

Water Pollution & Wastewater Mismanagement in Lebanon

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Why is this Such an Important Issue?



Rivers

Over 90% of collected wastewater in Lebanon is released untreated into rivers.



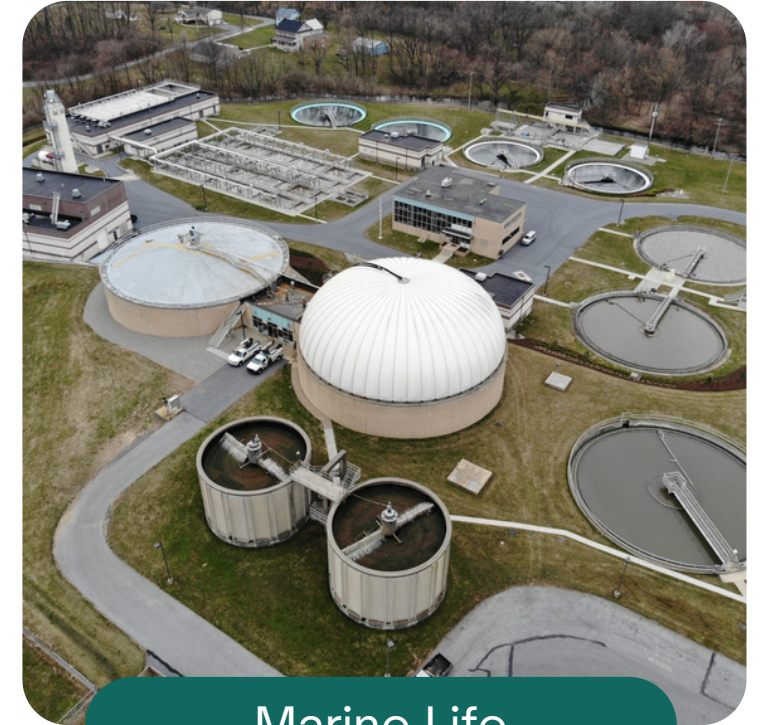
Contamination

Rivers are major sources of water for agriculture, therefore contamination threatens food safety and public health.



Water Quality

Drinking water supplies are affected as domestic wastewater, industrial discharge and agricultural runoff degrade water quality.



Marine Life

Germs, harmful chemicals, and farm fertilizers get into rivers. This makes too many plants grow (algae bloom), which uses up the oxygen in the water and kills fish.

Scope & Geography of the Problem:



Major Rivers Impacted:

Some of Lebanon's most important rivers are heavily polluted. Such as, **Litani, Abou Ali, Damour** and Beirut-coastal rivers among others.

The case of the Al-Ghadir River:

As one of the most polluted rivers in Lebanon, Al Ghadir acts like an open sewer because untreated household and industrial waste is dumped straight into it. People living nearby suffer from the smell, health issues, and polluted groundwater.

Watersheds & agricultural lands:

Farmers, especially in the Beqaa Valley, rely on rivers like the Litani to irrigate their crops. When polluted water is used for irrigation, harmful chemicals and bacteria can end up in food, soil, and livestock.

Causes of the Problem:

Not enough treatment plants

- Most wastewater is released without being cleaned first.

Weak laws & enforcement

- Rules exist, but they are rarely applied or monitored.

