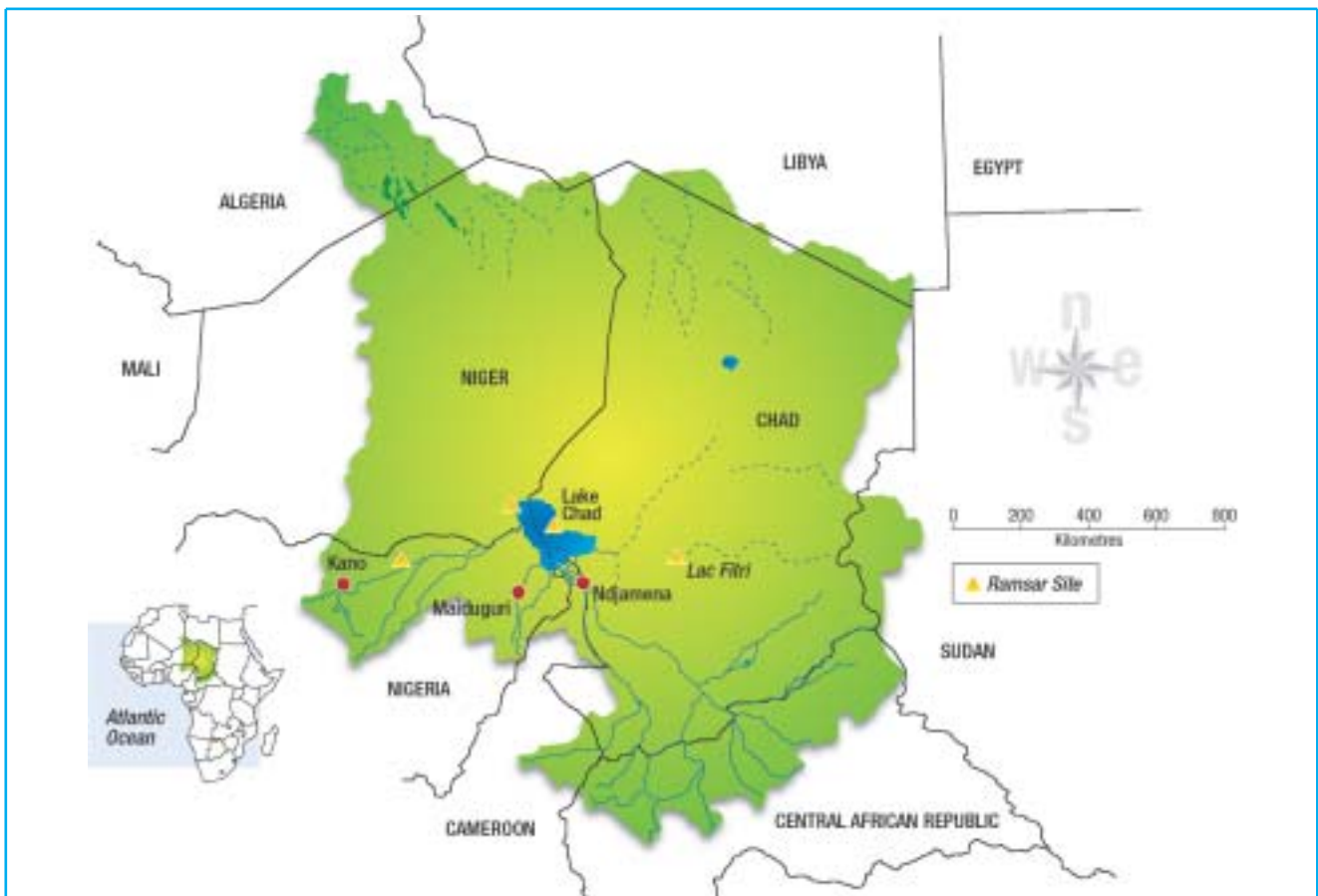


Lake Chad



Basin countries

Algeria, Cameroon, Central African Republic, Chad, Libya, Niger, Nigeria, and Sudan

Member states of the Lake Chad Basin Commission: Cameroon, Central African Republic, Chad, Niger, and Nigeria

Summary of basin characteristics

As big as the Caspian Sea as recently as 8,500 years ago, Lake Chad is now Africa's fourth largest lake, with a maximum extent of 25,000km². One of three major wetlands located within the Sudano-Sahelian zone (the others being

the Niger River Inner Delta in Mali, and the Sudd Swamps in Sudan), Lake Chad is rather shallow and has been particularly susceptible to the increasing variability and irregularity of rainfall during the last 40 years. It has fluctuated greatly during this period, shrinking by up to 80 per cent in 1985, but reaching 19,000km² once more in 2001.

The River Chari – along with its tributary, the Logone – provides 90 per cent of the inflow to the lake, while the remaining 10 per cent comes from the Komadougou-Yobe River system. Three-quarters of the water entering the lake north of N'djamena originate from headwaters in the Central African Republic and, to a lesser extent, Cameroon.

