

# **A BROADER VIEW OF THE LITANI'S POLLUTION CRISIS: MOUNTING CONFLICTS AND HIDDEN PITFALLS**

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## **Summary**

*In the past few months, Lebanon's environmental scene witnessed a change in tides. A series of actions pursued by the Litani River Authority (LRA) have built momentum, producing an unexpected change in Lebanon's lingering water pollution crisis. To protect the Litani from widespread pollution, the LRA initiated legal actions which lead to the prosecution of different stakeholders for polluting this river. The undertaken measures have instigated a tense atmosphere among stakeholders. This policy brief examines these events and addresses broader issues pertaining to water management and conflict.*

## **KEY RECOMMENDATIONS**

- ▶ Establish a national sustainable development strategy which takes into consideration both integrated resource management and development. Stakeholder participation in the development of this plan should be made at the earliest stages possible to minimize ongoing conflict.
- ▶ Promote stakeholder interaction through the establishment of a river basin committee which includes municipalities, water establishments, LRA, farmers, industries, international organizations and citizens. This committee can ensure continuous stakeholder dialogue and promote a shared sense of responsibility of the Litani and its protection.
- ▶ Clearly delineate stakeholder roles and responsibilities, particularly regarding wastewater management through policy reforms and continuous involvement of local authorities in policy-making.
- ▶ Introduce a wastewater tariff in a phased-in approach to enable existing WWTPs to be made operational. This tariff should be preceded by an awareness campaign to promote community acceptance and followed by law enforcement to ensure bill collection. Other financial schemes include selling treated wastewater for reuse, and onsite power production from sludge generated by treating wastewater.
- ▶ Implement nature-based solutions, such as constructed wetlands, to treat wastewater in areas where they are suitable (with available land) and where there is a need (lacking WWTPs). The viability of such solutions will depend on consistent, thorough and timely monitoring, available land for construction and community acceptance.

## **Problem Statement**

The LRA is the public institution responsible for monitoring activities of all Lebanese rivers and implementing irrigation and hydro-electricity projects on Lebanon's largest river, the Litani. Unfortunately the river continues to be used as an open sewer and dumpsite by different stakeholders in the river basin, causing extreme pollution levels with dire public health ramifications. Increasing ammonia and phosphate levels beyond permissible levels indicate increasing agricultural runoff and discharge of wastewater into the Litani River (see Figures 1 and 2).

In addition, anecdotal evidence from residents within the Litani basin of increased incidence of cancer and other infectious diseases has lead communities to mobilize against river pollution.

In response, the government launched a USD 730 million project for cleaning up the Litani in 2016. Previous attempts at river protection were proven futile until the issuing of Law 77 of the Water Code on April 13th, 2018, which is yet to be enacted. On the basis of this law, particularly Article 103, the LRA sought legal measures to ensure the cessation of river pollution by issuing warnings to various stakeholders regarding their polluting activities. In a country where water pollution is exacerbated by the practically nonexistent wastewater treatment and a solid waste crisis plagued by political inertia, this legal approach represents a fresh and inspiring undertaking.