Direct dumping of waste

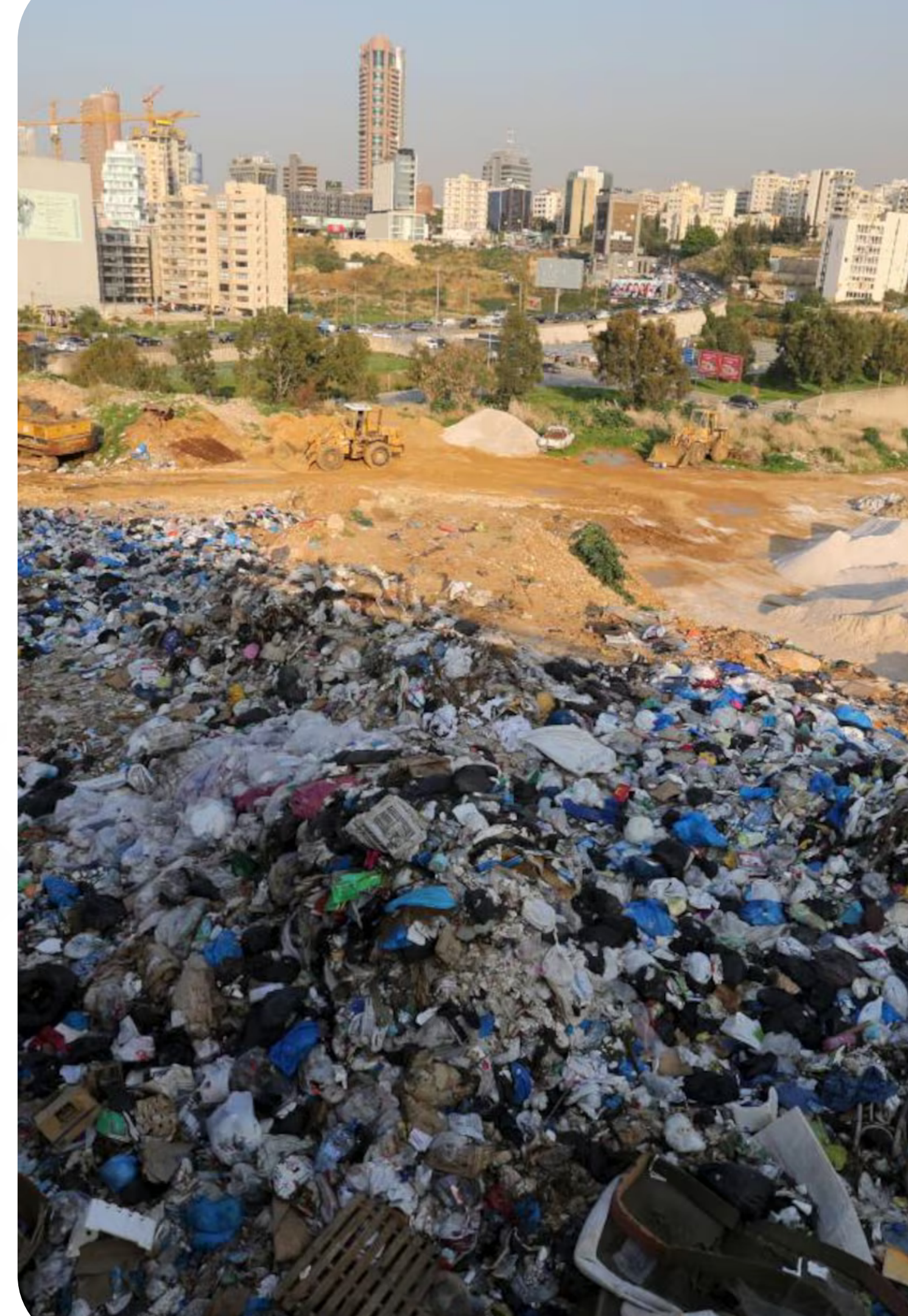
- Factories, hospitals, hotels, and homes often release sewage straight into rivers or through broken pipes.

Farming pollution

- Fertilizers and pesticides wash off fields into rivers and streams.

Growing population & cities

- More people = more waste, but infrastructure has not kept up.





Impacts of Water Pollution:

Health problems

- Dirty water spreads diseases and exposes people to harmful chemicals.

Damage to nature

- Fish and other river life die off, and biodiversity is lost.

