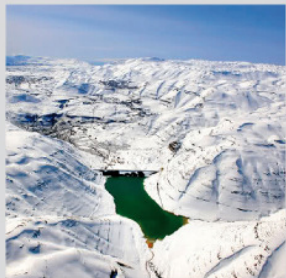


# National Water Sector Strategy

“A right for every citizen, a resource for the whole country”

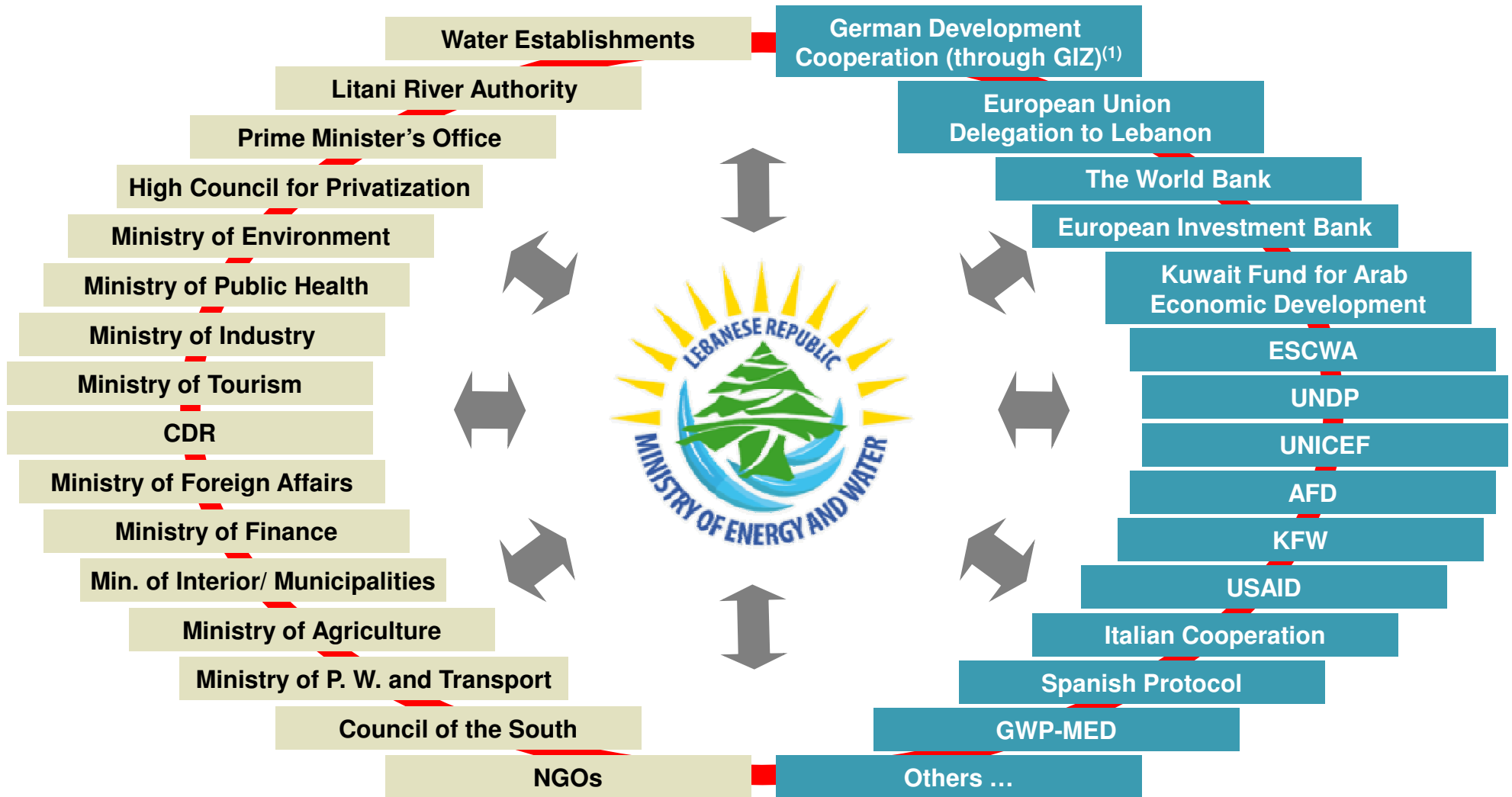


**Eng. Gebran Bassil**

Ministry of Energy and Water (Date 27/12/2010)

