



# Improving water governance in Lebanon's Kalb River Basin

## Background

Lebanon is facing several challenges including: an economic crisis, political instability, social turmoil, a significant refugee population, subpar infrastructure, and increasing water scarcity and pollution issues – particularly after the country's financial and economic crisis that has deepened since 2019. Improving water governance can help address various development challenges like upgraded water service delivery and allocation, agricultural productivity, food security and nutrition, as well as better public health.

In this context, the Kalb River Basin has served as a compelling case study, highlighting the challenges and opportunities for enhancing water governance in this area. It offers insights that can be applied to similar issues across the country while considering the unique characteristics and specificities of each territory.

This policy brief provides a summary of water governance analysis undertaken in collaboration with national stakeholders. These include the Ministry of Energy and Water (MoEW) and the Beirut and Mount Lebanon Water Establishment (BMLWE), as part of the project "Implementing the 2030 Agenda for Water Efficiency/Productivity and Water Sustainability in NENA Countries"<sup>1</sup> under the FAO Regional Initiative on Water Scarcity in the Near East<sup>2</sup> and funded by the Swedish International Development Cooperation Agency (SIDA). The

## KEY MESSAGES

- Lebanon is confronted with challenging water resource management, which is affecting the sustainability of its resource base.
- The water governance analysis carried out in the Kalb River Basin in Mount Lebanon focused on the increasing water scarcity and deteriorating water quality, contributing to disparities in water access and competition among water users.
- Multiple interconnected constraints explain this situation including: fiscal, economic, operational, cross-sectoral coordination issues, legal pluralism, insufficient resources and capacities, and limited data availability.
- To bolster sustainability and equity in water resources governance in the Kalb River Basin, it is important to establish a water cadastre that consolidates water tenure, promotes decentralization and participatory water management, as well as develop national water databases.

analysis, which will be summarized in a report (Gharios and Tanios, forthcoming), followed the governance framework described in the FAO paper "Focus on governance for more effective policy and technical support." (Bojić, Clark and Urban, 2022.) The data and information were collected from a

<sup>1</sup> See the project website: <https://www.fao.org/in-action/water-efficiency-nena/en/>

<sup>2</sup> See the project summary: <https://www.fao.org/3/bl089e/bl089e.pdf>

literature review, interviews with key stakeholders, and consultation workshops with key actors in 2021–2022.