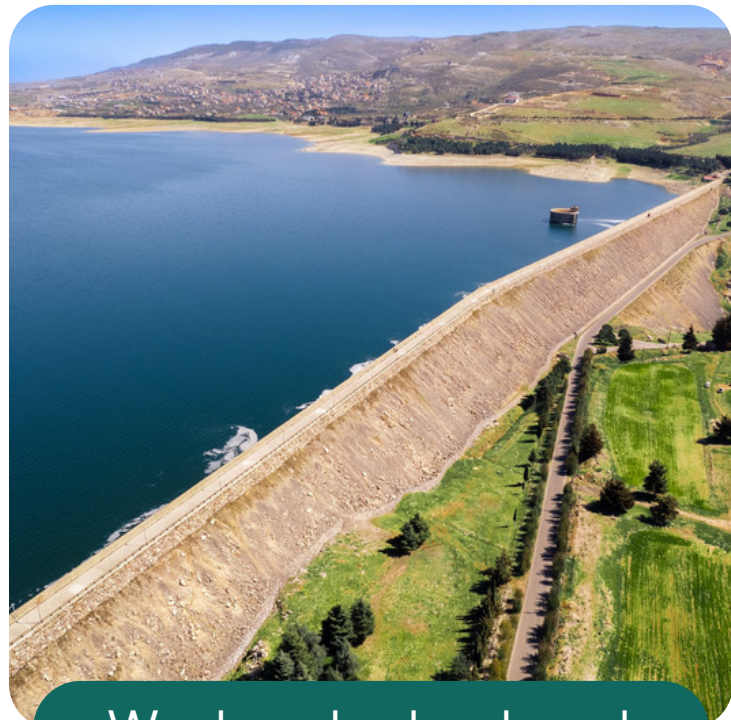
Farming risks

- Polluted water used for irrigation harms crops and lowers food quality.

Economic costs

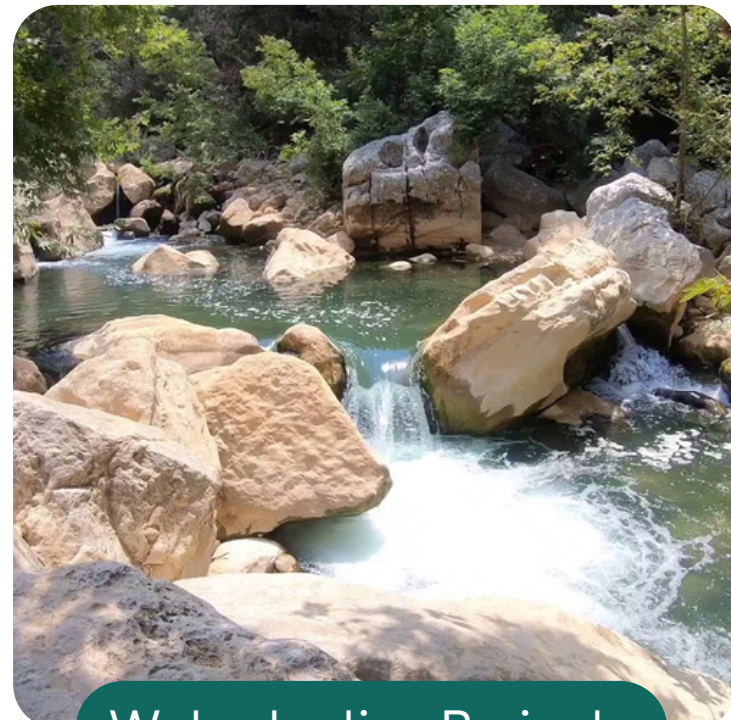
- More money spent on healthcare and clean-up.
- Farmers lose income, and tourism declines.

Whats being done?