## Ammonia and Phosphate Levels in the Litani River 2007-2017

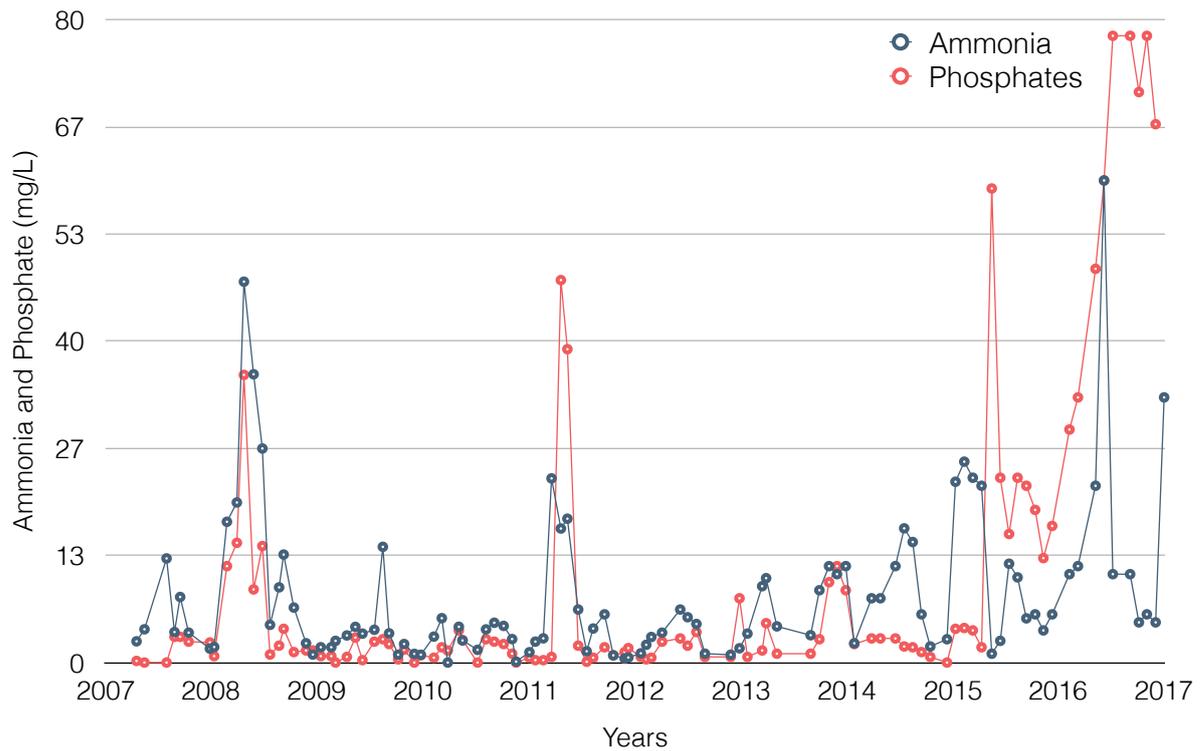


Figure 1. Ammonia and Phosphate Levels in the Litani River 2007-2017

***Ammonia levels are highly temperature and pH dependent, and in the case of the Litani, should fluctuate between 0.35 and 7 mg/L, whereas phosphate levels should not exceed 0.1 mg/L (EPA, 2001; CCME, 2010).***

With the help of ministries of Environment, Energy and Water, and Industry as well as internal security forces, the LRA has currently issued more than 200 violation notices to factories and municipalities located in the Litani River Basin, due to their alleged discharge of industrial and municipal wastewater into the river, dumping of waste on its banks, and construction violations. Accusations have also been directed at the United Nations High Commissioner for Refugees (UNHCR) and hospitals in the river's basin, for allegedly mismanaging wastewater from refugee camps and hospital waste, respectively. The culmination of these actions instigated a tense atmosphere among the different stakeholders manifested by the following events:

- Some municipalities responded to LRA's actions by halting the discharge of their wastewater and dumping of solid waste into the river, while others tried to wiggle away from responsibility by deflecting the blame on other municipalities;
- Over 79 factories were threatened with being shut down, and one of the factory owners was imprisoned;
- Following the flooding of the Litani, in January 2019, which resulted in the death of a young Syrian refugee, tensions escalated between LRA and UNHCR shifting the conflict towards the issue of relocating refugee camps to safer areas which are not within the river's flood plain.

All in all, the situation highlights mounting conflicts among stakeholders with competing interests in the Litani River Basin. Interestingly, the situation attests to the findings of a study by AUB's Issam Fares Institute which identified pollution and the mismanagement of the refugee crisis as predisposition factors to water conflict in the Bekaa (El Kareh, et al, 2018).

This situation further raises vital questions regarding the importance of clear roles and responsibilities among stakeholders, and the need to reinforce positive relationships among them to reduce the risk of water-related conflicts.

***93% of phosphate values exceed permissible limits***

## Analysis

This situation mirrors a wider spectrum of issues inherent to the Lebanese context such as the absence of stakeholder dialogue; unclear and overlapping roles and responsibilities; a silo approach to water resource management and development; weak or inexistent infrastructure; and an overall inefficient law enforcement process.

Unclear responsibilities pertaining to wastewater management in the region have significantly aggravated this issue. Although the promulgation of the long-awaited Water Code did provide a legal platform for law enforcement, and granted a consulting role to municipalities by giving them a seat on the national water council, it did not solve the discrepancy in Lebanese laws regarding wastewater management. According to the Municipal Law of 1977, wastewater and stormwater management are the responsibility of municipalities (Riachi, 2016). Later on, 'Law 2000/221' identified regional water establishments (RWEs) as the entities responsible for wastewater management, including collection, conveyance, and treatment (Farajalla et al, 2015).

