LCPS
المركز اللبناني للدراسات
The Lebanese Center for Policy Studies

Report

Perceptions of the Role of Municipalities in Water Sector Governance

Nadim Farajalla, Nancy Zaarour, Ramy Sakr

Jan 2025

Founded in 1989, the Lebanese Center for Policy Studies is an independently managed, non-partisan, non-profit, non-governmental think tank whose mission is to produce and advocate for policies that improve governance in Lebanon and the Arab region. LCPS's current research agenda focuses on: enhancing governance, informing the process of economic growth and sustainable development, promoting inclusive and effective social policies, and informing the development of policies for a sustainable environment. Four themes cut across the above areas of focus, including gender, youth, conflict resolution, and technology.

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of Hawkamaa-EU consortium partners, and do not necessarily reflect the views of the European Union.

Designed by Zéna Khairallah

Sadat Tower, Tenth Floor
P.O.B 55-215, Leon Street,
Ras Beirut, Lebanon

T +961 1 799 301
info@lcps-lebanon.org
www.lcps-lebanon.org

Perceptions of the Role of Municipalities in Water Sector Governance

Nadim Farajalla

Nadim Farajalla is the first Chief Sustainability Officer at the Lebanese American University. Formerly, he worked as a senior scientist and environmental engineer in the private sector, contributing to water resources, environmental impact studies, and climate resilience projects across the Middle East. He founded and led the Climate Change and Environment Program at the American University of Beirut's Issam Fares Institute. His research addresses climate change impacts on human settlements, impact of climate change on security, the nexus of water-energy-food, implementing Agenda 2030 in Lebanon and the region, and integrating sustainability in academic settings.

Nancy Zaarour

Nancy Zaarour is a Research Associate at the American University of Beirut (AUB)'s Olayan School of Business (OSB). She holds a PhD in Management from NEOMA Business School, France and an MBA and BS in Biology from the Lebanese American University. With over 18 years of experience in project management, she specializes in environmental sustainability, governance, and policy. Previously, she held senior roles at AUB's Issam Fares Institute, and the University of Balamand where she contributed to grant development, project management, and capacity building. Nancy has co-authored publications on environmental governance and water management and has taught courses and training sessions on proposal writing and project management.

Ramy Sakr

Ramy Sakr is an experienced environmental and livelihood consultant with more than ten years in managing and implementing impactful projects. He holds a Master of Science in Environmental Sciences and Management, and a Bachelor of Science in Biochemistry – Life Sciences from Saint Joseph University (USJ). Ramy combines a solid academic background with hands-on expertise in sustainable development, biodiversity conservation, and strengthening community resilience. His skills span proposal development, stakeholder engagement, and adherence to international donor standards. Driven by a commitment to environmental advocacy and sustainable solutions, Ramy actively uses his knowledge and experience to foster positive change and build a more resilient future for communities and ecosystems.

NOTE: This report was completed before the conflict in Lebanon flared up at the end of September 2024. The information and recommendations in this report reflect only the current state of the water sector and the views and perceptions of the stakeholders interviewed.

Introduction

Lebanon has experienced recurrent water scarcity in recent decades due to inefficient water management practices, including leakage, illegal connections, and poor maintenance. The country's water demand exceeds its renewable water resources, with a shortfall of approximately 400 million cubic meters annually. Since the 1990s, water demand has risen by over 60%, with shortages most noticeable in the summer months. Despite having sufficient water resources in theory, about 40% of water is lost in the distribution process, primarily due to leaks, theft, and mismanagement. These inefficiencies are key contributors to Lebanon's water crisis.

Lebanon's ongoing economic and political crises have worsened water shortages and quality, primarily due to deteriorating infrastructure, energy shortages, insufficient funding, and a lack of political will. The COVID-19 pandemic highlighted the importance of clean water and sanitation, further exposing vulnerabilities in Lebanon's water sector. Additionally, the influx of Syrian refugees and the poor management of refugee camps have strained the country's already limited water resources and infrastructure, contributing to the spread of diseases like cholera.

Lebanon's water laws are influenced by a mix of legal traditions, including French, Ottoman civil laws, and Sharia-based customs, with modern codified laws largely replacing older practices. The country's water legal framework operates as a dual system, combining formal governance through institutions like the Ministry of Energy and Water (MEW), Regional Water Establishments (RWEs), and municipalities, with informal, traditional water management practices. Lebanon's current water management structure was shaped by administrative reforms in 2000. The MEW oversees water and sanitation, working alongside the RWEs and the Litani River Authority (LRA). However, aligning decrees with the relevant agencies and establishing a clear authoritative system remains a challenge.