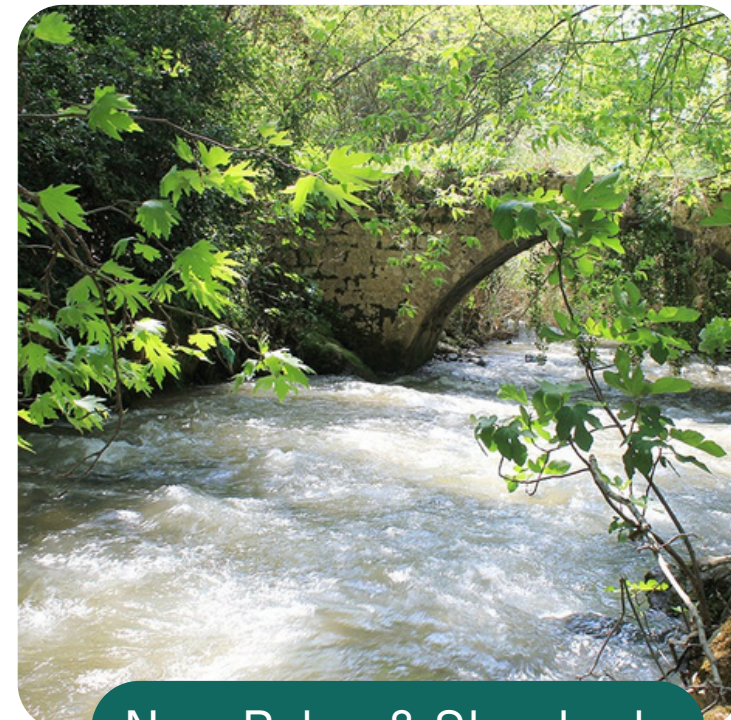
Wastewater treatment

- Out of ~300 million cubic meters of sewage each year, only about 81 million cubic meters is treated.
- A small part (~28 million cubic meters) can be reused safely.



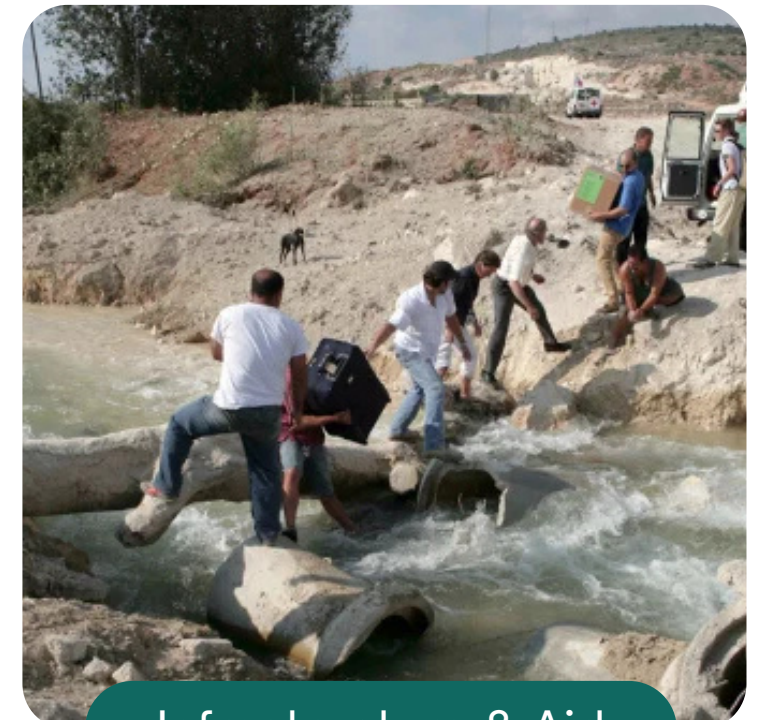
Water testing Projects

- Studies are being done to find the most polluted rivers and areas that need urgent help



New Rules & Standards

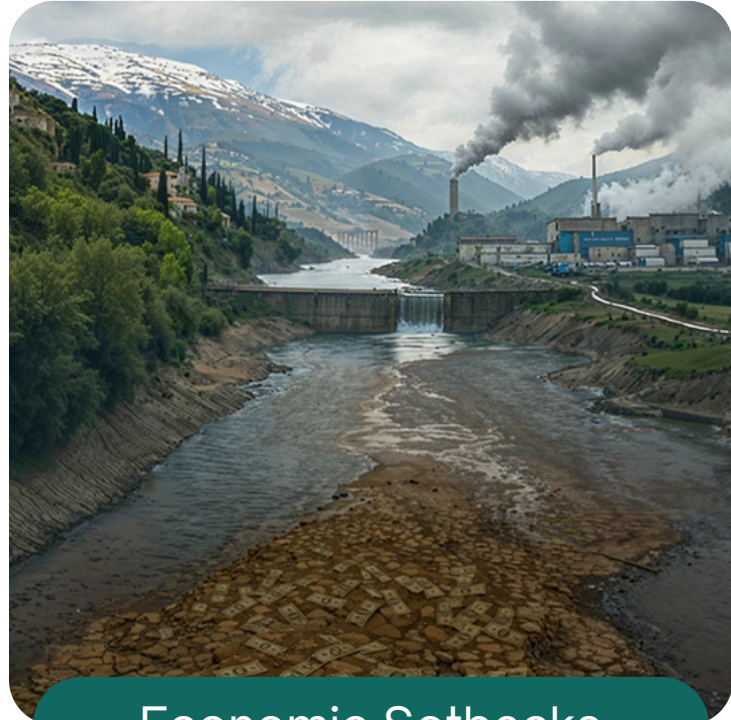
- Lebanon has recently introduced laws for safer reuse of treated wastewater, especially in farming.



