

## **Critical Assessment to the Wastewater Management Sector in Lebanon: Irresponsible Generation, Fragmented Collection, and Limited Treatment**

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**Abstract :** Wastewater management is a global concern and priority, both to protect the natural environment from the consequences of poor disposal, specifically water resources and to harness its potential as an additional water supply through water reuse. Lebanon still lags behind, being at the bottom of the list among the Arab countries in both safely managed sanitation services and wastewater treatment and in achieving the targets of SDG 6.3. This study which relied on a data collection survey targeting the municipalities, provides a critical assessment of the wastewater sector in Lebanon. The results revealed the fragmented sewerage collection systems, where only 13% of the targeted municipalities have complete coverage, leaving most of the urbanized areas at risk of pollution. The results also highlight the limited quantity of wastewater treated and the fragility of the operation of the wastewater treatment plants in light of the recent energy crisis. Ultimately, only 14% of the generated Wastewater is currently treated in Lebanon with primary treatment only. The assessment showed that wastewater management wasn't a priority on the national level for decades, where the lack of institutional coordination and long-term vision, the absence of deterrent regulations and advanced technology, the influx of Syrian refugees, and the recent economic crisis stand behind the current situation.

**Keywords :** wastewater management, lebanon, wastewater collection, SDG 6.3., governance gaps

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