The relationship between RWEs, LRA, and the municipalities is complex and often characterized by tension and overlapping responsibilities. Currently, RWEs are responsible for managing water supply, sewage, and irrigation at the regional level. Prior to the 1999 introduction of Law 221, municipalities handled some of these services locally. This shift has caused confusion over roles and responsibilities. A key issue has been the lack of effective

communication between RWEs and municipalities, hindering coordination in addressing local water needs.

Recent laws, such as the Water Act (Law 192/2020), seek to clarify these roles and promote collaboration, enabling municipalities to play a more active part in managing the water sector while maintaining close cooperation with RWEs. A good relationship between water authorities and municipalities is important for overall effectiveness in water services provision. Moreover, it is crucial for achieving financial targets, such as improving collection rates and reducing non-revenue water.

This report offers a comprehensive overview of the relationships between municipalities and RWEs. A total of 29 representatives from different municipalities across Lebanon, as well as RWEs, national consultants and NGOS were interviewed. This approach provides valuable insights into local dynamics, coordination gaps, and the effectiveness of current laws and policies. It captures diverse perspectives, helps identify challenges and opportunities for collaboration, and informs policy decisions. Additionally, it highlights the role of the private sector and NGOs, empowering stakeholders to share their experiences and contribute to more effective water management reforms.

Impact of Multiple Crises

Since 2019, Lebanon has been facing an economic meltdown and an on-going political crisis, exacerbated by the continuous influx of refugees since 2011 due to the war in Syria. This has significantly impacted municipalities, particularly in the water sector. Some examples of how these have affected municipalities are:

Economic meltdown: The severe economic crisis has strained municipal budgets and reduced their capacity to maintain and improve their infrastructure including those related to the water sector. The resulting and/or associated budget constraints have caused municipalities to struggle to fund essential services, including water supply, sewage treatment, and maintenance of existing systems. This has led to deteriorating service quality and frequent outages.

Political tensions and crises: Fragmented decision-making and a lack of coherent policy implementation have been exacerbated by the ongoing political instability, which has hampered effective

governance and coordination between municipalities and other entities like RWEs. The lack of effective communication and collaboration have resulted in overlapping responsibilities, delays in service delivery, and uncoordinated efforts in addressing water-related challenges.

Refugee influx: The large number of refugees has been placing additional pressure on municipal water systems, which were already overstretched. Increased demand for water and sanitation services have strained existing infrastructure and resources. Municipalities face challenges in providing adequate services to both local populations and refugees, leading to heightened competition for limited resources and increasing tensions between the host population and refugees.

Overall, Lebanon's current socio-economic and political problems make it difficult for municipalities to manage water resources and provide essential services, leading to a more precarious situation for residents and exacerbating existing problems in the water sector.

Key Stakeholders Engaged in Municipal Support

According to Law 221/2000 and Law 192/2020, the water sector in Lebanon is primarily managed by MEW on a national level. On the regional level, there are four autonomous RWEs—North Lebanon, Bekaa, Beirut and Mount Lebanon, and South Lebanon—along with LRA, which is tasked with managing the major rivers in the country. The MOEW, RWEs, and LRA are identified as the primary stakeholders of the water sector. The secondary governmental stakeholders include the Ministry of Agriculture and the Ministry of Environment. The Ministry of Public Health, Ministry of Interior and Municipalities, Ministry of Industry, the Ministry of Finance, the Council for Development and Reconstruction, the Council of the South are considered more peripheral stakeholders.

Prior to 2000, municipalities played a role in the water sector, namely in the construction and management of sewage networks and wastewater treatment plants. Law 221 then stripped the municipalities of any role and gave the RWE jurisdiction of sewage networks and wastewater treatment facilities. In 2020, Law 192 rectified the situation by encouraging and facilitating the involvement

of municipalities in the water sector, including water supply and wastewater treatment.

Prevalent Practices

Tariffs, Investment, Installation, and Operation and Maintenance

Practices related to tariffs, installation, and operation and maintenance in Lebanon's water sector reveal a fragmented system, with significant differences between municipal and RWE management. Both face critical challenges in financing, efficiency, and coordination, underscoring the need for improved collaboration and a clearer regulatory framework to enhance the sustainability of water services.

Municipalities set their own water tariffs, often based on local property rental values. These rates can vary widely across regions, reflecting local economic conditions and demand. Municipalities may struggle to establish tariffs that cover operational costs fully. RWEs have standardized tariffs approved by the MOEW and the Ministry of Finance; however, these tariffs often fail to cover operational and maintenance costs, leading to significant financial deficits. Both municipalities and RWEs face issues with non-revenue water and unpaid bills, impacting their financial viability. International aid sometimes provides temporary subsidies to assist in managing these challenges. This has been the case most recently during the on-going socio-economic and political crisis the country is enduring.