Infrastructure & Aid

- Some new treatment plants built.
- NGOs and international partners are helping with upgrades and support.

Barriers: Why the Problem still Exists?



Economic Setbacks

- Lebanon's economic crisis leaves little funding for new projects.



Corruption & Weak Rules

- Laws exist, but they are poorly enforced.



Electricity Shortages

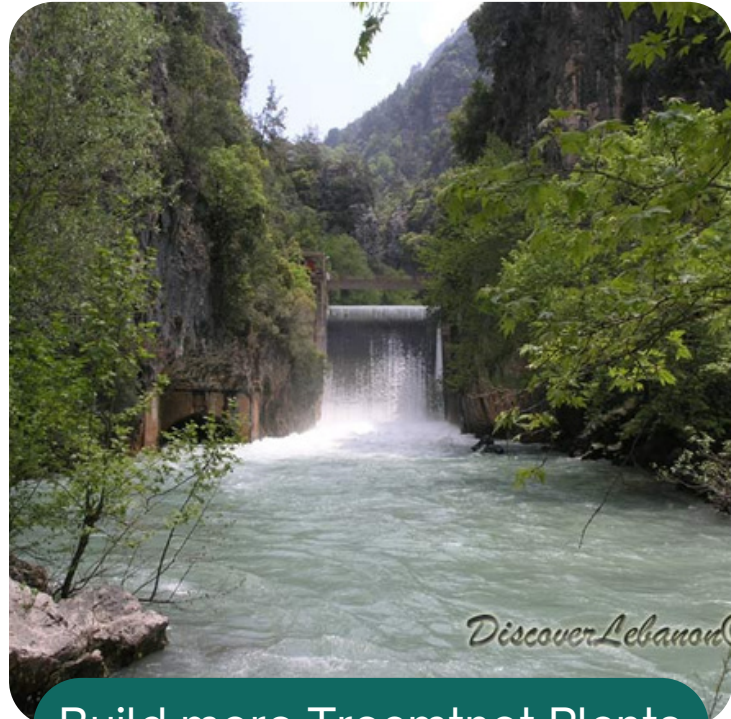
- Power cuts stop treatment plants from running properly.



Low Public Awareness

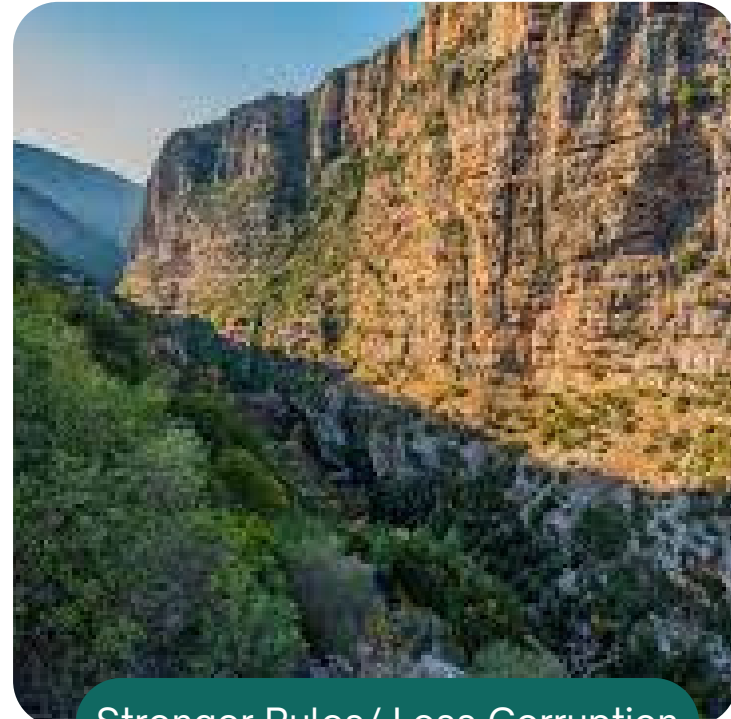
- Many people and industries are still dumping waste regardless of the constraints and regulations put in place.

