

Examining the Healthcare System Burden Attributed to the Litani

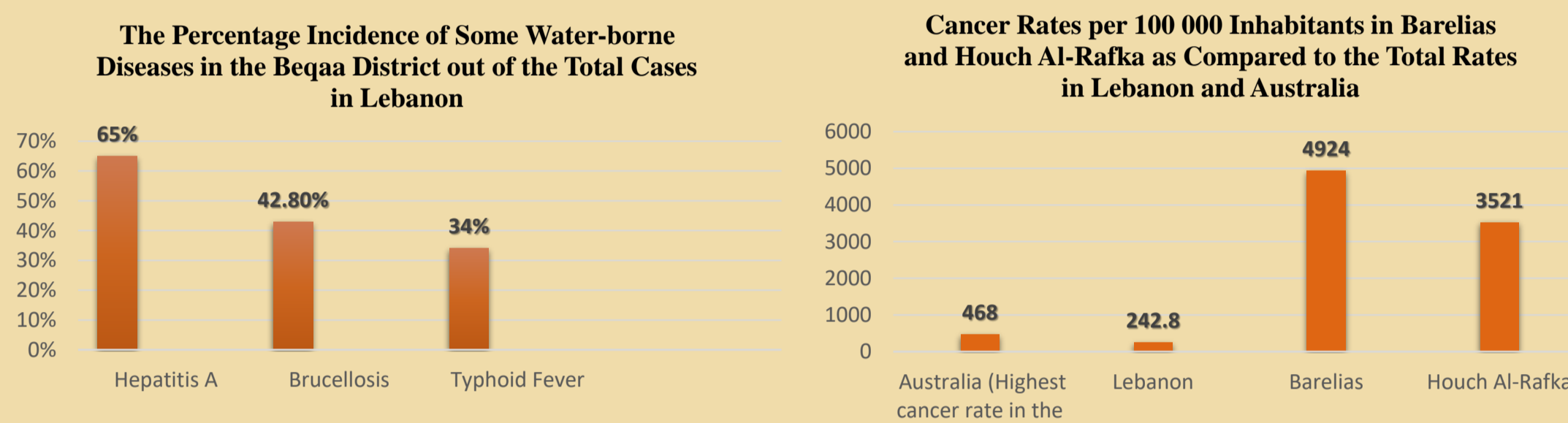
River Pollution in Lebanon

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Rationale

- The Litani River suffers from extreme multifactorial pollution that is challenging its ecological wellbeing and adversely impacting the health of the public as well as the healthcare system in Lebanon.
- Deteriorated water quality has a negative implication on the health of the public.
- Increased incidence of waterborne diseases and cancer rates has been recently recorded in areas within the Litani River Basin.