Lebanese Government (Resolution No. 2, Date 09/03/2012)

# The NWSS has been developed by the Ministry of Energy and Water, with the participation of national stakeholders and international donors



Note: (1) through played a key role in supporting the NWSS and its launching event.

## **Baseline**

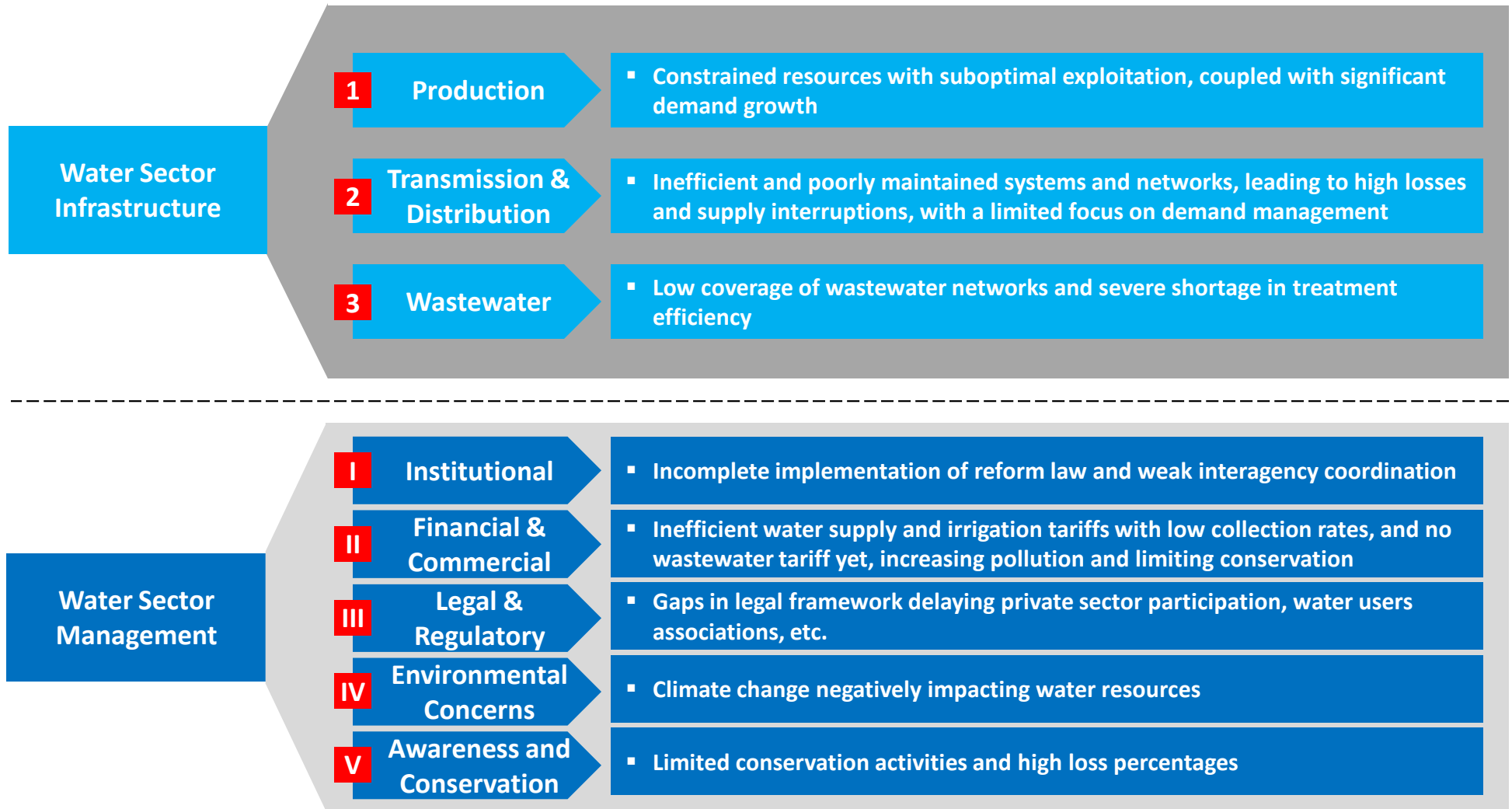
Demand/Supply Forecasts

Sector Enabling Environment

Investment Plan

Strategic Roadmap

# The Lebanese water sector is facing shortcomings both on the infrastructure and management fronts



## **Baseline**

