deforestation increase water erosion and hardening process, and deteriorates the physical quality of the soils, including its high salinity levels. Although the authorities have lagged in monitoring the existing regulations, the resistance of local inhabitants with no alternatives have endured the process (LCBC, 2016c).

Oil exploitations in different parts of Chad Republic - south (2003) centre (2011), operation of the refinery in Djermaya (2011), near the Chari River, downstream N'Djamena; the exploitation of the Agadem block in the east of Niger; crude oil exporting pipeline in northern Lake Chad (since 2016) have heightened environmental degradation in the basin. Ongoing exploitation in Cameroon's Logone plains, Niger's hinterland is indeed threats to the Lake Chad environment (LCBC, AFD and The World Bank, 2015:15).

Some common sources of industrial chemical pollution in the region include breweries, tanneries, textile plants and slaughterhouses are often located around watercourses. In these areas, untreated effluents are directly discharged due to the absence of wastewater treatment plants, particularly in Nigeria and Chad. Heavy metals concentrations are higher in the Challawa River (Kano) of the Komadugu-Yobe basin (Nigeria), due to numerous uncontrolled installations of tanneries. Moreover, the average load of suspended solids in the Chari-Logone system is 81 mg/l annually, with an export balance of 3,277,000 annual tonnes (LCBC, 2016c:156). Meanwhile, mechanical erosion is potent in the upper Chari-Logone basin, where the water pH is basic in the dry season and acidic in the rainy season. Such pH variations possess a distinct clay (kaolinite or montmorillonite) and a concentration of dissolved silica carried into the Lake Chad by the Chari and Logone flows (LCBC, 2016c).

Similarly, traces of chemical pollutants including zinc, magnesium, mercury and chrome were discovered in water samples taken from the Chari River. Chemical fertilisers, herbicides and insecticides are indispensable to the cultivation of cotton and rice in Cameroon and Chad, use of pesticides such as dichlorodiphenyltrichloroethane (DDT) toxic substances is released to the water surface and groundwater, with enormous danger to human health (LCBC,

AFD and World Bank, 2015; LCBC, 2016c; Magrin, 2016). Contamination of surface water and groundwater with nitrates by pollutants has potential risks for human lives and biodiversity. Besides, the microbial pollution of water sources caused by extremely poor access to appropriate sanitation and unhygienic practices have exacerbated the contamination of drinking water during rainy seasons. These often cause the outbreak and spread of waterborne diseases such as cholera and typhoid, particularly in urban centres.

6.4.1.1 Implications of the Desiccation of Lake Chad on Regional Human Security

The influence of environmental change on human development is premised on the challenges of scarcity or degradation of natural resources and its potentials for conflicts among users in eco-violence theoretical assumptions (Percival and Homer-Dixon, 1998). On the other hand, pervasive armed conflicts and ferocious crises mostly in developing or poor societies, reflecting a combination of environmental scarcities and an array of socio-political and economic factors have also been conceived within the same eco-violence theoretical model (de Soysa, 2002). While resource scarcity dominates the discourse on regional security and development, effects of human pressure on natural resources, the patterns of exploitation and utilisation of resources on a society's material well-being as well as its potential source for conflicts among resource dependents (Gleick, 1993; Homer-Dixon, 1994, 1999; Gleditsch, 1998) are further elaborated.

The size of Lake Chad's geographical basin covers about 2,500,000 km² surface, the conventional basin (area under the command of the Lake Chad Basin Commission) corresponds to the hydrologic and the active basin of the Lake Chad, covering 967,000 km² (World Bank, 2008; LCBC, 2016c). The lake is confronted with multitudes of environmental, economic, socio-political and security challenges, including Boko Haram terrorism. The nearly six decades of above 90% loss of Lake Chad basin water volume has tremendous effects on the ecosystems and regional economy. The recession has induced populations' vulnerability, food insecurity and regional security threats.

Notably, water and forestry resources are the two most vulnerable sectors as climate change affects ecosystems in the region. The physiological compositions of species of biodiversity in the basin are severely affected by climate variations, as certain plant varieties or vulnerable species disappear. More vegetation has also become identical, the almost 20 different species of vegetation in the 1960s are currently left with only five across the basin (LCBC, 2016c). This exacerbates deforestation, degradation of transhumance corridors, sanding of cropland, depletion of fish stocks due to falling water levels etc. It further undermines the ecosystem services, increases greenhouse gas emissions and diminishes carbon sequestration capacity. The Lake Chad Basin emphasised thus:

...the lake is unable to provide some of the critical environmental services that necessitated its recognition on the Ramsar List of Wetlands of International significance. These are recharging aquifers and supporting biological diversity such as habitats for wetland plant species and some rare breeds of fauna such as the kuri cattle, a breed peculiar breed to Lake Chad region and the Komadugu-Yobe River basin. Other services include the ecological function for colonies of 372 species of migrating aquatic birds, the conservation of wildlife species including the sitatunga or marsh buck (swamp-dwelling antelope of the region) and habitats for 120 species of fish etc. (LCBC, 2016c:180).

Likewise, Lake Chad's economy is heavily reliant on natural resources, climate change directly threatens the people's livelihoods particularly food security and health. The decline in agricultural productivity, reduction of drinking water resources particularly rural communities and disruption of the agricultural calendar have mounted, while flooding and dry spells (low productivity) intensify in rainy seasons. Most rural dwellers in the basin travel farther to harvest water for consumption and farming due to water shortage. The effects of environmental change on the population's livelihoods are further buttressed below:

The lake areas comprised of rich vegetation, forests, tall trees and herbs, loss of habitats along the lake routes from Mani Kossam in Chad are persistent due to low rainfalls and dry weather. When the lake was full it produced free and abundant fruits and food crops such as mangoes, tomatoes, watermelon, cassava, calabash, which were often fetched by women and children... but today, the water has receded. These benefits were confined to the lake area, as the area remained fertile for production and cultivation of maize, rice potatoes, cassava (few), onions, mango, tomato, sorghum, millet and guinea corn, particularly during the rainy season... Hence, water from the lake was used for irrigation, but in the dry season, farmers use boreholes or engine water pumps to irrigate their farms. Due to climate change, desertification and water loss have grossly affected rice cultivation in the basin area (FGD-6).

For the most part, severe flooding threatens the basin areas in Niger, Nigeria, Chad and Cameroon in 2010 and 2012 with many lives and properties lost. Other disasters caused by environmental change to the lives of the basin's population include the spread of several vector-borne diseases. For instance, alterations in the vectors of disease (mosquitoes), waterborne pathogens (cholera) and water and air quality affect animals and intensify pests damage on plants (LCBC, AFD and The World Bank, 2015; LCBC, 2016c; Magrin, 2016). According to the UNDP, (2017) "Everywhere, the consequences of climate change obvious in the Lake Chad basin, cattle carcasses on the roads, dusty skies, sand dunes and dry polders testify to the impact of successive droughts and the proximity of the Sahara Desert." While "the shallow waters of the lake, at most seven metres deep, make it dependent on seasonal rains and susceptible to evaporation", it concludes.

Environmental degradation resulting from sedimentation (and siltation) has negative effects on fisheries and transport between the Lake Chad islands. The course of the Chari and

Logone has been diverted while the position of villages on the river changed over time due to sedimentation. For instance, changes along the Logone - the natural border between Cameroon and Chad may have forced villages to move from one nationality to another or vice versa. While some islands were settled for over 40 years as a result such as Kinesserom, on the Chadian area of the lake, some recent islands formed were settled with mobile fishing camps. With more pronounced instances in the Komadugu-Yobe where the River regularly changes its course, transboundary conflicts have generated. From 2010 to 2012, many parts of the N'Djamena were flooded by the Chari River, rising flows, and intrusion from the Logone into the reservoir near the Maga dam have threatened its operation with periodic failure of the dam (LCBC, 2016c).

The vulnerability of Lake Chad to resources depletion induce socio-ecological changes and livelihoods impairment. For instance, social tensions rose in 1976 when the northern pool completely dried up, and fishers of several nationalities migrated to the southern pool, an area shared by Chad and Cameroon. Many fishermen change to farming, hoping it would be easier to cope with their new conditions. Meanwhile, conflicts arise between farmers and local fishers, on the one hand, and between herders and farmers, over competition for access to scarce water resources (LCBC, 2016c). “The population heavily relying on subsistence agriculture - farming fishing and livestock, have their productions declined as population increases” (MIOT-1). The vulnerability includes involuntary job change, forceful migration, conflicts among resource dependents (most especially Farmer-herdsmen conflicts) etc. The concerns below reinforce this argument,

The drying up of Lake Chad has forced many populations to change occupation - from farming to fishing or transhumance or combine jobs, thus bringing further stress on the environment and its resources. Worse still, the relationship between farmers and herdsmen is often conflictual. The animals destroy farmlands, eat up the produce as rising population and environmental challenges have led to the

extension of farmlands. The precarious situation has also led to the theft of farm produce and rustling of livestock (FGD-6).

A similar concern noted that,

Most farmers, forced out of jobs, were compelled to migrate to cities, several of them live in the urban fringes of the cities, and when the BHT conflict emerged, the areas provided the ready-made armies for recruitments. The effects of environmental change, such as the loss of water and arable land, impact negatively on livelihood activities. Thus, the loss of livelihood, landlessness and poverty forced the population to the cities in successive chains of rural-urban migrations, particularly from the northern and eastern axis of Borno Nigeria years before 1999 (GNGO-4).

The foregoing reveals that implications of Lake Chad's recession on the region and its population are multifaceted, with direct bearing on livelihoods, transborder relations, communities' resilience, conflicts among resource users and entities including the Boko Haram crisis etc. Despite considerable responses from national governments, particularly the four riparian states, multilateral mechanisms were engineered, beginning with the advent of the Lake Chad Basin Commission in 1964, among other institutional interventions. The depletion of Lake Chad's water and resources has effects on human security and development in the region and elsewhere. With resources believed to be "causal mechanism" of conflicts, that scarcity of resources (eco-violence) hinders the capability of poor societies' resilience against socio-economic pressure. Therefore, its apparent constraints on growth, effective social investment and technical innovation (Barbier and Homer-Dixon, 1999) are salient to the narratives in the Lake Chad Basin.

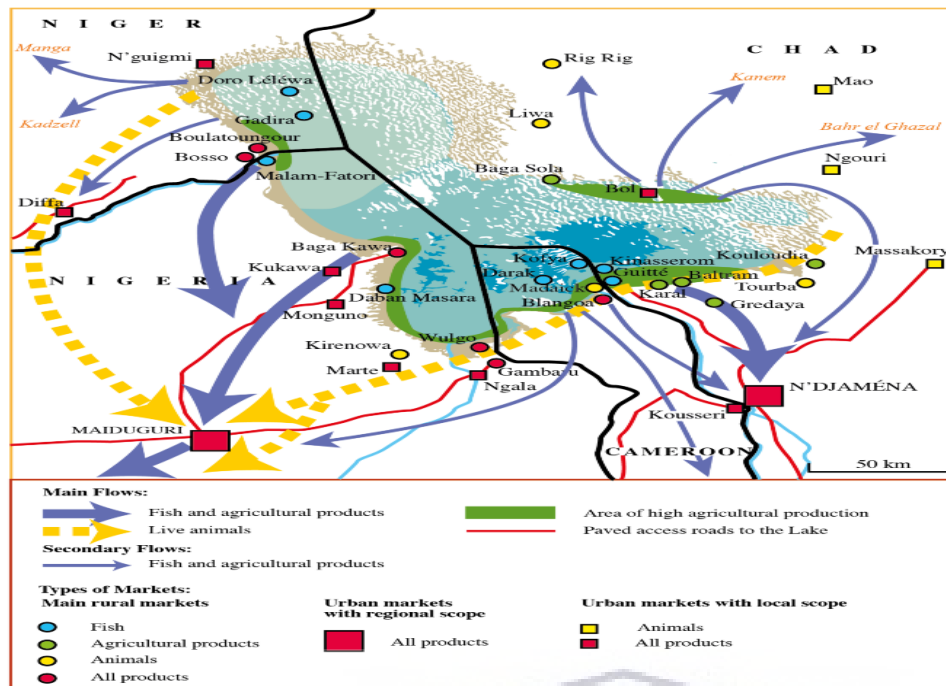
6.4.2 Socio-political and economic development in the Lake Chad Basin: components and constraints

The Human Development approach to human security (and its Reports) provides alternative narratives to understanding social development problems and progress across the world (Gomez, Gasper and Mine, 2015). Indeed, critical studies and reports on development in Africa have assessed the impacts of climate change, environmental degradation and the relevance of natural resources and transboundary water bodies to regional resilience, livelihood, and transborder cooperation (Goulden, Conway and Persechino, 2009; Heinrigs and Trémolières, 2012; Sušnik *et al.*, 2014; LCBC, AFD and World Bank, 2015; UNDP and OCHA, 2018). The major components and constraints of human security in the region are thus perused across these sub-themes: Livelihoods, capability and food security; Socio-economic factors of human insecurity; Economic migration, vulnerability and resilience practices; in the Lake Chad.

6.4.2.1 Livelihoods, capability and food security

The Lake Chad environment, water and general biodiversity are crucial to the sustenance of its population's livelihoods, capability and security. The socio-economic activities in the region are predominantly agriculture - farming; fishing; pastoralism, and trade (Figure 6.2). Until 2014, the lake was a net food exporting hub within and beyond the Sahel, owing to its ecosystem fertility and population's adaptation techniques, producing huge quantities of cereals, vegetables, meat and fish. However, the degeneration of environmental resources induces socio-economic impairment, poverty, and serves as the traditional driver of conflict among resource dependents due to scarcity. (Onuoha, 2008; Okpara *et al.*, 2015; Magrin and De Montclos, 2018). The socio-political and economic developments in the region are significantly affected by these factors, with effects on food security and transborder relations beyond the region.

FIGURE 6.2: TRANSBOUNDARY FLOW OF AGRICULTURAL ACTIVITIES IN THE LAKE CHAD



Source: LCB, AFD and World Bank, 2015: 13

6.4.2.1.1 Farming

Farming in the Lake Chad involves two main components, food crops and cash crops. Depending on which country, the major food crops include millet, sorghum, wheat, maize, taro, cassava, sweet potato, yam, cocoyam, bell pepper, okra and onion. The cash crops such as rice, dates and cotton are mostly cultivated in large farming systems. These methods apply the organic input of the natural soil resources for short term maximisation of soil productivity, with minimal use of irrigation or drainage, and chemical inputs. Indeed, a corresponding testimony revealed that “lots of maize, rice, guinea corn, millet grow at the shores of Lake Chad, while the lake’s water is channelled for irrigation, often without fertilisers needed. Hence, tropical fruits such as banana, oranges etc. grow naturally, with little efforts from farmers (GNGO-3). The farming categorisation is contrived by full or partial water use. The cultivation system in the Sudanian zone is diversified, manual, animal-powered and sometimes reliant on mechanised crop-growing practice. While rainfall patterns and water sources characterise the practice in the Sahelian or Sudano-Sahelian zones (LCBC, 2016c). This is buttressed by the statement below:

The Lake Chad basin is a source of livelihood and transportation in the region, the Lake and the environment supports large scale cultivation of crops and foods, freshwater fishing, and livestock production. Small scale agriculture is located around the lake areas and farther beyond, waters from the lake are used for irrigation. Onions, pepper, tomatoes and rice are largely cultivated in these areas. In areas such as Yau, Metele, Asara, Gashigar etc., rice and wheat grow in the wild, and some people just go and harvest...(PING-2)

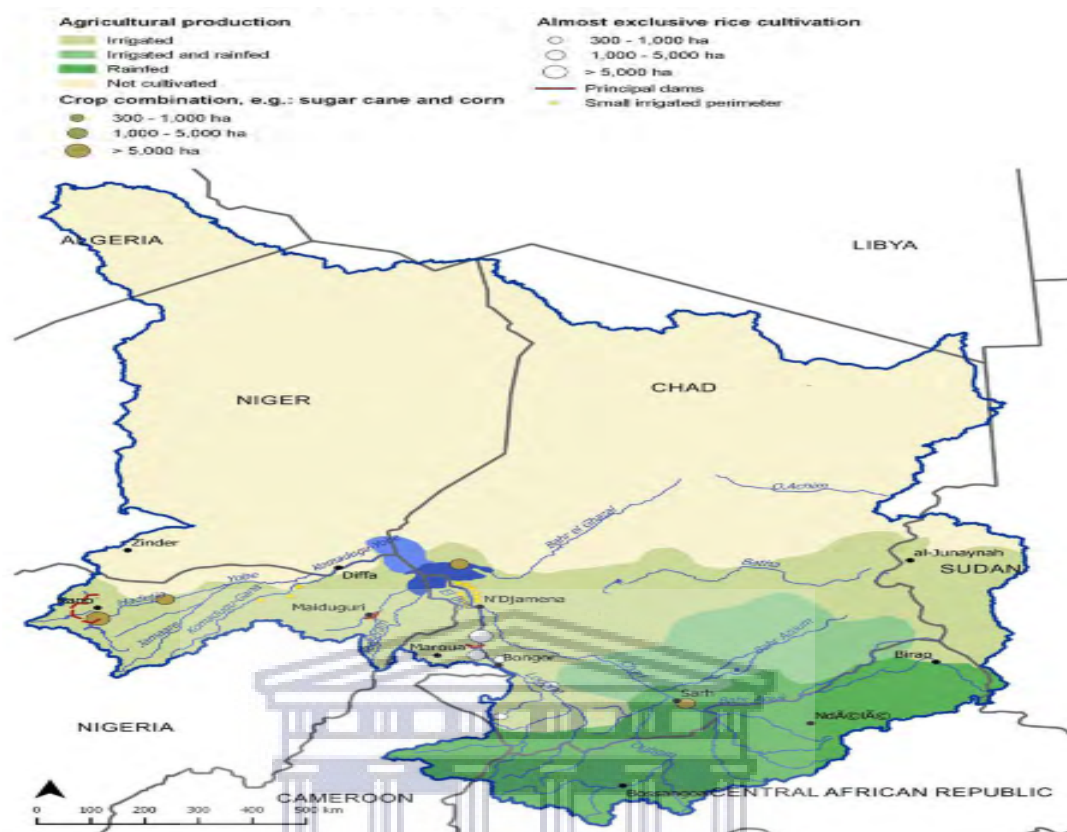
Importantly, climatic conditions and political crises have influenced farmers settlement in the region, for instance, the Wadai populations occupying the lake's south banks, arrived in two waves - the 1980s and the 2000s (LCBC, AFD and World Bank, 2015). Due to climate change and other socio-economic factors, the region's main farming techniques include rainfed farming, flood recession farming and irrigated agriculture (Figure 6.3). Rainfed farming (reliant of rainfall) is practised in the rainy season without irrigation. This is predominant around the Lake and the upstream areas of the Komadugu-Yobe and Chari-Logone rivers where maize, peanut, red sorghum, millet, cowpea, sweet potato, and cotton etc. are mainly cultivated. The Chari-Logone floodplains, mostly the Yaere-Naga in the Chad-Cameroon border is vital for rain-fed farming and market gardening and small-scale production of cash crops, fruits, vegetables, flowers, sold to consumers and restaurants. In Diffa (Niger) and Bol (Chad), dunes are used for rainfed cultivation of millet on a 5,000,000 *ha* farmland (LCBC, 2016c: 84)

The flood-recession farming is a natural irrigation technique necessitated by flooding's natural saturation of soils along watercourses in lowlands and floodplains. This is renowned in the Waza-Logone area, Cameroon which grows sorghum (about 120,000 *ha* per year) and Salamat, Chad (LCBC, 2016c: 84). This mainly household practice, featured among most of the population in the lake shores, while some mechanical inputs are complemented with this technique to enhance cash crop production. Significantly, through heavy clay soils (Karal, as

locally known) with high water retention capacity found in the basin's depressions, flood-recession sorghum is transplanted at the end of the rainy season. It completes its development cycle by drawing on the moisture retained in the soil. Cereals (rice, transplanted sorghum and maize), legumes, tubers are grown in large quantities including market vegetables, such as peppers in Niger transported to the Nigerian market.

The third, irrigated agriculture, is largely practised in the basin's southern half, small communities contiguous to the lake and rivers and the region's developed areas. The farmlands are irrigated by either or both pumping surface water and pumped groundwater, often undertaken to mitigate the vulnerability of rainfed agriculture to climate conditions. This practice is dependent on water control - endogenous or exogenous, often meant for specialised products such as rice as well as market gardening products or legumes, used as food supplement among the basin's population. The technique requires widespread use of manure and or inputs such as fertilisers, seeds and insecticides. In addition, farming is also carried out in the areas of the Lake Chad protected from flooding (mainly Chad and to some extent in Nigeria) through the Polder system - installation of temporary or permanent dams erected from local materials or reinforced concrete. These grow wheat, maize, flood-recession sorghum, fruit trees, date palms and sugar cane, including vegetable and other fodder crops.

FIGURE 6.3: AGRICULTURAL PRODUCTION IN THE LAKE CHAD BASIN



Source: LCBC, 2016c:83

The harsh climate and its variability impose major constraints on this sector. The lake's recession resulting from a series of long-term dryness created new cultivable areas, which may have been useful to local farmers. However, the farmers in the region are specifically affected by the impacts of seasonal variability on their harvests due to the receding water level. Worse still, several hectares of sweet potato, maize and cassava are often damaged by early floods, while some sites become submerged and marshes covering some previously farmed lakeside (LCBC, AFD and World Bank, 2015; LCBC, 2016c; Magrin and De Montclos, 2018). Other notable constraints include conflicts between socio-economic groups, land ownership crisis, and shattering failures of large irrigated lands, and lack of leadership among other perennial impediments to agricultural practices in the region (PING-2; GNGO-3).

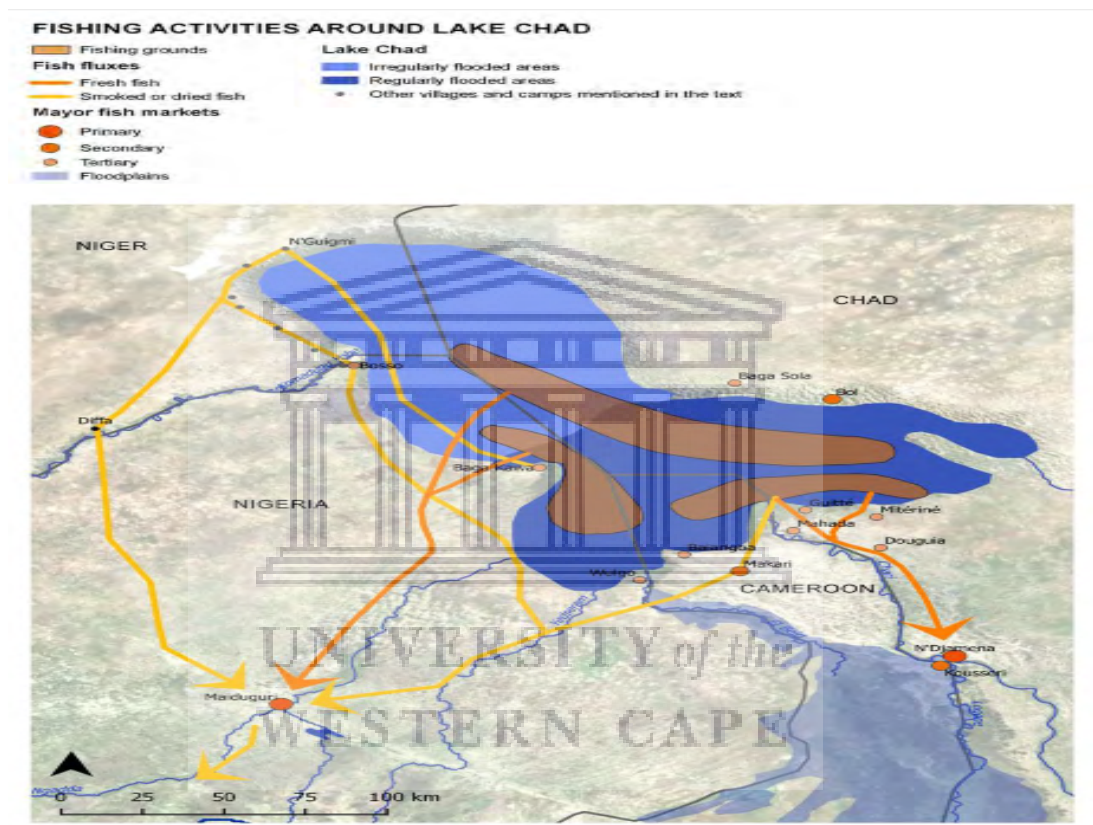
6.4.2.1.2 Fishing

Fishing is a prominent socio-economic activity in all the communities in the vicinity of Lake Chad (and other water bodies - rivers, reservoirs etc.). The fishing sector is a significant source of income for above 200,000 people across the basin. While providing food self-sufficiency for national economies, an estimated 60,000 - 100,000 tons of fish were marketed in the region in 2012 (LCBC, AFD and World Bank, 2015:13). A good example is Baga (Nigeria), whose major fishing outposts previously produce some 200 truckloads of fishes per week, including wild fishes, crudely harvested and processed with minimum inputs (GNGO-3; PING-2). Around the lake, main fishing communities include the Bodoma, Musgum, Kotoko, Shuwa Arab, Masa, Sara, Hausa, Kanuri and Malian communities. Hence, fishermen in the Lake Chad are highly cosmopolitan population and from various Sahelian and West African nationalities beyond the riparian states (Mali, Ghana, Benin Central African Republic) (LCBC, AFD and World Bank, 2015:16).

The permanently exposed area of the Great Barrier, separating the northern and southern basins controls the Lake's hydrology. The swampy vegetation makes fishing a booming activity, and the richness of the basin's floodplains in organic matter and minerals accumulated over the dry season provide a vital natural fishing reserve, with ideal conditions for fish growth and breeding. In this regard, eight water bodies are crucial to fishing in the region where close to 120-140 fish species are sourced (LCBC, 2016c:44). The most fished area is the small seasonal water bodies and channels with receding waters, followed by the major watercourses, and the Lake Chad (open waters). The rest include small permanent water bodies and ox-bow lakes, tributaries, floodplains, irrigation channels and artificial reservoirs (Figure 6.4). The three major groups of fishermen active in this sector include the well-equipped professionals, practicing seine fishing on the lake, and other large water bodies. They migrated to the lake from outside the basin communities particularly Nigeria, Mali, Benin and Ghana. Other categories are the nonprofessional seasonal fishermen, who combine fishing with

other activities (farming and livestock); and the indeterminate number of occasional fishers (men and women). Moreover, the sector benefits other direct and indirect players, whose numbers cannot be ascertained given the informal nature of their engagement. These are the fish handlers, transporters, processors and resellers. Others among them are the boat, net and rope makers, and ice sellers etc.

FIGURE 6.4: FISHING ACTIVITIES AROUND THE LAKE CHAD



Source: LCBC, 2016c:103

Fishing in the Lake Chad is largely artisanal, only about one percent of the fishing boat is motorised, with some 31,000 estimated canoes used (LCBC, 2016c: 100). The canoes were made from planks of wood, plywood or dug out from a single trunk of a tree. The common fishing methods include gillnets (floating and fixed), traps including dumbas (fences of chamber traps), baited and unbaited long-lines, beach seines, calabash floating (catching) technique, casting nets including mosquito nets, etc., however, the methods vary according to the depth of water or available fish species. Fish production varies annually depending on the

volume of rainfall and pressures exerted by fishermen on the watercourses. The sector is dominated by men (even occasional fishing) while women are largely involved in the processing and sale. Moreover, Lake Chad's fish processing techniques include smoking (braising in the grass and smoked over a wood fire), charring, sun-drying and frying, which are largely performed by families of fishermen (particularly women). Fishes are mainly processed, due to inadequate cold storage facilities. "Locally, fishes are sold fresh on the banks of fishing sites, quaysides, and local markets (where processed fish can also be purchased). Large volumes are sold at markets in distant towns, metropolis and across international borders, with the majority marketed in Nigeria, where demand is high" (PING-1; PING-2).

The Lake Chad fisheries are commonly managed in three ways, the traditional systems managed by traditional authorities, as practised in Cameroon. As a result, state authorities involve merely in oversight and awareness creation. The mixed systems involving both traditional and state authorities, feature commonly in Chad and Nigeria; and the modern systems managed by state authorities are also practised in Nigeria and Chad. The principal roles of the traditional and modern systems include regulation of the fishing seasons, promoting fish reproduction; defining fishing areas; taxation and exerting appropriate sanctions and fines. The fishermen are mostly organised into cooperatives, groups and associations e.g. Fish Producers Marketers Association, the Lake Chad Fisheries Association, the National Union of Fishermen and Seafood Dealers (NUFAS), Nigeria etc. (PING-1; FGD-4). Nevertheless, the continuous recession of Lake Chad impair fishery activities and a large proportion of fishermen has changed to farming or livestock activities. In addition to natural impediments (climate change, low rainfall, etc.), population growth threatens the sector. Overfishing, water diversion with fishing channels, and illegal fishing methods (use of nets with tiny mesh), severely curtail fish population, estimated above 120 species (AFROSAI, 2015: 21).

6.4.2.1.3 Pastoralism

Pastoralism is a productive sector of the Lake Chad economy. The unique Lake Chad resources - water and pasture, makes it significant for livestock rearing (Figure 11). Pastoralism is essentially based on mobility with transhumant farming and pastoral nomadism. Apart from the Lake Chad's native Kanuri and Bodoma agro-pastoralists, bands of Sahelian or Saharan livestock breeders (Toubou, Fulani (also known as Fulbe or Peul) and Shuwa Arabs) have settled the region in different rangelands due to the Lake's essential values. This includes its shelter against severe droughts, short radius mobility system of flood-recession pastures linking the hinterland, and regular but seasonal point (dry season) of extensive mobility (LCBC, AFD and World Bank, 2015). The camel Toubou are nomads from northern Niger, the Shuwa (Choa) Arabs - originally Chadian nomads and sedentary herders/farmers, are found in the southern Lake Chad basin across the four countries. While the Fulani, mostly transhumant cattle farmers, live everywhere in the basin and travel throughout the year with their livestock. The Lake Chad, its forage and water availability throughout the year, makes these groups passage (and others) inevitable following the 1970's droughts (LCBC, 2016c).

While true nomadism is diminishing in areas such as the M'Bororo in Cameroon who settled from the Central Africa Republic in the 1920s but now engaged in sedentary agriculture, the sector is diversified as most pastoralists combine other livelihood activities - fishery or farming. A remarkable feature includes livestock development by groups of farmers and or fishermen (while the pastoralists periodically look in opposite directions). The Bodoma and Kouri tribes usually increase their herd sizes during the booming farming and fishing seasons. The sedentary farmers and fishermen among the Kanembu (Chad), Diffa region (Niger), and Borno (Nigeria) particularly also invest in livestock, of which many of them are entrusted to local herdsmen operating around the lake.

There are two types of herdsmen, the nomads - who move about with their livestock, and the resident herders. The latter gathers the animals at a certain point where they eat and drink in the morning, while they retrieve the animals to the villages. In some cases, the process is carried out by the owners or by paid grazing men or boys who return the animals to their respective owners. This type of livestock breeders does not go farther searching for pastures for their animals despite the dwindling grazing lands. During the harvest (mostly in the dry season), they supplement the grazes fed to the animals with leftovers of millet, sorghum, guinea-corn etc. from their farms - or the by-product of the harvests, which are stacked, ground and packed as feeds for the animals in anticipation of the rainy season. Accordingly, this was a major practice until the BHT crisis. "Some herders in Borno were able to bring their livestock to Maiduguri before the heat of the crisis when many were stalked, and their animals snatched by rustlers and insurgents" (FGD-1). Opinions below noted further:

...around the lake, livestock graze on the vegetation and drink from the water channels. In the remote areas, herdsmen cross the roads and travel long distances with their animals in search of pastures and water and then return to their base in the evening. Most of the herdsmen are found in the lake areas, but in the dry season, they leave the area, move from villages to villages in the grasslands and travel far distance for grazing their livestock (FGD-1; FGD-6).

The herds provide a significant form of capital, meat, milk, and leather etc. for local consumption and industrial use. Dromedaries such as camels, donkeys and horses are modes of transportation across the region. An estimated number of livestock ranges in 2012 across the Lake Chad areas in the riparian countries is captured in (Table 6.3), as confirmed by a key informant, "There are two major means of saving or investment known to the rural people, the purchase of livestock or land. Because livestock hardly depreciates in values, they can be sold at will to address their needs" (GNGO-7). Most livestock on the rangelands of the Lake Chad

basin includes breeds of cattle, camel, horse, donkey, sheep and goats (Table 6.4), and other small ranges of livestock - poultry and pig etc. Of note, is the Kuri cow, a rare cattle breed-specific to the Lake Chad rangelands (although not native only to the area), is dying out. The Kuri breed is remarkable for its highly productive milk and significance for cross-border trade.

TABLE 6.3: LIVESTOCK PER RIPARIAN COUNTRY OF THE LAKE CHAD, 2012

Head of Livestock (2012)	Cameroon	Chad	Niger	Nigeria	Total
Cattle	5,001,000	7,800,000	10,125,768	19,200,000	42,126,768
Goat	4,600,000	6,780,000	13,760,687	57,600,000	82,740,687
Sheep	4,000,000	3,150,000	10,369,517	38,500,000	56,019,517
Camel	0	1,450,000	1,676,567	20,000	3,146,567
Total	13,601,000	19,180,000	35,932,539	115,320,000	184,033,539

Author's compilation based on figures from LCBC, 2016

TABLE 6.4: SPECIES AND BREED OF LIVESTOCK REARED IN THE LAKE CHAD

Species	Breed
Cattle	Arab, Bororo, Fulani, Kilara, Kuri, Massa, Toupouri, Wadara
Sheep	Arab, Fulani, Kababish, Kirdimi, Peul, Poulfouli or Massa, Uda, Waila,
Goat	Arab, Baguirmi, Kirdimi, Moussoro
Camel	Arab or Zebedi, Gorane, Kanem, Mahamid or Manga
Horse	Arab, Berber, Dongola, Logone pony

Author's compilation based on figures from LCBC, 2016

However, the sector has been constrained by several factors, particularly the impacts of climate change and insurgent crisis. Others include weak technical supervision and regulation of rangeland grazing and movement, persistence growth of infectious and parasitic diseases, inadequate research and programmes on transhumant livestock production (GIZ, 2015). Tensions arise not only due to population increase and pressure on forests for fuelwood but increasing nomadic communities' movement southward owing to the depletion of their erstwhile lush grazing lands. Thus, large production of livestock is threatened in most areas by emerging farmlands on transhumance corridors, the encroachment of buildings and croplands on previously gazetted pastures (GIZ, 2015; LCBC, 2016c). Consequently, clashes between herders and farmers have become recurrent, especially in grassland areas of the region.

Nomadism never existed in the Lake Chad area before, the movement of sedentary farmers are largely due to vegetation disturbance occasioned by climate change. The Kanembus, Buduma, Shuwa Arabs and Fulani are always sedentary, as a result, they are forced to travel with their herds away from their homes in search of pastures between June and October. The temporary displacement of the cattle enables grasses to regrow to feed the animals at the dry season, upon return to their base in October. Hence, different areas of the region are challenged with overgrazing due to the scarcity of grasses (AFROSAI, 2015). Remarkably, the Fulani is among the nomadic groups whose livelihood is dependent on the resources of the Lake Chad Basin. They move around with their grazing animals and often migrate southward in search of pastures. It was reported that “in most cases, there are no demarcated grazing lands, and, in few areas, where that exists, farmlands have surfaced on those arable lands once demarcated as grazing areas” (GNGO-5). The movements of herdsmen generally have serious security and socio-economic implications for the region, particularly herdsmen-farmers conflicts in Nigeria, it is a threat not only to the herdsmen but also to farmers.

6.4.2.1.4 Trade, Mobilities and Transborder relations

Population dynamics of the Lake Chad basin is largely influenced by the changing state of the lake and its environment on the one hand and regional security patterns on the other. In 2014, the population directly dependent on the Lake Chad was estimated at 2 million, around nearly 100 km to the tri-border point - Nigeria, Cameroon and Chad (Figure 6.5). Out of the nearly 50 million inhabitants of the conventional basin, thirteen million dwelling within a 300 km range from the Lake eclipse most of the region’s migratory flows and agricultural commodities (LCBC, AFD and World Bank, 2015:11). Across the islands and shores of the Lake and its tributaries, intense migrations characterise the communities-environment relationships. Shifts in the state of the Lake, specifically its transition in the 1970s from Medium Lake to Small Lake warranted changes in habitat configurations. New settlements, villages, livelihood

outposts emerged, old ones continue in a weak shape till they fade out of the production and trade chains. Annually, fishermen move in search of aquatic resources, pastoralists for grazing lands and farmers for flood-recession lands. This search, determined by the pace of flooding and flood-recession, often enhance mobility during high or low flooding years, particularly in the northern basin where the variability of natural resources is higher.

High flooding year, favourable to fishing enhances migration among Bodoma and Hausa fishermen, while pressures on resources increase rapidly in low flooding years - of the 'Dry Small Lake'. As observed during the 1970s and 1980s configurations, inhabitants of the northern basin move southward in search of their livelihoods. Conversely, sustained flooding and continuous heavy flood-recession in the late 1990s and the first decade of 2000 enhance farming and livestock production. Migration among the Komadugu Yobe River populations to the interior of the northern basin, also include pastoral movements from various localities. The influence of this on regional trade, communication and mobilities enhance livelihoods in the basin. This is further substantiated below,

The Lake Chad area is viable for agriculture, fishing, livestock etc., because of the interconnectedness of the region with three international borders - Niger, Chad and Cameroon, where a lot of transborder activities take place and northeast Nigeria particularly Borno is an entrepot and industrial base for the contiguous communities across the international borders (GNGO-3).

Regional metropolitan centres are pivotal to the marketing of agricultural products, Maiduguri is a redistribution hub towards other Nigerian cities as well as N'Djamena Chad. Merchandise is also extended to interiors of the Sahelian Lake Chad (such as Kanem, Chad, Manga and Kadzell in Niger, Serbewel in Cameroon, Borno in Nigeria), where structural cereal shortages is experienced (LCBC, AFD and World Bank, 2015). Besides, road constructions between 2000 and 2014, particularly in Nigeria linked several communities previously isolated,

while markets around the lake are relatively well organised and specialised to allow grouping of products transported to big urban centres. Most of these include Nigerian communities such as Baga Kawa, Monguno, Gamboru, Wulgo, and Maiduguri. Fishes, livestock and several farm products (pepper, cowpeas, vegetables and onions) are being marketed. Three significant cash crops traded include cotton, peanuts and onions. Gum Arabic also provides extra income for some 500,000 households of crop farmers, sedentary and nomadic livestock farmers (LCBC, 2016c:95). Women are empowered through processing and retail trading of agricultural products particularly fishes.

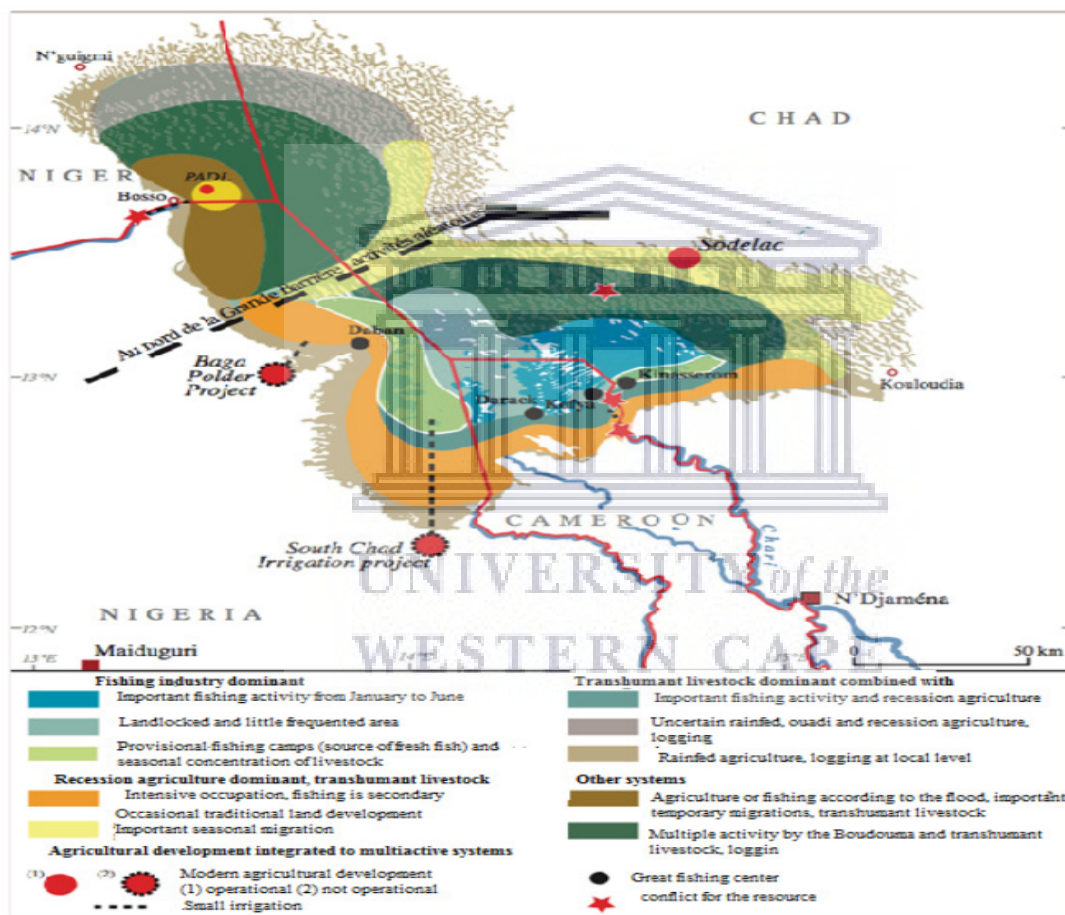
Conversely, Boko Haram insurgent crisis cripples the markets from Nigeria to Chad, and Niger to Cameroon. Since 2013, it has triggered the closure of trading routes and access to fishing and farmlands, mostly in the Nigerian lake area, the Nigeria-Niger and Cameroon-Nigeria borders. The population's adaptation strategy to the effects of environmental change, through a job change, transborder trade and mobilities have been worsened by insurgency while scarcity induced conflicts escalate in the region and contiguous areas.

6.4.2.1.5 The Lake Chad and Regional Food Security

The fertility of Lake Chad's soils and the prevalence of family farming-based crop-growing systems enhance the Lake area's capacity in cereal production, cowpea and varieties of vegetables (on its southern and south-eastern shores), and bell pepper along the Komadugu-Yobe. The region is a significant source of animal protein, aquatics and livestock, suited for local dietary requirements and highly competitive against imports. The varieties of foodstuffs produced provide employments for its people, enhances their living conditions and regional food security (LCBC, 2016c). Meanwhile, Lake Chad's dynamic food production is based on complex systems, conceived by the population in autonomous ways in adaptation to environmental variability. Remarkably, this is characterized by 3 "M": mobility, multi-activity, and its multi-purpose nature (Figure 6.5). The People follows the resource "Mobility" across

directions, engaging in “Multi-activity” of active participation in two or three of the main occupations (farming, fishing, pastoralism, trade and crafts) in varying proportions to environmental conditions and cultural traditions. Likewise, the “Multi-purpose” entails their utilisation of the same regions/space for three activities (fishing, farming, livestock), periodically and in a succeeding manner as dictated by flood-recession and flooding rates (LCBC, AFD and World Bank, 2015).

