

# **Climate Change-Induced Migration and Its Implication for Sustainable Development: Case of Lake Chad and Lagos Megacity Sub-Regions, Nigeria**

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## **Abstract**

A twin challenge of climate change resulting in resource depletion and contributing indirectly to insurgency induced a forced migration from an impoverished region. In Lake Chad basin, populations are trapped between consequences of climate change and insecurity. Once the largest water reservoir in the Sahel region, the negative impact of environmental change is epitomised by the receding lake and compounded by insurgency of Boko Haram, generated IDPs and precipitated forced migration towards socio-economically more prosperous southern regions. The effect of this migration to Lagos in particular confirms the Push and Pull theory of migration and also the division of its factors in Lee's laws. The preliminary analysis of data derived from randomly selected respondents with the FGD and Delphi forecasting techniques revealed Lagos as not only a naturally attractive destination for these migrants but confirmed that the migrants were both internal and international. The sustainable development implication of this is the increased pressure on the resources of the receiving city, inequalities and varying vulnerability; depletion of human resources, conflict over depleted resource and conscription into insurgency in the originating region.

Keywords: forced-migration, internal, international, climate change, inequalities, insurgency, pull-push, sustainability, resource, Lake Chad

## **1.0 Introduction**

The adverse interrelationships between man and his environment has been the main cause of disequilibrium, which usually result in negative effects to man himself, his environment and his survival as epitomised by the current global climate change phenomenon (Oyekan T & Sulyman A, 2015). Though Africa is the least producers of Green House Gas (GHG) emissions from inhabited continents, it is the most vulnerable to the effects of climate change and global warming (Gemeda D & Sima A, 2015; Bewket W. 2012 & Beg N, et al, 2011). African countries are more affected by the impact of climate change because of their reliance on agriculture as well as their lower financial, technical and institutional capacity to adapt and mitigate climate change, according to recent researches by Rose R (2015); Singh A & Purohit B (2014); & Nordhaus W (2006). The African continent is expected to be the most affected by climate change, desertification and land degradation (Hummel D, 2015).

However, environmental issues and poverty are inextricably linked in the context of Africa; combating these issues in an isolationist fashion would go against the interconnected realities of environmental and human livelihood (Evelyn Hayford, 2012). The situation of Lake Chad highlights how environmental crisis can result in political, economic and social inequalities and insecurity. The Lake Chad Basin (LCB) is "one of the most important agricultural heritage sites in the world, providing a lifeline to nearly 30 million people in four riparian countries —

Nigeria, Cameroon, Chad and Niger” (ACTED, 2015); with the majority dependent on the lake and other wetlands for their fishing, hunting, farming and grazing.

The Lake Chad also has an extensive hydrological basin which covers four other countries of Libya, Central African Republic, Sudan and Algeria. The basin is recognized as highly challenged by climate change, desertification and unsustainable management of water resources and fisheries (World Bank, 2002). In retrospect, FAO has called situation of the shrinkage of the lake an “ecological catastrophe” predicting that the Lake Chad could disappear in this century. More than 17 million people across north-eastern Nigeria and parts of Cameroon, Chad and Niger are facing a complex crisis driven by extreme poverty, climate change and violent conflict. As a result, more than 2.4 million people are displaced and over 10 million people need assistance to meet their basic protection and humanitarian needs (FFO, 2018).

Thus, the aim of this study is to identify the challenge, effects and current efforts being made to combat the impact of climate change and insecurity in Lake Chad Region and its spill-over effects into southerly regions of Nigeria, the most populous country in Africa at 198 million people (NPC, 2018).

## **2.0 The Challenge**

Over the years the Lake Chad had sustained the livelihood of over 30 million people around its shores in the four Sub-Saharan (SSA) countries of Africa. However, climate change has been attacking the lake on two fronts: reducing the rainfall that feeds it and accelerating evaporation due to high temperatures. These put the lake into jeopardy. If it dries up, it will lead to an unmanageable disaster to the population that depends on it (Salkida A, 2012).

The disappearance of Lake Chad will impact millions of people all of whom depend on the lake as their main source for drinking water, irrigation, and food. The region’s growing population dependent on the Lake combined with the reduction of water and resources has resulted in its exponential drying. Undoubtedly, the four nations sharing the lake will be worse affected. Also the four other countries that share the lake’s hydrological basin would be affected by its misfortune (Salkida A, 2012).

The receding of waters exacerbates difficulties in an area already at risk, and with one of the world’s lowest human development indexes. Coupled with demographic pressures, human activities and mismanagement of the remaining water resources, climate change leads to a massive environmental disaster. The impact of the drying lake is causing tensions among communities around it. This has a harsh impact on the million people whose means of livelihood heavily depends on the Lake. The resulting poverty and unemployment is pushing people to leave.

The receding of waters and the resulting deforestation and desertification strongly affected pastures of nomadic pastors and shepherds, who were forced to move to other areas to graze their livestock. Most fishermen, farmers and cattle herders have moved towards greener areas, where they compete for land resources with host communities, engage in menial jobs or to roam the streets as beggars.

It also strongly threatens peace and security in the region. Fighting the scourge of terrorist war in the LCB has been monumental for an impoverished region that for years had been struggling with deforestation and other human activities due to climate change (Enobi A & Johnson-Rokosu S, 2016). This created a mass of disgruntled elements that served as a reservoir for recruitment for insurgency groups. The aftermath effect is the generation of IDPs which precipitated forced migration especially towards the socio-economically more prosperous southerly cities such as Kano, Abuja, Lagos and others.

### **3.0 Study Area**

#### **3.1 The Geography of Lake Chad**

Lake Chad Basin is located in the far west of Chad and the northeast of Nigeria (Figure 1). Parts of the lake also extend to Niger and Cameroon Republics. It is fed mainly by the Chari River through the Lagone tributary, which used to provide 90 per cent of its water. It was once Africa's largest water reservoir in the Sahel region, covering an area of about 26,000 square kilometres, about the size of the US State of Maryland and bigger than Israel or Kuwait (ACTED, 2015).

The Lake Chad basin with a surface area of 25,000 km<sup>2</sup> in the 1960s is the largest endoreic basin in the world and estimated 8% of total African land surface area (UNEP Fortnam, M. and Oguntola J., 2004). According to Olivry et al (1996), the Lake Chad basin encompasses three climatic zones (Sudan Zone, Sahara Zone and Sahel Zone) with an average annual rainfall generally decreasing from the south of the lake to northwards of the Lake. The three precipitation regimes present in the basin are between 500-1000mm in Sudan zone, 100-150mm in the Sahel zone and less than 100mm in the Sahara zone. The Lake surface elevation ranges from 284 in 1855 to about 279 meters above sea level in 2005 (Figure 3).