Recommendations / What more could be done?



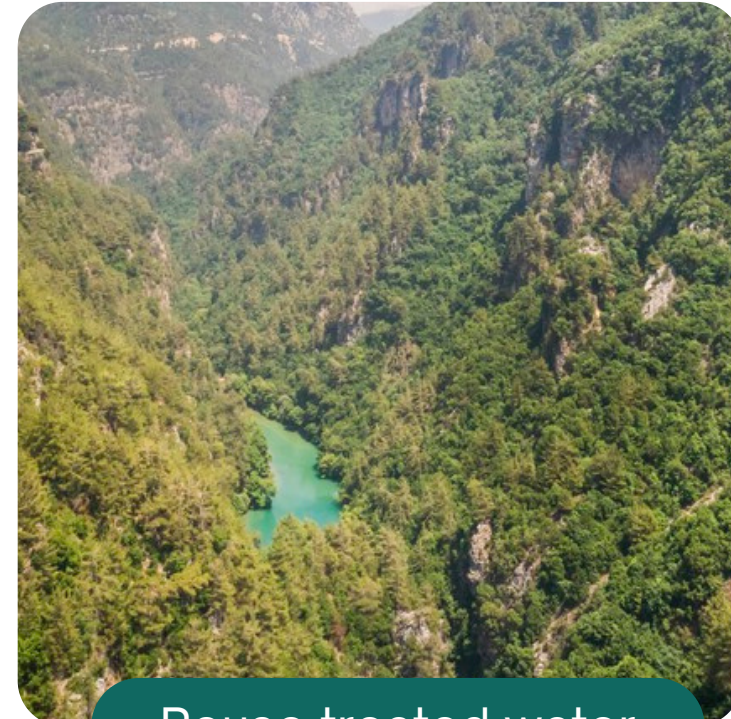
Build more Treamtnet Plants

- Expand and upgrade wastewater treatment infrastructure, especially for rural and under-served areas.



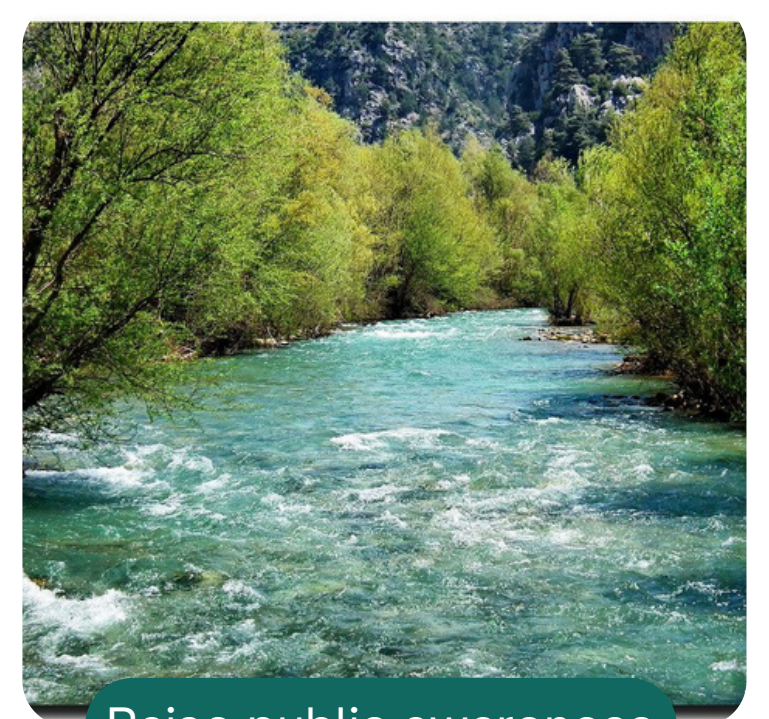
Stronger Rules/ Less Corruption

- Enforce environmental laws fairly and consistently by strengthening regulatory framework and enforcement.



Reuse treated water

- Encourage reuse of treated wastewater in agriculture to reduce demand on fresh water.