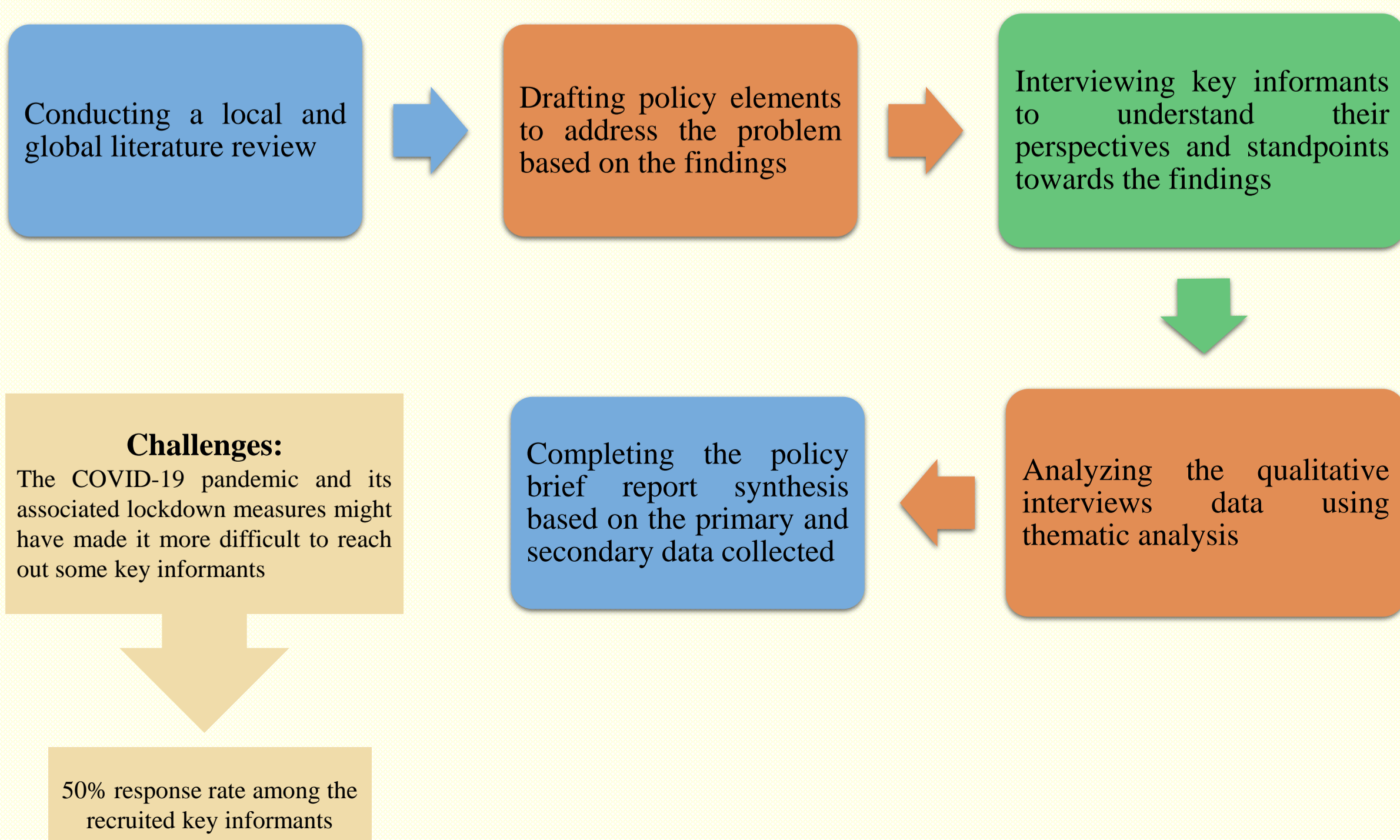


- Hence, the Litani River pollution is exerting a preventable burden on the healthcare system in terms of the healthcare costs associated with the attributed diseases.