FIGURE 6.5: MULTIPURPOSE NATURE OF THE LAKE CHAD’S SOCIO-ECONOMIC ACTIVITIES

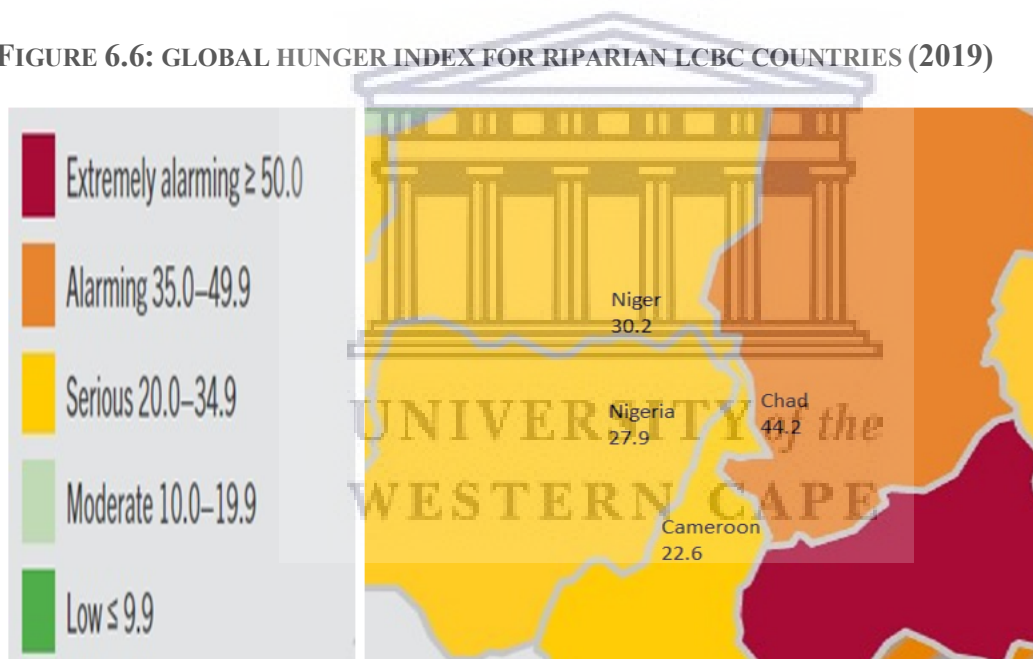


LCBC, AFD and World Bank, 2015:14

Nevertheless, the region’s susceptibility to climate variability and extremes has affected individual and household assets including the region’s natural, physical, human, financial and social capital and community wellbeing. The population’s diet consists of almost 46% of cereals and 20% of tubers. The foodstuffs provide energy, but insufficient amounts of vitamins, mineral salts, proteins and lipids needed for a balanced diet. Malnutrition including dietary

energy supply below 2,000 kilocalories per person daily is widespread in the region (LCBC, 2016c:106). Altogether, structural deficiency regarding the availability of dry cereals (maize, millet, rice and sorghum) affects the countries of the basin. Poverty and alarming hunger (and extreme in many cases) are pervasive in the Lake Chad. The Global Hunger Index (GHI),¹ a multidimensional statistical tool that illustrates hunger conditions in different countries (figure 6.6), rate Chad at 44.2, the worst in the region, followed by Niger, 30.2, Nigeria 27.9 and Cameroon 22.6 respectively (von Grebmer *et al.*, 2019:15). This may deteriorate as security and economic austerity worsen amid population growth and the negative consequences of climate change across the countries.

FIGURE 6.6: GLOBAL HUNGER INDEX FOR RIPARIAN LCBC COUNTRIES (2019)



Author's creation based on statistics from the GHI, 2019

Also, the lack of national food reserves and overdependence on imported products, increase the countries' vulnerability to food shortages. Hence, their reliance on cross-border trade to boost their food security. The landlocked Niger and Chad trade in livestock and farm

¹ The Global Hunger Index (GHI) is calculated based on the average of three indicators, the proportion of the undernourished population (Undernourishment), the proportion of underweight children below five years old (Child Stunting and Child Wasting), and the proportion of children mortality before age five (Child Mortality). The GHI ranks countries on a 100 point scale – 0 being the best and 100 being the worst.

produce especially with Nigeria and Cameroon owing to their direct access to the sea. According to the UN Office for the Coordination of Humanitarian Affairs, 369,000 children are severely malnourished (Nigeria, 289,000; Cameroon, 42,000; Niger, 20,000; Chad 18,000), while 4.1 million (Nigeria, 3.6 million; Cameroon, 324,000; Niger, 109,000; Chad 107,000) are food insecure in the Lake Chad basin (UN-OCHA, 2020:2).

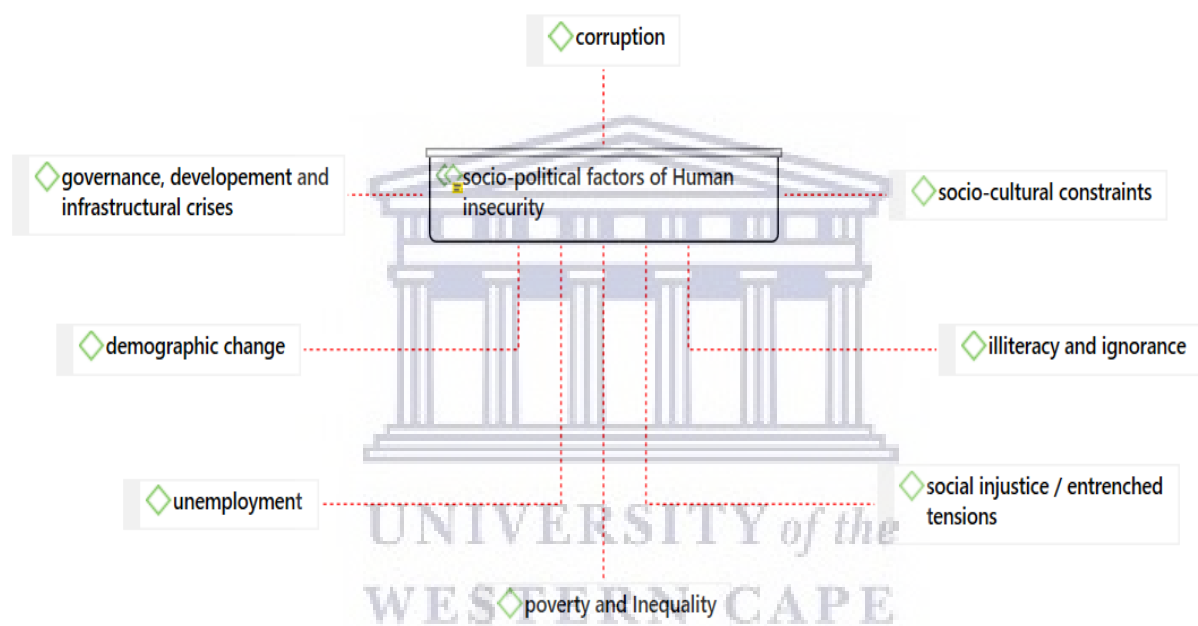
Gender inequalities in respect to food security are customary to the Lake Chad basin, making income distribution from productive activities uneven and rigidly defined. Women generally have limited access to land, the few with access are constrained to small areas with minor productive resources (particularly inputs and equipment) due to their smaller income base (LCBC, 2016c). This and its effect on women's capability is illustrated thus: "Women and children are generally regarded as "free" labour in the agricultural sector, they work in preparing the fields for sowing and during harvest without little or no direct benefit from the proceeds..." (FGD-2; FGD-5). In the livestock sector, many women active in the processing and marketing reap the benefits and some are masters of their businesses (FGD-1). In the fishing sector, the processing is an exclusively female role, including marketing of fresh fish and sales to local restaurants, but men are largely responsible for the sale of smoked fish particularly the wholesales and consignments, which generates substantial revenues (Authors observation in Maiduguri and N'Djamena; FGD-4; FGD-6). Regardless of these, the countries' long borders and regional agropastoral and socioeconomic complementarities considerably enhance trade, food sustenance, while poor climate, population pressure, internal and regional insecurity, high-level poverty, inadequate policies and weak institutions remain daunting.

6.4.2.2 Socio-political factors of human insecurity in the Lake Chad basin

The interface between socio-economic factors and human security dynamics is indicative of the multi-dimensional facets of development. Preponderance number of scholarships have established the influence of underdevelopment and social injustice on vices, criminality, and

even violent conflicts (Raleigh and Dowd, 2013; Agbibo, 2015; Akinola, 2015; Ogbonnaya, 2016). While, environmental change threatens the livelihoods, natural resource base and socio-economic wellbeing in the Lake Chad basin (Ifabiyi, 2013; Okpara *et al.*, 2015), an array of socio-economic and governance challenges in the region are critical factors of human insecurity, this includes political and governance challenges and human development crisis (figure 6.7).

FIGURE 6.7: SOCIO-POLITICAL FACTORS OF HUMAN INSECURITY IN THE LCB REGION



Source: Source: Author’s creation (ATLAS.ti version 8.4.23 – 2020)

6.4.2.2.1 Politics and governance challenges in the Lake Chad Basin

The Lake Chad region’s human development indicators are extremely lower than national averages, in countries whose index is among the lowest in the world. The region largely suffers deficits in basic public amenities and social services such as education, health, roads, water and electricity (LCBC, AFD and World Bank, 2015). The central authorities across the four Lake Chad basin countries often neglect the regions, which are all outlying or remote areas, excluding N’Djamena, the Chadian capital. The region’s extreme poverty level was worsened

by the 1970s droughts, while the economic crisis of the 1980s imposes a severe setback on the development projects of the post-independence era, thus leaving the informal sector dominant. Upbeat from the 2000-2014 macro-economic climate to boost public policies and development projects have proved defective to significantly improve the population's access to public goods. Indeed, the basin's rentier states remain weak and lack adequate control over development. Thus states often compromise with traditional and religious leaders including powerful non-state elements towards governing the areas, bedevilled by vast porous borders (Magrin and De Montclos, 2018). A significant opinion revealed that:

In terms of governance, most of these areas are marginalised with the prevalence of ungoverned spaces across the lake regions. There is a great deal of development lag in the region such as low or non-presence of governance, welfare, education, infrastructures and security etc. This makes the populations easily manipulated for political reasons by both internal and external forces. This is also linked to the challenges of population control and unchecked migrations of people across the borders. For example, many of the population in the border regions have multiple identities minimum of two and up to four depending on where they are, they could be Nigerian, Nigerien, Cameroonian or Chadian. So, availability of over 400 islands in the basin makes control or governance difficult and that is how Boko Haram found it easier to penetrate, control and strengthen its base (MIOT-1).

Although with little differences, dictated by colonial heritage, the region's history is beset by chaotic politics, frequent tensions within and across states, countless land conflicts, endemic corruption and banditry. The population's vulnerabilities are therefore multifaceted. Given the complexity of the region's enduring history, its human security predicaments are influenced by political factors - marginalisation and poor governance, and socio-economic conditions - ethnic and religious problems, inequalities (driven by age brackets, social status

and gender relations) and resource crisis. Magrin and De Montclos (2015:70) argue that “the zone, in Chad, represents 29% of its population and occupies a politico-economic axis of influence (although with perennial challenges), but in the three other countries are indeed national backwaters, representing 30% of Cameroon’s population, 9% of Nigerian and 3% of Niger respectively”. The contrasts between the lake economy’s dynamism and the limited state investments in support of its populations, make it imperative to examine the zone’s positioning across the national territories in respect to their geographic situation and demographic clout in national development and governance. Some specific governance challenges in the four riparian countries are aggregated below.

The two regions of Cameroon in the Lake Chad zone - the North and Far North regions are extremely distant from the country’s political and economic nerve centres - Yaoundé and Douala respectively. While the Adamaoua cliff poses a longstanding barrier to communications between the regions and the rest of the country, the Western Highlands triangle (1,000 km) also separates Yaoundé from the country’s window of Lake Chad. In these two regions, the government’s presence is less felt, particularly since the change of government in 1982. The cotton sector is hampered by fluctuating cotton prices and government partial neglect, its production was diverted to Nigeria several times (mostly in 2011). Perceived injustice in comparison with the eastern and southern parts of the country against the regions manifested through underemployment, inequity in access to the civil service, the disparity in services and infrastructures (roads, electricity, clean water, health and education). This formed a part of local explanations for youth’s acceptance of Boko Haram (LCBC, AFD and World Bank, 2015; Magrin and De Montclos, 2018: 70-75).

The Diffa Region of far-eastern Niger is also very remote (1,200 km or two days’ journey) from the national capital, Niamey. The region is more marginal due to its small demographic strength. Apart from an asphalt road connecting Zinder, Diffa and N’Guigmi, and a livestock well (both built since 1975), few public investments were attracted to the region

outside of regular food aid to Kazzell and Manga (due to their structural cereal deficits). Severe droughts and freeze on international aid warranted by the political crises (two coup d'état - 1990s-2000s) have evaded the region any meaningful investment. The region, thus, benefitted in the 2009-2011 investments in oil projects and the Termit Tin-Touna national nature reserve area. However, this is yet to positively enhance its status and population's livelihoods but for few elites (Magrin and De Montclos, 2018: 70-75).

These Chadian regions are extremely diverse, stretching from the north of Kanem in the Saharan zone through the Lake Chad wetlands and N'Djamena, to the Sudanian zone (Mayo-Kebbi Ouest) (see Chapters 1.8 and 5.3.2). Contiguity of the areas to the capital city, N'Djamena, determines their statuses. The pastoral water management projects - wadi development projects and regular food aid and the several multilateral polder projects sited around the shores of the lake in Bol in the 1950-1970s are remarkable. The Chadian rebellion of 1979-82 and insurrections in 2006 and 2008 occasioned stagnation in the regions' development processes. However, most of the critical public investments made in the 2000s provided by the crude oil proceeds are concentrated in the capital and contiguous areas. In Chad, apart from the paved road from N'Djamena to Karal, there is complete poor access to Lake Chad from the interior. Lack of transparency and openness in government, absence of industries, endemic poverty and resource curse have enhanced resentments by the people against the political elites in these regions (Magrin and De Montclos, 2018: 70-75).

Nigeria's North-east geopolitical zone is to a greater extent a backwater owing to its extreme remoteness from the national socio-economic and political centres - Lagos and Abuja, and the northern metropolitan city of Kano. While the zone remains a demographic titan in the Lake Chad region, it is of little significance in the socio-political and economic priority. However, it is still far ahead of the zones in other countries, for its relatively good transport system - road and railway and a thriving trade in smoked fish from Lake Chad. Unfortunately, the hydro-agricultural investments - the Baga Polder Project and the South Chad Irrigation

Project - sited in the region, courtesy the 1970s oil boom, by the Federal Government of Nigeria have been unsuccessful due to official graft, military rule and oil slump etc. Meanwhile, prospects on oil exploration mooted in the 2000s following Chad, Niger and Cameroon breakthrough top development priority in the region. However, the Boko Haram security and humanitarian crises, since 2009, have diverted interests away from development (Magrin and De Montclos, 2018: 70-75).

In all, development challenges have worsened in the region since 2016 due to two factors. First is the Boko Haram terrorist group's violence, its repression and humanitarian disaster most especially in Borno, Yobe River, Adamawa (Nigeria) the Lake Chad islands and the borders areas (Nigeria – Cameroon, Nigeria-Niger, Nigeria-Chad). The second is more economic, the drastic fall in oil prices since 2014, fluctuating between US 60 -25\$ per barrel (in 2020) has imposed untold hardship on the countries. Hence, channelling resources against the BHT crisis strains government finances and accelerate the decline of public spending on development. For instance, lack of potable water and poor sanitation and hygiene levels are principal causes of mortality and morbidity in the region. Access to an improved water supply is estimated at 45% among the rural population, and 70% in urban areas. In most remote communities, women and children walk miles daily to fetch water. Open defecation is practised by the majority of rural dwellers, while an average of 30% of urban population access improved sanitation facilities. Thus, waterborne diseases are rampant due to the population's extremely poor access to improved sanitation (LCBC, 2016c:110).

Secondly, corruption is a major factor of human insecurity in the Lake Chad Basin region owing to its negative consequences on development and incentive for criminality or despondency and anti-government sentiments. The dishonesty or criminal offences perpetrated by those in authority and their acquisition of illicit wealth benefits through graft, racketeering, prebendalism and abuse power for private gain is a bane to development and a trigger for

human security crisis in the region. For instance, Nigeria is Africa's leading economic power owing to its petroleum revenues, yet above 70% of its population lives in poverty (less than USD 1.25 per day) whilst Nigeria's gross annual national revenue is 5,270 USD per person (LCBC, 2016c:76). The rising inequality gap between in Niger, Chad and Cameroon, like in Nigeria has worsened the state of infrastructure, schools, housing and the economy due to graft in the public sector and its accompaniment with the private sectors. The cost of running the government in these countries is very high, while lack of openness and accountability is severe particularly in Nigeria, Chad, Cameroon and Niger respectively. This phenomenon has instilled a climate of resentment and hostility, and indeed critical to the growth of destitute and radicalism. A key informant submitted thus:

Corruption is a major development problem in the region. Since the Chad Basin Development Authority (CBDA) and the Lake Chad Research Institute (LCRI) both in Maiduguri, Nigeria were established, funds allocated were often siphoned or diverted (mostly in connivance with federal and state ministries of agriculture and water resources and other parastatals). The agencies are now moribund without adequate success towards realising their objectives. Before now there used to be an abundance of wheat cultivation, the flour mills and other industries for processing these are dead due to bad governance and corruption. Corruption is a recipe for underdevelopment and conflicts. The misuse of public funds and lack of accountability naturally disoriented the youths about going into agriculture, industries, entrepreneurship etc. but on how to acquire wealth through dubious means. Petroleum is also a curse to the region. It has rendered so many people idle and denied them the capacity to enhance their agency (GNGO-3).

Meanwhile, injection of funds and influx of international humanitarian operators have also complicated interventions and exacerbated corruption including diversion of relief items meant for IDPs. The testimonies below on the complicit of security forces and emergency staffs

underscores the pervasiveness of corruption in the protraction of conflict/humanitarian crisis in the region. Similarly, the National Emergency Management Agency (NEMA) officials and its state's counterpart (SEMA) were alleged of diverting funds and provisions meant for the IDPs. The armed forces were purported to receive tranches of cash as gratifications from transporter's unions in providing security when travelling along the military secured routes (FGD-5). Several extortions from motorists by security officials were also observed along the Nigerian-Cameroon border (Gamboru-Fotokol) all through to the Cameroon-Chad border (Kousseri-Ngueli) en route to N'djamena Chad (researcher's account). Accordingly, an IDP in Borno made the following remarks,

The rations of IDPs resettled to their original LGAs in Jere and Marte are still being claimed by the chairmen of the coordinating teams in the camps. The chairmen were selected by the IDPs, often connive with the security and government staff, instead of registering 1000 but register about 100 toward diverting food and relief materials for personal use... Before now, the rations were rice and guinea corn, but now they only give half rations of guinea corn. Most IDPs are denied their financial cards, while the few who possess it are at the mercy of the coordinators on 50-50 agreement of the IDPs benefits. Sometimes, they seize IDPs cards until they induce them financially. ...It came to worst when SEMA officials were bribed to let relief materials out of the camps, sometimes at night, trailer loads of foods are carted away from the camp, and often, no one is held responsible (PING-3).

6.4.2.2.2 Human Development challenges in the Lake Chad Basin

In Human Development Index (HDI) - measured by three criteria: life expectancy at birth, education levels and living standard, the region's poor development and access to essential services produce two Human Development Indicators (Table 6.8). Trailing in the global

ranking, Chad, 0.392 HDI (Rank 185), and Niger 0.348 HDI (Rank 188) currently stand at the lowest, while Nigeria 0.514 HDI (Rank 152) and Cameroon 0.512 HDI (Rank 153) stand in the middle of poor sub-Saharan African states (WFP, 2017:25). Despite upturn in commodity prices, particularly crude oil, long supplied by Nigeria and Cameroon, and joined recently by Chad in 2003 and Niger, 2011 (in addition to years of uranium exploration), per capita income remains extremely low across the countries. According to the World Bank (2019:2), the per capita income of the Lake Chad Basin countries ranged from Niger (\$414), Chad (\$728.3), Cameroon (\$1,533.7) to Nigeria (\$2,028.2) in 2018. In Nigeria, long-standing oil rents inhibited development due to corruption and dysfunctions in public institutions, huge population, economic stagnation and socio-political tensions. A similar resource curse is playing out in Cameroon, Chad and Niger. Yet, life expectancy at birth varies from 50 to 55 years, and the infant mortality rate is between 50 and 100 per thousand live births in the region (Magrin and De Montclos, 2018: 76).

TABLE 6.5: SOCIO-ECONOMIC PROFILE AND CRISIS IMPACTS OF THE LAKE CHAD

Country (pertaining LCB region)	Child Nutrition Crisis	Literacy (Male / Female) & Average Education level (years expected schooling)	Total Fertility (births per woman) & Infant Mortality (#deaths/1000 births)	Refugees, IDPs & Returnees	Tribal & Ethnic groups	Local Languages	Human Development & Multidimensional Poverty Index
CHAD (Western region: Lac, Hadjer Lamis, Kanem)	176,900 children under 5 with Severe Acute Malnutrition (SAM)	Adult literacy: 52 % M 34% F - 7.4 years	6.4 TFR 85 IMR	60,131 IDPs 90, 240 from CAR	Kanembu, Buduma (or Yedina), Maba, Hausa, Kotoko, Fula (or Fulani), Haddad	Kanuri, Chadian Arabic, Hausa, Fula	0.392 HDI (Rank 185) 0.545 MPI (86.9% pop MP)
NIGER (South-Eastern region: Diffa, Zinder)	14,338 children SAM in Diffa region; (Lean season: GAM from 13.2% in Diffa to 19.1% in N'Guigmi)	Youth literacy: 36.4% M 17.2% F Adult literacy: 27.3% M 11.1% F - 5.4 years	7.6 TFR & 57 IMR	91,360 Nigerian children out of 166,110 Nigerian refugees & returnees, IDPs	Hausa (53%), Peuls (10.4%) Fula, Shiwa Arabs, Kanuri	Kanuri, Fula, Hausa,	0.348 HDI (Rank 188) 0.584 MPI (89.8% pop MP)
NIGERIA (NE region: Borno, Adamawa, Yobe, Gombe) 14.8 million affected	383,000 MAM children & 136,783 expected SAM cases	Adult literacy: 73% M 49% F - 9 years	6 TFR & 69 IMR	2,152,000 IDPs (57% children); 152,148 children out of 262,324 returnees	Kanuri, Buduma, Hausa, Kotoko, Fula, Haddad, Shiwa Arabs,	Kanuri, Tiv, Hausa, Fula, Adamawa-Ubangi	0.514 HDI (Rank 152) 0.279 MPI (50.9% pop MP)
CAMEROON (Extreme North: Maroua region)	61,262 children SAM 133,255 (11.7%) with Moderate Acute Malnutrition (MAM)	Adult literacy: 82% M 69% F - 10.4 years expected schooling	4.9 TFR & 57 IMR	169,970 IDPs; 267,148 CAR 72,062 Nigerian refugees	Bantu, Kanuri, Buduma, Hausa, Kotoko, Fula, Shiwa Arabs	Kanuri, Tiv, Hausa, Fula, Adamawa-Ubangi.	0.512 HDI Rank 153 0.26 MPI (48.2% pop MP)

Source: World Food Programme, 2017:25

The basin's population growth rate, (also as illustrated in section 6.4.1), one of the highest in the world, heightens risks of overexploitation of natural resources and socio-political instability in the region (LCBC, AFD and World Bank, 2015). Lake Chad conventional basin's population is currently estimated at 50 million (rising from 37 million in 2002) shows a 1.5% to 3.7% annual population growth rate (LCBC, 2016c:69). The population spread heterogeneously, with huge concentrations in main urban - Maiduguri, N'Djamena, etc. and the lakeside towns, against lower densities in the more arid areas of the northern basin. Given its high fertility rate, averagely 6-8 children per women, 45% of whom are of childbearing age (15-45), a projected population rise from 45 million in 2012 to 130 million in 2050 in the conventional basin would translate to an increase from 13 million to 35 million in the lakeside during the same period (LCBC, 2016c:75). demographic pressure would continue to exacerbate the vulnerability of the poor population and their low access to basic services and infrastructure.

The intensity of poverty measured by the Human Development Report's Multidimensional Poverty Index (table 6.8) shows the basin area in and around the bottom of regional rankings in sub-Saharan Africa. Chad is 0.584 MPI (89.8% pop MP), Niger, 0.545 MPI (86.9% pop MP), Nigeria, 0.279 MPI (50.9% pop MP); and Cameroon, 0.26 MPI (48.2% pop MP). Owing to its sheer population, Nigeria since 2018 has the highest poverty rate in the region, nearly 70% of its population lives on less than USD 1.25 per day. Its gross annual national revenue per person is \$5,270 (United States Dollar), despite being Africa's largest economy, due to its oil reserves (LCBC, 2016c: 76). The overall regional MPI, conforms with agroclimatic areas of the Lake Chad basin - the Sahelian strip (Kanem and Diffa) being the poorest, as poverty declines towards the Gulf of Guinea. Surprisingly, Borno and Adamawa in Nigeria revealed minimal poverty rates, and the lowest in the region - a viewpoint hardly considered in analysing the trend of Boko Haram crisis. The above statement, as the study revealed, was due to major investment by

governments and development partners in the 2000s before the Boko Haram menace escalated.

A major factor of the capability constraint is the marginalisation of women in the region, which to a larger extent heightens poverty and despondency. Thus, 63% of women in Cameroon's Far North region are poor, compared to the 33.4% national average in 2012. Women, about 52% of the population, have much workload than men, and further constrained by limited access to education, information, agricultural extension services, credit and inputs (AfDB, 2014: 23). Across the basin, cereals are mainly cultivated by women while they solely harvest spirulina. Nevertheless, socio-cultural impediments against women's capability such as land-related disparities enhance poverty. For instance, women in the Nigerian zones own only 4% of the lands, while fisheries activities are dominated by men, in exclusion of fish processing residual for women (ADB, 2014:23).

The literacy rates and average education level of the region across national zones (table 6.8) is very low compared to the national average. Primary and secondary school enrolment across the region is poor. The primary enrolment ratio in Diffa is 57% around the national average, the literacy rate for ages 15-24 is 47% in Cameroon's Far North, the country's lowest. In Chad, gross enrolment ratio around the Lake (Lac Region and Hadjer el Hamis) is 45% (almost half of the national average), 91% with a slight improvement in contiguous regions Mayo-Kebbi (47%) and Chari-Baguirmi (65%). In Nigeria's Northeast gross enrolment is 47.7% half of what obtained in the southern part. Similarly, gross secondary enrolment rates are also low in the region - less than 10% in Chad and Niger, Nigeria's North East 30% ratio ranks lowest among the six national geopolitical zones (Magrin and De Montclos, 2018:47). A long-identified factor of poor school enrolment and completion rate include socio-cultural divide, resentment of Muslim dominated areas to western education and preference for Quranic institutions. This was observed in the Lake

areas in Chad, and Borno and Yobe states in Nigeria. The second factor for poor enrolment is poverty, lack of benefactor and incentives, as well as poor enforcement mechanisms for compulsory primary education across the zones in the riparian countries.

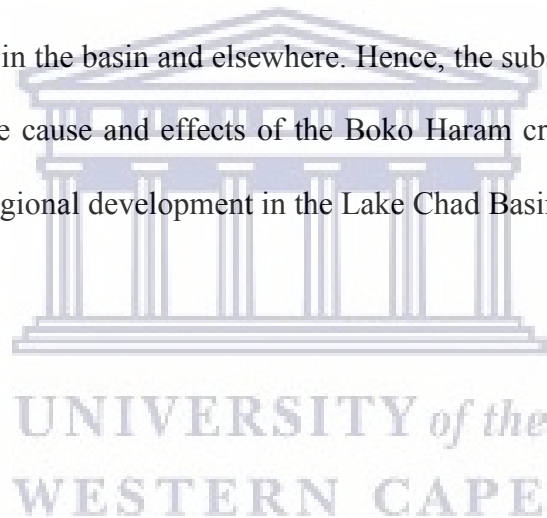
In sum, political and governance challenges - access to services and corruption; the critical human development calamity - demographic change and illiteracy, unemployment, poverty and inequality in the region highlighted above, are influenced by deep-rooted social injustice/entrenched tensions; socio-cultural constraints particularly against women; combined to exacerbate the threats of desiccation of Lake Chad on the population. Although some of the countries have high revenues, wealth is unevenly distributed across the basin. The nexus between the two phenomena illustrate that the development crisis triggers insecurity – criminality or armed conflict, while the latter impair development opportunities, livelihood and infrastructural growth (Onuoha, 2008, 2014; Magrin and De Montclos, 2018). Widespread socio-political challenges and decadent human development index retard regional development and heighten human insecurity in the Lake Chad Basin.

6.5 Chapter Summary

The chapter reflects on the myriad of human security challenges in the Lake Chad Basin, the causes and effects of the desiccation of Lake Chad, and its potentials for livelihoods and conflict in the region. While human security challenges remain complex and intertwine, the transboundary nature and socio-economic effects of the Lake Chad recession is the major issue of concern in the region. Hence, critical environmental challenges threatening Lake Chad are transboundary in nature, and indeed caused by natural (climatically driven) and anthropogenic (human-induced) factors. These include hydrological and freshwater variability; water pollution; sedimentation in rivers and standing water bodies; decline in biological diversity; invasive species (plants and animals). Others are population explosion and climate change. The cumulative implications of the factors above include livelihoods disruptions, impairment of

population and communities' resilience and impediments for regional development - capability and food security, trade, mobilities, within and beyond the region.

Likewise, the socio-political factors of human insecurity - politics and governance; and human development challenges across the riparian states of the Lake Chad were identified and discussed. Meanwhile, the prevalent socio-political challenges and decadent human development index in the region are influenced by deep-seated social injustice/entrenched tensions. Socio-cultural constraints, mostly against women, aggravates the threats of the depleting lake and its resources on the region's inhabitants. These prepare the ground for Boko Haram crisis to sprout among other factors, with daunting consequences for human security and regional development in the basin and elsewhere. Hence, the subsequent chapter provides an in-depth analysis of the cause and effects of the Boko Haram crisis as a human security threat and constraint for regional development in the Lake Chad Basin.



CHAPTER 7

BOKO HARAM CRISIS AND INSECURITY IN THE LAKE CHAD BASIN

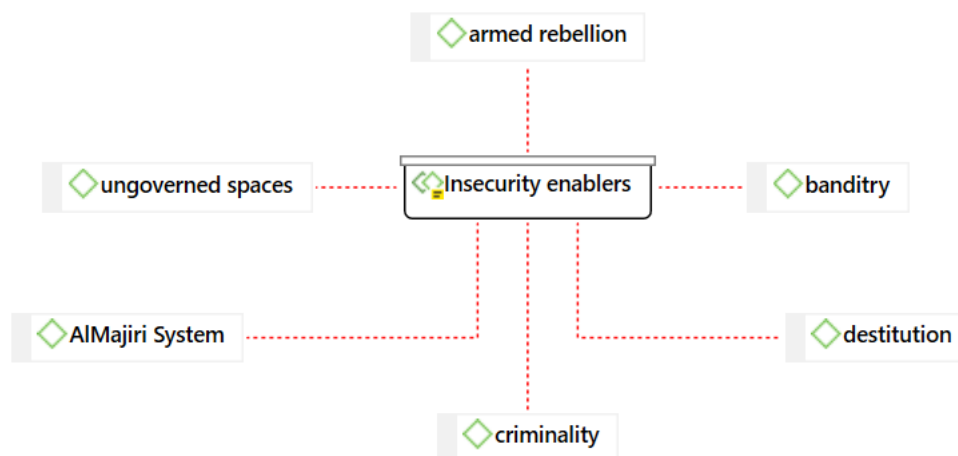
7.1 Introduction

Critical discourse on human security reveals the influence of underdevelopment, social injustice and deficient policies and institutions on conflict and insecurity, particularly in the Third World. Conflict and insecurity are costly in terms of eroding development opportunities, weakening state's power and debasing human development capacity (Buur, Jensen and Stepputat, 2007). In general, security threats to development, peace and stability in the Lake Chad basin emanate from an array of complex tensions birthed by environmental stress, resource conflicts, terrorism, armed banditry and militancy etc. These have deep-rooted historical, political and socio-economic underpinnings peculiar to the region and environs (Bamidele, 2013; Oyewole, 2013; Okoli and Iortyer, 2014; Agbiboa, 2015; Akinola, 2015; Sulemana and Azeez, 2015; Sambo, Othman and Omar, 2017). For this reason, insecurity and conflict narratives in the Lake Chad are reconstructed across these themes: Threats to security; the Boko Haram crisis; and implications of insecurity in the region (with insights from eco-violence theory).

7.2 Threats to security in the Lake Chad Basin

Apart from the threats of environmental change on livelihoods impairment and conflicts among resource dependants, insecurity in the Lake Chad basin is characterised by the following: Armed rebellion; Criminality in different forms including armed banditry; Ungoverned spaces; and the AlMajiri System and Destitution (figure 7.1). The causes of these challenges are interlocked while their effects are indeed transborder, owing to border porosity across the Lake Chad basin countries, and invariably the Sahel region.

FIGURE 7.1: FACTORS OF INSECURITY IN THE LAKE CHAD BASIN



Source: Author's creation (ATLAS.ti version 8.4.23 – 2020)

In the first place, political instability and armed rebellions in most of Lake Chad Basin countries and by extension the Sahel particularly Chad, Sudan, Niger and Mali have enabled transborder insecurity across the region's porous borders. The political challenges in these countries are reflections of state failure and politics of exclusion warranted by social injustice and marginalisation of the masses, especially the youths. Chadian rebellion (1979-82) and insurrections in 2006 and 2008; longstanding armed rebellion in the Chad-Sudan borders; and the violence in Sudan alone leading to the death of nearly 200,000 and displacement of two million population have had serious consequences for the region (Trimarchi, 2008; Essoungou, 2013; Magrin and De Montclos, 2018). Similarly, two armed insurrections, four coups experienced by Niger in its first five decades of independence have weakened its government, while Mali's 2012 military coup eroded its 20 years' nascent democratic gains as terrorists (including the *Azawad*, *Imrad* Defence Group, The *Tuareg* and *Ansar Dine* etc. - from northern Mali) compete violently to overrun the government (Essoungou, 2013; IRIN, 2018). Although a French-Chadian led intervention (2013) thwarted the rebellion, the continued conflicts induce dire humanitarian crisis and create several ungoverned spaces, thus heightening regional socio-political crises.

Secondly, criminality in the region manifests in different forms. (i) transborder armed banditry and rootlessness of armed groups; (ii) multitudes of illegal and criminal activities - light arms trafficking and smuggling of pharmaceuticals, fuel, vehicles, spare parts and contrabands; (iii) human and identity-document trafficking; (iv) cross border armed rebellion; and (vi) ungoverned spaces. The challenges are transborder in nature, owing to border porosity across the basin and the Sahel. Illegal smuggling and trafficking heighten insecurity in the region. These practices are pervasive among marginalised groups such as the Tuareg from Mali, Niger and Chad. These groups and others in the northern Sahel are susceptible to political turbulence and environmental challenges including impairment of their pastoralism and agricultural livelihoods (Lyman, 2008). Despite efforts on the effective implementation of the UN Convention against transnational organised crime by the basin's countries, transborder security cooperation across these areas remains deficient (ADB, 2014). The following observation buttresses this

...before the advent of BHT, for almost 20 years, armed robbery, banditry, wildlife poaching in the Lake Chad basin particularly the Nigerian-Cameroon border and most parts of Cameroon's Extreme North region have warranted considerable loss of lives, transportation and travelling difficulties due to the attacks on vehicles on the highway have been the region's undoing, this includes looting of mines, theft of properties and other valuables by bandits and other criminal gangs (GCO-1).

Thirdly, A strong linkage between ungoverned or under-governed spaces is prevalent in the Lake Chad. These are areas where the institutions of states cannot exercise absolute control, both development and security. In the Lake Chad, this includes poorly managed border areas, forest belts, vast desert areas etc. such as the Sambisa Forest in Nigeria, the Mandara mountain areas between Northern Cameroon and Nigeria, the Aïr Massif (Mountains) in Niger, Tibesti mountains in the Chad-Niger-Libyan border and some parts of the Lake Chad islands

etc. Due to remoteness or inaccessibility by security forces, these areas serve as sanctuaries or safe havens, operational bases, training grounds, logistic channels for criminal groups. These, in some cases, are areas of illegal mining, kidnapping and robbery activities for Bandits, terrorists etc. These groups often exploit the poverty and local conflicts in those areas to recruit its cell and maintain a network of informants among the local population. Accordingly

...following record peak fishing yields, rebel activity was especially prevalent around the Lake Chad's (ungoverned spaces). In 1979 there were over 15 reported cases of fishermen held for days at some time, whose nets and catches were also stolen. After a year, Kindjes Island, which provided a vital observation point over the lake, was ransacked... As a result of the unrest, a "joint multinational patrol" was established to prevent violence, douse political tensions and monitor events on the Lake (World Food Programme, 2016:15).

Despite joint patrol, the existing ungoverned and under-governed spaces in the region were used by the BHT for terror acts, particularly since 2009 when it went underground following the murder of its renowned founder, Mohammed Yusuf, by the Nigerian police. Hence, Boko Haram regrouped, and its activities thrive along the frontiers and the Lake Chad islands which are abandoned areas or 'no man's lands,' and mostly inhabited by vulnerable populations, among them the Bodoma, Yedinah and others. For instance, in Bagasola, Chad's Lac (Lake) region, development is far from the people who are mostly rural and uneducated dwellers. An informant noted that "the vulnerable ones among them embrace Boko Haram for socio-economic purposes and owing to rivalries on the control of the resources between them Bodoma (Boudouma) and Baguirmi" (MIOT-5). In Bagasola, Chad, the government is far from the people, the Nigerian currency (Naira) is the medium of transaction..., and the BHT was able to have its high command in the area where it radicalised most of the vulnerable population including its captives. An informant noted that "Bahna Fanaye (*a.k.a.* Mahamat Moustapha),

the foremost leader of Boko Haram in Chad, before his arrest in 2015, was a ringleader of clandestine smuggling activities in the region's ungoverned spaces..." (GTO-1).

Moreover, resentment and suspicions against western education loom in the region, particularly, Muslim dominated areas. Although, there is an age-long Islamic education and practices embedded in the people's culture such as the *Al-Majiri* Islamic education system in Northern Nigeria. Growing Islamic classes (madrasah) in Chad, Niger and other parts of the basin sought knowledge and teaching from foreign Muslim scholars, including radical Muslim scholars, through connections in the Arab world or the Maghreb, thus enabling the cultivation of "Islamic fundamentalist instructions" (WFP, 2016; Magrin and De Montclos, 2018). This, in part, also explain their poor enrolment for western education. On the other hand, religious extremism emerged as a tool to harness people's frustration and desperation within the context of irrefutable injustices and inequitable distribution of natural resources. Out of the confusion of weak state, lack of education and social inequality, Boko Haram lashes out and captures the society's discontent and found a tool in the "*Al-Majiri* youths". Although there are divergent opinions on this, some aggregated opinions reveal that the neglect of the *Al-Majiri* youths and bastardisation of the practice made it a potent social and security menace including possible infiltration by Boko Haram. It is therefore pertinent to ask what the *al-Majiri* represents and how it becomes a menace in the region?

7.2.1 The Al-Majiri System

The *Al-Majiri* system is an age-long practice that allows children and youths' migration to other areas to acquire Islamic and Quranic education. The name was coined from the Arabic word "Al-Muhajirun" (a term for the People of the days of Prophet Muhammed, who migrated, due to persecution, to another land). From long ago, this has been a major practice in Borno, children from across Northern Nigeria and environs come as AlMajiri to learn the Quran. The Islamic schools are in two forms, the *Tsangaya* (traditional Quranic/Islamic school where the

pupils are boarded with their Islamic teachers (*Mallams*). The second is the *Islamiyyah* (where the children go daily to study and then return to their parents/guardians' homes. Some of the Al-Majiri schools operate both the *Tsangaya and Islamiyyah*, Borno is renowned for these schools, grooming young children to learn and memorise the Quran.

The al-Majiri migrant students are well received and supported with foods or means of livelihoods in the communities where they learn. In Borno, most households store foods separately for al-Majiri to feed when they come asking for food at least once in a day. That used to be the practice in most parts of Muslim dominated areas in Northern Nigeria. A key informant maintained that “Al-Majiri is part of the cultural responsibility of the Kanuri people and a communal obligation to train students enrolled in the Quranic schools. Society takes responsibility to address their welfares including their teachers' wellbeing” (GNGO-8). In the past, children were given to the *mallam* (Islamic teacher) for Quranic education, the communities then, support them with farmlands to cultivate crops and harvest, as a form of their empowerment and meeting the needs or welfare of the *mallams*. Hence, a lot of al-Majiri have settled in Borno, and the system allows them to live and contribute to the community's development in diverse ways after graduation. However, this is no longer the case today. A lot of factors are responsible for this change.

Changes in the socio-economic condition, such as increasing population and endemic poverty in the society have affected the system, forcing the Al-Majiri to take care of itself. Thus, they move around with bowls begging “*Allah-aro*” - for the sake of Allah, and people give them alms – money, leftover foods and wears, in many cases. Indeed, most of the al-Majiris are products of irresponsible parenthood. Some are the neglected children are from mostly poor polygamous homes, whose fathers marry up to three or four wives, in a society where young girls are married out before their first menstruation or divorced several times before attaining 18 years old. In Maiduguri, Borno at large and environs, a lot of people bear

up to 10 or 15 children, while most parents abandon their responsibilities of child upbringing. As reported, “most of these children, from age six (6) fend for themselves and grew to become destitute and the bulk of the so-called al-Majiri children, who are mostly not enrolled in Al-Majiri Islamic schools but roam the streets to begging alms or scavenging to make ends meet” (GNGO-4). While nobody cares about their feeding, clothing, shelter and education, as many of them sleep on the culverts and appear rag tags, they have become a nuisance to themselves and a social menace to the society. A reputable scholar also remarked that “the indigenous al-Majiris in Maiduguri is not the problem because they are very few, but 70 percent of al-Majiris are not from Maiduguri, they mainly come from Kano and Bauchi direction. The Hausa move from places to places and come with different “baggage” ...” (GNGO-8).

Secondly, Borno used to be an area where food was very cheap, people do not trash their leftovers, they store and package for Al-Majiri to come to receive it. Hence, their major problem is food and society provide for them. However, due to decadent socio-economic circumstances and increasing populations, the people are no longer economically buoyant, most cannot feed their families regardless of feeding al-Majiri with food remnants. Hence, the al-Majiri moves from villages to cities/towns due to social changes, begging for alms. When they move to the cities their world view also changes and they become susceptible to different vices to make a living. Currently, the al-Majiri is no more a simple child looking for education but the one surrounded by many circumstances to which it must react. As personally observed, many of them live on foods scavenged in canteens, streets, and begging for alms and food across the town, others engage in petty jobs, cart pushing at the markets etc. As the challenges of modernisation overtook the Al-Majiri Islamic education, the children become economic refugees who got mixed up with the good, the bad, and the ugly. In actual sense, the AlMajiri has overstayed and the more reason, it negatively affects the Northern Nigeria, including infiltration by the Boko Haram group.

How is al-Majiri related to Boko Haram or infiltrated by the group? Indeed, a major controversy on the consequences of the al-Majiri is its possible linkage with the Boko Haram menace, as often several analysts fail to distinguish who is al-Majiri. Thus, it will be a disservice to define any out of school child or youth in the region as al-Majiri. As empirical evidence revealed, al-Majiri is a vulnerable group, several of whom were lured to Boko Haram at the embryonic stage of the group. Mohamed Yusuf (founder of Boko Haram) was reported to have persuaded the al-Majiris that:

...no matter how well you understand or memorise the Quran the government does not recognise you. You are neither paid nor empowered. You spent 15-20 years learning the Quran and no certificates as well as job or empowerment, but someone who acquires 6 years of western education (primary school certificate) becomes employed as a messenger in government establishments. He then goes further to 6-years secondary education and becomes employable as a clerk and you are not fit for that position, therefore we must change the system (GNGO-4).