The major cities in the drainage region include N'Djamena, Icawo, Maiduguri and Maroua. Recent research suggested that annual rainfall in the region ranges between 1500mm – 1600mm from the northern to the southern part; the lake depth varying between 4-8m northwards and 2-4m southwards with a mean value of 1.5m (Eboh, E. 2009; Ngounou, B. 2009). Similarly, Edmun et al (2009) found that the basin is dominated by the lagone-chari-river which account for 96% of water inflow into the Lake Chad and the region been hot and dry, evaporation rate reaches a peak of 2,300mm per year.

The studies presented thus far provide evidence that the potential for evaporation far outweighs the rainfall in the region as Figure 2 depicted the varying levels of water over time. FAO, (2012) reported a decrease in fish production from 220,000 tonnes of fish in the 1960s to about 100,000 tonnes in 2000. Recent annual yields are placed at 50,000 to 60,000 tonnes (Murray S. 2007), (Ovie S. and Emma B. 2012) & (FAO 2012). Similarly, low outputs have been reported for crops (e.g. sorghum declined from 328,000 tonnes to about 130,000 tonnes between the late 1960s and the years following 2010) (Uche T. et al, 2016). Livestock declined nearly 2% per year since the 1960s (Ovie S. and Emma B, 2012), (Mekonnen D, 2016).

Also, there had been recent animal yields which are placed at about 60,000 tonnes in 2007 and below 50,000 tonnes as at 2012 (Murray S., 2007); (Ovie S. and Emma B, 2012); (FAO, 2012).

#### **3.2 Lagos: Geography, History, Economy & Governance**

Lagos is the commercial nerve centre of Nigeria and its former political capital up till 1991. It is situated on Lat.6 degrees, 35'N & Long. 3 degrees 45'E. Administratively and geographically, the megacity sprawls over 16 of the 20 geo-political Local Government Areas (LGAs) constitutionally recognised. Lagos, usually referred to as Lagos State to distinguish it from Lagos Megalopolitan Area, is a State located in the southwestern geopolitical zone of Nigeria (Figure 4). On the North and East it is bounded by Ogun State. In the West it shares boundaries with the Republic of Benin. Behind its southern borders lies the Atlantic Ocean. 22% of its 3,577 km<sup>2</sup> are lagoons and creeks. Lagos is a port which originated on islands separated by creeks, such as Lagos Island, fringing the southwest mouth of Lagos Lagoon while protected from the Atlantic Ocean by barrier islands and long sand spits such as Bar Beach, which stretch up to 100 kms (62 miles) east and west of the mouth.

The smallest in area of Nigeria's 36 states, Lagos State is arguably the most economically important state of the country, containing the nation's largest urban area. The actual population total is disputed between the official Nigerian Census of 2006, and a much higher figure

claimed by the Lagos State Government. As of 2015, the population of Lagos city is approximately 16 million (CityMayors, 2017) and also grew to become the most populous city (NBS, 2015) in Nigeria as a whole. The conurbation is the second fastest-growing city in Africa and one of the most populous in the world (CityMayors, 2017). The State Government puts the current population at over 25million with a population density of 7000 persons/sq.km (lagosstate.gov.ng, 2018).

Before the Portuguese name of Lagos had been adopted, Lagos' initial name was Eko which referred mainly to the Island. The first to settle in Eko were the Aworis (Filani M, 2012). The Awori hunters and fishermen had originally come from Ile-Ife to the coast. Indigenous inhabitants include the Aworis and Eguns in Ikeja and Badagry Divisions respectively, with the Eguns being found mainly in Badagry. There is also an admixture of other pioneer settlers collectively known as the Ekos (Adefuye, 1987). The indigenes of Ikorodu and Epe Divisions are mainly the Ijebus with pockets of Eko-Awori settlers along the coastland and riverine areas. While the State is essentially, traditionally and indigenously a Yoruba-cultural environment (J.S Eades, 1980), it is today a socio-cultural melting pot attracting both Nigerians (with people from all the over 250 ethnic nationalities) and foreigners alike.

This contemporary State was created on 27 May 1967 according to the State Creation and Transitional Provisions Decree No. 14 of 1967, which restructured Nigeria into a Federation of 12 states (NBS, 2015). Before the issuance of this Decree, Lagos city, which was the country's capital had been administered directly by the Federal Government through the Federal Ministry of Lagos Affairs. However, Ikeja, Agege, Mushin, Ikorodu, Epe and Badagry were administered by the then Western Region Government. Lagos, the city, along with these other towns were captured to create the state of Lagos, with the State becoming fully recognized as a semi-autonomous administrative division on 11 April 1968 (NBS, 2015). Lagos served the dual role of being the State and Federal Capital until 1976, when the capital of the State was moved to Ikeja.

After the full establishment of the Federal Capital Territory, the seat of the Federal Government was also formally relocated to Abuja on 12 December 1991. Nevertheless, Lagos still remains the financial and economic nerve centre of the country. It would be the fifth largest economy in Africa if it were a country (Ekundayo J, 2013). The State's 2014 Gross Domestic Product (GDP) was put at \$91billion with \$4,333 *per capita* (lagosstate.gov.ng, 2018).

Ikeja, now the capital of Lagos State, was a well-planned, clean and quiet residential and commercial town with shopping malls, pharmacies and government reservation areas prior to the emergence of military rule in mid-1960s. The Murtala Mohammed International Airport is located in Ikeja. Ikeja is also home to a number of tourism and recreational attractions and shopping malls. Today, Lagos as other States in Nigeria, practices democracy with the Executive, Judiciary and Legislative arms in governance at the State. Since December 2007, Yoruba has been the second official language of debate and discussion for the House of Assembly after English.

Lagos State was formerly divided into five Administrative Divisions, which are further divided into twenty (20) Local Government Areas, or LGAs (Ajose S.A, 2010) (Figure 5) in the 1999 constitution. The 16 LGAs shown in Table 1 comprise the statistical area of Megalopolitan Lagos. The remaining four LGAs (Badagry, Ikorodu, Ibeju-Lekki and Epe) are within Lagos State but are not part of the megacity. In 2003, many of the existing 20 LGAs were split for administrative purposes into Local Council Development Areas. These lower-tier administrative units now numbered 57.

Lagos is being modernized and currently boasts of so many beautiful aerial views. The day-to-day activities in the state could be stressful, but so many things make someone forget all these challenges, when he feels Lagos in its real sense. Counting and observing the numerous five-star hotels, the lush green grasses at the various relaxation spots and recreation centres, the

various architectural masterpiece buildings and edifices and the many flyovers, which make the beautiful views of Lagos come out, either at night or at daytime, and other adorable sights, will continue to marvel someone of how great the state is.