Objectives

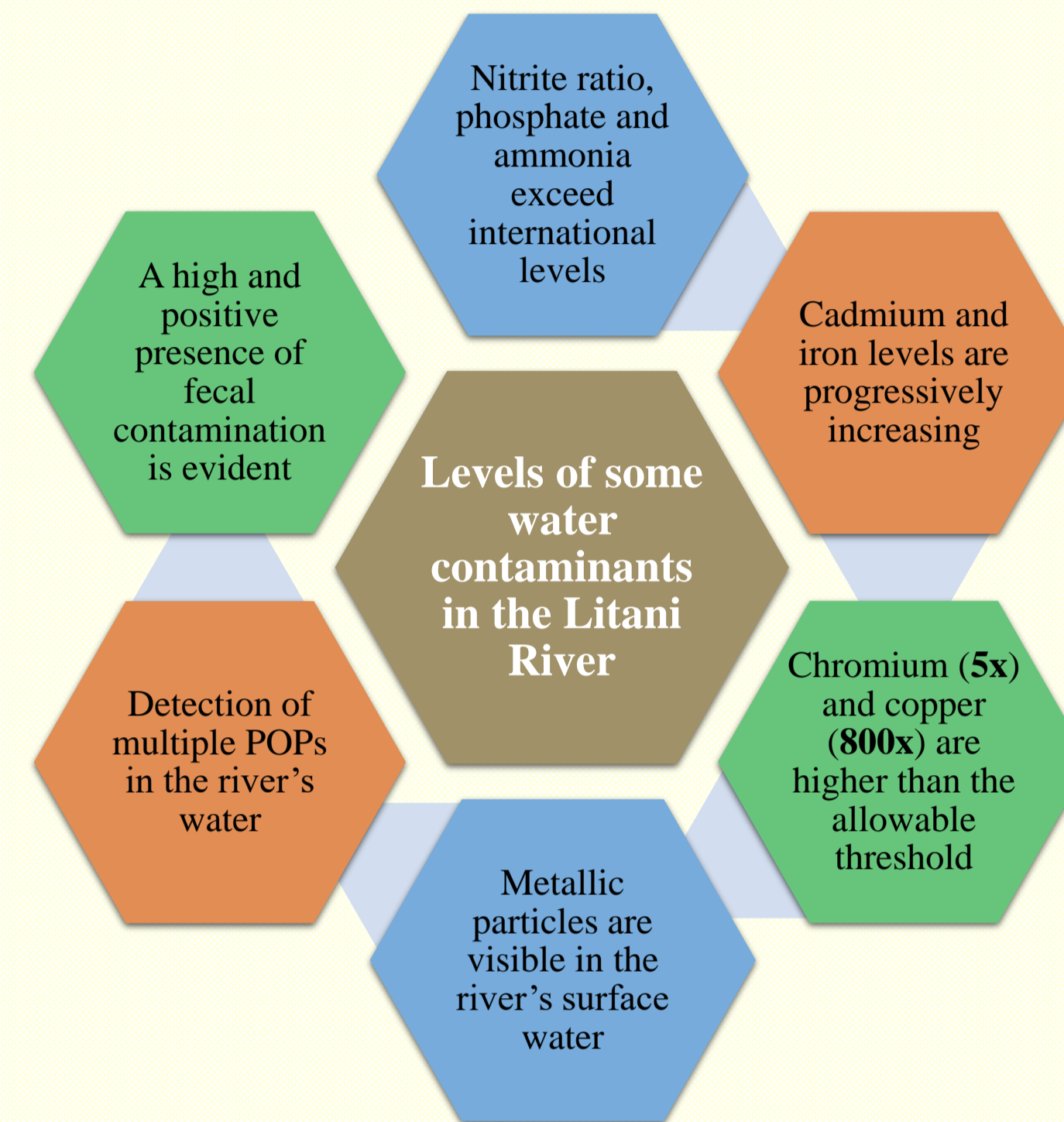
- To demonstrate the magnitude and the adverse public health implications of the Litani River pollution
- To understand the underlying factors contributing to the culmination of the Litani River pollution
- To synthesize an evidence base in support of a comprehensive approach for effective abatement and control of the problem

Process/Methodology



Findings

Magnitude of the Litani River Pollution



Contributing Factors to the Litani River Pollution

Governance Arrangements

- Lack of technical and human resources at the water sector associated entities
- Absence of effective monitoring and evaluation mechanisms for pollution control
- Poor cooperation and coordination among the involved stakeholders within the water sector
- Excessive centralization of decision making around water governance
- Outdated and/or poorly implemented water related laws and regulations
- Mismanagement of the Syrian refugees' crisis and misplacement of camps

Delivery Arrangements

- Random dumping of solid waste along the Litani River
- Direct disposal of untreated wastewater (46 million m³ yearly)
- Overuse of pesticides and fertilizers in agriculture (pesticides and fertilizers used are double and triple than the required dose)
- Disposal of untreated industrial effluent (4 million m³ yearly)
- Insufficient number of wastewater treatment plants in operation
- Deficient sanitation infrastructure