**Water Sector Infrastructure**

Water Sector Management

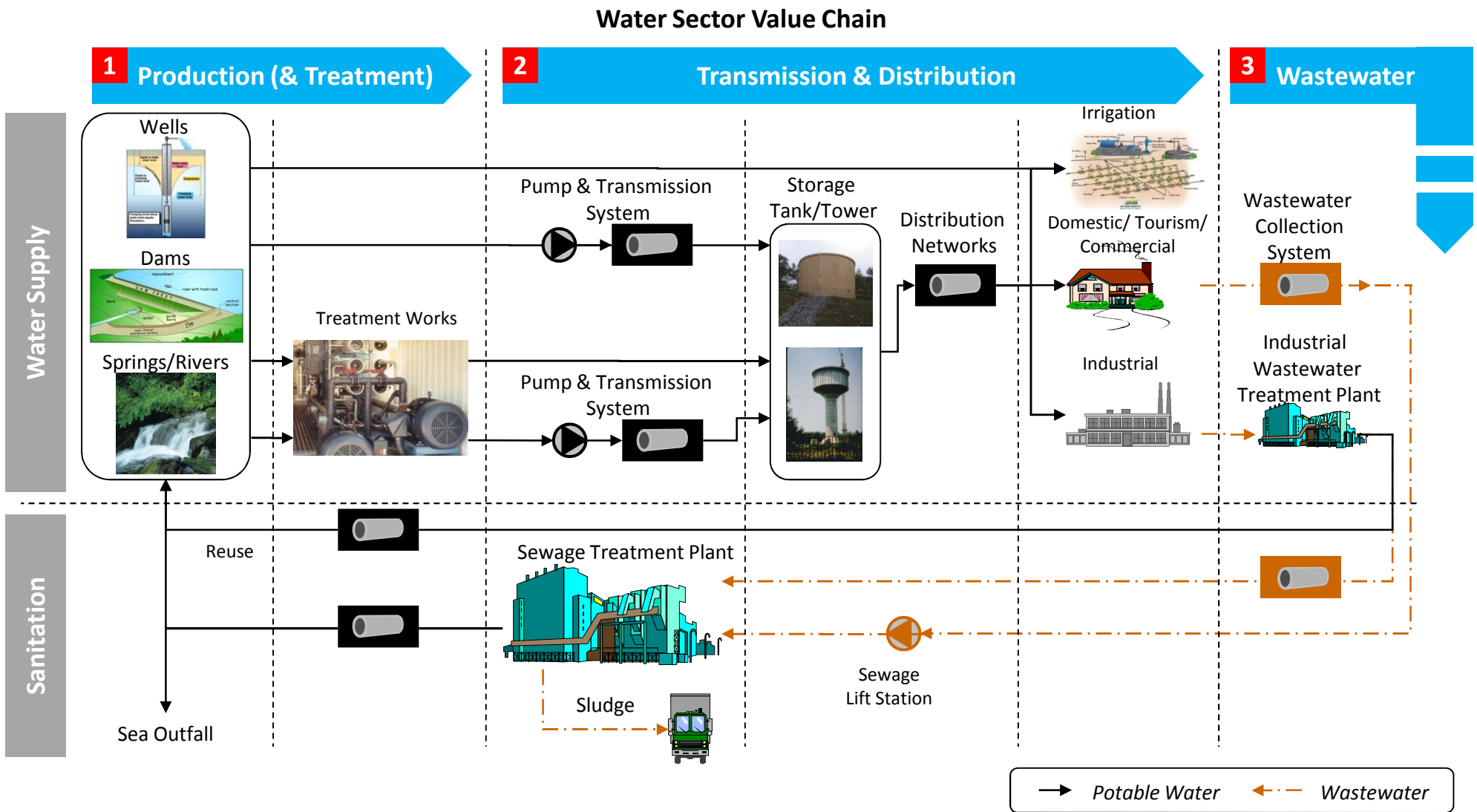
Demand/Supply Forecasts

Sector Enabling Environment

Investment Plan

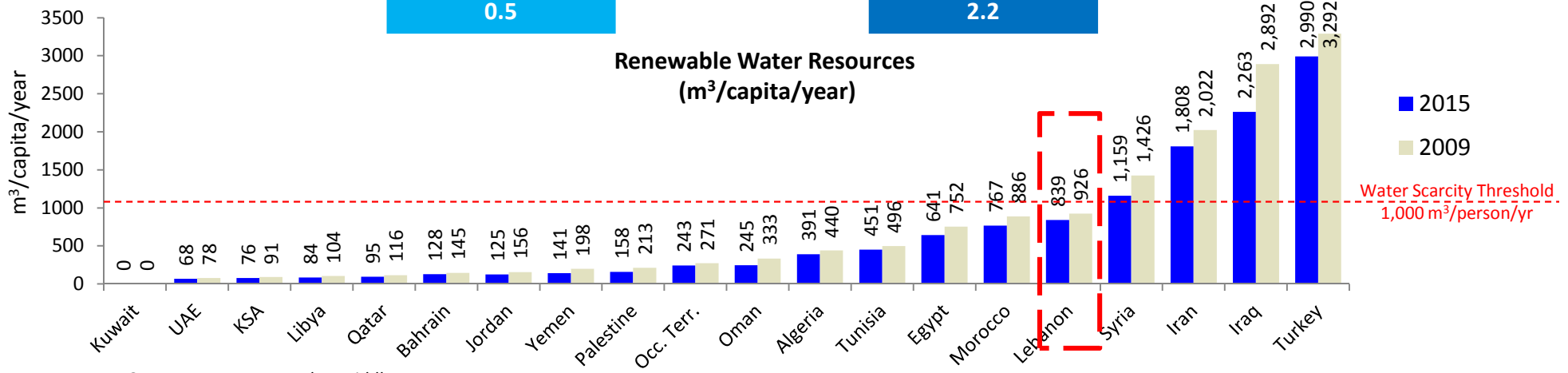
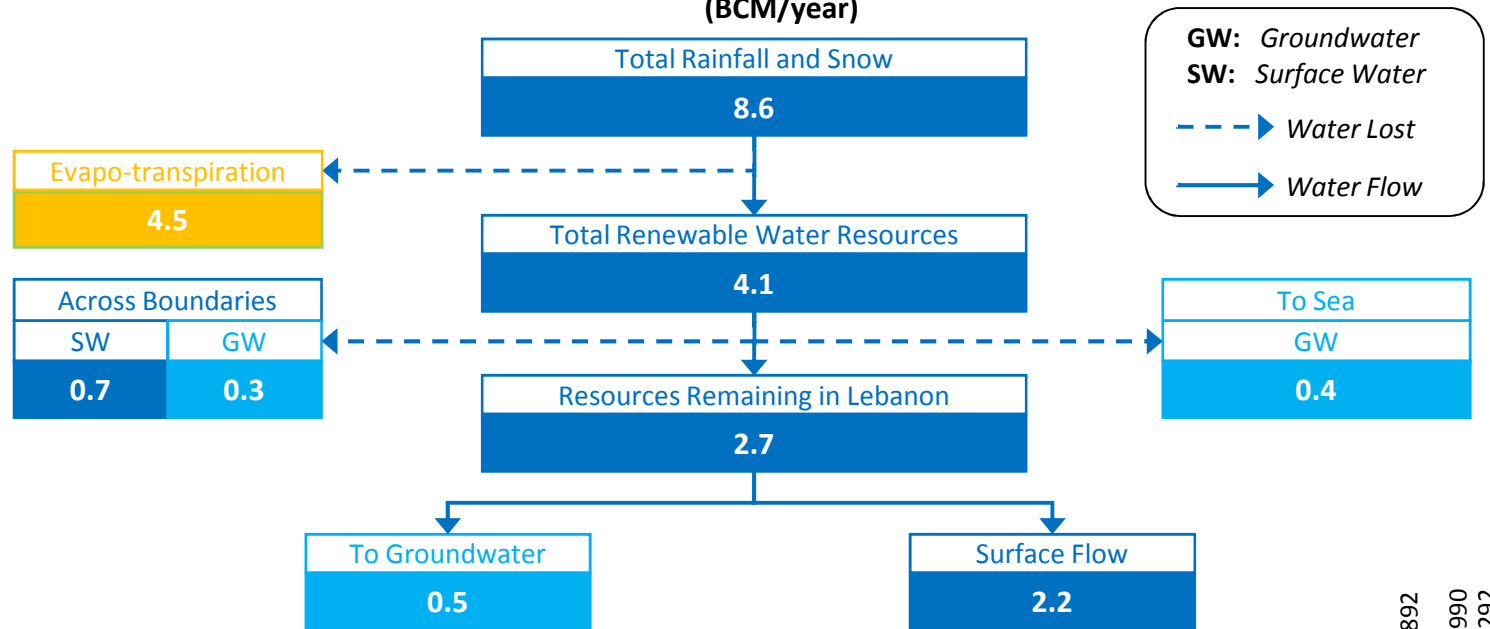
Strategic Roadmap