## **4.0 Conceptual Framework and Literature Review**

### **4.1 Conceptual Framework**

The concept of this study is hinged on the Push and Pull theory of migration and also the division of its factors in Lee's laws. The law divided factors causing migrations into two groups of factors: Push and pull factors. Push factors are things that are unfavourable about the area that one lives in and pull factors are things that attract one to another area. Relevant to this study amongst his Push Factors were: Inequalities, Not enough jobs, Few opportunities, Primitive conditions, Desertification, Famine or drought, Political fear or persecution, Poor medical care, Loss of wealth, Natural disasters, Death threats, Lack of religious freedom, Bullying, War/Civil War; while the Pull Factors included Job opportunities, Better living conditions, Political and/or religious freedom, Enjoyment, Education, Better medical care, Attractive climates, Security and Industry.

Similarly, it is also in tandem with three of Ravenstein's laws for Migration which stated that migrants who move longer distances tend to choose big-city destinations, that urban residents are often less migratory than inhabitants of rural areas and families are less likely to make international moves than young adults. Lagos, being the commercial nerve centre of Nigeria and indeed that of West Africa sub-region is naturally an attractive destination for these migrants despite the long distance – the pull factor. The causes and effects of this mass migration to Lagos megacity and its implication for sustainable development are the objects of this research. Conceptually, the processes confirm the Push and Pull theory of migration and also its division according to Lee's laws

### **4.2 Literature Review**

#### *Climate Change*

The presence of greenhouse gases due to anthropogenic activities has impacted on global temperature and precipitation in the last century (Gemedo D.O & Sima A.D, 2015) (Nicholson, S. E, 2010). The intergovernmental panel on climate change (IPCC, 2001) predicts that surface global temperature will rise between 1.4 – 5.8 degrees C by 2100 as a result of increase in concentration of greenhouse gases, mainly carbon dioxide (Gemedo D.O & Sima A.D, 2015). According to IPCC report presented by Boko et al (2007), Africa has observed temperature rise especially in between the late 1960s to 80s. Temperature across Africa are predicted to rise by 2 – 6 degree C over the next 100 years and rainfall variability is predicted to increase, resulting in frequent flooding and drought (Hulme M et al, 2001). According to a report on regional climate projections 2007 by IPCC presented in Gemedo and Sima (2015) that by 2050 the mean temperatures in Africa will rise from 1.5 – 3 degrees C and that the warming of Africa is very likely to be larger than the globe. The impact of the rise in temperature as predicted together with rainfall variability will reduce crop productivity in low income and agriculture dependent economies (Yunana, et al, 2017).

Increase in temperature and decline in rainfall in Sahelian and Sub-Saharan countries especially Sudan, Senegal, Mali, Chad, Niger and Eritrea that are mainly subsistence and small scale farmers will experience severe risk to their livelihood (Hummel D, 2015). The poor and marginalized usually have the least buffer to face even the modest climate hazards and suffer the most from frequent events with little time for recovery (Olsson L.M et al, 2014). Recent research by Rose R.M (2015), Singh and Purohit (2014), Nordhaus W (2006) shows that African countries are more affected by the impact of climate change because of their reliance

on agriculture as well as their lower financial, technical and institutional capacity to adapt and mitigate climate change. The African continent is expected to be the most affected by climate change, desertification and land degradation (Hummel D, 2015). Though Africa is the least producers of Green House Gas (GHG) emissions from inhabited continents, it is the most vulnerable to the effects of climate change and global warming (Gemedo D.O & Sima A.D, 2015) (Bewket W, 2012) (Beg N et al, 2011).

According to Yunana, et al (2017), climate change will exacerbate water challenges (through drought, water scarcity and reduced rainfall), leading to insufficient water for people and the environment and making it increasingly difficult to meet the needs of water demand for domestic, agricultural as well as industrial needs. Their assertion is currently being experienced in the entire Sub-Saharan Africa (SSA) with debilitating effect in the Lake Chad region.

#### *Impact of Climate Change on Lake Chad Basin*

The basic impact of climate change on Lake Chad Basin is evident on its shrinkage. A longitudinal study of the historical trends of Lake Chad by the Lake Chad Basin Development Commission pointed out that the lake covered 2million km<sup>2</sup> in 50,000BC. However, in 1963 the lake surface area fluctuated between 22, 903 to 25,000km<sup>2</sup>; in 2008 the surface area of the lake receded to 2500km<sup>2</sup>. A detailed examination shows that Lake Chad covers less than 10% of the area it occupied in 1960s, resulting in increased desertification, desiccation, famine and drought (Figure 6). The Global Resource Information Database of the United Nations Environment Programme, indicates that Lake Chad shrank as much as 95% from about 1963 to 1998 (Coe M.T & Foley. J, 2001).

If water continues to recede, Lake Chad could disappear in about twenty years from now, according to NASA climate forecasts (ACTED, 2015). The ACTED Group, based in Diffa, Niger Republic displayed several photographs (Figures 7 & 8) depicting the socio-economic situation of the people of the region as a result of the calamity. According to Eboh E. C (2009), there is a synergy resulting from climate variability and unsustainable water project which had significantly deterred the inflow of rivers that drain into the Lake Chad; this however, has resulted in the receding of the lake. Furthermore, Lemoalle J (2004) showed that in the 1960s, Lake Chad was about 25,000Km<sup>2</sup> in surface area, but it experienced a rapid shrinkage in the early 1970s and has since been fluctuating between 2,000 and 15,000Km<sup>2</sup>, depending on season.

The significant shrinkage experienced since 1960s is due to a combination of severe drought and irrigation water abstraction (UNEP/GRID, 2008). Hydrological observation for over 3 decades reveals that the volume of water stored in the lake decreased from 40-100 10<sup>9</sup>m<sup>3</sup> in 1962 to 7-72 10<sup>9</sup>m<sup>3</sup> in 2005. However, this resulted in about 90 percent of the originally inundated area been exposed in the 1970s (Olivry J et al, 1996). Fish production which is a major source of traditional livelihood in the basin is greatly threatened, with decrease in production by a 50 percent, from 140,000 tons in 1966 to 70,000 tons in 1980s (Ngounou B, 2009) and to less than 50,000 tonnes in 2012 (FAO, 2012); (Murray S, 2007); (Ovie S and Emma B, 2012).

