



Smoked fish market (Niger)

## Main recommendations

The expert group's work resulted in a precise diagnostic report that makes it possible to identify various policy options that could stimulate the development of the Lake. The expert group has thus formulated a series of recommendations. Its main recommendations relate to strategic orientations for the LCBC and/or its Member States:

**1. Adopt a new communication strategy for the Lake:** instead of sowing confusion by speaking in terms of a crisis and relying on arguments that lack solid grounds, highlight the Lake's potential to meet food and employment challenges;

**2. Develop a strategic review of various development options for the Lake (and the basin):** a prospective review in the form of a Strategic Environmental Assessment (SEA) concerning the ability to respond to future challenges (food, employment) created by water management in the basin would enable the review of a possible inter-basin transfer to move forward;

**3. Draw up a Lake development plan** built around a vision of Lake development shared by Member States and local populations;

**4. Adapt public policies to the Lake's specific characteristics** (environmental and population mobility, cross-border location) to implement regulations, public service development, developments, and technical support for productive activities;

**5. Prioritize support for family farming** through **pluriactivity** within farms and **multifunctionality** of *terroirs*, as these are the practices that are best suited to making optimal use of natural resources impacted by high variability;

**6. Secure land tenure:** support the clarification of rules governing land access, in order to prevent conflicts linked to the increasing pressure on resources and promote the necessary intensification;

**7. Facilitate the standardisation of regulations** at a regional level in West and Central Africa to promote cross-border trade, particularly with respect to regulations on animal health and agricultural safety, livestock, and fishing products;

**8. Better integrate homeland and cross-border security issues** into the LCBC's functions, particularly when it comes to managing information on natural resources and conflict prevention;

## What is an expert group review ?

### Objective

Ensuring that scientific knowledge are available for decision makers, to inform policymaking and public debate on today's major challenges related to the development of countries of the South.

### Method

- a North-South parity and multidisciplinary college of a dozen experts
- a collegial review of published and grey literature
- a synthesis report made accessible
- conclusions and recommendations for decision makers

### Expert group reviews

are driven by the Expertise Department of IRD

**9. Make the Lake secure from pollution risks:** protect the Lake from current or potential pollution by classifying it as a highly vulnerable environmental area and banning: 1) the use of hazardous plant protective agents, 2) all oil activities, including oil exploration in the Lake;

**10. Develop participatory approaches** to better integrate local populations and civil society organizations into cross-border environmental management and Lake development planning.

The expert group also highlighted the importance of actions related to information and research that contribute to development, with these two specific recommendations:

**11. Reactivate or implement observation systems** to remedy data deficits in a variety of areas: river and lake hydrology, hydrogeology, demography, biodiversity, etc.

**12.** The LCBC could play a major role in accelerating local research and development by implementing a **competitive fund** for research applied to development in partnership with beneficiaries (national technical services, local resident associations, local mayors, customary powers, etc.).

# Expert Group Review

## Development of Lake Chad

### Current Situation and Possible Outcomes

## The expert group

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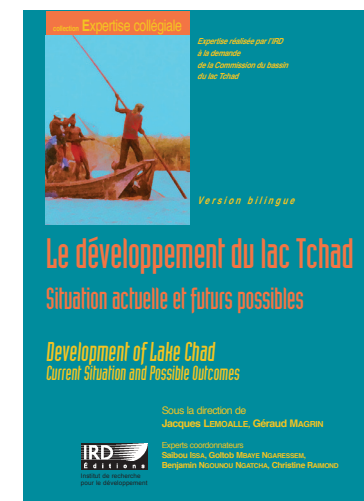
Muhammad WAZIRI (Maiduguri University, Nigeria)

The increased international interest in Lake Chad as a geographical symbol embodies certain nagging worries: is the Lake going to dry up? What consequences would this have for the environment and for the millions of people who depend on it? This expert group review addresses the need to clear up the confusion surrounding Lake Chad, as this misunderstanding is an obstacle to formulating development policies on its behalf.

The group chosen to conduct this expert group review was balanced in terms of origin (North-South parity) and included scientists who specialise in the areas of palaeontology, hydrogeology, hydrology, agro-systems, pastoralism, human geography, and contemporary history. Their work offers insights that shed new light on the Lake's complexity and its transformations.

