



Strengthening Legal, Regulatory, and Policy Frameworks for Transboundary Water Resources Management in the Lake Kivu and Ruzizi River Basin

FINAL REPORT

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1 Executive Summary

The Lake Kivu and Rusizi/Ruzizi River Basin is of great importance for its riparian populations and countries – Burundi, the Democratic Republic of Congo (DRC) and Rwanda. The water resources of the basin provide drinking water to people, help irrigate fields and thus support food security, generate electricity in a region suffering from energy shortages and outages, supply industries, facilitate navigation and thus exchange and trade, and provide important ecosystem services. The basin is, however, also facing extreme pressures stemming from the over-exploitation of resources, unsustainable economic development and climate change. Given the transboundary nature of the Lake Kivu and the Rusizi/Ruzizi River, identifying and implementing solutions to such challenges will require cooperation between the riparian states.

Acknowledging this transboundary cooperation need, the riparian countries have created, in 2014, the *Autorité du Bassin du Lac Kivu et de la Rivière Rusizi/Ruzizi (ABAKIR)*. ABAKIR is, however, struggling with various challenges, ranging from the persistent non-ratification of the 2014 *Convention internationale relative à la gestion intégrée des ressources en eau du bassin versant du Lac Kivu et de la Rivière Rusizi/Ruzizi (2014 Convention)*, which deprives the basin organization of its legal basis, to shortages in staff, and from financial constraints to an insufficiently clear vision how to address which transboundary challenges and in which way.

This report analyses the legal and political context in which ABAKIR operates – from the global to the regional and the national level – and develops recommendations for ABAKIR and its member states on how to advance transboundary water cooperation. Key recommendations concern

- 1) The embeddedness of ABAKIR and the ABAKIR cooperation process in the broader regional environment,
- 2) The legal basis for cooperation – with regards to the 2014 Convention as well as the legal and policy framework at the national level, and
- 3) The institutional setting of ABAKIR and its functioning in advancing cooperation on key issues in the basin.

As ABAKIR exists and functions within a broader regional setting, ABAKIR and its member states need to consider the relationships with other regional organizations. This concerns, on the one hand, regional economic and political integration organizations – with CEPGL playing an important role as a host for ABAKIR's offices, and on the other hand regional basin organizations, namely CICOS and LTA. Sharing the same hydrological basis, relations between ABAKIR and LTA and CICOS should be strengthened. In particular with LTA, strong coordination is required in order to ensure integrated basin management.

Concerning the legal framework of ABAKIR, the report suggests, first and foremost, to ensure the speedy ratification of the 2014 Convention in order to provide ABAKIR with a sound legal basis for cooperation. This would also allow the organization to rely on clearly defined rules and procedures for its work, including, for instance, clearly defined tasks for which funding is made available on a regular and consistent basis by member states.

With regards to implementing the legal framework of cooperation, the report recommends that member countries of ABAKIR jointly address the various challenges that the basin and its population, but also the institutionalized cooperation process itself face along these 3 dimensions. This requires, first and foremost, a prioritization of which topical matters and which cooperation challenges to address first. Water quality, hydropower generation and

cascade management, navigation, as well as methane gas and oil exploration are certainly high on this priority list, to be incorporated into an integrated basin management approach.

This might also require adding legal or political instruments to the existing – yet still not ratified – legal framework of cooperation. In addition to urgently ratifying the 2014 Convention, member countries should consider adding issue-specific protocols, procedural rules and related guidelines and policy documents that allow them to define rights and obligations of riparian states (e.g. in relation to fisheries), specific standards (e.g. on water quality and specific pollutants) as well as specific procedural responsibilities (e.g. on prior notification and consultation) in more detail.

Concerning the functioning of ABAKIR, it is important to verify that ABAKIR's institutional set-up is suited for its mandate and tasks and that within this setting technical, human and financial capacities are ensured. Additional staff needs to be hired that can perform specific technical tasks required for effective basin management. In order to do so, financial resources need to be made available, first and foremost by the member states themselves through contributions to the organization's core costs, to which they have committed themselves. Additional external funding, e.g. from international development banks and donor organizations, can then support specific basin management activities, managed by an effective ABAKIR.

Overall, it is important that member states of ABAKIR now move cooperation ahead and allow ABAKIR to play its key role in basin management foreseen by the countries when adopting the 2014 Convention. This requires continued and strengthened commitment by all member states.

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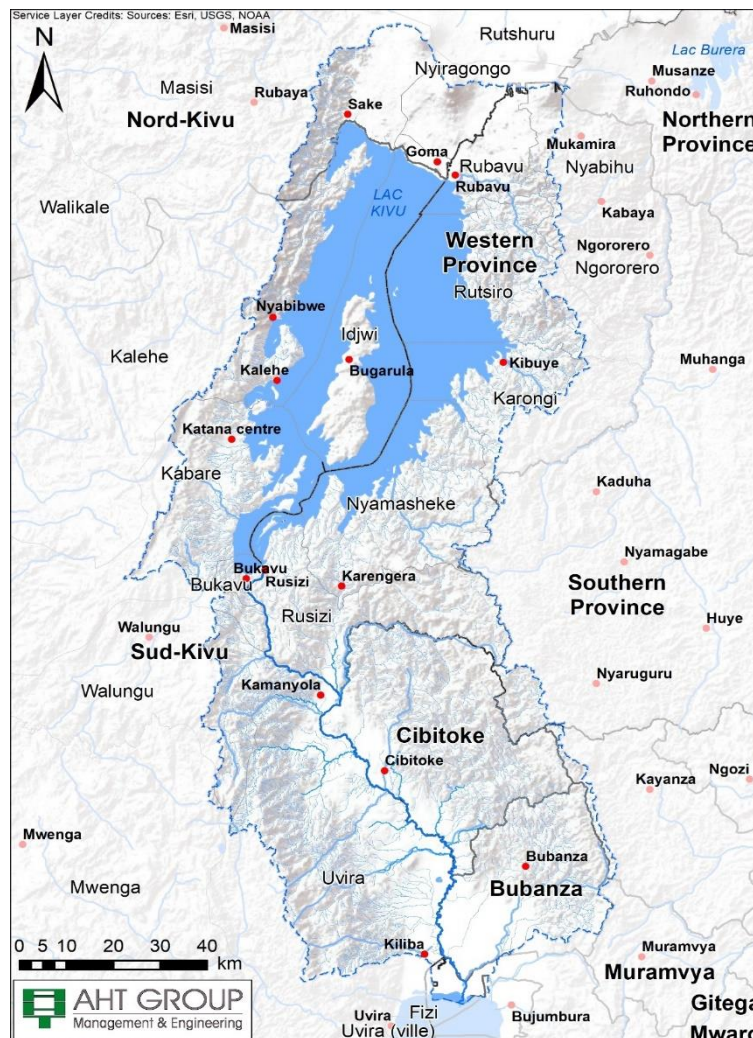
List of Abbreviations and Acronyms

ABAKIR	Autorité de Bassin du Lac Kivu et de la Rivière Ruzizi/Lake Kivu and Ruzizi River Basin Authority
AHT	AHT GROUP GmbH
CEPGL	Communauté Économique des Pays des Grands Lacs
CICOS	Commission Internationale du Congo-Oubangui-Sangha Basin
CIRGL	Conférence Internationale sur la Région des Grands Lacs
DAS	Sanitation Directorate (DRC)
DCN	Department of Nature Conservation
DGA	Directorate General of Agriculture
DEHPE	Department of Human Settlements and Environmental Protection
DGEREA	Directorate General for the Environment, Water Resources and Sanitation (Burundi)
DGECV	General Directorate for the Environment and Living Environment (DRC)
DGF	General Directorate for Forestry (DRC)
DRC	Democratic Republic of Congo
DRE	Water Resources Department (DRC)
DTE	Decentralized Territorial Entities (DRC)
EAC	East African Community
EIA	Environmental Impact Assessment
EUWFD	European Union Water Framework Directive
GIZ	Gesellschaft für internationale Zusammenarbeit
ICPDR	International Commission for the Protection of the Danube River
ISRBC	International Sava River Basin Commission
LTA	Lake Tanganyika Authority
LVBC	Lake Victoria Basin Commission
MDGs	Millennium Development Goals
MEDD	Ministry of the Environment and Sustainable Development (DRC)
MEM	Ministry of Hydraulics, Energy and Mines (Burundi)
MINEAGRIE	Ministry of the Environment, Agriculture and Livestock (Burundi)
MoE	Ministry of the Environment (Rwanda)
MRC	Mekong River Commission
OBPE	Burundian Office for the Protection of the Environment
NBI	Nile Basin Initiative
RWB	Rwanda Water Resources Board
SAP	Strategic Action Plan
SDGs	Sustainable Development Goals
SNEL	Société Nationale d'Electricité
TbEIA	Transboundary Environmental Impact Assessment
TDA	Transboundary Diagnostic Assessment
UN	United Nations
WASH	Water, Sanitation and Hygiene

2 Introduction

2.1 Opportunities and challenges in the basin

The Lake Kivu and Rusizi/Ruzizi River Basin, shared by Burundi, The Democratic Republic of Congo (DRC) and Rwanda, is a critical resource for the 11 million people living in the basin. As poverty levels remain high in the basin, access to and use of natural resources and ecosystem services related to the lake and the river are not only key sources of livelihoods, but also contribute to the overall socioeconomic development of the three riparian countries. The services provided by the basin include water for the provision of WASH services, agricultural production and fisheries to address persistent food insecurity, energy provision, and transport. The resources of the basin thus provide the basis for improvements in people’s water, food and energy security and can support action towards reaching the SDGs – not only SDG 6 on water, but also related



SDGs, namely SDG 2 (zero hunger) and SDG 7 (affordable and clean energy), among others. Moreover, the basin has a rich network of ecosystems that have ecological significance beyond the basin. They are significant not only because they contribute to people’s livelihoods through ecosystem services, but also for economic income through tourism.

At the same time, the basin is facing numerous challenges¹. On the water supply side, the basin is generally relatively rich in water (although significant differences exist between the different parts of the basin and the different riparian countries). Nonetheless, a significant share of the population does not have access to safe drinking water and sanitation – this is generally due to economic scarcity/the inability of governments to provide these basic services rather than the supply-side scarcity of water. In light of expected population growth, this trend could change, as an increasing number of people and economic activities might compete for the same (or possibly even declining) water resources.

Although **water resources** are generally abundant, the available water resources are faced

¹ Sher 2020; GIZ/ABAKIR 2021

with various threats, including the intrusion of various pollutants, the overexploitation of fish populations, the effects of soil degradation and erosion, risks posed by geohazards and the impacts of water resources development projects (such as hydropower projects). This is driven by broader developments, including a high population growth rate and rapid urbanization.

While the **level of pollution** still remains relatively low for the basin as a whole, water quality has been deteriorating in the past years (GEF 2020). Pollution stems from point and non-point sources as well as the waste that makes its way from the shores of the lake into the lake and further into the Rusizi/Ruzizi River. This includes agricultural pollutants, household waste and wastewater, and also mining effluents. High erosion is another important aspect threatening water quality. Pollutants also enter the lake via its many smaller tributary rivers. The impacts can already be felt locally and affect people's health and livelihoods. Moreover, the biodiversity in the basin (as well as further down in Lake Tanganyika) is being affected by such pollution. Water quality is thus one important challenge that needs to be addressed by all basin countries in a cooperative manner.

Although **fishing** remains largely at the subsistence level, an increase in illegal fishing activities and overfishing has been observed, leading to a decrease in fish populations in the last years². This can be a challenge to people's food security and livelihoods, but can also trigger local (yet transboundary) conflict among different fishermen and fishing communities. In order to reduce such risks, fish and fisheries are a topic that requires cooperative approaches of all basin countries. Moreover, recent years have seen an increase in aquaculture in the lake, which presents both an opportunity to increase the fishing yield, but can also come with new challenges, such as additional organic pollution.

Future **hydropower development**, although an important source of energy for the basin (and the riparian countries in general) in which a considerable part of the population still does not have sufficient access to save energy, could lead to environmental impacts and related socioeconomic costs. Such costs are typically distributed unevenly across the population, and often disproportionately disadvantage local communities. At the same time, important opportunities for generating electricity and incomes for people could be foregone or reduced if hydropower projects are not managed efficiently. Both dimensions require cooperation among the basin countries.

Water-related disasters, namely floods, flash floods and related landslides pose an additional risk to people and communities. Floods in DRC in March 2022 and earlier in summer 2021, hitting the provinces of North and South Kivu particularly hard, illustrate this. Adaptation to these events, as well as risk management and community preparedness remains limited.

Climate change only exacerbates these challenges. While rainfall is overall expected to increase slightly, the overall quantity of water available in the basin is not expected to change. Variability within and across the seasons will, however, increase as the climate changes³. Moreover, water quality is likely to be impacted by various – and partially climate-related – developments such as rising temperatures. This can present a significant challenge to existing water resource uses (such as fishing, with fish populations already decreasing due to the

² Sher 2020

³ Sher 2020; AHT 2022

effects of climate change⁴) and management patterns. Cooperative basin management efforts thus need to be climate sensitive and aim at building resilience in all basin states.

In addition, **natural risks** such as seismic activities and volcanic eruptions due to the geological location of the lake pose a risk to people living in the basin as well as to water resources (when volcanic eruptions affect water sources) and water infrastructures such as dams. Additionally, the methane and carbon dioxide stored in the lake – which has in some locations already reached saturation level – poses a threat to the riparian population in the form of a limnic eruption, an event that has occurred in similar waterbodies, such as Lake Nyos, which produced disastrous losses to human, animal, and ecosystem life (Smithsonian 2003). And while the methane and carbon dioxide stored in the lake can provide economic opportunities through energy production, the exploitation of these fragile and sensitive resources requires good governance, careful management and suitable technologies. Moreover, potential risks relating to unintended gas releases need to be mitigated, e.g. by ensuring that the respective facilities do not negatively impact fishing or other activities. Again, cooperation among the riparian states is important in this regard.

In addition, **persistent socio-political insecurity**, the presence of illicit and armed groups and persistent violence plague the basin with violent conflict at the local, regional and sometimes even national level in all riparian countries. While water so far has not been the direct source of conflict (but possibly acted as a threat multiplier in existing tensions, e.g. when different communities or groups compete over declining fish stocks), there is a risk that future developments increase the risk of competition and conflict over water as well as related resources (including fish stocks, gas stored in the lake, etc.). This could take place between individual water users, communities, ethnic groups, provinces or entire countries and creates not only potential for instability – in an already fragile region – but could also affect socioeconomic development. Joint basin management and development can contribute to preventing such conflicts and establish an atmosphere of trust and collaboration.

In order to address these and other challenges and opportunities and manage the basin and its resources in a sustainable, effective and cooperative manner, a comprehensive governance structure is required. Such a governance structure must have a transboundary dimension, given the challenges the basin faces transcend the boundaries of nation states and cannot, in many cases and to varying degrees, be addressed through local or national action alone. Moreover, transboundary cooperation over shared water resources provides entry points for fostering regional cooperation more generally, generating benefits for the basin, its people and its riparian countries that go beyond the benefits that unilateral action alone can produce.

2.2 This report – Content and methodology

This report assesses existing legal and policy instruments to address – in a cooperative manner – key challenges⁵ in the basin which have been identified by and discussed in various stakeholder consultations, focusing in particular on

⁴ Akonkwa et al. 2015

⁵ Addressing these challenges and opportunities in an effective manner also requires cross-cutting action, such as the sharing of data and information on the mentioned issues.

- Different water uses, such as
 - o Water supply and sanitation
 - o Agriculture
 - o Fishing and fisheries
 - o Hydropower
 - o Navigation
 - o Methane gas and oil exploration and exploitation
- Different elements relating to the protection and management of waterbodies, such as
 - o Integrated Water Resources Management in general
 - o Water quality and pollution
 - o Solid waste
 - o Urbanization, population development/management of urban areas/protection zones
 - o Nature conservation and environmental protection
 - o Biodiversity protection/nature protection
 - o Erosion, land management and sedimentation
- Climate change adaptation
- Flood/drought/disaster management

These issue-areas are also – to a large extent – mentioned in the 2014 Convention as the basis for cooperation in the Lake Kivu and Rusizi/Ruzizi River Basin or are part of cooperation under the Convention’s overall objective of ensuring the protection and the conservation of the water resources of Lake Kivu and the Rusizi/Ruzizi River (Art 1 2014 Convention), which requires the basin organization to be mandated to address all specific issues that fall under more general objectives and responsibilities, such as the integrated management of the water resources of a basin.

The report first reviews the broader context in which transboundary cooperation in the Lake Kivu and Rusizi/Ruzizi River Basin is situated and from which it could borrow inspiration in the forms of broad rules and principles as well as specific means of cooperation (section 2.2). It then zooms in on the regional level, assessing existing regional frameworks at the African (2.3) and regional East African (2.4) level as well as in basins adjacent to the Lake Kivu and Rusizi/Ruzizi River Basin (2.5.). It then turns towards ABAKIR as the key regional institution set up in 2014 by the three riparian states of the basin in order to sustainably manage their shared water resources (section 3). Given the importance of national and sub-national governance instruments, the report then accords detailed attention to the legal and policy instruments available in each riparian country (section 4). Findings generated from analysing these different available instruments at different governance levels – in particular in regard to their ability (or the lack thereof) to address the key challenges the basin is facing – are presented in the following section (section 5). The report concludes with some key recommendations for the way ahead (section 6).

For the development of this report, various analytical steps were undertaken, applying different methods of analysis. In a first step, a document analysis was conducted, including relevant international, regional and national legal and policy instruments. An overview of all national-level instruments that have been analysed can be found in Annex 1. In addition, secondary literature has been consulted in order to gain further insights into the legal and political situation in the basin and its influence on transboundary water resources governance. In a second step, stakeholders in the basin have been consulted in order to obtain their

perspectives and ideas. Stakeholder consultations consisted of various national-level and regional-level consultation events held in all three ABAKIR member countries, with a final high-level consultation workshop held in July 2022 in Darussalam, Tanzania.

3 The broader legal context of transboundary water resources management

3.1 Transboundary water resources management

With more than 300 rivers and lakes (and many more aquifers) transcending the boundaries of nation-states, the cooperative management of such shared water resources has become an imperative, required not only in order to ensure the integrated management of such water resources for environmental, social and economic benefits, but also in order to prevent and mitigate conflicts that could potentially emerge among riparian states when interests in the use of such resources compete. This is confirmed by state practice, which shows that around the world, states sharing water resources most often prefer cooperation over conflict and engage in cooperative rather than in conflictive action⁶.

In order to transform a momentary commitment to cooperate into long-term cooperative action, riparian states to shared basins often choose to institutionalize their cooperation through basin treaties and basin organizations. Basin treaties define clear principles, rules and obligations applicable to a certain basin. They also often define governance mechanisms such as how parties to an agreement will come to joint decisions, exchange data and information or address disputes that might arise between them. Basin organizations take institutionalization one step further and present permanent structures the implement treaty commitments as well as specific cooperative activities. They are therefore crucial for generating real benefits of cooperation for all states and stakeholders involved.

Research as well as ample empirical evidence shows that transboundary cooperation and, in particular, the establishment of basin treaties and basin organizations is ultimately beneficial for all riparian states as well as the basin's resources and people⁷. Transboundary cooperation over shared water resources can, for instance, address transboundary flows of pollutants and improve water quality in a waterbody, develop sustainable water use arrangements and therewith ensure sustainable water use, in particular in times of climate change, or ensure the exchange of flow data that allows for flood warning and preparedness across borders. It can thus help to achieve environmental, social or economic goals that were unattainable if each riparian state pursued a unilateral water resources use and management policy. Moreover, cooperating over shared water resources can also spill over into other policy fields, fostering regional cooperation more generally, thus contributing to regional exchange, trade, stability and peace.