Financial Arrangements

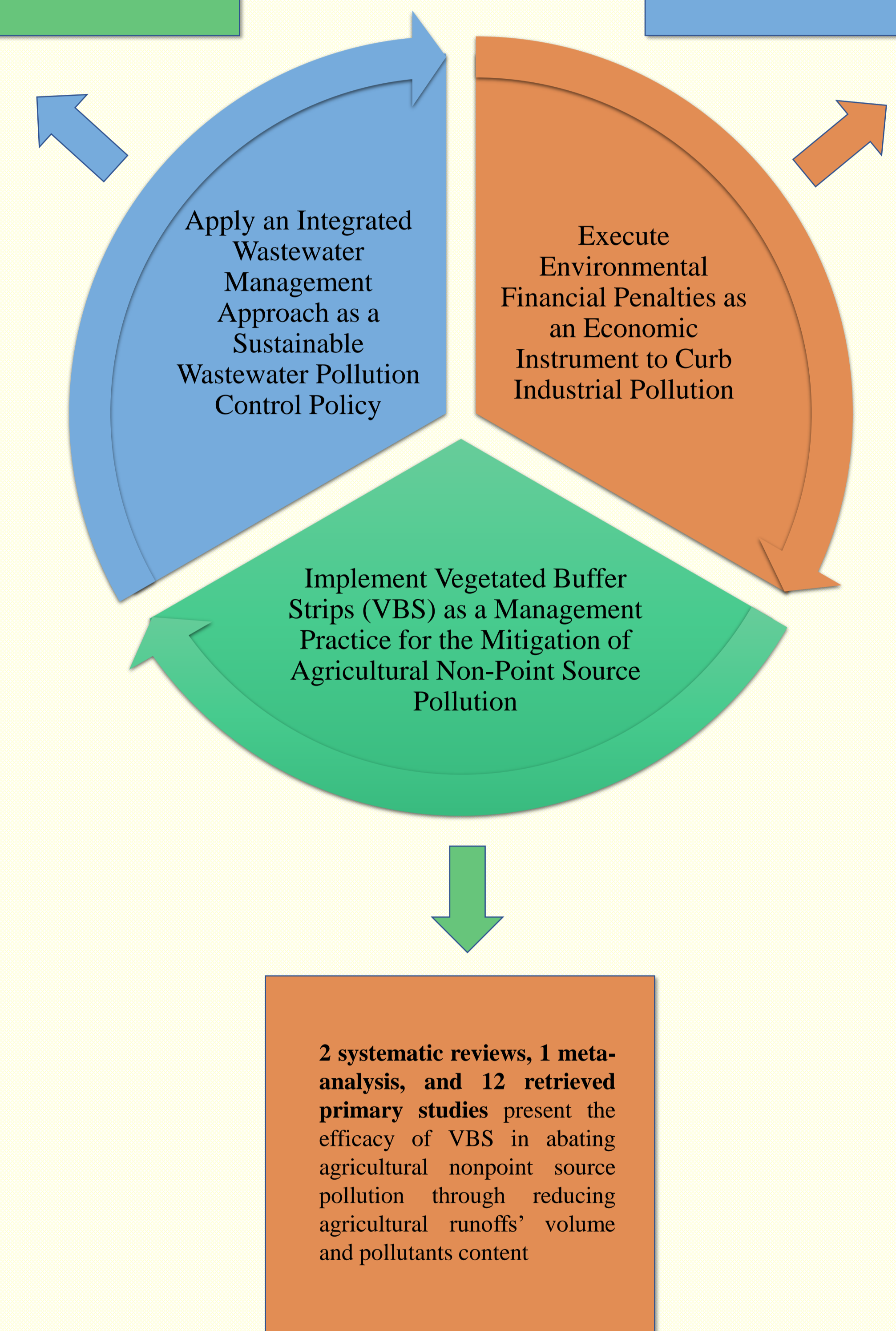
- 152% debt to GDP ratio in Lebanon
- Poor allocational capacity of national funds
- Lack of financial autonomy of water sector associated entities
- Corruption and lack of accountability and governmental transparency
- The most recent financial and economic crisis in the country

- Municipal wastewater and agricultural runoffs are the two main pollution burdens on the water quality of the Litani River.
- Industrial effluents dispensed into the river contain large quantities of toxic and hazardous chemicals that have detrimental health impacts on people of the various age groups.
- Therefore, addressing wastewater, industrial and agricultural pollution sources of the Litani river constitute the prioritized targets of evidence-based policy elements of direct interventions for comprehensive and effective abatement of the Litani River pollution.

Policy Elements of a Comprehensive Approach

1 systematic review and 8 retrieved primary studies illustrate the effectiveness of integrated wastewater management approaches for the prevention of water pollution and protection of the public's health

13 retrieved primary studies demonstrate environmental financial penalties as an effective economic tool for the attainment of pollution control, particularly industrial wastewater



Conclusion and Implications



As a critical public health concern and a substantial contributor to the avoidable socioeconomic burden on the national healthcare system in Lebanon, abating the Litani River pollution is a national public health priority that holds the premise of improved water quality, decreased community exposure to water related health risks, reduced water pollution related diseases and hence alleviation of the attributed socioeconomic tonnage on the national healthcare system; which is the end goal of this policy brief.