Lake Chad: A Study of a Drying Freshwater

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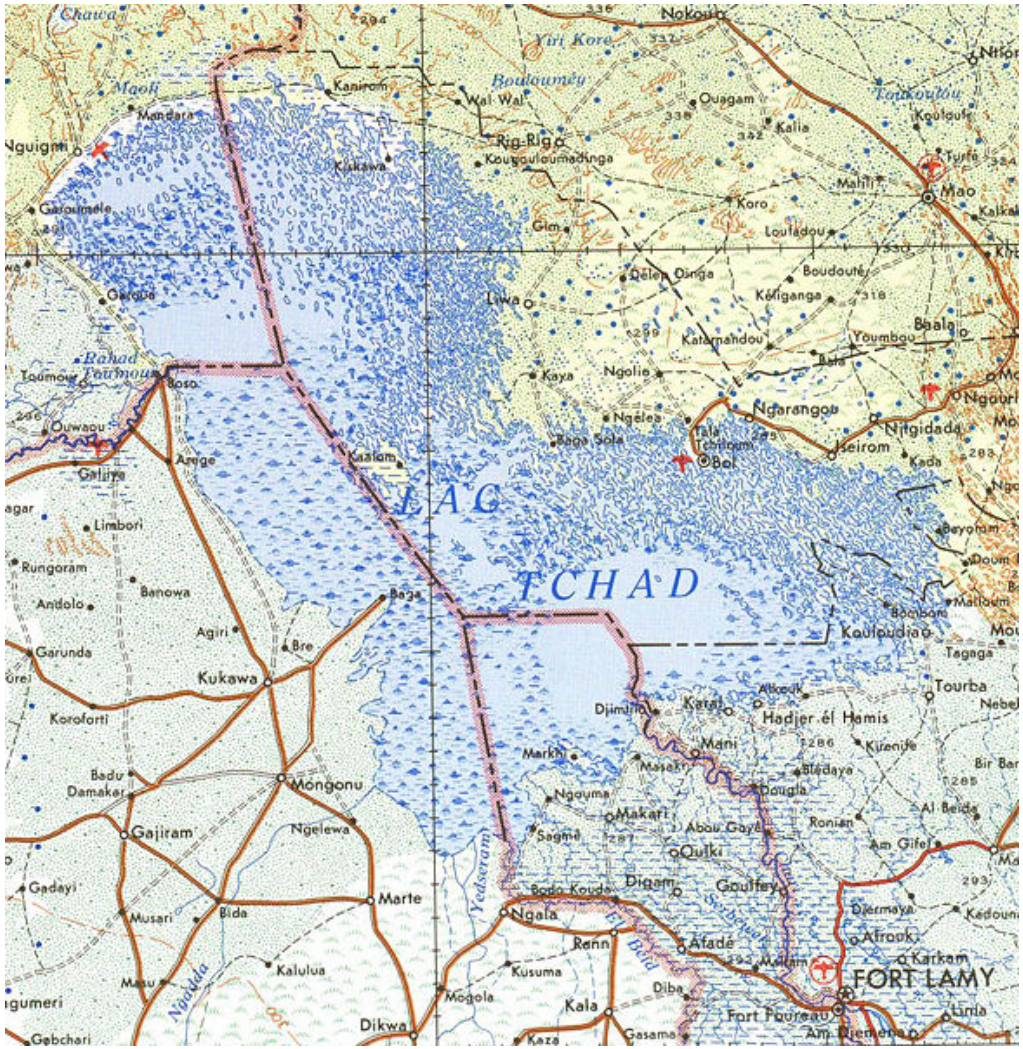
- **The Lone Man in the Desert**
- Imagine a man, who by no fault of his found himself in the desert. By the grace of mother earth, he was provided with water in a large bowl that would serve him and his generations for a long time. He was happy and began to use the water to meet his daily needs. He established himself and was looking forward to a happy and prosperous life. But somewhere along the line, he noticed that his water, that precious gift that has enabled him live in the desert for ages was fast diminishing. As a matter of fact, he discovered that he could no longer have enough water to meet his daily needs. He noticed that some extraneous factors were taking toll on his water. He realized that he has unwittingly overused his water in an attempt to meet his growing demands.
- After a rational thought on what was happening to his water, his main source of livelihood, he projected that except something was done urgently, the water would finish in a while and his continued existence in his desert home would be in peril. What would he do in the event that the water dries up completely? Would he move to another location where there is water? This choice is most unlikely because the people living in those locations are hostile and antagonistic. They would not welcome him in their location because their own water was also under pressure. Faced with the difficult situation, he realized that his best option was to do something and save his water and his own very existence in the desert.
- This is the story of the over 20 million people living on the brink around the shores of Lake Chad in Africa.