Yusuf was able to lure experts who memorised the Quran and convinced them to see corruption in the government as an injustice to the al-Majiri system. Initially, the true Boko Haram were those who have memorised the Quran and others enrolled in the al-Majiri Islamic schools, but after the 2009 uprising, the whole scenario changed. The al-Majiri factor in Boko Haram disappeared, but drug addicts who do not even understand Islamic religious practices are at the forefront of the Boko Haram campaign. It is logical to pose a pertinent question that, at what time did Boko Haram cease to be al-Majiri? Therefore, it is unequivocal that the pauperised out of school children and jobless youths roaming the streets were the readymade instruments for Boko Haram recruitment. Some were lured, enticed with money, food, women and some radicalised with drugs so much that they see Boko Haram as the movement to change

the corrupt system. Because they have gained nothing from the government, it was easy to convince them to join Boko Haram.

The above enabling factors reflect the general insecurity situation in the Lake Chad basin and the context under which the Boko Haram menace surfaced and thrived. Meanwhile, with an unfavourable climate, extreme population pressure, internal and regional military conflicts, worsened by extreme poverty and rising inequality, deficient policies and weak institutions, the region's human security challenges remain daunting.

7.3 The Boko Haram crisis

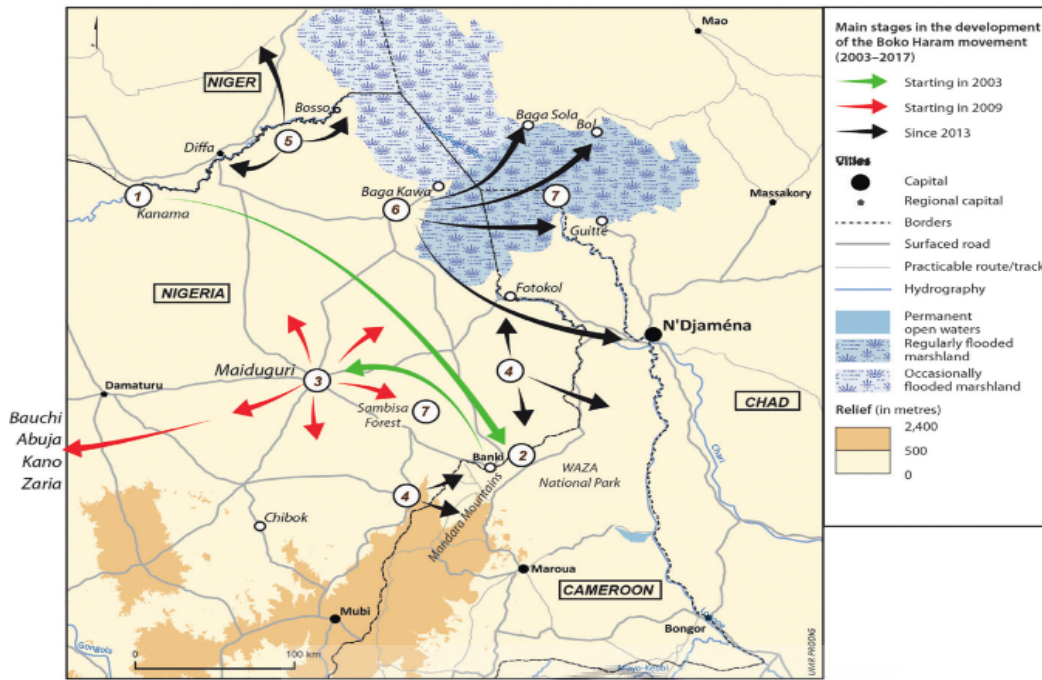
The enabling factors of Boko Haram terrorism largely correspond to the persistent development challenges and underlying vulnerabilities of the region's population to socio-economic, political and environmental threats. The protracted violence and the military approaches amid severe human security challenges undermine the self-sufficiency of national governments, communities, and individuals in the region. As rightly observed, the upsurge of Boko Haram violence in this area, forming part of the Sahel, as well as Islamic State (IS) Group's prevalence in both the Maghreb and Sahel has induced more threats, including humanitarian crisis. This is overwhelming as terrorist groups exploit transethnic solidarity (ADB, 2014) human vulnerability and the region's fragility. The origin (environmental and socio-cultural), radicalisation, trends and tactics that sustain the BHT violence are thus reviewed.

Terrorism, defined variously by scholars, presents a threat to global peace, development and security. The growing trends of globalisation and geopolitics etc. have aided the upsurge of violent conflicts, particularly in the Third World (Buckley, 2004). Typical modes of modern terrorism include explosive and incendiary bombing, shooting, assassination, kidnapping and hijacking etc. The above can be parts of wider unconventional aggressions used by political organizations, nationalistic and religious groups, revolutionaries, and state institutions such as armed forces, intelligence services or police (Mani, 2004). Employing some of these

unconventional aggressions, the Boko Haram terrorist group emerged in 2009, predominantly from Maiduguri, Borno state's capital, with influence in most of the states in the Northeast geopolitical zone of Nigeria, comprising Borno, Yobe, Adamawa, Bauchi, Gombe and Taraba states. Although there are divergent opinions regarding its actual date of establishment. As widely acknowledged, the sect was founded by Mohammed Yusuf in 2002, first as the Taliban and later as the *Jama'atu Ahlis Sunnah Lidda'wati wal-Jihād* (Group committed to the Propagation of the Prophet's Teachings and Jihad). Hence, for its notorious (extreme) opposition to Western education and democracy, alleged to have corrupting influences on Muslims, the appellation *Boko Haram*, a combination of both Hausa word '*boko*' - "western education" and the Arabic word '*haram*' - "forbidden," was adopted (Ajayi, 2012).

Following Nigeria's police extrajudicial killing of its leader, Mohamed Yusuf in 2009, Boko Haram went underground, re-emerged into a violent insurgency and became radicalised in 2012. It turned into an armed movement, created rear bases across Nigeria's Northeast. While the violence ravaging Borno, Yobe and Adamawa states, spill over to parts of Northern Nigeria and neighbouring Lake Chad countries (figure 7.2). As reported, "having expanded its theatre of operation into Cameroon, then Niger and Chad in 2014-2015, a regional anti-terrorist coalition was established by the LCBC countries to combat Boko Haram terrorism." Consequently, "the highly fragmented group retreated into the basin's islands and bushes, from where it continued to launch massive attacks, particularly suicide bombings" (GNGO-10; MIOT-1). The sect's resilience capacity raises questions about the causes of the insurgency. Some factors adduced include environmental, socio-economic and political etc.

FIGURE 7.2: MAJOR PHASES IN THE GROWTH OF BOKO HARAM MOVEMENT (2013-2017)



Source: Magrin and De Montclos (2016: 119)

Concerns about climate change and the Malthusian assumptions (illustrated in chapter 3.4) on demographic pressure as an indication for an upsurge of violence comes to mind (Hartmann, 2014), owing to the obvious effects of environmental degradation in the Lake Chad Basin. Years before the BHT, insecurity caused by Lake Chad water recession exposed affected areas to competition and migrant's influx to the lake - from the Nigerian area of the basin and from far away as Mali for economic activities since the 1970s and 1980s. As noted, "environmental change significantly influenced migration from the interior to the urban areas, Boko Haram did not emerge in the rural areas but as a result of urban violence in its initial stage, and the bulk of jobless youths forced to the major cities were involved, on the one hand... (NGGO-4). On the other hand, the effects of environmental change on regional security in the Lake Chad, particularly Boko Haram crisis, include hindrances of navigating most of the Lake Chad islands. The terrain, as reported, "makes it difficult for the armed forces to carry out military manoeuvres or combat the insurgents, while Boko Haram fighter's mastery and adaptation to the difficult marshy areas in the shores of the lake often inhibit counterterrorism

operations” (MIOT-3). The vegetation cover, especially eucalyptus and acacia species, and poor accessibility of the terrain particularly in the rainy season make the areas favourable hideouts and training grounds for Boko Haram.

Secondly, the factors of poverty may be perused differently to explain the Boko Haram crisis and its development, depending on the period of consideration. Vulnerable youths were recruited into Boko Haram due to the high level of poverty and unemployment, particularly in the post radicalisation era, 2012. However, poverty is a less significant cause. Aggregate opinions of informants reveal that jobless youths were manoeuvred or co-opted for different purposes, and not the leading cause as many have emphasised. Indeed, Borno was not the poorest state when Boko Haram emerged, there were also other states with high unemployment rate than Borno. Boko Haram should have grown in those states such as Kano, Kaduna etc. instead of Borno. A line of argument also reinforces the statements above.

Poverty as such was not behind the Nigerian Taliban in 2003 or Boko Haram’s initial version before the extrajudicial execution of its founder, Muhammed Yusuf, in 2009. Yet it drove young people, subsequently, into the militant ranks, as the hostilities aggravated the deprivation of Borno’s populations through a vicious cycle of mutually reinforcing poverty and insurgency. Nonetheless, Borno or Maiduguri was not the most poverty-stricken in the Lake Chad in 2014..., but Diffa (Niger) and Maroua, Cameroon’s poorest region with the lowest school enrolment rate, and three-quarters of the population living below poverty line (Magrin and De Montclos, 2018:129).

Thirdly, two critical but inter-related aspects of socio-cultural factors for the growth of Boko Haram can also be adduced. These are the poor child-rearing and forceful marriage practices pervading most parts of the region. The first has bred destitution and provided incentives for recruitment among destitute children and youths, mostly the al-Majiris (This is already discussed above, in section 7.2.1).

Yusuf's Salafism condemnation of forceful marriages of young girls created an avenue for social interactions among youths in his Markaz (Islamic institute). Magrin and De Montclos, (2018:135) argued that "easier access to women may have attracted single men who are unable to afford the expenses of a wedding, given the Salafist's condemnation of exorbitant cost of dowries inherited from pre-Islamic traditions." While exorbitant costs of dowries may not explain gender relations, a right explanation is adduced below.

Socially, the centre was a ground for social interactions among youths. Most girls who escaped from their fathers' houses for being forcefully married against their wishes often run to Yusuf's Markaz, complaining that their parents wanted to marry them out to a man they do not like... Yusuf welcomes them and made them realise such practice of forceful marriage is haram. Those escaped ladies were in turn married off to young men or boys in the centre. Hence that became a fertile ground or social centre to confront or alleviate some of the socio-cultural challenges of the society. Young men were married, empowered, and given senses of belonging in addition to the religious knowledge of the Qur'an and preaching sessions through which he captured the youths' attention (GNGO-2).

Additionally, political factors for the development of Boko Haram revolves around the challenges posed by poor governance and state's dysfunctions. Ab initio, Boko Haram's call for the strict enforcement of Sharia law became popular due to its condemnation of social injustice, opulence and the debauchery of the rich, and endemic corruption of the democratic space (Magrin and De Montclos, 2018). This rhetoric was not devoid of its ambiguities. One of these is the threats resulting from uncontrolled profiteering of elites involved in criminal, religious and political entrepreneurialism (Omale, 2013). Going by the prevalent practices of election rigging and thuggery in Northern Nigeria, politicians have armed and empowered thugs for protections and to perpetrate electoral malpractices. This is rightly observed thus:

The role of elites and politicians on arming youths (thugs) for electoral or political purposes etc. in Borno state and most parts of Northern Nigeria is phenomenal since 1999. For example, the so-called "ECOMOG boys" were used in the 1999 general elections in Borno state. Their equivalent in other states was the Saurasuka

in Bauchi, Kalare in Gombe, and Yandaba in Kano (2003) among others. Meanwhile, in the prelude to the 2003 Gubernatorial election, Ali Modu Sherif of the All Nigeria People's Party (ANPP) used Boko Haram to his advantage having reached secret agreements with them... This contributed immensely to his electoral victory, but they fell apart few months after he took office... many believe, that played a role in the extrajudicial execution of Mohammed Yusuf, in their ploy to silent the sect forever, but that was a turning point in its radicalisation, and Borno is not the same ever since... (PING-2).

Boko Haram kidnap of over 200 schoolgirls in April 2014, at Chibok, Borno state Nigeria, drew international attention to the government's inability to contain the menace. While few of the girls were freed in 2016, another 103 of the kidnapped girls were freed, following an agreement between the Nigerian government and BHT Group, brokered by the International Committee of the Red Cross. Meanwhile, Boko Haram Terrorist's (BHT) highly lethal attacks and suicide bombings, have occasioned over 35,000 combat-related and 18,000 terrorism-related deaths respectively since 2011. This includes at least 615 combat-related deaths recorded in the first three quarters of 2019 (Institute for Economics & Peace, 2019:2). The Global Terrorism Index (2019), ranked Boko Haram the fourth deadliest terrorist group in the world and the deadliest in Sub-Saharan Africa. Meanwhile, Nigeria climbed third in the 2019 Global Terrorism Index (GTI) with an 8.597 overall score, above Somalia. The above was a change of 5,089 between 2002 and 2018. This revealed that Boko Haram launched the most suicide attacks than any terrorist group in 2018 (Institute for Economics and Peace, 2019:18).

Moreover, multinational security operations across the four riparian member states (Cameroon, Chad, Niger and Nigeria) of the Lake Chad Basin Commission (LCBC), directly engaged the BHT. The Multinational Joint Task Force (MNJTF) was re-operationalised in June 2015, from an informal anti-banditry unit to a standby anti-insurgency combatant against the BHT and related threats in the region's ungoverned and under-governed spaces. The MNJTF operated independently and often collaborated with national security operations, such as

Nigeria's *Operation Lafiya Dole* (OPLD), Cameroon's *Brigade Intervention Rapide* (BIR) and Chad's Special Anti-Terrorism Group (SATG) (MNJTF, 2018). A field expert submitted thus:

...despite funding and logistics challenges, the MNJTF operations - 'Ops Rawan Kada,' 'Ops Gama Aiki' and Ops Amni Fakat (Chadian local Arabic expression for 'Peace at All Costs') carried out across the 4 countries recorded considerable victory against the insurgency. This includes the liberation of isolated islands – terrorist hideouts, recovery of territories, killing of Boko Haram terrorists and weapons confiscation. Specifically, the Ops Amni Fakat in 2018 successfully cleared several Lake Chad islands, neutralises three suicide attempts, killed 59 terrorists and captured terrorists including five caught in early offensives... While the MNJTF, incurred 8 death and 75 injured casualties, it succeeded in destroying the BHT's Improvised Explosive Devices (IEDs), motorbikes and 81 and 82mm mortars among others in up till March 2018 (MIOT-5).

Furthermore, Boko Haram's split in August 2016 into two distinct jihadist sects, with differing ideologies and operating methods, complicates the insurgent crisis. The Islamic State (IS) leader Abu Bakr Al-Baghdadi formally endorsed the splinter group from the long-time Boko Haram leader Abubakar Shekau and declared Habib Yusuf (a.k.a. Abu Mus'ab al-Barnawi) as commander of the Islamic State's West Africa Province (ISWAP), while Shekau continued to command loyal militant faction under the group's traditional name, Jama'atu Ahlis Sunnah Lidda'wati wal-Jihād (IRIN, 2018). ISWAP too was further factionalized when Amir Abba-Gana was appointed the new factional leader, following the elimination of Ba'a Idirisa, by the group on 9 February 2019. Ba'a Idirisa had replaced Abu-Mus'ab Albarnawi, both biological children of the Late BHT leader Muhammad Yusuf, a few months ago after infighting (Vanguard, 2020).

Nevertheless, the sect currently operates from three main locations in the region: the Mandara Mountain in the Nigeria-Cameroon border; the Sambisa forest, where the Shekau faction are permanently relocated; and the Lake Chad fringes (Lake Chad islands and the Nigeria-Niger border along Yobe and Diffa) the stronghold of ISWAP. The Shekau faction

was responsible for killing civilians in Southern and Central Borno including parts of Cameroon's Extreme North region. The ISWAP and its foreign mercenaries are fond of attacking military formations, looting weapons and killing the armed forces. Their strongholds in the Lake Chad islands are mostly the Tumbus - Tumbun Kibiya, Tumbun Alura, Tumbun Kurna, Sabon Tumbun, Kayewa and Tudun Wulgo. The camps in these areas are fortified with explosive devices and served as bunkers for its foreign commanders and local mercenaries. Local inhabitants abducted or forcefully recruited into the sect mostly from Northern Borno, North-East Nigeria along with some Budumas from Chad are trained in these areas (Vanguard, 2020). These areas, to a greater extent, insulate the sect from the armed forces, due to inaccessibility, ISWAP also claimed responsibility of the kidnapped Dapchi schoolgirls (Yobe state, Nigeria) in February 2018.

The resurgence of Boko Haram violence through incendiary attacks, suicide bombing, banditry, livestock rustling and kidnapping etc. illustrates that it is not eliminated. Its superior weapons superior firearms, some of which were labelled NATO after recovery by the counterterrorism forces, and its use of Rocket Propelled Grenades (RPG) and Anti-Aircraft (AA) guns make the sect wreak more havoc in such asymmetric warfare. As also reported, "several weapons used by Boko Haram are perhaps acquired from ex-fighters and rebels in the Libyan crisis, or those possibly sold to terrorists from the Black market" (GNRO-1; GTO-1).

More challenging is recent Boko Haram attacks against the military and their bases. Since the last quarter of 2018 Nigerian Army, suffered a series of brutal attacks from the ISWAP amounting to losses of soldiers and weapons. Nigeria's 157 TF Battalion, deployed under the auspices of the MNJTF, lost over 54 soldiers, in addition to four tanks and vehicles, to the BHT on 18 November 2018. This occurred at the Army Base on the outskirts of the Nigeria-Niger border in Metele Borno, Nigeria. This was preceded by earlier attacks on Nigerian troops deployed at Kukawa, Kareto, Ngoshe and Gajiram within two weeks from 2-

17 November 2018, where 16 soldiers were killed. The ISWAP, a Boko Haram splinter group, claimed responsibility for the Metele attacks among others.

Boko Haram, according to the Nigerian Army (2020), launched 14 attacks from 1-21 January 2020, with 38 deaths and 32 injured casualties including security agents. However, attacks in distant places such as Chibok (where 276 schoolgirls were abducted in April 2014) and Demboa - near the Sambisa Forest were mostly unreported, amid (the Nigerian) government's claims of technically defeating or decimating the sect. Other recent attacks on the Nigerian security forces include the 6 January 2020 attack on the convoy of the Theatre Commander of the Operation Lafiya Dole (OP-LD) by ISWAP, two kilometres to Auno in Kaga Local Government Area of Borno. The above and incessant shooting and kidnapping on the Maiduguri-Damaturu highway (including the killing of 30 commuters and abduction of children and women at Auno, 25 kilometres west of Maiduguri, on 10 February 2020) (Marte, 2020) not only constrained local and regional trade, travel and communication but further revealed the sect's vigour and resilience.

Similarly, the Nigerian armed forces have also not been spared from the BHT attacks. This includes the 10 January 2020 attacks at the Tillaberi Army base which killed 25 soldiers and 63 terrorists (Agence France-Presse, 2020). Recently, on 27 March 2020, Boko Haram killed 92 Chadian Soldiers in a 'deadly' attack on the Boma peninsula of Chad's Lac region. The reprisal onslaught by Chadian soldiers - 'Operation Anger of Bohama' was launched in the Lac islands after four days and lasted six days. Several BHT fighters were killed, their bunkers for weapons storage were captured including two BHT command posts in Chadian territory, recovered and destroyed. In addition to the scores of Boko Haram fighters captured by the Chadian soldiers, some of the terrorists fled towards Niger, Nigeria and Cameroon.

Nevertheless, the escalation of the Boko Haram crisis results from the lack of coordination between the national armed forces of the respective countries and the MNJTF.

The latter has been criticised for being ineffective, lacking clear strategy, intelligence and weapons to combat the BHT. Inconsistencies among the Troops Contributing Countries (TCC) show their lack of commitment to regional security but personal ambitions, the Chadian pull out from the MNJTF coalition in 2016, 2017 and a similar ultimatum in 2020 is a critical example. Similarly, most of the national forces lack both intelligence, international support and weapons to confront the BHT crisis.

In summary, divergence over the causes and intensification of BHT crisis exposes the Lake Chad basin's fragility and the states' weaknesses to address the pervasive human security challenges. Major controversies stimulated along with the critical factors of the environment, poverty, governance, corruption, religion and resources have impacted national and regional responses. Again, implications of (human) insecurity and the debates amplify potential conspiracy theories, particularly on the substance of the international community's humanitarian and military intervention agendas, and the virulence of ethno-religious stereotypes.

7.4 Implications of insecurity in the Lake Chad Basin: Eco-Violence Discourse

The transboundary nature of many of the world's water bodies and the pervasive armed conflicts in most developing or poor societies reflect the combination of environmental scarcities and the array of socio-political and economic factors (Gleick, 1993; Homer-Dixon, 1994, 1999; Gleditsch, 1998). Scarcity and violent conflict nexus vary in context and the cases are peculiar in comparison to each other. The prevailing contexts are differentiated by milieus such as the level of vulnerability of environmental resources, patterns of social relationship, nature of the state, the political power arrangement, and the structure of economic interactions among social groups (Percival and Homer-Dixon, 1998). Eco-violence presupposes that scarcities of essential resources or abundance of resources induce conflicts, marginalisation by

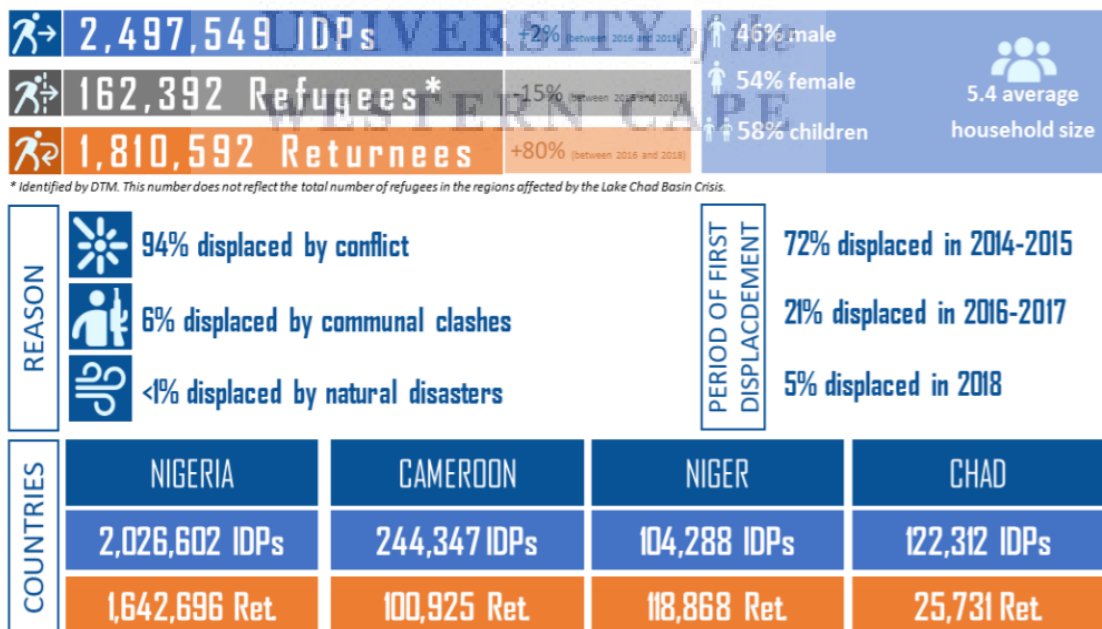
powerful few including undermining of state power and regional security (Collier & Hoeffler, 1998; Collier, 2000; de Soysa, 2002).

The above reveals that vital natural resources may stimulate destructive activities including the funding of rebellion by greedy elements. Bearing in mind other variables, stakes of primary products in total exports has a strong effect on civil wars, insurgency and violent conflicts. In most cases, it serves as incentives to rebel groups, warlords or politicians, foreign agents or transnational actors in loot captures etc. This has often generated violent conflicts particularly in the Third World and its peculiar to the Lake Chad Basin. Boko Haram crisis and the negative consequences of Lake Chad recession are interconnected in many ways. The manifestation of the negative consequences, as thematically explained below, include forced displacement; occupation of territories; restriction of access to means of production; restriction of movement, transport and trade etc. Others include livelihoods impairment; livestock rustling; looting and market disruption; loss of assets and income etc.

First is the humanitarian crisis and vulnerability of displaced persons. The insurgency, counterinsurgency and inadequate humanitarian support to the victims have imposed a perpetual violent cycle and destruction on the region. The humanitarian crisis in the region results from a combination of complex factors, ranging from the violence generated by Non-State Armed Groups (Boko Haram and ISWAP) communal clashes, under-development and environmental change. As a result, 2,497,549 IDPs, and 162,392 refugees were displaced in the region between 2014 and 2019 (IOM, 2019:3). This includes “the 2,000 - 7,000 persons reportedly missing - girls, women and resource persons” (GNGO-11). Meanwhile, 94% were displaced by conflict, 6% by communal clashes and 1% by natural disasters. The gender distribution includes 46 % male, 54% female and 58% children - representing 5.4 average household size. An estimated 1,810, 592 were resettled to their homesteads at intervals (Figure 7.3).

Key sectoral vulnerability and shelter assessments reveal that more than 2.5 million people are homeless. This includes 1,450,143 people living in conflict-affected areas in 30 LGAs (26 in Borno State and two each in Adamawa and Yobe State). Shelter patterns have shifted since the beginning of the conflict, in line with waves of displacement and returns. Most of the population (85.7%) fled their homes before 2016. Over one-third of affected people currently live in emergency family shelters, while a further one-third lives in self-made/makeshift shelters. Twenty-three percent of IDPs live in collective shelters (schools, government buildings, community centres etc.). The transitional needs of returnees are shaped by different dynamics. Nearly one-quarter of returnees assessed in return areas (267,937 individuals) live in inadequate shelters, with 87% in partially damaged housing and 13% in self-made structures. Adamawa, Yobe and the southern Borno States host the highest number of returnees in need of transitional shelter support, with 238,264 individuals either in partially damaged or self-made shelters in both States.

FIGURE 7.3: DISPLACEMENTS IN THE LCBC COUNTRIES - FACTORS AND COMPONENTS



Source: IOM, 2019:3

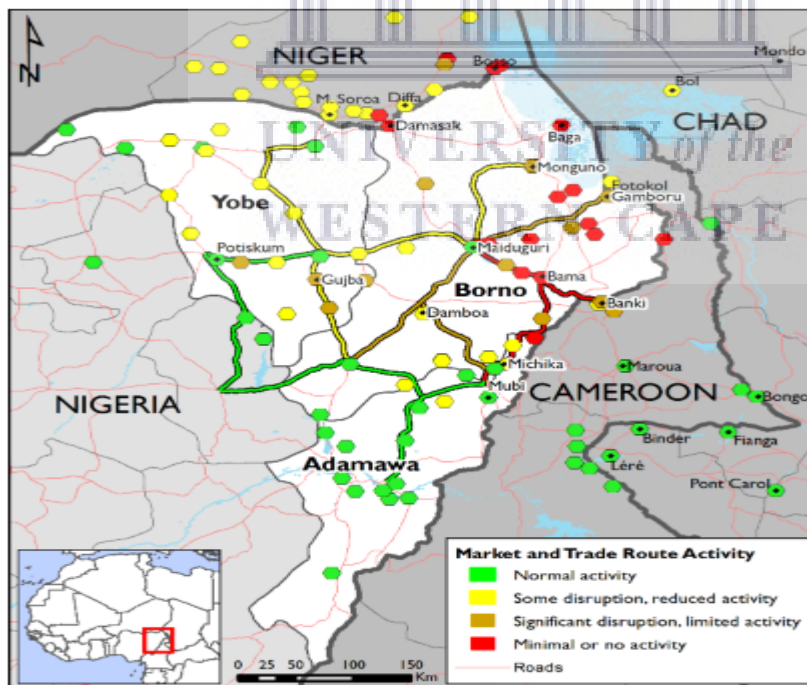
According to the UN-OCHA (2020b: 1), by the end of February 2020, the four LCBC states hosted an estimated 4,671,257 individuals affected by displacement including IDPs, returnees (Former IDPs and Returnees from abroad), refugees (both in- and out-of-camp), and Third Country Nationals (TCNs). Among the affected population, 3,650,768 persons (representing 78%) located in Nigeria; 524,116 persons (11%) reside in Cameroon; 261,631 persons (6%) in Niger; and 234,742 persons (5%) in Chad respectively. The mortality rate of under-five years-old children in the IDPs locations is four times above the emergency threshold, while an estimated 44,000 children in Borno suffer acute malnutrition (UN-OCHA, 2020a:2). This was necessitated by the BHT crisis and restriction on humanitarian supplies during the rainy season (June-September) by roads and tracks impassability.

Second is market disruption, restriction of trade, transborder cooperation and access to means of livelihoods (figure 7.4). The BHT crisis destroys socio-economic activities, public amenities and communication in the Lake Chad basin particularly the Northeast Nigeria's states of Borno, Yobe and Adamawa, Cameroon's Far North region, Chad's Lac region and Niger's Diffa region. In these communities, trade, food supply, public amenities (such as schools, markets, police posts, water facilities, electric cables, telecommunication masts and gadgets, roads and bridges) businesses and farmlands were disrupted (Committee on the North-East Initiative, 2016; FAO, 2017). To frustrate the military campaigns, the sect consistently targeted communities that set up vigilante forces or assisting the military. Population under the BHT controlled areas faced significant challenges including heavy taxation, plundering and forceful recruitment (International Crisis Group, 2016). The above was the case for several communities in the interior, particularly the LGAs in northern Borno such as Abadam, Kukawa, Marte, Guzamala, Magumeri and Gubio etc. (PING-3). While "most destroyed communities and routes around Pulka and Gwoza in Borno Nigeria and Southern Diffa in Niger are susceptible to landmines" (MIOT-7). These have exacerbated difficulties in production and

access to food, trade, and mobility by people in the areas, as livelihoods and transboundary cooperation in the region remained severely hampered.

Given that international borders of the four riparian LCBC states are imaginary and the LCBC Protocol allows free movement of persons in the basin, in Bagasola, Chad for example, there exist people of different nationalities Chadians, Nigerians and Cameroonians, including people from far away Mali, without concerns for nationality or national frontiers. It may not be necessary to ask what took them there, it so happens that the insecurity turned them into IDPs and refugees... most of these people do not want to leave for other places despite insecurity threats, their major concerns are livelihoods and wellbeing supported by different socio-economic activities around the lake (MIOT-5).

FIGURE 7.4: BOKO HARAM INDUCED DISRUPTIONS OF SOCIO-ECONOMIC ACTIVITIES AND TRADE ROUTES IN THE LAKE CHAD BASIN



Source: FEWSNET (2018:2)

The barriers to trade, movement and communication have thus reconfigured transboundary relations and economic activities in the region, with huge constraints on

businesses and regional development. As observed, restrictions of movements exist across Borno as virtually all Trunk A and B roads are closed due to insurgency. Normal travel from Maiduguri to Biu (in Southern Borno) is 180 Kilometres (about two hours), but now 560 kilometres travel across Yobe, Gombe and Adamawa states (for two days). For instance, a prominent motor park official at Muna Garage Maiduguri, Borno state, Nigeria lamented thus,

The continuous closure of the Maiduguri-Demboa road has constrained regular movement from Maiduguri to Gombe (Gombe state's capital) across Demboa - Biu - Kwayakusar - Bayo - Dadinkowa (a two and half-hour trip), at an average cost of ₦1,200 - ₦1,500 (Nigerian Naira). Hence, "military blockade on the normal route has compelled travelling for eight to ten hours to Gombe from central Borno through Yobe to Gombe state, i.e. Maiduguri – Beni-Sheikh – Damaturu – Potiskum - Fika – Gombe, with an average cost between ₦2,600 - ₦3,500" (PING-3).

Similarly, from personal observation travelling from Maiduguri Nigeria to Chad (6-8 February 2018) by road reveal that transportation from Maiduguri northward to Gamboru (Ngala LGA) i.e. from Muna Garage (Maiduguri) across, Marfa, Dikwa and Logonmane to Gamboru-Ngala, usually happens once in one or two weeks with substantial protection from the military throughout the trip on the main trading route that connects Fotokol and Kousseri (Cameroon) to Ngueli and N'Djamena, Chad. A supposed journey of two and a half hours lasted two days with two layovers at Dikwa and Gamboru, Nigeria, before reaching the Cameroon border in Fotokol, amid stress and fear of Boko Haram ambush and harassments at military roadblocks. Hence, haulage vehicles, lorries and trucks transporting items such as cement, building blocks, mattresses, plastic materials, metals, food and pharmaceutical products, water tanks, firewood, timber, textiles, and machinery etc. travel at an equal pace with commuters and private vehicles. The major trade routes and highways from the Lake Chad through Maiduguri to Kano or North-central Nigeria are mostly deserted for other routes. The

consequences are felt across the contiguous regions, including constraints to cross border relations and businesses while aggressive counter-insurgency operations in the region stifle socio-economic activities in efforts to frustrate the BHT's logistics, training and income. The BHT hence resort to livestock rustling, kidnapping for ransom, plundering of foods among other coping strategies.

The third implication is the disruptions of relations between population and resources critical to the region's development, particularly the productive rural settlements in the Lake Chad and Yobe basin. Through ethnic stigmatisation and use of the militia, the crisis has raised apprehensions on natural resources management such as fishing areas, grazing reserves and croplands. Long-standing mistrust and hostilities between ethnics have been stereotyped along with the Boko Haram 'sentiments.' For instance, the Mober clan in Niger, which form the bulk of the Boko Haram fighters, have been accused with great deal of suspicion. Similarly, the view of a member of the Chadian armed forces that "the Baguirmi were instrumental to the Chadian military's campaign against the Boko Haram elements among the Buduma – the former's rival, in the Chadian Lake region for the most reason of regaining access to their means of livelihood" (GTO-1), occupied by the latter with the aid of Boko Haram fighters confirms Taub's, (2017) assertion that tensions between the Buduma and Baguirmi of the Lake region in Chad played out in the former's support for *Boko Haram* to control fishing and arable farmlands around the Lac region of Chad, particularly at Baga Sola, Chad. A similar opinion is captured below,

The lake area is traditionally dominated by the Yedinah, a sub of the Kanuri, (literally meaning – the people of the grass), known in Chad as Buduma who are also found around the Lake areas in Nigeria, Niger and Chad. Over time there has been an influx of Hausa fishermen and farmers (from far away outside Borno) to the Lake, the Yedinah were outnumbered and lots of competition/conflict ensued between them. As time goes on, the Yedinah, having realized their stake of the lake

resources has dwindled while their population increases. (including some Kanuri) embraced the Boko Haram as an opportunity to dislodge the Hausa population toward regaining the lake areas and its resources. That explains how ethnicity played a key role in the BHT crisis and the resource conflicts in the lake area (GNGO-4).

The fourth notable effect of the Boko Haram crisis is the loss of assets and income due to theft and looting. This indeed heightens conflicts over depleting resources and forced migration among resource dependants. The BHT attacks on the Lake Chad islands force the population's movement to safer places on the lake shores. Also, interruption of livestock and fishing businesses, suspected of aiding Boko Haram indirectly or otherwise, through the racket of traders (bribery, intimidation or taxing), severely impede and reconfigure trade flows in the region (LCBC, AFD and World Bank, 2015). For instance, during the harmattan season, the number of fishes caught in Nigeria's LCB reduce drastically. The fishers supplement the ones caught in Nigeria's LCB area with the multitudes brought from Niger particularly the Karwa and Tarwada fishing communities. The fishermen in Niger sell or market virtually their fishes at Baga Fish Market in Maiduguri (a profitable aspect of transborder cooperation, movement and livelihood activities).

However, in the Nigerian area, virtually all the fishing areas are lost to the Boko Haram crisis. The areas are closed for over five years. Since the military restores some of the fishing areas, the fishers manage to harvest between 6 to 8 truckloads of fishes weekly and during harmattan, it reduces to 2 to 3 truckloads. Some fishermen have become impoverished, many have turned beggars, displaced, while others lost invaluable investments – houses, vehicles, livestock and fishing outposts. This threat has further widened competition and crisis over limited fishing areas. Most of those gradually returning to Baga and Dorombaga since late 2017, are dependent on humanitarian assistance from the NGOs and NEMA. The fish

processing usually taking place at Baga, which empowers most fishermen's wives and children, in the aspects of fish processing - smoking, packaging and loading at Dorombaga and environs have lost their livelihoods. Presently, the fishing areas are surrounded by soldiers while fishermen continue to encounter difficulties in working optimally, with fears in areas without the military presence. There is no access to some restricted areas while few other areas remain susceptible to Boko Haram attacks.

Likewise, herders across the basin are victims of the worsening trade terms (livestock/cereals), livestock theft and the crash of prices, which halved due to closure of the Nigerian market. This has forced herders to sell more livestock to support their families or migrate elsewhere. Boko Haram agents have raided cattle, abducted several hostages, murdered herdsmen and forced them to abandon several rangelands. In Diffa region, herds concentration has stoked intense tensions over cereal straw (animal feeds) and wetland herbs (bourgoutières) tensions over wells have also been heightened with enormous risks of accessing the Yobe River posed by the BHT. Nigerian herdsmen have moved north of Diffa and westward in the Zinder for grazing. Similarly, in Chad and Cameroon's sides of the lake, herdsmen resort to grazing their livestock on the shores, having been curtailed access to the islands within due to BHT elements. Nigerian herders have shifted to safer areas in Yobe, Gombe, Bauchi and Adamawa states and many southward to the Middle-belt and Southern Nigeria. Few others have indeed migrated to the Logone floodplains, where they can access the Diamare plains (Cameroon's Far North region) during the rainy season (Magrin and De Montclos, 2018:164).

Apparently, theft of livestock is carried out in different ways, during the heat of the insurgency, most herders were first displaced before their animals were carted away, some were attacked during grazing, then their livestock is stolen, in fact, "more than 100,000 livestock were reportedly lost to Boko Haram – stolen, forcefully taken or disappeared" (FGD-1). On several occasions in Maiduguri modern market, nomads spotted their cattle on sale by

other sellers, and arguments ensued over ownership and proofs were given. A group of pastoralists reported thus, “livestock owners describe the spots or marks on their animals from distance or call the cattle by names e.g. Hemra, Zarga, Sofra etc. and the animal responds, run to them from afar to prove that they have related or lived together for a long time...”(FGD-1). These are verbal languages that make the animals respond to their real owners. In addition to the above, farming communities, whose livelihood is largely dependent on the Lake Chad resources maintained that “southward movement of pastoralists, avoiding Boko Haram raids and livestock rustlers, force herders’ indiscriminate movement along farmlands...with consequences ranging from herdsmen-farmers conflicts of higher magnitude and loss of livelihoods in several farming communities” (FGD-2; FGD-6)

Moreover, the militarisation of the region engenders corruption by powerful elites, politicians, security forces and rent-seekers. The administrative bans on cross border movement, use of motorcycles; and the state of emergencies (Adamawa, Yobe and Borno (Nigeria) – 2014-15; Lac Region (Niger), February 2016; and Far North of Cameroon – 2016) were exploited by different elements. The periodic border and highway closures between and across countries (2014 till 2017), persistent checkpoints (mostly around the major cities – Maiduguri; N’Djamena; Diffa; and Maroua in Cameroon etc.) as well as identity check on streets and roads (particularly in Cameroon) were all manipulated. For the most part, people access and conduct businesses across detours and restrictions through different corrupt means - inducement with money, fish, livestock, motor fuel, etc. or arrangements with defence and security personnel (or Boko Haram elements). Some herders and fishers choose to brave the insecurity and restrictions to access the lake, bribing Boko Haram agents in control in those areas and/or defence and security forces, and at danger of fatal retribution by BHT (Magrin and De Montclos, 2018:162). Similarly, Some of the armed forces including other security men have taken over the businesses done by many of the people before their displacement, soldiers buy cattle and transport to other parts of the country in addition to the extortions taking place

on the highways, some of them do petty businesses on behalf of the people. The hardship imposed on the population by the BHT crisis and some armed forces profiteering illustrates the dynamics of the war economy. An opinion leader in the region maintained thus:

It is worrisome, that several traders traveling with a huge sum of money have been robbed on the way by armed forces. While some soldiers often come to the Bureau de Change to exchange CFA franc and US dollars, many travellers and businessmen confirm to the Bureau de Change operators how the military extorted and rob them particularly along the Maiduguri-Dikwa-Gamboru (Ngala) road (PING-2).

Additionally, the manner of deploying humanitarian aid – funds and relief materials also complicate the insurgent warfare and upset the region’s political economy. A considerable amount of relief was diverted and indeed jeopardise political will and regional level coordination toward meaningful development and reconstruction. The humanitarian crisis has serious security and political consequences for the region, a humanitarian project manager in Maiduguri maintained that, “it pushes people back into the BHT controlled areas, and across international borders, where those forced to migrate into the volatile Sahel areas returned indoctrinated as terrorists, or as trafficked migrants en route the Maghreb to Europe” (MIONG-2).

Furthermore, the BHT crisis stimulates concerns about the factor of essential mineral resources, geopolitics and conspiracy theories in the escalation of Boko Haram crisis. Given that, conspiracy theory explains harmful or tragic events necessitated by the actions of small, powerful entities, and rejects the dominant narrative surrounding those events. Such theories are prevalent in times of pervasive anxiety, hardship or uncertainty such as war, economic depressions, pandemics or aftermath of natural disasters. Going by critical instances, conspirational thoughts are propelled by fervent desire to analyse social forces that are self-relevant, significant and threatening through sense-making (Reid, 2019). Beyond conspiracies

theory, the evidence adduced reflect on the causality of resource conflicts, the capture of vital resources by powerful sub-national elements and transnational actors, and the expediency of external military intervention in the Sahel. These are illustrated within the complex security-development environment of the Lake Chad basin and the larger Sahel.

Apart from Boko Haram terrorists in the Lake Chad basin, non-state armed groups (NSAGs) confrontations against states and foreign interests – especially, strategic minerals across the Sahel have heightened security tensions. These include the Islamic State in the Greater Sahara (ISGS) and Ansar Dine - dominant along the Mali-Niger border, *Ansaroul Islam* (Burkina-Faso), the Katibat of Gourma and *Jama'at Nasr al-Islam wal Muslimin* (JNIM) - a March 2017 Islamist merger including *Ansar Dine*, *Al-Mourabitoun*, the Katibat Macina and Al-Qaeda in the Islamic Maghreb (AQIM) (Rupesinghe, 2018). Other ethnic militias include the Nigerien Movement for Justice (MNJ), the duo of Union of Forces for Democracy and Development (UFDD) and Movement for Democracy and Justice (MDJT) in Chad; and the Coordination of the Azawad Movement (CMA) a coalition of secular armed groups, that controlled Northern Mali after the 2012 rebellion (Raleigh and Dowd, 2013).

Consequently, numerous counterterrorism strategies and external military interventions have emerged against these Non-State Armed Groups (NSAGs) fighting against established interests in the Sahel. The major external military interventions in the Sahel include the United States African Command (AFRICOM), created on 28 September 2007, initially under the US European Command (EUCOM), and separated on 1 October 2008 as a full-fledged combatant command (Beck, 2018), and the French-led Joint Force of the Group of Five - Sahel (*Force Conjointe du G5 Sahel, FC-G5S*) created in 2016, integrating forces from Burkina Faso, Chad, Mali, Mauritania and Niger, to respond to armed groups and terrorists in the region (Rupesinghe, 2018). Others include hosts of British, German, American and Israeli forces in

Chad and the MNJTF headquarters in N'Djamena, Chad among several European armed personnel dispatched along the Niger-Libyan borders and elsewhere across the Sahel.

