

# LAKE BALKHASH — THE NEXT ARAL?

*Kazakhstan's Lake Balkhash is under threat of drying up. The history of the Aral Sea is being repeated: on the other side of the border in China, dam after dam is being built on the rivers that feed Lake Balkhash, and each one takes more and more water*

Waves rebound off the hot concrete of the sea wall. Fishing cutters bob up and down on the water. At midday, the harbour of Kuigana is deserted but for two sunburnt teenagers splashing about in the water.

Kuigan is a village of 1,800 people at the south-western end of Lake Balkhash in eastern Kazakhstan, on the delta of the Ili River, the lake's biggest inflowing river. The village is crisscrossed by canals, overgrown with reeds. Every house has a boat: the village lives on the fishing trade.

## FOR FISHERMEN, BALKHASH IS AN OCEAN

Kuigan's four fishing cooperatives employ about 200 fishermen between them. Oleg is one of them. A tall man with piercing blue eyes set in a weather-beaten face, for him Balkhash is not just a lake. "We call it 'the ocean,' he says. "Storms here are the real thing, very dangerous."

Since the virtual disappearance of the Aral Sea, Lake Balkhash – a 600-kilometre slash in the Kazakh steppe – has become the largest lake in Kazakhstan. The bed of the Aral, once the fourth largest lake in the world, is now more than two-thirds desert. Today, the threat of a similar fate hangs over Lake Balkhash.



Photo: Edda Schlager

Between 1972 and 2001 Lake Balkhash shrank by 150 square kilometres – losing an area about the size of Potsdam. According to experts at the Kazakhstan Institute of Geography in Almaty, water levels fell by two metres in the decade between 1988 and 1998 alone.

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*Lake Balkhash lies in the steppes in eastern Kazakhstan*

## DECADES OF WATER WASTING

One reason for the looming disaster is several decades of siphoning water off for irrigation. So much water has been diverted that several of the rivers that used to feed the lake now no longer reach it, petering out in the surrounding steppe and desert. It was just such long-term degradation that eventually caused the rivers that fed the Aral Sea to dry up. Irrigation is crucial for cotton cultivation, one of the most important economic sectors in Central Asia – but about 50 percent of the water diverted into primitive irrigation canals is lost to evaporation and leakage.

Oleg, the fisherman from Kuigan, finds it impossible to imagine that Lake Balkhash itself could dry up. “No, that’s impossible – you can see for yourself how much water there is in the rivers this year!” he says.

It is true that water levels in Lake Balkhash, which had reached their lowest levels at the beginning of the turn of the century, have slowly started to rise again in the past decade. The glaciers in the Tian Shan Mountains, where the Ili River begins, are melting rapidly under the influence of global climate change, and fish are once again spawning again in the rivers and Lake Balkhash itself. All this has led many journalists and politicians to the erroneous and short-sighted conclusion that the danger has passed.

## CHINA IS THIRSTY

Another factor is Kazakhstan's giant eastern neighbour. The Ili River, which accounts for up to 80 percent of the water flowing into Lake Balkhash, begins on the border with China's Xinjiang Uighur Autonomous Region, where the Chinese are building numerous dams.

Jakup Dostai, a hydrologist at the Kazakhstan Institute of Geography, watches this anxiously. “The Chinese are beginning economic development in the west of the country. There are oil and gas reserves there, but there's a shortage of water,” he says. About 30 dams and reservoirs are planned on 12 large rivers in Xinjiang, including the Ili. “When these plans are realized, the flow of water from China to Kazakhstan will fall by two thirds,” says Dostai.

## IN THE LONG TERM WATER LEVELS ON BALKHASH WILL FALL

For Lake Balkhash, such a course of events would be a death sentence. The lake is shallow – no more than 10 metres at its deepest point. “So even now, the lake is divided into two parts: the fresh and the salty,” explains Dostai. “And since water quickly evaporates in a dry climate, the lake is extremely sensitive to any reduction in the inflow of water.”