INTRODUCTION

Map showing location of Lake Chad (World Atlas)



- Lake Chad is a closed drainage basin that retains inflow of water but allows no outflow to other bodies such as rivers and oceans
- The only outlet of water is by evaporation and seepage
- Lake Chad, unlike most closed basins is a freshwater system
- Examples include the Aral Sea, Caspian Sea. Extreme example is the Dead Sea

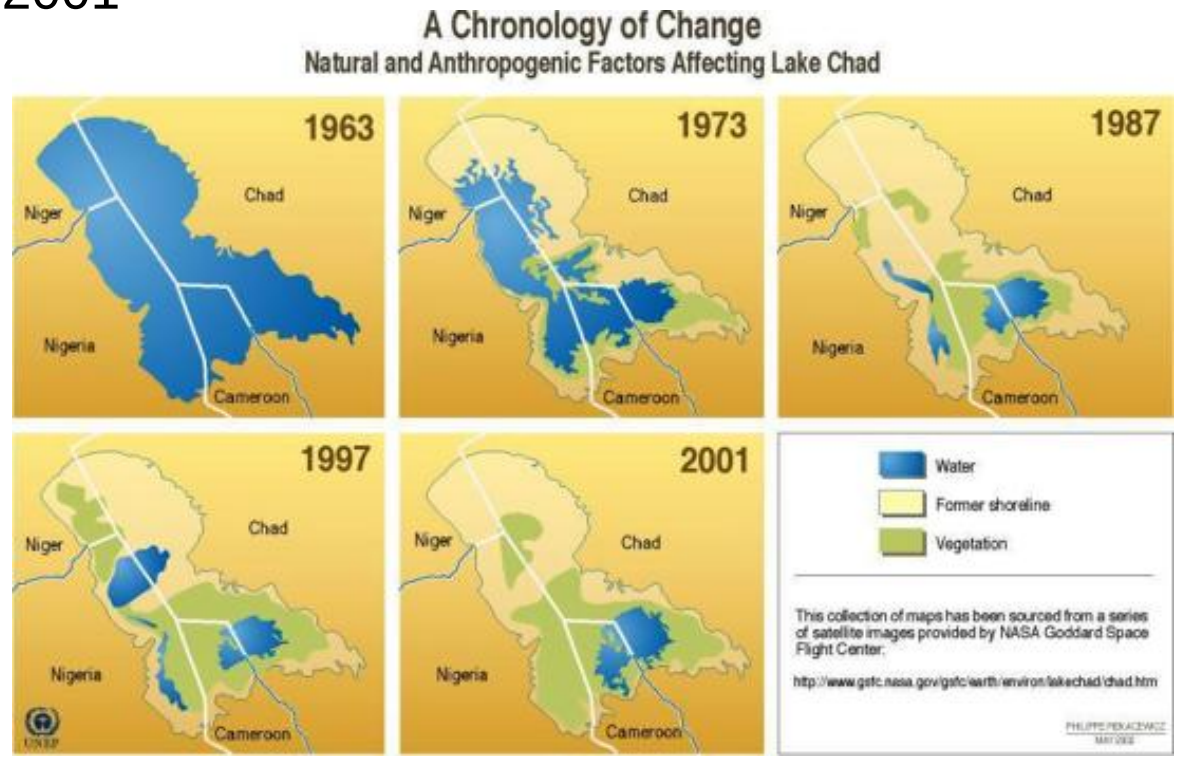
- Once Africa's fourth largest Lake and sixth in the world
- Shrunk from previous 388, 500km2 some 600, 000 years ago to the less than 25, 000 km2
- Formed during the Neolithic Sub pluvial period from 7th millennium BCE, when wet and rainy conditions prevailed in North Africa
- Lake is believed to be a remnant of the ancient sea Mega-Chad that grew and shrunk over a period of 13, 000 years
- What is today known as the Sahara Desert supported luxuriant savanna type ecosystem that was habitat to elephants, giraffe, etc

2. Factors Affecting Lake Chad

- **Natural Factors**
  - Increased variability and irregularity of rainfall during the last four decades
  - Changes in global temperatures and regional rainfall
  - Geographical location of the Lake on the edge of the Sahara Desert
  - Extreme high temperatures in the Sahara
  - High rate of evaporation reaching 2000mm/yr
  - Low rainfall of about 1500mm/yr
  - Drought over the past three decades
  - Climate change exacerbates the drying up