### A lake with shifting contours

The history of the Lake involves important surface variations at every timescale: from geological to annual to seasonal. During the 1950s and 1960s the Lake went through a wet period during which it was a single body of water measuring 20,000 km<sup>2</sup>. During this period it was known as *Medium Chad*. The *Little Chad* period began in 1973, at which time the Lake had two main basins. During the driest years of this period, the north basin dried out completely; this is known as the *Dry Little Chad* period. From 1991 to 2013, no such episode was recorded. This progressive drying has transformed the Lake from nearly an inland sea into a huge area of marshland. Current climatic models cannot predict whether global warming will increase or a decrease the Lake's water levels.



Expert group review under IRD supervision at the request of the Lake Chad Basin Commission  
To be published in June 2014

### A key regional magnet

The current *Little Chad* environment functions like an oasis within the Sahel, providing ecosystemic services that make it an area of demographic polarization. An influx of populations migrating from the nearby and remote hinterlands to the Lake has impacted the activities and populations of the Lake and its shores, which had a population of more than 2 million people in 2013. The densely populated southern shores

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Fulani herdsmen transhumance near Gredaya (Chad)

(50 to 100 inhabitants per km<sup>2</sup>) contrast with the northern shores, which still have significant potential in terms of land and property. This opposition is due to greater environmental variability in the northern basin and to its isolation, located far from southern markets and served by poor roads. Overall, Lake Chad is one of the rare rural regions in the Sahel to show a positive net migration in recent decades. This can be understood in the context of the ingenious ways in which societies have adapted to this environment, through high annual and interannual mobility and original improvements to systems of production.

### A multifunctional space stimulated by urban demand

The systems of production, perfected endogenously and relying on seasonal flood recession, enable the optimal use of fertile environments for fishing, livestock farming, and agriculture. These systems are based on pluriactivity within families and multifunctionality of spaces (alternately flooding and dewatering the same parcels of land (*terroirs*), thereby allowing fishing, livestock farming, and agricultural activities to take place successively). Until now, the growing human pressure on resources has been regulated by

### Lake Chad in a few figures

Variable	Period	Value
Average annual surface of the Lake	1991-2013	7,000-11,000 km <sup>2</sup>
Maximum surface area of the Lake during flooding	1991-2013	14,800 km <sup>2</sup>
Minimum surface area of the Lake during water recession	1991-2013	3,000 km <sup>2</sup>
Average drawdown-range of the Lake's surface area	2000-2010	5,200 km <sup>2</sup>
Inflows from the Chari to the Lake	2000-2009	21.2 km <sup>3</sup> /year
Withdrawals for irrigation purposes in the Lake watershed	Around 2010	1.8 km <sup>3</sup> /year
Corn production of the Lake and its immediate surroundings	Around 2010	600,000 à 900,000 metric tons/year
Fish production	Around 2010	50,000 à 100,000 metric tons/year
Population of the Lake and its immediate surroundings	2013	2 million inhabitants
Population of the Lake's area of influence (radius of 300 km)	2013	13 million inhabitants
Population growth rate of the Lake and its immediate surroundings	1970-2010	3.2% per year

### Key questions submitted to the expert group

1. Is Lake Chad disappearing?
2. Is population mobility a viable solution to environmental variability?
3. What is the Lake's contribution to regional food security?
4. What forms of governance are suited to Lake Chad?

customary systems, which has prevented serious conflicts from erupting. Strong demand from urban markets, in particular the markets in N'Djamena and Maiduguri –regional cities with populations of around 1 million people each– has stimulated these systems of production. As a result, Lake Chad makes a significant contribution to the food security and the urban food supply of the hinterlands, which extend over a radius of 300 km with an estimated population of 13 million people in 2013.

### Complex governance at the basin scale

Governing Lake Chad involves significant challenges. Since the 1960s, there have been several major conflicts between riparian countries, making the Lake the site of border tensions. Regional cooperation through the Lake Chad Basin Commission (LCBC) has become one of the main tools for managing this cross-border space and the natural resources of the basin, though the organisation has faced considerable difficulties that reflect the crises experienced by its Member States. During the 1970s and 1980s, some of these countries undertook large-scale agricultural projects which ultimately ended in failure, resulting in the relatively low level of public investment in Lake Chad that was seen until recent decades. In late 2010, in a context favourable to climatic and economic planning, the renewal of public agricultural policies in response to growing food demand showed that progress had been made with respect to managing natural resources at the regional level. The Water Charter that was adopted in 2012 under the auspices of the LCBC has the potential to make a further contribution to this effort. Additionally, the inter-basin transfer from Ubangi to Lake Chad is a major project that is receiving considerable attention. A study has