The enactment of Law 221 did not clarify ambiguities pertaining to wastewater. Although the law clearly places wastewater under the responsibility of RWEs, it also assumes them to have the financial and administrative autonomy to undertake this role, which is not the case. Nearly all RWEs are suffering from significant financial limitations and an inadequate number of skilled staff, making them unable to take over the operations of wastewater treatment plants (WWTPs). Currently the few active plants are indirectly overseen by some RWEs and operated by contracted private companies. Some municipalities on the other hand are handling the operation and maintenance of wastewater networks and some are operating small-scale WWTPs (USAID, 2013).

Accordingly, the combination of overlapping responsibilities and a lack of stakeholder dialogue and coordination has impeded performance efficiency, created confusion among both local authorities and citizens, and lead to the unjust prosecution of municipalities.

Another element of this crisis is the lack of proper planning apparent at the level of wastewater and solid waste management, and the refugee crisis. Indeed planning for WWTPs does not take into consideration the operating cost of these facilities. With the absence of a wastewater tariff, the majority of WWTPs remain nonfunctional due to the lack of operation and maintenance budget. In addition, a strategy for solid waste management is yet to be implemented, forcing municipalities to rely on quick solutions which are unsanitary and unsustainable. Municipal services are also hindered due to delays in the disbursement of funds from the Independent Municipal Fund (IMF), which is usually insufficient and delivered on an irregular basis and years behind schedule (Atallah, 2011). Finally planning for refugee camps did not take into consideration flood risk assessment nor facilities required to manage the camps' wastewater and solid waste. All these factors have been crucial in instigating conflict among stakeholders in the region.

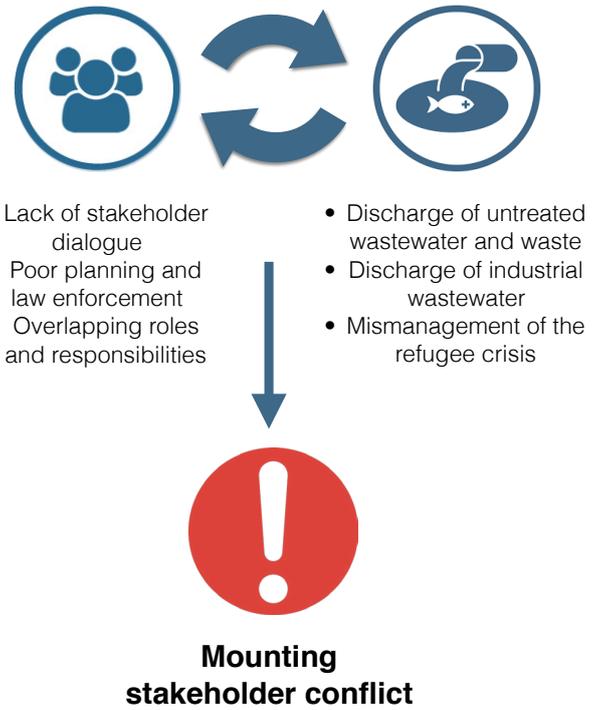


Figure 2. Factors influencing stakeholder conflict in the Litani River Basin

***More inclusive political and social processes are essential in creating an environment that would minimize stakeholder conflict***

## List of Acronyms

<b>IMF</b>	Independent Municipal Fund
<b>LRA</b>	Litani River Authority
<b>RWE</b>	Regional Water Establishment
<b>UNHCR</b>	United Nations High Commissioner for Refugees
<b>WWTP</b>	Wastewater Treatment Plant

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## Climate Change and Environment Program

The Climate Change and Environment program, at the Issam Fares Institute for Public Policy and International Affairs at AUB, was originally launched in 2008 as “The Research and Policy Forum on Climate Change and Environment in the Arab World”. The program aims to use academics’ technical expertise to answer socially driven questions on climate change and environment in order to fill policy gaps in Lebanon and the Arab World. Topics are tackled in a multidisciplinary approach using both Social and Applied Sciences perspectives to answer the same hypotheses.

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