While AFRICOM, presumably key partner in the Trans Sahara Counterterrorism Initiative (TSCI), participated in the French-led operations in Mali and the fight against *ISIS* elements in the Sahel, provided logistics and maintenance supports to Chad's Special Anti-Terrorism Group (SATG) including 60 light armoured vehicles, training etc. (Beck, 2018), "activities of the AFRICOM are selective, constrained to areas of key Western interests - the extraction of vital resources and protection of political elites, expatriates and humanitarian workers instrumental to its cause..." (GNRO-1) despite all the drones the mission falls short of destroying ISWAP and other militants in Niger, and the Lake Chad basin, while Nigerien defence forces constantly come under terrorist attacks including the 10 January 2020 attacks at the Tillaberi Army killing 25 soldiers. Similarly, the FC-G5S and its Sahel Strategy are more committed to repelling militants or insurgents fighting against the French preeminence, European interests, and preventing the alteration of the prevailing political equation across the Sahel countries for geopolitical reasons. Hence, growing resentments against foreign interests escalate insecurity in the region. Opinions below capture the reality,

No significant collaboration exists between the regional MNJTF and the foreign military outfits - the FC-G5S and AFRICOM... military contingents from France, Germany and Italy crisscross the Sahel particularly in Niger, Mali, Chad, Burkina-Faso and the Niger-Libyan border for reasons favourable to them... (GNRO-1), all they care about is securing European borders after creating a big security problem in Libya... and exploiting the Sahel's insecurity to possess the region's vital resources... through their political stooges in power in the (Sahel) countries... (MIOT-3).

Accordingly, the dilemma of resource curse amid struggles for resource capture adds to the complex human security-development concerns of the region. With enormous deposits of petroleum, gold and uranium etc., mining and exploration of these strategic minerals by the Multinational Corporations' (MNCs) and the politics over its control amplify deadly security threats amid resentments over deprivations by the Sahelian youths. For instance, the exploration of petroleum in Chad since the early 2000s and Mali - backed by 2004 legislation (carving out 700,000 *km*² into 29 blocks), exist as shared concessions to foreign oil multinationals. Indeed, over 15 companies from Australia, Canada, France, Ireland, Italy, Qatar, Spain, the United Arab Emirates (UAE) and United States profit from oil explorations in the Sahel (Snorek, 2017). The potential of southern Chad in oil was known since 1973 although exploration began in October 2000. The Doba oilfield was constructed in Chad and the first barrel exported in October 2003. Oil Prospecting by foreign corporations reveals economically viable deposits in areas of huge environmental value - the Yaere floodplains, protected areas and beneath the Lake Chad. Two major refineries currently operate near Zinder, Niger and Djarmaya, near N'Djamena, Chad, the latter's annual production is about 700,000 tons of gasoline and kerosene, 20,000 tons of diesel, 25,000 tons of polypropylene, 60,000 tons of liquefied petroleum gas and 40 000 tonnes of fuel oil (fuel) (LCBC, 2016c: 181).

In the Diffa region, the China National Petroleum Corporation has been exploring crude oil following the completion of the oil project (2009-2011) channelling oil to Zinder (south-central Niger) producing 20,000 barrels per day. In 2018, the firm and the Nigerien government signed another deal towards a second oil well that would enable a 110,000 barrels per day production (Energy Review, 2019). Despite the infrastructure constructed (airfield and roads etc.) along with the project, tensions generated include the Diffa riots (27-28 April 2013) over environmental concerns and benefits to the local populations. The review of the 2007 Oil Code, in 2013 extended 15% of oil revenues earmarked for the local authorities in the oil-producing

areas, providing additional revenue to N'guigmi, Diffa and Ngourti (LCBC, 2016c: 181). Similarly, foreign multinationals' exploitation of uranium in Niger (global fourth-largest uranium producer) adds little or no benefits to its population, amid economic recessions caused by the decline in the commodity's global prices with the apparent complicity of Areva S.A (now Orano), a French state-owned nuclear power and renewable energy multinational. Approximately 150,000 tonnes of uranium extracts from two mines - Somaïr and Cominak in Arlit - account for nearly a third of Areva's overall multi-billion-dollar global production, (Destrijcker and Diouara, 2017), hence Niger's human development index 0.348 (the lowest in the LCB region) ranks 188 globally and one of the world's poorest nation.

Moreover, 'resource capture' by foreign bourgeois who often corrupt government officials with Petro-dollars bribe brings no commensurate benefits to the population or critical investments in oil-producing or resource-rich communities (such as Diffa, Arlit and Doba etc.). Again, the MNCs alleged complicity in the region's devastation, environmental degradation and population's disenfranchisement engender distrust of political elites. The tensions generated, thus, propel extremism, youth restiveness and militancy in the Sahel. The consequent states, MNCs and foreign military partners' 'forceful' protection of commercial interests, amid population resentments, appear counterproductive (Snorek, 2017). The politics of oil exploration and control of strategic resources as indicative of conflicts is complicated as interests of powerful local and foreign actors dictate the region's political economy. Significantly, the quality of petroleum resources and natural gas recently discovered in the Lake Chad basin are in commercial quantities and characterised by external influence and the politics over who controls the exploration benefits. The French government has a great stake in the politics and control of the resources of the region. Three of the riparian countries of the LCBC are erstwhile colonies of France excluding Nigeria. In these countries, the French interests reign supreme, exploration activities are ongoing, but not in Nigeria's side of the Lake

Chad Basin. Hence, metropolitan interests may not support a stable Lake Chad that would allow the region's freedom of exploitation of its resources.

Most cases of instability and incursions over the years have occasioned demographic change and dislodgement of people from their traditional homeland through the Boko Haram crisis. Most people have been forced out of their lands, and whatever you want to carry out in the areas can be done without anyone's challenges. For instance, the last batch of the resource persons - mostly geologists from the University of Maiduguri dispatched to the oil fields in 2017 was attacked by Boko Haram on their final survey at Gajigana. As a result, 17 were kidnapped and 10 others killed. There are lots of controversies surrounding this... how could they have been overpowered by Boko Haram despite heavy security mounted around them by the military? They were outnumbered and overwhelmed by Boko Haram's superior weapons. How can we explain this? The question of "*ganimah*" – spoils of war, which Boko Haram and other state and non-state actors' benefits can be illustrated to explain the rationale for human displacement and the exploitation of the region's resources under different guises.

Meanwhile, former Nigerian President Goodluck Jonathan had several discussions with the government of Chad, and in 2015 he travelled with the former Borno State Governor (2003-2007) Ali Modu Sheriff. Again, the current president Muhammadu Buhari, upon assuming power, made his first foreign trip to Chad and then twice to the French president over the same issue. A respected opinion leader in Borno maintained that "when the Boko Haram fighters operating in the Nigeria-Cameroon border were captured, large tracts of the document found with them implicated the French government" (GNGO-2). The informant also stressed that "there is possible crude oil lifting from northern Borno and the Yobe River area towards Diffa Niger and Chad for refining... as pipelines were constructed from Niger by the Chinese multinational and from Chad to the coast of Cameroon by the French government and the World Bank for transfer abroad (GNGO-2). This among others indicates suspicions of French interests in the crisis, as proposed crude oil exploration in the Borno (Nigeria) axis remains a

futile exercise. This reality is apparently because such exploration would affect those of the neighbouring countries, which the powerful foreign interests cannot afford.

As evidenced above, the Boko Haram crisis undermined the capacity of Lake Chad Basin and its countries' legitimacy to contain insecurity and address development challenges in the region. In the Lake Chad basin, environmental change induces both "resource scarcity" and conflicts among resource dependants, while the menacing consequences of "resource curse" in the struggle to capture strategic resources by powerful external and sub-national actors have repercussions for human security and regional development. The combined effects of these two distinct but intertwine phenomena enhance the vulnerability of Lake Chad basin's population and indeed undermine their resilience capacities to shocks and emergencies. Hence, eco-violence theoretical premises, as exemplified above, critically explained the causality of the Boko Haram crisis within the complex security-development environment of the Sahel region. With resources presumed as a "causal mechanism" of complex insecurity, "scarcity and conflict" hinder the capability of poor society's resilience against socio-economic pressure (Homer-Dixon, 1994, 1999; Percival & Homer-Dixon, 1998; de Soysa, 2002). Therefore, its apparent constraints to growth and effective social investment and technical innovation (Barbier and Homer-Dixon, 1999) are critical to the narratives of the Lake Chad Basin.

7.5 Chapter Summary

The chapter examines the causality of the Boko Haram crisis within the security-development milieus. It highlights human security challenges emanating from environmental change, social injustice and misgovernance, as recipes for violent conflicts and insecurity in the Lake Chad Basin. The Boko Haram terrorism is enmeshed in the wider Sahel crisis, whose underlying causes and effects are persistent and complexified by underdevelopment, geopolitics, resource crisis, and the growing militarisation by local and external actors. This also presupposed that insecurity and conflict in the Lake Chad basin are deep-rooted in complex historical, political

and socio-economic tensions. The underlying factors of the BHT crisis, thus contextualised the region's strategic nature, resources and actors involved (states, non-states and transnational). In addition to the threats of environmental change on livelihoods and conflicts among resource dependants (exemplified in chapter 6), critical enablers of insecurity in the Lake Chad basin examined include armed rebellion, criminality, banditry, ungoverned spaces, and destitution including the Al-Majiri tragedy. These overwhelming factors explain the origin and complex effects of the BHT crisis. The terrorist groups' exploitation of trans-ethnic solidarity, human vulnerability and communities' fragility in the region etc. characterise the factors for conflict's escalation, trends and the resilient tactics sustaining the BHT violence.

Moreover, explanations of eco-violence theory on scarcities of essential resources or its abundance as a factor of conflicts, marginalisation by few powerful elites, undermining of state power and regional security reveals the connection between the Boko Haram crisis, Lake Chad recession and resource exploitation. Therefore, the negative consequences of the complex circumstances include forced displacement; occupation of territories; and restriction of movement and access to means of production; transport and trade. The above and the consequences of livelihood impairment - livestock rustling, market disruption, looting and loss of assets/income and corrupt practices inherent in the war against BHT etc. have worsened human security in the region. Finally, the negative effects of Lake Chad's recession on livelihoods and conflicts among resource dependants illustrated in the previous chapter indicate the significance of transboundary river basins and allied resources to human security and development. The next chapter will conceive an appraisal of regional development processes – national and multilateral, in addressing the root causes and effects of human insecurity in the Lake Chad basin toward integrated resources management, livelihood enhancement and sustainability.

CHAPTER 8

REGIONAL DEVELOPMENT PROCESS IN THE LAKE CHAD BASIN: SUCCESS AND CHALLENGES

8.1 Introduction

Regional Development embraces multilevel capacities in addressing the myriad of challenges within a milieu. It encompasses instruments such as institutions and policy regimes designed towards short-term and or the long-term at regional, national and multilateral levels, including multisectoral interventions. Given the intense vulnerability of Lake Chad basin to human security and development challenges, an assessment of multilateral governance and regional interventions are examined. The integrated approaches to resource management, environmental protection, infrastructural development, and security in the region, involving multiple actors are reviewed. Chapters 8 and 9 present comprehensive discussions on regional development - multilateral governance, national development programmes and security interventions across the case study area. It substantiates qualitative findings with secondary data to assess the efficacies of regional development and multilateral interventions in the Lake Chad Basin. The explanations of human security and development in selected transboundary river basins in the Global South are also juxtaposed.

8.2 Background

The transboundary nature of most water bodies - rivers, lakes, open oceans, large marine ecosystems and aquifers etc., the essential services and resources they provide and the challenges of exploitation by different parties amid scarcities provide avenues for multilateral governance and regional development. Critical studies on regional development identify three significant linkages between transboundary river basin and human security. First, is the vitality of regional hydrology to livelihoods sustenance, environmental stability and human capability.

Secondly, water bodies as sources of development including socio-economic activities, and thirdly, loss of livelihoods and poverty as traditional drivers of conflict among resource dependents (Thomas, 2000; Onuoha, 2008; Okpara *et al.*, 2015). In similar discourses, power relations and inadequate water management are potential conflict factors, especially, in Africa where most transborder river bodies lack adequate technical, material and institutional capacities (Goulden, Conway and Persechino, 2009; Sušnik *et al.*, 2014). Hence, the factors often impede regional integration and sustainability in conflict-prone or complex security environments.

Challenges of equitable water allocation and distributions of social-ecological costs and benefits connect security issues, coupled with the differential evolution of state capabilities to spill into a hydro-security complex situation in TRBs regions (Asah, 2015). A regional water allocation process and policy options embracing river channel upgrading, conservation techniques and sustainable agricultural practices across the Lake Chad drainage basin may be prioritised for alleviating water deficits needed toward socio-economic development, regional cooperation, stability and sustainable environment (Odada, Oyebande and Oguntola, 2004; Ifabiyi, 2013). This highlights the relevance of environmental NGOs, sustainable development advocacies and empowerment of the grassroots in transborder water management.

Studies have investigated the core of using the Human Development Reports (national and regional) as a baseline to assess human security threats, as alternative progress or understanding social problems (Gomez, Gasper and Mine, 2015). Hence, the significance of regional cooperation in hydrology, agriculture, mining and transborder security is underscored. This is cognisant of the measures against threats to the seven categories of human security (figure 3.1) - economic, political, environmental, health, food, community and personal security, highlighted as key components of the human development process.

8.3 Analytical framework

A qualitative case study methodology of regional development in the Lake Chad Basin is adopted in this chapter. Qualitative findings are substantiated with descriptive statistics from secondary data and to assess the efficacies of regional development mechanisms in addressing human security challenges in the Lake Chad Basin. In addition, theoretical constructs of the “Capability Approach” were also incorporated in the data interpretations. The research design and data analysis procedures illustrated in Chapter 5 (section 5.3), and the thematic analysis, detailed in Chapter 6 (section 6.3) remain applicable. This includes three (3) major themes, five (5) categories (sub-themes) and eighteen (18) codes, as captured below (Table 8.1).

TABLE 8.1: QUALITATIVE THEMES, CODES AND CATEGORIES ON REGIONAL DEVELOPMENT

Themes	Codes	Categories
Regional development capacities	Water management Multilateral development interventions Soft security approach NGOs and civil societies engagements	Multilateral governance
	Human development capacities Infrastructural development National intervention projects National intervention challenges	National development capacities
Interventions	Humanitarian intervention (IDPs)	Humanitarianism
	Local conflict management mechanism National Counterterrorism Regional counterterrorism Challenges of counterterrorism	Security and conflict Management
Sustainable development	Environmental funding and mitigation Monitoring and Evaluation (M&E) Resilience/adaptation strategy Sustainable livelihoods (policies and projects) Sustainable peace and security	Sustainable development

8.4 Research Findings and Discussions

The study found that regional development capacities in the Lake Chad basin are multilevel, multidimensional, and in some cases multi-sectoral in approach (regionally and nationally). Multilateral governance in the region, to a greater extent, involves both regional institutional mechanisms – policies and programmes, and national action plans, including a multiplicity of

interventions by development partners and NGOs as part of civil society engagements. These were geared toward responding to two major prevailing conditions: development crisis birthed by the desiccation of the Lake Chad basin (since 1964); and the general insecurity which climaxed with the outbreak (2009) and escalation (2012) of the Boko Haram menace. Measures against the first condition began with the establishment of the Lake Chad Basin Commission in 1964, followed by critical national action plans etc. The second circumstance warranted the re-operationalisation of the regional Multinational Joint Task Force (MNJTF) in 2015, as well as national corollaries across the four riparian countries.

Therefore, the significance, success and challenges of these initiatives are reviewed across three themes - Regional development capacities; Interventions (humanitarian and military); and Sustainable development, and five categories (Table 8.1 above). Besides, comparisons of human security-development and water management are drawn from selected transboundary river basin (TRBs) areas in the Global South according to the Lake Chad Basin circumstances. Thus, regional development in the Lake Chad basin is explored in two major categories - multilateral governance (involving the Lake Chad Basin Commission's transboundary initiatives); and national development capacities across the four riparian countries. Added to the former is the contributions of NGOs as part of civil society engagement in the basin communities.

8.4.1 Regional development: multilateral governance and water resources management

Regional development, according to the OECD is “a general effort to lessen regional disparities by supporting social and economic activities, through employment and wealth-generating resources, in less developed regions” (Floroiu and Schin, 2014). Although the concept initially began as merely economic, rather, towards the end of the 20th century, it assumed a multifaceted scope. Regional development capacities in the Lake Chad Basin highlight the multilevel mechanisms - institutions, policy regimes, programmes and projects to address

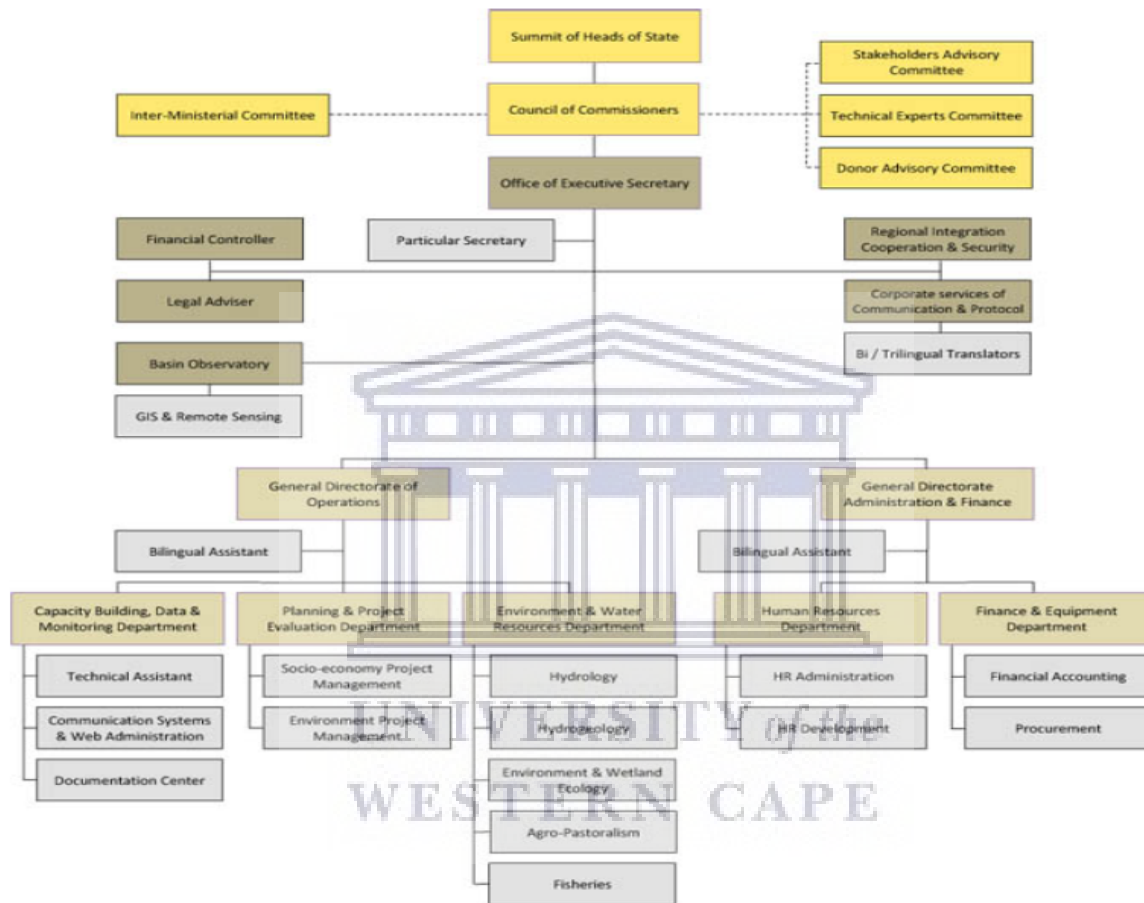
various development challenges - environmental and socio-economic, bedevilling the region since 1964.

Multilateralism according to John G. Ruggie, it is an institutional form that coordinates relations among three or more states based on generalised principles of conduct...’ Robert O. Keohane, depicts the phenomenon as a ‘collective institutionalised action by an inclusively determined set of independent states’ and or ‘persistent set of rules that constrain activity, shape expectations and prescribe roles’ (Telo, 2012:14). Given the globalisation and increase interdependence and its myriads of challenges, multilateralism is usually geared toward addressing common problems or as a form of collective bargaining. Multilateralism is a potential response to the complexity of several risk problems. It provides adaptive risk management or problem-solving capacity and promotes dialogue among stakeholders. Evoking Piattoni (2010:1), multilateral governance, the “increasingly dense networks of public and private, individual and collective actors” is typified by galvanising the synergy of the international community (states and organisations) and NGOs as or civil society engagement (Berti Suman, 2019). Therefore, multilateral governance embraces multiple actors and combine efforts in promoting shared objectives.

The Lake Chad Basin Commission is the foremost platform for collective bargaining and multilateral governance of the basin’s natural resources. It was established on 22 May 1964 by the Fort-Lamy (now N’Djamena) convention. Its mandate includes the sustainable and equitable management of Lake Chad and other shared water resources of the basin; preservation of the ecosystems of the Lake’s conventional basin; and promotion of regional integration and preservation of regional peace, and security in the basin. At inception, it had only the four riparian countries- Cameroon, Chad, Niger and Nigeria as member states (LCBC, 2016g). The LCBC officially admitted, the Central African Republic (CAR) as the 5th member in 1996, Libya as 6th member State in 2008, while Sudan, Egypt, the Republic of Congo, and the Democratic Republic of Congo enjoy Observer status. The jurisdiction of the LCBC

extends to the Conventional Basin (967 000 km², without Libya) comprising three (3) regions each in Cameroon and the CAR, two (2) in Niger, the six Northeast (6) States in Nigeria, and the entire Chad Republic, incorporating virtually all the river - tributaries that supply the Lake, the floodplains and aquifers in the Lake Chad basin area (AFROSAI, 2015; LCBC, 2016g).

FIGURE 8.1: THE ORGANOGRAM OF THE LAKE CHAD BASIN COMMISSION



Source: LCBC, 2018f: 1

The commission is headquartered in N'Djamena, Chad. Its key organs are the Summit of the Heads of State and Government (SHSG) of member-states (guidance and highest decision-making body); The Council of Ministers (two each from member-countries: budget approval and resolution); The Secretariat (implementation and representative body) led by an Executive Secretary and host of experts and administrators. The commission's advisory structures incorporate several donors committee, inter-ministerial committee, parliamentary committee, stakeholders committee and experts technical committee (figure 8.1 above). While

its support structures are derived from national focal points of LCBC; and Technical committee, the commission enjoys two major forms of resources: internal and external. The former is sourced from member-countries contributions for daily running and the counterpart funding for projects and programmes. The latter is derived from partners and donors, which are solely used for funding agreed projects and programmes. These resources are used across its intervention sectors - agriculture, fishery, livestock, environment, water resources, infrastructure, peace and security (LCBC, 2016f).

The LCBC collaborates with several technical, financial and strategic partners. This include (i) United Nations agencies - UNDP, FAO, UNEP, UNESCO, Economic Commission for Africa and the World Meteorological Organisation, etc. (ii) Multilateral financial institutions: African Development Bank, World Bank, Global Environment Facility (GEF), Arab Bank for the Economic Development of Africa (BADEA) and the Islamic Development Bank (IDB), etc. (iii) Bilateral funding agencies: The German Federal Ministry of Economic Cooperation and Development (BMZ), Agence Française de Développement (AFD), United States Agency for International Development (USAID) and the Kuwait Fund, etc. (iv) Intergovernmental Organisations based in Africa: The African Union (AU), Economic Community of West African States (ECOWAS), Economic and Monetary Community of Central Africa (CEMAC), The International Congo-Ubangui-Sangha Commission (CICOS) and the Nile Basin Authority (NBA). (v). International Non-Governmental Organisations: The Ramsar Convention, World Wild Fund for Nature (WWF), International Union for the Conservation of Nature (IUCN), African Network of Basin Organisation (ANBO) and the International Network of Basin Organisation (INBO), etc. (AFROSAI, 2015; LCBC, 2016g).

The Fort-Lamy Convention acknowledges the member-states sovereign rights over the Basin's water resources, and prohibits any unilateral exploitation of the lake water, specifically when such use portends a negative effect on other's interests (LCBC, 2016f). It also empowers

member-states to initiate projects, in due and prior consultation with the LCBC, while encouraging them to refrain from adopting any measures capable of altering the Lake's water balance, exploitation by other riparian states, and the quality of the biological components of the basin's flora and fauna (UNEP, 2004; LCBC, 2016g). Yet, the basin remained challenged by decades of environmental challenges as clearly identified in the transboundary diagnostic analysis (TDA) of the Lake Chad Basin, conducted in 2008.

8.4.1.1 Regional development initiatives and programmes

Since 2000, the LCBC took effective measures towards regional development in the basin. This consolidated on the 1985 African Ministers' Conference on the Environment (AMCEN) pledged support to the LCBC for the integrated development of the basin. It was aimed at halting the desiccation of the Lake and effective use of its (natural) resources, and the Lake Chad Basin Master Plan, adopted in 1994. The provisions of the Vision 2025 "Integrated River Basin Management" was adopted in 2003. Encompassing both short-term and long-term plans, it was formulated to harness the basin's freshwater ecosystem, biodiversity and aquatic resources toward enhancing the populations' needs and poverty reduction. The eight-year short term Plan was to enhance collaboration and capacity building among LCBC riparian member states and stakeholders; to facilitate transboundary diagnostic analysis and formulate a framework for the integrated water management in the basin. It also prepared implementation priority actions to address transboundary challenges. Its implementation modalities were tested through pilot projects, stakeholders' engagement, and demonstrated capacities for project implementation by riparian member countries (LCBC, 2013).

The 20 years Long-term Plan embraces various approaches. First, it divides the entire basin into sub-basins to facilitate international cooperation on its management and external support, to promote participation in planning and implementation of sustainable development programmes, and to engender flexibility and bilateral donor's support (LCBC, 2013). The sub-

basin development programmes include (i) Sustainable Development Programme for Lake Chad and its basin (ii) Programme for the Komadugu-Yobe sub-basin (iii) Programme for the Chari-Logone-El-Beid sub-basin (iv) National priority projects and programme, with regional importance to the basin (LCBC, 2013:12). As envisioned, “this would enhance greater national and sub-regional capacity in conflict prevention and management; encourage strong public and private sector participation towards economic growth, trade, investment, and employment generation; and promotion of regional cooperation through the sustainable management of the region’s ecosystem and allied resources” (MIOT-3). Other significant initiatives to achieve the LCBC’s sustainable roadmap include the feasibility study of Inter Basin Water Transfer (IBWT) from Congo River to the Lake Chad, 2000, the Strategic Action Plan (SAP) -2008, adoption of the “Lake Chad Water Charter” (common water management principles) in April 2012, and the Lake Chad Development Action Plan (LCDAP) 2016-2025, etc.

Firstly, on the water transfer project, the Summit of the Heads of State and Government (SHSG) of the Lake Chad Basin in N’ djamena, Chad, held on 28 July 2000, agreed to mobilise six million (\$6m) US dollars for the feasibility study of the IBWT from Ubangi River in CAR to the Lake Chad. So far, Nigeria supported the study with a \$5million grant. The feasibility study presented the possibility of increasing the lake inflow by an additional 3.5 Km³, an annual inflow of 23.5 to 24.5 km³, it is, indeed, a long-term capital-intensive project. Secondly, the “Lake Chad Basin Water Charter”- the basin’s legal instrument for water management, was approved by the SHSG of the LCBC in 2012. It is currently ratified by all riparian member countries, except Libya and CAR. This seeks to enhance equitable and sustainable water management among member states in complementing the Programme for Integrated Water Resources Management in Transboundary River Basins in Africa.

Secondly, the SAP’s overall goal ‘Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem’, sets five Ecosystem Quality and Water Resource Objectives (EQWROs) including specific implementation actions for the 2008 to 2025 period. The

National Action Plans (NAP) are also formulated toward identifying effective solutions to the environmental problems in the member countries. Thus, the LCBC has launched several initiatives, toward the Vision 2025, through implementing the SAP. These include the Lake Chad Basin Sustainable Development Programme (PRODEBALT) - 2009-2016. The PRODEBALT was designed to strengthen food security and increase the incomes of vulnerable population averagely by 67 percent in the region.

The third is the Five-year Investment Plan (FYIP 2013-2017), adopted by the 14th SHSG of the LCBC in N'Djamena, Chad on 30th April 2012 toward safeguarding the basin's ecosystem. The FYIP's components include water transfer project from Ubangi River to Lake Chad, which seeks to open up the region improve river transport enhance irrigation potentials, generate hydropower and gradually restore Lake Chad to its pre-1964 state; sensitization on the sustainable use of natural resources and ecosystem preservation; strengthening stakeholders participation and implementation of the Lake Chad Basin Water Charter; and Implementation of the National Action Plan (NAP) for Integrated Water Resources Management (IWRM) of member countries. Remarkably, a donor conference held in April 2014 in Bologna raised funds for implementing the Five-Year Investment Plan and the National Action Plan (NAP). The African Development Bank (AfDB) supported the initiative with 53.82 UA (Unit of Account), and other partners provided the sum of 17.41 Million UA, i.e. 71.23 Million UA (USD 110.4 million) in total (ADB, 2014).

The Lake Chad Development and Climate Resilience Action Plan (LCDAP), 2016 – 2025 was launched in 2015 (supported by the World Bank and the AFD), with an estimated 916 million Euros, to transform the Lake Chad into a hub of regional rural development, in parallel to restoring peace and security in the region (LCBC, 2016c). The Plan aims to enhance the region's capacity in food security, job creation, and social inclusion of youths, women, and vulnerable populations and sustainably improving their livelihoods. The focus is on the populations settled on the shores and islands of the Lake Chad, thus creating a resilience system

to mitigate the challenges of demographic growth, climate uncertainty and hydrological variability. The action plan encompasses seven priority areas: supports to producers and their value chains; securing access to natural resources and conflicts management; livelihoods improvement through public investments; enhancing regional transportation and trade; preserving the lake's environmental capital; enhanced management of Lake Chad's water resources; and information dissemination, knowledge improvement and environmental monitoring (LCBC, AFD and World Bank, 2015). The plan, as postulated "allows local governments and customary authorities in the member-states including the civil society to implement its provisions. It also enhances LCBC's capacity in data collection, sharing and analysis of information critical to governance of the basin's shared resources" (MIOT-4).

Also important is the LCBC/BGR Project on improving groundwater knowledge in the Lake Chad Basin. The large variability of river discharges and the inadequate surface water in most of the basin makes groundwater the most important source of water supply in the region. Due to the inadequate knowledge of the regionalisation and quantity of groundwater recharge including resource availability, the joint project of the German Federal Institute for Geosciences and Natural Resources (BGR) and the Lake Chad Basin Commission (LCBC) began in 2007 to palliate this dearth of knowledge. The exigency of improving groundwater governance, the reversal of current trends of groundwater depletion and pollution of aquifers in the Lake Chad Basin elicit the need to harness the basin's groundwater resources toward improving the lives of its communities.

The second phase of the original project "Sustainable Water Management of Lake Chad Basin", concentrated on the interface between surface water and groundwater in the inundation plain of the Logone River – stretching from the northern Lake Chad to the Mandara Mountains in the south (Cameroon). The investigation comprises the Yaéré plain - about 8,000 km² in Cameroon and the Naga plain - 4,500 km² in Chad, which is a vital area for fishing, recessional

agriculture, and livestock breeding (BGR, 2019). Recently, three million euros of funding new joint projects between LCBC and BGR was approved by the BMZ for another three years (1 July 2019 - 30 June 2022). Development practitioners in the LCBC suggested that “areas of research need to be explored on groundwater management in the Lake Chad Basin, particularly in respect to creating more sustainable and viable approaches” (MIOT-6). This is critical, bearing the continued shrinkage of Lake Chad and increasing use of groundwater as a palliative to the region’s growing water needs (LCBC, 2019).

Moreover, the Programme for the Rehabilitation and Strengthening of the Resilience of Socio-ecologic Systems of the Lake Chad Basin (PRESIBALT) was launched in harmony with the FYIP (ADB Group, 2018). Its priorities include the preservation and development of water resources, ecological services and value chains, capacity building and programme management. The aim is to boost the incomes and food security of 15.3 million inhabitants (52% women) within the Lake’s impact area, including their access to basic social infrastructure (LCBC, 2017). The five-year programme - which officially started in January 2016 was extended until September 2021 by the fourth meeting of its Steering Committee, held in Yaoundé, Cameroon from 13 to 14 December 2019.

Similarly, the BIOPALT Project (Biosphere and Heritage of Lake Chad) was launched at the International Conference on Lake Chad held in Abuja, Nigeria on 26-28 February 2018. The project, funded by the ADB and jointly executed by UNESCO and LCBC, assesses the hydrologic, natural, socio-economic, and cultural resources of Lake Chad. For three years, its goal is to strengthen the local capacities in the protection of natural and cultural resources, act as lead agent on ecosystem rehabilitation such as wildlife migration corridor (elephants between Chad, Cameroon and Nigeria), oasis preservation and control of drying water points (LCBC, 2018). Key development practitioners in the LCBC submits that “the project, at the long run, will promote a green economy, foster income-generating activities such as spirulina production, green algae harvested by women (using traditional methods), and support efforts

on the preservation of the endangered *Kouri* cattle specie (specific to Lake Chad)” (MIOT-3). Another concluded that “it would also enhance the region’s capacity to meet the criteria for candidature as a transboundary biosphere reserve and World heritage site in the short term” (MIOT-4).

Furthermore, the “Regional Stabilisation Strategy” (RSS) of the LCBC, launched in November 2017 in N’Djamena, Chad, to generate policies and programmes towards the short, medium and long-term stabilisation and development of the Lake Chad Basin Region. With a view on the commonalities and peculiarities of each of the concerned areas (across the countries). The RSS hopes to address the root causes of the BHT crisis and enhance resilience, consolidating on the progress of MNJTF and national security operations in the Boko Haram-affected Areas. The strategy rests on nine strategic pillars (Political Cooperation; Security and Human Rights; Disarmament, Demobilisation, Rehabilitation, Reinsertion and Reintegration of Persons associated with Boko Haram; Humanitarian Assistance; Governance and the Social Contract; Socio-Economic Recovery and Environmental Sustainability; Education, Learning and Skills; Prevention of Violent Extremism and Building Peace; and Empowerment and Inclusion of Women and Youth) (LCBC, 2018).

The Implementation Framework for its operationalisation comprises a set of eight Territorial Action Plans (TAPs) for the eight key Boko Haram-affected areas of the Basin. These are Borno, Yobe and Adamawa states in Nigeria; Diffa Region in Niger; Region du Lac and Hadjer-Lamis regions in Chad; and the Far North and North regions of Cameroon. The RSS runs for five years from the date of adoption – 30 August 2018, by LCBC and the Member States. It serves as a relevant tool to address the region’s critical challenges such as climate change and promoting good governance, transparency and accountability in both the political and socio-economic spheres (LCBC, 2018). It critically aligns with the AU’s Agenda 2063 and the SDGs 2030 emphases for the creation of conditions necessary for sustainable peace and

development in the region. This significantly provides necessary guidance for applicable national and regional inclusive development tools for resource mobilisation.

To this effect, the Regional Stabilisation Facility (RSF), a multi-donor basket fund, developed by the United Nations Development Programme (UNDP), with support from Germany, Sweden, United Kingdom (UK) and EU was launched on 17 July 2019 during the Second Governors Forum in Niger. The RSF was conceived to mobilise \$100 million (US) to facilitate the implementation of the RSS of the LCBC (UNDP, 2020). The RSF, as envisaged “aims to support the RSS in providing immediate stabilisation interventions within 18-months, to improve community safety and security; restore essential infrastructure and basic services; and provide livelihood opportunities for households in the affected communities” (MIOT-1). This also includes extended support to strengthen the capacity of LCBC on RSS.

The LCBC’s sustainable development roadmap - Vision 2025, embraces the AU Agenda 2063 – “The Africa We Want” and the UN SDGs (2015-2030). The successful implementation of the afore-mentioned initiatives would enhance the achievement of Agenda 2063 in general, and three of the seven broad aspirations (1, 4 and 6) along 19 of the 55 targets specifically. These are (i) Aspiration 1 “A prosperous Africa based on inclusive growth and sustainable development” – five (5) targets; (ii) Aspiration 4 – “A peaceful and secure Africa” – eight (8) targets; and (iii) Aspiration 6 – “An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children”, six (6) targets. Accordingly, Agenda 2063 is a fifty-year long-term strategic framework for Africa’s socio-economic transformation aimed to optimise the use of the continent’s resources for its people’s benefit. It was formulated in 2013 and adopted by the African Union in 2015. It seeks to accelerate the execution of previous and present continental initiatives for growth and sustainable development such as The Lagos Plan of Action, The Abuja Treaty, The Minimum Integration Programme, and the Programme for Infrastructural Development in Africa (PIDA). Others are: the Comprehensive Africa Agricultural

Development Programme (CAADP), the New Partnership for Africa's Development (NEPAD), as well as some regional levels plans and programmes (AU, 2015).

Remarkably, the linkages between the Vision 2025 and SDGs cannot be overemphasised. Goals 1, 2, 6, 8, 9 and 13 encompass critical issues peculiar to the region, this includes poverty, human security, regional development, sustainable management of resources, peace and security, and resilience to climate change etc. The successful implementation of Vision 2025 will improve the Lake Chad basin's progress – nationally and regionally, on the SDGs. Meanwhile, the LCBC's sustainable roadmap interface with the African Development Goals (Agenda 2063) and the SDGs on the critical issues elicited above. Thus, continuous review of the frameworks and periodic evaluation of the mechanisms will fast track the success of these programmes toward addressing human security and regional development challenges.

8.4.1.2 Success and significance of LCBC programmes

The National Action Plan (NAP), formulated by the LCBC and member states to complement the SAP, has propelled several important initiatives. One is the joint IUCN, Cameroon's Ministry of Forests and Wildlife and the Heavily Indebted Poor Countries (HIPC) project. It was initiated to improve and secure the livelihoods of communities for sustainable development of Waza National Park. Second is the Niger's Community Action Project for Climate Resilience (PACRC) aimed at improving Lake Chad communities' production and resilience capacities against climate change, to enhance national food security in Niger. The third is the Support Programme for Local Development and Natural Resources Management (PADL-GRN) 2010-2016 created to enhance the living conditions and food security of rural communities. These strengthen participatory processes for local development and (natural) resources management across the basin countries (LCBC, 2016c). In support of the Mega Chad project, the LCBC's initiative for biogas development in Chad's Zafaya region and Cameroon's Maklingaye was launched in partnership with Nigeria's University of Maiduguri. The project

was accompanied by village reforestation schemes. This provided avenues for subsequent interventions through collaborations with technical and financial partners such as the UNEP, 2007, GEF, 2008, and AfDB in 2010 (LCBC, 2016c).

Approved on 11 December 2008, the PRODEBALT commenced operation in February 2009, a mid-term review in August 2012, officially closed on 31 December 2015 (and extended till December 2016) costing 60.7 Million UA, or 41.84 Billion Francs CFA. The programme was implemented along four (4) components (regional and national): Protection of the Lake Chad and its Basin; Adaption of production systems to climate change; institutional support of LCBC Secretariat; Programme coordination and management. Remarkably, Component A was executed at 61%, component B at 54%, Component C at 19% while Component D at 43% as presented in the LCBC's report, 31 December 2016 (LCBC, 2017b).

In the short term about 8,000 ha of sand dunes were stabilized, 500,000 ha of river banks and lands were protected and enhanced by the sixth year; 55,390 ha (approx.) of reforestation, plantation, agroforestry was achieved; while two endangered species (breeding and fishing) were also preserved by the sixth year. Meanwhile, 50 management plans of natural resources were expanded; Some 200 micro-projects of diversification of activities impacting on the cultivation of Spirulina (60% beneficial to women) were funded; and a total number of 200 biogas units, 150,000 improved stoves, 2,000 Chorkor ovens and 1,500 isotherm containers were popularized and provided to enhance the livelihoods of the populations across the four counties and CAR. In addition, restructuring of the LCBC was also undertaken by the second year including capacity-building for nearly 15,300 senior staff, technicians, officials of farmers' organisations, trained by the sixth year. The LCBC's legal instrument for the Integrated Water Resources Management (IWRM) was adopted and implemented within the same period. Hence, the programme's mid-term performance level from 2009 to 2014 was at least 60% in 2012 and 90% in 2014, including satisfactory technical and financial performance (LCBC, 2017b).

Meanwhile, the medium-term appraisal of PRODEBALT's implementation reveals that water contributions to the Lake increased by one billion m³ by the sixth year of the project. The sedimentation of the lake also shifted from 210 tonnes/km²/year to 105 tonnes/km²/year. The rates of vegetal, animal, and aquatic production estimated at 19%, 12.5% and 42% respectively increase in the same period, while the consumption of firewood declines by 1 million m³ as a result of tree planting and agroforestry increase from 100% to 250% during the sixth year (LCBC, 2017b). The relevance of the PRODEBALT is further captured thus,

Considerable success was made in terms of employment and training, the programme assisted some of the population with equipment and training. In adaptation to climate change, through the implementation of simplified irrigation activities, it drilled some boreholes and provided generators or water pumps to farmers to ease irrigation activities. Secondly, there was a local development fund, which focused on assisting the population in income generation, this helped reduced unemployment and the empowerment of women and youths. Several aspects of support for purchasing equipment in tailoring, carpentry or rearing of animals were provided (MIOT-6).

Furthermore, a multinational appraisal of the ongoing PRESIBALT reveals its significance toward the improvement of the low level of human development in the region. This is attributed to the improved resilience of the populations and their living environment through its key determinants. This includes enhancing the knowledge, fundamental rights, and capability of about three million people through sensitization, vocational training, and literacy. Second is widening access to primary health care (300,000 beneficiaries annually) and drinking water (80,000 beneficiaries annually) with strong impacts on the reduction of the morbidity and mortality rates, particularly those linked to water-borne diseases, at least by 50 percent (ADB Group, 2018).

Additionally, the construction of multi-purpose centres under the PRESIBALT Scheme equipped with solar kiosks across five LCBC countries (including the CAR) improves about 80,000 beneficiaries' access to community services and energy at modest prices. The above will continue to enhance better social habits, new trade opportunities and improvement of the populations' living standards. As projected by the ADB and development partners of the LCBC, employability of women and youth will also increase through on-the-job training in trades (30,000 annually) and technical training (500 beneficiaries annually) as the needs of the Lake economy requires. Finally, the combination of projects, vocational training, and access to the means of production for the poor (works for an asset) possibly produce extra incomes for the beneficiaries at about 50% minimum of their current revenues. This will continue to yield more if the use of social services - education and health including the value of social capital is enhanced (ADB, 2014: 8).

Furthermore, the LCBC is responsible for promoting the regional Inter-Parliamentary Committee on the Lake Chad. It oversees the issues of governance and addresses the problem of lobbying the national parliaments of LCB states especially in the areas of budget, passing resolutions or domesticating policies that advance the cause of the commission in its mandates. Indeed, the agency is also responsible for the creation of re-operationalisation of the Multinational Joint Task Force (MNJTF) in 2015, a regional security mechanism for combatting the Boko Haram threat and other insecurity challenges (MIOT-4).

Likewise, several local initiatives were also facilitated by NGOs on sustainable development, in their civil society's engagements across the LCBC countries. Some notable ones include the Association for Environmental Education (ACEEN) in Cameroon, the Contribution to Wetland Management Association (COGEZOH) in Niger, the Nigerian Conservation Foundation (NCF), and the Humanitarian and Development Organisation (OHD), an NGO based in Bol, Lac Region, Chad (LCBC, 2016c). The Chadian Bol-based OHD, since its advent in 2005, "...have made concrete efforts at reducing food insecurity in

the region, empowering local populations in activities such as smoking of fish in traditional ovens, the use of dead hedges to fence off cultivable areas in the Wadis and collaborated with the LCBC on mapping the Lake Chad's southern pool" (MIOT-4).

In the same vein, NCF (founded in 1980) implements several projects, including the renowned "Living on the Edge Project" in Nigeria's Northeast. The initiative, funded by the Dutch Postcode Lottery, makes field interventions on restoring and conserving natural habitats in arid and wetland areas towards improving the living conditions for its people including raising public awareness on the sustainable use of natural resources and conservation in the Sahel (LCBC, 2016c). On its part, the COGEZOH, since creation in 2000, has engaged Nigeriens particularly youths in awareness creation about wetland management. It also promotes market gardening, support for the identification and fencing of sites, construction of drainage wells, etc. The NGO has rehabilitated or built four community wells, created and trained water management groups including activities on beekeeping and ecotourism (LCBC, 2016c). Meanwhile, ACEEN (founded in 2000) was instrumental to the implementation of the project - Sustainable development of the Logone River flood plain ecosystem and poverty reduction among its communities, 2011-2015. It is currently engaged in advocacies, lobbying, stakeholders' engagement etc. on conflict reduction among resource users, devastating effects of fuelwood and oil pollution in the region (LCBC, 2016c).