Many municipalities invest in small-scale infrastructure, such as local wastewater treatment facilities, water supply networks (including wells and reservoirs) often supported by international NGOs and donors. Examples are the Wastewater Treatment Plants (WWTPs) in Ablah and Ferzol and the water reservoir and associated network in Qab Elias. Such initiatives aim to address local water demands where RWEs may not be responsive. RWEs are responsible for a wide spectrum of infrastructure that range from small scale water supply networks to larger infrastructure such as water conveyance pipelines, wastewater treatment plants, and dams. For most RWEs, their investment capacity is limited due to financial constraints and bureaucratic inefficiencies. Ineffective coordination between municipalities and RWEs often results in duplicated efforts and inefficient resource use, leading to suboptimal infrastructure development.

By law RWEs are supposed to oversee the operation and maintenance of all water and wastewater systems. In many areas though, municipalities manage the operation and maintenance of local water systems, including distribution networks and treatment facilities due to the inability of RWEs to do so—either because of financial constraints or due to the lack of qualified personnel. However, many municipalities lack the technical expertise and resources needed for such endeavors and their work ends up being inadequate. Both, RWEs and municipalities, face significant challenges related to inadequate funding and operational capacity, which hinder their ability to maintain service quality.

International organizations often provide training and support to improve the operational capabilities of both municipalities and RWEs, which is essential for enhancing service delivery.

Municipalities and RWE/LRA Under Current Laws

Laws 221, 241, and 247 of 2000 reformed the water sector, and part of this reform involved the transfer of any responsibilities that municipalities might have held for water supply, irrigation, and sewerage to the RWEs. This shift led to confusion and conflict, as many municipalities had historically managed several aspects of these services and the handover was not conducted well, if ever. To address these issues, Law 192/2020 (Water Act) was enacted, allowing municipalities to take a more active role in water services, but with a requirement to coordinate with RWEs and fill service gaps as necessary. Implementation decrees for this law have not yet been issued. A key aspect of water resources management is access to, and extraction of, groundwater. According to Ministerial Order No. 118 of 2010, the licensing process for groundwater drilling and extraction is supposed to involve RWEs, the MOEW, and municipalities. Abuse of the process, through corruption and lack of capabilities, has led the permit application process to remain centralized at the ministry level.

Currently, municipalities are mainly involved in the installation and maintenance of stormwater drainage networks, in addition to the supporting role that Law 192 has given them. However, many municipalities have been forced to step back into their former roles (pre-2000) mainly due to RWEs' lack of responsiveness or capability. International donors support municipalities in this role, but this is leading to uncoordinated efforts such as the building of sewage

treatment plants, water supply networks, drilling wells, frequently without consideration of any RWE or MOEW masterplan. The involvement of the RWEs in such projects is sketchy and inconsistent. This has led to ineffective water service provision and poor, or even non-existent, maintenance of such infrastructure by the beneficiary municipalities, which is often attributed to the lack of funding or of properly trained personnel.

Roles of INGOs, NGOs, and Donors

International non-governmental organizations (INGOs), local NGOs, and donors are actively involved in Lebanon's water sector. They often partner with local municipalities to address issues especially related to water and wastewater, agriculture, industry, and the environment.

At the level of water and wastewater, INGOs and NGOs usually partner with municipalities to improve water supply, wastewater management, and service delivery. They engage in infrastructure development, capacity building, community outreach, emergency response, research, funding, and policy advocacy. Their collaboration with municipalities significantly enhances the effectiveness and sustainability of water and wastewater management.

INGOs, local NGOs, and donors are actively involved in enhancing agricultural practices related to water management in Lebanon. Their activities include collaboration with municipalities to improve irrigation systems, promote sustainable practices, and support local farmers. For instance, they support the construction and upgrading of irrigation systems to ensure efficient water use in agriculture. This includes modernizing existing infrastructure to reduce water waste. These organizations provide training for farmers on sustainable agricultural practices, water conservation techniques, and efficient irrigation methods. This empowers local communities to manage water resources effectively. They also engage in capacity building, community outreach, research, funding, and policy advocacy. Their collaboration with municipalities enhances sustainable agricultural practices and improves water management for local farmers.