This provides an important message to the Lake Kivu and Rusizi/Ruzizi River Basin as well, highlighting how transboundary cooperation can improve the state of the basin's resources, address many of the challenges the basin, its resources and its people are facing, generate additional benefits and prevent or mitigate disagreements and their negative repercussions on regional stability and peace as well as economic development. International legal instruments, policies and other guidance at the global or regional level can support such efforts.

⁶ De Stefano et al. 2010

⁷ McCracken et al. 2018

3.2 The global framework

3.2.1 The global legal framework

International water law provides the overarching framework for how countries that share water resources should use, develop and protect such water resources. Moreover, it provides guidance on how these countries should behave toward and engage with their co-riparian states. It is therefore also relevant for the Lake Kivu and Rusizi/Ruzizi River Basin. The following paragraphs outline the key principles of international water law that are relevant to the basin.

First and foremost, the principles of **equitable and reasonable utilization** and of **no significant harm** represent the cornerstone of international water law and can be considered two sides of the same coin. The principle of equitable and reasonable utilization entitles each state sharing a watercourse to a right to utilize that watercourse for its own aims and purposes, but in an equitable and reasonable manner. Equitable does not imply an equal portion of water. Reasonable utilisation strengthens the basin perspective, by focusing on what use is reasonable from a basin perspective, acknowledging that what seems to be reasonable according to national considerations is not necessarily reasonable for the entire basin.

The principle of no significant harm requires states to ensure that in their use of shared water resources no significant harm is caused to other riparian states⁸. It thus complements the principle of equitable and reasonable utilization by requiring such utilization to prevent significant harm on others. It is therefore important to note that the principle does not prohibit any type of harm. Instead, it constitutes a due diligence obligation by which states have to take all measures to prevent significant harm (a threshold that can differ considerably across basins) – also in consultation with potentially affected states. It is considered as a key element of international state practice and customary international law and has been confirmed in the jurisprudence of relevant international courts⁹.

The implementation of these principles requires a number of specific actions, captured in key procedural principles of international water law. The principle of **prior notification** and consultation requires a state planning a project that involves and possibly affects a transboundary watercourse (and thus other riparian states) to notify co-riparian states about this project and consult with them¹⁰. By now, it is established international state practice – which has been confirmed by rulings of international courts¹¹ – to notify co-riparian states of any water resources development project planned in one country of a transboundary basin and to consult with all other riparian countries over potential impacts (and whether the project should nonetheless be implemented or not).

In order to be able to assess potential impacts – but also to manage a basin more generally – data and information is required. The principle of **data and information sharing** requires states to share such data and information. It is important to note that this is not a static

⁸ Gupta/Schmeier 2020

⁹ Such as in the 2010 Pulp Mills on the River Uruguay (Argentina v Uruguay) case, 20 April 2010

¹⁰ Schmeier 2020

¹¹ Such as the 2010 Pulp Mills on the River Uruguay (Argentina v Uruguay) case, 20 April 2010 and the Indus Waters Kishenganga Arbitration (Pakistan v. India), 20 December 2013

obligation, but requires regular exchange. Such data and information also includes, for instance, an environmental impact assessment, which has to be conducted for projects in shared basins, taking into account possible transboundary impacts and the harm they could entail for neighbouring states¹².

In the case of Lake Kivu, where navigation is a crucial economic activity, the principle of the **freedom of navigation** – which by far predates the water resources focused principles – is also of crucial importance. Generally, the principle states that navigation on international rivers (or lakes) is open to all nations¹³ and equality is required among states navigating an international river. This does, implicitly also require coastal states to that river (or lake) to ensure that such navigation is indeed possible and not obstructed. At the same time, such freedom does not preclude specific regulation of navigation by riparian states (that is, rules and regulations can be introduced that govern navigation, set restrictions to navigations in terms of areas or technology used, etc.).

The aforementioned principles have been codified in global instruments, namely the **1997 UN Watercourses Convention** and the **1992 Helsinki Convention**. These instruments, due to the fact that they codify existing customary international law, are relevant to the Lake Kivu and Ruzizi/Ruzizi River Basin, although none of the basin countries is a party to those conventions so far.

In particular the 1997 ***Convention on the Non-Navigational Uses of International Watercourses (UN Watercourses Convention)*** provides useful guidance on how to interpret and implement specific international water law principles (as described above) in a basin context. This concerns, in particular, the principle of equitable and reasonable utilization (Art 5), for which the 1997 UN Watercourses Convention (in Art 6) provides a non-exhaustive list of factors that shall be taken into consideration when determining what constitutes equitable and reasonable in a specific basin and requires basin states to enter into consultation in order to determine such equitable and reasonable utilization among them. These factors include, among others, geographic, hydrological and ecological factors, economic and social needs, existing and potential uses as well as the dependency of the population on the water resources, but ultimately prioritize vital human needs. The Convention also codifies the no significant harm principle (Art 7) and emphasizes that where significant harm occurs in spite of states having taken all appropriate measures to prevent such harm, elimination or mitigation of the harm or even compensation are required.

Additionally, the 1997 *UN Watercourses Convention* also provides detailed guidance on the principle of prior notification and consultation (Art 11-19) as well as the requirement to regularly exchange data and information (Art 9). It can thus provide important guidance to the basin when it comes to implementing these procedural obligations. Likewise, the 1992 *Helsinki Convention* can also provide interesting guidance, especially on issues pertaining to water quality, where it provides more detailed provisions than the 1997 UN Watercourses Convention.

¹² This has been confirmed in the 2010 Pulp Mills on the River Uruguay (Argentina v Uruguay) case, 20 April 2010, when the ICJ put specific emphasis on the need to conduct and then share in the context of prior notification, transboundary environmental impact assessments.

¹³ Some legal discussion persists on whether this concerns riparian states only (very narrow interpretation) or all/any states (broad interpretation) and often depends on river-specific treaties that operationalize general international legal norms. For this report, the focus will be on navigation of generally any vessel, without specification of whether these are vessels flying the flag of riparian states or of other (third) states.

Other international environmental law instruments could also be applicable to the Lake Kivu and Rusizi/Ruzizi River Basin as they govern specific issues of relevance to the basin. This concerns, in particular, those instruments that the 2014 ABAKIR Convention specifically refers to in its Preamble, namely the **1971 Ramsar Convention** (to which all basin states are parties).

The 1971 Ramsar Convention was established with the aim to ensure the conservation and wise use of all wetlands, with a particular focus on transboundary wetlands or wetlands in transboundary basins. This includes specific cooperation requirements, e.g. the need for states to consult each other on wetland management and the potential effects of water resources developments. As the Lake Kivu and Rusizi/Ruzizi River Basin is home to important wetlands, such as those of the Virunga National Park in DR Congo and of the Nyungwe Park in Rwanda, which have indeed been listed as Ramsar sites, Ramsar principles should also guide the management of the basin.

Overall, there is thus a comprehensive legal framework available that can and should guide the management and development of the Lake Kivu and Rusizi/Ruzizi River Basin. Closer attention to and engagement with relevant global instruments in each riparian government could further strengthen this. Capacity development might be needed in this regard and the Lake Kivu and Rusizi/Ruzizi River Basin countries, together with their international partners, might want to assess available capacity development and training opportunities on international water law, of which ample exist already, including specifically for the African context (e.g. by the Global Water Partnership and others).

The national laws relating to water resources in the riparian countries of Lake Kivu and the Rusizi/Ruzizi River basin do refer – in different ways and to different degrees – to transboundary cooperation over shared water resources and thus implicitly also to international water law principles such as the principle of cooperation and the principle of riparian community¹⁴. There is, however, no specific mentioning of international water law principles (or their national implementation) in the national water laws¹⁵. National water policies and other policy documents are slightly more specific¹⁶. It is, however, important to also implement the obligations and requirements that arise from such rather general principles through national, but very importantly also through transboundary action that puts in place specific rules and obligations that riparian states jointly develop and implement.

3.2.2 The global policy framework

The legal framework for the governance of shared water resources, which sets rules,

¹⁴ The principle of riparian community represents a compromise of two earlier principles of international water law, the principle of absolute territorial sovereignty and the principle of absolute territorial integrity, which proved to be irreconcilable. The principle of riparian community implies that countries sharing a basin are bound to each other by the water resources they share, which means that the exercise of each state's sovereignty over its natural resources is limited by the other state(s)'s sovereignty. Cooperation in the management of shared water resources is thus the only way forward.

¹⁵ In the case of the 2012 Water Law of Burundi, Art 132 refers to transboundary water resources and states the government shall support regional conventions and cooperation. There is, however, no specific reference to international water law principles. The 2008 National Water Law of Rwanda, for example, states in Art 80 that the government "shall take necessary measures to encourage cooperation concerning management and exploitation of shared waters with the neighbouring States", but it does not provide for further details relating to specific legal principles.

¹⁶ The 2011 National Water Policy of Rwanda, for example, refers to transboundary water management in chapter 5.2.9 and includes reference to specific international water law principles, such as the obligation to assess the impacts of planned measures and to avoid significant transboundary harm (yet not to equitable and reasonable utilization), albeit without exact reference to specific global conventions (Rwanda National Policy for Water Resources Management, p 17/18.)

principles and obligations for parties to a shared watercourse, is embedded in a broader policy framework on shared water resources that the international community has developed over the last decades. The development started with the **1966 Helsinki Rules** and was followed by several principles that were advanced through international processes and conferences. This includes, most importantly, the Integrated Water Resources Management (IWRM) approach and its emphasis on managing shared water resources, no matter at which level, in an integrated manner and with a view of ecosystem boundaries rather than political-administrative boundaries. This makes transboundary and integrated basin management paramount to the sustainable management of any water resource. The Lake Kivu and Rusizi/Ruzizi River Basin is no exception to this and regional organizations as well as national governments have committed to IWRM principles through various legal and policy means (see sections below).

Beyond the water sector itself, the sustainability debate – which emerged and developed since the **1972 Stockholm Conference**, followed by its successors – has made important contributions to the discourse around the management of shared water resources as well. Important principles developed in this context are the obligation “to effectively control, prevent, reduce and eliminate adverse environmental effects” and for states to “ensure that activities within their territory and control do not cause damage in other states” (Principle 21 Stockholm Declaration), which mirrors the principle of no significant harm in international water law.

Since the 1970s, such international sustainability principles have further developed and have been incorporated into international legal instruments (including specifically for water law, not only through the global conventions mentioned above, but also by numerous basin treaties making specific reference to the 1972 Stockholm or the 1992 Rio Declaration). The **Millennium Development Goals** (MDGs) in 2000 took the sustainability debate even further. They were expanded in 2015 with the **Sustainable Development Goals (SDGs)**.

The SDGs are today’s leading guidance when it comes to sustainable development – including water resources (reflected in SDG 6), but also sectors depending on and/or impacting water resources (including e.g. SDG 2 on hunger, with water being a key input for ensuring food security, or SDG 7 on energy, with water directly or indirectly being required for the production of energy). They thus provide important guidance for (transboundary) water resources management as well. At the same time, they require careful balancing between the different SDGs. Working towards the achievement of one SDG (e.g. on hunger) can well affect progress on other SDGs, e.g. when increased agricultural production to improve food security has negative impacts on water resources, thus challenging SDG 6.

Within SDG 6, **indicator 6.5.2** is of particular relevance as it requires states to engage in transboundary cooperation over shared water resources and measures whether states that share such resources have indeed their shared basin covered by an operational cooperation arrangement (such as a treaty and a basin organization, ensuring coordinated management and regular data and information exchange)¹⁷. So far, Burundi, DRC and Rwanda as the riparian states to the Lake Kivu and Rusizi/Ruzizi River Basin have however reported only limited information on transboundary cooperation arrangements as per SDG 6.5.2 for the Lake Kivu and Rusizi/Ruzizi River basin to the relevant global institutions (UNESCO and UNECE)¹⁸,

¹⁷ UN Water website “Indicator 6.5.2 “Proportion of transboundary basin area with an operation arrangement for water cooperation”, <https://www.sdg6monitoring.org/indicator-652/>

¹⁸ UNECE (2020): Reporting on global SDG indicator 6.5.2. Rwanda, https://unece.org/sites/default/files/2021-12/20210920_rwanda_report_en.pdf

falling short of SDG 6.5.2 targets.

In recent years, an increasing link has been made between (transboundary) water resources governance and the climate change discourse. Acknowledging that climate change translates itself largely through the water cycle, more and more calls have emerged that emphasize the need to accord more importance to water in the global climate debate. As climate change is expected to have a significant impact on the Lake Kivu and Rusizi/Ruzizi River Basin, riparian states are encouraged to link specific water resources management activities to broader climate change mitigation and in particular adaptation activities.

In addition, there are important international guidelines for hydropower development (and dam construction more generally), coming into play depending on the financier and/or the developer. The World Bank OP 7.50 standard (World Bank 2001), for example, requires that for World Bank supported projects on international waterways, a notification of all other riparian states and the development of agreements or institutional arrangements between all concerned riparian states is required. Such international requirements for a cooperative approach to developing the resources of a shared basin was also a driving force behind Lake Kivu and Rusizi/Ruzizi River cooperation as international financiers for Rusizi III and IV required compliance with certain principles.

3.3 Frameworks for transboundary water resources and environmental management in Africa

The **African Union** (AU) provides the overarching framework for regional cooperation in Africa. Within the AU, the African Ministers Council on Water (AMCOW) is probably of highest relevance given its function as a specialized committee of the AU for water and sanitation, although it does not have any legal power. In its **2008 Sharm El-Sheikh Declaration**, which remains the most important statement of the AU on water, member states – which include the Lake Kivu and Ruzizi River riparian states – commit themselves to integrated management and development of national and shared water resources and the equitable and sustainable use of those (AU 2008, 2).

The only African instrument the 2014 ABAKIR Convention makes explicit reference to and which could therefore provide important guidance for the basin is the **1968 Convention Africaine sur la conservation de la nature et des ressources naturelles (Algier Convention)**. It encourages state parties to engage in the conservation, utilization and development of soil, water, flora and fauna with a focus on present and future welfare (Art I) (thus incorporating some early sustainability considerations). In order to achieve this, countries shall, among other things, establish polices to conserve, utilize and develop water resources and prevent pollution (Art V), establish conservation areas, limit hunting and poaching and the trade in endangered species (which can in fact be seen as one of the main focus areas of the convention) and cooperate on transboundary matters.

[11/Rwanda_2ndReporting_SDG652_2020_web.pdf](https://unece.org/sites/default/files/2021-11/Democratic%20Republic%20of%20the%20Congo_2ndReporting_SDG652_2020_web_small.pdf) and [UNECE \(2020\): Reporting on global SDG indicator 6.5.2. Democratic Republic of Congo, https://unece.org/sites/default/files/2021-11/Democratic%20Republic%20of%20the%20Congo_2ndReporting_SDG652_2020_web_small.pdf](https://unece.org/sites/default/files/2021-11/Democratic%20Republic%20of%20the%20Congo_2ndReporting_SDG652_2020_web_small.pdf). It is thereby interesting to note that Burundi does not mention the Lake Kivu and Rusizi/Ruzizi River Basin at all in its reporting on SDG 6.5.2 (UNECE (2018): Reporting on global SDG indicator 6.5.2. Burundi, https://unece.org/fileadmin/DAM/env/water/activities/Reporting_convention/All_countries/BURUNDI_Reporting_SDG652_final_06.02.2018.pdf

Specifically with regard to water, Art V requires states to take efforts to guarantee the provision of drinking water to the population and, in order to do so, take measures on studying the water in the basins of the region, coordinating the planning of water resources development projects, administrating and controlling all utilization of water and preventing pollution (with the last two ones, as per Convention, not necessarily requiring transboundary cooperation or even joint activities but simply the development of such measures at the national level). Art V also specifically requires consultations and possibly the establishment of international commissions in order to resolve problems relating to the use of joint water resources and thus the joint development and conservation of such shared water resources. This is a clear requirement for transboundary water cooperation – including through institutionalized cooperation mechanisms – also applicable to the Lake Kivu and Rusizi/Ruzizi River Basin. Beyond the specific requirements for water under Art V, the 1968 Convention is also an important reminder of riparian states' commitment to environmental and sustainability goals – within and also beyond the water sector. This provides important guidance to the Lake Kivu and Rusizi/Ruzizi River Basin.

The Convention was replaced in 2003 by the ***Convention Africaine de Maputo sur la conservation de la nature (2003 Maputo Convention)***, which entered into force in only 2016, which might be the reason for the 2014 ABAKIR Convention not mentioning it, and rather referring to the older 1968 Algier Convention¹⁹. The 2003 Maputo Convention also provides guidance specifically on water resources management, requiring states to maintain water-based ecological processes, protect human health, prevent damage to other states through pollution, prevent excessive abstraction and engage in the integrated management of water resources (Art VII). Similar to the 1968 Convention, the 2003 Maputo Convention also specifically refers to transboundary water resources (both surface and groundwater) and calls for states to consult on the rational management and the equitable utilization of such water resources (if required through inter-state commissions) and to solve disputes arising from the use of such resources (Art VII). No further guidance is provided on how to do that though²⁰.

Interestingly, the 2003 Maputo Convention also puts forward relatively strong requirements with regard to public information sharing and public participation in decision-making, especially with regard to projects of potentially significant transboundary impact in the member states (Art XVI). These requirements would de jure also apply to Burundi, DRC and Rwanda and thus also to information sharing in the context of the use and development of the Lake Kivu and Rusizi/Ruzizi River Basin.

¹⁹ Another reason could be that DR Congo is yet to ratify the 2003 Maputo Convention (which it signed in 2008 but never ratified) to make it applicable to DR Congo as well (until then, the older 1968 Algier Convention remains in force for DR Congo, also in relation to the other states of the Lake Kivu and Rusizi/Ruzizi River Basin, in spite of those already being parties to the newer 2003 Maputo Convention).

²⁰ Except for the requirement to grant any person affected by transboundary harm access to administrative and judicial procedures in the country causing the harm even if the affected person is not from that country (Art XVI), which would also apply to potential harm resulting from water resources development projects and could amount to a requirement for prior notification and consultation.

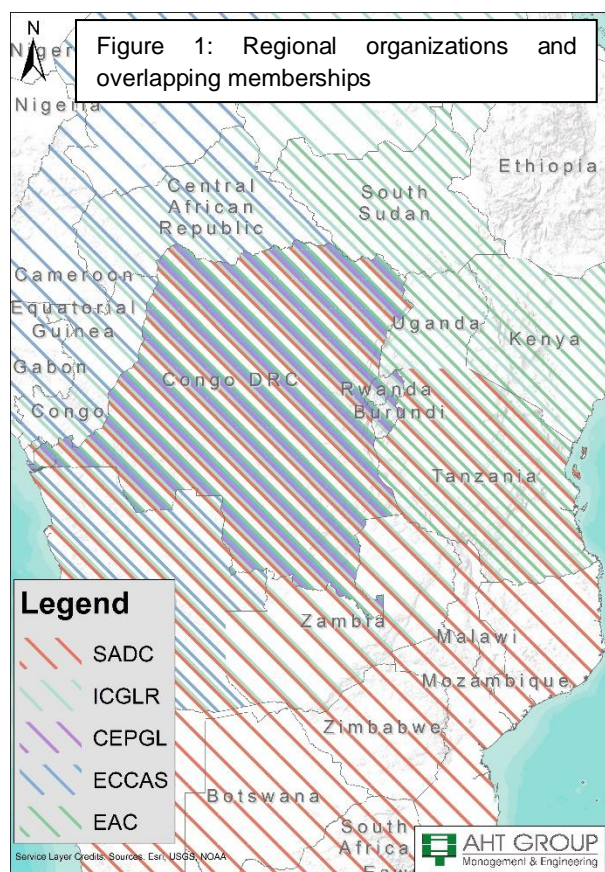


Figure 1: Regional organizations and overlapping memberships

3.4 The (sub-)regional context

Additionally, regional instruments provide an important framework for cooperation in the basin as they guide riparian states towards regional cooperation. This is particularly important as regional instruments are often better adapted to the specific interests and needs of the countries of a region, considering specific socioeconomic or political characteristics. At the same time, there are considerable overlaps in memberships – with different countries of the region being party to different organizations (see map below) – that require cooperation and dialogue.