# Several steps constitute the water sector value chain



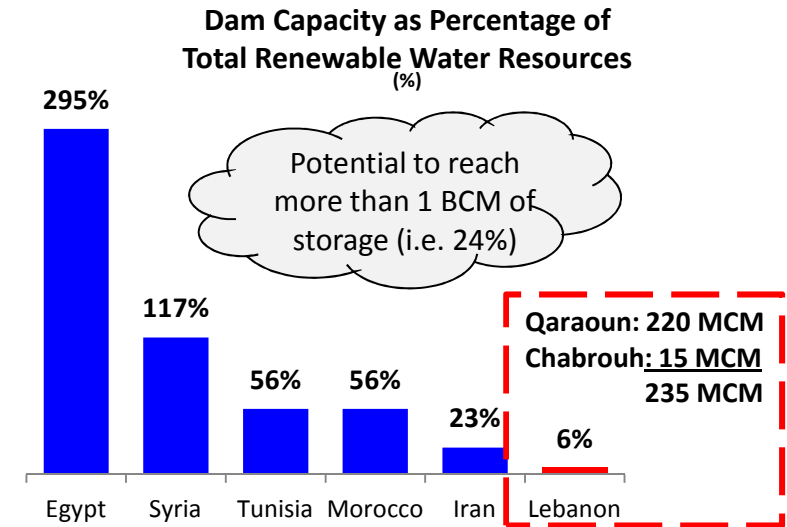
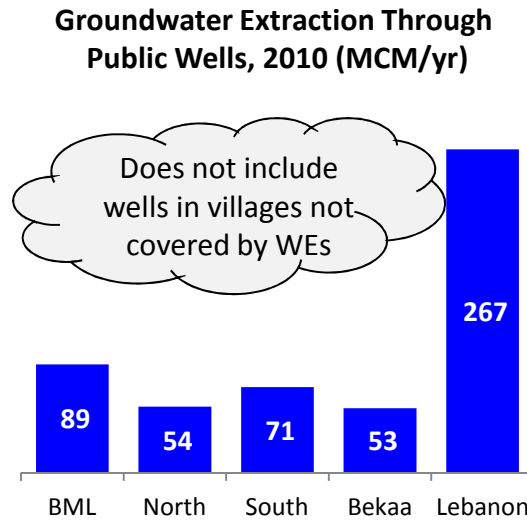
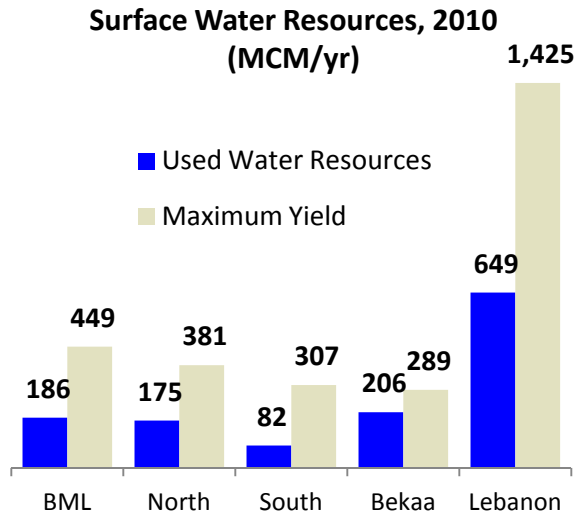
# 1 Renewable water resources per capita are already slightly below scarcity threshold, with expected decrease in the coming years