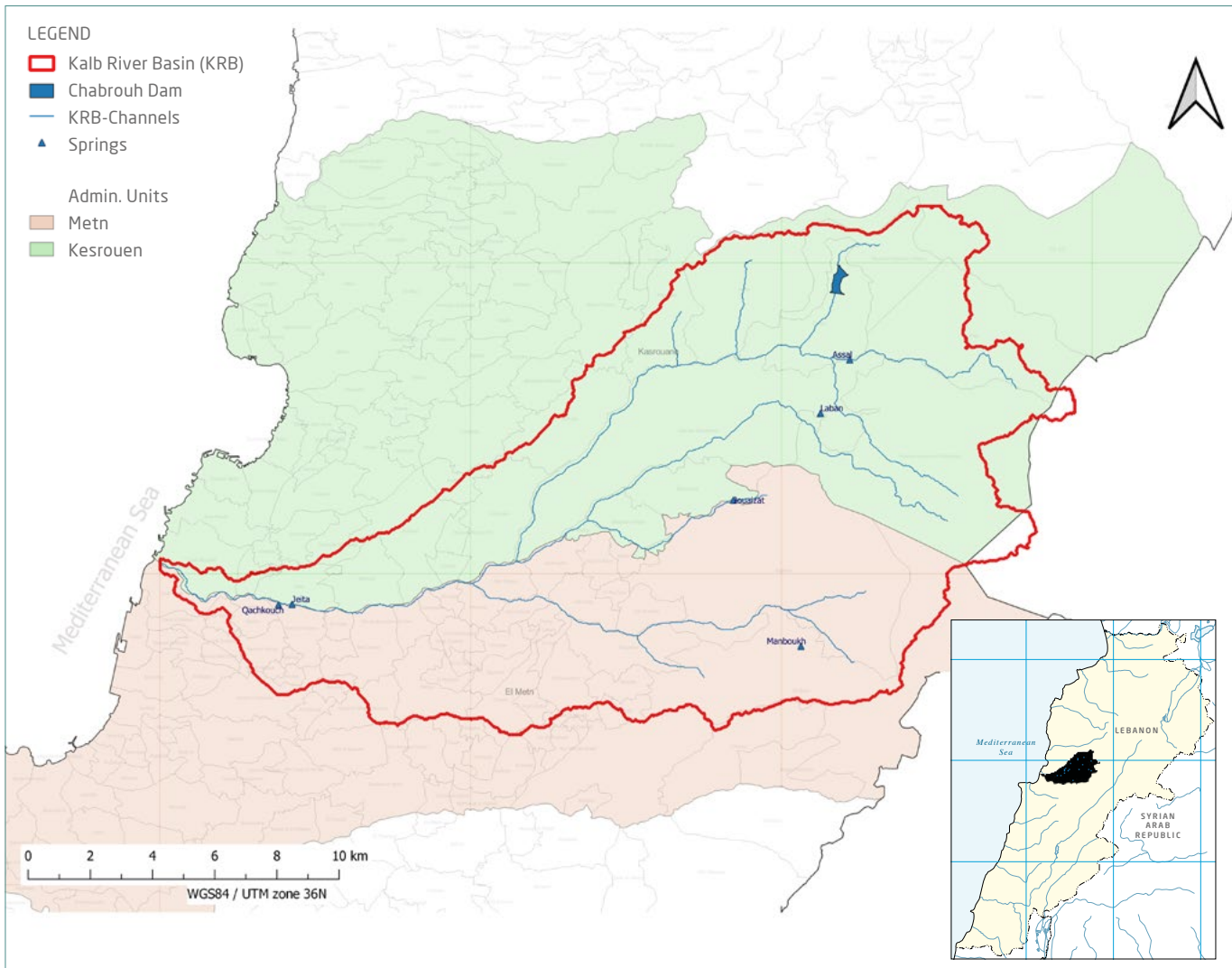
## The Kalb River Basin

The Kalb River Basin is primarily situated within the Mount Lebanon Governorate and serves as a critical water source for local inhabitants and beyond. The Jeita Spring, which emerges from the Jeita Grotto, runs through the basin and constitutes the primary water supply for the Beirut Area (Doummar *et al.*,

2010). Its proximity to the sea enables its water to be redirected to Beirut for domestic use. The Laban and Aasal springs in the basin have sustained nearby communities for centuries, particularly farmers, and continue to shape their livelihoods.

Ten percent of the basin's surface area is predominantly cultivated with field crops, olives, stone and pome fruits, tropical fruits and citrus. While water availability is relatively good, there are disparities in access to water in addition to fluctuations in water availability throughout the year.

Figure 1. Lebanon's Kalb River Basin delineated surface water catchment



Source: Serhal, A. (forthcoming). The Kalb River Basin groundwater modelling. Rome, FAO.



## Analysis

The present water governance in Lebanon is the result of its traditions and customary rules, which have been transmitted through generations. Agricultural water uses and practices are a heritage of Mesopotamian, Roman, Ottoman, and French water laws. The current institutional framework for water resources management is the result of reforms that were set in place in the 2000s. The primary policymaker for water is the Ministry of Energy and Water, seconded by four Regional Water Establishments, with the mandate to manage irrigation, potable water, and wastewater within designated areas. The establishments were supposed to gradually replace the Autonomous Water Offices and Local Committees, independent from administration, that managed agricultural water largely according to customary water regimes. Currently, all 22 Autonomous Water Offices were dismissed, but some local committees are still active.

The Water Law 192 promulgated in 2020 recognized customary water rights in Article 12, subject to the condition that such rights are not in conflict with the principles of sustainable water resource management. Under Article 34, the Lebanese Government can revoke water rights when this is deemed necessary for public interest or for water conservation purposes, with fair compensation to the rights holders. The Water Law also provided the establishment of a “water cadastre” to record the existing rights over water in the country (Article 13). Additionally, it supported the establishment of Water User Associations, and it further stipulated the possibility of transitioning existing Local Committees into Water User Associations under Article 75. The specific details of this transition process should be established through a decree issued by the Council of Ministers.

The analysis of water governance in the Kalb River Basin revealed numerous governance challenges that contribute to widening disparities in water access. These challenges comprise fragmented water resources management, legal pluralism, financial limitations, suboptimal operation and maintenance

practices, and insufficient engagement of water users in decision-making processes.

The analysis in the Kalb River Basin found that the Beirut and Mount Lebanon Water Establishment – which is responsible for water resources management in the area – is facing significant challenges in effectively implementing its mandate. Management of different irrigation canals continues to be handled mainly by the farmers or local committees despite the reform, which creates tension among water users. Unaccounted-for-water and non-revenue-water are big issues in the basin. Downstream farmers express dissatisfaction when comparing their situation with upstream farmers. Their water turn – the specific period or schedule during which a particular farmer has access to the shared water resource – is repeated every 20–25 days, whereas upstream farmers have a water turn that is repeated every 6–7 days. Several downstream farmers have therefore abandoned their lands despite having invested in individual reservoirs.