#### *The Dimension of the Region's Insecurity*

The effect of the activities of Boko Haram compounded and exacerbated the impact of climate change in Lake Chad region. Most importantly the concept of security is vital for national cohesion, peace and sustainable development. The advent of Boko Haram in the Lake Chad region in 2009 brought the security situation into a state of confusion. Boko Haram has been attacking the Northeast of Nigeria, capturing territories and spreading to some parts of the Lake Chad Basin (LCB) region of Niger, Chad and Cameroon (Oluwadare A.J, 2017). Nigeria started an onslaught on Boko Haram at the onset of its activities in the Northeast; however,

before the formation of the joint task force by the Lake Chad Basin regional authorities, the activities of the sect had spread to neighbouring countries.

Apparently the terrorists targeted these countries for attacks in retribution for their participation in the regional joint task force and for daring to support Nigeria's efforts in quelling the insurgency (Enobi and Johnson-Rokosu, 2016). Oluwadare (2017), noted that the cost of combating the attacks and defeating the terrorist group has been confounding and has already taken its toll on the LCB. Fighting the scourge of terrorist war in the LCB has been monumental for an impoverished region that for years had been struggling with deforestation and other human activities due to climate change. In other words, the cost of the battle has been debilitating for a region and countries facing the severe impact of climate change as evident in the shrinkage of the Lake Chad.

Oluwadare (2017), noted that for several years, there have been scholarly analyses on security challenges as well as the links between them and many grievances, such as marginalization, resource control, unemployment, religious intolerance, and neglect of educational and health sectors. These factors have heightened the spate of insecurity and insurgency in the subregion, including the militarization of the entire political landscape by the military dictatorship that ruled for several years in the area. Anyadike (2013) opined that Boko Haram, not only set a precedent but also strengthened an attempt by the Nigerian Islamic conservative elements to impose a different Islamic religious ideology on a secular Nigerian state in particular. He recalled the Tuareg rebellion of 2007-2009 led by the Sahara Desert Tuaregs of northern Mali and the Niger Republic.

That Chad has been inundated with a series of crises such as the Chadian civil war of 2005-2010, which has created a mass of disgruntled elements in that country. These disgruntled elements have served as a reservoir for recruitment for insurgency groups. Cameroon has been relatively peaceful, with a major exception being the February 2008 uprising due to a hike in fuel prices at the pump in that country. The aftermath of this unrest has left scars that must be managed by the government. Oluwadare asserts that the failure of improving on the livelihood of the people has brought much discontent and an attitude of revolt from Nigerians, Chadians, Cameroonians and Nigeriens who expected better opportunities than they have received. People believe that the governments of these countries have undermined, under-developed and impoverished the vast majority of the peoples.

Boko Haram's violent conflict in the Lake Chad Basin continued till date with constant raids and suicide bombings, creating fears and widespread trauma for people and preventing them from accessing basic essential services, and damaging infrastructure. The Lake Chad Basin harbors about 21 million inhabitants from Nigeria, Niger, Chad and Cameroon. These people are among the world's poorest and most vulnerable. The effect of Boko Haram terror on the security of the area cannot be overemphasised. People are now being denied their fundamental human rights and cannot exercise freedom of movement or worship for fear of being attacked by members of the sect. The planting and carrying of explosives has been a common method of the sect.

Oluwadare (2017), noted further that the most dangerous of the activities of Boko Haram is the conscription of young boys and girls, who have been brainwashed to believe that their heaven is assured if they die in the process of "fighting for Allah." Sometimes they are even put under the influence of dangerous drugs to perform these heinous acts. Boko Haram has created fear in the minds of the people. Churches and mosques were bombed while people were worshipping. The attacks of Boko Haram have caused a severe drought in economic and commercial activities, as business activities are almost at a standstill. Commercial banks now do brisk business, as they have reduced their working duration from eight hours to just three.

Awojobi (2014), opined that the frequent bombings and clashes between the insurgents and the security agents have weighed heavily on the commercial and business activities in the region, while many people have fled the area. In some locations, business activities were paralysed. The spate of insecurity trailing the activities of Boko Haram in the four countries has greatly stressed and imperilled a growing commercial chain that was instrumental in the cooperation and integration process, which was the vision of the founders of Economic Community of West African States (ECOWAS) in a fast globalising economic and political order. Oluwadare (2017), observed further that Nigeria had no option but to cooperate with the neighboring countries to form the Multi-National Joint Task Force (MNJTF).

The activities of the sect prompted the subregion to establish the MNJTF, comprising soldiers from Nigeria, Niger, Chad and Cameroon as granted by the African Union in February 2016. The response of the adjacent countries of Chad, Niger, and Cameroon was spontaneous as they agreed without much persuasion to join in contributing to the MNJTF (Théroux-Bénoni, 2016). The MNJTF, with its headquarters in Ndjamena, has been able to canalize the insurgents and restrict them within the Sambisa forest as the push against them was on all fronts. The present situation sees the fighting deescalating given the successes that the MNJTF has achieved. For instance, the cases of bombing have drastically reduced since the line of supply of the insurgents had been cut.

Anyadike opined further saying without the support of the international community and international antiterrorist agencies, such as the European Union, the region might not be able to defeat the scourge of terrorism. The situation has been compounded where such uprisings came with a level of political undertone, such as the accusation that trailed the emergence of Boko Haram at the onset. In Nigeria, the sitting government between 2011 and 2015 had accused the opposition of fanning the ember of disunity as a result of its failure at the polls.

## 5.0 Methodology

Due to the non-existence of reliable and up-to-date data on migration, this study relied solely on primary data which were collected with three techniques: personal interview through structured questionnaire, focus group discussion (FGD) and Delphi forecasting. To elicit information on the subject of study, the questionnaire was designed and randomly administered on 200 respondents; 150 of them were identified as migrants from the Lake Chad Region and the rest 50 from the pool of established residents within the various strata of Lagos megacity. The 16 LGAs that formed the megacity were divided into 4 strata, each consisting of 4 coterminous LGA as shown in Table 1 below. The 200 questionnaires were allotted based on the population density of each stratum and then administered randomly.