The **East African Community (EAC)** is the overarching regional cooperation and integration organization in the region. Established in 1967, it brings together seven countries, including all Lake Kivu and Rusizi/Ruzizi River Basin riparian states

(since DR Congo joined the EAC in 2022).²¹ The EAC also engages specifically in matters relating to the environment and to water resources management, e.g. through the active promotion of cooperation in the Lake Victoria Basin (where basin management institutions are part of the EAC) as well as in the Lake Tanganyika and Nile River Basins. The EAC has also developed relevant documents, such as the EAC Protocol on Environment and Natural Resources Management (EAC 2006), which provides important guidance on environmental management issues (albeit not in force yet), and the EAC Water Policy.

The EAC has so far not taken any active steps in also engaging in Lake Kivu and Rusizi/Ruzizi River Basin cooperation efforts. However, there seems to be an interest on the side of the EAC (and LVBC) to share its experiences in transboundary water management specifically with Lake Kivu and Ruzizi River countries. There is thus a great opportunity for ABAKIR to learn from experiences in the EAC. More exchange should therefore be encouraged. Engagement beyond this, e.g. with regards to EAC playing a stronger role in Lake Kivu and Rusizi/Ruzizi River basin management or water-specific EAC policies or strategies being applied to the basin, would need to be carefully assessed, especially in light of the many and often overlapping regional arrangements that already exist (see below) and that bear the risk of leading to overlaps, inconsistencies and inefficiencies.

The **1983 Treaty of the Economic Community of Central African States**, to which all three

²¹ An interesting point to note here is that DR Congo is also still a member of the Southern African Development Community (SADC), Southern Africa’s regional organization. SADC has developed quite advanced legal and political guidelines for (transboundary) water resources management (this includes, for instance, the obligation to establish joint management institutions for all shared watercourses). This includes the 2000 Revised Protocol on Shared Watercourses, to which DR Congo is also a member state and which therefore applies to DR Congo. While it goes beyond the purpose of this report to assess the legal consistency between SADC and EAC (or other regional) water law and governance instruments, it should be kept in mind that such overlapping memberships could potentially come with challenges and inconsistencies.

states of the basin are parties, sets up the Economic Community of Central African States (ECCAS). It aims to promote cooperation and development in the region, including economic integration. It has three specialized organizations: The Regional Commission of Fisheries for the Gulf of Guinea (COREP), the Commission of Central African Forests (COMIFAC) and the Central African Power Pool (EAC-CAPP). A Protocol of Cooperation on Natural Resources was also signed in 1983, complemented more recently with a Regional Water Policy (2009) and a Regional Action Plan for IWRM (2014). Implementation of these instruments in specific member countries does, however, seem to remain relatively weak and no specific follow-up actions have been reported in the ABAKIR countries. Such political instrument can nonetheless support overall awareness of sustainable water resources management and thus strengthen the willingness and the capacity of different government actors to engage, including at the transboundary level

The 2014 ABAKIR Convention explicitly only refers to the **1976 *Convention portant création de la Communauté Économique des Pays des Grands Lacs (CEPGL Convention)***. It thus bears particular importance in the context of Lake Kivu and Ruzizi River cooperation. This Convention creates a community between Burundi, DRC (then Zaire) and Rwanda, focusing on economic development through economic cooperation – combined with cooperation in other fields such as commercial, scientific, cultural, political, financial, military or technical matters – and the commitment to political order along joint borders (Art 2). It establishes joint institutions to achieve these objectives, but does not provide much more detail on how the envisaged cooperation shall be achieved.

It was within the context of the CEPGL and the existing cooperation between the Lake Kivu and Rusizi/Ruzizi River Basin riparian states, that ministers of water signed the agreement to set up an authority in charge of managing the water resources of the Lake Kivu and Rusizi/Ruzizi River Basin, leading to the establishment of ABAKIR. CEPGL can thus provide a general guidance for cooperation in the Lake Kivu and Rusizi/Ruzizi River Basin and remind countries of their overall commitment to regional cooperation in the interest of peace and economic development. If it were to play a larger role in water resources cooperation,²² this would require a much clearer definition of its role, the linkages between ABAKIR and CEPGL and specific working processes and responsibilities. The foundation is there and the day-to-day support CEPGL provides, e.g. through hosting ABAKIR at its premises, is an important step, but details about the relationship between both institutions require further clarification. This has been further advanced through an MoU between both organizations, developed since 2020 (but not yet adopted).

CEPGL has four specialized bodies, the Energy Organization for the Great Lakes (EGL) and the International Electricity Corporation for the Great Lakes (SINELAC), both in charge of energy; the Agronomic and Zootechnical Research Institute (IRAZ) and the Great Lakes States Development Bank (BDEGL). Especially EGL and SINELAC play an important role in the Lake Kivu and Rusizi/Ruzizi River Basin as they manage hydropower generation, which means that any decisions taken in their context can have impacts on the Ruzizi River.

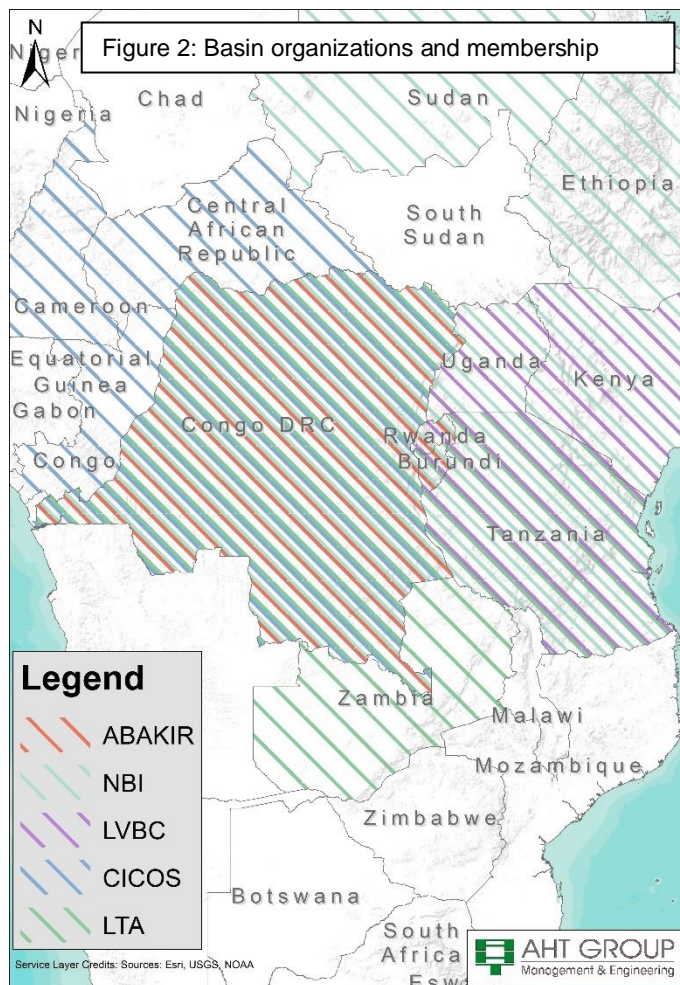
²² Such relationships of more general regional cooperation organizations playing a role in/being the umbrella for transboundary water resources management exist. A notable example from the region is the Lake Victoria Basin Commission (LVBC), which was established under the East African Community (EAC) and thus made a specialized institution of the EAC and for which the EAC provides various processes and services. At the same time, the LVBC is linked to the EAC e.g. through reporting requirements from the LVBC to the EAC Council of Ministers and the EAC Summit.

It will be important to clearly define not only the relationship between these organizations and ABAKIR (including roles and responsibilities), but also to ensure the compatibility of their respective goals and objectives. For instance, EGL and SINELAC with their legitimate focus on maximizing electricity outputs might, unintendedly, produce negative impacts on the water resources of the Lake Kivu and Rusizi/Ruzizi River Basin and thus counteract ABAKIR's overall aim and objectives. A close collaboration between these organizations in a spirit of cooperation and with the willingness to compromise will thus be needed to ensure the integrated management of the basin's water resources beyond the interests of specific sectors only. This will also require member states, who ultimately drive these organizations, to develop and implement integrated management approaches. A specific legal or policy document defining such commitment to cooperation as well as specific rules (e.g. for dam management and operation, minimum flows, flood protection, multi-purpose use, etc.) is important for the sustainable management of the river. This needs to include regulation for managing the Rusizi/Ruzizi hydropower cascade, ensuring integrated dam management and operation with a focus on integrated water resources management and sustainability criteria (beyond mere hydropower output).

The **International Conference on the Great Lakes Region (ICGLR)/Conférence Internationale sur la Région des Grands Lacs (CIRGL)** was established in 2006 by the Pact on Security, Stability and Development in the Great Lakes Region. Bringing together all Lake Kivu and Ruzizi River riparian states (and in total 12 countries from the region), it aims at promoting cooperation on peace and security, economic development and regional integration, humanitarian issues and social development, as well as good governance. In particular, regional security has moved to the forefront of its work in the past years, given the various peace and security challenges in the region. It could thus provide a general framework for cooperation in the region. But it has also engaged in specific projects of relevance to the Lake Kivu and Rusizi/Ruzizi River Basin under its economic development umbrella, specifically with regard to methane gas exploitation in Lake Kivu, as well as in relation to the illegal exploitation of natural resources – which often fuels violent conflict. For the latter, a legally binding protocol was negotiated under the overall Pact. Moreover, there are attempts to integrate CEPGL into CIRGL, which would resolve some of the potential overlaps. It does, however, remain unclear for the moment whether and if so when this is likely to happen.

While all these regional and sub-regional instruments and institutions provide important inspiration for and guidance to regional cooperation and specifically for the Lake Kivu and Rusizi/Ruzizi River Basin, there is also a risk of overlapping and even conflicting mandates, roles and responsibilities. More attention needs to be paid to this tendency towards treaty congestion and related risks of inconsistencies and potential conflicts. And ABAKIR needs to find its position in this complex setting.

3.5 Sub-regional basin-specific context



Additionally, there are basin-specific organizations that at least a sub-set of Lake Kivu and Rusizi/Ruzizi River Basin riparian states are members of and that could therefore be of relevance for the governance of the Lake Kivu and Rusizi/Ruzizi River Basin as well: two regional agreements and basin organizations in the same basin (the Congo River Basin) and two additional ones in the neighbouring Nile River Basin, nonetheless providing important insights into basin cooperation in the region.

The **Nile Basin Initiative (NBI)** governs the entire Nile River Basin.²³ It has three core functions, namely the facilitation of basin-wide cooperation, water resources management (including integrated management at basin level) and the development of water resources in an economically viable and environmentally friendly manner. All three riparians of the Lake Kivu and Rusizi/Ruzizi River Basin are

also members of the NBI, although hydrologically, the basin belongs to the Congo River Basin.

The **Lake Victoria Basin Commission (LVBC)**, set up under the framework of the EAC (see above), governs Lake Victoria, a sub-basin of the larger Nile River Basin, with a focus on its sustainable development and the equitable utilization of water resources (2003 Lake Victoria Protocol). Burundi and Rwanda, but not DRC, are parties to the 2003 Lake Victoria Protocol and members of the LVBC. The LVBC has set up a quite advanced and functioning system for the integrated management of Lake Victoria which can provide important insights and inspiration for ABAKIR. Further exchange should therefore be encouraged.

The **Commission Internationale du Congo-Oubangui-Sangha Basin (CICOS)** governs the Congo-Oubangui-Sangha Basin. It focuses on navigation as well as integrated water resources management of the basin and aims to promote, among others, a harmonized regulation of navigation and riverine transport, an integrated planning and use of shared water resources, the optimization of water allocation and sustainable development and poverty eradication (1999 *CICOS Accord*). Only DRC is a party to the 1999 CICOS Accord (and its 2004 revision) and thus a party to CICOS. However, with the Lake Kivu and Rusizi/Ruzizi River Basin hydrologically being part of the greater Congo River Basin, it is important to enter

²³ Issues relating to the status of the Cooperative Framework Agreement and its perception by different Nile riparian states (namely Egypt) as well as the status of the NBI will not be discussed in this document.

into a discussion about collaboration between the basin organizations, but also the commitment to specific legal principles and policy commitments.

The **Lake Tanganyika Authority (LTA)** governs Lake Tanganyika. Its primary mission is to ensure the protection and conservation of the biological diversity in the basin and the sustainable management of natural resources of the lake and its basin. In comparison to both the broader Nile and the broader Congo cooperation frameworks, it has a considerably stricter focus on environmental protection (and less on water resources development). Given the close hydrological linkage between the two lakes, it is important that both organizations intensify their exchange and discuss specific principles, management objectives and joint activities. This might include an arrangement that specifies the inflow from Lake Kivu and the Ruzizi River into Lake Tanganyika (including arrangements for possible exceptional periods such as droughts).

Only Burundi and DRC are parties to the 2003 *Lake Tanganyika Convention* and thus members of the LTA. An MoU exists between the LTA and ABAKIR (drafted in 2020). The MoU focuses on cooperation in the fields of environmental and water resources protection, the water, energy and food security nexus, fisheries, disaster risk management, data and information sharing, scientific exchange as well as capacity development. The MoU has, however, not been signed so far and no activities are being implemented under it. Mutual visits have also been conducted with a focus on basin management and planning, indicating a general interest in cooperation. Signing and effectively implementing the MoU should be of utmost priority to both ABAKIR and LTA. In addition, specific issue areas for cooperation need to be identified and addressed, with priority given to water quantity/flows, water quality and environmental considerations.

There are thus four different legal instruments to which at least a subset of Lake Kivu and Rusizi/Ruzizi River Basin riparian states are party to and could possibly borrow inspiration from for the governance of the Lake Kivu and Rusizi/Ruzizi River Basin.

As two of these instruments actually govern the greater basin to which the Lake Kivu and Rusizi/Ruzizi River Basin belongs (LTA and CICOS), particular attention should be paid to those. This creates a rather complex legal, political and institutional situation. With regard to the legal setting, principles, rules and procedures of CICOS and LTA, de jure also apply at least for DRC (with regards to CICOS rules) and Burundi and DRC (for LTA rules) respectively. While it is beyond the scope of this report to conduct an analysis of treaty consistency between these instruments, it is important to note that this can create treaty inconsistencies from which disagreements over the interpretation and implementation of international water law principles can arise.

In any case, it will be necessary for ABAKIR to engage in a discussion with CICOS and LTA on how best to cooperate (and where possible legal fine tuning might be required). Moreover, Lake Victoria seems to provide particularly helpful insights into governing the basin, so further exchange and mutual learning should be initiated.

4 ABAKIR

Cooperation in the Lake Kivu and Rusizi/Ruzizi River Basin is – or should be, pending entry into force – governed by the 2014 ABAKIR Convention. The following sections explore the content of the Convention in more detail and assess its current state and the transitional structures that have been implemented due to the persistent lack of ratification and thus entry into force of the Convention.

4.1 Convention internationale relative à la gestion intégrée des ressources en eau du bassin versant du Lac Kivu et de la Rivière Ruzizi

The *Convention Internationale Relative à la Gestion Intégrée des Ressources en Eau du Bassin Versant du Lac Kivu et de la Rivière Ruzizi* (hereafter “the Convention”) was adopted in 2014 through a *Déclaration Conjointe des Ministres en Charge de la Ressource en Eau relative à la Gouvernance de la Structure Transitoire de l’ABAKIR et à la Signature des Textes Constitutifs de l’ABAKIR* (signed on 4 November 2014). This followed the Declaration of Kigali, signed in July 2011, in which the governments of Burundi, DRC and Rwanda already had approved the Convention and signed a related agreement that created ABAKIR as a transitional body – without this being followed by proper action until 2014.

The 2014 Convention establishes ABAKIR as a transitional structure, to be set up by the Council of Ministers which is to be established in the Statutes of ABAKIR, to manage water resources in the basin until the Convention actually enters into force and an actual basin organization is established. This is a rather unique approach compared to basically all basins around the world as the Convention that is not yet in force basically asks a Council of Ministers, which is only established through the Convention and thus not already in place at the moment of the adoption of the Convention, to set up an organizational body that would function while the Convention remains unratified and be replaced by an actual basin organization once the Convention does get ratified.

The Lake Kivu and Rusizi/Ruzizi River Basin thus finds itself in a situation where a legal framework that establishes institutionalized cooperation is in place, but falls short of being actionable. The following sections assess what the existing framework nonetheless has to offer and how it can be strengthened in the future. It is, however, important to note that the ratification of the Convention and its full implementation by member states are a prerequisite for long-term successful basin management and development (see section 3.2.2).

4.1.1 Key principles of the 2014 Convention

The Convention’s main focus – as per Art 2 – is the protection and conservation of the water resources of the Lake Kivu and Rusizi/Ruzizi River Basin through integrated water resources management. It is interesting to note that the 2014 ABAKIR Convention puts such a strong focus on protection and conservation, while water resources use and development are much less the focus of the actual text. While this is welcome from a natural resources sustainability and protection perspective, it is rather unusual for many of the international water treaties in Central, Eastern and Western Africa – with the exception of the Lake Tanganyika Authority (see above). It does, however, provide a very useful and innovative approach to managing the basin’s resources in a truly integrated and sustainable manner.

It is interesting to note that the 2014 ABAKIR Convention refers to a number of innovative international water law principles, such as the precaution principle, the polluter-pays and the user-pays principle as well as the principle of benefit sharing (Art 6). These principles, while cutting edge in the international legal debate, are not considered customary international water law yet and have not fully been codified in any of the global water law instruments. This might present a challenge with regard to implementation.

At the same time, however, the 2014 ABAKIR Convention does not explicitly include one of the cornerstone principles of international water law – the principle of equitable and reasonable utilization (but instead refers to the principle of equitable and sustainable utilization, which could – especially in light of Annex I to the 2014 ABAKIR Convention – be read as meaning something similar). Accordingly, there is a strong commitment among Lake Kivu and Rusizi/Ruzizi River riparian states to manage shared water resources in a cooperative and sustainable manner, adhering to key rules and obligations.

The 2014 ABAKIR Convention does include the other substantive cornerstone principle of international water law, the principle of no significant harm (Art 8). It thus requires all member states to ensure that any water resources development project they intend to undertake does not cause significant harm to the basin or a co-riparian state. In order to establish whether harm would occur from a project and whether such harm would be significant requires strong cooperation and various processes among riparian states – and thus emphasises the importance of establishing and strengthening ABAKIR as a formal institution that can then manage such processes.

The Convention does, however, lack key procedural principles of international water law that are generally perceived as crucial for implementing the core substantive principles of international water law. This concerns, in particular, the principle of prior notification and consultation, which allows riparian states to a shared basin to be made aware of and able to assess the impacts of projects planned by other riparian states before they actually do get implemented and, consequently, before they can cause any harm that would possibly amount to significant harm and/or would be contrary to the equitable and reasonable utilization of the basin's resources. Prior notification and consultation are, however, a key element of customary international law and should be adhered to in the Lake Kivu and Rusizi/Ruzizi River Basin as well. Informing co-riparian states early about planned projects and providing them with the opportunity to review relevant information – namely transboundary impact assessments – builds an atmosphere of trust and prevents or mitigates conflict in the long run. It is therefore important that ABAKIR member countries engage in a discussion on how to include notification and consultation mechanisms over planned projects in their cooperation.

Experience from other basins shows that such procedural guidance is important and proves particularly useful if there is a disagreement between two or more states over the potential impacts of a water resources development project. In the Mekong River Basin, for instance, the Mekong River Commission did manage to contain a severe disagreement between Laos (intending to develop a series of dams on the mainstream of the river) and downstream Cambodia and Vietnam (opposing these projects for fear of impacts on their water resources use and economic development opportunities). This was done on the basis of pre-established and clearly defined legal principles (in the 1995 Mekong Agreement) as well as subsequent legal instruments, namely the *Procedures for Notification, Prior Consultation and Agreement*

(PNPCA). The lack of such mechanisms in the Lake Kivu and Rusizi/Ruzizi River Basin can become a challenge if ever such disagreement were to occur – a scenario quite likely given the water resources development needs in the region.

