

Water Security in Perspective

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Abstract:- The paper diagnoses one among the very many challenges facing Lake Chad Basin which is water insecurity that has plagued not only the basin, but escalated to the entire north east sub-region of Nigeria with damning food security consequences to the country and adjoining countries of Chad, Niger and Cameroun. The Boko Haram insecurity plaguing the region has further worsened the water and food security situation. Indeed the water body has diminished by about 90% since the 1960s due to overuse and climate change effects. The paper postulates a number of steps to remediate the problem.

Keywords:- Water Security, Lake Chad.

I. INTRODUCTION

Water is a unique resource in comparison with others. It is a fundamental substance for life on earth. Water is essential for life on earth. Humans only require small amount of it to survive but the supply need to be regular, and the water quality hygienic and safe. Among the human rights, the one to drinking water and sanitation has been established and developed since 2008 (UN 2015b). Water resources and other ecosystems which provide and sustain the water resources are important in many facets including Agriculture, Transportation, Tourism, Trade, Commerce and Industry etc, but is under threat from bioterrorism, unsustainable use, land use change, pollution, urbanisation, construction, climate change, and other forces. The relationship between these threats and underdevelopment is clear because it is the poor that are first hit and hardest, when water is not accessible.

Water- its quantity and distribution has several potential consequences for human well-being in a way that its connection with security and conflict has become a subject of growing concern globally Okpara et al (2015).

In other words, water security is the state at which seas, lakes, rivers and rain are free from danger, threat, terrorism attack, theft and espionage. Also, it is the state at which people that depends on the water are feeling safe, stable and free from fear. The Norwegian Nobel Committee views water security as threat to human capabilities and well-being, driven by environmental changes through water

resources degradation and scarcity with implications for food supply, mass migration and regional cooperation and development (NNC, 2007).

Socially, water insecurity is now a major concern in Nigeria given our rapid population growth, competition between competing interests such as grazing, irrigation and urban water supplies, competition between upstream and downstream users, reduction of the volume and quality of both groundwater and surface water. The overall effect is acute water shortages, limited access to clean and potable water and lack of adequate security for the prevention of biological and physical attack on water infrastructure. More recently water security is now linked to tensions and conflicts such as questions of national boundaries, navigation, to farming and grazing as well as human right issues being experienced in many parts of the country.

Water management is often a complex issues with far reaching and often continuous effects. Water-related tensions emerge on different geographic scales, but it is the inter-play of these tensions with a number of political, socio-economic, environmental, and cultural factors that determine whether violent conflict will result. Conflict simply refers to a real or perceived set of incompatible interest and goods among two or more parties. It is not necessarily violent. Even when water is not directly connected to proximate causes of conflict, water.

II. THE NORTH EAST REGION

The Lake Chad Basin is located in the North East zone of Nigeria. The rainfall pattern in this region is reducing, and the Sahel is expanding southwards with 3500 km² of the land becoming desert each year. The implication of this is reduction of land resources useful for grazing and farming. It has been argued that 200 villages are being abandoned every year while those that remain depend on wood for energy, leading to more desertification. Due to high radiation, high rate of evaporation and evapotranspiration occur resulting into groundwater table dropping and wells becoming drier due to unsustainable withdrawals. Unfortunately, there is low rainwater harvesting and high incident of flooding in this region. The case of flooding that occurred in the year 2010, 2012 and 2016 caused lot of community displacements and stress to human security.

In this region, water insecurity has caused displacement of 1.8m people; farmer's herder's conflict, collapsed fisheries; crop failure; increase soil salinity with famine affecting more than 65,000 people and close to 10.7m people in need of humanitarian assistance.

Bunkers have been built underground and Improvised Explosive Device (IED) production are at alarming rates with tendency for surface water and groundwater pollution. The fate of oases such as Kajimaram oasis, oases of Manga grassland in the North eastern region cannot be ascertained at the moment. Can anyone be sure of the safety of soil resources including fertility in areas where bombing has occurred.

III. CAUSES AND SOURCES OF THE PROBLEM

A complex interplay of the sources which include; climate change, population pressure, human activities and mismanagement of the remaining water resources and endemic insurgency have contributed in worsening the water security situation of the Lake Chad basin. Largely located in the semi-arid Sahel zone, the Chad Basin is particularly vulnerable to the adverse impacts of climate change and its ramifications can be felt today. As a result of increasing temperatures and decreasing rainfall, the lake's surface has been shrinking over the years reaching a level of above 90% - factor also attributable to human interventions like dam construction or irrigation.

As water level decreased, so did the basin's plentiful natural resources. Not only have the availability and quality of fresh water decreased, but adverse impacts also include reduced fish stocks, loss of vegetation and depletion of grazing land. This has further been aggravated by desert encroachment. The shrinking Lake Chad is eroding the livelihoods of many people, providing a fertile ground for recruitment for Boko Haram that offers economic incentives and perspective, to disenfranchise youths. The Nigerian military accused Boko Haram of poisoning water resources and using them as weapon, further compounding climate reduced water scarcities.

IV. THE LAKE CHAD REGION

The region under consideration is located in West Central Africa, specifically with the North East Sub-region of Nigeria, parts of Chad, Cameroun and Niger. The dynamic nature of the lake is reflected in its ever changing size, shape and depth in response to variation in temperature and rainfall (Okpara, et al (2015).

The Lake Chad is an area of extensive poverty and is facing unknown threats of climate change. The region is typical of climate change issues in regions having an important natural potential within least developed countries. They combine hydrology (variability), ecology (ecosystem richness and vulnerability), socio-economic matters (production of food and monetary resources, jobs), governance, (articulation between regional and national policies; between sectoral policies). It is a fragile and

vulnerable ecosystem, exposed to hydrological shifts (of which climate change is a key parameter), high population growth, and political crises.

