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DEUTSCHE ZUSAMMENARBEIT

FACTSHEET

Lake Kivu and Ruzizi/Rusizi River Basin

The study area encompasses the cross-border catchment area of Lake Kivu and the Ruzizi/Rusizi River up to its mouth at Lake Tanganyika. It covers a total surface area of 13 449 km², including 2 412 km² for Lake Kivu. Lake Kivu is a volcanic dam lake at an average altitude of 1 462 m, with a maximum depth of 485 m. The Ruzizi/Rusizi River flows southwards from Lake Kivu for 168 km across the Ruzizi/Rusizi plain to Lake Tanganyika.

The area has a tropical climate (temperature 14.7–23°C), with a long and a short dry season, and a long and a short rainy season (1 020–1 830 mm rainfall/year). All climate change scenarios modelled to date forecast a slight increase in annual rainfall, and an increase in hot days and nights.

The population of the basin is predicted to rise from 11 million inhabitants in 2020 to 27.5 million inhabitants in 2050, an increase of 150%.

In 2016, the catchment area comprised 45% agricultural land, 30% forest, 20% grassland, 3% shrubland and 1% urban area. Over the past 25 years, the area dedicated to agriculture has increased by 29% whereas grassland and forest areas have decreased by 2 500 km² and 530 km², respectively.

ABAKIR

On 4 November 2014, Burundi, the Democratic Republic of the Congo (DRC) and Rwanda signed an international convention establishing ABAKIR as a transitory body. However, they have not yet ratified the convention. ABAKIR's mission is to promote economic, industrial and social development in each country. The transitory body's mandate is to undertake preliminary actions to support ratification of the convention and the establishment of a permanent ABAKIR that **promotes regional stability and good governance.**

Location of Lake Kivu and Ruzizi/Rusizi River Basin

Water resources and water use

Lake Kivu contains about 560 billion m³ of water, 300 billion m³ of dissolved carbon dioxide and 60 billion m³ of dissolved methane. Along its course, the Ruzizi/Rusizi River falls in elevation from 1 450 m to 770 m, offering the potential to generate more than 500 MW of **hydroelectric power** (around 80 MW are currently exploited). Rwanda is extracting **methane** from Lake Kivu to use for power generation and distribution in its national grid (currently 76 MW). **Groundwater** is exploited from 550 natural springs in Burundi and Rwanda, largely for **drinking water** in rural areas.

Agriculture in the area is mainly rain-fed subsistence farming, but irrigated agriculture occurs on the Ruzizi/Rusizi plain in Burundi and DRC. Functional agricultural areas cover 12 500 ha of the plain; however, the potential area for **irrigated agriculture** is 125 713 ha.

Fish production has increased to over 6 000 t/year (1999) and up to 14 000 people in Rwanda and DRC work in the fishing sector. **Other economic activities** in the basin include food processing, mining, various building industries, tourism and navigation.

Lake Kivu is a **volcanic dam lake** at an average **altitude of 1 462 m**, with a maximum **depth of 485 m**.

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Floods and **droughts** will become **more frequent** due to **climate change**.

The water balance of the Lake Kivu and Ruzizi/Rusizi River Basin presents an annual net non-consumed volume of 6.4 billion m^3.

Threats to the basin

Natural hazards

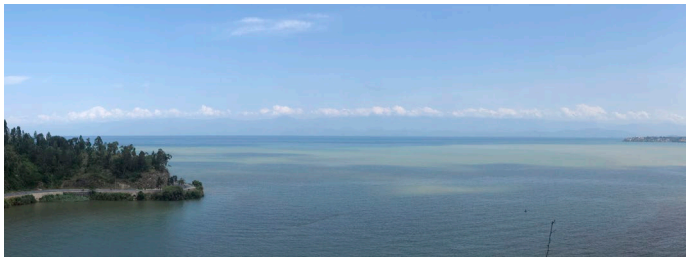
The primary natural hazards are volcanic eruptions, earthquakes, gas explosions, floods and landslides. Volcanic eruptions displace inhabitants and could cause the deep waters of Lake Kivu to **release asphyxiating gas**, threatening the safety of millions of people. Additionally, the steep slopes of the basin are increasingly prone to **landslides**. Floods and droughts will become more frequent due to climate change.

Soil degradation

Overexploitation of soils leads to soil degradation that, in turn, leads to declining soil productivity, landslides and decreased water quality. **Erosion** is the greatest challenge to the basin's water quality, and **annual soil losses in different parts of the basin are estimated to range from 91–290 t/ha/year** (average 100 t/ha/year across the basin as a whole), resulting in widespread turbidity in watercourses.

Human threats

Water quality is also threatened by **pollution** linked to urbanisation, industrialisation and agriculture. The construction of dams leads to hydro-ecological discontinuity, affecting biodiversity by inhibiting fish migration. The expansion of urban areas in mountainous areas substantially increases the risk of landslides and soil erosion.



Ecosystem services

The basin offers various ecosystem services, including:

Aquatic ecosystems	• Drinking water • Food (mainly fish) • Hydropower • Methane gas
Land and forest ecosystems	• Wood (for fuel) • Food (agriculture) • Landslide prevention • Climate regulation: barrier to winds, carbon sink • Culture and tourism: e.g. National Parks • Soil (humus) formation (forests) • Soil restoration measures (e.g. progressive or radical terraces, agroforestry)

A lack of incentives and funding for conservation in river basins ultimately leads to degradation of natural ecosystems. Payment for Ecosystem Services offers a mechanism to reverse this dynamic, with those who guarantee the functioning of ecosystem services being compensated by users of those services. This increases the likelihood that critical ecosystems will be maintained and protected.

Legal and regulatory frameworks

Rwanda, DRC and Burundi have established legal and regulatory frameworks governing the use and protection of water and environmental resources, and have ratified numerous international conventions. Currently, however, these are not fully implemented, financed or enforced across the basin. To increase sustainable management of water and related resources in the basin, the three countries must continue to pursue:

- harmonisation of policies and regulations across the basin
- strengthening and optimisation of existing hydrometeorological monitoring networks
- institutional reinforcement of ABAKIR
- reduction of pressure on the environment
- introduction of natural risk management measures.

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