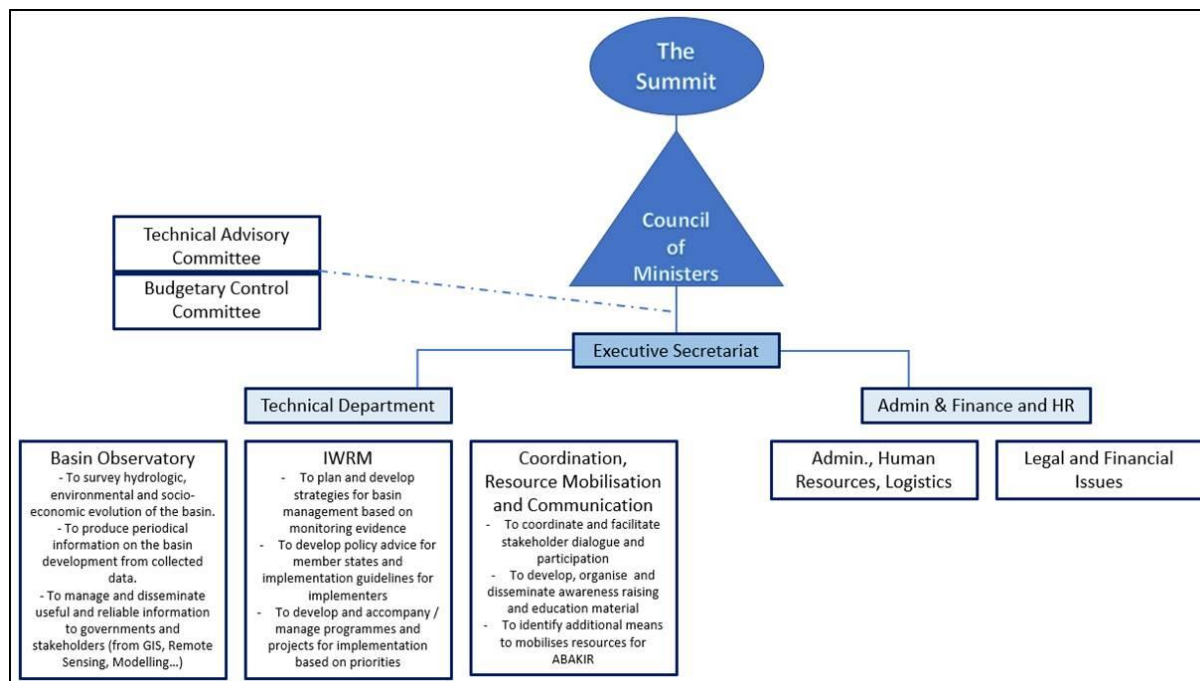
Overall, key principles of cooperation have thus been defined, but more work is required. This includes the ratification of the 2014 Convention (in order to make these principles legally binding), but also the further definition and then implementation of joint legal principles. Having agreed to e.g. equitable and reasonable utilization or no significant harm alone has little value for basin management and development as long as there is not more detailed definition and joint understanding among member countries what this means specifically for their basin and which processes they will apply in case disagreements ever occur over such joint understanding.

4.1.2 Functions and set-up of ABAKIR as per 2014 Convention

The 2014 Convention assigns a clear mandate and mission to ABAKIR (as a transitional institution as well as later as the proper basin organization), namely to coordinate the implementation of the Convention, to ensure and to represent the joint interests of the member states with regard to integrated water resources management in the basin, through a concerted effort with different stakeholders of each of the member states (Art 11). The same article also emphasizes ABAKIR's mission to support cooperation between member states to ensure the sustainability of water resources development for harmonious socioeconomic development in the basin (Art 11). The 2014 *Statuts de l'Autorité du Bassin du Lac Kivu et de la Rivière Ruzizi* provide further detail on the design of said organization, providing ABAKIR, overall, with a solid legal framework that sets it up as a basin organization.

The 2014 Statuts also establishes the key organs of ABAKIR (see figure below for the prescribed set-up), namely a Summit of Heads of States, a Council of Ministers, an Executive Secretariat, a Consultative Technical Committee and technical committees as well as a Budgetary Control Committee (Art 12). The 2014 Statuts (in part III) provide more details on how these organizational bodies are to be set up and what their exact functions are and how they operate.

Key governance bodies that are crucial for the overall functioning of cooperation – also in view of set-ups of other basin organizations around the world – are the Council of Ministers (Conseil des Ministres) and the Executive Secretariat (Secrétariat Exécutif). The other organizational bodies foreseen in the 2014 Convention and the Statuts also serve important functions, but might be slightly less relevant in light of the overall functioning of ABAKIR under current constraints, where the emphasis should be on getting the most important bodies functioning.



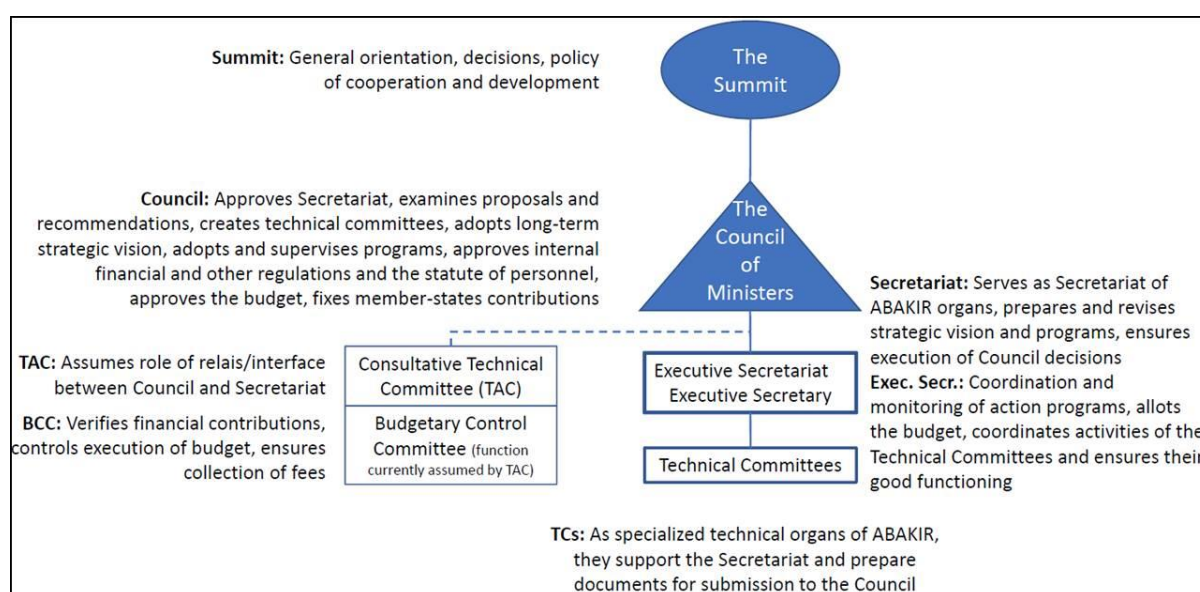
The **Council of Ministers** brings together the ministers in charge of water resources from each member state (and can include other sectoral ministers as well, depending on the issues to be discussed). It is in charge of providing the overall political framework as well as guidance on broader political questions of cooperation and development in the basin. It is thus crucial for making any decisions on cooperation in the basin and for moving specific cooperative actions, activities and projects forward.

The **Executive Secretariat** plays a key role in implementing political decisions on cooperation in the basin, but also in simply maintaining cooperative action by organizing regular meetings, reporting on ABAKIR activities and maintaining liaisons with other regional or international actors. Its functioning (including the availability of required human, technical and financial resources) is therefore crucial. In order to ensure such functioning, basin states have foreseen a number of posts within the Executive Secretariat. In addition to the Executive Secretary, these are two directors (one for Administration and Finance, one for Operations), leading the respective directorates. Each director function is allocated to one of the countries (the Executive Secretary function to DRC, the Operations function to Burundi and the Administration Function to Rwanda). This is rather unusual compared to many other basin organizations and might require reconsideration if hiring of such high-level staff should be entirely based on merit.

The Administration and Finance Directorate is expected to comprise of various internal services, namely finance, legal, internal, HR, communications and translation). The Operations Directorate is expected to comprise various departments, covering the different

aspects and sectors of cooperative basin management (including e.g. water quality, data and information, studies, etc.). Detailed job descriptions for the directors and the heads of department have already been prepared (BID 2011), but never implemented. Likewise, there seems to be an understanding of additional technical capacity that needs to be hired (such as a WASH expert an IWRM expert, an environmental expert, a data management expert and an evaluation expert – as expressed by the high-level consultation workshop participants in July 2022).

The 2014 Statuts describes a slightly different set-up for ABAKIR as a transitional organization (see figure below), accounting for slightly limited human, financial and technical resources. This structure has been confirmed in the process of the development of the SAP as the current set-up member countries would like to see for ABAKIR, but remains insufficiently implemented.



So far, in addition to the three Co-directors there are only support staff – one accountant, one driver and one cleaner) working at ABAKIR. This is clearly entirely insufficient for running a basin organization.

The 2014 Convention also defines ABAKIR's funding. Art 13 thereby highlights that ABAKIR is to be funded through member contributions as well as royalty fees arising out of the impacts from the different uses of the basin's resources. The latter establishes a link to the polluter-pays and the user-pays principle put forward by the Convention in Art 6. De facto, financial contributions of member states to ABAKIR are, however, lagging behind, only paid irregularly (if at all) and often do not meet set targets.²⁴ This challenges the very existence of the organization and the implementation of its activities.

Member contributions are to be made on an equal basis, with each member country contributing the same amount to the organization's budget.²⁵ This is a viable approach that

²⁴ Each member country is supposed to contribute 251,000 EUR/year in order to cover the basic costs of ABAKIR. This is not implemented in practice by any of the basin states.

²⁵ One challenge that some stakeholders mentioned – possibly as an explanation why country payments are lagging behind – is that the 2014 Convention needs to be ratified before a formal budget for the organization can be drawn up.

has proven effective across international basin organizations (UNECE 2021). The challenge so far rather seems to be the actual willingness to pay, for which the 2014 Convention and the Statuts do not foresee any recourse, so that member states who have so far not (or insufficiently) paid do not face any consequences. This ultimately affects cooperation overall, as other countries also stop, delay or reduce their contributions due to the perceived lack of fairness of member contributions, which ultimately affects ABAKIR's overall ability to function and to deliver on cooperation expectations.

Overall, the institutional basis for ABAKIR, set through the 2014 Convention and Statuts, is solid and provides a sophisticated basis – fully in line with international practice – for cooperation among member states. The fact that ABAKIR still struggles to function and to demonstrate the benefits of its existence to its member states is hence not related to the organizational set-up of ABAKIR itself, but rather the lack of implementation of the existing framework.

4.2 Current status of ABAKIR

4.2.1 The ratification of the 2014 Convention

As mentioned above, the ABAKIR Convention has not entered into force until today due to the persistent lack of ratification by member states which is a prerequisite for entry into force according to Art 17 of the Convention. Reasons for the persistent non-ratification are manifold. They include direct cooperation commitments of member countries (namely the insufficient visibility of benefits ABAKIR produces for its members), but also broader regional developments such as the recent tensions between ABAKIR member states. Participants of the high-level workshop in July 2022 emphasized that the ratification processes were well underway in all countries. However, progress has been lacking for several years now.

The persistent lack of a functioning legal framework and the related transitory nature of ABAKIR constitute a challenge for the water resources and the people that depend on them, as well as the riparian countries as a whole. Various reasons for the persistent non-ratification and thus non-entry-into-force of the 2014 ABAKIR Convention exist. Those include issues relating to commitment and willingness of the basin states, related to this are also questions pertaining to the actual added value of a basin treaty and a basin organization, which need to be addressed in the near future.

ABAKIR nonetheless can and has to fulfil an important role as a transitional structure and has the potential to significantly advance cooperation and improve transboundary water resources management in the basin. In spite of the limited resources and the transitional nature of ABAKIR, some important advances have been made that can benefit the basin and its people and thus demonstrate the value of cooperation. Overall, progress remains limited though.

During the high-level workshop in July 2022, several participants highlighted that the ratification of the 2014 Convention would address, if not solve, many of the existing problems, such as e.g. an insufficiently defined budget of ABAKIR, lacking member contributions or shortcomings in project implementation. While it is true that the persistent non-ratification is a challenge as it leaves ABAKIR in a limbo situation, the ratification of the 2014 Convention alone will not solve ABAKIR's problems as many of those are related to human, technical and

financial capacity as well as an insufficient commitment of member states to cooperation. Ratifying the convention is thus only a starting point, but more collaborative work is needed between all member states towards jointly building and providing the capacities required for long-term cooperation.

4.2.2 Current status of ABAKIR's functioning as transitional institution

As per the decision of the member countries, ABAKIR as a transitional institution was supposed to initiate and implement a number of activities, namely 1) the production of a preliminary inventory of the water resources of the basin (a state of the basin report/Transboundary Diagnostic Assessment (TDA), 2) the collection and later harmonization of rules and regulations relating to the use and the protection of water resources, and 3) awareness raising among stakeholders concerning joint rules and regulations for the use of water resources and their protection. Other activities with regard to basin planning were to be implemented subsequently.

Progress so far mainly relates to contributions to integrated and sustainable basin management, in particular the first task of ABAKIR (the development of a state of the basin report). The TDA and the SAP have indeed been key steps in that direction. Through the Transboundary Diagnostic Analysis (TDA) and the Strategic Action Plan (SAP) ABAKIR, with the support of its international development partners, namely the European Union and the German Ministry for Economic Cooperation and Development (BMZ) with implementation support by the GIZ, has made considerable progress in assessing the state of the basin and developing a basin management plan, which are key steps towards sustainably managing a shared basin and also contribute to increasing cooperation over shared resources. These documents also provide member states of ABAKIR a starting point for defining joint action and, in particular, identifying low hanging fruits for joint activities, where transboundary benefits can be achieved at low costs.

These achievements are, however, insufficient and the lack of progress has severely impacted ABAKIR's reputation. Progress in developing and issuing guidelines on sustainable water resources management, a key task of the organization, is lacking so far. Likewise, there is no basin-wide approach to fishing, in spite of the great importance of the sector. The same holds true for navigation, another issue area that requires transboundary action. Stakeholders in Burundi, for instance, pointed out that results from ABAKIR's work since 2014 are largely lacking. In order to really advance the transboundary management of the basin's resources and generate benefits for the basin, ABAKIR needs to engage in various issue areas of utmost relevance to the basin (and this report – in section 5 – outlines the key topics that require transboundary action).

Likewise, data and information sharing, which is crucial for the development of basin management plans as well as any other water resources management activities, remains limited. Currently, there is no institutionalized data sharing between the member countries. Bilateral data sharing – which could provide a short-term alternative in order to ensure mutual information – is also very limited. This means that ABAKIR and its member states should focus with greatest urgency on establishing a data and information management system that allows for gathering, analysing and sharing data and information. Data should thereby not only be shared between member states, but also with the general public (see below), such as e.g.

done already to some extent by Rwanda's Water Resources Portal.

In this context, reporting to member countries is also crucial but insufficient. While ABAKIR produces regular reports (3 during the year and one annual report) that are shared via the TAC with the Council, stakeholders have emphasized during the consultations that reporting on ABAKIR's activities remains insufficient, especially as reporting was, at least until recently, limited to reporting exclusively within ABAKIR's own structure). Annual reporting by ABAKIR should ideally also reflect on essential trends in water quality and water quantity in the Basin and report on trends in behavioural change among the basin population towards more sustainable catchment management practices. All this all contributes to reduced visibility of ABAKIR in its member states and with a broader public, and thus ABAKIR constituencies, as well as trust of those in ABAKIR, ultimately undermining the organization's value proposition to its members.

This also relates to stakeholder engagement more generally, a key function of basin organizations. Local stakeholders, representatives of different water user sectors, environmental organizations and many others need to be informed about and involved in transboundary basin management in order for measures to be accepted and implemented down to the very local level. ABAKIR has so far not really engaged with basin stakeholders beyond communication activities (e.g. through social media). More engagement will be needed in the future – in order to ensure the implementation of basin management measures, but also in order to build trust across country borders, a key for future conflict prevention.

The SAP has therefore proposed a Consultation Platform that would allow for engaging stakeholders in the basin (including ABAKIR itself, representatives of member states, regional organizations, development partners, research institutes, NGOs, civil society and the private sector) and sharing data and information among them, coordinating implementation of projects and identifying and harvesting synergies between activities. The Consultation Platform is intended to be convened, organized and facilitated by ABAKIR – as many other basin organizations around the world do.

The limited functioning of ABAKIR has been hampered by an insufficiently developed organizational structure – not so much because of the lack of a framework that sets up such structure (which is in place), but by the persistent gaps in human, organizational, technical and financial capacity of the organization.

So far, ABAKIR's progress in setting up a functioning institutional framework for transboundary water resources management remains limited. While an organizational chart has been developed and proposed, many of the foreseen positions remain unfilled. This leaves ABAKIR with very limited staff and technical capacity.

So far, it consists of only 3 political representatives (one from each country), which form the Technical Advisory Committee (TAC). Technical Committees have not been established, except for a committee that consists of the three focal points of the member states (and can be complemented by additional focal points for specific issues). The function of the Executive Secretary is performed by the Co-Director from DRC, supported by the Co-Director from Burundi and an acting Co-Director from Rwanda, together accounting for 3 high-level staff of the Secretariat. All administrative personnel had ceased its work in 2015 due to a lack of

funding by ABAKIR member states²⁶ (and as of now two support staff in charge of finance, administration and logistics have resumed their functions), while technical staff had never been employed in the first place.

A particular challenge with regard to ABAKIR's organizational set-up and in particular the Executive Secretariat is the fact that there is not only too little staff (see above), but that there is also a particularly problematic lack of technical/working-level staff. This leaves the planned directorates unstaffed, with no technical staff available to conduct work in each planned department and no administrative staff to support the implementation of such work. An organization such as a basin organization cannot function through political/high-level staff alone. As international experience shows, staff actually maintaining the organization (finance and admin staff, logistics staff, etc.) and implementing specific projects (technical staff) is a prerequisite for any successful institutionalized basin management. ABAKIR and its member countries therefore need to address these challenges with utmost urgency.

Most recently, however, it seems that there is increasing momentum again since 2021. Various stakeholders highlighted that there is an increasing willingness in their country to ratify the 2014 Convention and move ahead with cooperation. However, countries have also attached certain conditions to such ratification. Burundi,²⁷ for instance, asks ABAKIR to update all member states proactively on the current status of the organization and progress made in agreed upon work programs and activities (namely the SAP), to finalize the SAP and have it validated by all countries, and to provide a comprehensive financial plan for the implementation of the SAP, including through upcoming GEF funding.

5 Analysis of the existing national legal, regulatory and policy frameworks

In all riparian countries, various laws, decrees, by-laws and other legal instruments as well as various political instruments exist that aim at addressing sustainable water resources management and/or sectors related to it (including environmental policy, food/agricultural or energy policy, strategic planning, etc.). Many of those are of relevance for governing the natural resources of the Lake Kivu and Rusizi/Ruzizi River Basin, including, first and foremost, water legislation and policies, but also documents relating to water-using sectors (agriculture, energy, transport, land use planning, etc.) and to the environment (biodiversity, wetlands, forestry, conservation areas, etc.).

As this chapter will show, these instruments – and in particular their implementation – do, however, vary considerably across riparian states and have not always and in all locations led to a sufficiently effective management of the natural resources of the basin. In addition to the national (and sub-national) level, there is also a need for coordination between or possibly even harmonization of such national instruments at the basin level in order to address basin-wide governance challenges that cannot be solved through unilateral action.

²⁶ Until 2015 (since 2011), Rwanda was the only country that funded ABAKIR, but also stopped in 2015.

²⁷ Stakeholder consultations in Burundi, 1 March 2022.