The shallower the lake becomes, the faster its water evaporates. The less water flows into Lake Balkhash, the faster the surface area of the lake shrinks. That in turn threatens the broad reed beds that line the shore and serve as a refuge for numerous species of birds and animals, and with time will push the two million people who live in the Balkhash Basin and depend on fishing and agriculture to the brink of starvation.

Dostai and his colleagues estimate that the optimal level of water in Balkhash is 341 metres above sea level. In early 2012 the water was at 267 metres above sea level. If the water level falls below 230 metres, Balkhash, like the Aral, may fragment into several separate, smaller lakes.

## FIELDS TWICE THE SIZE OF AN AIRPORT

Profligate use of water resources in Kazakhstan itself also contributes to the threat. Creeping sands have already reached the outskirts of Bakbarty, a settlement 150 kilometres from Kuigan. Only 70 metres now separate the dunes from the first houses, but the villages continue to raise rice in the surrounding land. And rice, of course, requires artificial irrigation.

Akylbek Botbayev is a foreman at a collective farm that raises rice on 1,000 hectares (about twice the size of Berlin’s Tegel airport). In Bolbayev’s words, “rice is a very sensitive crop, and you have to maintain an exact level of water in all the fields. It’s a real art.” As he proudly shows us around his lush green fields, he explains how water levels are regulated with the simple opening and closing of manually operated locks on the canals. “And no pumps; the water is guided only by gravity.”



Water for irrigating both the rice fields and the crops the collective raises on another 2,000 hectares is diverted from the main channel of the Ili River two kilometres away. For much of their course the walls of the open irrigation ditches are not concreted, however, so a significant portion of water simply seeps into the ground before it reaches the fields. “The water there is enough,” says Boybayev reassuringly.

## BALKHASH, COPPER, ZINC AND LEAD

There is one more factor that makes Lake Balkhash like the Aral. For decades, the waters of the Amu Darya and the Syr Darya carried fertilizer, pesticides, and insecticides out from irrigated cotton fields downstream and into the Aral. This deadly mixture was held for years at the bottom the sea: now its bed is exposed, the pollution is carried by dust storms across the region.

Photo: Edda Schlager

## POLITICIANS FEAR CRITICIZING CHINA

Despite the social and economic significance of the problem, Kazakhstan and China are still a long way from reaching agreement on Lake Balkhash’s inflowing rivers. In 2001, the two countries set up a joint Kazakh-Chinese commission on questions of use of trans-border water resources, but the bilateral agreement that came with it is non-binding, being only a declaration of intention. “We need a clear agreement defining how much water each country has a right to divert from each river,” says Dostai.

Kazakh Deputy Agriculture Minister Marat Tolibayev says the Chinese have agreed to joint regulation of the water issue “on the principles of justice and dependent on the size of the population in the river basins.” However, as Tolibayev notes, “if we carve up water resources like that, someone has to lose.”

Kazakh politicians tend to refrain from criticizing China, and such reticence is understandable: China is Kazakhstan’s most important foreign partner, and has plunged billions of dollars of investment into the Kazakh economy. Thus the Chinese shy away from talks, while continuing to develop their western regions without regard to the fate of Lake Balkhash.

*Edda Schlager, Almaty, Kazakhstan*

*“We call it ‘the ocean’” says Oleg Schuhmacher about Lake Balkhash. “Storms here are the real thing, very dangerous”*

Experts from Kazgidromet, Kazakhstan’s hydro-meteorological service, believe the level of pollution in Lake Balkhash is constantly increasing. In the eastern, shallower end of the lake concentrations of copper, zinc, lead, arsenic and sulphates have doubled in the past two years alone. Scientists believe that deposits of heavy metals on the bed of the lake by now amount to hundreds of tons.

One of the biggest culprits is effluent from the Kazakhmys corporation’s copper smelting combine in the town of Balkhash on the lake’s northern shore.