Funders often collaborate with municipalities to promote sustainable practices, improve water quality, and enhance environmental conservation. Their activities include water quality monitoring, community engagement, infrastructure development, wastewater management, research, financial support, and policy

advocacy. Collaboration with municipalities enhances the effectiveness of these initiatives and contributes to better environmental outcomes.

Key Informant Interviews

This report provides an in-depth analysis of the relationships between municipalities and Regional Water Establishments (RWEs) in Lebanon. To achieve this, a Key Informant Interview (KII) framework was developed based on a thorough scientific review (see Annex 2). KIIs, which are qualitative, semi-structured interviews with individuals possessing specific expertise or insights, allow for a conversational flow that brings out nuanced issues, contextual factors, and challenges that structured methods might miss.

The KIIs in this report benefit from a wide range of perspectives on the role of municipalities in water sector governance, combining both quantitative ratings and qualitative insights. Thirty-three representatives from local municipalities, RWEs, and water sector consultants across Lebanon's seven governorates were invited to participate, with 29 ultimately included in the study (see Annex 1).

Through these KIIs, the report uncovers valuable insights into local dynamics, coordination gaps, and the effects of current laws and policies. It highlights challenges and opportunities for collaboration, supporting informed policymaking. Moreover, the report emphasizes the contributions of the private sector and NGOs, enabling stakeholders to share experiences and contribute to meaningful water management reforms.

Mapping Stakeholders

The stakeholder mapping for water sector governance in Lebanon covers a diverse range of entities, including municipalities, RWEs, and other governmental and non-governmental organizations. The KII included the following key stakeholders:

Municipalities: Represented by officials such as heads of municipalities and members from the municipal councils. The KII included responses from representatives of multiple municipalities, indicating their critical role in local water management. 12 out of 29 of the respondents were from various municipalities, highlighting their significant involvement in water governance.

Regional Water Establishments: These establishments, Beirut and Mount Lebanon Water Establishment (BMLWE), Beqaa Water Establishment (BWE), South Lebanon Water Establishment (SLWE), and North Lebanon Water Establishment (NLWE) are responsible for water distribution, infrastructure maintenance, and resource management. 14 out of 29 of the interviewees were from water establishments, underscoring their primary role in managing water resources at a regional level.

Other Stakeholders: This category includes entities such as NGOs, private sector representatives, national consultants, and other governmental bodies involved in water governance. They constituted 3 out of 29 of the respondents.

Rationale for the KII

The KII was designed to gather comprehensive insights into the perceptions and experiences of key stakeholders involved in water sector governance in Lebanon. Given the complex and multi-layered nature of water management, the KII targeted specific aspects of governance, including effectiveness, efficiency, coordination, and financial management by municipalities and water establishments. The rationale behind it is rooted in the need to:

Evaluate Current Governance Structures: Assess stakeholders' views on the strengths and weaknesses of the current water management framework. This helps identify areas that require improvement and those that are functioning well.

Understand Stakeholder Roles and Responsibilities: Clarify the roles played by different entities in water governance. The KII aimed to capture how responsibilities are perceived and executed across various levels of governance.

Identify Challenges and Opportunities: Through targeted questions, the KII sought to uncover the challenges faced by municipalities and water establishments, as well as potential opportunities for enhancing water management practices.

KIIs Takeaways

Based on the KII data, several key insights were drawn from the stakeholders regarding the current state of water governance in Lebanon, particularly focusing on the roles, challenges, and successes

of municipalities and RWEs as perceived by the interviewees. The KII focused on five areas:

- Perception of municipalities' role in water governance
- Coordination between municipalities and regional water establishments
- Resource allocation and financial management
- Public engagement and awareness
- Capacity building and training needs

The following is a detailed analysis of the main takeaways.

Perception of Municipalities' Role in Water Governance

Limited Authority and Impact: A significant portion of the respondents, 17 out of 29, expressed concerns about the limited role that municipalities currently play in water governance. Many stakeholders indicated that municipalities often lack the necessary authority to make substantial decisions or to manage water resources effectively. This perceived weakness is attributed to the overlapping responsibilities between municipalities and water establishments, which often leads to confusion and inefficiencies.

Potential for Greater Involvement: Despite the current limitations, there is a consensus among stakeholders that municipalities should be more actively involved in water governance. 9 out of 29 of the respondents believe that with better legal backing and resources, municipalities could take on a more significant role, particularly in managing local water sources, maintaining infrastructure, and engaging the public in conservation efforts.

Coordination Between Municipalities and Regional Water Establishments

Coordination Challenges: The survey reveals a persistent challenge in the coordination between municipalities and RWEs. Only 4 out of 29 of the respondents rated the current level of coordination as effective. The majority pointed out that poor communication and a lack of formal collaboration mechanisms encumber effective water management. This lack of coordination often leads to duplicated efforts, delays in infrastructure projects, and inefficient use of resources.