Figure 2. Basic framework for governance analysis



## GOVERNANCE AND POLICY SUPPORT POLICY BRIEF

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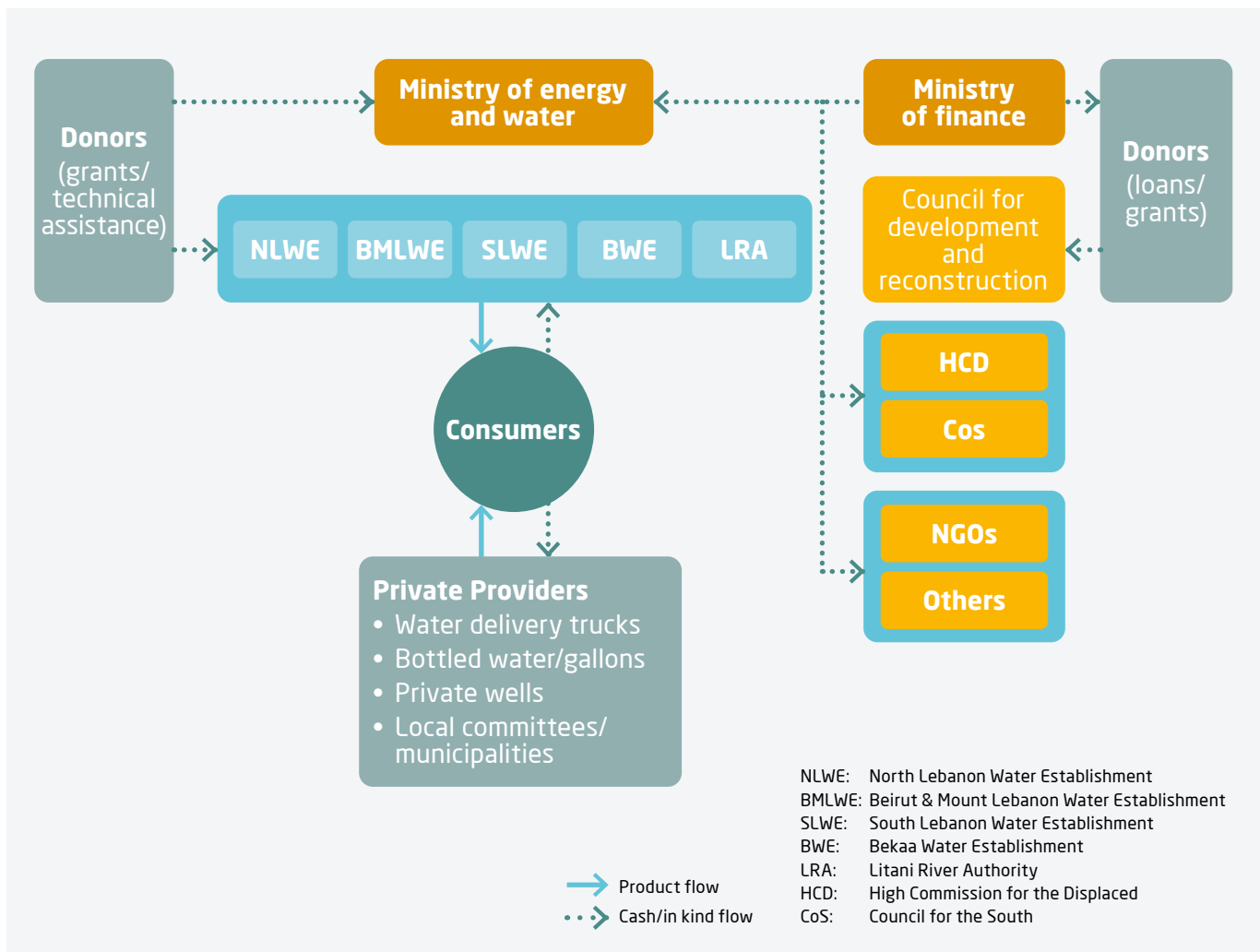
Pollution poses yet another threat to the river. The quality of the water in the river has been adversely affected by pollution from agricultural and industrial activities, as well as from untreated domestic sewage and solid waste disposal. Most water users do not resort to professional septic tank cleaners. Instead, they wait for the irrigation season to start to empty them into the canals, polluting the water that reaches downstream users.

Additionally, the pressures of growing urbanization and industrialization only compound these issues. To address water quality challenges, there have been