5.1 Burundi

5.1.1 National level legal instruments and policies

The legal and political system of Burundi provides guidance on the management of water resources, various water-related sectors and other aspects. An overview of all relevant legal and policy instruments can be found in the table in Annex 1.

Burundi has a national Water Code in place, adopted in 2012. It defines the fundamental rules that govern water resources management as well as a related institutional framework for its implementation. This includes further details on water resources infrastructure, the conservation and protection of water resources, the funding of water management, etc. In addition, it provides for charges to be levied on the use of water, which is an important tool for giving effect to the widely accepted principle that water has an economic value (Art 2 (1)) (which has only recently been introduced in Burundi), and the principle of subsidiarity (Art 2 (2)). The Water Code also provides for water quality protection (e.g. by prohibiting certain activities in water protection zones²⁸) as well as water quantity protection (e.g. through prohibiting the abstraction of water that would temporarily or momentarily change the course or the flow of the watercourse (Art 48)).

Legislation also refers to some of Burundi's international commitments, e.g. to United Nations Framework Convention on Biodiversity, the Ramsar Convention on Wetlands, and the Convention on Sustainable Management of Lake Tanganyika.

Since 2007, Burundi has engaged in various reform initiatives in the water sector, including with regard to the management of water resources. In this context, a National Water Policy (2009), a National Water Strategy (2011) and a National Sanitation Policy (2013) have been put in place in addition to the 2012 Water Code, providing strategic orientation and more policy details on specific aspects of water management. This changed the approach to water management from the perspective of water abundance and free use towards a closer grip of the government on water resources in a stewardship approach, aiming at managing the water sector more effectively on the basis of clear rules and through qualified institutions.

Since 2018, implementation of these lies with the Ministry of the Environment, Agriculture and Livestock (MINEAGRIE) and, in particular, the Directorate General for the Environment, Water Resources and Sanitation (DGEREA), the Directorate General of Agriculture (DGA), supported by the Burundian Office for the Protection of the Environment (OBPE). Responsibility for infrastructure lies with the Ministry of Hydraulics, Energy and Mines (MEM). Beyond the water sector, Burundi also has various laws in place that govern the environment and natural resources, such as the 2000 Environment Code, the 2011 Law on the Creation and Management of Protected Areas and the 2010 Decree on Environmental Impact Assessments. Sectoral laws with relation to the water sector include the 2011 Land Code, the 2013 Mining Code and the 2016 Forestry Code. Additionally, Burundi also has relatively elaborate legislation in place for navigation and river transport.

It has been recognized that the complexity of water resources management problems is

²⁸ It is not clear whether the waters and banks of the Lake Kivu and Rusizi/Ruzizi River Basin fall within such protection zones and therefore certain activities such as animal grazing, storage of fuels, mining, etc., as per Art 45) are prohibited or not.

increasing due to the interactions between different factors such as water pollution, especially management of solid waste, sedimentation, fishing/fisheries, navigation, urban water and sanitation, water and sanitation, irrigation, extraction of methane gas, natural disaster management, power generation and industrialization. The legal instruments of the Republic of Burundi provide an institutional framework for coordination of water resources management and a key ingredient of integrated water resources management.

5.1.2 Sub-national legal instruments and policies

Burundi is subdivided into provinces (as well as more local administrative units such as communes, zones and local administrations). These also have a role to play in water resources management. This concerns, in particular, the provinces situated in the Lake Kivu and Rusizi/Ruzizi River Basin, namely Cibitoke, Bubanza, and a minor part of Kayanza and Bujumbura. These are further divided into communes (of which 18 are located in the basin) and then municipalities.

The legal and political system of the country devolves water resources management functions to the district and to user organizations based in the basin, as required by the principle of stakeholder and user participation. This implies that a lot of the water resources management rules required for protecting and sustainably managing the basin – and their implementation and enforcement – have to happen at the very local level. This seems to be a challenge though as local human, technical and financial capacity is very limited.

5.1.3 Analysis

Burundi has a relatively comprehensive legal and policy system for governing water, related resources and water-using sectors in place. Reforms since 2007 have aimed at further strengthening the sector, contributing to the achievement of development goals. Implementation is, however, lacking. This is largely due to a lack of investments, inefficient management of water infrastructure, and a lack of sufficiently qualified staff and capacity.²⁹

As a consequence, access to water and sanitation remains a challenge. Only 61% of the population can obtain safe drinking water within a 30-minute round trip from their households (UNICEF Burundi, no date), with the access rate also under stress due to rapid population growth³⁰. Access to safe sanitation is much more limited, with only 34% of the population having access to at least basic sanitation facilities (Politique Nationale d'Assainissement du Burundi et Stratégie Opérationnelle Horizon 2025, 2013). This has led to significant inequalities with regard to water and sanitation. The main reason is not that water is not available for use, but the capacity of service providers in the sector is insufficient, the legal and regulatory framework is fragmentary and incomplete, and the sector is severely short of financing. .

Burundi is also highly vulnerable to climate change and in particular water-related extreme events that will most likely increase with climate change. Preparedness of the population and

²⁹ In fact, already the 2011-2022 Water Strategy of Burundi explicitly mentions the need to build capacities at the national level in order to be able to participate successfully in international negotiations over shared water resources (Burundi (2011), 25).

³⁰ https://www.sanitationandwaterforall.org/sites/default/files/migrate_default_content_files/Burundi_Country_Brief.pdf

public authorities to such events is very limited. Therefore, Burundi is ranked 168 out of 182 countries in regard to its vulnerability and readiness to successfully adapt to climate change (Sanitation and Water for All, Burundi, 2022).

The awareness of and the interest in transboundary water management in general and in Lake Kivu and Rusizi/Ruzizi River Basin cooperation more specifically seems to be limited in Burundi. While reference is made, e.g. in the 2012 Water Code (namely Art 2 (5), committing to regional cooperation with upstream and downstream riparians), to international and regional instruments (including the Convention on Sustainable Management of Lake Tanganyika), Lake Kivu and the Rusizi/Ruzizi River are not mentioned (as cooperation has only started in 2014). Moreover, policy makers seem to have limited interest in ABAKIR as it did not deliver on improving the sustainable management of the basin and its resources in the past years. This is, however, more related to ABAKIR's perceived non-delivery – and not to a general lack of interest in transboundary basin management.

5.2 DRC

5.2.1 National level legal instruments and policies

DRC has several laws, regulations and policies in place that govern the use of water and related resources. An overview can be found in Annex 1.

The national water law in DRC was adopted in 2015. It defines rules concerning the management of water resources, but also includes provisions on water and sanitation services. It has a strong focus on integrated water resources management and the decentralization of the water sector (with so-called Decentralized Territorial Entities (DTEs) expected to play a key role in local water issues and WASH Management Committees at the village level). Among its interesting features is that it accords explicit priority to the human use of water/use for drinking water over other sectors and that it puts forward the principle of cost-recovery for water supply, two rather innovative principles in water law. It also defines the institutional framework to implement legal and policy goals.

In addition to water-specific legislation, other instruments – especially in the context of natural resources and environmental governance – are of relevance as well. This includes, for instance, the 2011 Law for Environmental Protection as well as specific sectoral/issue-specific laws e.g. on nature conservation (2014), on agriculture (2011), on forestry (2002) or on electricity (2014).

Several government ministries and agencies are responsible for and involved in water resources management. These include the Ministry of Energy and Water Resources (MERH), the Ministry of the Environment and Sustainable Development (MEDD) and, in particular, its General Secretariat, its General Directorate for Forestry and its General Directorate for the Environment and Living Environment (DGECV). The latter one specifically includes responsibility for water through the Water Resources Department (DRE), the Sanitation Directorate (DAS), the Department of Human Settlements and Environmental Protection (DEHPE) and the Department of Nature Conservation (DCN), the Ministry of Health and the Ministry of Planning. Water services and water use (including the related infrastructure) thus lie with MERH, which e.g. oversees the distribution of drinking water and electricity, e.g.

through a public company for drinking water in urban areas, while water resources management is in the hands of MEDD. The Congolese Agency for Environment and the Congolese Institute for Nature Conservation support this work.

It is interesting to note that the transboundary water resources of the Congo River Basin play an important role for DRC, providing water to the population as well as numerous other water resources uses. The country also engages in the Commission Internationale de Congo-Oubangui-Sangha (CICOS), which is hosted in Kinshasa. The transboundary management of the Congo River Basin, has, however, experienced several set-backs in the last years and joint projects, aiming at generating socioeconomic benefits for the countries and their populations, have not been implemented as planned (e.g. the Palambo Dam, jointly planned by the Central African Republic and DRC). Among various reasons, this is also due to limited human, technical and financial capacity for transboundary water resources management in all Congo River riparian countries, including DRC. It is likely that these challenges for DRC will affect its engagement in cooperation over the Lake Kivu and Rusizi/Ruzizi River Basin as well.

5.2.2 Sub-national legal instruments and policies

DRC is sub-divided into provinces. In the Lake Kivu and Rusizi/Ruzizi River Basin, these are the provinces of North Kivu and South Kivu. South Kivu has the responsibility of managing Lake Kivu water resources. Below the provinces, the administrative units are the territories, with 9 territories located in the basin. This highlights a need for multi-level governance in addressing challenges relating to the water resources of Lake Kivu and the Rusizi/Ruzizi River Basin, but also implies an elevated level of complexity. This is in particular the case as in DRC the interaction between the national level in Kinshasa and the various provincial or local levels is hampered by logistical and communication challenges (no road connection, unreliable air connection, limits to electronic communication, etc.).

Decentralized units are, in particular, responsible for agriculture, spatial planning and rural development, including e.g. water development for use by agriculture and other sectors, rural water supply and rural sanitation, drainage (also for flood control), erosion control, but also activities such as fish farming or the construction of ports and riverbanks. As this includes quite some implementation responsibilities and thus also considerable financial needs, capacity at the local level is crucial, yet often still insufficient.

One of the many challenges at the local level in DRC is water quality. In Bukavu, for example, water quality has been deteriorating over the last years (AHT 2002; Bisimwa et al. 2022), leading to heavy pollution of the rivers and streams flowing into Lake Kivu, especially during the dry season, when less pollutants are dissolved. Improvements in liquid and solid waste management and the treatment of polluted waters are lacking – due to a lack of relevant legal, political and implementation means, but also due to insufficient enforcement.

DRC's environmental legislation is not clear and/or consistent on buffer zones along the shore of the lake and from rivers to be maintained. Encroachment for building and trading purposes in urban areas and for agricultural production and mining in rural areas is rife and a major contributor to sedimentation and pollution of Lake Kivu and its rivers. Households, like many in Bukavu town, rely on the land along the shore for their very existence and economic activities. Simply adopting legislation that prohibits these activities along the shores will

therefore not be enough and alternative sources of income will have to be developed in parallel.

Overall, it seems that while all required laws, regulations and policies are de jure in place, implementation is lacking, if not absent at the local level, due to connection/logistics issues (see above) as well as local capacity challenges. This also challenges water resources management – including for Lake Kivu and the Rusizi/Ruzizi River. Supporting local water resources management and the implementation of existing laws should therefore be a priority for the national and the local government(s) – supported by ABAKIR.

5.2.3 Analysis

The water and sanitation sector as well as water resources management lag behind expectations – both international (such as the SDGs) and national. A significant share of the population continues to live without safe drinking water supply and improved sanitation services and water resources continue to be managed unsustainably. Only 52% of the population have access to an improved water source and only 29% have access to improved sanitation facilities (2015 figures in DRC' Note Pays – Perspectives Économiques en Afrique 2018 of the African Development Bank). The main challenges in the sector are insufficient public investment, weak capacity of water and sanitation service providers; inadequate infrastructure for collection, treatment, storage and distribution of water and wastewater treatment systems, and weak sector governance. While DRC possesses a large amount of water resources (in fact the largest of all African countries) and has so far not suffered from water scarcity at large, the pressure on the country's water resources is increasing considerably as the population grows, the economy develops and climate change impacts increase. Combined with ineffective management, a lack of financial resources, the impact of (violent) conflict and lacking or deteriorated water infrastructure, people's water security is already at risk today.

This also affects transboundary water cooperation and DRC's ability to effectively participate in institutionalized cooperation mechanisms, especially if these are in their earlier stages and require more commitment and investment of their member countries before being able to fully demonstrate their benefits for the country.

5.3 Rwanda

5.3.1 National level legal instruments and policies

The environment, including water, has received great importance in Rwanda's constitution. Art 22 accords everyone "the right to live in a clean and healthy environment", which reflects very progressive environmental law and policy. Accordingly, Rwanda has a large number of legal and policy instruments in place that govern various elements of environmental governance and management. The same holds true for the water sector, which is characterized by a rather large number (especially in comparison to neighbouring states) of laws, decrees, presidential orders and policy instruments governing various aspects of water resources management, water supply and sanitation and related aspects.

Water governance and the relating legal instruments in Rwanda are strongly influenced by the decentralization that has been promoted in the country since 2000. Hoping to fight poverty through empowering local people, but also aiming at increasing transparency and accountability, various sectors were decentralized, including the natural resources and environment sector. The principle of subsidiarity is a crucial element of this approach. This was mainly done through the 2007 Rwanda Decentralization Strategic Framework and the Rwanda Decentralization Implementation Program 2008/2012). This is reflected specifically in the water sector as well. The 2011 National Policy for Water Resources Management, for instance, puts a strong emphasis on decentralized implementation and service provision, explicitly seeing the central government as a regulator, but not an implementer.

A key challenge for this approach is the fact that the capacity of local and sub-national actors in the water sector remains very limited. Although the government introduced a strong commitment to capacity development in relation to its decentralization strategy, actual improvements remain limited. This can also be observed in the Lake Kivu and Rusizi/Ruzizi River Basin, to which many regulations apply, but in some cases remain insufficiently implemented to actually address the problems at stake. In addition, several of the challenges Rwanda is facing on Lake Kivu and the Ruzizi River are of transboundary nature (such as the management of fish stocks and the fisheries sector) and therefore cannot be addressed effectively by Rwanda alone.

Rwanda bases its water governance on the Law determining the Use and Management of Water Resources from 2018 as well as various Prime Minister's Orders and other legal and policy instruments (an overview can be found in Annex 1). Additionally, several laws regulate other yet related issues and sectors, such as the 2018 Law on Protection, Conservation and Promotion of the Environment or the 2013 Forestry Law and the 2013 Biodiversity Law.

The 2011 National Policy for Water Resources Management is the key political document for water resources management in Rwanda. It explicitly calls for integrated water resources management and accords explicit importance to local water users and stakeholders.

In addition, the 2010 National Policy & Strategy for Water Supply and Sanitation is of importance as well. The Rwanda Water Resources Board launched in 2021 its Strategic Plan 2021 – 2030 which has as objective to ensure sufficient water resources for long-term economic growth and to reduce the impact caused by flooding, landslides and erosion risks in Rwanda.

Other sectoral policies in sectors relating to/affecting the water sector include the 2009 Strategic Plan for the Transformation of Agriculture, which also emphasizes IWRM as a basis for sustainable agricultural management (including water-specific actions such as effective catchment management, the development of water user associations, etc.) or the 2019 National Land Policy as well as the 2019 National Environment and Climate Change Policy, which includes provisions relating to water and climate change. Likewise, Rwanda has taken steps forward to regulate fishing activities, ensuring that specific practices and timing is been adhered to. This aims at improving the sustainability of the fisheries sector in the lake and is of great importance for Lake Kivu and in fact other riparian states as well.

Responsibility for the sector lies with the Ministry of the Environment (MoE) and the Ministry

of Infrastructure.³¹ The Ministry of the Environment is in charge of environmental protection, climate change, pollution control, forest management, etc.; the Ministry of Infrastructure is responsible for water supply and sanitation (with implementation done by the Water and Sanitation Corporation as a service institution). The Ministry of Environment is also in charge of the Rwanda Environment Management Authority (REMA) (responsible for the implementation of national environmental policies and related legislation). The Rwanda Water Resources Board (RWB), directly under the Prime Minister, is in charge of ensuring the availability, quality and good management of water resources. In addition, the Mining, Gas and Petroleum Board and the Forestry Agency have a role to play in managing the Lake Kivu and Rusizi/Ruzizi River Basin.

In addition, the Ministry of Agriculture and Animal Resources also has a key role to play, being in charge of fishing, land use planning and irrigation. Other ministries and agencies are also involved to different extents (such as the Ministry of Local Government, in charge of decentralization), creating a rather complex institutional framework in Rwanda. With different ministries responsible for water, there is always a risk of overlaps and conflict (Stoa 2014). This is, however, minimized in Rwanda through a sector-wide approach that the government takes, e.g. through thematic working groups on specific issues.

Rwanda also engages actively in transboundary water management activities, especially in the context of the Nile River Basin. It is a member to the NBI and the Lake Victoria Basin Commission and engages in various policy and project activities in this context, typically as a very proactive partner. It has therefore already built some capacity in transboundary cooperation processes and with related institutions. It is important to transfer this capacity to the Lake Kivu and Rusizi/Ruzizi River Basin as well.

5.3.2 Sub-national legal instruments and policies

Below the national level, Rwanda is sub-divided into provinces, with the Western and Southern Provinces located in the Lake Kivu and Rusizi/Ruzizi River Basin. These are further divided into districts, which also play a role in water resources management – especially in the context of the country's strong decentralization agenda – and therewith also for the management of the Lake Kivu and Rusizi/Ruzizi River Basin. Districts are highly autonomous administrative entities, developing their own development plans and prioritizing sectors for development, but also in charge of water, sanitation, energy, environment and natural resources. There are 7 districts in the Southern/Western Provinces that lie within or immediately adjacent to the Lake Kivu and Rusizi/Ruzizi River Basin.

Within this legal, political and institutional framework, different basins or catchments establish catchment management plans as required through the 2011 National Policy for Water Resources Management. So far, this has only happened in four specific pilot catchments in the country, one of them being the Sebeya catchment, which is part of the Lake Kivu and Rusizi/Ruzizi River Basin. The Sebeya Catchment Management Plan (Republic of Rwanda 2018) has as its objective that all water demands for socio-economic development in terms of quantity and quality are met, while land productivity has been increased.

³¹ Stoa, R. (2014): Subsidiarity in Principle: Decentralization of Water Resources Management, *Utrecht Law Review*, 10, 2, 31-45

The fisheries sector is an interesting example for local regulation. The local police monitors and enforces the rules set by the Ministry of Agriculture (also responsible for fisheries), including the no-fishing period over the summer, the respect to no-fishing zones along coastal areas where mainly juvenile fish swim, as well as the control and certification of boats and nets and other equipment and the related issuance of permits for commercial fishing. On the Rwandan side of the lake, the fisheries sector was therefore, for a long time, considered as sustainable.

Rwanda has also developed a policy on buffer zones around the lake, aiming at ensuring that developments at the local level do not have negative impacts on the lake. As per Rwanda's environmental legislation, buffer zones of 50 m from the shore of the lake have to be maintained (and 10 m from major rivers). No economic activities or construction is permitted there – unless it is proven that those do not have a negative impact on the environment through an EIA and approved by the Minister of Environment (in consultation with other relevant institutions). De facto, however, the local population does not always comply with this. Construction and other activities (including agriculture and mining) have encroached on the shores of Lake Kivu, negatively affecting the health of the lake, although to a lesser extent than in DRC. A key challenge is therefore the fact that the local populations rely on the land along the shore for their very existence and economic development. Simply adopting legislation that prohibits activities along the shores will therefore not be enough. For effective implementation, participatory approaches with the local population are needed in order to ensure their ownership of the issue and their compliance with the law.

5.3.3 Analysis

Rwanda has a very elaborate legal and policy set-up with regard to various environmental sectors as well as water management. Numerous laws, decrees and Orders by the Prime Minister have been developed that deal with various different dimensions of water resources management, water provision or more general environmental matters. A strong emphasis is put on water users at the lowest administrative level and stakeholder participation, driven by the principle of subsidiarity and the country's overall commitment to decentralization.