Socio-economic importance

The Lake Chad basin supports more than 20 million people. The local economy in the upper part of the catchment is based on fishing, agriculture and pastoralism. However, people living around the lake lack access to safe drinking water and proper sanitation.

More than 150,000 fishermen live on the lake's shores and its islands. Many of them originate from well beyond the riparian region, sometimes from as far as Ghana. The current estimate of annual fish production from the lake is 60,000 to 70,000 tonnes. However, as a result of environmental changes since the 1970s, including fluctuations in lake level, there have been considerable changes in the fish fauna. These include high mortality, the disappearance of some open-water species, and the appearance of species adapted to swamp conditions in areas where they were previously unknown.

The raising of cattle, sheep and camels – by local as well as nomadic herders – is also economically important, together with cultivation of some traditional crops. The most common system is lake-bottom cropping or receding moisture cultivation, which has been a response to the contraction of Lake Chad. Villagers have shifted from relying entirely on fishing, to farming the emergent lake floor as flood water recedes.

A few large-scale irrigation schemes (polders) developed on some parts of the lake shore have proven totally unsuited to the hydrological, climatic and cultural conditions in the Lake Chad region, and can be considered as complete failures.

Though still quite marginal, the production of spiruline (blue algae) seems to be gaining economic importance.

In addition to direct support for livelihoods, the lake also plays an important socio-economic role in regulating annual water supply, recharging groundwater, and helping to control flooding.

However, the precise linkages between environmental and socio-economic systems and their transboundary impacts are still to be determined; for

instance, the important role of groundwater in the basin. The forthcoming GEF project, supported by UNDP and the World Bank, will enable a better understanding of transboundary issues relating to groundwater and will help in deciding the best options for management.

Biodiversity values

Over 100 species of fish have been recorded from the upper Chari system, while over 120 species are known from the lake itself and the lower reaches of the Chari River. Both the lake and the Chari floodplains support a rich terrestrial and aquatic fauna. The region is also notable for the Kuri ox, a domesticated breed of *Bos taurus longifrons* at risk of extinction.

Lake Chad is on a major migration route for birds moving between Africa and the Palearctic. At least 70 species of bird make stopovers each year, especially Pintail *Anas acuta* (about half a million), Garganey *Anas querquedula* (about 400,000) and Ruff *Philomachus pugnax* (about 130,000). Although these numbers are much lower than those reported in the 1960s, they are still significant and qualify the lake for inclusion in the Ramsar List of Wetlands of International Importance. Lake Chad has also been identified as a globally significant Important Bird Area (IBA) according to the criteria developed by BirdLife International.

Other important wildlife in the basin include sitatunga *Tragelaphus spekii*, African elephant *Loxodonta africana*, hippopotamus *Hippopotamus amphibius* and crocodile *Crocodylus* sp.

Priority issues for river basin management

In addition to high climatic irregularity and occasionally extreme droughts in the region, unsustainable management of natural resources, population increases throughout the Lake Chad region and desertification are among the biggest challenges facing the basin's human population. Measures to promote ecosystem integrity and ecological functioning of the basin are required urgently.

One outmoded but regularly occurring proposal – which is highly questionable on both environmental and socio-economic grounds – is the artificial diversion of more water to Lake Chad. This proposal is driven by the same engineering, infrastructure-ori-

ented vision that has failed to deliver sustainable solutions in other parts of the world. The scheme envisages diverting water from the Oubangui River north to the Chari River by constructing a huge canal. This could have a serious impact on biodiversity, since species occurring in the ‘donor’ system might threaten the continued existence of species that are endemic to the Chari River.

Other threats include the spread of invasive alien grasses, which have formed a dense mat covering half of the lake, impeding the transport of goods that sustain the region’s economy. In addition, unsustainable water management, including dyke building and a lack of proper irrigation systems, has resulted in an accumulation of salt in the soil.

The signing of the Lake Chad Basin Commission (LCBC) Convention, as far back as 1964, was already a clear sign of the riparian countries’ willingness to address issues relating to sustainable management of the lake and its catchment area. While other international environmental agreements have been signed by all five member countries, few of these have been backed by relevant national legislation to make their implementation effective. However, as described below, great strides have been made recently under the Ramsar Convention on Wetlands. As of July 2003, three countries (Chad, Niger, Nigeria) are Contracting Parties, while Cameroon and Central African Republic are expected to join in the near future.

Role of WWF and its partners

WWF is working to promote management planning at the Lake Chad basin scale with several regional and global partners: the LCBC and its five member states, the Ramsar Convention secretariat (Ramsar Bureau), the Global Environment Facility (GEF, through the World Bank and UNDP), and NGOs including the Nigerian Conservation Foundation and IUCN–The World Conservation Union.

In this context, large-scale designations of new Wetlands of International Importance (Ramsar Sites) have been initiated since 1999. This has been achieved with support from WWF in all five LCBC member states, as well as in two of the three countries which, although they share the Lake Chad hydrological basin, are not yet members of the Commission, namely Algeria and Sudan.