Altogether, with the support of the Technical and Financial Partners (TFP) the LCBC has served as a platform for coordination and execution of regional development programmes and projects in the region, a positive drive towards integration, the fight against poverty and diseases, and improvement of livelihoods and living standards in the basin. More importantly, the commission also performs supervision and coordinating roles towards resources mobilisation and provides avenues for peer review of member-countries' development strategies mobilisation of the resources. These, indeed, promote inclusion and synergies of the goals related to socio-economic integration and harmonisation standards on the AU's Agenda

2063 and the UN development agenda (MDGs and SDGs) in the sub-region. However, some fundamental challenges continue to impede these strides.

8.4.1.3 Challenges to LCBC development programmes

The challenges to the implementation of many LCBC initiatives include insecurity, poor funding, the LCBC's institutional deficiencies, the difference of interests among LCBC member-states and geopolitics/resource conflicts. The worst threat to regional development processes in the basin is insecurity, largely the Boko Haram menace and its attending humanitarian crisis. This (as discussed in Chapter Seven) enabled the diversion of scarce funds to address its consequences and hinders transborder cooperation and development in the basin. Access to several sites has been constrained, thus limiting implementation capacities of LCBC programmes such as PRODEBALT, PRESIBALT and the SAP etc. Secondly, inadequate commitments to funding by member states hinder LCBC operations. Also, lack of working capital, sometimes for more than six months, due to bureaucracies and disbursement inadequacies by TFPs constrain its programmes.

Thirdly, several aspects of the provisions of the Fort Lamy Convention (1964) still undermine the LCBC's institutional capacity in water resources management. Added to the challenges of funding which restrains its visibility in most parts of the basin, the commission lack enforcement power against member-states' violation of its agreement, owing to the sovereignty clause. Similarly, Member-states' national policies on water resources management remain weak, inconsistent (due to several socio-economic conditions), while some are yet to materialise. Apparently, lack of national and regional guidelines or standards for water regulating and cost-sharing mechanisms, have enhanced environmental degradation in the basin and curtails the population's access to some by-products such as electricity. LCBC is yet to fulfil its objective of promoting equitable and integrated water management including

allied natural resources in the basin. The Water Charter is yet to be ratified the Parliaments of three of its member countries and hence not operational.

With regard to the differences of interests among member-countries, LCBC's difficulties reflect the different influence of the member States on the commission and the significance of the lake to the countries. Only the four riparian countries directly border the lake, out of its six members. However, for Cameroon and Niger, the lake warrants little attention from their national capitals - some 1,500 km farther away from its shores, until recently when oil is exploited from the basin area. Combined with their socio-economic challenges little commitments to funding and implementation of LCBC regulations from Cameroon and Niger impact on the LCBC activities and regional cooperation processes. Although the Agadem oil exploration in Niger's Diffa region (since 2009) by the China National Petroleum Company, integrates the area to the national development agenda, it also warrants strong government control toward social peace needed for petroleum operations (Magrin, 2016; Magrin and De Montclos, 2018; Energy Review, 2019).

Meanwhile, Nigeria, the sub-regional heavy-weight, funds over half of the budget and designates the successive Executive secretaries of the commission. Her interests in the control of LCBC seems difficult to interpret while Lake Chad and its area within Nigeria remain peripheral in her priorities. To Chad, which headquartered the commission, the lake is her political, economic, and demographic core, with half of its territory and population located around it (from the Lake to the Chari-Logone Mesopotamia). Hence, coupled with low funding commitments, lots of disregard by the country and its population to several regulations on fishing, water abstractions, logging, and pollution in the lake areas (Magrin, 2016). These altogether affect regional development and implementation of regional development policies and projects.

Geo-political concerns about the exploitation of Lake Chad's resources and acrimony among the players also affect regional development in the basin. Beginning with the

exploration of the Lake Chad since the 19th century by several European powers - Britain, France, and Germany particularly, and eventual colonisation, courtesy the Berlin conference (1884-5). The whole region later became Britain's and France's spheres of interest (due to the provisions of the Versailles Treaty (1919) following the First World War - 1914-18) until the end of colonialism in the 1960s and beyond. Yet, the interest of these powers still reigns supreme in the region. Beyond the colonial dichotomy (anglophone-francophone) and language barriers, the Western powers including China, influence policies and activities in the region - as technical financial partners (see 8.4.1) and multinationals in critical sectors - mining, crude oil exploration, hydrology and military (see chapter. 7.4). These have serious concerns for development in the region and engender disagreements among the countries particularly on issues of environmental degradation and resource management. For example, Magrin (2016) remarked thus:

... since the early 2000s, the “petroleum mode” in Chad, made President Idris Derby discover the environmental cause. In 2009, he signed a decree prohibiting logging throughout the country to control desertification; in most cases, he stepped up controls over fishing gear use, especially on the Lake, all in an abrupt manner favoured by the Chadian State. ...the interest for the cause of Lake Chad was consistent in context, with political control, internal and external legitimisation strategies influenced by a search for environmental rents... This period of media attraction to the Lake Chad (2009-2012), happened during Chad's occupancy of the rotational chairmanship of LCBC (Magrin, 2016: 215).

8.4.2 National water management and development capacities

The LCBC member-states operate within the framework of several international agreements in addition to the Fort-Lamy Convention (1964) towards environmental conservation and water management. Some of these include the Convention on Wetlands (Ramsar Convention) (Iran,

1971); the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992); the Convention on Biological Diversity (CBD) of the Rio Summit, 1992; and the Convention to Combat Desertification in Countries Experiencing Severe Drought and/or Desertification, Particularly in Africa (Paris, 1994) etc. (LCBC, 2016c). Hence, several national agencies, key ministries, and policy frameworks (Table 8.2) are also established to enhance water management and harness the development capacities of Lake Chad across the riparian countries.

TABLE 8.2: NATIONAL AGENCIES AND KEY MINISTRIES FOR WATER MANAGEMENT

Country	National Agencies on Lake Chad Area Development	Relevant National Ministry	National Collaborating Agencies or ministries
Cameroon	The Chari-Logone Integrated Rural Development Project (PDRI-CL)	Ministry of Mines, Water and Energy (MINEE); Ministry of the Environment, Nature Protection and Sustainable Development (MINEPED)	National Water Committee; National Consultative Committee on the Environment and Sustainable Development (CCNEDD); the Centre for Hydrological Research
Chad	Lake Development Corporation (SODELAC), Conservation Project of the Kouri Bovine (Cow) in Bol	Ministry of the Environment and Water, Ministry of Agriculture; and Ministry of Livestock	Directorate of Rural Engineering and Agricultural Hydraulics (DGRHA); National Office of Rural Development (ONDR); National High Committee on the Environment (HCNE)
Niger	Regional Water and Sanitation Commission (CREA) (collaborating with the National Water and Sanitation Commission (CNEA)	Ministry of Hydraulics and the Environment, Ministry of Agriculture, and the Ministry of Livestock	National Council for the Environment and Sustainable Development (CNEDD), Company for Water Utilities (SEEN), Niger Water Assets Holding Company (SPEN)
Nigeria	Chad Basin Development Authority (CBDA), Lake Chad Research Institute (LCRI)	Federal Ministry of Water Resources; Federal Ministry of Agriculture and Rural Development; State Ministries of Agriculture and Water resources; Federal Ministry of the Environment.	National Council on Water Resources, the National Technical Committee on Water Resources, the River Basin Development Authorities and the Ministry of Agriculture and Rural Development.

Author's compilation

In Cameroon, water management and governance are facilitated through three ministries: Mines, Water and Energy; the Centre for Hydrological Research (Ministry of Scientific and Technical Research) and Agriculture. Following the national crisis of the 1980s, irrigation and water sector in Cameroon was privatised. The fall of productivity, as a result,

enabled the government's policy directions toward the farming of existing schemes, small-scale irrigation, and to an extent private sector-driven irrigation. Hence, the national legislation (Law No. 98/005) of 14 April 1998 was passed to protect against pollution, water resources preservation and drinking water quality (LCBC, 2016c).

In Chad, water management and governance fall under various ministries and public/semi-public agencies. These include Ministry of the Environment and Water - in charge of water resources development; the Ministry of Agriculture, through the Directorate of Rural Engineering and Agricultural Hydraulics (DGRHA), is responsible for irrigation development. The National Office of Rural Development (ONDR) is a semi-public executing agency for agricultural development programmes or projects. Others are the Ministry of Livestock and the Lake Chad Development Company (SODELAC). In Chad, the water sector was largely unregulated until the adoption of the Water Code (Law No.016/PR/99) by the National Assembly in 1999. It was meant to achieve water regulation, decentralisation and substantial involvement of the private industries and individual users in the sector. Nevertheless, the legislation passed on irrigation schemes, are poorly implemented (LCBC, 2016c).

Meanwhile, Niger's Ministry of Hydraulics and the Environment, Ministry of Agriculture and the Ministry of Livestock formulate and coordinate its national water policy and governance. The country's Ordinance (No. 2010-09) of 1 April 2010 is a principal national provision for water management. This specifies rules on water supplies for human use and livestock, and irrigation activities. The mandates and roles of the National Water and Sanitation Commission (CNEA) including the Regional Water and Sanitation Commissions (CREA) were defined (LCBC, 2016c). Significantly, Niger's "Economic and Social Development Plan" (PDES)- 2012 and the 3N Plan (Les Nigériens Nourrissent les Nigériens) illustrates its IWRM vision. The PDES provisions centres on quality drinking water, sanitation, and hygiene at the

local level, while the 3N Plan focuses on food security and self-sufficiency through an increase of irrigable land to 125,000 ha for agriculture by 2015” (MIOT-3).

In the case of Nigeria, the principal coordination of water policy rests in the Ministry of Water Resources, with responsibilities cutting across, policy formulation, irrigation management, hydrology and meteorological studies and statistics. Other institutions involved in the policy formulation and execution include the National Council on Water Resources, the National Technical Committee on Water Resources, the River Basin Development Authorities and the Ministry of Agriculture and Rural Development. “A significant attribute of the water sector in Nigeria is the decentralisation of administration, hence integrated water resource management is not codified in one policy document but enshrined in ranges of regulations on irrigation, agriculture, navigation, and administration. Nevertheless, there is a lack of adequate coordination” (PING-2).

Across the riparian countries, the national institutions and their subsidiaries illustrated above have over time transformed into different forms and functions, as dictated by socio-political factors and national priorities. Several initiatives towards human development and sustainable management of the Lake Chad resources were initiated nationally. Some significant national investments undertaken during the 1960-1970 decade include ambitious irrigation projects such as Nigeria’s Southern Chad Irrigation Project (SCIP) and the Baga Polder Project; and Chad’s Sodélac Polders etc. Various challenges such as economic, political, and environmental crises occasioned the disruption (e.g. Nigeria) or resizing (e.g. Chad) of these investments, thus leading to staggering outcomes. Some significant interventions and challenges to development in these areas are further reviewed.

8.4.2.1 National development initiatives in the Lake Chad area of Cameroon

Since 1951 (before the formation of LCBC and national independence) the SEMRY-I (Yagoua) Project, connected to the main hydraulic installations was initiated as a mechanised farming experiment in Cameroon. The Society for the Expansion and Modernisation of Rice-growing in Yagoua, (originally known as *La Société d'Expansion et de Modernisation de la Riziculture de Yagoua*), was a 24-hectare rice cultivation scheme, developed in Pouss, to train growers, process and market the rice. A 40 km long levee was built along the elevated bank between Yagoua and Djafga reserved area of 1,500 ha. In 1965, it was extended to 2,700 ha against flooding. When the flow is high, water intakes through the levee, supplied the rice paddies through the gravity-fed channels. Meanwhile, the hydraulic installations were remodelled in the 1970s due to deficiencies in high flow periods (LCBC, 2016c:86).

Indeed, the positive outcomes prompted the SEMRY II Project in which four additional irrigation systems were established between 1978 and 1986. Water was supplied from the reservoir - floodplains to the north of the Danay stream, for rice cultivation in the Yaere. These projects enhanced biodiversity transformations - improving the Yaere and the communities' adaptation practices in several ways. This includes the construction of 27 km levee between Pouss and Guirvidig; Providing the Maga reservoir with 500 million m³ (340 million m³ utilised) and a surface area of 120 km² - 360 km². Significantly, 5,500 ha (out of the Scheme's 6,200 ha) of rice paddy was farmed by 11,000 farmers and their families (who were also supported with credit facilities) (LCBC, 2016c:86). This enhanced socio-economic transformations in the country's Musgum region. Annually, the Maga fields cultivated averagely 35,000 tonnes of rice, with total annual production estimated at 60,000 tonnes for the SEMRY II project. By implications, the project's area was not exploited for pastures and rain-fed farming. Despite decline water flow of the Guerloo stream (a tributary of the Logone

River), the Maga was crucial for fishing (supplying about 2,000 tonnes of fish annually) including fruit production and market gardening etc. (LCBC, 2016c:87).

Moreover, a five-year joint project of the IUCN, the Ministry of Forests and Wildlife (MINFOF) and the (IMF/World Bank's) Heavily Indebted and Poor Countries (HIPC) Initiative, 2010-2015 took place toward the sustainable development of the communities of the Waza National Park and environs. Toward securing livelihoods of the population, 69 fishing, livestock and farming micro-projects were funded. In addition, new boreholes, improvement of transhumance corridors and co-management of natural resources were facilitated, through a participatory mechanism involving local population and administrative and forest authorities. Also, several other programmes were implemented under the aegis of Cameroon-Japan cooperation, particularly in fishing activities. This includes the construction of fisheries centre in Maga, training fishers and women involved in fish processing, provision of fish farming ponds, the ice-making unit provided in support of Women Association's Initiative in Maga, and workshop for producing canoes and fishing equipment etc. (LCBC, 2016c).

More importantly, the Chari-Logone Integrated Rural Development Programme, co-financed by the Government of Cameroon, the Islamic Development Bank (IDB) and the Organisation of Petroleum Exporting Countries' (OPEC) development fund, was launched in two phases. The first phase (3 June 2008 - 23 February 2016) was geared toward poverty reduction, food security and livelihoods improvement, with a cost of \$10,642,100 (US Dollar). It facilitated the rehabilitation of 570 ha irrigation perimeters, provision of a sluiced dam to secure rainfed and recession agriculture on a 40,000 ha land, rehabilitation and construction of socio-economic projects communities and populations' livelihoods support - livestock, fishing, and farming, through micro-credit financing. The Second Phase (16 May 2017 - 17 April 2020) is still ongoing, with an estimated cost of \$31,812,711 (US Dollar) was a strategy for the rural

development sector. The focus is on the diversification of agricultural production through the value chain approach to enhance farmers' benefits of their products (IDB, 2018: 2).

Since the economic crisis of the 1980s and political stagnation or lack of democracy has stifled development across Cameroon particularly, the west and the northern regions. The North, a development project attraction in the 1960-70s, which also produced the country's first President was slid down as a result of regime change - the arrival of Paul Biya in 1982 and the suspect of the North region in the crisis to oust Biya in 1984. The north's prominence in Cameroon's development agenda manifested in critical infrastructures - roads, urban amenities, tourism facilities, railway to Ngaoundéré (1974), the Lagdo Power Dam, and the hydro-agricultural project (halted by the 1980s crisis). However, with the above crisis, rural development was consigned to the Cotton Development Company (Sedocoton) established since 1974 while the Semry rice scheme - a national project was capacitated to a mere regional food security agenda. There are evident contrasts between the regions more advantaged cities and towns such as Garoua and Maroua and the marginal or under-governed spaces around the Lake Chad. Therefore, strong feelings of political marginalisation, injustice and imbalances reflect in access to services, infrastructures and opportunities such as employment between the northern regions and south Cameroon. These combined effects and livelihoods challenges were parts of local explanations for some youth's embrace of Boko Haram.

8.4.2.2 National development initiatives in the Lake area of Chad Republic

The Lake Chad area to the Chari-Logone (Mesopotamia) is a strategic development pole of the Republic of Chad particularly during its age of development, 1950 to 1960 housing the Bol polders and its irrigated wheat crops, the resource-rich southern Chad is a historical cotton-producing area with considerable investment, including oil production since 2000 (Magrin, 2016). Polders are pieces of land in a low-lying area reclaimed from waterbody through built dikes and drainage canals. The north-eastern part of Lake Chad consists of mud deposits, rich

in organic matter (overlying clay). The groundwater in polders, close to the surface (0.5-2.5 m) provides an opportunity for farming. Farmers cultivated crops (mostly wheat) in polders around the lake shores including planting in the oases and wadis of northern Chad (LCBC, 2016c). The Société pour le Développement du Lac (SODELAC), as reported, was established in 1967 to coordinate cultivation and supply of wheat to the state-owned flour mills (the Grands Moulins du Tchad) at N'Djamena (operational since 1964)” (MIOT-3).

To boost wheat production and other agricultural produce - sorghum millet and rice etc. The government invested in large-scale Polders project, cost at 2.925 billion CFA equivalent of \$13 million US Dollar. These consist of (i) rehabilitation/construction of irrigation and drainage system - Guini polder (370 ha net area) (ii) construction of irrigation and drainage systems for Berim Polder (800 ha net area) (iii) provision of commercial agricultural development scheme - farm settlement (iv) provision of agricultural support services to farmers on the Polders project: training extension, marketing, credit facilities and resettlement assistance etc. (v) expansion of the Matafo research station for adaptive agricultural system (vi) Consultancy services provision for SODELAC (World Bank, 1975).

Unfortunately, the flour mill shutdown in 1980 till the end of the decade, because of rebellion in the late 1970s. The plans to cultivate 200 km² of wheat in polders around Lake Chad were truncated as warfare undermine SODELAC's infrastructure, construction of additional polders and farmer's resistance of SODELAC-controlled production. Similarly, the *Cotontchad* (Société cotonnière du Tchad) was established in 1971, as a producer and marketer of Chadian cotton and its by-products. The company's role includes procurement, growing and transporting cotton and its by-products to several industries. To enable a quick supply of raw materials to textile industries, officials of Chad's National Office of Rural Development (Office National de Développement Rural) ONDR monitored cotton production. They also gathered information on food production (although unsystematically). However, the 1980s crisis hampered its operations and growth of the cotton industry until the 1990s. The *Cotontchad* is

currently acquired by Olam International, one of the world's leading suppliers of cocoa beans and products, coffee, rice and cotton, with headquarters in Singapore (MIOT-4). A related example of partial water control includes the Banda Sugar cane plantation, located near Sarh town on a 3,700 ha and water supply capacity from a 3,000 m³/h (830 l/s) six-in-stream pumping stations installed on the banks of Chari River. The company is managed by Chad Sugar Company (Compagnie Sucrière du Tchad) (MIOT-3).

Furthermore, recent initiatives in Chad include the Support Programme for Local Development and Natural Resources Management (PADL-GRN) and the National Programme for Food Security (NPFS). The PADL-GRN targets 70 percent of the rural population, nearly 3,000,000 inhabitants in 13 regions in Chad, and awarded 21 billion CFA francs (32,000,000 euros) funded by the European Development Fund for six years (2010-16). It seeks to improve livelihoods and food security of rural communities through participatory processes in local development and natural resources management. The NPFS started in 2006 with a total budget of 103 billion CFA francs, half of which is funded by the government of Chad and the rest by international partners. Hence, the upgraded Kindjiria traditional polder run a system of three harvests in every two years and estimated 300 ha of wheat, and 600 ha of maize cultivation. Other polders capacities currently enhanced include the 6,900 ha Lake Prefecture Rural Development Project - (PDRPL), the Doum-Doum Polders (2,400 ha), the Mamdi Polder, Bol (20,000 ha), the Liwa (27,000 ha) and the Ngouri (1,000 ha) (LCBC, 2016c).

All considered, development eludes most of the Lake Chad areas of Chad, although considerable efforts have made to enhance critical infrastructures and support for livelihoods among rural populations. However, the country is reeling in the political and security tensions emanating from Idris Derby's autocratic leadership, lack of openness and accountability, protracted rebellion, and high poverty index bedeviling the state of Chad. These coupled with the rentier state of its economy, resource curse, and the neglect of mechanised agriculture due to oil exploration has increased the country's dependence on foreign aid. The lack of education

and inadequate empowerment supports also undermine the capability of the largely youthful population of the Lake Chad areas.

8.4.2.3 National development initiatives in the Lake Chad area of Niger

The Diffa region, far-eastern part of Niger, and its sparse population has been eluded of critical development activities, this reflects the region's remoteness to the centre of political authority, the country's peculiar socio-economic predicaments - poor human development index and reliance on external aids, and political instability - repetitive coups d'état in the 1990s and 2000s. Significantly, bell pepper has been the region's main cash crop. Its cultivation on more than two-thirds of cultivable lands as the figures from the Ministry of Agricultural Development (Niger) reveals, largely impacted the livelihoods of the population, particularly through transborder trade. Well above 125,000 tonnes of bell peppers are harvested and marketed (dried or fresh) in Nigeria (LCBC, 2016c: 95). Meanwhile, national development capacities and investments in livelihood activities have been lesser in comparison to the Lake Chad areas in the other three countries, until the 2009-2011 CNPC's Oil Project built in the Ngourti commune, connecting the Zinder refinery. Meanwhile, earlier socio-economic activities were small and medium scale and largely privately driven.

However, beyond the airfield, road construction and maintenance facilitated in support of the oil activities, the region thus, receives better public investments in the 2000s than the past decades. This include dams - for oxbows development, built on the Yobe River basin, a massive well-based irrigation Project was constructed in Ngagam (between Bosso and N'guigmi), several infrastructures - roads, electrification and water supply were provided in the region, such as the Diffa- N'guigmi road, water supply to Dosso and surrounding villages and electricity to Malam-Fatori (in the Niger-Nigeria border). Other major urban infrastructures for Diffa include a polytechnic (specialised in oil and electronics) and a college of education in Diffa (Magrin and De Montclos, 2018). Plausibly, some of these investments

are largely due to the social dynamics triggered by oil activities and other political exigencies in the country. Thus, mounting social unrest and environmental NGOs campaign against oil impacts on the environment forced the government to invest in the region towards the peace and cooperation needed for harmonious oil activities in the region.

Moreover, the Diffa-Local Development Support Project (PADL-D), 2004-2012, was funded with the disbursement of UA 15 million from the ADB and UA 0.853 million from the Government of Niger respectively, towards sustainable agriculture and livestock production in the region. It appreciably enhanced food security, rural employment, and income of rural households (particularly farmers and pastoralists) in the region (ADB, 2012: 1). Additionally, the UNDP-GEF's "Project to Strengthen the Resilience of the Agricultural Sector to Climate Change", was funded in partnership with the Government of Niger between 2009 and 2013. Chetimari, Diffa region benefitted from this project, among eight communities categorised as vulnerable in the country's National Adaptation Programme of Action (MIOT-3).

Similarly, the Community Action Project for Climate Resilience (PACRC) was launched by Niger's government on 22 October 2012 toward enhancing the production systems and communities' resilience to climate change and contribute to national food security. The nationwide project, coordinated by the Ministry of Planning, Land Use and Community Development, targeted 38 communities across Niger's eight regions. Also, the Household Food Security Support Project (2010-2013) was assisted with 1.4 million Euro (918,399,800 CFA) funding from the French Development Agency (AFD) toward implementing the national food security policy. This was expected to enhance the livelihoods and food security of vulnerable households in the region of Diffa among others (LCBC, 2016c).

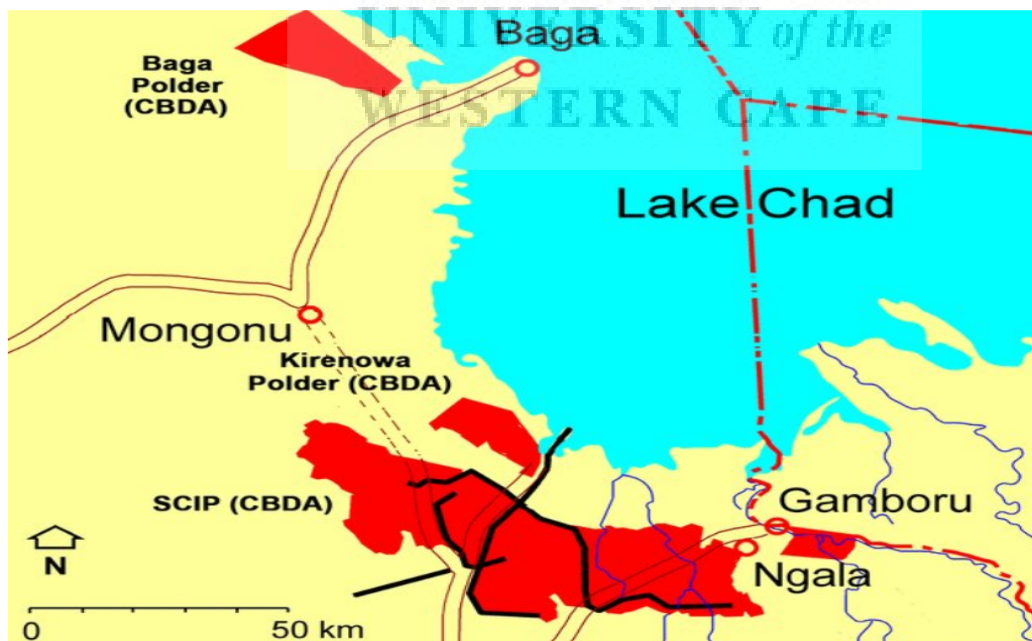
Altogether, Niger is often constrained as a landlocked state, the country's Lake Chad area - Diffa region's remoteness to the centre of national political and economic development aggravates its deprivation. Hence, socio-economic activities in the region are small or medium scale and largely individual with limited government support or private sector investment.

These have exacerbated poverty and despondency among the poor and marginalised. Despite considerable public interventions in development projects and infrastructures since 2009, anti-government tensions and socio-economic crisis continue to mount particularly due to oil exploration, without a commensurate impact on the average citizens.

8.4.2.4 National development initiatives in the Lake Chad area of Nigeria

Given the fact that the Lake Chad area occupies a shifting perimeter in the riparian states' development processes, the region has been included intermittently in Nigeria's national development strategies, particularly during the oil booms of the 1970s. The Nigerian authorities have undertaken ambitious irrigation projects, dams and polders (figure 8.2) managed by river basins development authorities and guided by policies and research institutes to enhance livelihoods and development in the region. However, with limited successes, some of these initiatives have encountered disruptions due to political, ecological and economic crises that bedevilled the country in general and the region specifically.

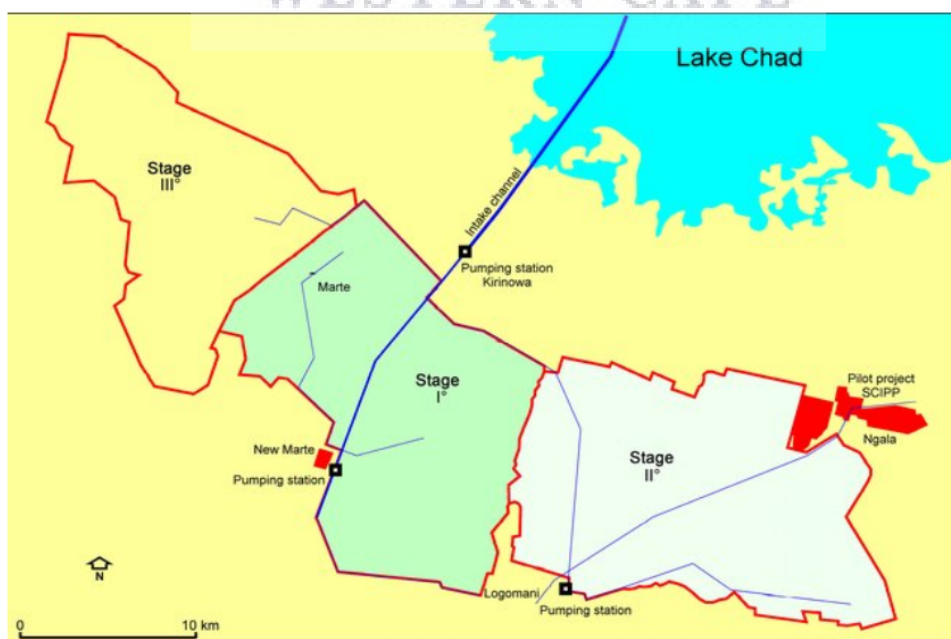
FIGURE 8.2: IRRIGATION PROJECT AROUND THE LAKE CHAD AREA (NIGERIA)



Source : Bertoincin and Pase, 2017: 248.

The South Chad Irrigation Project (SCIP), situated about 120 km north-east of Maiduguri, Borno state capital, is the largest irrigation scheme implemented in Nigeria. It was designed in 1972 to irrigate 67,000 ha of land in three phases (figure 8.3) and implemented one after the other: Phase I (22,000 ha), Phase II (27,000 ha) and Phase III (18,000 ha) (LCBC, 2016c:213). The major communities in the project area comprise Marte, Ala, Missene, Sola and Gadadai etc. where fishing, cultivation and livestock breeding were integrated. The SCIP was meant to exploit the potentials irrigation capacities of the Lake Chad, enhancing the fertile lands within its perimeter, navigating from one to two harvests yearly. Thus, mechanised agriculture, industrial manufacturing, electrification and marketing of produce on a regional scale were the hallmarks of this intervention scheme. The project constructed channels and a system of pumping stations and installations mainly for wheat and rice cultivation (cotton later included). This also included plans for establishing settlements, a grid of road networks operating to link the project's terrains with the region's capital - Maiduguri, as its population was projected to grow from 10,000 to 220,000 by 2010 (Bertoncin and Pase, 2017: 248). However, due to structural difficulties only Stage I and few parts of Stage II were implemented

FIGURE 8.3: SOUTH CHAD IRRIGATION PROJECT (SCIP) – PHASES I-III



Source: Bertoucin and Pase, 2017: 248.

The second notable projects include the Baga Polder Project (BPP) and the Alau Dam Project. The BPP is another major irrigation facility executed in Nigeria's northeast by the Federal Government. It is located within 120 km north of Maiduguri to irrigate 20,000 ha of land toward the cultivation of 28,000 tonnes of maize, 26,000 tonnes of wheat and 14,000 tonnes of peanuts yearly, including large quantities of potatoes and vegetables. This project was projected to enhance irrigation capacities of 4500 families, contribute to agriculture and food security in the region. It was taken over by the authorities of the North-East region in 1975 and supervised by its Ministry of Agriculture and Natural Resources, the project began operation in 1982 and remain till date partially completed. The Alau Dam Project, sited about 22 km along the Maiduguri - Bama road, was initiated in 1984 although construction began in 1986. The project was planned to irrigate an 8,000 *ha* rice-growing facility in Jere (LCBC, 2016c: 213). The project's reservoir is fed by the Ngadda and Yedseram Rivers and remained abandoned due to several complications. The depletion of groundwater resources supplied principally to Maiduguri and environs may have resulted from ecological factors, corruption of government officials and or political crisis. This assertion is explained further:

The SCIP was conceived by the Gowon administration in the 1970s among other eight river basins development areas across Nigeria. The SCIP, the subsequent polders, and dam projects are perhaps the most ambitious irrigation projects in Nigeria. They were designed to cultivate about 500,000 hectares of land drawing water from Lake Chad to irrigate wheat and rice production, villages were dispersed, lands prepared and intake canals dug across four LGAs - Kukawa, Monguno, Marte and Ngala, bordering the lake in Borno State. Billions of Naira were committed to the project... Unfortunately, traditional guinea corn and millet farmers and other products were forced to divert to wheat and rice cultivation,

including the abysmal land tenure policies and neglect by successive administration after years of graft by key government officials and their local collaborators, frustrated the project... less than 40 percent of the projects were completed to date (GNGO-4).

These projects – SCIP, BPP, Alau Dam and others are managed by the Chad Basin Development Authority (CBDA), a Federal Government Parastatal created in 1972, under the Federal Ministry of Water Resources. Its mandate is to undertake comprehensive development of surface and groundwater resources in Nigeria's Chad Basin area for multi-purpose use, particularly on irrigation infrastructure, watershed management, flood and erosion control, and livelihoods supports. The CBDA has implemented several Flood Control Projects toward environmental protection in the region. Some notable ones include Phases I and II of the erosion control scheme in Ngaddabul; erosion control activities - in Galtimari and Polo; Ngelzerma (in Sambisa) and the Nguru-Hadejia wetlands. Others are erosion control projects (Phases I&II) in Gashua; and flood control facility, Potiskum Yobe state (LCBC, 2016c).

Remarkably, the Lake Chad Research Institute (LCRI), was created by the Research Institute's Order (establishment Act) in 1975 and sited in Maiduguri in 1976. As mandated, the institute initially conducts multidisciplinary research in crops, livestock, fisheries, agroforestry, wildlife and public health. However, a re-appraisal of its mandate and function in 1987, transformed it to a crop-based with key mandates in genetic improvement of wheat millet and barley; investigation of challenges to agricultural food crops of the northeast ecological zone, including livestock, trees, agroforestry into production systems; facilitate agricultural extension and research liaison activities with key federal and state ministries, departments and agencies, industries and private Agric producers (LCRI, 2020) The institute opened stations in Baga, Ngala and Malam-Fatori, and experimental sites in Biu , Marte, Demboa - Borno State. Others outside Borno are in Gashua, Yobe; Deba and Dadinkowa, Gombe; Uba, Adamawa; Gembu, Taraba; and Jos, Plateau etc.

Recently, the North-East Development Commission (NEDC) was established and signed as an Act by Nigeria's President Muhammadu Buhari on 25 October 2017. It is the focal institution mandated to assess, coordinate, harmonise, report, and implement various intervention programmes by the federal and state governments or their Ministries, Departments and Agencies (MDAs), and other development partners for the Northeast states; (Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe). Its mission is to lead the reconstruction and development of Nigeria's northeast, having replaced the Presidential Committee on the North-East Initiative (PCNI), earlier inaugurated on 26 October 2016 to supervise the Presidential Initiative for the North East (PINE). The PINE was a 3-year national strategy, coordination and advisory body for humanitarian interventions, transformational and developmental efforts in Northeast Nigeria. Hence, NEDC consolidates previous arrangements such as the PINE, the National Humanitarian Coordination Forum, the Victims Support Fund (VSF) and the Safe School Initiative (SSI). The NEDC projects focus on humanitarian coordination, early recovery, long-term development, and stabilisation programme (PCNI, 2016; NEDC, 2018). The commission will need to invest in data systems, health care, agriculture, education and skills training, and housing projects to successfully rebuild the region, devastated by over ten years of BHT insurgency, and development crisis.

In summary, Nigeria's Chad basin area, like other riparian countries, reveals a contrast between the dynamism of the lake area's socio-economy and the limited state interventions and investments in favour of its populations. This indeed undermines the region's socio-economic potentials. The major investments of the 1970s and 1980s were abandoned due to poor planning and implementation, grafts among government officials etc. For instance, part of the industries established in the region was the Maiduguri Flour Mills Limited, opened in 1983. Before it shutdowns in April 2013, the Flour Mills was one of the oldest food processing companies of the Borno state government. Its products include Golden Penny wheat flour, semovita, maize

flour and animal feed etc. It employed thousands of workers; but was close down because of Boko Haram insurgency, financial irregularities and other operational constraints.

Worse still, controls and levies on trade imposed by several public officials operating in the lake area (police, customs officers, forestry and water agents), are often unremitted to the authorities. While Northeast Nigeria enjoys better infrastructures (including road networks, railway and higher institutions of learning) and fewer industries than other Lake Chad basin areas in the riparian countries, its infrastructures and access to essential services (water, health, education) are the poorest nationally, in a country with incoherent or non-existing social protection. The Northeast region's human development indicators, like other riparian countries, ranks among the least in the world (see table 6.8), a critical factor for growing crisis and human insecurity. Additionally, it would be erroneous to ascribe to the region as being marginalised in national political and socio-economic development despite its remoteness. Apparently, prominent persons from the region have held sway or being at the corridors of power in Nigeria from independence (1960) to date, while the nature of Nigeria's federalism also favours the region. However, poor literacy level among the people, deliberate disempowerment by their elites (a dominant practice in the Far North), reflecting the region's politico-religious entrepreneurialism, thus undermine the masses of its population and regional potentials in comparisons with other geo-political regions in Nigeria.

8.5 Transboundary river basins in the Global South: development and challenges

The world's 286 transboundary river basins (TRBs), covering 62 million km² (42 percent of Earth's land area), connecting over 2.8 billion humans (about 42 percent of the global population) across 151 countries. These factors and estimated 22 000 km³ of annual water discharge (nearly 54 percent of the global river flow) provided (GEF, 2016: 2), highlights the TRBs potentials for development, cooperation and conflict management among different entities across the globe. Some of the Global South's TRBs include the Tigris-Euphrates River

and the River Jordan (Middle East), the Nile River (North and East Africa), the Niger River (West Africa), the Congo River and the Lake Chad (Central Africa), and Mekong River (Southeast Asia). Others are the Amazon River and the La Plata River (South America) etc.

Given the prevailing conditions of the Lake Chad basin and the larger Sahel, what lessons can be learned from similar river basins areas in the world, particularly the Global South? As Kreamer (2012) succinctly observes, water scarcity can serve as a driver of conflicts among resource users, induce regional tension, border disputes, political discords, as well as ethnic violence and cross-border terrorism. Critical lessons from these vital resources in other regions can be extrapolated in referencing regional development and human security in the Lake Chad Basin. Specifically, issues of development and water-related tensions or crises from some selected TRBs in the Middle East and the North and East Africa are subsequently reviewed.

Significantly, rivers are the most common sources of water across the Middle East and North Africa. The regions benefit from two of the world's greatest rivers - the Nile and the Tigris-Euphrates. The region's rivers are threatened by high evaporation and low precipitation. In varying degrees, low water supply in the region is exacerbated by climate change and increased populations (Brooks, 2007; Gleick *et al.*, 2014). Present generations in the region are primarily stressed by water scarcity, its distribution and quality across the communities. However, the future generations' concerns may include the sustainability of adequate water supplies, preservation of the quality of the environment and achieving equity in water distribution.

Most rivers in the Middle East, including the modest size, are international. This includes the Tigris-Euphrates River systems - rises in Turkey and traversing the Syrian border through Iraq. The countries sharing this TRB include Iraq, Iran, Jordan, Saudi Arabia, Syria and Turkey. The two rivers form a single basin due to its convergence in the Shatt-al-Arab waterway shortly before its discharge into the Persian Gulf (Kibaroglu & Olcay Ünver, 2000).

Remarkably, approximately 90 percent of the Euphrates water is used for irrigation, power generation and livelihoods support to riparian populations in Iraq, Syria and Turkey. While this impedes modalities for effective and equitable use and management of water resources in the region, water management, thus, rests on the countries' irregular negotiation patterns. (Kibaroglu & Olcay Ünver, 2000). However, decades of unilateral decisions and tensions among the countries in both the upstream and downstream of the river system was followed by tenuous cooperation and joint management efforts - the Joint Technical Committee between Turkey and Iraq in 1980. Meanwhile, with Syria's inclusion in 1983, 16 meetings were held between 1983 and 1993. This embraced exchange of hydrological and meteorological data and information on the basin, information progress reports on dams' construction and irrigation schemes in the three riparian states etc. (Kibaroglu & Olcay Ünver, 2000).

Few of the Middle East's medium-sized rivers include the Jordan and the Orontes, mainly located around the eastern Mediterranean area. Several other short or transient streams, normally fed by springs in the mountains flow into the sea or seep into the desert (Brooks, 2007). The River Jordan and its surface catchment area 18,194 km² is shared among Syria, Lebanon, Israel, Palestine and Jordan (Talozi, 2007:74). Its main tributary, the Yarmuk River, marks part of the Syria-Jordan frontier, while three main springs - Hasbani in Lebanon as well as Dan and Banias in Israel and Syria respectively, account for the River Jordan's headwaters. The three springs also converge to form the Upper Jordan River in Israel. Approximately 1,400 million cubic metres *MCM*/year of water discharge into the Dead Sea from the Jordan. This discharge was before different water projects were implemented in Jordan, Israel and Syria. Presently, it has reduced to 250-300 *MCM*/year, largely as irrigation return flow, saline spring outflows or inter catchment runoffs (Talozi, 2007:74). There is an absence of joint regional management of the Jordan river but sporadic inter-governmental negotiation or meeting among the riparian states exists.

Contrary to the situation in the Middle East, North African nations are larger, and most African rivers are national with few exceptions. The Nile river is one of the exceptions, with eleven riparian states, the bulk of its flow originate in Ethiopia (the upstream) from where the Blue Nile rises (Brooks, 2007). The Nile River (the longest in the world) rises from the south of the equator, flows northward through northeast Africa to drain into the Mediterranean Sea. The Nile basin includes parts of Egypt, Sudan, Ethiopia, the Democratic Republic of the Congo, South Sudan, Kenya, Tanzania, Burundi and Rwanda (Brooks, 2007). Consequently, the Nile Basin Initiative (NBI) was established on February 22, 1999, as an intergovernmental collaboration of ten Nile Basin countries. These are Burundi, Congo DR, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, The Sudan, Tanzania and Uganda. Eritrea is an observing member. The NBI's all-inclusive basin-wide institution provides a forum for consultation and coordination among the basin's states on a win-win basis toward the sustainable management and development of the Nile Basin's shared water and allied resources (Henkel *et al.*, 2014).

Indeed, lessons can also be drawn from cases of water tensions across these regions. In the Tigris-Euphrates River system, tensions and disagreements among the riparian states are constant over water allocation, equitable distribution, preservation of water quality and construction of development projects such as dams, reservoirs and hydropower etc. One of the major water crises occurred in 1990 over Turkey's interruption of the Euphrates flow to fill the Ataturk reservoir which both Syria and Iraq protested. Both Iraq and Syria further objected to the former's construction in 1995 and 1996 of the Birecik - an after-bay dam on the Euphrates (Kibaroglu and Olcay Ünver, 2000).

Water also plays critical roles in the ongoing Syrian conflict. Given the fact that the conflict was influenced especially by Assad's repressive rule, a deteriorating economy in the wake of uprising asking for political reforms across the Middle East and North Africa are also factors of the crisis. Hence, challenges emanating from droughts, agricultural failure, water loss and management challenges induced contributed to social unrest and violence in Syria

(Gleick, 2014). Syria, like the entire Middle East, suffered periodic droughts, from 1900 to 2005, six severe droughts occurred with average monthly winter precipitation dropping one-third. Additionally, a multi-seasonal extreme drought of 2006-2011, was reputed the record worst drought in Syria, with consequences on the region's water resources, dams and reservoirs (Gleick, 2014). The resultant, crop failures, persistent livelihood disruption and rural-urban migrations further heightened unemployment, economic hardship and social unrest in Syria.

Meanwhile, in the Nile region, despite the existence of the Nile Basin Initiative, water wars currently loom among the major countries, particularly Ethiopia, Egypt and Sudan with critical transboundary consequences in the region. Ethiopia's construction of the Grand Ethiopian Renaissance Dam (GERD) on the Nile River since 2010 has bred regional tensions. The projected - 500 feet high, 6,135 feet wide - an extra saddle dam and a reservoir of 800 square miles, will be Africa's largest dam and hydroelectric power plant when completed (Benaim and Hanna, 2018: 3). The GERD's reservoir could retain 74 billion cubic meters - more water than Egypt absorbs annually. Its 16 turbines will almost triple Ethiopia's present installed capacity to generate electricity and electricity exports to neighbouring states (Benaim and Hanna, 2018). This initiative has sparked tensions with neighbours - Egypt and Sudan including counter manoeuvrings with external players in the region. The GERD's capacity to transform Ethiopia's economy, revolutionise Sudan's agricultural sector when fully operationalised, as feared by Egypt, may fundamentally threaten the livelihoods of 95 percent Egyptians' population living along the Nile's delta (its downstream) when the waters are diverted to fill the project's massive reservoir.