### Ideating possible outcomes for the future of Lake Chad

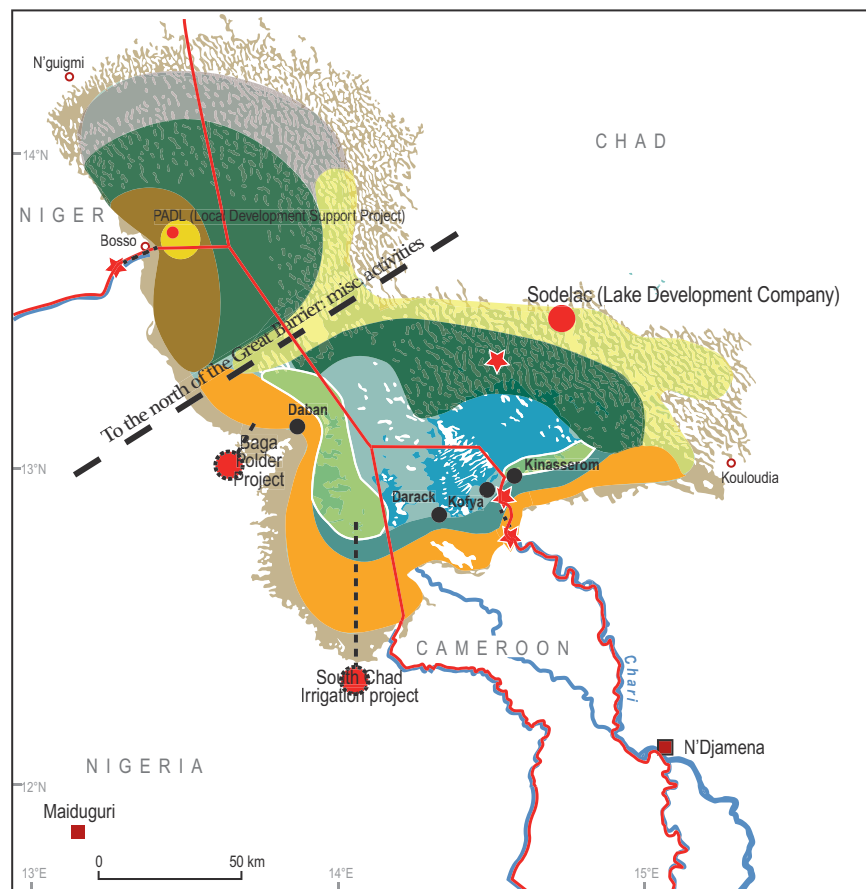
More precise knowledge is needed to build a shared vision of the Lake's future and adopt a strategy that meets future challenges for sustainable development. This strategy entails making simultaneous progress in the areas of economic growth, environmental sustainability, and social equity. In the Lake Chad basin, these specific issues result in two core challenges: feeding rapidly growing local and regional populations and providing employment opportunities to the large youth population, as the path to development through rentier urbanisation provides no future for this segment of the population. Lake Chad has the potential to contribute to this strategy.

concluded that the project is technically feasible, though the costs will be high. However, the persisting vagueness of certain aspects of the reasoning behind the transfer is contributing to uncertainty about Lake Chad's future.

### Lake Chad today: an oasis with an uncertain future

Lake Chad's current prosperity depends on a delicate balance between societies and environments. Public policies should take this into account in order to build on achievements and remove major limitations without neglecting the expertise and endogenous innovations that local populations have developed in this unique environment. Thanks to its natural and human potential, the Lake could make a significant contribution to regional food security and employment. At the Lake Chad basin scale, the progress made in terms of development is helping to alleviate human pressure on the Lake's natural resources, but the demographic densification taking place on its shores is likely to exacerbate tensions.

### Lake Chad multifunctional spaces



#### Fishing predominant

- Fishing important from January to June
- Landlocked, scarcely visited area
- Temporary fishing stations (source of fresh fish) and seasonal concentration of herds

#### Flood recession agriculture predominant, transhumant stock breeding

- Isolated traditional land use
- High seasonal migration

#### Agricultural land use integrated into the multi-user systems

- (1) Functional (2) Non-functional
- Modern agricultural land use
- Small-scale irrigation

#### Predominant transhumant stock breeding together with:

- Considerable fishing and flood recession agriculture
- Unpredictable rainfed, Wadi, and flood recession agriculture, logging
- Rainfed agriculture, local logging

#### Other systems

- Agriculture or fishing depending on flooding, considerable temporary migration, transhumant stock breeding
- Buduma multi-activity and transhumant stock breeding, logging
- Large fishing centre
- Conflict over the resource

Source: Raimond et Rangé, 2014. Atlas du Lac Tchad.

Export of goods to Nigeria (Doro Lelewa port, Niger)