Current Water Balance for Lebanon for an Average Year (BCM/year)



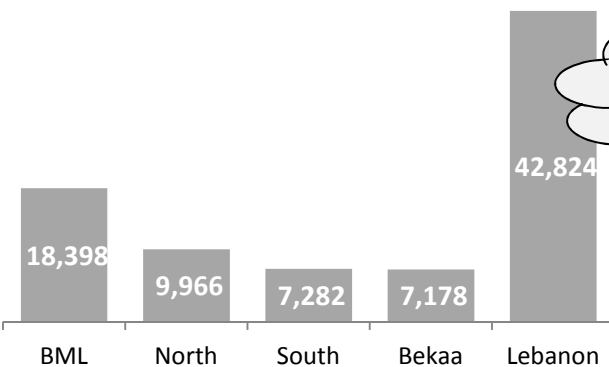
Source: MEW, FAO Aquastat, Water Market Middle East

# 1 Surface water resources are largely exploited but with limited storage, while significant stress is put on groundwater mainly through private wells

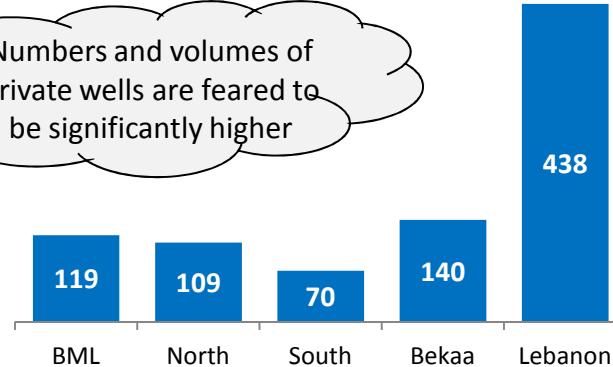


## Groundwater Extraction Through Private Wells, 2010

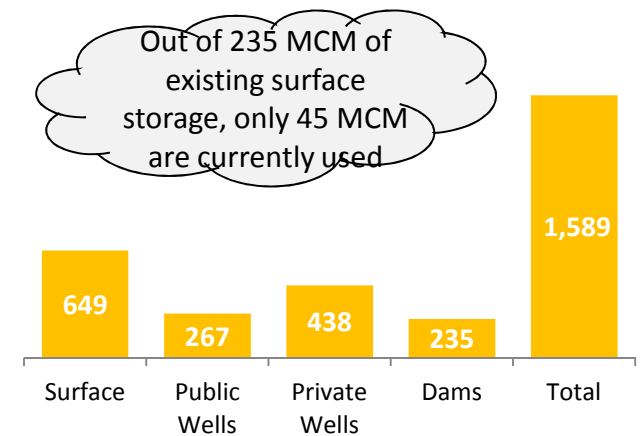