Collaborative Initiatives: Despite these challenges, there are examples of successful collaboration. In regions where municipalities and RWEs have established clear communication channels and shared management responsibilities, there have been notable improvements

in water service delivery. 6 out of 29 respondents shared positive experiences where joint efforts led to better maintenance of infrastructure and more reliable water supply, particularly in emergency situations.

Resource Allocation and Financial Management

Inadequate Resources: One of the most critical issues highlighted by the survey is the inadequate allocation of resources to municipalities for water management tasks. 20 out of 29 respondents identified this as a major obstacle, with many noting that the financial constraints significantly limit the ability of municipalities to maintain water infrastructure, enforce regulations, and engage in long-term planning.
Calls for Innovative Financing: There is a strong belief among the interviewed stakeholders that new financing mechanisms need to be explored. Suggestions included public-private partnerships, increased government funding, and international aid to strengthen the financial capacity of municipalities. Respondents emphasized that without sufficient funding, even the best-intentioned water management initiatives are likely to fail.

Public Engagement and Awareness

Low Levels of Public Awareness: The survey indicates that public awareness regarding the role of municipalities in water governance is relatively low. Many respondents believe that this lack of awareness contributes to the challenges faced by municipalities in implementing water management strategies. Only 7 out of 29 respondents felt that the public was adequately informed about the responsibilities of municipalities and their role in water resource management.
Importance of Public Engagement: Respondents stressed the importance of increasing public participation in water management decisions. 15 out of 29 of the stakeholders suggested that municipalities should invest in public awareness campaigns and community engagement activities to foster a better understanding of water conservation and the critical role that local governance plays in it. Successful examples of public engagement were shared, where increased community involvement led to more effective water conservation efforts and better compliance with water use regulations.

Capacity Building and Training Needs

Need for Capacity Building: The lack of technical expertise within municipalities was another significant concern raised by the respondents. Many municipalities struggle with limited human resources and a lack of specialized knowledge in water management. 16 out of 29 the respondents suggested that targeted capacity-building programs, including training and technical assistance, could significantly improve the effectiveness of municipal water management.

Successful Training Initiatives: Some respondents pointed to successful training programs that have already been implemented in certain regions. These programs have helped municipal staff develop the necessary skills to manage water resources more effectively and to work more collaboratively with water establishments. The survey suggests that expanding these initiatives could have a broad positive impact on water governance across Lebanon.

Key Observations

The KII results reveal several critical insights into the governance of the water sector in Lebanon, particularly concerning the roles of municipalities and RWEs.

Strengths and Weaknesses

Based on the survey responses, the primary strengths of Lebanon's water sector include the abundance of water resources and the commitment of local authorities in certain regions. Some respondents highlighted that specific municipalities and RWEs have shown strong leadership and effective management in maintaining water infrastructure, despite the challenges they face. Additionally, the presence of government support for certain initiatives was noted as a positive aspect, although this support is not uniformly distributed across all regions.

The survey also revealed several significant weaknesses in the water sector. The most frequently mentioned issues include poor coordination between municipalities and RWEs, insufficient financial resources, and limited technical expertise at the local level. These challenges are compounded by the lack of clear communication channels and the absence of formal frameworks for collaboration. Moreover, respondents pointed out the ineffectiveness of current

governance structures, which fail to empower local authorities adequately, frequently lead to suboptimal water management practices across the country.

Key Data Collected from the Survey

Municipalities' Role in Water Governance: Municipalities are perceived to have a limited but essential role in water governance. While 17 out of 29 respondents rated municipalities' involvement as weak, there is a general belief that municipalities should be more actively engaged in local water management. The challenges municipalities face include limited authority, insufficient financial resources, and a lack of technical expertise. Despite these challenges, 6 out of 29 respondents highlighted successful initiatives where municipalities have effectively managed water resources, especially in infrastructure maintenance and local engagement.

Coordination Between Stakeholders: One of the most significant findings is the poor coordination between municipalities and water establishments. Only 4 out of 29 respondents rated the current coordination as effective, pointing to a critical gap in the governance framework. The lack of clear communication channels and collaborative efforts is a recurring theme, with many stakeholders calling for the establishment of formal coordination mechanisms to enhance governance outcomes.

Resource Allocation and Financial Management: 20 out of 29 respondents identified inadequate resource allocation as a major challenge for municipalities. The lack of sufficient financial and human resources was cited as a primary factor limiting municipalities' effectiveness in water governance. The need for innovative financing mechanisms and better financial management practices at the municipal level was highlighted as a key area for improvement.