As a consequence, significant progress has been made towards water, sanitation and water resources management goals. While the National Strategy for Transformation (2017-2024) has a target of 100% access to clean water by 2024 87% of the population has currently access to safe drinking water and 86% of the population have access to improved sanitation (National Institute of Statistics of Rwanda (NISR), 2018).

Implementation of water-related laws, policies and specific projects remains a challenge due to, mainly, a lack of human, technical and financial capacity. Although the government has put a strong emphasis on capacity development for local actors and those involved in the water sector at lower governance levels (Stoa 2014), capacity remains limited, hampering implementation of specific laws, policies and related projects. Specifically for transboundary processes and national engagement in those, further capacity development is therefore required.

6 Findings

6.1 Current state of legal, regulatory and policy frameworks for (transboundary) water resources management in riparian countries

Governance of water resources at the national (and sub-national) level faces various challenges relating to underlying laws and policies – and in particular their implementation – in all three countries. Those relate in particular to limited technical capacity and limited financial resources, but also to insufficient prioritization of water resources management and environmental protection by the governments at all governance levels. In addition, the overall political instability in the region and the various conflicts at the local, national and transboundary level challenge cooperation in the basin and negatively affect ABAKIR's work

Overall, the water laws and policies of all three countries incorporate the IWRM principle. This de jure implies management at the basin level. While this is foreseen e.g. in Burundi's Water Code through the establishment of water commissions at the basin level, implementation is lagging behind. The same holds true for DRC, where the 2015 Water Law calls for the establishment of catchment committees, but those have not been established yet. This is to some extent related to general challenges the countries face with decentralization and the principle of subsidiarity, which requires capacities at the local level that are not available.

It is, however, important to note that it is not so much the legal system of individual countries, specific laws within these countries or incompatibilities between specific laws of the different countries that present challenges to cooperation. The current state of the laws and policies relating to water and other environmental/natural resources matters in the countries are generally conducive to regional cooperation and even integration over shared water resources – also in comparison to other basins in the developing world, where transboundary water cooperation is significantly more advanced in spite of persistent challenges of legislation and implementation at the national and local level. Instead, it is the political willingness and the technical, human and financial capacity that prevents Lake Kivu and Ruzizi/Ruzizi River Basin cooperation to progress.

In light of the legal situation across basin countries – with a relatively well-developed legal system but insufficient implementation – it is even more important to clearly define what the priorities for transboundary basin management are and at which governance level they should be addressed.

It will impossible for the basin countries – individually at the national level and together through ABAKIR – to address all water management issues and opportunities at the same time. Prioritization is therefore required. Countries will have to agree which issues need to (and can be) tackled first and then adapt their national legal system and policies, but also implementation of those, accordingly. Key sectors that were mentioned for prioritization by stakeholders, including the July 2022 workshop, include water quality/pollution, fisheries and integrated basin planning.

Moreover, it is important to define in which issue areas ABAKIR and its member countries intend to pursue which type (and depth) of cooperation. Some issue areas might require harmonization, others only coordination.

Harmonization thereby refers to ensuring that the legal instruments in each country are in fact the same/have the same regulatory function. Coordination, on the other hand, is of less regulatory depth and rigour, aiming at ensuring that the legal instruments in each country contribute to achieving a jointly defined goal, but without necessarily doing this in the same way. Different issue areas require different approaches to this.

An example is the regulation of fisheries compared to the regulation of solid waste: Fish populations do not know political boundaries and thus migrate across those. In order to ensure the sustainability of fish populations, the regulation of fisheries needs to be harmonized across countries sharing a waterbody (for instance, no-fishing times that aim at protecting juvenile fish need to be exactly the same in countries sharing a lake). This requires the adoption of a harmonized approach. Solid waste, on the other hand, is a problem that occurs on the banks of a lake or a river. Countries can aim at reducing the solid waste that ends up in a shared waterbody, but the way this is implemented in each country (through local enforcement of waste management regulation, through local collection by the government or companies, etc.) can vary and differences in approaches will not affect the overall outcome.

Harmonization is much more difficult to achieve in institutionalized cooperation processes than coordination. It will therefore be helpful for ABAKIR to carefully inquire – as started during the July 2022 high-level workshop – which issue areas really require harmonization and which of those are of utmost importance to be addressed. A priority list can then be established that can guide progress in the development of cooperation, tackling one issue after the other and at the appropriate level of coordination or harmonization.

Capacity is also a key bottleneck for water resources management in in the entire basin. Especially at the local level there is often a staff shortage and available staff lack sufficient expertise and training. This also affects the management of transboundary water resources and thus also the Lake Kivu and Rusizi/Ruzizi River Basin. Capacity development is therefore of utmost importance for the basin and each individual ABAKIR member country.

This concerns, in particular, capacity to engage in transboundary cooperation processes, develop and implement national and basin-level legislation and policies to address specific challenges, develop and implement specific tools for transboundary cooperation (such as basin management plans), or address disagreements in a constructive and peaceful manner. So far, there is limited expertise within the countries, especially beyond the ministries directly responsible for transboundary cooperation. A significant capacity development effort is therefore needed. This should include learning from other regional organizations and exchanging with staff from other basin organizations or national staff in charge of transboundary relations in other basins (this could also be used to improve relations with other basin organizations, namely LTA and CICOS, overall).

Specific issues that cause continuous concern and require action relate to various fields of water resources management (and beyond), which are addressed in the following subsections.

6.2 Sector- and issue-specific findings

Transboundary water management has an important role to play in ensuring that water resources are sustainably managed and protected for future generations while allowing for socioeconomic development and poverty eradication today. The Lake Kivu and Rusizi/Ruzizi River Basin faces various challenges that require different types of governance responses with different legal and policy instruments at different governance levels. The next sections focus on the 10 key challenges, as defined and discussed by stakeholders during the development of this report, and summarize findings from the previous sections on international, regional and national governance mechanisms specifically with regard to these challenges. They also provide recommendations on how to strengthen integrated water resources management in these areas, including through different types of transboundary cooperation, further.

It should thereby be noted that all sectors and issues are and will be affected by the impacts of global climate change. It will therefore be important to consider climate change – and the need to build resilience – in all measures taken by ABAKIR and/or its member countries when moving cooperation ahead.

It should be noted that these water-related challenges are embedded in a broader context of instability and insecurity. Stakeholders have highlighted this during the consultations. The problematic security situations in parts of the riparian states as well as between the states does negatively influence water resources management and international cooperation on it.

6.2.1 Water supply and use

Lake Kivu and the Ruzizi River provide water to people, ecosystems and the various economic sectors in the basin. In order to maintain these important services over time, it is important to ensure that withdrawal for the various uses does not exceed the limits of sustainability. With the basin still being relatively rich in water, this might not be of utmost priority (and has not been mentioned as such by stakeholders), however this is a rapidly emerging issue and therefore something that should be on ABAKIR's agenda. Especially hydropower developers have already noticed negative trends in river flow, with reduced flows already affecting electricity production during the summer months (and therefore also requiring coordinated reservoir operations, see below).

It is important that riparian countries to the basin agree about the use of the basin's water. This commitment has been defined in the 2014 ABAKIR Convention and its focus on integrated and sustainable water resources management (Art 2). The 2014 ABAKIR Convention, at the same time, recognizes each riparian state's right to use the water resources of the basin and benefit from their exploitation (Art 5), in the framework of certain principles further defined in Art 6. clarifying what this exactly means – also in light of international water law principles – is important in order to sustainably manage available water (including under climate change), but also in order to prevent potential future conflicts over these resources.

This does not mean that a full allocation scheme is required that would, in great detail, define quotas by country and/or sector. Instead, regional cooperation can play a key role in defining what is perceived as equitable and reasonable water utilization (as per 2014 ABAKIR Convention).

So far, however, hardly anything has been done in this regard. ABAKIR and its member countries need to eventually look into water availability in the basin (including under future climate change scenarios, develop different water balance scenarios and discuss whether and how existing and planned water uses and projects are in line with the supply. This can be done in a joint analysis, also contributing to data and information exchange and trust building. Beginning efforts have been made in the 2020 TDA to establish information on water availability, water balance scenarios, and climate change scenarios, but this requires further in-depth study.

Box 1: Nile Basin Strategic Water Resources Analysis

The Nile River Basin is faced with various water-related challenges, largely relating to a discrepancy between water supply (which is decreasing due to climate change) and water demand, which is seemingly ever-increasing. Competition and disagreements between countries over water resources have led to severe conflicts in the basin.

In order to address these challenges and gain a joint understanding of the water resources available in the basin – in light of future demand – the NBI has conducted a water resources analysis. The analysis contrasted different water supply scenarios (also taking into account different climate change scenarios) with different demand scenarios in the future. The analysis found that plans for future water resources development did not match with expected water supply – a wake up call for better water resources management and coordination across countries. In this context, scenarios for addressing the expected future imbalances were also developed.

Additionally, the joint implementation of the analysis supported trust building and information sharing among the Nile countries as national data was shared and analysed jointly, models were developed jointly, different experts from the different countries worked together and a joint understanding was gained of what the shared basin had to offer and where the challenges lie.

Source: NBI, <https://nilebasin.org/index.php/information-hub/technical-documents/124-strategic-water-resources-report/file>

6.2.2 Agriculture

Regulation of the agricultural sector with regard to its impacts on the basin's water resources remains limited – both at the transboundary level and individually in each country. Although the exact details vary across the three basin countries, it is generally observed – and has been mentioned by the stakeholders – that legal and policy instruments regulating the agricultural sector are either lacking or, more commonly, not implemented.

Most regulation for the agricultural sector can be done at the national and local level. Coordination across borders and the development of joint legal or policy instruments is only required where agricultural action on land in the basin affects the water of Lake Kivu or the Ruzizi River (e.g. through agricultural effluents (see section below on pollution), water abstraction for irrigation, erosion and related sedimentation, etc.).

It is important that countries agree on certain standards for agricultural water uses (and other

agricultural activities such as the use of fertilizers) and that countries commit to meet them for the sake of the basin as a whole. The development and implementation of measures can then be done within each country, according to their own national systems, laws and policies. This reflects common practice in other transboundary basins around the world. Coordination would thus be the right approach – instead of harmonization. This has been confirmed by stakeholders in the July 2022 consultation workshop.

As agriculture is only one of several challenges in the basin, it is important for ABAKIR member states to clearly define whether agriculture is a priority topic for them to address in urgency or whether agriculture-related cooperation activities can be postponed slightly to the benefit of other issues. As few stakeholders have mentioned agriculture as a key priority, it might seem useful for ABAKIR to first assess jointly which elements of agriculture really need to be addressed and how urgent this is. The same holds true for potential benefits arising from a more coordinated approach to agriculture in the basin.

6.2.3 Water quality challenges and pollution

Water pollution in the basin stems from various resources, namely household pollution, pollution from public venues such as markets, agricultural effluents, pollution from industrial sites as well as pollution from mining activities. The water quality in the lake has been declining for several years now, posing an increasing challenge to the basin, but also to Lake Tanganyika as the recipient waterbody. Addressing such pollution is crucial for the health of ecosystems and riparian people as well as for the maintenance of the various economic activities that depend on clean and healthy waters.

Water quality can be governed in different ways. Typically, laws and other regulatory instruments aim at limiting the inflow of specific pollutants into the watercourse with the goal to obtain a certain level of water quality/not to exceed a certain pollutant load considered as adequate in the context of a specific basin. Governing pollution thus consists of different elements, namely the definition of a desired state of water quality of the waterbody and an identification of pollutants (and their origin) that challenge this desired status and therefore need to be limited (at certain standards, effluent limits, etc.). This can be done at different governance levels. According to the subsidiarity principle (confirmed in Art 6 (f) of the 2014 ABAKIR Convention), it is desirable to leave implementation to the more local levels. At the transboundary level, more general aims and objectives, basin-wide pollutant standards that effectively tackle the pollution challenges, are typically set. Each individual country (and provincial and local entity within this country) can then determine how to reach these aims and objectives, deciding which polluters to limit in which way and through which policy or enforcement means (taking into consideration e.g. economic developments, impacts on livelihoods, etc.). This approach has also been confirmed by high-level representatives from the countries in a workshop in July 2022.

ABAKIR could play a key role in addressing the various types of pollution by working with its member countries in defining overall pollution standards in the basin that have to be met by the different users and related polluters. Although it can be difficult to establish a specific acceptable load and related thresholds, especially if limited data is available and the capacity of a waterbody to deal with certain pollution loads is therefore difficult to establish, ABAKIR nonetheless has a key role to play in at least attempting to develop such jointly agreed upon

thresholds. In this context, Art 6 of the 2014 ABAKIR Convention plays a key role as it puts forward the polluter-pays and the user-pays principle (Art 2 (b)), requiring the polluter or the user of water covering the costs relating to the prevention, control or reduction of pollution.

In addition, addressing pollution also requires comprehensive and consistent water quality monitoring. It seems that water quality monitoring still remains a challenge in Burundi and DRC (with only Rwanda monitoring water quality in the basin (GEF 2020), but still facing capacity challenges). ABAKIR should play a role in this – supporting member states in monitoring water quality in their parts of the basin, but also in harmonizing monitoring standards and then sharing related data and information.

Implementing this principle at the basin level is a challenge. And it is not necessarily what is required by the 2014 ABAKIR Convention. Compliance with Art 6 (b) of the Convention requires parties to the Convention to ensure the polluter-pays and the user-pays principle are being applied – at whichever governance level they regulate pollution control and management more generally.

Implementing this principle at the transboundary level would require ABAKIR itself to define and then implement certain fees for pollution, including collecting and enforcing them. This would require ABAKIR to have local (where pollution happens) enforcement power and be able to act on the territory of the member states. Or it would require the setting up of a complex system in which ABAKIR defines fees for pollution that are then implemented at the national level, e.g. through the collection of fees by local authorities in each member states. Examples for such approaches functioning at the transboundary level/via a basin organization are largely inexistent. The Senegal Organization (OMVS) has tried to establish such system with the support of the World Bank, but implementation remains in its infancy.

Pollution from (partly illicit) settlements around the lake are a key challenge for the Lake Kivu and Rusizi/Ruzizi River Basin. In particular, houses built along the water line often discharge household wastewater and other pollutants directly into the lake. While legislation in Rwanda establishes a buffer zone of 50 m³² in which no activities such as housing (and related pollution) are allowed, DRC legislation provides for a 15 m zone only (although consultations with some stakeholders suggests it has been extended to 50 m by now, with no formal references available for now; implementation and enforcement remain a major challenge though).³³ As a consequence, effluents from households do flow directly into the lake, causing at least localized pollution problems. DRC therefore needs to develop and, most importantly, enforce regulation that prevents such pollution. Transboundary cooperation and in particular the definition of specific basin-wide standards that have to be met can thereby be an important guidance and motivation.

Household pollution also affects drinking water production in some locations, such as Bukavu, where especially after heavy rainfall the Murundi River as well as smaller water sources from which drinking water is produced for Bukavu are too heavily polluted to produce adequate drinking water. This is an issue that needs to be addressed at the local level (based on the necessary national legal documents and enforcement rights as well as on an improvement of

³² Sher 2020

³³ It is important to note here that the security situation in Eastern Congo has played a key role here. E.g. the town of Bukavu has more than tripled in population in the last decade, which has, together with weak local governance, led to illicit construction and no adherence to building regulations in general and the buffer zone to the waterline in particular.

treatment facilities to ensure they are able to treat water at sufficient levels). That is, the regulation of household pollution does not necessarily require transboundary harmonization. Instead, it is important to develop and implement national laws and their respective local implementation documents that regulate pollution arising from households, including the construction of required infrastructure. This can limit pollution to streams and creeks that flow into Lake Kivu and the Ruzizi River.

Pollution from agriculture is another challenge that needs to be addressed. As agricultural effluents (mostly fertilizers and pesticides) vary across the countries, the definition of an overall standard, then broken down into specific action at the national and local level, seems most suitable again. Hence, coordination at the basin level through ABAKIR and implementation at the national level also seem to be the best approach here.

Similarly, effluents from industries and economic activities (including market places, but also locations producing specific and potentially hazardous pollutants, such as hospitals) in the basin need to be regulated at the national (and respective local) level, possibly with coordination at the basin level in terms of defining pollution standards. In addition, ABAKIR could also play a supportive role for its member states in supporting cleaner production measures in industries in the riparian countries that reduce pollution loads from the beginning on, thus not only preventing pollution, but also increasing efficiency by reducing operational costs where possible. This would also be in line with broader sustainability considerations that prefer pollution prevention over treatment.

Another severe challenge is pollution from mining, in particular from small scale artisanal mining, for which hardly any regulation exists or is implemented. Again, it is important that riparian states define clear standards for pollution originating from mining – differentiating between large-scale industrial mining and smaller artisanal mining – and implement those.

Box 3: Water quality management in the Danube River Basin

Water quality is a key issue in the Danube River Basin. Pollution originates from household effluents, agricultural runoff, industries and other sources. In recent years, however, significant advances have been made in addressing key pollutants in the basin. This has indeed led to a significantly improved state of the basin.

In the 1994 Danube River Protection Convention, all member states to the International Commission for the Protection of the Danube River (ICPDR) have committed to improve the quality conditions in the basin and to cooperation in this regard. The European Water Framework Directive (EU WFD), to which ICPDR member states are also bound, further reinforces this.

Accordingly, the ICPDR coordinates member states' efforts in identifying key pollutants, developing programs of measures to reduce those (through measures then implemented at the national level and under national control and budget) and reporting back to the basin organization and all riparian states on improvements made. Joint monitoring, e.g. through a Trans-National Monitoring Network, which captures and unifies data on water quality from stations all over the basin, supports these efforts as it ensures that all riparian states are informed about challenges and progress at all times.

Source: ICPDR, Water Quality, <http://www.icpdr.org/main/issues/water-quality> , ICPDR, Introduction to the Danube River Basin Water Quality Database, <http://www.icpdr.org/wq-db/>

6.2.4 Solid waste

Solid waste, and in particular plastic waste, has been mentioned by many stakeholders as a challenge to the health of the basin. As it is not or is irregularly collected, it gets washed into the lake by various streams (and the waste that is collected tends to be washed into the lake during the regular heavy downpours due to ineffective handling of solid waste once collected).

In addition to affecting the lake, solid waste (and other debris), including plastic waste, also affects the generation of hydropower. It is reported that Ruzizi I is operating at only half of its capacity due to debris in front of the intake and that Ruzizi II regularly (up to 3 times per week) has to stop one or more turbines from operating because of debris. Clearing this generates additional costs (on top of lost electricity production) and is said to be a key reason for regular power cuts in Bukavu.

Waste management is, however, a matter that is typically managed at the local level – possibly with framework regulation at the national level. While the urgency of dealing with the waste problem is obvious, a transboundary approach to the problem, e.g. through coordinated legislation or harmonized policies, seems of little use. This has also been accepted during the high-level consultation workshop in July 2022.

ABAKIR therefore might rather want to engage in coordinating national and local activities around solid waste management. Moreover, ABAKIR might engage in monitoring the solid waste situation – probably in cooperation with the dam operators – in order to see whether and how national action makes a difference. In addition to regulation, awareness raising in the local population is an important means for addressing the waste problem around the lake and beyond. Likewise, building the capacity of local actors, including entrepreneurs and industries, to avoid, but also to collect and to valorise solid waste can be a promising way forward that countries could engage in and that ABAKIR could facilitate.

6.2.5 Fishing and fisheries

Fishing and the fisheries sector are of great importance for the basin and its population, but legal and policy instruments for sustainably managing the sector are still of limited effectiveness. Declining fish stocks due to overfishing, illegal or illicit fishing or inappropriate fishing behaviour are a result of this – although also affected by warming lake waters due to climate change, the intrusion of pollutants and other factors.

The management of fish stocks and the regulation of the fisheries is thus an issue-area that absolutely requires transboundary cooperation, coordination and integrated management as it constitutes a typical common pool resource problem.