**Table 1: Distribution of Questionnaires**

S/N	STRATUM (4 LGAs each)	Questionnaires	Percentage (%)
1	Alimosho, Agege, Ifako-Ijaye, Ikeja	80	40
2	Mushin, Oshodi-Isolo, Kosofe, Shomolu	40	20
3	Lagos Mainland, Surulere, Eti-Osa, Lagos Island	30	15
4	Apapa, Amuwo-Odofin, Ajeromi/Ifelodun, Ojo	50	25
	<b>Total</b>	200	100



In the questionnaire were variables such as respondent's demographics (age, gender, marital status, occupation), origin of migrant, direct or transited migrant, year of migration, mode of travel, reason for migration, contact with relations at origin, skill possessed, current engagement and area of location in the city, opportunities available, potential vulnerability, willingness to return or not to origin in future, perception of existing residence,

The responses were collated, summarized and values were signed to them in the form of simple percentages. To balance the judgement and enrich the findings, a focus group discussion was organised comprising eight residents only while the application of Delphi forecasting technique; a non-quantitative technique for forecasting based on expert opinions was employed too. The essence is to use the assessment of opinions and predictions by a number of experts and stakeholders over a number of rounds in carefully managed sequences. In this case, having identified the problem for which some opinions were required, a brief regarding the subject was prepared. This contained among other things issues of increase in crime rate, depletion of scarce resources, increase unemployment rate, increase traffic bottleneck, unruly and lawless attitude of untrained motorcyclists, tax evasion, security vulnerability of indigenes, etc.

The level of agreement was predetermined at 65% value, that is, the level of responses at which experts and stakeholders can agree on the phenomenon being predicted. The number of experts involved in the exercise was 15 including urban planner, urban geographer, climatologist, economist, sociologist, local council official, market leader, civil society representative, security personnel, traffic control official, commercial transport operator, politician, community development/landlord association official, organised private sector (OPS) representative and academician. They were provided with background documentation and the respondents' questionnaire.

Within 2 days, their first responses were retrieved, summarized, tabulated with the means and standard deviation calculated for each category of variables. The salient points were compiled and listed. The tabulations were returned to these stakeholders in a meeting convened to discuss first round results. They were required to review their initial assertions in light of the results presented, and submit a new round of predictions. The specific areas of disagreement were highlighted, and again requested to consider their predictions in light of the panel's overall views. By the third round, the process produced a level of agreement that overshot the predetermined value.

## **6 ANALYSIS AND DISCUSSION OF FINDINGS**

Demographically, this study found that the respondents are youthful migrants with 65% between the age range of 15 – 35 years and 35% between 36-45 years of age. They were also predominantly males. While no case of female respondent was observed formally in the course of the study, there were suspicions that they might be hiding and made themselves invisible due to cultural and religious limitations in their origin. Occupationally, about 40% are fishermen; 30% farmers; 20% traders and 10% herdsmen originally; plying their trade within Lake Chad region. Also, about 60% and 40% were married and unmarried respectively before they migrated to Lagos.

The study discovered that the migration process was both internal and international in character as about 50% of the migrants originated from North-East Nigeria (internal); Niger Republic – 25%; Cameroon – 15% and Chad Republic – 10%. The last three being international. Interestingly, the study discovered that only about 30% of the migrant actually travelled to Lagos directly from the troubled region while the rest 70% had initially transited briefly to some northern cities such as Maiduguri, Kano, Kaduna, Bauchi, Jos and Abuja before heading to Lagos for better prospect. The mode of travel also differed. About 60% travelled by road to Lagos by hanging or 'parasiting' on trucks bringing food produce or cattle to Lagos at zero fare.

In the same vein, about 20% travelled by rail from Kano to Lagos while the remaining 20% either reared cattle or join cattle herders from the North to the South-West region before 'sneaking' into Lagos finally. However, the study found that about 95% of the migrants arrived Lagos within the last 4 years. As the study confirmed, two major reasons were adduced by the respondents as prompting their forced migration, viz: consequences of the depleted lake and insecurity caused by Boko Haram insurgency. While all respondents attested to the fact that both phenomena negatively affected their socio-economic lives, they however differed on which one was predominant. Only 35% agreed that the consequences of the lake depletion was more than the other while 30% were of the view of the predominance of the insurgency.

However, they all agreed that depletion of the lake made them to be jobless, thus not only making many youths and girls easy prey for recruitment into Boko Haram group but also causing community or ethnic feud while competing for remnants of the resource. In addition, >10% of these migrants had artisanal training while over 90% possessed no formal skills before their migration. Furthermore, about 15% claimed they still maintain regular contact with their ancestral home. Over 60% claimed they hardly get information from their relations while others were not sure whether relations at home are still alive or not.

Due to the functional gap in the public transportation system in the city of Lagos, most of the migrants (60%) found it easy to enter the motorcycling business, popularly known as 'okada' in Nigeria. This required little or no formal training at all. Consequently, most of the accident resulting from this section of public transportation were traced to their recklessness, lawlessness and frustration. Others were engaged as labourers (20%) at construction sites; 10% as gatemen in residential houses and factories while 5% each parade the streets as shoemenders or load carriers in several markets adorning Lagos respectively. The study found that about 70% of these migrants live and work within the more densely populated Mainland LGAs while about 30% were found in the Island area LGAs.

While all of them attested to the hard life they are currently experiencing, they found it preferable to the life of hunger and insecurity in their origin. On the opportunities available to them in Lagos, only 2% planned to go to school to improve their fortune if able to get sponsors while others prefer to get capital to go into more lucrative businesses. They all agreed that Lagos area is very peaceful and they were not vulnerable to any visible danger in the course of their daily struggle. Though they all confirmed the hospitable nature of the city, only 25% will however be willing to return to their origin when and if conditions over there are right in future, but 75% says they were unwilling to go back no matter the condition.

However, Lagosians have varying perception of these migrants with implications for sustainable development. All the respondents nursed the fear of increase pressure on the scarce and competitive resources of the city. While 80% foresaw potential increased neighborhood insecurity, some others wanted these untrained 'okada' riders banned due to the rate and number of accidents alluded to their attitudes. Everyone too, agreed that the existing inequalities will be compounded which may also lead to ethnic feud with high vulnerability by peaceful residents. Finally, the Delphi forecasting technique process produced 90% as the level of agreement in contrast to the predetermined level of 65%.

## **7.0 Recent Regional and Global Interventions**

A number of interventions have been proposed on both regional and international scale by some countries, the UN System and donor agencies and efforts are being made to provide humanitarian assistance to millions of displaced people, especially in IDP camps. Also, these interventions in addition, are examining the technical solution to combat the effect of climate change in the region by recharging and replenishing the basin with adequate water volume to

combat drought, famine and desertification in order to regenerate socio-economic activities and provide employment for farmers, fishermen, herdsman and traders alike.

For instance, Oluwadare (2017) observed that the activities of the region have received a boost from the international community. The United States government in August 2016 offered over \$37 million to the Lake Chad Basin for humanitarian assistance. The United Nations Regional Coordinator in assessing the situation said the region would require at least \$559 million in the next four months to ease the crisis in the area (UNOCHA/Channels Television Nigeria, October 14, 2016). Other recent efforts are noted below.