The abysmal 1959 Nile water sharing and usage deal, a bilateral agreement between Sudan and Egypt, signed since the British colonial era, bestowed Egypt with a large share of Nile water to the exclusion of Ethiopia and other upstream nations. While criticising the agreement, Ethiopia's call for more equitable water use, including efforts on a broader regional water management treaty over the decades, has faltered. Hence, the dam dispute in the region

portends risks of resurgent violence in eastern Africa, mass migration, instability in Egypt, and threats to key chokepoints in the Red Sea. In Other words, shifts in allegiance and high politics among the contending states are engendered. For instance, with the GERD, sited some 20 miles from Sudan's border, Ethiopia's assurance to Khartoum that water would not be channelled away from its path, changed its initial stand with Egypt. This is because the project's potential benefits to its agricultural base became evident. The GERD could enable Sudan's Eastern Gezira province to farm three seasons annually, boost the efficiency of its small hydroelectric Nile dams, and enhance its potential as a net food exporter to its neighbouring African and Arab states. In the meantime, generalized promises that Ethiopia will slowly fill the reservoir to prevent Egypt's considerable pain has been hard for her to trust or accept, as population surge hampers economic growth in Egypt (Benaim & Hanna, 2018). Despite the optimism and seeming impossibility of direct war, the absence of a breakthrough in dialogue and recriminations fuel acrimony between Ethiopia and Egypt, while duelling nationalisms and anxieties of domestic instability restrict both parties.

Nevertheless, both Ethiopia and Egypt induce proxy fights to aggravate the other's pressure points. Egypt, for instance, was accused of training forces in Eritrea, in the latter's prolonged conflict with Ethiopia (a claim Egypt constantly denies). Although a historic peace accord including trade and security agreements was signed on 9 July 2018 between leaders of Ethiopia and Eritrea ending a protracted conflict destabilizing the Horn of Africa. While Sudan is susceptible to Egypt's pressure through rebellious factions in Darfur, South Kordofan, and the Blue Nile, Sudan has been a safe-haven for Islamist adversaries of Egypt's regime (Benaim & Hanna, 2018). Instead of a joint cooperative path on the GERD dam, a non-concrete future threat confronts regional cooperation in the Nile basin with prospects for contentious diplomacy.

Another relevant example is the Southern Somali Coast – a large marine ecosystem connecting Somalia, Kenya and Tanzania on the Indian Ocean (Carbone and Accordi,

2000)among others. Unfortunately, regional key players have been contesting for influence in war-torn Somalia backing opposing factions, while a cluster of proxies for states to undermine each other remains pervasive across the region. In Somalia, Middle Eastern involvement, establishing military bases, arable farmland and cultivating proxies against their rivals, as well as conflicting interests of regional actors have increased the volatility of its local politics. Consequently, resource conflicts, mass migration, crime and state failure have threatened human security and regional development in East Africa.

From the foregoing, governance challenges increasingly intersect with nature, national security and regional stability, as natural and anthropogenic factors exacerbate human security and development crises. As revealed by events in these climes - “water tensions” in the Nile, uncontrolled occupation by human activities and external influence in Somalia’s coast, abysmal water management capacities in the Euphrates-Tigris etc. threaten livelihoods, populations’ capabilities and resources regeneration, with manifestations of violent conflicts and uprising, cross border migration, and extremist terrorism. While there is no likelihood of large-scale clashes over water resources among the Lake Chad basin countries, the asymmetries in economic, and socio-political conditions and the colonial orientations of member states undermine regional development in the region. Similarly, inconsistencies in regional policies and national socio-economic priorities impair human security and livelihoods in the region, thus exacerbating conflicts among resource dependents. Moreover, commitments to regional agenda are also challenged by non-complementarities between the national and regional development policies and programmes. Conflicting statistics on human security challenges and human development index among the LCBC member states, development institutions also constitute fundamental challenges. Therefore, regional development strategies and multilateral governance through functional expertise are critical to addressing the hybrid challenges prevalent in the TRBs. This would embrace the traditional socio-political economy and security concerns of the parties involved.

8.6 Chapter Summary

The chapter reflects on aspects of regional development initiatives and multilateral governance i.e. the regional and national levels development strategies and programmes toward addressing development challenges particularly those emanating from the desiccation of Lake Chad basin. Meanwhile, there are major interventions implemented across the basin towards enhancing the populations' livelihoods, human security and regional cooperation. Considerable numbers are executed by the LCBC in the form of transboundary initiatives, the individual member countries in the form of National Action Plans, including development interventions by other IGOs - UN specialised agencies and NGOs in their civil society engagements. The various levels of multilateral governance – regional and national development mechanisms and the factors of institutions, policies and programmes, including the short-term and long-term interventions are evaluated within the prisms of human security.

Specific emphasis is placed on the sustainable management of the Lake Chad's resources in addressing threats to livelihood and resilience to environmental stress, and strategies for socio-economic development, peace and security across the basin. Additionally, implications of the TRBs on development, regional integration and counter-terrorism strategies are considered with inferences from selected transboundary water bodies in the Global South. This effort reflects on the best mechanisms to manage the region's resources and transborder cooperation among the population, issues of their wellbeing and capability toward the realisation of the LCBC's Vision 2025 - Integrated River Basin Management. Significantly, the basin's regional development processes and sustainable development roadmap – *Vision 2025* are contextualised within the broader implementation of the *AU Agenda 2063* and the UN SDGs.

The previous chapter examines the causality of the Boko Haram crisis within the security-development milieu, illustrating the effects of environmental change on livelihoods and conflicts among resource dependants. The above and other security threats in the Lake

Chad basin *e.g.* armed rebellion, criminality, banditry, ungoverned spaces, and destitution (including the al-Majiri predicament) are considered within the prisms of human security in the wider Sahel. The challenges of the regional development processes, the inadequacies in addressing the root causes of human security challenges are exemplified in this chapter. These and the daring consequences of the Boko Haram menace (discussed in chapter 7) amplify several interventions – military and humanitarian, across the region. An appraisal of human security interventions and their implications for the Lake Chad Basin is subsequently conceived.



CHAPTER 9

HUMAN SECURITY INTERVENTIONS IN THE LAKE CHAD BASIN

9.1 Introduction

The chapter discusses the array of interventions in the Lake Chad basin to address the consequences of insecurity in the Lake Chad Basin. It is remarkable to emphasise that apart from the diverse regional development efforts and national programmes on livelihood supports and investments in infrastructural development, the Lake Chad basin is recipient to several interventions due to the emergencies created by the Boko Haram crisis. Amid the growing human security challenges exacerbated by the Boko Haram crisis, emergency responses in the region have taken two tracks, and military operations and humanitarian intervention. These broad facets of interventions encompass several instruments such as direct and indirect aid, logistical supports and capacity building at national and regional levels. Therefore, critical discussions of the military and humanitarian interventions, involving local and international players, and implications are subsequently considered.

9.2 Military Interventions and counterterrorism in the Lake Chad Basin

Arrays of anti-terrorism strategies have been deployed since 2011 to combat the Boko Haram menace in the region. Beginning with police operation in Nigeria, a full-scale national military operation followed when it escalated in Northeast Nigeria in 2012. Consequently, its escalation across the borders of the Lake Chad, in the first place, warranted national military responses by the riparian countries and ultimately a multinational military operation in the region. Given the 5-years Regional Stabilisation Strategy of the LCBC (adopted on 30 August 2018) commitments to combat Boko Haram crisis from two fronts - military and humanitarian, particularly in areas with weak governance, there is persistent synergy among the key players - national security forces, MNJTF, IGOs and state actors, and occasionally with NGOs, on soft

security measures. Hence, various anti-terrorism measures across the four countries against Boko Haram are presented below. These are discussed in addition to soft security approaches and the challenges to counterterrorism in the region.

9.2.1 National anti-terrorism measures in the LCBC countries

First, in Nigeria, the Army intervened to combat the insurgency through warfare operations, following the radicalisation of the BHT in 2012, its incessant attacks against civilians and the inability of the police to arrest the menace. In May 2013, Nigerian Armed forces launched an offensive in the Northeast region in its attempt to dislodge Boko Haram insurgents following a declaration of the state of emergency by the federal government on 14 May 2013. The state of emergency was enforced in three BHT ravaged states - Borno, Yobe and Adamawa, and extended in November till May 2014. Despite the initial success of the offensives, the BHT regain its strength, massacred 42 students in Yobe in July 2013, and launched dual attacks on Bama and Malam-Fatori on 5 August 2013, leaving 35 dead, and killing another 44 people in a mass shooting on 11 August (2013) in a mosque in Konduga, all in Borno state.

Moreover, the 7th Division (also known as Div-7 or JTF-RO), the newest among the 6 divisions of the Nigerian Army was created in August 2013, to squarely combat Boko Haram insurgency, terrorism and armed banditry prevalent in North-eastern Nigeria. The 7-Div is headquartered in Maiduguri and became operational with effect from 22 Aug 2013. Its area of operational responsibilities covers three north-eastern states of Adamawa, Borno and Yobe, it includes a combat motorcycle unit as part of its 25th Task Force Brigade. The unit was created to secure the roads in Yobe and provide multiplier force combat operations (Nigerian Army, 2018). However, Boko Haram insurgency escalates in the region, and killed 19 people in a suicide attack on 10 January 2015, in Maiduguri. Consequently, a coalition of military forces from Nigeria, Chad, Cameroon, and Niger commenced a counter-insurgency campaign against Boko Haram in late January 2015. On 4 February 2015, the Armed Forces of Chad killed over

200 Boko Haram fighters. Soon afterwards, the insurgents attacked Cameroon's border town with Nigeria - Fotokol, killing 81 civilians, 13 Chadian soldiers and six (6) Cameroonian soldiers. Moreover, following a coordinated air and ground assault, the Nigerian military retook Monguno on 17 February 2015. These events prepared the stage for re-operationalisation of the Multinational Joint Task Force under the auspices of the LCBC in 2015.

In late 2015, the Nigerian Army, launched the Operation Lafiya Dole (Hausa words translated as 'peace by all means') – OP-LD to coordinate the military's impetus against Boko Haram from the Nigerian side. As field reports suggested, the OP-LD deployed between 35,000 and 40,000 soldiers up till 2018. In 2016, it cleared 53 areas, arrested 60 BHT militants and rescued 16,542 civilians. Similarly, between 2017 and 2018, 720 areas were cleared (including the Alargano Forest considered as the BHT spiritual hideout), 182 militants surrendered while 19,768 civilians were rescued. Arms, ammunition recovered included AK-47 rifles, RPG bombs, mortar tubes and anti-aircraft guns etc. (GNGO-10). This illustrates that the OP-LD recovered territories hitherto overrun by Boko Haram, degraded and confined the insurgents to the fringes of the Lake Chad - islands, border areas - Nigeria-Cameroon and Nigeria-Niger including the Sambisa Forest where the army had challenges to explore. Nevertheless, the forces have been able to frustrate Boko Haram's arms routes, destroys its Improvised Explosives Devices (IED) factories, materials and other equipment. The military's establishment of the Civil-Military Relations Department has been instrumental to the interactions with the civilian population toward winning their minds.

Indeed, ongoing media campaigns against psychological warfare etc. were initiated by the military through the Radio Lafiya Dole Maiduguri, and the Nigerian Armed Forces Radio in Abuja. This also includes cooperation with the NGOs and security to the civilians and displaced population, town hall meetings and collaborations with the local populations, particularly the Civilian Joint Task Force (CJTF) - on intelligence. The military carries out

Operation Safe Corridor in Maiduguri as a soft measure toward de-radicalisation of the captured and surrendered insurgents. It also adopts the use of fliers and radio communications, jingles and billboards to this effect. However, most of the gains of 2015-2018 are eroded by the troop's inability to hold the grounds where it dislodged the militants, lack of adequate weapons and poor coordination by the military. The armed forces, thus, suffered constant attacks, weapons looting and surprise ambush from Boko Haram while kidnapping for ransoms increases. Hence, adequate and sophisticated weapons including drones, Mines Resistance Ambush Protected (MRAP) vehicles, more troops, intelligence and change of tactics are long overdue.

Secondly, although Boko Haram started on the Nigerian side of the lake, Cameroonians did not know what it was all about initially. Many profited from the sales of food and other supplies (bought from Cameroon) to feed Boko Haram 'people' in the bush, without knowing that. When it was discovered, authorities in Cameroon joined forces to disrupt Boko Haram supply chains or Main Supply Routes (MSRs). Meanwhile, Boko Haram had moved ahead searching for arms supplies, attacking police posts, defence and security forces around the border where it looted ammunitions including 4x4 Hilux vehicles. While Cameroon was struggling to fight all this, there came the stages of looking for money, then Boko Haram kidnapped French tourists (citizens) in Waza Park, then abducted Chinese engineers working in the park, including priests. As reported, "the Cameroonian government immediately heavily intervene and declared war on the BHT in 2014" (GCO-1). At the 2015 meeting in Paris, the issues were discussed, and efforts were made to improve on joint security operations. The decisive measures taken by Cameroon include

- (i) Reshuffling of the Cameroon Army and the creation of new administrative units and structures to fight the BHT close to the affected zone in the Cameroon-Nigeria frontiers.*
- (ii) A military operation in the Logone-Chari area was linked to the newly created 4th military base stationed in the Far North's capital, Kousseri, and the 4th*

Gendamerie region was reinforced to bring command closer to the troops against Boko Haram. (iii) More forces were transferred to the Far-north region to engage in the fight against the BHT and take the threats to the insurgents instead of the other way round (GCO-1).

As maintained, Cameroon's Lake Chad area was relatively peaceful before the Boko Haram crisis, although there were incidents of armed robbery and attacks on vehicles on the highways, mines and banditry, including wildlife poaching in the region, leading to loss of lives, and travelling difficulties etc. Hence, the *Brigade Intervention Rapide* (BIR) - a special joint operation with other security units, launched in 1998 to arrest criminality and banditry on the highway and borderlands, was reorganised in 2014 to meet the BHT challenges among other measures. Hence, loss of lives and destruction of properties in the Cameroon axis of the basin declined. With the BHT routes obstructed, the sect resorts to cattle rustling, looting of villages to sustain itself. Other tactics include suicide bombing against soft targets, attacks on mines, planting of explosive devices and abductions (of mostly women) etc. The hardships it imposes on Northern Cameroon, as rightly maintained "include displacement of families, destruction of churches, mosques and schools, abandonment of farms. Indeed, over 2000 lives lost, 150,000 displaced and nearly 500,000 people forced to flee to Garoua down South and elsewhere" (GCO-1).

Apart from the BIR, other measures reportedly taken include *Operation Alpha* and *Operation Emergence 4*, "it was carried out by the armed forces of the fourth military command in Cameroon" (GCO-1). These measures enable the national defence forces to synergise with the MNJTF i.e. in the direct joint operations with the MNJTF sector in Cameroon, as well as joint operations with national forces of Nigeria and Chad. In effect, some villages are gradually becoming livable and at the Sector 1 of MNJTF - Cameroonian side and no area or territories are currently held by Boko Haram. However, both assurances cannot be given in borderland

areas between Cameroon and Nigeria due to its volatility. The terrorists' continuous search of supplies, foods and loots in this volatile area makes the villagers vulnerable to attacks. Despite Boko Haram's high mobility - running from one village to the other and looting day and night, massive terrorists attack no longer exist because of these measures. The joint operation between Nigeria and Cameroon is ongoing and it is the main counterterrorism operation in the area.

Thirdly, in Niger, the Boko Haram crisis arose in 2014. The sect initially had no problem with those who cooperate with them, but massively attacked those who failed to cooperate (including suicide bombing). The severity of these attacks undermined security and governance in the Diffa region and environs. Populations dislodged from their homes and livelihoods such as fishing areas, farmlands, and rangelands led to dwindling economic activities and transborder movement and trades including government revenues. Hence, several public amenities including telecommunication facilities (such as Airtel, Orange etc.) by the BHT. It also plundered food stores including government food reserves, shops and markets, set ablaze food remnants and buildings. As a result, A state of emergency in the Diffa region was declared in 2014, the government of Niger undertook several military and soft measures. Accordingly,

Two major operations were launched by the national defence forces to combat the Boko Haram menace in Diffa region, Niger. The first is Operation Ngaa (meaning a shield/bow). This was launched in 2014 due to the turbulence created by Boko Haram incursion around the Nigerian-Niger borders, the fleeing of the terrorists into Niger, plundering of food stores and threats on the transport routes. The second is Operation Maidunama, conceived in 2015, and conducted jointly in several cases with the Nigerian and Chadian armed forces against Boko Haram. This was carried out before the MNJTF was re-operationalised (GNRO-1).

Worse still, because of these constant attacks and killing of several government officials, the rural dwellers fled to the villages, while displaced populations are sheltered in urban areas. All the villages close to the lake, the islands of the border areas were deserted, leading to economic disruptions, food insecurity and loss of assets, Diffa region, thus, became grossly paralysed. Hence, NGOs were also susceptible to Boko Haram attacks, many, fearful of their lives, could not move to areas where humanitarian services are needed. Consequently, the commander of the MNJTF in 2018 established a sector 4 of MNJTF operation in Diffa. There is also the launch of Special forces to combat the menace, and the deployment of the Niger Military Zone 5 to address the challenges as it becomes pervasive.

Significantly, “success made by the operations is reported to include, “the killing of over 300 Boko Haram militants, the liberation of virtually all BHT- controlled areas and over 100 of persons in terrorist’s captivity” (GNRO-1). However, it is challenging that the terrorists often regroup to launch surprise attacks and suddenly disperse. Despite this, the government initiated an *Open door* to surrender, embrace peace and reintegrate the terrorists into the society. A camp was set up at Maina - about 70 km from Diffa, on Demilitarisation, Demobilisation and Rehabilitation (DDR) for the surrendered BHT. Many of them were thought handiworks, civic education and de-radicalised while the one caught with ammunitions and those overpowered by the military after gunfire exchange was jailed. Up till now, the government forces continue to engage them, while constant attacks on military formations - barracks and convoys continue.

Furthermore, in Chad, Boko Haram incessant attacks, ranging from IEDs attacks against the police, four suicide attacks in N’Djamena and three others at Bagasola in 2015 enabled a swift response from the Chadian authority. Three of the major attacks in N’Djamena include suicide attacks on the Police central headquarters, the Police College, and the Central Market. The emergence of Bana Fanaye – a Chadian Kanouri, leader of the

BHT witnessed massive radicalisation of the terrorists in Chad. The sect conscripted and lured victims through indoctrination and enticements particularly among the riverine populations – especially the Boudouma in Chad and few others in the Mandara Adamoua area in Cameroon. As a result, the Chadian Armed Forces became instrumental in the counter-insurgency coalition campaign of January 2015 against Boko Haram, involving military forces from the four countries.

Hence, operations with the armed forces of Nigeria, Niger and Cameroon successfully dislodged the terrorists at Bosso, Damasak and Diffa in 2015. Major achievements made include the liberation of all the towns and villages occupied by the terrorists from Fotokol to Gamboru and Diffa to Damasak. The Chadian Forces killed over 200 Boko Haram fighters on 4 February 2015 and subsequently signed a bilateral security agreement with Niger in 2015 to combat Boko Haram menace along the border areas. These existed prior to the re-operationalisation of MNJTF. On 3 January 2016, Bana Fanaye - leader of Boko Haram leader in Chad was arrested by the Chadian security forces, hence, major arrests were made further. Since then insurgent attacks are only confined to the islands where they sometimes launch surprise attacks. (GTO-1).

The Special Anti-Terrorism Group, *Groupement Spécial de Lutte contre le terrorisme* (SATG), is Chad's foremost counter-terrorism force for engaging extremist organisation and supporting multinational missions beyond Chad. With a specific focus on border security and interdiction of trafficking in illicit products, SATG engaged Boko Haram in the Lake Chad Basin areas, provided combat mission to the MNJTF, towards enhancing internal and regional stability. It receives training and logistics from the US Marine including the supply of 60 light armoured vehicles in 2017. Recently, the *Operation Anger of Bohama* was launched on 31 March 2020 in the Boma peninsula of Chad's Lac region. The operation comprised 9,000 soldiers including aerial support, in a reprisal onslaught lasting six days, following the BHT's killing of 92 Chadian Soldiers in a 'deadly'

attack on 27 March 2020. The attack was successful, killing and arresting scores of BHT fighters, the terrorist's bunker (for weapons storage) was captured including recovery and destruction of two its command posts and seizure of BHT boats in the Lake Chad islands. This forced several of the terrorists to fled across the borders. The problem of the environment – marshy terrain which is often impassable during operations and the asymmetric pattern of the warfare makes the war quite challenging.

9.2.2 Regional Security Mechanism – Multilateral Approach to Counterterrorism

The Multinational Joint Task Force (MNJTF) is archetypal of multilateral security architecture in the Lake Chad Basin. It was established by the four riparian countries of the Lake Chad Basin including Benin to combat the Boko Haram crisis at the regional level. It is partitioned into four sectors with operational headquarters in N'Djamena, Chad (MNJTF, 2020). The MNJTF traced its origin to 1994 when the countries established a Joint Task Force to address security challenges emanating from armed banditry and trafficking etc. Initially, the headquarters was in Baga, Nigeria. However, in January 2015, Boko Haram militants overrun Baga following its destruction, the sect massacred the residents and displaced several others. Beginning in 2012 further re-operationalised on 11 June 2015, the MNJTF was expanded and strengthened to encompass counter-terrorism operations. It operates within the authorised mandate of the African Union Peace and Security Council (AU-PSC) and the UN Security Council (UNSC) to meet the threats of insurgency and terrorism, complicated by the ungoverned and under-governed spaces in the region exploited by Boko Haram (MIOT-4). The MNJTF works in close collaboration with its strategic and technical partners which comprise the Centre for Coordination and Liaison (CCL) i.e. the UK France and the USA. Apart from the CCL, the MNJTF also has as partners international organizations such as the AU, EU and UN etc. (MNJTF, 2020).

The MNJTF's mandates are reported to be three folds; military operations - to create conditions for the restoration of civil authority, taking into cognisance issues of gender-based violence and protection of civilians. The second is protecting all humanitarian actors within the Lake Chad Basin, to assist them to provide supports and services to those in need. The third is creating conditions for the stabilisation and restoration of civil authorities to the affected areas within the LCBC countries (MIOT-5). Initially, the MNJTF comprised of 3 sectors of operations. Sector 1- Cameroon, Sector 2 - Chad, and Sector 3- Nigeria/Niger (Niger was a sub-unit of sector 3), but later became a full-fledged sector in 2017. Sector 1 is headquartered at Morra, Cameroon; Sector 2 -Bagasola, Chad; Sector 3 - Baga, Nigeria; and Sector 4 - Diffa, Niger. While the soldiers from Benin provide garrison duties at the headquarters in N'Djamena, each of the sectors operates with its troops and within the territorial confines of the various countries, under a sector commander. At the force headquarters, the force commander directs the sectors' operations (MIOT-7).

Funding the MNJTF is largely borne by the four LCBC countries. As revealed, "the supports from the strategic and technical partners are not often directed to the MNJTF but routed through the African Union mostly in the form of military equipment supports or non-military equipment" (MIOT-4). There are monetary requirements which the MoU and the Support Implementation Agreement for the MNJTF operations make mandatory for the Troops Contributing Countries (TCCs) towards administering their forces in line with their resource capacities, the impact of that deals with issues of logistics, equipment procurement and supports to the pledged forces of the MNJTF. This remains within the domain of national authorities. This is outside the seat fund made available for its various operations and activities (MIOT-5). Therefore, an estimated figure of funding available to the MNJTF cannot be easily ascertained.

The capacity purportedly "stands at about 10,000 troops" (MIOT-7). Additionally, it has a mission support team attached to it by the AU, mainly civilians, to address issues of

logistics, human right and humanitarian interventions. That civilian component is domiciled at the force headquarters in N'Djamena. In addition, “Nigeria contributes the largest number of troops estimated at 33 percent followed by Chad, Cameroon and Niger in that order. The MNJTF equally has troops from Benin republic, about 150 providing garrison duties for the headquarters” (MIOT-5). Of course, Benin is not a member of the LCBC, but given its friendly posture, its political leadership agrees to support, knowing fully well that if the crisis escalates there might be spill-overs to Benin. The equipment is the responsibility of the national forces, though assets available to the various TCCs are aggregated into the MNJTF operations. Beyond that, there is non-military fighting equipment such as soft-screen vehicles supplied by the strategic partners, but in very limited quantities. The national Airforce is also integrated into the MNJTF operations, therefore, synergy in terms of applications of military or kinetic power, exists in its operations. Training of the MNJTF is further summed thus,

In military operations, there is always in-theatre training – some specific areas of need that you train for. Before that, there is pre-deployment training conducted by various Troops Contributing Countries (TCCs), i.e. training of personnel based on expectations for operations. These are followed by several other technical training for troops deployed to the theatre of operations. There is currently one related to the completion of access, interoperability across the sector, synergies and training on counter Improvised Explosive Devices (IEDs) also known as Explosive Ordnance Disposal (EOD) Training. Each sector of the MNJTF has sub-units responsible for training including addressing issues of IEDs (MIOT-5).

Furthermore, the administration comes from the member states. The Head of Mission for MNJTF, is indeed the political head of the Command, while the Force Commander is the military head. The Head of Mission is the Executive Secretary of the LCBC and currently Ambassador Mamman Nuhu. He reports to the Heads of States and Government of the LCBC

countries. The LCBC manages issues that have political leanings, diplomatic relations etc. in support of the MNJTF responsibilities. Since re-operationalisation in 2015, there had been six commanders of MNJTF. These are Major General T.Y. Buratai (two months), Maj. Gen. I.I. Abbah (4 months), Maj Gen. L.O. Adeosun (January 2016 - May 2017); Major General L.E.O Irabor (8 July 2017 – August 2018); and Maj. Gen. C.O. Ude (August 2018 - November 2019). The current commander is Maj. Gen I.M. Yusuf, since November 2019 (MNJTF, 2020). Right below the Force Commander, there is a Deputy Force Commander and the Chief of Staff (CoS). The CoS supervises all the staff branches and Chiefs administrative units. The staff branches include Administration Military Information; Operations; Logistics; Plans; Communications; Civil and Military Cooperation (CIMIC); the Force Medical Officer; and the Military Public Information. Others are Civilian Advisor, Police Advisor, and the Legal Adviser (LA).

9.2.3 Success and challenges of MNJTF and regional counterterrorism

As part of its concept of operations, there is a memorandum of understanding which allows for any of the troops to cross international borders within the Areas of Responsibilities (AoRs) of the MNJTF whether singly or jointly but most times they are joint. Troops crossing over to another territory (s) is sanctioned by the authorities in the countries. In four different operations, the MNJTF has continued to combat the Boko Haram militants across the region. These operations include

1. In *Operation GAMA AIKI* (2016), areas such as Damasak, Gashigar, Abadam, Malam Fatori, Metele, Baga, Wulambagana and Duchi were cleared.
2. The *Operation RAWAN KADA* (2017) was meant to clear the remnants of the BHT hideouts and held communities along the Komadugu river. The operation was successful, it destroyed many of the BHT camps, killed several the terrorists and many of its captives, mostly women and children.

3. *Operation AMNI-FAKAT* (April 2018). (Meaning peace by all means – In Arabic). This operation in 2018 successfully cleared several Lake Chad islands, neutralises three BHT suicide operations, killed 59 terrorists and captured five militants in early offensives... While the MNJTF, incurred 8 death and 75 injured casualties, it succeeded in destroying the BHT's Improvised Explosive Devices (IEDs), motorbikes and 81 and 82mm mortars among others.
4. Operation *YANCIN TAFKI* was launched in February 2019 to overrun the last hideouts of Boko Haram in the Lake Chad area against the backdrop of the terrorist's attacks in Arege, Metele and Baga etc. which killed lots of Nigerian and few of the MNJTF soldiers. The ongoing operation was approved by the Defence and Security Committee Meeting of the LCBC in December 2018 and recently reviewed in December 2019.

The hitherto occupied territories and caliphates declared by Boko Haram across parts of the Lake Chad basin were retaken and liberated by the MNJTF, in collaborations with national armed forces (MIOT-7). "Several periodic clearance operations against Boko Haram, ambushes and patrols around the territories continue supposedly to deny them freedom of actions. Multitudes of Improvised explosive devices IEDs were neutralised and IED manufacturing factories, destroyed" (MIOT-5). As observed, there has been increased socio-economic activities within the affected communities, where lots of transborder movement, and commerce increase across the board. This shows the extent MNJTF has gone and indeed the impacts of its operations. However, the BHT is not yet defeated, but decimated having been in disarray and fled into the interiors of the Lake Chad islands to the north, the Mandara mountains to the south along the Nigeria-Cameroon border axis. Indeed, the BHT's continuous vacillation between hide-outs in the forest, combat training camps, and civilian communities makes the crisis unpredictable. Its multiple identities, alliances and coping strategies - including disguise and capacity to regroup and recalibrate frustrate the regional counterterrorism measures.

Although not equipped to facilitate comprehensive socio-economic stabilisation measures, the MNJTF is an active stakeholder in the Lake Chad Basin development efforts and the regional stabilisation programme. Given the fact that the Regional Stabilisation Strategy (RSS) - 2018-2022 was launched in December 2017 combat Boko Haram threats from two fronts: the military and the humanitarian fronts, by critically focusing on areas with weak governance and development challenges. In terms of soft security measures, “psychological operation is being carried out by the MNJTF. With efforts from Sector 1 of the MNJTF, many lives and families are being restored, most of the displaced are relocated to their homes. Today around Morra, around 10 acres of land is designated for the rehabilitation and reintegration of the surrendered BHT and those retrieved from the terrorist’s captivity. Psychological experts take charge of these development projects and security measures are improved around them” (GCO-1).

Following the track of Nigeria’s OP-LD inauguration of the Radio Lafiya Dole, the MNJTF, on 9 August 2017, inaugurated the Dandal Kura International Radio Station of N’Djamena. The station – broadcasts mainly in Kanuri language which is largely spoken in the Lake Chad basin area across the four countries. The objective is to establish a series of local radio stations under the umbrella of a regional network broadcasting in major languages of the area and dealing with the major concerns of populations based on reliable and accurate information on security, humanitarian and development dynamics in the region. Today, it has bridged the media isolation of the area, particularly those under Boko Haram propaganda, promote security, peaceful co-existence, solidarity and responsible citizenship against the violence and hatred propagated by Boko Haram Terrorist Group.

Despite the above feats, several challenges to counterterrorism operations can also be adduced. Some have raised concerns about poor coordination between MNJTF and national troops, language barriers among the countries – Anglophone-Francophone dichotomy, and the

sovereignty questions. One of the major drawbacks of counterterrorism across the region is equipment holding particularly in aspects of communication and necessary air support. The terrain and weather of the region have also posed challenges in this regard. The terrain in most areas is marshy and impassable by the land forces during operations, and this has been exploited by the insurgents. Second is funding challenges to the MNJTF as well as the national operations. This can be attributed to the financial constraints experienced by the LCBC countries who are essentially producers of primary products - crude oil and uranium. The continuous oil slump, particularly since late 2014 have imposed structural deficits including currency devaluation, particularly in Nigeria.

The third is the challenge of inadequate personnel and weapons. While the BHT crisis is asymmetric warfare, to defeat the terrorists, they must be outnumbered by ratio 4:1 at least, supported by game-changing weapons. These are lacking in the MNJTF and most national operations. For instance, there are places that the Nigerian army and MNJTF recapture up to three times or more, apparently because there were not enough troops and equipment to hold the ground. Every place in Borno or the porous border areas cannot be protected – the areas are vast. The Sambisa forest for example stretches across seven states and Sambisa is 6.5% of Nigeria's entire landmass (Bdliya and Bloxom, 2008:15). How many troops are to be stationed there? Moreover, the war against the insurgency is worsened by so many unfolding factors, First, a result of weapons inflow from Libya after the fall of Muammar Gaddafi (since 2011), the BHT attack military locations, captures the weapons of the armed forces whenever the chance occurs. Sometimes they parade more sophisticated weapons particularly Al-Barnawi's faction of Boko Haram which pledges allegiance to the Islamic State in West Africa ISWAP. The insecurity in Mali and elsewhere in the Sahel also makes the terrain volatile.

Altogether, the MNJTF is a significant model for cooperation in Africa and a platform for LCBC countries to reaffirm their commitments to promote peace and solidarity. It is indeed

a great diplomatic achievement that offers several opportunities for member countries having mutualised their efforts to combat a common enemy, the BHT Group. Hence, MNJTF provides a concrete platform for solidarity and African inventiveness to address its problems.

9.3 Humanitarian interventions in the Lake Chad Basin

The effects of Boko Haram crisis manifest across the region and in all facets of human endeavours. Almost 2.5 million IDPs and 165,000 refugees were dispersed across the Lake Chad borders, an estimated 2,026,602 million in Nigeria, 244,347 in Cameroon, 122,312 and 104,288 persons in Chad and Niger respectively (IOM, 2019:3). Among these are 2,000 - 7,000 reportedly missing persons - girls, women and 'resource persons' and 1,642,696 returnees (GNGO-11). Apart from the officially sheltered IDPs estimated at 250,000, a large number of displaced populations move between two key areas, or across locations inaccessible to humanitarian actors (MIONG-1). The official IDPs are sheltered by humanitarian agencies in camps run by security forces across the region, including state-sponsored civilian vigilante groups (in Northeast Nigeria). Beyond the few humanitarian organisations deployed to Nigeria following the 2013 declaration of emergency in Borno, Yobe and Adamawa states, most international aid players commence operations in the region after the MNJTF coalition was birthed in 2015. Hence, humanitarian deployments are largely concentrated in the Northeast Nigeria (the worst-hit in the region), and especially in Borno (Nigeria), the Diffa Region (Niger), Cameroon's Far North region, and, to a limited extent, Chad's Lac Region and Nigeria's Yobe and Adamawa states etc. "The influx is overwhelming with approximately 120 local, national, and foreign NGOs only in Borno state by 2018" (PING-2).

There exist 242 camps and camp-like settings in Northeast Nigeria, hosting an estimated 659,000 IDPs. Among these, 196 are in Borno, hosting 637,718 IDPs; 14 camps in Taraba (6,383 IDPs); 13 camps in Yobe (13,206 IDPs); 21 camps in Adamawa (9,750 IDPs). Meanwhile, most of the camps are highly congested, with available space per individual

varying from 10 -18 m² (half of the standard sphere prescribed). Accordingly, 564,682 persons currently live in government lands, schools and buildings in camps and camp-like settings and 3,432 persons in transit hubs. Few of the camps, 109 sites (nearly 42%), receive site facilitation and management support from humanitarian operators (NEMA, 2019:3). Camp management facilitated by government agencies is only implemented in less than 20% of the current IDP sites, with limited capacities especially in hard-to-reach locations. The level of congestion heightens the displaced population's vulnerability to the outbreak of diseases or epidemics, such as cholera and hepatitis E (GNGO-11).

In affected communities across the four countries, 515,000 children (450,000 in Nigeria – 244,000 alone in Borno, 31,000 in Cameroon, 22,000 in Chad and 12,000 in Niger) suffer acute malnutrition, with deficiencies in water and medical care. This represents 75.7 percent of those sheltered away from their homesteads. The mortality rate of under-five years-old children in the IDPs locations is four times above the emergency threshold, (UN-OCHA, 2020a:2). Accordingly, “the basic needs of displaced persons are food (64%), water, shelter, health and sanitation” (MIONG-1). Other supports include education or skills training, security, psychosocial supports, livelihoods empowerment and resettlement etc.

Humanitarian aid is not deployed in the same manner across the four countries, however, emergency reliefs in the form of shelter, food supports and non-food items are provided to the displaced persons in camps managed by NGOs in Cameroon, Chad and Niger. Humanitarian actors have managed IDP camps, facilitated registration, documentation to address the nationality issues of displaced persons and enhance their periodic resettlement. Similarly, in these three countries, donor agencies have funded relief programmes including intensive empowerment schemes, targeting youths and women. As Magrin and De Montclos (2018: 124) accentuate, “displaced youths in Far North Cameroon were empowered, courtesy of supports from AFD and EU Emergency Trust Fund, by participating in crucial projects - rural roads and well digging”. The projects also facilitate a savings account with microfinance

institutions through which their wages are paid. Hence, it enables them to recoup the incomes lost due to Boko Haram displacement.

However, for her previous experiences during its civil war (1967-70), Nigeria was wary of humanitarian aid as a potential infringement on its sovereignty, thus, taking a different route from the other LCBC countries. As a result, humanitarian actors have had to mutually agree on terms of operations with local institutions including the military, NEMA at the federal level and the State Emergency Management Agency (SEMA) at the states level etc. A multi-sectoral approach involving key government ministries and agencies were deployed to critical sectors such as food, shelter, security, education, water, sanitation and Hygiene (WASH), psychosocial support, livelihoods empowerment and resettlement of IDPs. While several challenges are inherent in these activities, periodic coordination meeting is conducted in camps, local government and in some cases at the state level among government agencies, humanitarian actors and NGOs.

In terms of food items, resources and provisions from the donor agencies, NGOs and governments are channelled through NEMA, who takes the lead in the monthly food distribution, with assistance from SEMA. In effect, households are registered with identification cards, which grants them access to the collection of monthly rations. Food items such as rice, sorghum, soya beans and maize among other grains are provided while SEMA provides condiments. Similarly, some registered IDPs receive Cash Base transfers (CBT) and dry foods support through the World Food Programme (WFP) scheme. The beneficiaries were paid N16,000 (Nigerian Naira) at the end of every month per household via a dedicated Airtel SIM card. The CBT enrolled 2,854 households in 2017. The payment was initially N23,000, reduced to 17,000 and later N16,000 to accommodate the new arrivals. The dry food supports are provided to the IDPs based on households or family size (6 members minimal) with condiments such as cooking, oil, salt, seasoning, dried pepper, okra etc. Dry ration of foods is

provided to the most vulnerable households, particularly women. (MIONG-2). However, this is not a consistent exercise, a humanitarian worker emphasized thus,

In most cases, foods distributed do not survive the IDPs for a month, perhaps about two weeks. They often improvise till the next distribution date. The rations are insufficient, at most times rice or sorghum, beans and cooking oil are provided, including infant cereal for lactating women. The quantities are as follows: 15 kilograms to 30 people per group, all this given per household including 4 bags or 50 kg of rice, 1.5 bag of beans, 25 litres of cooking oil. Now the sorghum takes the place of rice. The WFP provides the food while the International Medical Corps (IMC) distributes (MIONG-3).

In addition, Non-Food Items (NFIs) are also provided by the UNHCR with supports from the International Organisation for Migration (IOM) and WFP. These include blankets, cooking pots, lanterns, mattresses, sanitary items such as pads, soaps (MIONG-2). Distribution of NFI is very challenging due to logistical challenges and inadequate funds etc. The NEMA maintained thus,

NFIs remain the second most reported need of IDPs in the North East of Nigeria, both in host communities, camps and camp-like settings. The provisions of NFI is not systematic due to the lack of prepositioned items in key receiving areas. The three main NFIs requested by the affected population are mostly mats (41%), mosquito nets (29%), kitchen sets (20%). Nearly half of the affected population in official camps received NFI kits, the situation remains the same with NFI needing to be provided as per baseline NFI assessments and/or replenished through in-kind and cash/vouchers interventions, due to the short lifespan of shelter related NFI as well as the continuous movements of populations. No electricity supply to

the camp. The emergency workers and humanitarian agencies' offices are powered by generators, while the IDPs use lanterns in their rooms and tents.

Shelters are managed by NEMA, the International Committee of the Red Cross (ICRC), since 2017, and the Borno State Emergency Management Agency otherwise known as SEMA. Among most of the displaced population (85.7%), over one-third currently live in emergency family shelters i.e. two households in one emergency shelter of two sides (two households per shelter), while a further one-third lives in self-made/makeshift shelters. Twenty-three percent of IDPs live in collective shelters (such as schools, government buildings, community centres, etc.). The transitional needs of returnees, though shaped by very different dynamics, nearly a quarter of returnees (assessed by NEMA, 2018) in return areas (267,937 individuals) live in inadequate shelters, with 87% in partially damaged housing and 13% in self-made structures. This is further illustrated below,

IDPs Shelter is managed by the NEMA, and now joined by the International Committee of the Red Cross (ICRC) – both oversee 90 percent of the shelter. Clothing was twice supplied by NEMA between 2014 and 2017, and sometimes when the need arises by NEMA and SEMA. Most IDPs are sheltered in tents and uncompleted buildings in the camps, there are inadequate mattresses and most IDPs sleep on mats or cement bags, this is the case of Dalori Camps 1 and 2 (Maiduguri) - the largest IDP camps in Africa according to the UNHCR and ICRC. Water boreholes were constructed by the Red Cross, UNICEF, NEMA, SEMA and the Nigerian Airforce (MIONG-2).

Another critical sector of the humanitarian responses is water sanitation and hygiene. This is also coordinated and managed in a multisectoral approach among local and international emergency providers. Water sanitation and hygiene are provided by the ICRC, UNICEF, the Nigerian Airforce, with supports from SEMA. These organisations have provided solar-

powered and or generator-powered boreholes, water tanks and taps etc., including water points with hand pumps to some camps. In addition, the OXFAM and the Danish Refugee Council (DRC) have supported some informal IDP camps and locations with water and hygiene facilities. Meanwhile, apart from facilitating the restoration of family links, the ICRC and UNICEF support and manage sanitation in some camps visited across the region, particularly in Maiduguri and environs. “Between 2015 and 2017, some selected IDPs, coordinated by SEMA, were supported with sanitation materials and remunerated with a monthly stipend of N11,000 (Naira) as empowerment from the ICRC and UNICEF. Although remunerations to the IDPs, in this regard, have stopped, cleaning items are still provided regularly” (MIONG-2; MIONG-3).

Similarly, in the health sector, the State governments, the University of Maiduguri Teaching Hospital and the Nigerian Airforce contributed immensely to IDPs health. Apart from the Nigerian Airforce medical centres in some IDP camps, some clinics are provided and run by UNICEF, including pharmaceuticals, medical and rescue supports by the Médecins sans Frontières (MSF) and Action Against Hunger and the International Rescue Committee (IRC) respectively (MIONG-2). Facilities provided also include ambulance vehicles. “Collaboration is facilitated with referral hospitals such as Umaru Shehu Ultramodern Specialist Hospital, Muhammed Shuwa Memorial Hospital and General Hospital, all in Maiduguri. While NEMA has a partnership with the University of Maiduguri Teaching Hospital in case of issues beyond the camp clinics and the three Hospitals” (NGONG-1).

Education is managed and coordinated by the state governments with supports from UNICEF. Makeshifts schools were constructed in most of the IDP camps for pupils from Primary 1-6 and Junior Secondary School 1-3. The UNICEF provides school pupils with uniforms, school bags and writing materials etc. There are also several Koranic schools - formal and informal within most camps. However, schooling in the camps is beset with several challenges. Some of these are observed below,

After receiving educational materials, the next day the children come to class empty-handed having sold them at the markets. This remains a challenge to education in the camp due to hunger and malnutrition among IDPs. The children's attitude and their orientation about western education and discouragement from their parents/guardians also undermine the progress of education at the camps. On the other hand, the children sometimes come late to school while meeting their teachers absent. Efforts have been made to ensure the principals monitor their subordinates' presence and punctuality, and to always teach even if there are five pupils in the class (FGD-3).

Besides, the IOM provides informal education to the IDPs - mostly women and children. To heal their wounds over the loss of loved ones, assets and means of livelihoods, IOM renders psychosocial support to the victims, such as vocational training in soap production, shoemaking, tailoring, barbing, cap knitting, and recreational activities for children and adults in most of the camps. The aim was to change them into active survivors rather than disgruntled victims. Accordingly, training of IDPs by the IOM also involves creating awareness on the importance of education, enrolment of IDPs into formal education and support for indigent students up to the higher institutions. Towards enhancing the IDPs livelihoods, it was reported thus,

“An agency for mass literacy, training and artworks, created by the IOM has supported most IDPs with grinding and pasta machines, sewing machines, barbing or knitting tools etc. Also, the IOM provides the above beneficiaries with fabrics, sewing materials to start independently, while further help on the services not provided by the agency are rendered in terms of referral to other experts as the need arises” (MIONG-3).