Anthropogenic Factors

- Over utilization of water
- Intensive fishing activity
- Overgrazing of livestock causing desertification
- Diversion of inflowing waters for irrigation
- In absolute terms, 50 % of the decline is attributed to human use of water the rest is attributed to climate
- Map showing satellite images of Lake changes in 1963, 1973, 1987, 1997, 2001



4. **Management Actions**

- The objective of this paper is to assess the management actions being taken to save the Lake and the populations dependent on it
- A number of actions have been initiated at local, national and international levels
- Some actions are on going while some are proposed
- All the actions are aimed at reversing the trend towards extinction of the Lake
  - **Local Level Action**
- *Fadama* farming (Lakebed cultivation)
- Farming of the exposed Lake floor as the water recedes
- Principal crops cultivated include wheat, rice, maize, etc

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4.2 National Level Intervention

- **Lake Chad Basin Development Authority (LCBDA)**
- A national initiative by the Federal Republic of Nigeria
- Aimed at developing and managing the portion of the Lake within Nigeria's territorial boundary
- The LCBDA has not achieved much of its targets
- Authority faced with many constraints including poor funding, political realignment of state boundaries
- Too much politicization of river basin development in the country
- Note: LCBDA is just one out of the 11 river basin development authorities in the country

4.3 Regional Intervention

- **Lake Chad Basin Commission (LCBC)**
- The oldest and most visible institution responsible for managing Lake Chad
- Inter-governmental agency established in 1964 by the four principal basin countries namely: Chad, Nigeria, Niger and Cameroon
- Later on, Central African Republic (CAR) and Sudan were admitted thereby increasing the Conventional Basin area to over 1 million km2
- Main objective is to regulate and control the utilization of water and other resources within the basin
- Also, to deal with conflicts resolution and promote regional cooperation

- LCBC has been relatively active
- It has developed a Master Plan for multi-donor approach for implementing major integrated projects
- The Commission was reformed in 1990 with a reduction of its size and budget to US$1 million
- Budget is contributed by the Member States in the following proportion: Nigeria 52%, Cameroon 20%, Chad 11%, Niger 7%, CAR 4 %
- Member States have constraint in meeting their financial contributions
- This has slowed down project implementation by the Commission
- Outside donor funding is required to save the situation

4.4 Lake Chad Replenishment Project (LCRP)

- An inter-basin water transfer proposal by the LCBC
- The most ambitious intervention proposed so far
- Idea was conceived in 2002
- Aimed at rejuvenating the Lake by transferring water from Oubangui River in CAR, a tributary of the River Congo to the Lake Chad
- Would reverse land and water degradation and regenerate the Lake ecosystem
- Would involve damming the Oubangui River at Palambo in CAR and channeling some 900m3/s of water annually through a navigable canal of about 100-150 km to Lake Chad

- The affected countries have already approved the project
- Implementation requires major international funding
- Sum of US$10.6 sought from the World Bank thru the GEF under the LCBC/GEF project arrangement
- Project would:
- – Facilitate regional transportation through the canal
  - Boost irrigation to between 50, 000 – 70, 000 km2
  - Boost energy supply from the 702mw dam
  - Reduce deforestation
- Sum of US$ 6 million needed for feasibility studies
- Member States of LCBC have contributed US$1million in counterpart funding
- The remaining US$5 million to be contributed by donors
- Urgent need to rally fund to implement the project

4.5 A Ramsar Wetland Management Site

- An intervention at the international level
- The decision to recognize Lake Chad as a Wetland of International Importance was taken in 2000
- Chad, Niger and Nigeria have already designated their portions of the Lake as Ramsar Sites
- Cameroon is in the process of doing the same
- The aim is to reinforce the role of wetland ecosystem for sustainable development
- Also to promote transboundary wetland management
- Sum of US$9.6 approved for the project that commenced in 2003

Conclusion

- There is growing consciousness and concern at local, national and international levels over the fate of Lake Chad
- A number of management actions have been initiated
- The actions are yet to yield appreciable results
- Problem of funding and lack of political hampering project implementation
- Future of the Lake depends on how much of the recovery projects were implemented
- Member States can hardly afford the funding required for these projects
- External donor funding is critical
- Vision is to realize most of the targets by 2025
- If these targets fail, there would be human ecological disaster
- I know that human kind is the same and won’t allow this to happen

Photo One: Farmer Plowing Dry Soil with Oxen, Senegal
(Photo from Africa Focus, University of Wisconsin)

Appreciation

I would like to thank the organizers of the *Riversymposium* for giving me the opportunity to attend and present this report.

Thank you all.