Stakeholder Engagement and Public Awareness: There is a notable gap in public awareness regarding the roles and responsibilities of municipalities in water governance. While some successful public engagement initiatives were reported, they are not widespread, and many stakeholders believe that increased public participation is essential for improving water management outcomes. 15 out of 29 respondents suggested that enhancing public awareness and stakeholder engagement could significantly contribute to more effective water governance.

Household Water Provision

Survey responses highlight several practices implemented by municipalities and RWEs across Lebanon to ensure water provision to households. These practices vary depending on the region's resources and infrastructure, but they collectively represent efforts to manage and distribute water effectively. The practices below reflect a combination of traditional water management methods and modern infrastructure development, tailored to the specific needs and challenges of different regions in Lebanon.

Water Wells – Drilling and Maintenance: A common practice among municipalities is the drilling of water wells to access groundwater resources. These wells are often maintained by local authorities or in collaboration with RWEs to ensure a consistent supply of water, especially in areas where surface water is scarce.

Water Springs – Utilization of Natural Springs: In regions with abundant natural springs, municipalities and RWEs have tapped into these sources to provide water to local communities. This involves constructing pipelines and channels to convey water from the springs to residential areas, ensuring a reliable source of fresh water.

Water Reservoirs – Construction and Management: To store water and regulate its distribution, municipalities have built water reservoirs. These reservoirs collect water from various sources, including rainfall, springs, and wells, and are managed to ensure an even supply during dry periods. Some municipalities have also invested in expanding the capacity of existing reservoirs to meet the growing demand.

Pipeline Networks – Expansion and Maintenance: The survey shows that municipalities have been actively involved in laying down and maintaining pipeline networks to connect households with water sources. This infrastructure is crucial for the efficient delivery of water from wells, springs, and reservoirs to homes.

Water Treatment Initiatives – Filtration and Purification: Some municipalities have undertaken water treatment projects to ensure the quality of water supplied to households. These initiatives include setting up filtration systems and chlorination units at the point of collection, particularly for water sourced from wells and reservoirs.

Public Awareness Campaigns – Conservation and Efficiency: In addition to physical infrastructure, municipalities have also conducted

public awareness campaigns aimed at promoting water conservation and efficient use among residents. These campaigns are part of broader efforts to manage water resources sustainably, particularly in regions facing water scarcity.

Mandate of Municipalities and RWEs

Survey findings support what was found in the literature, namely that municipalities do not have an authority in managing local water resources under existing municipal laws. Their authority and responsibilities in the water sector is limited to support the RWEs. Municipalities can have a legal role in the management of the water sector only by having a cooperation agreement with the water establishment highlighting the roles and responsibilities of each entity.

Interviewees indicated that, according to laws 221/2000 and 192/2020, water establishments are the only official governmental and independent bodies to oversee and manage the water sector in Lebanon. However, the lack of clear legal guidance, combined with insufficient financial and technical resources, hampers their ability to effectively oversee water infrastructure, ensure quality standards, and collaborate with the municipalities. Consequently, there is a pressing need for legal reforms to clarify and strengthen the municipalities' mandate in water management, enhance coordination mechanisms, and provide adequate support to enable them to fulfill their roles efficiently and sustainably when needed.

Best Practices Conducted Between RWEs and Municipalities

The survey highlights several best practices in collaboration between RWEs and municipalities, focusing on joint efforts to improve water management. These include the development and maintenance of infrastructure, such as pipelines and reservoirs, and the shared management of water resources like wells and springs. Additionally, municipalities and RWEs have collaborated on emergency response plans and public awareness campaigns to enhance community engagement and water conservation. These partnerships have proven effective in ensuring more reliable water services and better management of resources across Lebanon.

Recommendations

Some suggested solutions to overcome the identified challenges are presented below:

Municipal Authority and Decentralization: Enactment of the implementation decrees for Law 192 is essential for the proper coordination and cooperation between municipalities and the RWEs. While municipalities are in direct contact with recipients of water services, they often lack the legal authority and resources to effectively respond to the demands and needs of these residents. Hence, empowering the municipalities legally is critical. This must go hand-in-hand with the development and enactment of structured coordination mechanisms to enhance governance. Many interviewees labeled this as administrative decentralization.

Public-Public and Public-Private Participation: Public-public partnerships, between RWEs and municipalities, focus on improving water distribution and coordinating policy efforts, ensuring better alignment in governance. Meanwhile, public-private partnerships (PPPs) leverage private sector expertise and funding to enhance water infrastructure, improve efficiency, and facilitate innovation in water treatment and supply. However, the success of PPPs often depends on clear regulations, transparency, and accountability to ensure equitable access and sustainable resource management amidst Lebanon's economic and environmental pressures.