Altogether, protection is being provided against Gender-based violence (GBV) domestic abuse and violence etc. by the UNHCR, while the IOM provides livelihood and psychosocial supports, including shelters for the IDPs. As earlier emphasised, the Nigerian Army, the Police Force, the Nigerian Civil Defence Corps provide security in and around the IDPs camps, with support from the Civilian Joint Task Force (CJTF). In virtually all the sectors, NEMA and SEMA coordinate humanitarian reliefs - water, health, food, shelter, education including multisectoral activities etc. and the operations of the international humanitarian organisations and NGOs.

However, this is not the case for all the camps and IDPs across the region. Challenges confronting the camps vary, and all IDPs – officially camped and otherwise are confronted with different predicaments. Most of the IDP camps are overcrowded. As observed, from the register, for example, in Dalori camp 2, a camp populated with 6,900 IDPs in 2015 when it was established, rose to 22,000 IDPs in mid-2017. Meanwhile, at the time of visit in February 2018, it comprised of 15, 321 IDPs mostly from Bama, Konduga and Gwoza Local Government Areas. The specific breakdown include: adults - male: 2485, female: 3212; children - male: 4552; and female: 5072. The total number of male is 7037 and female is 8284. Apart from congestions, a key informant summarised the challenges of the IDPs thus,

Many of the IDPs in the camps walk farther distances to harvest fuelwood for cooking because they cannot afford the money to buy kerosene and charcoals - which are indeed expensive. In that process, many of the females became raped in the bush. Beyond their food rations, there are not supported with money to buy charcoal and kerosene. Initially, there was a central kitchen where prepared food was distributed. Food committees were selected among the IDPs, managed by the staff of SEMA on the Camp, and remunerated with stipends by the NEMA and SEMA. That process lasted for almost a year until late 2015. Several IDPs complained about the way the foods were being prepared, most times not to their

tastes. The IDPs suggested that every household or individuals prepare their foods. At that time government provided firewood to the central kitchen, but when the system changed. the supply of fuelwood also stopped (NGONG-1).

Remarkably, some IDPs developed survival strategies to adapt to their conditions through individual economic activities within and outside of the camp. Some young adults (mostly male) operate as tricycle drivers in the town, others run small scale stores or businesses for the sale of essential goods, foods, fuelwoods etc. within and around the camps. As observed, the camp economy also includes the cheap sales of relief materials by IDPs in the camp market spaces. For instance, a 2kg of wheat semolina, originally costs ₦1,500, is sold by IDPs at ₦1,200 (Naira). While this and other foods are sourced from their relief provisions, the practice often attracts large buyers from the areas around the camps. As also observed, an infant sold some of his food items to purchase a wooden and metal delivery cart with jerry cans to fetch and supply water to people within the camp (Fertiliser camp) and individuals/houses in the environs. A cartload of water, ten jerry cans of 20 litres each, were sold at ₦200 (Naira) less than 1\$ (US Dollar). In a day, sometimes, he sells up to ₦800 or ₦1,000 (Naira).

Apart from the official IDPs, several affected persons in informal camps are left unsupported either by the government or humanitarian agencies, they survive by living at any available spaces, scavenging, alms begging or charity etc. some among them are pregnant or malnourished. The case of the Fertiliser's Camp on the Muna Garage Road, Maiduguri corroborates this. The IDPs encountered there lamented they feed by self-efforts and no one provides for them, after years of crying for food and relief supports. Occasionally, sick IDPs are provided medical services by Halimat Hospital - Muna Road as well as Primary Health Centre near the Fertiliser Camp. The only two clusters of pit latrines and water boreholes and reservoirs were provided by OXFAM and DRC respectively during their brief visitations in

2017. The people complained of neglect, idleness and joblessness. They sleep on cement bags in makeshift tents made of shacks.

Overall, humanitarian delivery is affected by poor access to most parts of the region, particularly the Far-north of Borno, due to utter destruction of amenities - roads and telecommunications and or BHT control and military restrictions. Hence, northern Yobe and the rest of Borno are supplied by armed escorts, including the UN Humanitarian Air Service (UNHAS) aircraft operations managed by WFP. Nevertheless, the humanitarian regime in the Lake Chad basin, since 2016, has had several implications for the region's political economy. The magnitude of funds and influx of international humanitarian operators deployed to the region complicate the emergency and stimulate corruption in several ways, despite initial containment of the region's food crisis. This includes diversion of relief items, funds and racketeering. The lack of political foresight and regional-level coordination have engendered exploitation of the displaced populations by security forces etc. The humanitarian regime is believed to have its drawbacks and classic motives. Comparably, it is less effective in rural areas due to large diversion of aid, while the system has temporarily heightened the vulnerability of populations (IDPs and refugees). Thus, humanitarian implementation appeared mostly unsuitable to local socio-economic circumstances, particularly to herders, fishers and traders in most parts of the region.

9.3.1 Implications of the humanitarian regime in the Lake Chad Basin

The integrated humanitarian approach – combining security and development, lacks regional coordination, it enhances military profiteering in most of the LCBC countries. With the utmost priority placed on anti-terrorism and military influence, the political class and top military hierarchy profit more from the coordination of humanitarian funds and projects. For instance, in Cameroon, the Minister of Territorial Administration, which led the Ad-Hoc Inter-ministerial Committee on Donations for the Populations and the Defence Forces was mandated

to coordinate funds administration and food distributions and other humanitarian aid under the defence forces' supervision in 2015 till 2017. As a result, priority was given to the military, while civilians benefit about 40 percent of the funds received. Likewise, in Nigeria, the Victim Supports Fund, launched in 2015 was not planned to compensate government or the military, but instead sponsors security forces' infrastructures such as the police station shelters in Dikwa (2016), meant to protect a large number of IDPs, and the military hospitals at the 7th Division barracks and Dalori Camp I, both in Maiduguri.

Second is the intricacy of the Non-food items (NFIs) provided by the humanitarian relief operators. As observed in the IDP camps in Maiduguri, the distribution of NFIs prioritises pregnant ladies, raped victims, the sick and the aged etc. However, lack of food and extreme hunger among the IDPs have drafted most of the young ladies (mostly teenagers) into prostitution or voluntarily offer themselves for sex to get pregnant, although some of the young females are victims of rape by some security officers including CJTF boys. By implication, pregnant IDPs receive proper care and supply of NFIs such as towels, sanitary pads, pharmaceutical products, mattresses and adequate nutrition provisions etc. While the relief operators also replenish these items periodically even after child delivery or loss of pregnancy. Unfortunately, in most cases, the girls sell the NFIs to make money and then terminate the pregnancies (FGD-3). Proper counselling and re-orientations are required and the main problem of food shortages or hunger properly addressed.

Moreover, international NGOs have been criticised by the people, and often condemned by the military hierarchy for allegedly assisting Boko Haram or undermining the anti-terrorist campaign. This manifests in several forms, the humanitarian agencies' reproach of the military as committing crimes against humanity in the latter's persecution of anyone connected to Boko Haram, and the military's accused Amnesty International of undermining the war against insurgency and UNICEF of spying for Boko Haram. Some of the INGOs operating in the

region have been accused of channelling supplies to the BHT while some have been truly involved as the third party for negotiations of ransoms between the BHT and government toward the release of BHT abductees. A case in point was the release of some schoolgirls kidnapped in Dapchi, Yobe, in February 2018. In Maiduguri, authorities faulted the free foodstuffs distributed by INGOs as undermining local agriculture, engendering dependence and discouraging restoration of IDPs to their homestead despite congesting the city. Two key informants submit thus,

It is believed that some people are taking foods, logistics, ammunition and other supplies to the BHT, many even suspected the NGOs to be complicit in this matter. Most believe that NGOs escalate the crisis, for example, renting buildings for ten years and paying the property owners upfront, do they have it in mind that the crisis will prolong for another ten years? All this among others beg for suspicion (GNGO-2).

The second IDP reported thus:

There is deliberate effort to prolong the Boko Haram crisis. No wonder the NGOs rent building in Maiduguri at ₦150-200 million (Naira) for five years, perhaps because they know the crisis will continue. A hotel was rented at ₦3.5 billion, the property owner wanted to sell, the NGOs refused and rented instead ... Another proprietor of an uncompleted building rented his property for ₦18 million per annum for 10 years, and he received ₦180 million. Others rent out cars (mostly SUVs) for ₦350,000 - ₦400,000 monthly... (GNGO-7).

Diversion of international aid is recurring among government officials across the four riparian countries. It is believed that “Authorities often misappropriate foreign aid control, influence food distributions and skew inspections. In most times, the lists of aid recipients compiled by local officials are inflated with many name duplicates, while data coordination is deliberately not centralised” (GNGO-11; NGONG-1). For instance, “in Cameroon, an outcry

over fraudulent practices in the 2015 emergency plan to build hospitals and schools in the country's Far North region was reported. As a result, the IDPs in the proposed schools were left in temporary shelters while the facilities remain uncompleted" (GCO-1). In Nigeria, chances of independent oversight are slim because IDPs are under the control of military and government emergency staffs, hence, the alarming diversions are difficult to stop because of the dramatis personae involved - high ranking officials. Thus, humanitarian workers and locals cannot voice out openly for fear of forfeiting their contracts, including IDPs who might be accused of being BHT agents should they voice out. An official statement of Nigeria's Vice President Yemi Osinbajo, in 2017 emphasised that 50 percent of food aid to the Northeast IDPs were siphoned. Yet, the Senate inquiry into corruption, fraudulent practices and lack of transparency by members of the PINE on the disappearance of 2.5 billion Naira reconstruction of schools in Yobe, eventually died a natural death (Magrin and De Montclos, 2018: 188).

Different diversion methods employed include racketeering, sale of humanitarian relief materials on the black market and relief organisation's payment of kickbacks to custom agents over seized commodities. Government officials are not the only complicit in this regard. IDPs have sold relief materials including foods when their expectations are not met. Boko Haram has also plunder IDP camps after food distributions at different times, a critical example was Bosso, Niger in 2017 and Rann, Borno in January 2019 etc. The BHT also engage in food grabs and attack on food convoys and Northeast Nigeria on several occasions including Jere LGA near Maiduguri. Similarly, systematic theft of foods or relief materials in truckloads have enhanced a discreet repackaging of commodities, sold in the black market and outside the region. Meanwhile, the military has been rumoured by sections of the public for falsely imposing curfews to enable its convoys to protect stolen food, commodities, livestock etc. transported to other parts of Nigeria.

Generally, the challenges enumerated, apart from aid diversion, are not all peculiar to the countries. Nonetheless, in several areas, most of the interventions have proved unsustainable in addressing humanitarian problems. Duplication of responsibilities and contradictions among programme handlers and inequalities of access to the resources provided by the IGOs, and poor coordination between government agencies and other players - ministries, NGOs and donors, warranted by differing norms, interests and motivations have undermined the goals of humanitarianism. In Cameroon and Nigeria, most have criticised the initiative as disconnected from realities, and sometimes targeting wrong beneficiaries. While national agencies are supposed to coordinate relief with the UN-OCHA, donors and specialised organisations, the aid regime has handed the fortune of millions of vulnerable populations in the hands of powerful few across the countries – such as the VSF, PINE and NEDC in Nigeria, and the Inter-Ministerial Committee in Cameroon, the military command and top politicians etc. across the countries. These have complexified the humanitarian crisis and made normalcy restoration and IDPs resettlement highly hypothetical.

9.4 Chapter Summary

The chapter reflects on two broad facets of interventions - humanitarian and military actions in responses to the consequences of insecurity, particularly the Boko Haram crisis, in the Lake Chad Basin. It summarises the significant aspects of counterterrorism in the Lake Chad basin with considerable attention on the mechanisms initiated by the LCBC member-states locally and regionally to arrest insecurity, particularly the BHT crisis. Of course, national counterterrorism strategies involving military operations and soft security approaches were deployed to confront the BHT crisis first to squarely arrest the threats itself and secondly to address its root causes. These to an appreciable extent have turned successful amid the synergies between the national defence forces and the Multinational Joint Task Force (MNJTF) and other external actors or supporters in the region. Thus, while the MNJTF represents a

diplomatic and strategic breakthrough for Africa and its inventiveness towards peace, security and regional stability, the challenges to counterterrorism and the inadequacies of the MNJTF and the regional security approaches generally were considerably debated.

Furthermore, the multitudes of humanitarian support, management and strategies toward addressing the plights of the displaced persons - IDPs and refugees across the Lake Chad basin - were presented. The roles of identified key players - state and non-state actors (IGOs - mostly UN agencies and NGOs) was evaluated. Hence, the significance of a multi-sectoral approach to emergency or humanitarian intervention was highlighted. Nevertheless, controversies surrounding the implications of the humanitarian regime on the region's political economy, human security dynamics and escalation of Boko Haram menace were elicited.

In the previous chapter, the research shows that the regional development process and multilateral governance are multidimensional. These involve regional mechanisms in the form of transboundary initiatives, the national level action plans and the inputs of strategic actors as collaborative supports *e.g.* foreign governments' agencies, IGOs *e.g.* the UNDP, AfDB, the World Bank, and NGOs etc. The concerted efforts are geared toward addressing the development challenges in the region and particularly those emanating from the recession of Lake Chad Basin. With limited significance on the population's livelihoods, human security and regional cooperation, these processes are challenged by structural factors including funding, lack of continuity and complementarity between multilateral and national interventions. These and most especially the Boko Haram menace have warranted critical interventions – military and humanitarian towards addressing human security and regional development challenges bedevilling the region. Nevertheless, a convergence between the regional development processes and human security interventions are critical to the region's resilience and sustainable development.

CHAPTER 10

CONCLUSION, RECOMMENDATIONS AND FURTHER RESEARCH

10.1 Introduction

The chapter presents a summary of the research findings and explores a rethinking of human security and regional development matrix in transboundary river basins. It critically discusses the main findings and the interface with the study's theoretical premises. Similarly, the empirical findings and its correspondence with propositions of the theoretical frameworks are also synthesised to reflect the study's philosophical underpinnings. Meanwhile, the limitations of the study's findings and future research directions are also expounded, in addition to the empirical, theoretical and methodological contributions of the research. These are followed by recommendations for research and policy applications. Lastly, a suitable concluding remark, restating the research major points or concerns are submitted to ultimately bring the work to an end.

10.2 Conclusion of the study

A significant application of the human security approach to regional development in Lake Chad Basin provides an opportunity to analyse the different but interconnected phenomena in an informative way. The approach has helped to identify and discuss cross-cutting challenges that impair the wellbeing, survival and dignity of individuals, groups including the peace and stability of communities, states and the entire Lake Chad Basin region. The desiccation of the Lake Chad Basin necessitated by environmental change and anthropogenic factors combine with structural socio-political and economic challenges to exacerbate human insecurity across the region (Table 10.1). Hence, with the Boko Haram crisis, human insecurity in the region remain complex and overlap with development and humanitarian challenges. The disruption of

the livelihoods and resilience capacities of the population of Lake Chad Basin further constrain its regional development with transborder effects beyond the region.

TABLE 10.1: DIMENSIONS OF HUMAN INSECURITY AND PECULIAR ROOT CAUSES

DIMENSIONS OF HUMAN INSECURITY	ROOT CAUSES (Peculiar to Lake Chad Basin)
Economic Insecurity	Persistent poverty, unemployment, poor education, deprivation, lack of access to credit, land and social protection, inflation
Food Insecurity	Extreme hunger, desertification, famine, crop failure, abrupt rise in food prices
Health Insecurity	Poor sanitation, lack of access to basic health care, malnutrition, epidemic, infectious diseases.
Environment Insecurity	Environmental degradation, pollution, natural disaster, resource depletion, invasive species
Personal Insecurity	Gender-based violence, physical violence, forced displacement, human trafficking, child labour
Community Insecurity	Rebellion, terrorism, insurgency, crime, inter-ethnic, religious and other identity-based tensions, despondency
Political Insecurity	Political repression, corruption, human rights violation, injustice, marginalisation

Author's compilation The hypothesis of the study is premised on the assertion that ***“Human security challenges are not adequately addressed in the Lake Chad basin, thereby constitute major impediments to regional development”***. Within its limited scope, the study demonstrated that development in the Lake Chad basin is challenged by the persistent desiccation of the Lake Chad - a shrinkage of nearly 95 percent between 1963 to date, and the ignominy of incessant Boko Haram Crisis since 2009. The threats to the communities' fragility, populations resilience and transborder cooperation emanating therefrom, have further heightened human insecurity across the region. Meanwhile, the investigations undertaken by the study also revealed that regional development mechanisms - institutions, policies, programmes and projects and diverse interventions have been conceived (multilaterally and nationally) to address the twin challenges bedevilling the region. Thus, an appraisal of the mechanisms and interventions toward enhancing livelihoods, sustainable development and regional stability reflect marginal impacts on the populations. Much of these addresses the consequences of the challenges and neglects several root causes. However, there is less complementarity among the multilateral and national efforts on regional development and stability in Lake Chad Basin.

While the regional initiatives (developmental) and interventions (security and humanitarian) have produced mixed outcomes, most intended beneficiaries are further deprived amid challenges of geopolitics, resource curse and alteration of the regional political economy. A synopsis of major conclusions is synthesised below in four snapshots.

Snapshot I

The inquiry on the dynamics of human security in the Lake Chad Basin aims to enhance an understanding of the root causes of human security challenges that emanate from the lake's desiccation and its consequences for regional development. In other words, the main objective was to explore the causality of the desiccation of Lake Chad basin in relation to human security particularly the livelihoods and socio-economic development in the region. By and large, a qualitative case study methodology and thematic analysis of the phenomena were adapted with the "Capability Approach" and "Eco-violence" theoretical constructs to place the study in a critical perspective. It argued that Lake Chad and its rich biodiversity is an enabler of human security in the Lake Chad Basin, and its degeneration negatively affects livelihood, resilience and regional development in the basin area. This was further explored within two broad categories: the desiccation of Lake Chad and effects on human security and development; and the region's components and constraints of socio-political and economic development.

The hydrological and biophysical alterations of the lake emanate from two causes environmental change - climatic variability, and human-induced consequences. Implications of Lake Chad's recession on the region and its population are thus multifaceted, with direct bearing on livelihoods, transborder relations, communities' resilience, conflicts among resource users. These challenges are mediated by a combination of environmental scarcities and socio-political and economic factors. With resources believed to be "causal mechanism" of conflicts, scarcity of resources (eco-violence) hinders the capability of poor societies' resilience against socio-economic challenges. Hence, the effects of human pressure on natural resources, patterns of exploitation and utilisation of resources have become potential sources

of conflicts among resource dependents. Similarly, the decline in agricultural productivity, reduction of drinking water (particularly in rural communities) and disruption of the agricultural calendar negatively impact on human development. Other challenges include deforestation, degradation of transhumance corridors, sanding over cropland, depletion of fish stocks due to falling water levels etc. Therefore, Lake Chad's ecosystems are of considerable natural diversity and exposed to stresses, worsened by climate change and man-made activities. This illustrates its fragility from the security, socio-political and economic standpoints.

Snapshot II

The interconnections between Boko Haram menace and socio-economic development crises pervading the region and the former's implications for regional development and human security in the Lake Chad basin is another significant objective of the study. Thus, it argued that violence, conflicts and terrorism - the major threats to peace and security in the Lake Chad Basin, emanate from the region's development crisis, which invariably exacerbates human security predicaments. Accordingly, the study attributed that, the hydra-headed Boko Haram menace is the cumulative effect of the complex tensions birthed by environmental stress, resource conflicts, armed rebellion, criminality and the ungoverned spaces etc. prevalent across the region. The tensions, no doubt, have deep-seated historical, political and socio-economic underpinnings peculiar to Lake Chad and the Sahel region. Indeed, causes of the challenges are interlocked while its effects are transborder in nature, owing to the level of human mobility and border porosity across the region. The insecurity threats further induce livelihood disruption, diversion of scarce resources toward counterterrorism and humanitarian interventions.

Moreover, in revealing the causality of the Boko Haram crisis within Lake Chad's regional security-development milieus, the study argued that human security challenges emanating from social injustice, illiteracy, marginalisation and misgovernance are recipes for

violent conflicts and insecurity in the region. In addition to the challenges of environmental change on livelihood and conflicts among resource dependants, security threats in the region, such as armed rebellion in the Sahel countries; criminality, banditry; ungoverned spaces; and destitution including the Al-Majiri tragedy, provided the ground for Boko Haram crisis. Hence, negative consequences of these complex circumstances include forced displacement; occupation of territories; and restriction of movement and access to means of production; transport and trade. The aggravated disruptions of livelihoods and resilience practices, manifesting in different forms - livestock rustling, market disruption, looting and loss of assets/income, have worsened human security predicaments in the region amidst corrupt practices that characterise security and humanitarian management.

Snapshot III

Given the intense vulnerability of Lake Chad basin to human security challenges - environmental change, resource depletion, infrastructural deficit, and protracted conflicts of different dimensions, the logic of assessing regional development processes - integrated resources management and livelihoods enhancement towards sustainable development and human security across the Lake Chad basin was conceived. The study argues that integrated approaches to regional development involve multiple actors and instruments - institutions, policies, and programmes. These were explored along two major categories - regional (basin-wide) endeavours through multilateral governance and national development mechanisms or interventions. To achieve this, qualitative findings were substantiated with secondary data (including statistics) to assess regional interventions across the basin. The above was juxtaposed with a review of security-development concerns in selected TRBs in the Global South.

Since 1964, the advent of the LCBC represents a major milestone in the institutional development of the Lake Chad basin through multilateral governance, with policies, programmes and projects to address critical development challenges bedevilling the region.

The LCBC has been a platform for research, investment, collaboration among national and international development players, and regional integration among the basin's populations. Since 2000, the LCBC has taken significant measures to enhance regional development in the basin, adopting in 2003, the provisions of Vision 2025 "Integrated River Basin Management" encompassing both short-term and long-term plans (LCBC, 2013). Several initiatives or action plans formulated by LCBC include the Strategic Action Plan (SAP) - 2008, the National Action Plan (NAP) for Integrated Water Resources Management (IWRM) and the Regional Stabilisation Strategy (RSS), 2018-2023 etc. Its remarkable programmes e.g. the Lake Chad Basin Sustainable Development Programme (PRODEBALT), the Programme for the Rehabilitation and Strengthening of the Resilience of Socio-ecologic Systems of the Lake Chad Basin (PRESIBALT, 2017-2021) and the BIOPALT (Biosphere and Heritage of Lake Chad) Project (2018-2021) etc. have been complemented by several national initiatives, including irrigation projects and infrastructures, implemented towards sustainable resources management and livelihood enhancement.

Nevertheless, some of the limited success recorded by the initiatives include aspects of (natural) resources management strengthened by the participatory processes for local development engendered in parts of the basin. Other initiatives are failing due to structural challenges such as inadequate funding, poor impact assessment mechanism, corruption and inconsistencies in national development priorities and political instability etc. The Boko Haram menace has hampered regional development in Lake Chad Basin. It has occasioned the diversion of scarce funds to address insecurity, hinders accessibility of projects site and transborder cooperation etc. Challenges to regional development also include lack of financial commitment by member-states and inadequate disbursement. Some aspects of the Fort-Lamy Convention undermine LCBC capacity, particularly in enforcement and its abysmal national and regional guidelines for water regulating and cost-sharing mechanisms. The conflict of

interests among member-countries and geopolitics also constitute barriers to regional development and LCBC's efficiency.

Snapshot IV

The efficacies and challenges of the major tracks of emergency responses - military operations and humanitarian interventions was another objective critically examined in the study. Amid growing human security challenges, worsened by the Boko Haram crisis in the Lake Chad Basin, the above reinforces the argument that stability in the Lake Chad basin requires integrating security operations and humanitarian interventions to address critical human security challenges. Military operations and humanitarian interventions are undertaken by states and non-state actors within the national and regional spaces, unilaterally and multilaterally. These endeavours encompass direct and indirect aid, logistic supports, capacity building, an array of local and foreign operators among other critical and strategic instruments. Implications of these on human security and development in the entire region cannot be overemphasised.

The 5-years Regional Stabilisation Strategy (RSS) of the LCBC was enabled on 30 August 2018 to combat the crisis from both military and humanitarian fronts, especially in areas with weak governance, amid other soft security measures. These initiatives – MNJTF and RSS, thus, take to cognisance synergies among various national security forces, foreign military contingents, state agencies, IGOs and NGOs, especially in soft security measures. The considerable success recorded by the MNJTF has been hampered by inadequate funding, personnel and sophisticated weapons. The lack of coordination and distrust sometimes among the LCBC member-countries including geopolitical influence often frustrate regional counterterrorism efforts.

Furthermore, there is a variation in humanitarian operations across the four countries. In Nigeria, emergency efforts are carried out mostly by state agencies in collaboration with humanitarian agencies and NGOs. Meanwhile, emergency reliefs - shelter, food and non-food

items, provided to IDPs are principally managed by NGOs in Cameroon, Chad and Niger. Therefore, the humanitarian regime across the region has several implications for its political economy. Despite containing the regional food crisis, the quantum funds and multiplicity of international relief operators complicate humanitarianism and stimulate corrupt practices in most parts of the region. This includes diversion of relief materials, funds and racketeering mostly by local operators. The lack of political foresight and regional-level coordination by government authorities have engendered exploitation of the displaced populations by security forces, local aid managers. The purported complicity of humanitarian aid workers/organisations support for the terrorists not only undermine regional security and national counterterrorism operations but complicates the humanitarian regime.

10.2.1 Research Findings

The study accentuates the significance of the human security and resilience system on regional development processes in the Lake Chad Basin. Thus, four critical and interconnected gaps peculiar to human security and regional development challenges in an underdeveloped transboundary river basin area such as the Lake Chad are identified. These are presented and discussed further below.

First, inadequate understanding of the cause-effects (and transboundary nature) of the desiccation of Lake Chad basin on human security and development challenges.

Second, insufficient investigations on the implications of socio-economic enablers of Boko Haram menace for human security in the Lake Chad Basin.

Third, inconsistencies between regional development processes and human security outcomes across the Lake Chad basin have not been properly assessed.

Fourth, discrepancies between intervention approaches (military and humanitarian) and critical human security and regional development outcomes in the Lake Chad basin are hitherto not thoroughly evaluated.

10.2.1.1 Inadequate understanding of the cause-effects (and transboundary nature) of the desiccation of Lake Chad basin

Seven critical environmental challenges of Lake Chad, that are transboundary were identified. First is ‘variability of the basin hydrological regime and freshwater availability’ caused by natural factors (decline rainfalls, desertification etc.) and human activities (construction of dams, water diversions, irrigation schemes etc.). Second is ‘water pollution’ (industrial, traces of heavy metals due, oil exploitations and microbial pollutions); third is ‘sedimentation in rivers and standing water bodies’ (erosions, sand dunes flooding, vegetation stripping etc.) Fourth is ‘decline in biological diversity’ (human activities such as deforestation, shifting cultivation, threats to flora and fauna etc.); and the fifth is ‘invasive species’ - plants (*typha and prosopis Africana*) and animals (*quela quela*). The other two challenges include ‘population growth’ (rising urbanisation and pressure on natural resources); and ‘climate change’ (irregular rainfall, the limitation for production systems).

The transboundary implications of the desiccation thus impair socio-economic development i.e. livelihoods, food security, mobilities and transborder cooperation across the region. Its potentials for conflicts over shared resources further threatens human security-development across the Lake Chad area. Declining agricultural productivity, reduction of drinking water resources (mostly in rural communities) and the disruption of the agricultural calendar etc. negatively impact on human development. A cycle of the environmental, economic, socio-political and security challenges in the region emanating from the transboundary nature of the desiccation of Lake Chad including its indirect effects on Boko Haram crisis should be understood as impediments for regional development and security.

10.2.1.2 Insufficient investigations of the socio-economic enablers and implications of Boko Haram menace on human security

Illustrating the complexity of the Boko Haram crisis, the study indicates the origin of the group from socio-economic crises; its hijack by powerful elites (mostly in Nigeria for political ends); and finally the undercurrents of its geopolitical complexity (including conspiracies) amidst the struggle for control and exploitation of strategic resources. Thus, the factors that necessitated Boko Haram menace largely correspond with the persistent development challenges or underlying vulnerability of the region's population to socio-economic, political and environmental challenges. The implications of livelihood impairment, conflicts among resource dependents, bad governance, destitution and the al-Majiri debacle heighten human insecurity in the region. Political instability and armed rebellions in most Lake Chad Basin and Sahel countries - Chad, Sudan, Niger and Mali, have enabled transborder insecurity across the region's porous borders. This includes enduring criminality, particularly in under-governed spaces, such as armed banditry, trafficking and illegal smuggling of humans and commodities (arms, identity-documents, contrabands, drugs, spare parts etc.), highway robbery and vehicle hijacking, livestock rustling and communal rivalries etc. The causes of these challenges are interlocked, while the effects are transborder due to the porosity and vastness of borders across the basin and the Sahel.

The entanglement of Boko Haram menace in the web of Sahel crisis contextualises the region's strategic nature, the significance of mineral resources and the role of actors (states, non-states and transnational) to human security. Thus, the region's vast landlocked area of insecure national borders, its dependence on external food assistance, finance and investment capital while its energy and mineral resources are highly coveted complexify the regional crises. The lack of structural and political adjustments, typified by an unrepresentative and extremely centralised government, exacerbate instability across the Sahel. The space created by protracted conflicts and underdevelopment in the renowned historic trading and migration

route between the North and sub-Saharan Africa is exploited by armed groups, criminal networks, and foreign military agents for different purposes. Hence, the origin (environmental and socio-cultural), radicalisation, trends and tactics sustaining the BHT violence illustrate the linkage between Boko Haram menace and socio-economic development crises in the region and the larger Sahel.

10.2.1.3 Inconsistencies between the regional development processes and human security outcomes

Development interventions in the Lake Chad basin embrace multilevel mechanisms - institutions, policy regimes, programmes and projects conceived across regional (multilateral) and national levels to address development challenges including environmental and socio-economic. This highlights the central role of the LCBC, since 22 May 1964, as the foremost platform for collective bargaining, multilateral governance in the aspects of natural resources management. While taking significant measures to enhance regional development in the basin, LCBC has several policies and implemented remarkable programmes, with supports from its strategic partners and donors, towards achieving its Vision 2025 - “Integrated River Basin Management”. In the same vein, the study also reveals considerable efforts made by the riparian countries of the LCBC to enhance water management and harness the development capacities of the Lake Chad areas in their respective jurisdictions. Hence, national policy frameworks and projects on livelihoods, resource management and infrastructural investments facilitated by national agencies have also stimulated partnerships with multilateral development agencies and donors including the LCBC or interventions towards sustainable development.

However, nuances of the implementation challenges of several LCBC and member-states initiatives must be understood within the sphere of regional insecurity, LCBC’s institutional deficiencies, differences of interests among LCBC member-states and funding challenges as well as geopolitics/resource conflicts. However, there is a contrast between the

dynamism of the lake area's socio-economic potentials and limited state investments or interventions in favour of the region and its populations. Various challenges resulting from economic, political, and environmental crises occasioned the disruption (e.g. Nigeria) or resizing (e.g. Chad) of these investments, or abandonment, thus, producing staggering outcomes. Inconsistencies between the development efforts and human security outcomes across the lake areas in the four countries should be understood. Regional water management and investments in livelihood potentials nationally are largely ineffective given the increase in water demand and the volume of water and allied resources management required to galvanise human security-development. Unfortunately multilateral and national development interventions are done in isolation from security-specific interventions. This phenomenon to be addressed by the Regional Stabilisation Strategy of the LCBC. Therefore, the LCBC's sustainable development roadmap - Vision 2025 in harmony with the national development interventions can be leveraged to achieve the AU *Agenda 2063* – “The Africa We Want” and the UN SDGs (2015-2030), given its expansive linkages with these continental and global development initiatives.

10.2.1.4 Discrepancies between intervention approaches (military and humanitarian) and human security and regional development outcomes

The emergencies created by the Boko Haram crisis have propelled two major tracks of intervention across the Lake Chad basin - military operations (national and multinational) and humanitarian interventions. These broad facets of interventions encompass an array of instruments including direct and indirect aid, logistical supports and capacity building at national and regional levels, as well as the involvement of local and international players. However, the approaches and implementations of these activities have dire implications for the Lake Chad basin's human security and development outcomes.

Indeed, the MNJTF is a significant model for security cooperation in Africa owing to its efforts towards regional peace and solidarity in the Lake Chad Basin. It represents a huge

diplomatic success with several opportunities for member countries and inventiveness to address African problems. However, counterterrorism operations in the regions are beset with critical challenges ranging from poor coordination between MNJTF and national troops, the Anglophone-Francophone dichotomy, and the sovereignty question. Other drawbacks for counterterrorism across the region include equipment holding particularly inadequate communication and necessary air support in a region whose terrain and weather inhibit military manoeuvres. Additionally, the MNJTF and the national armed forces are underfunded while adequate personnel required to overpower the terrorists by ratio 4:1 including game-changing weapons to combat asymmetric warfare also bereft the region's counterterrorism drive.

The second track of intervention against the Boko Haram menace was greeted by an overwhelming influx of humanitarian deployment to the region. The humanitarian regime, since 2016, has altered the region's political economy with implications for security and development in the Lake Chad Basin. The magnitude of funds and influx of international humanitarian operators deployed to the region complicate the emergency and stimulate corruption in several ways, despite initial containment of the region's food crisis. This includes diversion of relief items, funds and racketeering among humanitarian and security operators. The lack of political foresight and regional-level coordination engender further exploitation of displaced populations by security forces etc. The humanitarian regime is believed to have its drawbacks and classic motives, its negative consequences on the military operations stem from the mutual conflicts between the national forces and humanitarian workers/agencies. Hence, the system has heightened the vulnerability of IDPs and refugee's livelihood complications, food insecurity and dependence on reliefs. The humanitarian regime appears mostly unsuitable to local socio-economic circumstances, particularly to herders, fishers and traders in most parts of the region. Therefore, the integrated humanitarian approach – combining security and development, lacks regional coordination. Its priority for anti-terrorism and utmost military

coordination of humanitarian funds, projects and other activities enables the political elites and top military hierarchy's profiteering etc.

10.3 Recommendations

Based on the above findings on the dynamics of human security and regional development challenges in the Lake Chad Basin, the following recommendations are proposed to improve the rethinking of human security and regional development matrix. The suggestions will indeed enhance discourse on sustainable development, security and regional stability in transboundary river basins, specifically the Lake Chad area.

10.3.1 Improving water resources governance and environmental management to safeguard the productive potentials of Lake Chad and mitigate the transboundary effects of its desiccation.

Water governance and natural resources management in the Lake Chad basin require enhanced capacity in the basin particularly between the Lake Chad Basin Commission and the member states in protecting the Lake Chad's resource base and mitigate the challenges of environmental change. The above emphasises the need to strengthen the LCBC to set practical water sharing formula among member states and resources management. Its capacity for mobilisation, evaluation, and dissemination of information on policy direction and public policy participation should be enhanced, including monitoring the implementation of its agreed water charter. Hence, crucial supports and implementation of proposed reforms to address the alarming challenges of environmental change and regional security crisis are critical in this regard. Improved monitoring of the components of its socio-ecosystem, biodiversity and further awareness is also needed to enhance regional capacity on climate resistance.

The Lake Chad remains an interminable source of water and a critical resource for socio-economic development, therefore, ranges of solutions from the short term to long-term are thus needed. The threat posed by its shrinkage makes water recharge from the Ubangi River

the best long-term solution to save the lake. Inter Basin Water Transfer (*transaqua*) is being mooted and managed by an Italian consortium BONIFICA. It an ambitious project of water transfer from the Congo Basin to Lake Chad, to halt its drying up through water release across the Ubangi while anticipating gradual restoration to a normal environmentally-sound standard. The Lake Chad is greatly connected to its population's livelihood, development and transborder cooperation. The soil of the area is composed of lacustrine deposits – requires no or fewer fertilisers to yield high production. The IBWT is a positive step, to achieve its objective, the many challenges bedevilling the project must be surmounted. This includes political difficulties, limited international cooperation, funding challenges and dependence on foreign technology. Again, comprehensive environmental impact assessment needs to be carried out since the ecosystem would be modified or transformed by the project such as the landforms, but the project is capable of enhancing the livelihoods of the communities covered by the projects, generate electricity, communication and enriching the diversity of aquatic animals, including migratory birds.

In the short-term, two solutions can be envisaged. First, is exploring the prospects of efficient water-saving to limit water use for essential needs of the population and socio-economic activities, this would enhance maximum water flow into Lake Chad basin. Second, preventing water losses in the tributaries of Lake Chad and the transfer of sediments (solid residue) suspended in the watercourses, which cause siltation in the lake. The actions can be concentrated mostly on the Chari-Logone systems which contribute above 90% of inflow into the lake. Dredging and stabilisation of the riverbanks of both Chari-Logone and Komadugu-Yobe sub-systems should be evaluated and effectively carried out. The LCBC should surmount the following challenges towards “integrated management of the Lake Chad basin: conservation of its water resources; restoration of the lake's water level; desertification control; data management; and regional cooperation.

In this regard, conservation is required to preserve the lake's limited water resources through appropriate conservation programme such as vegetations restoration towards soil texture enhancement, reduction of evaporation and evapo-transpiration, including the creation of protected areas, parks etc. This should be significantly geared to safeguard the lake, tributaries, aquifers, aquatic ecosystems and other water bodies against the transboundary hazards of pollution. Indeed, restoring the lake's water level and its ecosystem will enhance the restoration of its wetlands. Desertification control, involving sand dune fixation, erosion control and vegetal regeneration, is critical to halting the desert encroachment on the basin's environment and resources. Data collection, evaluation, storage and dissemination through relevant media are the crucial process of sustainable management of the basin's resources. The efficiency of the Technical Committee created within LCBC in 2000, charged with the task of harmonising water resources data and management, should be improved in this regard.

Moreover, regional cooperation involves the integrated management of the lake's resources and proposes a collaborative approach to transboundary water management involving LCBC and member states, technical and financial partners (TFPs), local authorities, NGOs, corporate entities and various associations of the people. This would enhance the security of water supply for the vulnerable population and the environment. Thus, updating and harmonizing regional agreements are *sine qua non* for effective and sustainable management and strengthening dialogue between member states through a common approach on the water management, harmonisation of national water policies etc.

10.3.2 Promoting inclusive development to address the roots of insecurity and Boko Haram menace in the Lake Chad basin

Adequate security and proper governance are two phenomenons eluding most parts of the Lake Chad Basin. Reconstruction and development possibilities currently depend on the conflict trajectory. In other words, security and governance questions need to be reviewed against the

unfolding Boko Haram menace and counterterrorism operations by national and multinational armed forces. While the conflict dynamics remain at the respective national peripheries, without affecting the four countries at the national stage, the lakeside areas across the countries may continue to be stressed, battered and underdeveloped if governance and counterterrorism or conflict resolution do not improve nationwide in the region across the four countries. Thus, holistic development to address the root causes of insecurity and Boko Haram menace should be founded on policies, programmes and substantial public investments to improve the natural and human potentials of Lake Chad. This would enable it to perform its roles in the aspects of food security, job creation, socio-economic and regional stabilisation. Also, improved access to basic services – education, health, sanitation, rural roads and social security will uplift the conditions of the population, particularly the vulnerable. Enhanced accessibility, internal and external is a crucial factor in the growth and development of the population and the areas. This would further boost the rural economy.

Authorities in the Lake Chad basin should address the critical needs of food production and employment. The magnitude of population increase requires growth in food production; the quantum growth of unemployment rate occasioned by demographic transition requires massive job creation, otherwise, the threat to the region's social and political equilibrium will aggravate. Poverty and under-employment are indirectly linked to the Boko Haram catastrophe. Consequently, actions in this regard should prioritise labour intensive enterprise - agriculture, infrastructure, trade and services. The Lake Chad, no doubt, has the potentials to meet the region's food and employment demands. In the meantime, soft loans to traders, farmers and market men and women should be enhanced to make the population less vulnerable to the consequences of insurgent crises.

Moreover, Primary and secondary school education should be made compulsory across the zone, with incentives such as school feeding and provisions of educational materials to the teeming youth population to gain their interests in western education. Secondly, where the

Koranic school is dominant, the system should be integrated to serve dual purposes, where the instructors are also re-trained and incentivised to modernise the education and check the problem of radicalisation. With the out of school children, government and private individuals can create vocational learning centres where the out of school and adults can acquire skills such as tailoring, carpentry, block making, GSM repairs, ICT, animal husbandry. Graduates of such schools can be self-sufficient, create jobs on their own and in turn enhance their capabilities – a strategy to drastically reduce the menace of illiteracy and joblessness. Governments perhaps would need to visit those centres, encourage their proprietors and place at least token incentives at their disposal after graduation.

An active youth employment policy should be formulated with a combination of support for family farming and the informal sector (rural and urban) towards wealth creation, income enhancement and economic diversification. Similarly, an overhaul of the educational curriculum should be facilitated to incorporate critical entrepreneurial skills (such as data processing, agriculture, animal husbandry, fisheries, electrical fittings and installations) and training in clean energy along with global standards. The trained youths can be empowered on five critical clean energy initiatives, this will ease livelihoods challenges, promote investments and environmental protection in the region These include in solar (providing solar energy access to low-income communities); gravity light (producing sustainable and cleaner light for families and children); gas (Providing cleaner heating with natural gas, to save households and small scale businesses invaluable time and resources); clean cookstoves (bringing clean cookstoves to families and creating healthier homes); and hydrogen (creating cleaner transport fuels and industrial processes). The certified graduates can be empowered or supported by government, philanthropists and corporate organisations to ensure its sustainability. The Bank of Industry can then intervene to empower them, tasking them on a choice business plan(s) to be fund and monitored by NGOs and government agencies.

Furthermore, trading development is essential for long-term growth and progress. This can be engendered by regional actors in the basin, particularly along with three directions. According to Magrin and de Montclos (2018), promoting local and regional trade for economic development, territorial integration and potential government-regulated tax revenues base are critical measures for long-term growth in the Lake Chad. Several measures critical to this dimension is gradual ease of barriers to movement imposed by the counterterrorism operations and security restoration; government monitoring and curtailment of illegal levies charged by agents and gradual closure of checkpoints; investment in critical infrastructures - roads construction and maintenance and dock bases along waterways and markets to enhance development and diversify productive outlets and government regulated taxation on trade.

Moreover, in partial support of the World Bank's envisaged scaled-up metropolitan development model for creating high growth rates, there is need for development funding in national hubs, urban and rural areas to focus on investments in human capacity – health and education, due to their capacity for promoting positive social and geographic mobility. Thus, metropolitan development could have spillover effects on other national hubs in the long run. Again, regional development investment, from the standpoint of value-added activities intersecting rural areas with productive capacity and the urban network of principal and secondary hubs may enhance balanced development, conducive for peaceful socio-political and economic environments. Towards efficiency and sustainability, the projects should be steered by local players instead of government agencies, while the latter facilitates oversights and monitoring toward accountability, also at the grassroots.

Furthermore, integrated urban systems can be stimulated to enhance critical infrastructure crucial for the quality of life and youth empowerment, while supporting cumulative benefits for resource efficiency and mitigating climate change. This underscores the imperative of using the SDGs, upcycling and the circular economy to construct regenerative buildings (from recycled concrete, wood and glass etc.). The 'eco-village and cities' developed

will ultimately chart sustainable pathways in human settlement and environmental protection. Remarkably, the SDGs address the challenges of poverty, hunger, inequality and environmental degradation, and include definite targets to make cities and settlements inclusive, safe, resilient and sustainable. While upcycling, otherwise recognised as creative reuse, is the process of converting by-products, waste substances or unwanted materials into new reusable products or materials of improved quality and environmental value, the circular economy embodies a systemic approach to economic development devised to benefit business enterprises, society and the environment. In disparity to the 'take-make-waste' linear method, the circular economy is a regenerative design endeavoured to gradually decouple growth from finite resources consumption. By engaging across the different levels of governance and within public-private partnerships, such development will be an effective compass to guide governments, corporates and individuals towards sustainability in construction in Africa.