This concerns, firstly, fishing quotas or other measures to limit the overall amount of fish taken from the lake. Such quotas need to be defined on the basis of the overall sustainable yield of the lake, that is, the amount of fish that can be taken from the lake without negatively impacting

the long-term sustainability of fish populations. This overall amount then needs to be shared between riparian countries. The respective country quotas can then be further managed within each country, e.g. by defining the allocation of quotas out of the overall share to specific geographical locations, fishermen groups, etc. Moreover, the compliance with such local quotas then needs to be monitored and enforced in each country at the local level. This should also include reporting back to the national and then to the transboundary level on compliance with quotas, but also on the development of fish populations in specific locations.

No such mechanism currently exists in the Lake Kivu and Rusizi/Ruzizi River Basin. ABAKIR as the basin organization is the ideal actor to develop such a mechanism. This has been confirmed by stakeholders consulted for this report, including high-level representatives of the countries who gathered in July 2022. The focus should thereby be on setting clear standards that apply to all riparian countries and create binding law for all involved, which then needs to be implemented (and reported back on) by each country.

The same holds true for fishing practices and related protection measures: Protection measures to sustain fish stocks in the long term need to be developed. This concerns, for instance, periods during which no fishing is allowed so that fish stocks can recover and juvenile fish can develop. Likewise, joint fishing and fisheries regulation typically also includes guidance on the type of technology and equipment to use in order to protect fish populations (e.g. juvenile fish) and to level the playing field between fishermen from different countries.

ABAKIR should also engage in this field, leading countries towards jointly agreed upon and binding commitments on fishing practices, fishing technology and other protection measures. So far, Rwanda has such measures in place (with a 3-month no-fishing-period as per Rwandan 2008 Aquaculture and Fisheries Law and the related 2020 Ministerial Order), but DRC has so far not introduced similar measures (although some regulation on fisheries is done at a more local level, mainly through governors in provinces adjacent to the lakes) and a revision of the fisheries law is currently under way at the national level. This is a field of urgent action for ABAKIR, especially as local stakeholders report declining fish populations and reduced catch and thus lower income in the fisheries sector.

Compliance and enforcement are likely to present a major challenge for the implementation of fishing-related regulation due to the very local nature of the activities. Given the limited opportunities for livelihoods and income generation, local people often have to turn to fisheries – even if illicit. It will therefore be difficult to enforce rules and practices. This requires good coordination and clear chains of coordination from the transboundary (ABAKIR) level all the way to the local level and local enforcement entities.

This is not only important for the sustainability of fish populations and thus the long-term livelihood opportunities for local people, but also has a broader security dimension. Various conflicts have already occurred between Rwandan and Congolese fishermen in the past years and continue to occur, leading not only to arrests of illegal fishermen but violent conflict between fishermen from both sides (ISS 2022), including fatalities. In a region generally suffering from violence and instability, any possible new source of tension at the local but also at the transboundary level should be mitigated very early on.

Box 5: Joint fisheries management in Lake Ohrid and Prespa

Albania and North Macedonia share several watercourses, including the transboundary lakes Ohrid and Prespa. Both lakes are important sources for fisheries, providing local people around the lake but also the countries' economies with important income. Over the past decades, however, fish populations had suffered from overfishing as well as other environmental challenges.

In 2020, both countries signed an Agreement on Joint Sustainable Fisheries Management in Lake Ohrid and the Great Prespa Lake and established a Joint Fisheries Committee. Through this mechanism – and in the absence of a basin-wide basin organization dealing with water resources management more generally – both countries now cooperate in developing binding standards and practices that ensure the sustainable use of fish in the lakes, including e.g. fishing practices, species protection, protection of juvenile fish, etc.

Source: GIZ, 2017, Fish and Fisheries. Lake Ohrid,
<https://www.giz.de/en/downloads/Fish%20and%20Fisheries%20Ohrid%20Lake%20-%20EN.pdf>

6.2.6 Hydropower

The operation of dams for hydropower generation is another issue area that requires coordinated management. With two operational hydropower plants on the Ruzizi River and another two under development, the effective governance of these plants – not only for hydropower generation, but also for environmental, social and economic purposes – is crucial. In particular, there needs to be a harmonized approach – implemented at basin level – for the development of hydropower projects (and any dam, in fact) as well as for their operation. This was confirmed by stakeholders, in particular in the consultation workshop in July 2022.

With regard to the development of such projects, it is important to consider possible transboundary impacts already early in the planning phase. While all basin countries have laws in place that require environmental impact assessments to be carried out, the inclusion of transboundary impacts in those is insufficient. It does not sufficiently require project-developing actors to consider possible transboundary impacts – as would be required under international law and, in particular, the no significant harm principle.

ABAKIR needs to play a key role in this regard. ABAKIR should engage in the harmonization of environmental impact assessment requirements for projects with potential transboundary impacts. ABAKIR can also, similarly to other basin organizations around the world, facilitate such transboundary environmental impact assessments, e.g. by providing relevant data, setting up expert groups among riparian countries that discuss specific elements (such as impacts on the flow regime, fish and fish migration or sediment) or sharing relevant information across all riparian countries, including with the public.

Box 6: Guidelines for Transboundary Environmental Impact Assessments (TbEIA) in the Mekong

In the Lower Mekong Basin, the Mekong River Commission (MRC) has developed Guidelines for Transboundary Environmental Impact Assessment (TbEIA). These guidelines aim at facilitating cooperation among riparian states in conducting environmental impact assessments for any project with potential transboundary impacts. These complement national environmental impact assessment laws, policies and guidelines, ensuring that particular attention is paid to potential transboundary impacts. Moreover, they support the implementation of specific legally binding instruments under the 1995 Mekong Agreement, namely the Procedures for Notification, Prior Consultation and Agreement (requiring a sound understanding of possible transboundary impacts) and the Procedures for Data and Information Exchange and Sharing.

These guidelines create a transparent basis for assessing potential transboundary impacts and share such information across all states. They therefore also contribute to building trust between states as all riparian states have the same technical approaches to rely on, creating a trusting environment that prevents conflicts early on.

Source: Mekong River Commission, 2018, <https://www.mrcmekong.org/resource/ajg6hp>

When designing and managing dams, the maintenance of minimum flows – for hydrological, environmental or socioeconomic reasons – is a key element of sustainability. For the Ruzizi River and its dams, mechanisms for ensuring minimum flows do not yet exist. Rules exist that ensure a minimum flow and a minimum water level to be maintained at the outlet of Lake Kivu into Ruzizi River. Proper cascade management will, however, become increasingly important, once Ruzizi III is operational. While this is largely in the hands of EGL and SINELAC as so far electricity production considerations alone determine the use and the management of the river's waters and the operation of dams, ABAKIR might have a role to play here, bringing in environmental and other water user sectors' perspective, moving cascade operation considerations beyond exclusively electricity output.

Engagement in planning and project design also needs to be accompanied by effective project management and operation. In addition to the planning stage, when a basin organization needs to be involved in ensuring that new projects will not have negative transboundary impacts that could amount to significant harm, there is also a need for coordinated management and operation of dams.

This concerns, for example, the adherence to certain operational standards (if they have been determined) or the development of such. For Ruzizi I and II, it seems that fish ladders have been included in the project (Muvundja et al. 2022). However, these do not seem to be operational. The dam operators might have limited interest in such issues, given their sole mandate on electricity production. However, a closer engagement between ABAKIR and EGL and SINELAC could improve the situation, thus contributing to more sustainable hydropower generation. Increasing acknowledgement by the electricity producers – not least due to decreasing water quantities that are impacting their operation, but also water quality problems relating to solid waste, negatively impacting hydropower generation as well – might, however, increase the willingness to actively engage with ABAKIR. This could lead to an effective cooperation that allows for truly integrated basin management.

Integrated cascade management and operation is crucial for integrated water resources management. The aim is to go beyond a sole hydropower focus, where the operation of individual dams would be driven by electricity output considerations alone, and instead take other elements – such as flood protection, environmental flows, etc. – into account as well.

Box 7: Dam cascade management for flood protection in the Pacific Northwest

The Columbia River, shared between the U.S. and Canada, is home to numerous dams, originally developed mainly for hydropower generation. In light of the high flood risks the region is facing, the different water management agencies and dam operators in both the US and Canada – including the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Bonneville Power Administration and British Columbia Hydro – cooperate closely in order to adjust reservoir operation across four U.S. States and the Canadian province of British Columbia for flood protection purposes. The operation of dams is coordinated and optimized with a view to store water in reservoirs and manage flows in order to reduce flooding.

This is also based on a dense network of monitoring stations, collaboration with weather services as well as the involvement of communities in the basin. Based on an atmosphere of trust and collaboration, local dam operators and water managers regularly engage with each other, e.g. through daily coordination calls and open data exchange.

Source: US Army Corps of Engineers 2022, <https://www.nwd.usace.army.mil/Media/News-Stories/Article/3105888/coordinated-action-critical-to-preventing-flooding-in-portland-vancouver/>

In the Lake Kivu and Rusizi/Ruzizi River Basin, ABAKIR as the basin organization has a role to play in such coordinated dam management. This does, however, require intense cooperation with SNEL, SINELAC, the upcoming Ruzizi III project and any other national and regional agencies (such as EGL) involved in decision-making over the operation of individual dams or the entire cascade.

A far-reaching cooperation mechanism already exists between all three basin states in the context of EGL and the development of the Ruzizi III hydropower project (located on the Ruzizi river on the border between DRC and Rwanda, but jointly developed also with Burundi under the EGL as a sub-organization of CEPGL). The arrangement for the project includes an energy-sharing formula (1/3 of electricity generated for each partner). Although implementation is significantly lagging behind, Ruzizi III can be seen as a commitment of all basin states to cooperation. This resembles the earlier projects of Ruzizi I and II, which already produce electricity for one (in the case of Ruzizi I) or all three countries (in the case of Ruzizi II). As the benefits from cooperative efforts are tangible (electricity generated), this also highlights that clear benefits are required in order to strengthen countries' ownership of regional cooperation processes (and the institutions that manage these processes, improving their sometimes insufficient effectiveness) – an important lesson learned for ABAKIR.

Another challenge not addressed in this report is the efficient operation of hydropower plants. The existing hydropower plants Ruzizi I and II do not operate at their full installed capacity and in fact never have (Muvundja et al. 2022). This is mainly due to technical problems as well as management and maintenance challenges. While ABAKIR is not directly involved in the operation of these projects, there might be room for ABAKIR – in its engagement with the

hydropower operators – to emphasize the need for efficient electricity production, not least because the costs that the projects cause to the environment of the basin need to be countered by adequate benefits in terms of electricity supply.

6.2.7 Erosion, land management and sediments

Sedimentation of the Ruzizi River is a key issue for hydropower production. The reservoirs of Ruzizi I and II are already facing severe siltation problems, endangering the production of electricity in the future. Water quality is affected in the lake and in the river, impacting various other economic uses as well.

Sedimentation is, to a large extent, a result of land management and thus at the core of the national legal and political responsibility of each basin country. ABAKIR member countries' national laws and policies relating to land use, land management and specifically sediment issues do, however, vary considerably. Due to the very local nature of land management, ABAKIR's role should be a coordinating one.

The Strategic Action Plan for the Lake Kivu and Rusizi/Ruzizi River Basin and its Basin Authority ABAKIR contains therefore several recommendations for ABAKIR, like coordination and awareness raising. For most households in the basin the main source of energy remains firewood or charcoal for cooking. This is increasing soil erosion and sedimentation, decreasing biodiversity and damaging microclimates. The propagation of improved stoves in the Basin can help reduce the use of firewood and thus minimise the extraction of wood from forests in the Basin, while reforestation contributes to the conservation of soil and water. Improving access to electricity for households would also reduce the use of firewood, thereby protecting the natural water reservoirs created by forests. There is also considerable potential for the use of photovoltaic panels as part of rural electrifications schemes.

ABAKIR can bring countries – and relevant national and regional agencies, including hydropower producers – together to jointly discuss sediment issues, develop joint guidelines or standards, support countries in the implementation of these and monitor the effects over time. This needs to happen in cooperation with the hydropower operators given their significant influence on the lake and the river levels.

6.2.8 Nature conservation and environmental protection

Nature protection and conservation remains a challenge. While countries generally have – although to varying degrees – regulation and policies in place, their implementation remains limited. Designated protected areas, for example, are being encroached on by agricultural and urban development. The Ruzizi Delta National Park in Burundi, for example, has lost a considerable part of its territory due to agricultural encroachment – on no legal basis and in violation of the originally designated boundaries of the national park.

Where ecosystems transcend the boundaries of nation states, joint governance is required. This can be done through the harmonization of national legislation and policies for national park and protected area management/for nature conservation and/or through coordination between countries without directly harmonizing the laws. Coordination is thus a better choice than harmonization.

Within the broader field of environmental protection, biodiversity, nature conservation, etc., specific topics that need transboundary attention have also been mentioned by stakeholders. This includes, for instance, the management of hippopotamus in the river, for which coordination across country borders is required, but which is so far not addressed.

It will be important for ABAKIR to continuously monitor existing and newly emerging environmental issues in the basin and assess whether they merit transboundary engagement through ABAKIR – and if so, how (coordination vs harmonization).

6.2.9 Navigation

Shipping and water-borne transport are a key economic activity on Lake Kivu, including transport of goods and people across the lake (within the same and across countries). Navigation is better developed on the DRC³⁴ side of the lake, with ferry services reaching Bukavu and Goma, but less so on the Rwandan side so far (but this might change in the near future). Accordingly, the legal, policy and institutional framework for navigation is also more developed in DRC than in Rwanda.

Navigation on a transboundary lake (or river) does, however, require consistent navigation rules and standards – for safety, for environmental concerns and many others. ABAKIR therefore should play a key role in ensuring that countries closely cooperate on navigation, including through supporting the harmonization of navigation rules and standards for the lake to create a level playing field for lake operators.

Especially in light of the importance of navigation for the overall economic development of the region, ABAKIR might consider putting priority on this issue-area. This is also the case because good examples and legislation – even from the region, such as from CICOS – are available and can be adapted to the specific situation of Lake Kivu. This might be a valuable contribution not only to cooperation and economic development, but also come with a peacebuilding dimension between the countries.

Box 9: Governing transboundary navigation in the Sava River Basin

Riverine navigation is an important economic sector in the Sava River Basin in Southeastern Europe. The International Sava River Basin Commission (ISRBC), established under the 2002 Framework Agreement for the Sava River Basin, therefore helps the 5 riparian states to coordinate navigation activities and performs important activities relating to the rehabilitation and development of waterway infrastructure in the basin and relating to navigation safety.

Activities in the past years included, among others, the development of a joint plan for the marking, maintenance and development of waterways, the adoption of unified rules on navigation (including conditions for navigation), the adoption of technical rules for vessels and personnel, as well as the establishment of River Information Services (providing electronic

³⁴ Reference should also be made to the 1999 Code de la Navigation Intérieure CEMAC/RDC, which the members of the Communauté Economique et Monétaire de l'Afrique Centrale and DR Congo have entered into. It provides guidance on transboundary navigation at the regional level and could thus serve as an interesting model for transboundary navigation governance that could inform the Lake Kivu and Rusizi/Ruzizi River Basin as well.

navigational charts and other important information and warnings).

These activities, developed in a joint manner through the basin organization and implemented at transboundary and at national level – according to the principle of subsidiarity – have significantly advanced the navigation sector in the basin and contributed to making it safe and economically viable again – especially after the war between the countries in the 1990s, which had brought navigation to a standstill.

Source: ISRBC, Navigation, <https://www.savacommission.org/activities/navigation-269/269> and Protocol on the Navigation Regime to the Framework Agreement on the Sava River Basin, https://www.savacommission.org/UserDocsImages/05_documents_publications/basic_documents/protocol_on_navigation_regime.pdf

6.2.10 Methane gas exploration and exploitation

The methane gas of Lake Kivu could present significant economic gains for riparian states. However, so far only Rwanda has engaged in exploration and exploitation, with the company KivuWatt / ContourGlobal extracting methane gas from Lake Kivu with a capacity of 26 MW, which electricity is delivered to the national grid of Rwanda. Another concession is awarded to Shema Power Lake Kivu which is finalising the construction of barges, pipelines and a powerplant for methane gas extraction. The plant will have a capacity of 56 MW to be connected to the national grid of Rwanda. . DRC, on the other hand, remains largely absent and is only slowly engaging in methane gas exploitation (e.g. with concessions issued to potential developers, such as the Tunisian Company EPPM, working on gas extraction since 2017). – not least because the region is of limited interest to the national government and private investors have also not been overly keen to engage in this conflict-ridden part of the country. In light of the electricity shortages the Congolese side of the basin faces (with e.g. the city of Goma experiencing regular and significant electricity outages), development of methane gas exploration might increase in importance on the Congolese agenda soon. Moreover, both countries have signed an MoU for a joint project aiming at producing 200 MW of methane gas from Lake Kivu. A coordinated and in fact joint approach to methane gas extraction is in any case important in order to ensure the safety of the basin's people while harvesting sustainable economic outcomes. This requires legal harmonization – for methane gas as well as for oil. Such harmonization has already started to some extent, namely in the context of the Management Prescriptions for the Development of Lake Kivu Gas Resources (Tietze et al. 2009), jointly developed by both countries since 2007.

Various instruments exist between the countries to govern the exploration and exploitation of methane gas. Starting in 1975, DRC (then Zaire) and Rwanda entered into the first Convention de coopération entre le Rwanda et la République du Zaïre pour l'exploitation, le transport et la commercialisation du gaz méthane du Lac Kivu (Bukavu Convention). It states that both countries must jointly conduct all activities of methane gas exploitation. It was reaffirmed at a summit by both countries in March 2007. In 2015, when technologies were advancing and interest in exploiting these resources had considerably increased, a Protocole d'Accord sur la Surveillance de l'Exploitation Sécurisée Gaz Méthane du Lac Kivu was adopted by DRC and Rwanda. This was followed by an MoU between both countries in 2017, aiming at developing a specific project, focusing on the joint exploitation of methane gas (MoU on the Joint Exploitation of Methane Gas in Lake Kivu, aiming at producing 200 MW of electricity) – also accompanied by another MoU on the joint exploration of oil in Lake Kivu.

Overall, there is thus a bilateral framework in place between DRC and Rwanda for managing the exploration and exploitation of the methane gas (as well as oil) of Lake Kivu. Cooperation between both countries is happening – in parallel to national activities, which are more advanced in Rwanda than in DRC (not least also due to the commitment of both countries to work together and not move ahead unilaterally). So far, such activities have not led to any disagreement between the countries (Augé 2009). In order to prevent such disagreements in the future (as a result of competition between the countries over methane gas resources or as a result of concerns in DRC about the impacts of Rwandese actions), renewed and more specific cooperation is required. ABAKIR should support such cooperation initiatives between its member countries.

At the same time, it will be important to avoid duplications or even competition between ABAKIR and other initiatives – notably the existing bilateral initiatives between DRC and Rwanda. As a first step to do so, an MoU will be signed soon between ABAKIR and the Rwanda Environment Management Authority (REMA), which leads this bilateral work.

The regulation of methane gas abstraction also affects fishing in the lake. A well-functioning relationship between methane gas exploitation and the fisheries sector is crucial to maintain the benefits generated by both sectors and prevent conflict between them. For safety reasons, a no-fishing zone needs to be established around exploration and exploitation locations (of 500 m from barges and 200 m from pipelines). As indicated during consultations for this report, no-fishing zones have been agreed to between the private company extracting the methane and the affected riparian states (DRC and Rwanda). However, no such zones have been defined in national or transboundary legal or policy instruments so far (but are apparently being discussed in negotiations between the countries under the umbrella of their MoU).

Electricity generation through hydropower and through methane gas can only be done in a secure and reliable manner if the lake level is maintained and properly managed. . For the safety of people, a certain lake stratification is also required to ensure that the process of capturing methane can be executed in a safe manner. Coordination between the riparian states on the management of the lake is therefore of utmost importance.