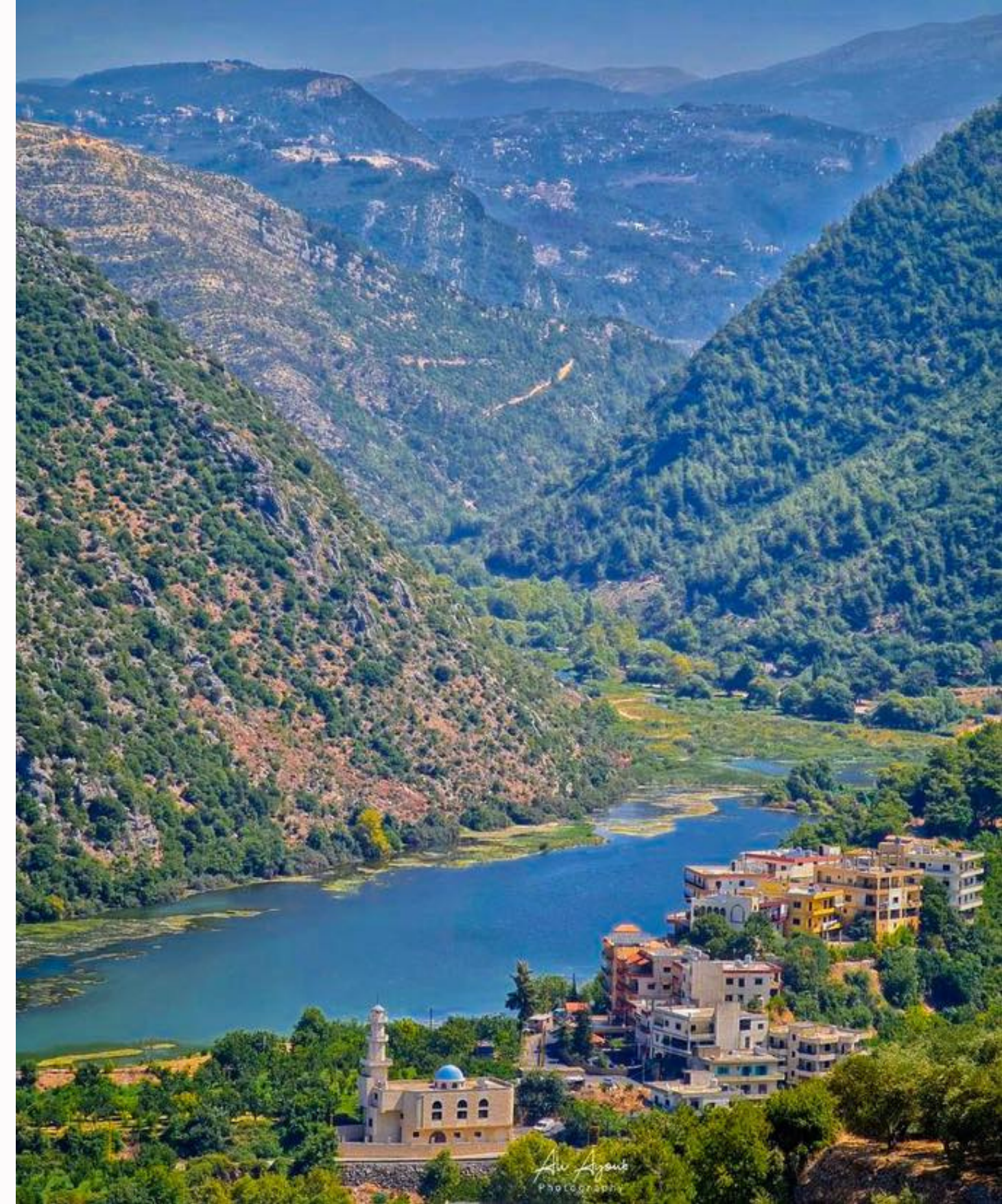


Raise public awareness

- Promote public awareness programs on pollution, water conservation, safe disposal of waste.

Conclusion:

Water pollution & wastewater mismanagement are critical, multifaceted threats in Lebanon to public health, environment, food security, and to the economy. Although some efforts exist, systemic challenges limit progress and urgent action is needed.



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