Financial Constraints: Municipalities and RWEs can implement a range of strategies to overcome financial constraints. Enhancing tariff collection through digital platforms can improve revenue consistency, while PPPs can attract investment and technological innovation. Diversifying funding by securing international grants and using blended finance models—combining public, private, and philanthropic capital—can reduce financial risks and expand resources. Innovative tools like performance-based financing and green bonds tied to measurable service improvements incentivize efficiency and sustainability. Additionally, decentralized water funds and microfinance for water-saving technologies empower local communities, and capacity-building programs can boost effective budget management and transparency.

Public Engagement: The importance of public participation in water governance cannot be understated. Increasing public awareness and engagement is key for improving governance outcomes. Without an

understanding of water sector planning, there will be no buy-in by the public, and most developments will be stunted.

References

Arcenciel. (2023). 'Projects on Sustainable Water Management and Wastewater Treatment.'

Comair, G. (2006). 'Challenges in the Lebanese Water Sector.'

Food and Agriculture Organization (FAO). (2019). 'Water Management in Lebanon: Challenges and Opportunities.'

Gharios, G. (2020). 'Legal pluralism and unofficial law in Lebanon: evolution and sustainable development of water'. Retrieved from: https://iwaponline.com/wp/article/22/3/348/74106/Legal-pluralism-and-unofficial-law-in-Lebanon

Gharios, G., and Farajalla N. (2019). 'Bridging Policy Frameworks to Address New Challenges to Lebanon's Water Management Structure'. Retrieved from: https://www.researchgate.net/publication/336106822_Bridging_Policy_Frameworks_to_Address_New_Challenges_to_Lebanon's_Water_Management_Structure

Gharios, G., Farajalla, N. and R. El Hajj (2021). 'Challenges of post-war policy reforms in Lebanon's water sector – lessons learned.' Retrieved from: https://iwaponline.com/ws/article/21/7/3672/81898/Challenges-of-post-war-policy-reforms-in-Lebanon-s

International Crisis Group. (2021). 'Lebanon's Political Crisis: A Roadmap to Recovery.'

IFI and OXFAM (2021). 'Wastewater Treatment Initiatives in Lebanon.'

Machmouchi F., Zaarour, N. and N. Farajalla (2024). 'Legal Framework For Wastewater Management in Lebanon'. Retrieved from: https://www.aub.edu.lb/ifi/Documents/publications/policy_briefs/LEGAL-FRAMEWORK-FOR-WASTEWATER-MANAGEMENT-IN-LEBANON.pdf

Ministry of Energy and Water (MOEW) (2024). 'Towards a Sustainable Water Sector Lebanon's National Water Strategy 2024 – 2035.' Retrieved from: https://www.pseau.org/outils/ouvrages/mee_lebanon_s_national_water_strategy_2024_2035ENG.pdf

MOEW (2020). 'Water Act (Law 192/2020): Legislative Framework for Water Sector Reform.'

National Water Sector Strategy (NWSS) (2020). 'National Water Sector Strategy: Framework for Action.' Retrieved from: https://www.pseau.org/outils/ouvrages/lewap_updated_national_water_sector_strategy_2020_2035_1970.pdf

UNHCR. (2022). 'The Impact of Syrian Refugees on Lebanon's Water Systems.'

UNICEF. (2022). 'Struggling to keep the taps on.' Retrieved from: https://www.unicef.org/lebanon/media/8891/file/Struggling%20to%20keep%20the%20taps%20on%20EN.pdf

World Bank. (2021). 'Lebanon: Economic Monitoring Report.' Retrieved from: https://documents1.worldbank.org/curated/en/394741622469174252/pdf/Lebanon-Economic-Monitor-Lebanon-Sinking-to-the-Top-3.pdf

Annex 1: List of Interviewees

Institution	Region
Akkar	NLWE
	Mouniz municipality
	Qobayyat municipality
Baalbeck/Hermel	Beqaa Water Establishment (BWE)
	Hermel municipality
	Fekha municipality
Beirut and Mount Lebanon	Beirut and Mount Lebanon Water Establishment
	Mrouj municipality
	Feghal cooperative
	Ain Kfour municipality
	Local Community
	Jbeil municipality
Beqaa	BWE
	Qaraoun municipality
	Makse Municipality
	Litanit River Authority
Nabatieh	South Lebanon Water Establishment (SLWE)
	Nabatieh municipality
North	North Lebanon Water Establishment (NLWE)
	Amioun municipality
South	SLWE
	Lebaa municipality
Consultants	Professor at the Lebanese University
	Former DG Ministry of Energy and Water
	Development Association Ink
	Independent Consultant – former engineer at the Ministry of Agriculture
	Consultant

Annex 2: Questionnaire: Perception of Municipalities' Roles in Water Sector Governance

This questionnaire aims to capture a broad spectrum of perspectives on municipalities' roles in water sector governance, providing a balanced mix of quantitative ratings and qualitative insights.