The climate of Lake Chad basin is characterised by high temperatures, strong winds, high eva-transpiration (estimated at 2,200 mm/annum) and fluctuating rainfall patterns (FAO, 2009). Annual rainfall varies spatially from nearly 1,400 mm along the southern pools to less than 150 mm near the northern end (Odada *et al.*, 2006). The Lake Chad area is home to 20 million people – 11.7m in Nigeria; 5 m in Chad; 2.5m in Cameroun; 634,000 CAR and 193,000 in Niger.

As a result of the crises emanated from shrinking of Lake Chad Surface water to about 5% of its previous level (Gao *et al.*, 2011), 2.6 million people have been displaced, 4.4 million people are in need of urgent food assistance and ¼ of a million children malnourished. The lake has receded completely from Nigeria and moving toward Cameroun and Chad.

The shrinking is exacerbated by lots of factors including increasing droughts, scarcer rainfall, population growth and the pumping of the lake's water for the water-intensive exploitation of Uranium in Niger National irrigation project conducted by the riparian states. A World Wildlife Forum consultant argued that the diversion of water from River Chari to irrigation projects and construction of dams on the Jama'are and Hadejia rivers also contribute to the shrinking.

Stream flow modification and water diversion, associated with the construction of large irrigation and water development projects along the Chad-Logone River and Komadugu-Yobe River, are also identified as contributory factor in the shrinkage of the basin over the period 1970 – 2013 (US Geological Survey, 2014). The construction (between 1979 and 1990) of Yaguou-Tekele Dyke and Maga Dambeside the Chari-Logone River in Chad, and a series of other dams such as Alau dam, Tiga dam, and the Yeders dam at the Nigerian end of the Kamadugu-Yobe River have impacted greatly on the Lake's waters (Onuoha, 2008).

V. OPTIONS FOR SECURING WATER IN THE LAKE CHAD REGION

- i. For any programme to succeed in the Lake Chad Region, there is need for joint effort to ensure sustainable peace. The Multi-National Joint Task Force should be strengthened and empowered to perform its required duty of ensuring peace in the region.
- ii. Government should deploy security personnel especially the National Security and Civil Defence Corps (NSCDC) in the area to protect water resources, infrastructure, watersheds, aquifers and water ecosystems. Where possible, there could be the information of water guards.
- iii. There are a lots of ungoverned spaces within the Lake Chad region which are abodes for criminals.

Government of individual countries should mop these up.

- iv. Federal government of Nigeria should dialogue with other countries that share water boundaries with Nigeria on ways to secure the waters, sign Agreements on trans-boundary aquifers, find new sources of water, and recharge the Lake Chad.
- v. The need to enact and enforce borehole drilling and water restriction policies.
- vi. The LCBC should develop a sub-regional water strategy that will ensure sustainable water utilisation. The case where each country works at cross purpose with the others should be discouraged.
- vii. There is need to explore possibilities of tapping from fossil water aquifer system (like the Nubian Sandstone).
- viii. Tributaries of water should be dammed to take up the water left off in order to avoid flooding.
- ix. Rationalise the use of existing water in the urban areas through metering to avoid abuse rather than the current practice of fixed charges.
- x. There should be good governance and connectivity in dealing with water security issues to avoid wasted efforts that will have no impact on the citizenry.
- xi. The Green Green wall initiative should be sustained, with the scope widened to incorporate the use of renewable energy and green house technology.
- xii. Adapt water management to climate change, develop and manage water resources fairly-share water, land, and food in a cooperative manner, and in a way that does not leave vulnerable groups disproportionately burdened by the burden of climate vulnerability.
- xiii. There is need for storing and harvesting water so that it is available when there would normally be no rain-surplus harvested, and stored for use in the dry season. Water could be transferred from areas where it is scarce. This would help reduce pressure on the shrinking Lake Chad. Other options apart from the use of large dams include natural wetlands, ground water aquifers, ponds, and small tanks. The covering of rooftop water tanks would heavily reduce evaporation.
- xiv. Improve water-use efficiency through drip irrigation and sprinklers.
- xv. Change cropping system to less thirsty crops.
- xvi. Develop climate information services to guide climate change adaptation.
- xvii. Develop strong advocacy for sustainable water use.
- xviii. Use isotope hydrology as a tool for managing water resources. Isotope dating can be used to estimate the origins and movement of water within the hydrological cycle, and thus determine the availability and capacity of underground aquifers and other water resources.
- xix. An attempt should be made to revisit and implement all commitments and agreements made at both local and International Conferences pertaining the Lake Chad. Similarly, all previous Charters signed should be respected.

VI. CONCLUSION

It has been observed that the Lake Chad Basin which has hitherto served as the food basket of not only the north east sub-region of Nigeria, but also to a large extent Nigeria and the surrounding countries of Chad, Cameroun and Niger, has been ravaged by a complexity of environmental factors of drought and desertification, as well as the negative consequences of climate change, which contributed to the shrinking of the lake, aggravated by population pressures. The situation has impacted negatively on livelihoods within the region, and has been further worsened by the endemic insurgency within the zone. There is therefore an urgent need to tackle this complex crisis in order to save the Lake and bring an end to the humanitarian situation currently ravaging the region. Actors working on the Lake Chad crisis should take account of the climate-related security risks, and integrate these considerations into efforts to address the root causes, or the symptoms of the crisis.

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