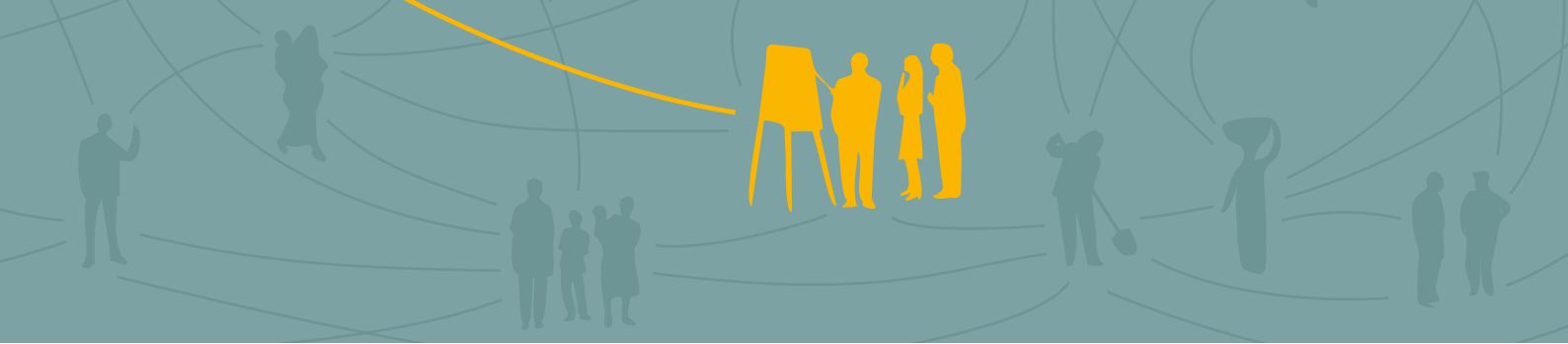
efforts to improve water management practices and to reduce pollution in the river. The Water Law has introduced the “polluter-pays” principle in Article 51. However, the implementation of this principle is pending until the decree of application is promulgated.

The lack of precise and reliable data on water quality and quantity, coupled with the growing competition for water resources among different stakeholders – as well as between water users and management authorities – presents additional challenges to effective water governance. Moreover,

Figure 3. The current institutional setting of water sector in Lebanon



Source: Bassil, G. 2012. National water sector strategy: a right for every citizen, a resource for the whole country. Arab National Development Planning Portal. <https://andp.unescwa.org/sites/default/files/2021-09/National%20water%20sector%20strategy.pdf>



insufficient collaboration among key actors, along with financial limitations, slows down meaningful improvements.

The analysis process has sparked a keen interest among farmers, the Beirut and Mount Lebanon Water Establishment, and local communities to engage in discussions that advance sustainability and equity in local water governance. By encouraging greater engagement with local stakeholders, a more positive attitude towards paying for water services can be fostered, which in turn can facilitate the effective implementation of water policies and laws.

## Recommendations

- **Strengthening participatory water resources management**

Encouraging the participation of local community members in decision-making processes can increase trust and inform decisions. This could be done through establishing dialogue platforms bringing together all of the stakeholders including water users and decision-makers to address conflicts around different water uses. Recognizing the legitimacy of existing functional institutions on the ground can improve water management and aid in the implementation of irrigation management transfer.

Figure 4. Chabrouh dam, Kalb River Basin, Lebanon



Source: (c) FOSS-the-world, CC BY-SA 4.0

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- **Establishing a water cadastre with the involvement of local communities**

It is essential to maintain and update water rights data and ensure equitable access to irrigation water. This entails gathering information on water rights from various entities. Recruiting data-gatherers from local communities will have the dual benefit of tackling the information shortfall as well as increasing cooperation and trust.

- **Creating a national water database**

Establishing a water information system and data centre is crucial, and including local communities in data collection can improve sustainability in agriculture and cohesion. Developing methods to share hydrological information transparently can benefit all stakeholders.

- **Promoting water user associations**

Strengthening organizational governance and self-financing of water user associations, with technical and institutional support provided by the Beirut and Mount Lebanon Water Establishment, as stipulated in the Water Law 192, would facilitate more effective management of irrigation schemes and reduce tensions among water users and between farmers and the establishment.

- **Assessing infrastructure needs at the community level**

Identifying priorities and funding modalities for infrastructure upgrades should be done in consultation with local communities. Identifying the highest priority upgrades at the community level can increase farmers' engagement and ensure the highest return on investment.

## Find out more

**Gharios, G. & Tanios, S.** (forthcoming). *Improving water governance in Lebanon's Kalb River Basin*. Rome, FAO.

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**Bojić, D., Clark, M. & Urban, K.** 2022. *Focus on governance for more effective policy and technical support*.

**Doumar, J., Margane, A., Jin, Y., Geyer, T. & Sauter, M.** 2010. *Artificial tracer tests 1 – April 2010*. Special report No. 1 of Technical Cooperation Project “Protection of Jeita Spring.” Department of Applied Geology, University of Göttingen, Germany, and Federal Institute for Geosciences and Natural Resources (BGR), Germany. [Cited 1 October 2023]. [https://www.bgr.bund.de/EN/Themen/Wasser/Projekte/abgeschlossen/TZ/Libanon/jeita\\_fb\\_en.html](https://www.bgr.bund.de/EN/Themen/Wasser/Projekte/abgeschlossen/TZ/Libanon/jeita_fb_en.html)

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