Certainly, this idea is borrowed from a 35,000-square-metre eco-village under construction in the southern periphery of Copenhagen, Denmark - the 2014 European Green Capital bidding to become carbon neutral by 2025. Danish architects Lendager Group and project partners Arstiderne Arkitekter oversee the 400-home development, a five housing blocks, in Ørestad South, Copenhagen, beginning late in 2019 and scheduled for completion in 2023 (UN Environment Programme, 2019). As part of its emphasis on tackling poverty, the project sought to create 100 unskilled jobs for marginalised employees and aimed to provide adequate food - 300,000 meals yearly by growing crops in the greenhouses and on the rooftops. The foods grown are expected to be served in local restaurants with leftovers distributed for free based on integrated food waste handling system and a designated area for sharing and picking free redundant food. Production of vegetables alleviate transport costs and reduces emissions, and indeed a noteworthy project for community-building and education. Therefore, universal access to energy, enhanced efficiency and the use of renewables enhance resilience against environmental stress and climate change. It has been projected that two-thirds of the

global population will live in cities by 2050, and urban settlements currently account for 70 percent of greenhouse gas emissions (UNEP, 2019:2). Integrated and sustainable human settlements are thus equipped to lead the renewed efforts to track and cut emissions. Rainwater collection facilities capable of recycling a million litres of water annually will aid water treatment, recycling and reuse. With geothermic energy including solar panels and rooftop gardens on such buildings, energy consumption will be reduced while it produces recycle energy.

10.3.3 Harnessing regional development processes – national and multilateral, toward human security and sustainable development across the basin

Harnessing the potentials of Lake Chad towards human security and sustainable development is premised on the aspiration of transforming the basin into a functional hub for regional development and socio-economic integration. The objective is “to secure the communities and its productive systems toward increase food production while promoting employment and social inclusion amidst growing climate uncertainty and demographic change”. Cognisant of the intense variability of Lake Chad’s hydrology and its high population mobility and resources contraction, seven thematic priorities are envisaged along the sustainable development pathways. These have been outlined in various LCBC policy documents (Vision 2025, Strategic Action Plan, National Action Plan and the Water Charter) among other significant initiatives and collective works. It includes (i) Supporting the producers and their value chains; (ii) Securing access to natural resources and preventing/resolving conflicts; (iii) Improving living standards through public investments; (iv) Facilitating effective transport and trade; (v) Preserving the environmental capital of Lake Chad; (vi) Improved management of the basin’s water resources; and (vii) Disseminating information, knowledge improvement, and monitoring the basin’s environment (LCBC, AFD and World Bank, 2015).

Achieving the above indicates effective service supports to household agriculture, small scale investments to help adapt to environmental variability, and strengthen producer’s

associations. It also incorporates an improved post-harvest value chain (storage, processing, trading) support, while securing the mobility, multiactivity and multi-functionality of livelihood activities that characterise the Lake Chad's dynamism and resilience to climatic and hydrological variations. Attaining the objectives also entails overcoming the region's peculiar challenges and their human security implications. This includes improving regional security – to secure production systems and enhance the capacity of the Lake Chad system in food production and employment (farming, fishing pastoralism and trade) without degrading the basin's natural capital base; improved service delivery to the populations; - improved management of the effects of climate variability and ecosystem loss; - effective planning and coordination of water abstractions formula in the region; and - protecting Lake Chad against risks of pollution (agricultural, urban, industrial and extractive/mining e.g. crude oil).

Regional resilience should prioritise enhancing the population capacities in the mitigation of climate and hydrological variability in place of the temptations for huge investments, which turned out to be a colossal failure in adapting to unforeseen environmental fluctuations in the region. Thus, priority investments in smaller or medium-sized projects with higher localised impacts should be conceived to enhance the livelihoods of the people. The capacity to stimulate enhance local governance and improved management and access to natural resources will curtail overexploitation, socio-political tensions and exclusion processes. Sustainable development and environmental governance require enhanced efforts in the basin for water resources management (and allied natural resources) by the countries together with the LCBC. The river basins development authorities (RBDAs) across the riparian countries needs to be revived and not politicised. These should be carried out based on renewed purpose and political will backed by genuine policies/mandates and the right staffing. Policies should be integrated into local priorities and the people involved in the conception and implementation of the programmes. Some sustainable development practices and suggestions are further aggregated below.

Through silviculture of the arid environment and application of the Drip Irrigation system, climate change can be mitigated while agriculture further diversified. Silviculture is the practice of managing the growth, structure/composition, the quality of forests and trees planting to meet values and needs. Such practice will enhance fruit tree planting, improve the carbon sink in the environment, enhance human livelihood and health, and provide yields for livestock grazing. The Drip Irrigation system involves the use of flexible pipes instead of plastic pipes to create plantations for food and cash crops and to enhance the growth of orchards and arboriculture - tree culture and management especially food trees towards creating jobs and environmental protection (GNGO-9). The forestry policy needs to incorporate Drip Irrigation for Arid environment or rain deficient environment to enhance tree planting and vegetation covers. This is a major practice in Israel where water is channelled through pipes for 365 days farming supplied by the government where farmers are charged for the water consumed. The Alau Dam in Borno may be instrumental in this regard, this would boost efficiency and save costs. Similarly, Planting bamboo can also aid in climate change mitigation and restore forests in the Lake Chad Basin. Bamboo grows quickly, matures within a few years, they can be harvested continuously throughout its 80-year lifespan. Bamboo as trees substitute thickens the forests, it effectively absorbs carbon-dioxide and regrows rapidly when cut down. For instance, Malawi and Kenya are currently investing in bamboo planting to halt landslides, loss of forests, and absorb greenhouse gases.

Sustainable agriculture in the Lake Chad basin should prioritise regional specialisation based on comparative advantage. For example capacities of the zones across the riparian countries should be enhanced in crucial produce, Borno, Nigeria – wheat, sorghum, timber, rice and millet; the Far North of Cameroon - cotton, rice, peanut and millet; Lac Region in Chad - grains, oilseeds, cotton and sugar; Diffa region - bell pepper, millet, sorghum and cowpea etc. Again, fertilisers, seedlings, modern implements and technical assistance for subsistence farmers should be enhanced. Clean water and water harvesting techniques should

be encouraged including supports on channelling lake water to the farms due to their financial constraints etc. To curtail waste suffered by local farmers in preserving farm produce (often done at home using traditional practices), technology and machinery support is required. Addressing the impediments to women's emancipation requires the following: education; NGOs and civil societies intervention and engagement of women through awareness and empowerment to boost their entrepreneurial acumen, training etc.; Micro-finance support to traders. Above all, governmental incentives need to be more liberal so people can access them.

Sustainability of fishing in the basin demands regulation of fishing activities to prevent overfishing and protect infant fishes. Specifications for fishing nets and monitoring compliance should be carried out. In the same vein, sophisticated canoes, fishing equipment, training in modern fishing techniques and education of the children of fishermen are key to sustainable practices and development in the fishing communities. Moreover, the *aquaponics* system can be encouraged in the Lake Chad basin, a practice in which fishes are placed into a tank filled with water, plants are placed in the above frames (the tanks of water), while the roots of the plants sit in the water and absorb nutrients from fish waste. The ancient Mexican practice among the Aztecs and Mayans for growing food and fish in floating boxes known as *Chinampas*, was reinvented for the 21st century as aquaponics. *Aquaponics* requires neither pesticide nor chemical fertilizer, but only 10% of the water used in traditional farming (World Economic Forum, 2019:1). Aquaponics method can be developed to whatever size, it can produce fresh fish and vegetables throughout the year.

Sustainable pastoralism requires the establishment of ranches and grazing lands. This is critical to conflict management between farmers and herdsmen. Re-establishing these would allow the proper harvesting of their resources and a critical investment in that sector and improved livelihood for the pastoralists. Irrigations systems where livestock can graze, and farmlands are adequately watered should be enhanced in the basin areas. There is a need for land redistribution. Organise the herdsmen into cooperative societies, enhance them to buy

lands with inputs from the government and private sector. The ranches, grazing lands including abattoirs need to be established where animals are raised, slaughtered and processed, while animal dungs and waste products are processed into fertilisers and poultry feeds etc. Companies, in this regard, should be sited in these localities from where the processed products can be transported to where they are needed. As a result, employment would be created, and chains of values added including revenues for the government.

Furthermore, a sustainable environment and wealth creation can be achieved through investments in waste to wealth. Two major practices can be recalled from Kolkata – Indian mega city’s use of nature for sewage processing and Ethiopia’s Reppie facility in Addis Ababa, turning trash into energy, clean water and bricks. Due to the absence of a waste treatment plant, Kolkata’s 750 million litres of daily wastewater flow into its wetland area – a massive network of man-made waterways. In the pools of the waterways, plants naturally convert nitrates and absorb phosphates including heavy metallic substances. Thus, organic wastes are naturally converted into fish foods while the clean water is used for watering crops. An estimated 10,000 tonnes of fish are produced annually from the wetlands including 40-50 percent of entire green vegetables sold in the market (WEF, 2019:2). This can be replicated in the Lake Chad tributaries including the prevention of flooding.

Similarly, the Reppie facility burns over 1,400 tonnes of waste daily to provide electricity for over three million people in 25 percent of homes in Addis Ababa, while generating hundreds of jobs. Navigating from waste to electricity enabled the production of three million bricks from ashes, 30 million litres of water from the trash. This initiative relieved the tragedy of the age-long Koshe dumpsite, Addis Ababa’s biggest landfill (which grew to the size of 36 football pitches) and from where tragedy struck in 2017 when a landslide killed 114 people most from among its thousands scavengers (WEF, 2019:3). The waste burning venture, also make Koshe factory safer and productive for the people in the locality. Thus, owing to the enormity of solid waste generated in the basin metropolitan areas particularly Maiduguri and

N'Djamena, replicating this venture will address the challenges of pollution, joblessness and dangerous conditions of scavengers etc.

Integrating regional development efforts to address the precarious living condition and acute vulnerability of Lake Chad's population can require revitalising the productive potentials of the basin's ecosystem, strengthening resilience among the vulnerable section of its population (mostly women and youths), enhancing value chains, and facilitating enduring transborder or regional cooperation. This can be achieved through investment in long-term development initiatives to address human insecurity, certainly, by enhancing the presence of states in service provision to the population, support for dialogue and local consultation to avert tensions - social, land and resources and manage conflicts.

10.3.4 Integrated security and humanitarian mechanisms towards sustainable peace and regional stability across the Lake Chad basin

Effective regional stabilisation and sustainable peace and security in the Lake Chad basin require strengthening counterterrorism and a holistic review of humanitarian approaches with harmonised regional security-development strategy. De-escalating the Boko Haram menace and advancing human security preferences in this regard are sustainable pathways to address the fundamental causes and consequences of cross-border insecurity and socio-economic calamity pervading Lake Chad and the Sahel region.

The BHT crisis and other forms of insecurity in the region should be engaged beyond the security prism against the backdrop of the security-first stabilisation strategy of the military-led counter-terrorism operations. Such tactics de-politicises the BHT menace and de-emphasises local socio-economic and political factors that triggered violent extremism in the region. Going forward, the regional stabilisation strategy (RSS) should be pursued with renewed vigour and utmost political will. A lot should be done concerning human development, infrastructures, and governance across the region, particularly in the remote and under-

governed spaces. In these spaces - the islands, the porous borders, and the waterways, adequate security presence and effective policing should be guaranteed. The interactions among the LCB countries epitomised in the MNJTF should be enhanced and endured at least till 2050, to build trust and enhance partnership towards progress in the region as against belligerency. Cross-border collaborations and communications between the MNJTF, the FC-G5S including national military forces in counter-terrorism operations across the region and the Sahel should be guaranteed and leveraged on a community policing system. Besides, ongoing awareness and advocacies in local languages to counter violent extremism and radicalism should be strengthened and extended to all BHT-ravaged areas, beyond Maiduguri and N'Djamena, toward enhancing the stabilisation processes.

Beyond the fact that there are terror cells and allies from across the borders, there are people who have sympathy for the BHT from within, border porosity and loss of soldiers or losing weapons to the 'enemies' often demoralise the armed forces. Every crime is local, the security forces' deficient knowledge inhibits intelligence gathering, while the BHT group and other criminals recruit from among the local populations to mobilise their fighters, logistics, funds, ammunition and other essential supplies. To win the war against the BHT, the ideology must be defeated. Incorporating the local population into the security architecture will help bridge the gaps and enhance intelligence gathering. Community policing as a form of local inclusion in security management and collaboration between state security agents - the police and armed forces, and their civilian counterparts - hunters and neighbourhood taskforce etc. will effectively combat banditry and other criminalities. It will also make the population feel safe and protected to inform or guide the state security agents and indeed take ownership of the security architecture. Similarly, the instrumentality of the traditional people around the lake *e.g.* Kanuri, Buduma and Kanembu etc. as potential solutions to conflicts and security-development crises in the Lake Chad region should be explored. Hostilities and rivalries among the groups are detrimental to regional peace and security. Hence, inter-group relations among

them should be made cordial and peaceful while conflicts over resources are resolved amicably on a positive-sum (win-win) basis toward addressing the region's multiplicity of problems.

While security is improved, the personnel particularly those on the frontline should be adequately motivated in terms of welfare, remunerations, training (including strategies on asymmetric warfare and civilian engagement). Periodic rotation of the forces can be enhanced to avoid war-weariness and human rights abuse. Secondly, adequate equipment supports and personnel to outnumber the terrorists or bandits by at least ratio 4:1 in every battlefield or operation. While the efforts to buy weapons were frustrated a few years ago by the western governments amidst the (Nigerian) military's collision with some humanitarian organisations e.g. Mercy Corps, Action Against Hunger and UNICEF accused of aiding Boko Haram, forced the Nigerian government to purchase weapons from the black market through Argentina, Israel, Ukraine etc. (a move ultimately blocked by the Obama administration). However, the purchase of 12 Embraer (A-29) Super Tucano light combat aircraft (comprising wing-mounted machine guns, advanced surveillance weapon integration system, precision-guided bombs and air-to-air missiles) already approved by the United States in April 2017 at the cost of \$593 million (US Dollar, scheduled for delivery in 2024 (Kelly, 2018). This is the type of bombers needed to prosecute the war against Boko Haram, it can land on the hard surface or tarmac and with a capacity to bomb continuously for hours due to its fuel economy. In this regard, Fixed-wing aircraft and combat helicopters (including Apache helicopters) would also be instrumental in aerial support.

Other significant game-changing weapons should include VT-4 (MBT-3000) battle tank, the SH5 (105 mm) self-propelled artillery, the ST1 light tanks, the Typhoon Mine-Resistant Ambush-Protected vehicles (MRAPs), the Spartan armoured personnel carriers (APCs), the armoured mine-clearing vehicles, the Armoured Guard Booths, and Buffalo vehicles etc. To garrison the Lake Chad waters, the navy would also need hardware such as the rigid hull inflatable and the Epenal boats, the inshore patrol crafts and the STAN Patrol Vessels.

While some of these have been procured recently by Nigeria since April 2020, other LCBC countries need to stockpile their arsenals towards finishing the war. For instance, the VT-4 (MBT-3000) is a 52-ton vehicle, manned by three crew members (driver, gunner and commander), with an automatic loader which reduces the number of crews on board. The hardware is also armed with a smoothbore cannon (125 mm), a remotely operated anti-aircraft machine gun (12.7 mm) and a coaxial machine gun (7.62 mm), while the tank is also installed with a GL5 active protection capacity and fire guided missiles. In addition to the above, the combat vehicle's fire control component consists of a roof-installed panoramic vision - a digital gun control system and a laser warning device installed to enhance night and day operation. Above all, the tank is a turbocharged diesel engine of 1200 hp with a maximum speed of 70 km/h and a range of 500 km (DefenceWeb, 2020). On its part, the SH5 105 mm, is a self-propelled artillery system, armed with a 6X6 platform - 105 mm gun which elevates by 0-70 degrees and a 30 degree left and right traverse. Its artillery range is about 18 km, installed with a computerised fire-control device, including GPS communication, positioning and navigation systems. Indeed, the SH5 effectively speeds at 100 km/h and 800 km range. Its armoured crew compartment is protected against shell splinters and fire from small arms (DefenceWeb, 2020).

Towards a coherent and effective humanitarian management: A paradigm shift to implementing strategies that strengthen humanitarian-development nexus should be conceived towards regional stabilisation in the Lake Chad Basin. This will address the underlying factors that birthed insecurity instead of an excessive military approach. Efficient mechanisms should be facilitated to increase delivery and improve development outcomes in fragile and conflict-ridden areas through improved coordination, innovative and programmatic methods and mutual accountability. The existing national development policies in education, infrastructure, WASH, economy, livelihoods and governance should be expanded with suitable adaptation to the contexts of affected areas. Creating enabling conditions for development and humanitarian

programming will enhance openness, accountability, greater utilisation of risk analysis, monitoring mechanisms and inventive strategy for risk factors mitigation. In line with the Agenda 2063 and SDGs, medium and long-term support should target the vulnerable population's livelihoods, education/skills acquisition and resettlement. These should adequately embrace the national strategies on transformation, local governance and relevant stakeholders' engagement while prioritising local authorities' leadership in humanitarian management.

Moreover, a shift from emergency relief to development intervention can be engendered through capacity and resilience building, youth empowerment and education. Although contingent on rapid security improvement and ultimate defeat of Boko Haram, the policy shift should begin with the reconstruction of battered areas, rehabilitation of the various livelihoods, repatriation and resettlement of the population. A multi-dimensional intervention mechanism scheme encompassing the combined inputs of producers, traders, corporate sector and local authorities should be developed to stimulate local and regional economic growth. This requires that operational players, donor and multilateral development agencies utilise consistent data and cultivate proper knowledge of the different areas, the local peculiarities and the population's needs. This would enhance the operations of the field practitioners (INGOs, CSOs, government MDAs and local government authorities) and the respective grassroots groups - traders, farmers, herders, fishers among others. This will enhance humanitarian programmes and bolster government policies and interventions on socio-economic development, household agriculture and infrastructures.

Furthermore, the RSS should be enhanced to address the fundamental socio-economic challenges that fostered insecurity and radical extremism, such as socio-spatial inequalities, bad governance and lack of economic prospects prevalent among the youths. Local capacity-building and effective monitoring of the short-term, medium-term, and long-term impacts of the RSS programmes and intervention are essential, including support to strengthen the

capacity of LCBC on RSS. This will improve regional resilience and consolidate the progress of MNJTF and national security operations, particularly in the crisis-ravaged areas.

10.4 Areas for Further Research

The transboundary nature and effects of the desiccation of Lake Chad basin and pervasive violent conflicts characterise the dynamics of human security in the Lake Chad region. Despite abundant human and natural resources including youthful population, hydrology, rich biodiversity and strategic resources – petroleum, uranium and gold etc, bad governance and poor human development across the study area have severe implications for regional development in the basin. The disruption of livelihoods and resilience of the population of Lake Chad basin constrain regional development with transborder effects beyond the region. Hence, human insecurity in the Lake Chad basin is complex and overlaps with development and humanitarian responses. The study itemises significant areas for future research.

- ❖ Monitoring regional development (including policies, programmes and interventions) to enhance Lake Chad's sustainable development roadmaps in achieving Agenda 2063 and SDGs. Further research can be explored on transboundary river basins as Special Economic Zone (SEZ) in relations to the implementation of the African Continental Free Trade Agreement (AfCFTA).
- ❖ The complex interactions between development crisis and actors (state and non-states) in water and mineral resources management or exploitation and implications for regional security-development should be explored beyond the study's two variables – the desiccation of Lake Chad and Boko Haram crisis.
- ❖ More feasible and sustainable approaches on groundwater management in the Lake Chad Basin can be investigated further bearing the continued shrinkage of Lake Chad and increasing use of groundwater as a palliative to the region's growing water needs.

- ❖ The intrinsic mobility, multiactivity and multi-functionality of the livelihood activities in the Lake Chad have been conceived to overcome peculiar development and human security challenges. As a factor of dynamism and resilience to climatic and hydrological variations in the Lake Chad, this can be expanded in further studies.

10.5 Contributions of the Thesis

The thesis contributions to knowledge can be specifically categorised into three broad spectrums - empirical, methodological and theoretical. Empirically, the research enhances the existing discourse on the desiccation of the Lake Chad basin and regional insecurity by linking the two variables to complex human security phenomenon and regional development outcomes involving multiple actors. A considerable number of studies have engaged with any of the three spectrums or any or both variables without interfacing them with the broad human security concepts or regional development outcomes. Hence, the study bridges this lacuna in research. Additionally, to the author's best knowledge, no previous study has conceived the case study analysis on the intersection of human security with development processes and humanitarianism in the Lake Chad Basin. This elicits debates on using human security solutions to bridge development gaps and catalyse regional integration.

Methodologically, the study utilises a case study design to address the puzzles elicited in the research questions. The study conceives the cause-effect analyses of human security and development thematically within the case study context - the Lake Chad basin and its peculiar features. It explores the significant process of regional development and the effects of interventions in relation to official reports of actors involved (groups, institutions - local and multilateral) and testimonies of the population as (beneficiaries). This allows an exhaustive investigation of the cases, focusing on both the context and details within its internal characteristics and the surrounding environment. It interprets the micro-level - individual(s) activities within the macro-level (large-scale) social structures and processes and substantiates

qualitative findings with secondary data to assess the regional development process and multilateral interventions in the Lake Chad. This provides more opinion-based analysis and conclusions than generalised statistics. Its thematic analysis enables the collation of data into manageable forms to construct narratives, by treating component cases individually it extrapolates cross-case conclusions to provoke reasoned debate.

Theoretically, the study engages two bodies of analytical constructs - the “Capability Approach” and “Eco-violence theory”. The critical underpinnings significantly frame the cause-effects analysis of human security and development conditions in the Lake Chad Basin. This indeed provides a nuanced understanding of how the socio-political, economic and environmental processes affect human security and the role of actors, interventions and geopolitics on regional security-development. Significantly, the Capability Approach highlights the human development factor of human security challenges towards advancing regional development progress amidst the complexity of Lake Chad terrain. It also underscores the multidimensional factor of human well-being and the complexity of its valuation, the recognition of freedom and choice as a significant process of development. Eco-violence theorises the impact of human pressure on natural resources, the patterns of exploitation and utilisation on society’s material well-being as well as its potential source for conflicts among resource dependents. It highlights environmental concerns and indeed scarcity and control of strategic resources as matters of “high politics”, the contentions among the multiplicity of actors and the implications for regional security and development.

The theories’ divergent and intersecting views on the factors of interventions, actors and resources elucidate the constraints and enablers of human freedom, capability and resilience to socio-economic and environmental threats in the Lake Chad Basin. From critical security (post-positivist) perspective, the strong emphasis on causal explanations (positivism) and hermeneutics (textual interpretation) deconstructing the security-development narratives of Lake Chad basin, particularly in areas of policy initiatives and social relationship among the

population are significant contributions of the thesis. Therefore, the narratives underscore the imperative of revising or improving the capability approach and eco-violence theoretical models to intersect human security concerns with regional development priorities, with critical emphasis on the Global South.

10.6 Chapter Summary

The study contextualises human security and regional development matrix in transboundary river basins. It explores the interface between the persistent desiccation of Lake Chad basin and complex insecurity and its management across diverse spectrums of initiatives, within the prisms of human security and regional development. The discourse reviews the threats to the security of the people's livelihoods (economic, environment, food and health security), and their socio-political wellbeing (personal, community and political security) and innovative approaches to address them across the Lake Chad Basin. Using a case study methodology and abstractions from the Capability Approach and Eco-violence theory, the study acknowledges that inadequate measures to address human insecurity impede regional development in the Lake Chad Basin. Moreover, its appraisal of the regional development mechanisms rather reflects marginal impacts on the populations as root causes of the critical challenges remain neglected while addressing the consequences. It further elicits debates on the outcomes of interventions - military and humanitarian, its further complication human insecurity and alteration of the regional political economy amid challenges of geopolitics and resource curse.

Based on the above findings, four broad recommendations embracing improved water resources and environmental management; inclusive development to address the root causes of insecurity; harnessing regional efforts toward sustainable development; and integrated regional security-development strategy (against the military-led humanitarian approach) are proposed towards enhancing human security and regional development in the Lake Chad Basin. The study stresses that imperative of transboundary river basins as Special Economic Zone (SEZ);

complex interactions between development crisis and actors; use of groundwater as a palliative; and the intrinsic mobility, multiactivity and multi-functionality of livelihoods in the Lake Chad basin can be pondered in future researches along the resilience and sustainable development discourse. Therefore, the submission bridges a gap in research from empirical, methodological and theoretical standpoints to highlight the intersection of human security-development and interventionism as the catalyst for regional integration.



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APPENDICES

Appendix 1: Interview questionnaire guide to Key informants



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Project Title: Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin

Name of Interviewer	
Name of interviewee	
Place of interview	
Date of interview	
Organization	
Age	
Qualification	
Religion	
Tribe/community/Country	
Country of birth	

Background

African regional communities have high level of vulnerability to human security challenges. This is because of rapid migration, old infrastructure, limited capacity for society management and high level of poverty and informality among others. Regional development provides opportunities for innovation, growth and cooperation, where synergies have been created among African institutions, multilateral organisations, governments at different levels and communities. This, however, is fraught with diverse challenges. Potentially, the development pathways of regional groupings in Africa could be harnessed for more sustainable practices. Promoting resilience and regional development are central to building a secured and sustained African community, transborder cooperation and sustainably development in the region. The questions below are to be discussed between the researcher and the informants to explore human security challenges and regional development processes in the Lake Chad basin.

1. What are your/organisation's most important responsibilities and tasks in this community/region?
2. Since when have you been engaged with the work/organisation?

3. What are your /organisation's achievements since you started working/ sited this organisation here?
4. What are the challenges to your work/organisation's operation?
5. What are your/organisations contribution to enhancing the people/community's wellbeing?
6. How has the Lake Chad basin environment affected your work/organisations operation here?
7. How has the people of this community/region influenced your activities/operation?
8. Are there any societal norms constraining human emancipation in the community?
9. Do you think that everyone in the community/region have equal access to resources and opportunities?
10. What are social structures in the society affecting human freedom, development and security?
11. Which opportunities need to be created to address them?
12. What are the potent security challenges confronting this community/region at large? how have they affected your operation?
13. What efforts have you/organisation made to address it?
14. Do regional policies from the LCBC or multilateral institutions enhance socio-economic development in the Lake Chad basin region?
15. How has any of the projects or programmes affected you/organisation?
16. How has insurgency and counter-insurgency operations in the region affected the people and the region's development?
17. What can you suggest as the best ways to sustainable development in the community/region?

Thank you for your participation and support

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Appendix 2: Guide for Document Review and Institutional Record



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Project Title: *Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin*

Official reports or review of institutional documents - policies and interventions (programmes) of key national and multilateral organisations will be collected as secondary data for further assessment in the study. This includes official bulletin, annual reports, memoranda of understanding with other institutions, progress reports, projects documents and field work statistics. A lead from the LCBC headquarters and the documents made available shall be followed through its collaborations with and supports from the following institutions: the UNDP, World Bank, AfDB, GEF, GIZ etc. Data on the complementary work of the LCBC member states in addressing the human security and development challenges in the region will also be sought.

LCBC and its member countries capacities in strengthening regional development shall be structured in this order

s/n	Policies/ Interventions	Date - Starting & terminal	Costs (US dollar)	Beneficiary	Partners / collaborators	Outcome	Challenges
1	Climate resilience						
2	Integrated management of Lake Chad basin ecosystems						
3	Investments and interventions on improving the quality and quantity of water						
4	Specific interventions on agriculture - fishing farming and pastoralism						
5	Specific programmes on						

	youth and women empowerment						
6	Specific Intervention on masses awareness and civil society engagement on critical security challenges						
7	Regional security mechanism - policies and intervention						
8	Institutional and legal reforms and policies to enhance regional integration in the LCB region						
9	Others						

2. Available workshops and Project Management team meetings.

i. Which workshop are available in the few months? Where is it taking place and what are its purposes?

ii. When is the Project Management team meeting? Where is it taking place and what are its purposes?

3. Interviews at the LCBC headquarters as well as local or regional headquarters of its partner agencies would be conducted to specifically clarify the following.

I. LCBC achievements in agriculture and livestock, the Project Kouri for the maintenance and development of the breed bovine Kouri.

II. Results and Impacts the Djimtilo (Chad) fishing centre on the population of the Lake Chad Basin.

III. Sharing knowledge and best practices on sustainable management of water resources and biodiversity toward promoting sustainable development and the imperative of regional efforts participatory approach

IV. Are there link between security, economic and ecological challenges? What are the regional efforts to address this and its backlash?

V. Regional strategies toward the Sustainable Development Goals (SDGs)

Thank you for the cooperation and understanding

Appendix 3: Guide for Focus Group Discussion (FGD)



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Project Title: *Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin*

1. Background

- 1.1 How many years has this group/association been in existence?
- 1.2 How do you define your community/locality (Boundaries and peculiar features)? And how does its environment affect your means of livelihood?
- 1.3 Which authority(ies) is/are most responsible to the need of the people and community in terms of education, provision of necessities – food, job and public infrastructures? (Government officials, donors, NGOs, international organisations and informal leadership)
- 1.4 How are resources channelled toward the development of the community?
- 1.5 What are the major security threats to the community and its means of livelihood?
- 1.6 How are decisions made within this community on development and security matters?
- 1.7 How are community members involved?

2. Community – Institutions’ Relationships

2.1. Which of the following organization/agencies is/are relevant to this community?

Organization Type	Response		Persons or organizations which help or support these community-based organizations (Use the Code Below)
	Yes	No	
River Basin Commission			
Community Development Associations			
Agricultural Cooperatives			
Trade (market) union			
Environmental awareness Agency			

Security and policing			
Educational development agency			
Social service group			
Disaster and emergency management agencies			
Others (specify)			

1. Local government. 2. State/provincial government. 3 National governments. 4. International organisation (such as LCBC, UNDP, World Bank AfDB etc.). 5. Non-governmental organisations. 6. Civil societies. 7. Religious societies. 8. Business group. 9. Politicians or wealthy citizens 10. others (specify)

3. Resources, migration and Conflict management

3.1 How has climate variability influenced your livelihood and wellbeing?

3.2 Has loss of resources led to encroachment on your means of livelihoods by other groups (farmers, herders) or influenced change of jobs/occupations

3.3 Has desert encroachment or loss of water resources forced your migration from one community to the other in search of livelihood?

3.4 Are there any conflicts among people of same or different livelihoods over shared resources?

3.5 What are the community's or regional mechanisms for conflict prevention or resolution among resource users?

3.6 How are people protected from violence from others?

3.7 Have insecurities in nearby countries (C.A.R. Western Sudan and Libya etc.) influenced migrants (economic and conflict driven) into your community?

3.8 In what ways are the Boko Haram insurgency affected livelihoods and wellbeing of the community

4. Collective challenges to community/ Individual Capabilities

4.1. Which is/are the most service problem in the community? (state the magnitude)

Electricity _____ Water _____ Transportation _____

Security service _____ Education service _____ Housing _____

Health service _____ Public market Agricultural Extension Service _____

Environmental and waste management service _____ Others _____

4.1.1. Between the last ten to five years what efforts were made to address the problem/s? (Any pressure on the government or other agencies from the group(s) or community)?

- A. identify the measures/process undertaken
- B. Who took the initiative
- C. How was it articulated
- D. What has been achieved
- E. What challenges were encountered in addressing the problem

4.2. In the last 10-5 years, has the group/community organized to address a need or problem?

4.2.1. Around what issue(s) did the community organize?

- (a) _____ (Initiative #1)
- (b) _____ (Initiative #2)
- (c) _____ (Initiative #3)

4.2.2 How successful are/were these issues?

4.2.3 What are the challenges encountered?

4.3 What are the three (3) most important issues the community/group would like to be addressed urgently?

5. Community's Resilience Mechanisms

The following resilience factors are to be discussed purposely to understand the focused groups perceptions and local mechanisms to achieve them:

- (a) Local measures to sustainable development in agricultural practice (farming, livestock and fishing)
- (b) Erosion prevention, and water exploration/management techniques - Process and how to improve it
- (c) Community efforts at managing security challenges and conflict resolution mechanisms
- (d) Socio-cultural engagement and interaction across communities and occupational units.

Thank you participating in this discussion

Appendix 4: Sample Letter of consent for Key Informants



University of the Western Cape

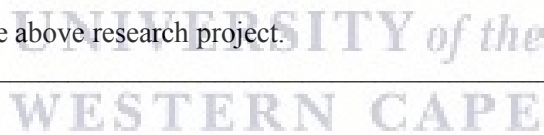
Private Bag X17, Bellville 7535, Cape Town, South Africa
 Telephone : (021) 959 3858/6 Fax: (021) 959 3865

E-mail: pkippie@uwc.ac.za or spenderis@uwc.ac.za

Title: Dynamics of Human Security in Regional Social and Economic Development: A Study of the Lake Chad Basin

Researcher: Adeyemi Badewa

- | | |
|--|--------------------------|
| 1. I confirm that I have read and understood the information sheet explaining the above research project and I have had the opportunity to ask any questions about the project. | <input type="checkbox"/> |
| 2. I understand that my participation in this study is voluntary. I am free not to participate and have the right to withdraw from the study at any time, without having to explain myself. I am aware that this interview might result in research which may be published, but my name may be/ not be used. | <input type="checkbox"/> |
| 3. I understand my response and personal data will be kept strictly confidential. I gave permission for members of the research team to have access to my anonymised responses. I understand that the information derived from this research is confidential and treated as such. | <input type="checkbox"/> |
| 4. I agree that the data collected from me to be used in the future research. | <input type="checkbox"/> |
| 5. I agree to take part in the above research project. | <input type="checkbox"/> |



Name of participant..... Signature..... Date

Name of interviewer..... Signature..... Date

Appendix 5: Sample Letter of consent for Institutional Record or Document Review



INSTITUTE
FOR SOCIAL
DEVELOPMENT



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Title: Dynamics of Human Security in Regional Social and Economic Development: A Study of the Lake Chad Basin

Researcher: Adeyemi Badewa

6. I confirm that I have read and understood the information sheet explaining the above research project and I have had the opportunity to ask any questions about the project.
7. I understand that my participation in this study is voluntary. I am free not to participate and have the right to withdraw from the study at any time, without having to explain myself. I am aware that this interview might result in research which may be published, but my name may be/ not be used.
8. I understand my response and personal data will be kept strictly confidential. I gave permission for members of the research team to have access to my anonymised responses. I understand that the information derived from this research is confidential and treated as such.
9. I agree that the data collected from me to be used in the future research.
10. I agree to take part in the above research project.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Name of participant..... Signature..... Date

Name of interviewer..... Signature..... Date

Appendix 6: Sample Letter of consent for the members of Focused Group Discussion



University of the Western Cape
Private Bag X17, Bellville 7535, Cape Town, South Africa
Telephone : (021) 959 3858/6 Fax: (021) 959 3865
E-mail: pkippie@uwc.ac.za or spenderis@uwc.ac.za

Title: Dynamics of Human Security in Regional Social and Economic Development: A Study of the Lake Chad Basin

Researcher: Adeyemi Badewa

11. I confirm that I have read and understood the information sheet explaining the above research project and I have had the opportunity to ask any questions about the project.
12. I understand that my participation in this study is voluntary. I am free not to participate and have the right to withdraw from the study at any time, without having to explain myself. I am aware that this interview might result in research which may be published, but my name may be/ not be used.
13. I understand my response and personal data will be kept strictly confidential. I gave permission for members of the research team to have access to my anonymised responses. I understand that the information derived from this research is confidential and treated as such.
14. I agree that the data collected from me to be used in the future research.
15. I agree to take part in the above research project.

Name of participant..... Signature..... Date

Name of interviewer..... Signature..... Date

Appendix 7: Information Sheet for Semi structured interview (Key Informants)



Project Title: Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin

What is this study about?

My name is Adeyemi S. Badewa, a student at the University of Western Cape, South Africa. I am conducting a research on the above topic. The study is for academic purpose and it aims to evaluate the policies and programmes of key institutions, national and multilateral such as the Lake Chad Basin Commission, national agencies in its member states and other relevant organisation's support such as the UNDP, AfDB etc in relation to addressing the challenges of human security and regional development. It also hopes to identify challenges encountered by the population in accessing those programmes and projects towards informed recommendations to enhance opportunities and transborder cooperation among the populations in the Lake Chad basin. As a key stakeholder in the region's development process or beneficiary, I am inviting you to participate in this research project. Your ideas and opinions will be of immense value, and your participation and inputs will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions pertaining to regional development policies, projects and how best to address the security problems in the region in general and your community in particular. The interview will take about one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected throughout the course of the research and in the future. This research project involves the use of audio tapes and record keeping (jottings of comments and observations). The interview will be recorded so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The recorded notes during the interview will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, we will both sign a consent form that binds me to keep to what we would have agreed to

What are the risks of this research?

The risk of the research revolves around the ongoing threats to life and travelling in the Boko Haram ravaged areas in northeast Nigeria (Borno and Yobe states) and Diffa region in Niger Republic. Protection would be sought from the Nigerian defence headquarters and the Multinational Joint Task Force of the LCBC. But if the place is not accessible, data related to the areas and agencies would be collected via email and telephone conversations from key

informants, NGOs and humanitarian organisations domiciled in the areas. Meanwhile, there are no known risks to the informants in the research project as their identities would be well protected.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about regional development processes in the Lake Chad basin, role of significant actors and institutions in addressing development and security challenges in the region, and the degree to which those efforts affect your livelihoods, wellbeing and security. It is hoped that the study will uncover several problems challenging human development, freedom and security with an informed recommendation to policy makers and development practitioners on how to improve the region's development and populations livelihood.

Do I have to be in this research, and how may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm due to your participation.

What if I have questions?

If you have any questions feel free to contact the researcher Adeyemi S. Badewa on email: yemmybadewa@hotmail.com or on phone number: +27780038161, +234 806 668 1230.

If you have any questions about the research study itself, please contact my supervisor Dr M. Dinbabo of the Institute for Social Development (ISD), University of Western Cape South Africa via email mdinbabo@uwc.ac.za

Should you have any questions regarding the study and your rights as a research participant or report any problems related to the study, please contact:

Dr Sharon Penderis
Ag. Director Institute for Social Development
School of Government Building,
University of the Western Cape
Private Bag X17
Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

Appendix 8: Information Sheet for Institutional Record and Document Review



Project Title: Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin

What is this study about?

My name is Adeyemi S. Badewa, a student at the University of Western Cape, South Africa. I am conducting a research on the above topic. The study is for academic purpose and it aims to evaluate the policies and programmes of key institutions, national and multilateral such as the Lake Chad Basin Commission, national agencies in its member states and other relevant organisation's support such as the UNDP, AfDB etc in relation to addressing the challenges of human security and regional development. It also hopes to identify challenges encountered by the population in accessing those programmes and projects towards informed recommendations to enhance opportunities and transborder cooperation among the populations in the Lake Chad basin. As a key stakeholder in the region's development process or beneficiary, I am inviting you to participate in this research project. Your ideas and opinions will be of immense value, and your participation and inputs will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions pertaining to regional development policies, projects and how best to address the security problems in the region in general and your community in particular. The interview will take about one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected throughout the course of the research and in the future. This research project involves the use of audio tapes and record keeping (jottings of comments and observations). The interview will be recorded so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The recorded notes during the interview will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, we will both sign a consent form that binds me to keep to what we would have agreed to

What are the risks of this research?

The risk of the research revolves around the ongoing threats to life and travelling in the Boko Haram ravaged areas in northeast Nigeria (Borno and Yobe states) and Diffa region in Niger Republic. Protection would be sought from the Nigerian defence headquarters and the Multinational Joint Task Force of the LCBC. But if the place is not accessible, data related to the areas and agencies would be collected via email and telephone conversations from key

informants, NGOs and humanitarian organisations domiciled in the areas. Meanwhile, there are no known risks to the informants in the research project as their identities would be well protected.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about regional development processes in the Lake Chad basin, role of significant actors and institutions in addressing development and security challenges in the region, and the degree to which those efforts affect your livelihoods, wellbeing and security. It is hoped that the study will uncover several problems challenging human development, freedom and security with an informed recommendation to policy makers and development practitioners on how to improve the region's development and populations livelihood.

Do I have to be in this research, and how may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm due to your participation.

What if I have questions?

If you have any questions feel free to contact the researcher Adeyemi S. Badewa on email: yemmybadewa@hotmail.com or on phone number: +27780038161, +234 806 668 1230.

If you have any questions about the research study itself, please contact my supervisor Dr M. Dinbabo of the Institute for Social Development (ISD), University of Western Cape South Africa via email mdinbabo@uwc.ac.za

Should you have any questions regarding the study and your rights as a research participant or report any problems related to the study, please contact:

Dr Sharon Penderis
Ag. Director Institute for Social Development
School of Government Building,
University of the Western Cape
Private Bag X17
Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

Appendix 9: Information Sheet for Focused Group Discussions (FGD)



Project Title: Dynamics of Human Security in Regional Social and Economic Development: A Case Study of the Lake Chad Basin

What is this study about?

My name is Adeyemi S. Badewa, a student at the University of Western Cape, South Africa. I am conducting a research on the above topic. The study is for academic purpose and it aims to evaluate the policies and programmes of key institutions, national and multilateral such as the Lake Chad Basin Commission, national agencies in its member states and other relevant organisation's support such as the UNDP, AfDB etc in relation to addressing the challenges of human security and regional development. It also hopes to identify challenges encountered by the population in accessing those programmes and projects towards informed recommendations to enhance opportunities and transborder cooperation among the populations in the Lake Chad basin. As a key stakeholder in the region's development process or beneficiary, I am inviting you to participate in this research project. Your ideas and opinions will be of immense value, and your participation and inputs will be highly appreciated.

What will I be asked to do if I agree to participate?

If you agree to participate in this research project, you will be asked to answer questions pertaining to regional development policies, projects and how best to address the security problems in the region in general and your community in particular. The interview will take about one hour and will be held at a place of your choice.

Would my participation in this study be kept confidential?

All your personal information, including your name will be kept confidential and will not be disclosed to anyone. Only pseudonyms will be used in the final report and in all published reports to protect your privacy. Your identity will be protected throughout the course of the research and in the future. This research project involves the use of audio tapes and record keeping (jottings of comments and observations). The interview will be recorded so that I can accurately transcribe the conversation. All information obtained from the interview will be treated with strict confidentiality and will be used for research purposes only. The recorded notes during the interview will be kept securely in a locked file cabinet in my study room that will only be accessed by me. Furthermore, we will both sign a consent form that binds me to keep to what we would have agreed to

What are the risks of this research?

The risk of the research revolves around the ongoing threats to life and travelling in the Boko Haram ravaged areas in northeast Nigeria (Borno and Yobe states) and Diffa region in Niger Republic. Protection would be sought from the Nigerian defence headquarters and the Multinational Joint Task Force of the LCBC. But if the place is not accessible, data related to

the areas and agencies would be collected via email and telephone conversations from key informants, NGOs and humanitarian organisations domiciled in the areas. Meanwhile, there are no known risks to the informants in the research project as their identities would be well protected.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about regional development processes in the Lake Chad basin, role of significant actors and institutions in addressing development and security challenges in the region, and the degree to which those efforts affect your livelihoods, wellbeing and security. It is hoped that the study will uncover several problems challenging human development, freedom and security with an informed recommendation to policymakers and development practitioners on how to improve the region's development and population livelihood.

Do I have to be in this research, and how may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalised or lose any benefits to which you otherwise qualify.

Is any assistance available if I am negatively affected by participating in this study?

This research will not expose you to any harm due to your participation.

What if I have questions?

If you have any questions feel free to contact the researcher Adeyemi S. Badewa on email: yemmybadewa@hotmail.com or on phone number: +27780038161, +234 806 668 1230.

If you have any questions about the research study itself, please contact my supervisor Dr M. Dinbabo of the Institute for Social Development (ISD), University of Western Cape South Africa via email mdinbabo@uwc.ac.za

Should you have any questions regarding the study and your rights as a research participant or report any problems related to the study, please contact:

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School of Government Building,
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This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.