Section 1: Background Information

1. Name:
2. Position:
3. Organization:
4. Municipality (if applicable):
5. Years of Experience in the Water Sector:

6. Contact Information (optional):

Section 2: General Perception
7. What do you think of the current water governance framework?
o 1 – Very Poor o 2 – Poor o 3 - Adequate o 4 – Good o 5 – Very Good
8. What do you think the main strengths of the current water sector governance framework are? List the top three to five.
9. What do you think the main weaknesses of the current water sector governance framework are? List the top three to five.
10. How would you rate the overall role of municipalities in water sector governance in Lebanon? (1 = Very Poor, 5 = Very Good)
o 1 o 2 o 3 o 4 o 5
11. In your opinion, what are the key responsibilities of municipalities in water sector governance?
12. What activities have municipalities been undertaking in the water sector?
13. Do you think these activities should be undertaken by municipalities, by the regional water establishments, or the ministry?

Section 3: Effectiveness and Efficiency
14. How effective are municipalities in managing local water resources? (1 = Not Effective, 5 = Very Effective)
o 1 o 2 o 3 o 4 o 5
15. How do you rate water-related issues (e.g., water distribution, maintenance of infrastructure, etc.) handled by municipalities? (1 = Very Poorly, 5 = Very Well)
o 1 – Very Poorly o 2 – Poorly o 3 – Adequately o 4 – Well o 5 – Very Well
16. Can you provide examples of successful water management initiatives led by municipalities, e.g. types of activities such as laying water supply networks; maintenance of networks; drilling wells; building reservoirs; etc.?

Section 4: Coordination and Collaboration
17. How well do municipalities and regional water authorities (and the ministry) coordinate and communicate? (1 = Very Poorly, 5 = Very Well)
o 1 o 2 o 3 o 4 o 5
18. Who initiates the communication and/or coordination?
o 1 – Municipality always
o 2 – Regional Water Authority always

o 3 – Ministry of Energy and Water
o 4 – All equally
o 5 – A third party initiates the communication/coordination
19. Are there any existing partnerships between municipalities and other stakeholders (e.g., NGOs, private sector) in water sector governance? Please provide details.

Section 5: Funding and Resources
20. How adequate are the financial resources allocated to municipalities for water sector activities? (1 = Very Inadequate, 5 = Very Adequate) o 1 o 2 o 3 o 4 o 5
21. What are the mechanisms for financial management and accountability at the municipal level regarding water governance? Please list/describe.
22. Do you think these mechanisms are effective? Please explain.
23. What funding sources can municipalities explore to enhance their role in water sector governance?

Section 6: Public Engagement and Awareness
24. Do you think the public knows what the role of the municipality in water governance is?
25. Do you think the public knows what the role of the regional water establishment in water governance is?
26. How actively do municipalities engage the public in water sector governance? (1 = Not Active, 5 = Very Active)
o 1 – Not Active o 2 – Somewhat Active o 3 – Neutral
o 4 – Active o 5 – Very Active
27. How aware is the local population about their municipality's role in water governance? (1 = Not Aware, 5 = Very Aware)
o 1 o 2 o 3 o 4 o 5
28. What strategies can municipalities use to enhance public participation in water governance?

Section 7: Challenges and Recommendations
29. What are the main challenges faced by municipalities in water sector governance?
30. What are the opportunities for municipalities to improve their role in water sector governance?

31. What specific recommendations would you make to strengthen the role of municipalities in water sector governance?

Section 8: Future Outlook
32. How do you see the role of municipalities in water governance evolving over the next 5-10 years, e.g. taking on more responsibility, removing itself from the governance of the sector, other?
33. What innovations or practices could be adopted by municipalities to enhance water governance?

Closing
34. Would you be willing to participate in a follow-up interview or provide further insights if needed? (Yes/No)
35. Please provide any additional comments or suggestions for this questionnaire.

Thank You
Thank you for your time and valuable insights. Your responses will significantly contribute to understanding and improving the role of municipalities in water sector governance in Lebanon.