#### *UNESCO-Supported International Conference on Lake Chad 2018*

The Federal Government of Nigeria and the Lake Chad Basin Commission (LCBC), with the support of the United Nations Educational, Scientific and Cultural Organization (UNESCO), organized the International Conference on Lake Chad in February 2018. The theme of the conference was "Saving the Lake Chad to revitalize the Basin's ecosystem for sustainable livelihood, security and development". The main objective of the International Conference was to create global awareness on the socio-economic and environmental challenges arising from the shrinkage of the Lake Chad, which are causing threats and inducing insecurity. The overall objective was to develop a comprehensive programme for action to save the Lake from extinction.

The Sub-themes of the Conference were:

- i. Restoration of Lake Chad: State of the art scientific knowledge and technical innovations;
- ii. Lake Chad Water Transfer: prospects, challenges, and solutions;
- iii. Social, environmental, cultural, and educational aspects in the current context;
- iv. Security and regional cooperation aspects with a view to restoring peace in the Lake Chad basin;
- v. Funding of approved options.

The specific objectives of the conference are as follows:

- To inform stakeholders, discuss and develop consensus on the different solutions to restore Lake Chad, including the Inter Basin Water Transfer (IBWT) Project from the Ubangi River to the Lake Chad;
- To bring together experts, political decision makers, donors, UN Specialized Agencies, scientific and technical experts, civil society, NGOs and researchers to exchange knowledge and share information on water resources development and management in a crisis environment for sustainable development in the Lake Chad Basin;
- To garner political and financial support, for the restoration option identified for of the Lake Chad.

#### *Ministerial Conference on the adoption of the Regional Stabilization Strategy for the Lake Chad basin region Abuja, Nigeria, 2018.*

A Ministerial Conference of the Member States of the Lake Chad Basin Commission (LCBC) was held in Abuja on 30 August 2018 with the support of the African Union (AU) and United Nations Development Programme (UNDP). The conference was organised to consider and adopt the Regional Stabilisation, Recovery and Resilience Strategy for Areas Affected by Boko Haram in the Lake Chad Basin Region. The Strategy is expected to drive, rationalize and complement various initiatives and interventions aimed at stabilizing the areas affected by Boko Haram's activities in the Lake Chad Basin region (AU, 2018).

Conference participants include Ministers from Member States of the Lake Chad Basin Commission and Benin. Governors from Lake Chad Basin region, especially areas affected by the activities of Boko Haram, the Force Commander (FC) of the Multi National Joint Task

Force (MNJTF), Deputy Special Representative of the United Nations Secretary-General for West Africa and the Sahel (UNOWAS), United Nations (UN) Resident Coordinator and United Nations Development Programme (UNDP) representative in Nigeria and UN country team in Nigeria, United Nations Office for Central Africa (UNOCA) and the United Nations Office to the African Union (UNOAU), representatives of the Governments of Germany, European Union Delegation to the Federal Republic of Nigeria and Economic Community of West African States (ECOWAS), International Development partners and other relevant bodies from the UN.

Prior to the Ministerial Conference, Senior Officials from Lake Chad Basin Member States deliberated, validated and recommended for adoption of the Strategy by the LCBC Council of Ministers. The Strategy is aimed at addressing the short, medium and long-term stabilisation, resilience and recovery needs in the areas affected by Boko Haram. The nine pillars of the strategy which includes political cooperation; security and human rights; disarmament, demobilization, rehabilitation, reinsertion and reintegration of Persons Associated with Boko Haram; humanitarian assistance; governance and social contract; socioeconomic recovery and environmental sustainability; education and vocational training; prevention of violent extremism and peacebuilding; empowerment and inclusion of women and youth, respond to the multi-layered challenges in the Lake Chad Basin region.

The meeting affirmed the enormous humanitarian and political challenges engendered by the diminishing Lake and activities of Boko Haram, and applauded Member States of the Lake Chad Basin. It further underscore the importance of the Stabilisation strategy as critical to the long term development, peace and stability of the countries affected by the activities of Boko Haram, and implored member states, AU, Regional Economic Communities and Regional Mechanisms, international partners to support the implementation of the Strategy (AU, 2018). Following deliberations, the council of ministers unanimously adopted the Strategy. The Ministerial Meeting also witnessed a signing ceremony for the renewal of the Memorandum of Understanding (MoU) and the Support Implementation Agreement (SIA) between the African Union and the Council of Ministers of the Lake Chad Basin Commission for the enhancement of additional support to the MNJTF.

#### *Lake Chad Region Berlin Conference, 2018.*

A High-Level Conference committed to comprehensive crisis response in the Lake Chad Region with renewed commitments by participants to work together to address the multi-faceted crisis affecting the region was held in Berlin between 3 - 4<sup>th</sup> September, 2018. More than 70 countries, international organizations and civil society actors gathered in Berlin to discuss solutions to bring peace and stability to the affected countries. The participants discussed humanitarian assistance, crisis prevention and stabilization, as well as development, to chart a way forward for a comprehensive and inclusive response. The conference provided an excellent opportunity for in-depth discussions on various aspects that had been raised during the 2017 Oslo Humanitarian Conference on Nigeria and the Lake Chad Region (FFO, 2018). Participants agreed that a coherent, multi-year approach is needed that integrates all available instruments to tackle the protection crisis and the root causes of the conflict. This is needed to pave the way for sustainable and resilient development of the region, and thus contribute to a better future for the affected people. The political process initiated in the margins of 2017 conference in Oslo highlights regional ownership and cross-border cooperation at all levels. It also established the Consultative Group on Prevention and Stabilization in the Lake Chad Region which met for the first time in Berlin in September 2017 and developed a regional cross-border framework for cooperation at Governor level.

At a subsequent meeting in Maiduguri, Nigeria, in May 2018, the Governors founded a permanent forum and formalized their commitment to a regional stabilization strategy adopted on 30 August 2018 in Abuja by the African Union and the Lake Chad Basin Commission. During the Berlin conference, 17 UN Member States, the European Commission, pooled funds (UN Central Emergency Response Fund and UN Peacebuilding Fund), the World Bank and the African Development Bank combined announced US\$2.17 billion to support a comprehensive response to the crisis in the Lake Chad Region. In addition to this support, multilateral financial institutions (African Development Bank, Islamic Development Bank and World Bank) announced US\$467 million in concessional loans (FFO, 2018).