6.3 Current state of ABAKIR for institutionalized cooperation and transboundary water resources management in the broader context of the basin

In addition to an analysis of the existing legal and policy instruments for governing individual water resources management challenges (see previous section), it is also important to return to ABAKIR's role and functioning. This concerns, in particular, its institutional capacity to actually live up to its role and responsibility (assessed earlier in this report).

First and foremost, the persistent non-ratification of the 2014 Convention remains a challenge as it prevents many cooperation processes and activities from the beginning. This needs to be addressed by the three countries of the basin urgently. It would be valuable to assess in detail where impediments to ratification lie and whether and how those can be overcome. If such analysis results in the acknowledgement that ratification is unlikely in the short-term, more thoughts should be put into how to make ABAKIR as a transitional institution more functional.

A key problem, highlighted by numerous stakeholders during the consultations, is the lack of visible results and outcomes produced by ABAKIR in its interim and transitional status. Stakeholders in the riparian countries perceive ABAKIR as insufficiently effective and have so far not seen the added value of the organization for addressing the basin's challenges. Therefore, appetite in each riparian country for ratifying the 2014 Convention and/or engaging in specific ABAKIR activities or providing human and financial capacity to those remains extremely limited. This has pushed the transitional ABAKIR into a vicious cycle in which the organization relies on member states' commitment and contributions to cooperation in order to create impact while at the same time member states are reluctant to provide such commitment and contributions due to the lack of visible impact.

This has created a stalemate situation – which has also been observed in other basins around the world – which is difficult to change. The interim ABAKIR will need to prove the benefit that it provides and thus its added value to its member countries quickly in order to reignite interest in transboundary water cooperation.

Beyond the actual functioning of the transitional ABAKIR as a basin organization, other challenges concern specific activities required for any form of effective basin management. First and foremost, this concerns the sharing of data and information. Without adequate data (e.g. on the state of the basin's resources, the impacts of water resources developments or the effects of measures implemented for basin management), no sound decision-making is possible – neither at the national nor at the basin level. So far, the transitional ABAKIR has no such mechanism in place although it is mandated to do so. This significantly hampers the understanding that all countries – individually and jointly – have of the basin and thus their ability to take decisions and jointly implement activities.

In addition, a lack of data and information sharing also often comes with trust issues. Not sharing information within a basin can lead to situations in which some riparian countries feel that they are not receiving sufficient information about activities in co-riparian countries, triggering mistrust and suspicion and thus feeding competition over shared resources that can lead to full-fledged conflict. Examples from around the world, including e.g. the Aral Sea Basin (where Tajikistan shared little information about the Rogun Dam, leading Uzbekistan to fear the impacts on its agricultural production) or the Nile (where Ethiopia did not notify Egypt over the Grand Ethiopian Renaissance Dam and shares little information about the exact expected impacts), confirm this risk.

In addition to issues pertaining to ABAKIR as an institution itself, it has also become clear that ABAKIR is embedded in a complex regional web of rules and institutions. It is connected to and influenced by regional organizations – of general political and economic nature as well as of issue-specific nature – and basin organizations as well as specific actors within its member countries that play a regional role in the basin. This means that ABAKIR has to connect to and coordinate with these institutions. ABAKIR and its members should therefore engage quickly and intensively with other players in the region, especially EAC, CEPGL, SINELAC, LTA and CICOS.

7 Recommendations

This section summarizes key recommendations derived from this report and the analysis undertaken in the context of the development of the report, including the various stakeholder consultations.

It is recommended that transboundary cooperation and related legal and policy coordination and harmonization focus on the following issue areas:

- Water resources management and planning (including sectoral uses)
- Water quality
- Fish stocks and fishing
- Hydropower development, planning and operation
- Navigation
- Methane gas exploration and exploitation
- Environmental protection and nature conservation

Other issue areas are certainly of importance for the well-being for the basin's resources, people and riparian countries, but require addressing at the local and national level without necessarily also necessitating basin-wide transboundary action. This concerns, in particular, the provision of water and sanitation services and the management of solid waste (including plastic waste), which need to be addressed urgently in each country, but do not necessarily require intense transboundary cooperation (beyond regular exchange and reporting on advances to ABAKIR and a monitoring of these activities' impacts on the basin).

In addition, it is important to address various cross-cutting issues. The most important (and urgent) one is the sharing of data and information. So far, there is no mechanism through which ABAKIR member states share data and information on the state of the basin and its resources, impacts of water resources developments or effects of measures taken in order to protect or better manage the lake. This makes informed decision-making and thus any kind of effective basin management difficult.

Overall, recommendations derived from this report can be summarized as follows, differentiating between

- 1) the broader regional environment within which Lake Kivu and Rusizi/Ruzizi River cooperation takes place,
- 2) the legal context – at the basin and at the national level, and
- 3) the ABAKIR and its functioning.

With regards to the **broader regional environment** within which cooperation takes place, it is important to engage with the regional economic and political integration organizations that operate (at least partly) in the same geographic space and have overlapping membership. This concerns, in particular, the CEPGL. Hosting ABAKIR has already established a strong link between CEPGL and ABAKIR, which is likely to be strengthened once and if the MoU currently under development between both organizations is adopted.

In addition, ABAKIR and its members need to explore their relations to basin organizations with overlapping hydrological scope, namely LTA, but also CICOS. With Lake Kivu and the

Rusizi/Ruzizi River flowing into Lake Tanganyika, it is of utmost importance to ensure integrated basin management by establishing political and technical ties – in an institutionalized manner, e.g. through an MoU or a cooperation agreement or even stronger linkages – between ABAKIR and the LTA. Similar relations can also be explored by CICOS, yet with slightly less urgency.

Engaging with other basin organizations in the region – namely LVBC and NBI – can have additional advantages, in particular the exchange of experiences on transboundary water cooperation.

Another important aspect that needs to be addressed relates to the legal basis for cooperation – at the basin level and in riparian states. With regards to **ABAKIR's legal basis**, it is important that member states advance the ratification process and provide ABAKIR with a fully ratified, implementable and functional legal basis. ABAKIR cannot be expected to perform its intended functions if it lacks the legal basis for this. Moreover, the persistent non-ratification also has implications for other factors affecting the basin organization's functioning, namely its funding (which member states claim to ensure once the 2014 Convention is ratified, leaving ABAKIR in a limbo for now).

Addressing the legal basis for cooperation also includes the question of **legal harmonization or political coordination** through which specific issues in the basin can and should be addressed. ABAKIR and its members need to define not only which issues to tackle first (see below), but also whether to do that through legal harmonization or political coordination. Differentiating clearly between matters that indeed require harmonization (such as fisheries, navigation, cascade management or methane gas exploitation) and matters that can effectively be addressed through coordination (such as solid waste or water quality/pollution) will be crucial. Given ABAKIR's limited capacities, focusing on the key issues at the right levels of cooperation (harmonization vs coordination) will allow to ensure that the cooperation process moves ahead in a timely and effective manner.

Next steps could consist of jointly identifying these key issues (also supported by the findings of the SAP) and setting up technical working groups with members from all three countries to identify management options for the respective challenges or opportunities, then deciding whether (and how) those can be translated into additional legal documents or policy instruments. External support might be required for this, but ownership should come from the countries first.

Thirdly, it is important to improve the **functioning of ABAKIR as a basin organization** and ensure its effectiveness in ensuring integrated basin management. This requires sufficient technical, human and financial capacity. Sufficient and adequately trained and capacitated staff is required to fulfil core functions of ABAKIR. The current staffing shortages therefore need to be overcome as quickly as possible. This concerns, in particular, technical staff in addition to existing management staff.

In order to do so, ABAKIR needs sufficient financial resources. Those are, first and foremost, to be provided by its member states (as they have already committed themselves to). Funding a basin organization's core costs from member contributions has proven an important and sustainable means for strengthening ownership and improving efficiency. Donor funding, investments and possible innovative funding mechanisms (e.g. climate finance) can be

explored in addition, supporting the implementation of specific basin management activities.

Addressing the main recommendations of this report and moving towards a fully functional basin organization is crucial for the sustainable management and development of the Lake Kivu and Rusizi/Ruzizi River Basin – especially in light of the many challenges it faces already, in the water sector and beyond.

Moreover, it will be crucial that ABAKIR demonstrates its value to its member states (and their populations) as well as to the international community in the very near future. ABAKIR's standing and reputation are at serious risk and commitment of member states seems to be decreasing over time – reflected, among others, in the lack of financial contributions of member states. If this negative trend continues, ABAKIR will find it difficult to ever become an effective basin organization. This will ultimately adversely affect the basin, its resources and the people depending on them.

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9 Annex 1: Overview of legal instruments in ABAKIR member countries

Sector	Sub-sector/area	Burundi		DR Congo		Rwanda	
		Laws	Policies/Strategies	Laws	Policies/Strategies	Laws	Policies/Strategies
Water	General	Loi n°1/02 du 26 mars 2012 portant Code de l'Eau au Burundi	National Water Policy/Politique de l'Eau (2009)	2015 Water Law (loi N°15/026 du 31 décembre 2015 relative à l'eau)		Law No 06/2017 of 03/02/2017 establishing the Rwanda Water and Forest Authority and determining its mission, organization and functioning	National Policy on Environment and Climate Change (2019)
		Décret-loi N° 1/41 du 26 novembre 1992 portant sur l'organisation du domaine public hydraulique	National Water Strategy (2011-2022)			2013 Prime Minister's Order N° 143/03 of 24/05/2013 determining the organization, functioning and composition of the National Water Consultative Commission	National Plan for Environment and Natural Resources (2018-2024)
	Water and sanitation	décret-loi N° 1/16 du 17 mai 1982 portant sur le code de la santé publique	National Sanitation Policy/Politique nationale d'assainissement et sa stratégie opérationnelle (2013)		Politique nationale d'assainissement	Regulation No 002/RB/WAT-EWS/RURA/015 OF 23/09/2015 Governing Water Supply Services in Rwanda	National Policy and Strategy for Water Supply and Sanitation Services (2010)
		décret 100/242 du 31 décembre 1992 portant sur la réglementation de l'évacuation des eaux usées en milieu urbain			Stratégie nationale d'assainissement		
	Waste water	Ordonnance Ministérielle conjointe n°770/468 du 25 mars 2014 portant fixation des normes de rejet des eaux usées domestiques et industrielle					
	Water resources management	2012 Law on the Water Code (Law n°1/02)	Document d'orientation stratégique pour l'aménagement des Bassins versants, 2022			2018 Law on the Use and Management of Water Resources in Rwanda (Law n°49/2018)	National Policy for Water Resources Management (2011)
						2013 Ministerial Order determining the Main Visions of Water Management of the Large Hydrographic Basins in Rwanda (Ministerial Order n°007/16.01)	Rwanda's National Water Resources Master Plan (2015)
						2013 Ministerial Order on Procedures for Declaration, Atuthorisation and Concessions for Water Use (Ministerial Order n°002/16.01)	2016 National water supply policy RURA
						Ministerial Order N° 007/16.01 of 15/07/2010 determining the length of land on shores of lakes and rivers transferred to public property	
						Ministerial Order N° 002/16.01 of 24/05/2013 determining the procedure for declaration, authorization and concession for the utilization of water	
						Ministerial Order N° 005/16.01 of 24/05/2013 determining the organization and functioning of hydrographic basin committees	

				<p>Ministerial Order N° 006/16.01 of 24/05/2013 determining the organization of water resources data collection, treatment, management, exploitation and communication</p> <p>PMO no 006/03 of 30/01/2017 drawing up a list of swamp lands, their characteristics and boundaries and determining modalities of their use, development and management OG no 07 of 13/02/2017</p> <p>Ministerial Order N° 007/16.01 of 24/05/2013 determining the main management visions of water resources in the main hydrographic basins in Rwanda</p>
Environment	Environment in general	<p>2000 Law on the Environment (Law n°1/01) (loi N° 1/010 du 30 juin 2000 portant sur le code de l'environnement de la République du Burundi)</p> <p>National Strategy for the Environment</p> <p>2010 Decree on the Environmental Impact Assessment Procedure (Decree 100/2002)</p> <p>1980 Decree on the Creation of National Parks and Nature Reserves (Decree n°1/6)</p> <p>décret N° 100/22 du 7 octobre 2010 portant sur les mesures d'application du code de l'environnement en rapport avec les procédures d'étude d'impact environnemental (exigence de l'étude d'impact)</p> <p>Loi n°1/09 du 25 mai 2021 portant modification du Code de l'Environnement</p> <p>2018 Decree on the Ministry of the Environment, Agriculture and Livestock (Decree n°100/087)</p>	<p>2011 Law on the Fundamental Principles relating to Environmental Protection (Law n°11/009) (Loi N°11/009 du 09 juillet 2011 portant principes fondamentaux relatifs à la protection de l'environnement)</p> <p>National Environmental Action Plan (1996)</p> <p>2006 Decree on the Provisions relating to the Obligation to carry out Environmental and Social Assessments of Projects in the DRC (Decree 043/2006)</p> <p>Decree on the Creation, Organisation and Functioning of the Congo Environmental Study Group (Decree 044/2006)</p> <p>Loi n°14/003 du 11 février 2014 relative à la conservation de la nature</p>	<p>2018 Law on the Modalities of Protection, Conservation and Promotion of the Environment/Law on the Environment (Law n°48/2018)</p> <p>2008 Decree on the Requirements and Procedures for Environmental Impact Assessments (Decree 003/2008)</p> <p>2008 Decree establishing the List of Works, Activities and Projects subject to Environmental Impact Assessment (Decree 004/2008)</p> <p>2018 Ministerial Order N° 001/2018 of 25/04/2018 determining the list of works, activities and projects subject to an environmental impact assessment</p> <p>Law N°63/2013 of 27/08/2013 determining the mission, organization and functioning of Rwanda Environment Management Authority (REMA)</p> <p>2010 Prime Ministerial Order N°126/03 of 25/10/2010 determining the responsibilities, organization and functioning of committees in charge of the environment conservation and protection</p>

	Ordonnance ministérielle N° 530/770/720/320 du 27 février 2009 portant sur l'aménagement et la gestion des aires de protection aux abords des ravins traversant les centres urbains et les espaces verts			2013 Ministerial Order N° 004/16.01 of 24/05/2013 determining the list of water pollutants		
		2014 Law relating to Nature Conservation (Law n°14/003)		2008 Ministerial Order N° 005/2008 of 15/08/2008 establishing modalities of inspecting companies or activities that pollute the environment		
Desertification			National Action Programme to Combat Desertification (2006)			
Protected areas/national parks/conservation				Law N° 064/2021 OF 14/10/2021 governing biological diversity	Protected Areas Management and Conservation Policy (2013) 2013 Wildlife Policy	
Biodiversity				2013 Law governing Biodiversity in Rwanda (Law n°70/2013)	Biodiversity Policy (2011)	
				Law N° 064/2021 OF 14/10/2021 governing biological diversity	National Strategy and Action Plan for Biodiversity Conservation (2003)	
Climate change	National Action Program for Adaptation to Climate Change (2007)		National Action Programme for Adaptation to Climate Change (2006)		National Action Programme for Adaptation to Climate Change (2006)	
Water-related/ impacting sectors	Agriculture	National Agricultural Investment Plan (2012-2017)	2011 Law on the Main Fundamentals of Agriculture (Law n°11/022) (loi N°11/022 du 24 décembre 2011 portant principes fondamentaux relatifs à l'agriculture)	National Agricultural Investment Plan (2014-2020)	Law n° 14/2017 of 14/04/2017 establishing Rwanda Agriculture and Animal Resources Development Board (RAB) and determining its mission, organization and functioning	Irrigation Policy (2015)
					Law n° 30/2012 of 01/08/2012 on governing the use of agrochemicals	National Agricultural Policy (2018)
					Ministerial Order N° 001/14 of 14/04/2014 determining modalities for sub-leasing of agriculture, livestock and forest land	Strategic Plan for Agricultural Transformation
Energy/hydropower	Sector Strategy for the Energy Sector in Burundi (2011)		2014 Law relating to the Electricity Sector (Law n°14/001) (loi N°14/011 du 17 juin 2014 relative au secteur de l'électricité)		Regulations No 02/R/EL-EWS/RURA/2016 governing electricity quality of service in Rwanda	National Energy Policy (2015)
					Law N°09/2013 of 01/03/2013 establishing Rwanda Utilities Regulatory Authority (RURA) and determining its mission, powers, organization, and functioning	
					Regulations 002/EL/energy/RURA 2012 of 4th October 2012 on electrical installations	

Forestry	2016 Law revising the Burundi Forestry Code (Law n°1/06) (Loi N°1/07 portant Revision du Code Forestier) Code forestier		2002 Law on the Forestry Code (Law n°11/2022) (Loi N°011/2002 du 29 aout 2002 portant code forestier)	Prime Minister's Order No 115/03 of 25/06/2015 determining the organ issuing a state forest harvesting license and modalities for its issuance Ministerial Order No 004/MINIRENA/2015 of 18/06/2015 determining the issuance of license used for the activities relating to a District private forest Ministerial Order No 006/MINIRENA/2015 of 18/06/2015 determining the management of protected state forests not governed by special laws	National Forest Policy (2018)
Climate change		NDC Burundi		NDC DR Congo	NDC Rwanda
Disaster management					Law No 41/2015 of 29/08/2015 relating to disaster management Prime Ministers Order determining organisation and functioning of disaster management organs (2018)
Land use	2011 Law revising the Land Code (Law n°1/10)	National Strategy to Combat Land Degradation (2011-2016)	Loi N°011/2002 du 29 aout 2002 portant code forestier à son article 48		2013 Law on Land Tenure in Rwanda (Law n°43/2013) National Land Policy (2019) Ministerial Order N° 007/16.01 of 15/07/2010 determining the length of land on shores of lakes and rivers transferred to public property 2012 Law relating to the Code of Town Planning and Construction in Rwanda (Law n°10/2012) National Urbanization Policy (2015)
Mining	décret-loi N° 1/138 du 17 juillet 1976 portant sur le code minier et pétrolier 2013 Law on the Burundi Mining Code/Loi portant code minier du Burundi (Law n°1/21) Ordonnance ministérielle N° 540/760/770/236/2006 fixant la contribution annuelle pour la réhabilitation des sites d'exploitation artisanale des substances minérales				Mining Policy (2010)
Fisheries	Loi n°17 du 30 novembre 2016 portant organisation de la pêche et de l'Aquaculture au Burundi Ordonnance Ministérielle 710/1721 du 3 septembre 2019 portant réglementation de la pêche et de l'aquaculture	Politique de la Peche	Décret du 21 avril 1937 portant régime de la chasse et de la pêche Décret du 12 juillet 1932 sur la réglementation des concessions de pêche	Plan directeur de pêche	Law n° 58/2008 of 10/09/2008 determining the organization and management of aquaculture and fishing in Rwanda Ministerial Order N° 001/11.30 of 11/12/2020 regulating aquaculture and fisheries

	Ordonnance Ministérielle n°710/1720 du 3 septembre 2019 portant organisation de la pêche de l'élevage et de l'exploitation des poissons ornementaux	Ordonnance-loi n° 68/074 du 8 mars 1968 relative à la protection des crocodiles et portant modification de la législation sur la chasse et pêche	
Methane gas abstraction		Loi N°15/012 du 1 aout 2015 portant régime général des hydrocarbures	Law n°07/2017 of 03/02/2017 establishing Rwanda mines, petroleum and gas board and determining its mission, organization and functioning Management Prescriptions for Development of the Gas Resources in Lake Kivu
Navigation	2010 Law on the Code of Navigation and Lake Transport (Law n°1/11)	Ordonnance-loi n° 66-98 du 14 mars 1966 portant Code de la navigation maritime Ordonnance-loi 409/T.P.V.N. 30 novembre 1943 Commission d'enquête pour la navigation fluviale et lacustre Ordonnance 68/126 du 29 mars 1968 sur la police maritime	Law N° 02/2010 of 20/01/2010 establishing Rwanda Transport Development Agency (RTDA) and determining its mission, structure and functioning
Tourism			Tourism Policy (2009)



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