A shrinking African lake, which still covered 26 000 km² in the 1960s (almost the size of Belgium), and now threatens to disappear in the near future, appeals to the imagination. The international attention mounts whenever the level of Lake Chad dips, but no such outcry is heard when the water level rises again in subsequent years. Consequently, the general public is convinced that Lake Chad is shrinking in size – in fact dying – and for one obvious reason: climate change. The fact is that Lake Chad has always shown large variations in size and the clear decrease in the 1970s and 1980s was partly due to irrigation along the rivers responsible for filling it. For the local people living along the border of Lake Chad the seasonal and annual variation in water level is part of life, but this elusive phenomenon appears to be difficult to accept by national and international decision makers. Lake Chad must be tamed, with predictable variations in water level, enabling large irrigation schemes along the borders of the lake. They should know better. Long-existing irrigation projects in Nigeria and Chad were destroyed by high water in the wet 1950s, while large irrigation schemes built in the wet 1960s could not be used in the many dry years since then. The ambitious South Chad Irrigation Project (with a planned 670 km² of land irrigated) used a supply canal originally extending 24 km into the lake, but during the dry mid-1980s the water’s edge was up to 70 km away from the inlet. Local farmers and fishermen followed suit in the 1980s, as they, and their ancestors, had done during previous droughts. But times are changing.
Lake Chad Basin in North-Central Africa can be considered as a cuvette between the Niger and Nile valleys (Fig. 20), on the bottom of which lies Lake Chad. About 7000 years ago, when the Sahara was still grassland (the ‘Mega-Chad’ period), its shoreline was several hundred km further inland (Leblanc et al. 2006, Kröpelin et al. 2008). For thousands of years the basin has been predominantly desert, transitioning into Sahelian grasslands and wooded savanna in the south. These arid lands sharply contrast to the basin’s oases of life: the wetlands. In addition to Lake Chad, Lake Fitri and Lake Iro also contain water throughout the year. The basin holds extensive floodplains: the Hadeija-Nguru floodplains in northern Nigeria (300 km west of Lake Chad; see chapter 8), the extensive floodplains along the Chari and Logone Rivers in Cameroon, Chad and the Central African Republic, and the borderlines of the three lakes cited above. These floodplains generally dry up in December – January, offering the perfect wintering site for migratory birds. In addition, there are many small and isolated ephemeral wetlands formed by rainfall and local run-off, especially in the transition zone of Sahel and Sudan savanna. For a few weeks or months, especially after the rainy season from August till October, they contain water and vegetation, allowing both livestock and wildlife good foraging and water supply when the other wetlands are inundated. The various wetlands complement each other in the timing of flooding and drying up, the key to survival of the basin’s inhabitants, including birds.

Lake Chad

Hydrology Lake Chad is a closed lake, with a single surface outlet under exceptionally wet circumstances into the northeast, the lowest part of the basin, the old ‘Mega Chad’. By the time of the first rains in June, the water level in Lake Chad starts to rise 5-6 cm per month, owing to variation in local rainfall between 9.4 and 56.5 cm per year (Vuillaume 1981) and an increasing inflow of the Chari and Logone Rivers (Fig. 86). In a dry year, with low riverine input, the water level in the lake already reaches its peak in November, but, if the inflow is large, the water continues to rise until January or even February. When, after the rainy season, the river discharges largely cease, the level of the lake drops gradually by up to 6-7 cm per month in April-May. The water level varies seasonally by around 90 cm, in some years by even more than 150 cm.

In a wet year the annual inflow exceeds the annual evaporation,