## **Conclusion**

The anthropogenic activities influencing climate change usually result in negative effects to man and his survival as exemplified by the forced migration from the Lake Chad Basin Region; though the major challenge of the study is unavailability of relevant secondary data on regional migration. It also induces and fertilises insurgency as in the case of Boko Haram in this region which encouraged both internal and international migration. The implication of this is the increased pressure on the resources of the receiving cities, such as Lagos in this case. The city itself has been groping with developmental challenges including urban transportation, inadequate housing, and dearth of adequate infrastructural facilities, traffic congestion, degraded environment and high criminal activities. The depletion of human resources, conflict over depleted resource and conscription into insurgency are the sustainable development implication on the originating region.

Though it has been demonstrated, the urgent need to address the problem of the region holistically is imperative. The promises and plans at the various conferences and meetings should be redeemed and implemented under the supervision of the UN Agencies while the Member States of the Lake Chad Basin Commission take charge effectively due to the regional dimension of the crisis, the crucial role of local actors, cross-border cooperation and ownership at all levels. The donors billions of dollars to support humanitarian, peacebuilding and development activities in Cameroon, Chad, Niger and Nigeria; and concessional loans announced by multilateral financial institutions must be justified in concrete terms. Stakeholders must commit to addressing the immediate and longer-term needs and help build the resilience of millions of crisis-affected people in the Lake Chad region.

More importantly, there is the need for the government to embark on poverty alleviation programs that will impact positively on the lives of the people. The tranquillity and well-being of any society are necessary components of national security. The generation of employment for the teeming population is a critical problem that requires the urgent attention of the government, vigorously and aggressively pursued (Oluwadare, 2017). He opines that the engagement of unemployed youths would automatically result in depletion in the number of youths always readily available for recruitment into various criminal gangs. Thus, education must be given priority, aggressively pursued, and made compulsory for all children, including the physically challenged.

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Figure 1: Showing the Location of Lake Chad Basin Region in Africa

(a)



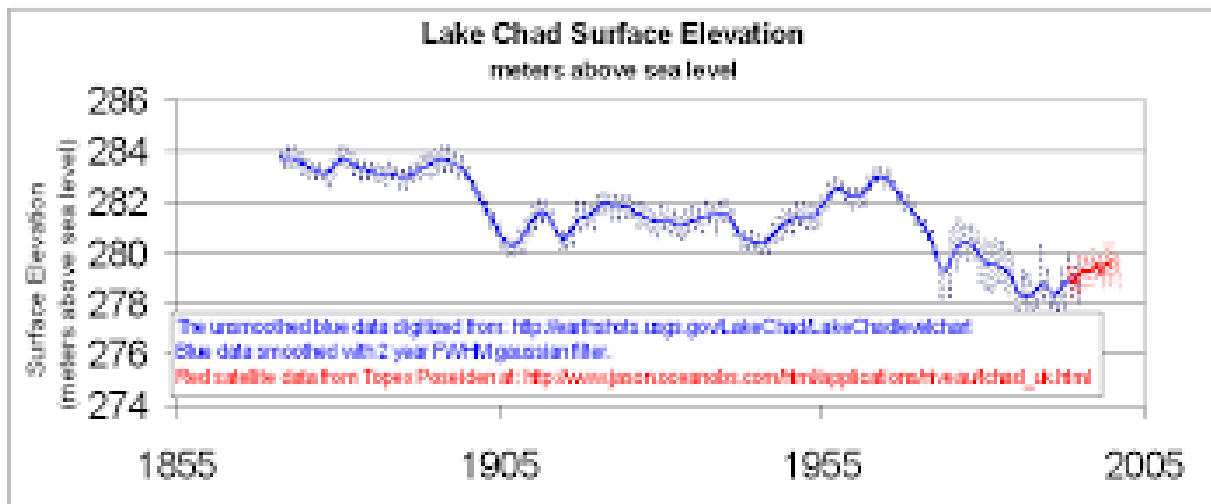
(b)



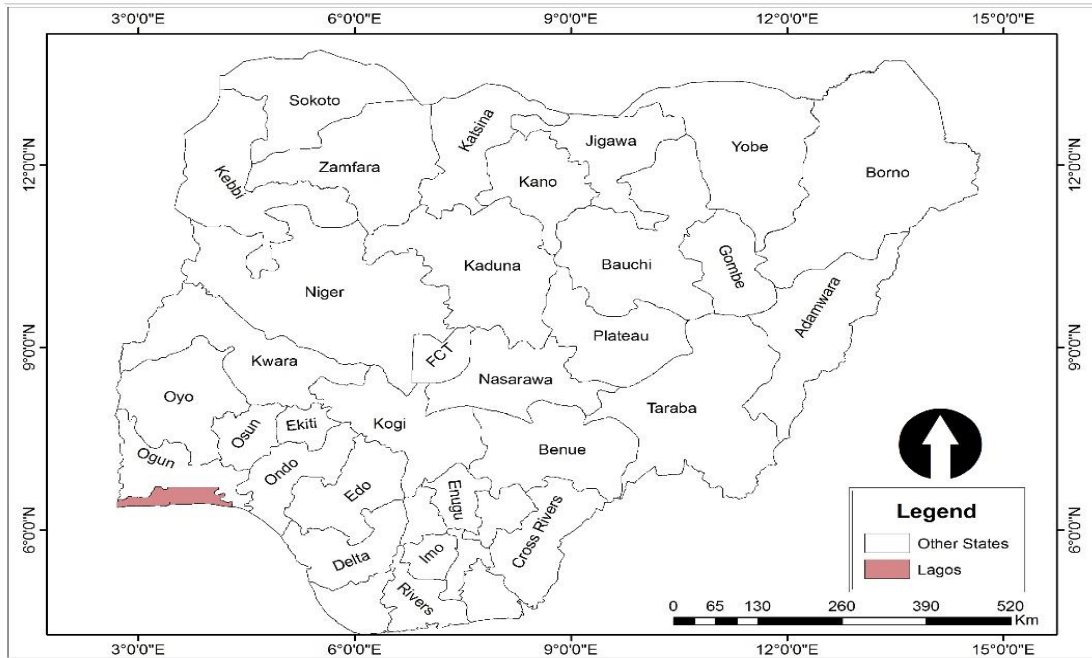
**Figure 2: Lake Chad Varying Level Over Time**