Improving the management and sustainable use of Lake Chad and its basin is the goal of a GEF project entitled ‘Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem’. GEF (World Bank and UNDP) and LCBC have been jointly leading the development of this project, with support from both the Ramsar Bureau and WWF.

WWF’s own role has been primarily that of a catalyst, bringing together governments, NGOs and the Ramsar Bureau. This was partly enabled by provision of ‘seed money’ to support Ramsar Site designations. All of the key steps described in the ‘Chronology’ below have been achieved with continuous involvement, encouragement and technical support from WWF.

Conservation method demonstrated

The use of the Ramsar Convention to stimulate unprecedented whole-of-basin management and protected area establishment for Lake Chad, Africa’s first transboundary Ramsar Site, has contributed to:

- increased understanding among neighbouring countries that a shared commitment to managing the lake basin sustainably can improve long-term access to water, food, and other natural resources
- channelling GEF funding into pilot projects and management plans in the Lake Chad region
- enhancing cooperation among villagers and whole communities to establish laws and programmes for conserving the lake
- laying the groundwork for the role of the LCBC as a local management body to govern shared resources, promote dialogue among countries, and avoid unnecessary conflicts
- providing tools essential to raising awareness of wetland values (e.g. brochures, maps, posters, web services and web-based outreach programmes).

Resources devoted

Over US\$155,000 has been devoted by WWF since 1999 to support large-scale designation of new Ramsar Sites in all five LCBC member States; most are located within the Lake Chad basin. WWF’s investment has been formally recognized as co-funding for the GEF project.



Domestic animals grazing the shore of Lake Chad in the Chad Basin National Park, Nigeria. WWF-Canon / Meg Gawler

Chronology

2000

- June: WWF and Ramsar participate in a GEF Regional Workshop for preliminary shortlisting of potential pilot sites. WWF produces a short television film on Lake Chad, promoting its designation as a 'Wetland of International Importance' under the Ramsar Convention.
- July: LCBC Heads of State Summit formally decides that the whole of Lake Chad must be designated as a transboundary Ramsar Site.

2001

- March: WWF and the Ramsar Bureau participate in the 2nd LCBC/GEF Regional Workshop, where six GEF pilot projects, coinciding exactly with existing or planned Ramsar Sites, are selected by LCBC member states.
- June: Niger, with WWF support, designates its part of Lake Chad as a Ramsar Site.

2002

- January: Chad designates its portion of Lake Chad as a Ramsar Site, also with WWF support.

- September: joint LCBC/WWF/Ramsar presentation on cooperation within the Lake Chad basin at GEF's International Waters Conference in China. The conference chairman highlights the Lake Chad basin partnership as a model approach, and the project generates considerable interest among GEF Task Managers involved in other international lake/river basins.
- November: signing of a Memorandum of Cooperation between the Ramsar Bureau and LCBC, covering four principal areas of activity:
 - The wise use of all wetlands in the basin: the partners will seek to involve all stakeholders in institutional cooperation and to strengthen the role of wetland ecosystems in sustainable development
 - Mobilization of funding: the partners will work to ensure that projects focus on the combined importance of wetlands for biodiversity conservation and poverty reduction
 - Designation and management of Ramsar Sites: the partners will explore possibilities for a coherent national and regional network of Ramsar Sites at the basin level as the basis for the sustainable management of wetlands

- International cooperation and transboundary management: the partners will promote transboundary wetland management at all levels, particularly with the assistance of international donors.

2003

- January: approval by GEF Council, and endorsement by World Bank, of the GEF/LCBC project. Total budget is US\$9.6 million, of which about 25 per cent is reserved for implementation of the six pilot projects – all of them related to improving the management of designated (or to be designated) Ramsar Sites, most with direct support from WWF.
- June: LCBC and WWF make the first public presentation concerning possible establishment of a ‘ChadWet’ initiative, during a meeting organized by the Ramsar Bureau and its Mediterranean Coordination Unit. This would aim to emulate, for the Lake Chad basin, the success of the ‘MedWet’ initiative in the Mediterranean basin (see www.medwet.org).
- Ongoing: WWF continues to support preparations for Ramsar Site designations covering the Nigerian and Cameroonian sectors of Lake Chad, as well as several other major wetlands throughout the Lake Chad basin.

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Lessons learnt

- 1. Independent organizations, such as WWF, can play a unique role as a catalyst, facilitator, technical adviser and ‘honest broker’**
- 2. Relatively small financial investments can generate significant conservation results**
- 3. Transboundary protected area designations can help to ‘unlock’ international financial cooperation**
- 4. Intergovernmental treaties, such as the Ramsar Convention, and river basin organizations, such as the Lake Chad Basin Commission, can provide the basic institutional framework required for effective transboundary cooperation. However, the mere existence of agreements and institutions is not sufficient for securing success**
- 5. It is essential to invest time in carefully building up relationships of trust with key stakeholders, demonstrating that external partners such as WWF are serious about their commitment to a given basin**
- 6. Long-term investment – especially of time, regular personal contacts and mutual visits – is required in order to make a real difference**