**Figure 3: The Surface Elevation of Lake Chad**

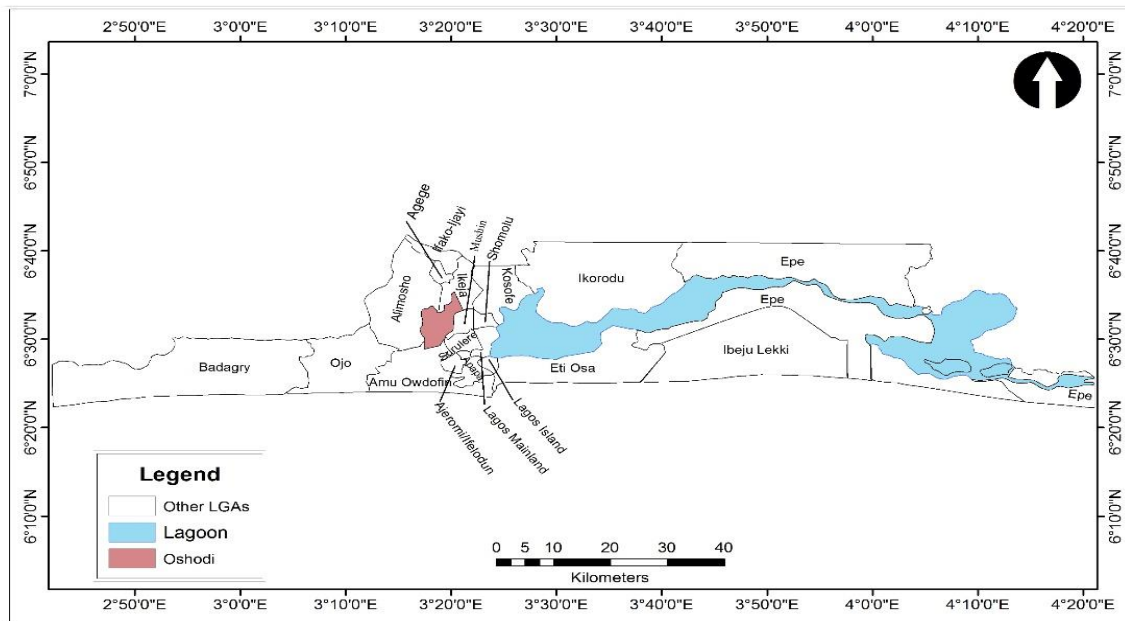


**Figure 4: Figure 4: Map of Nigeria Showing Location of Lagos State**



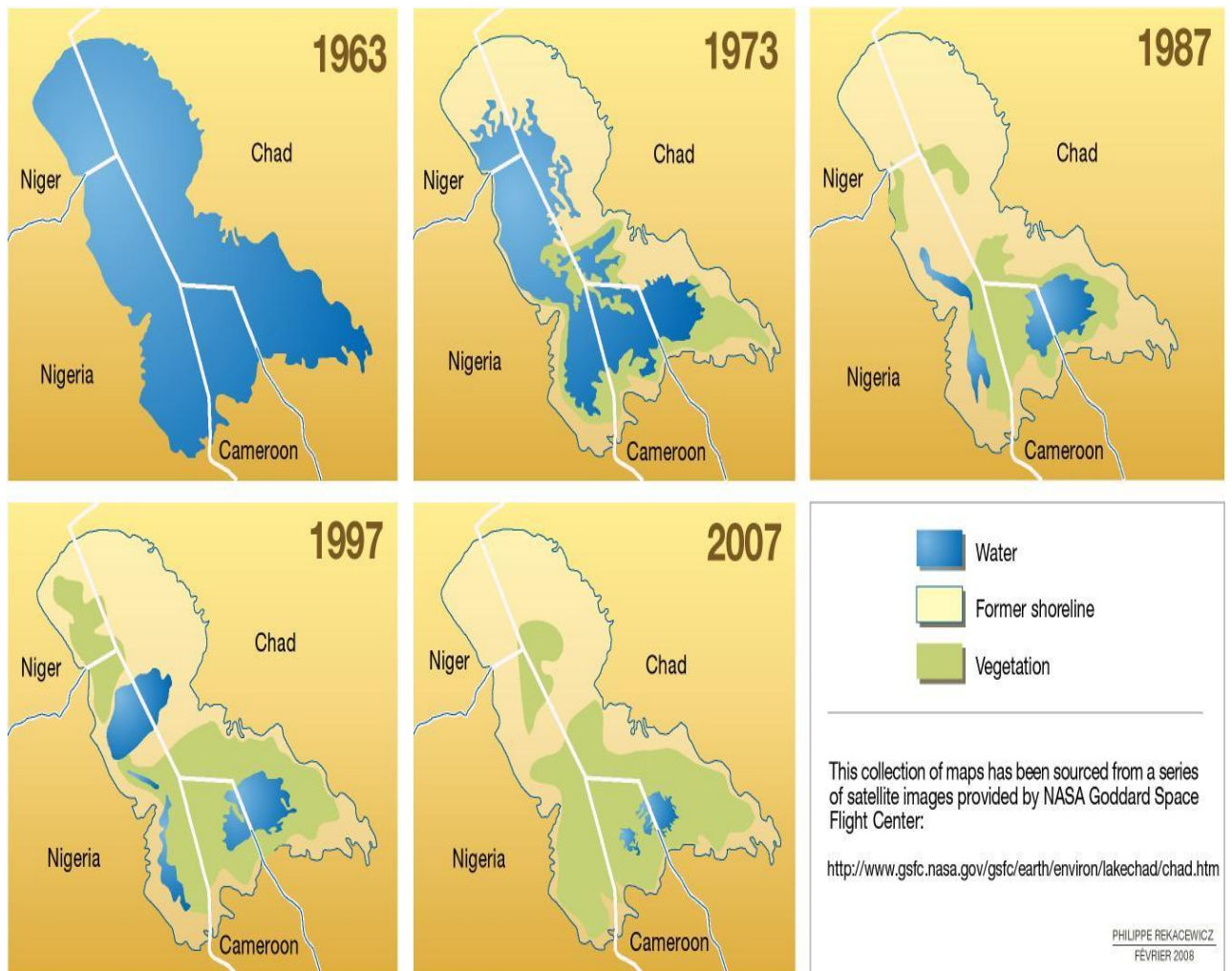
*(After Oyekan Tai: Potentials of Urban Transport Infrastructure, WIT Conf. 2018)*

**Figure 5: Map of Lagos State showing its Local Government Areas**



*(After Oyekan Tai: Potentials of Urban Transport Infrastructure, WIT Conf. 2018)*

**Figure 6: Trends in the Shrinking and Desiccation of Lake Chad, 1963-2007**





**Figure 7: Some Selected Socio-economic Activities around the Shore of Lake Chad**



*(Source: ACTED Group, Diffa, 2015)*

**Figure 8: Some Examples of Human Livelihoods in Lake Chad Region**



*(Source: ACTED Group, Diffa, 2015)*