### Numbers of Private Wells



### Extracted Volumes from Private Wells (MCM/yr)



## Total Water Resources Used (MCM/yr)

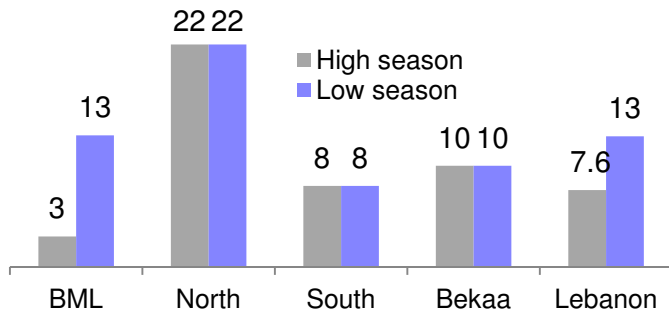


Source: MEW, WEs, FAO Aquastat

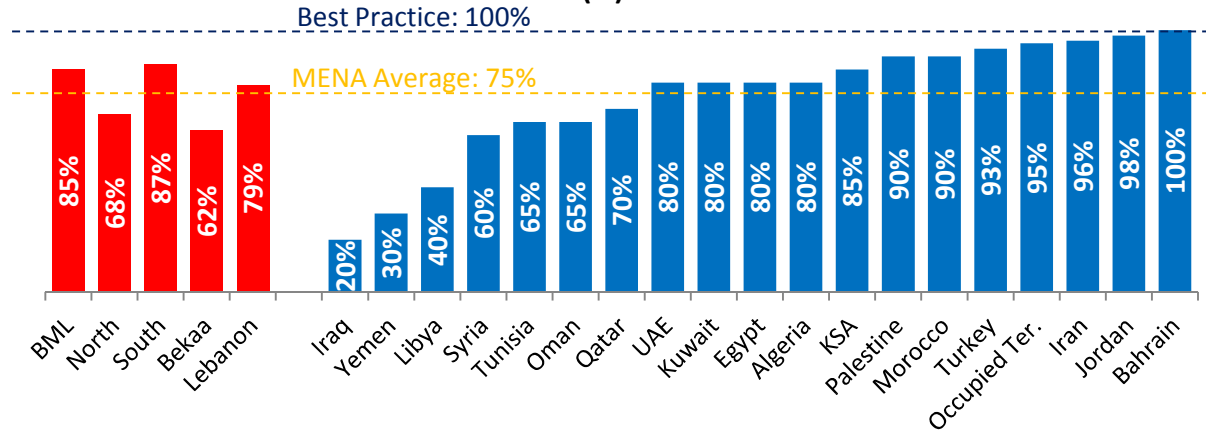


## 2 Although coverage is better than the regional average, more than 50% of transmission and distribution networks are past their useful life ...

Continuity of Water Supply Service, 2009 (Hrs/Day)

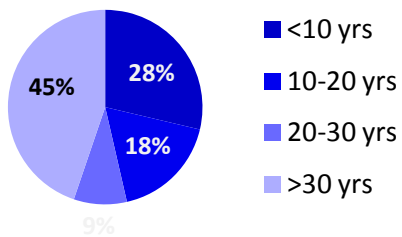


Potable Water Network Coverage (%)

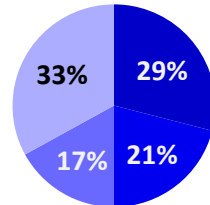


Age of Networks, 2010

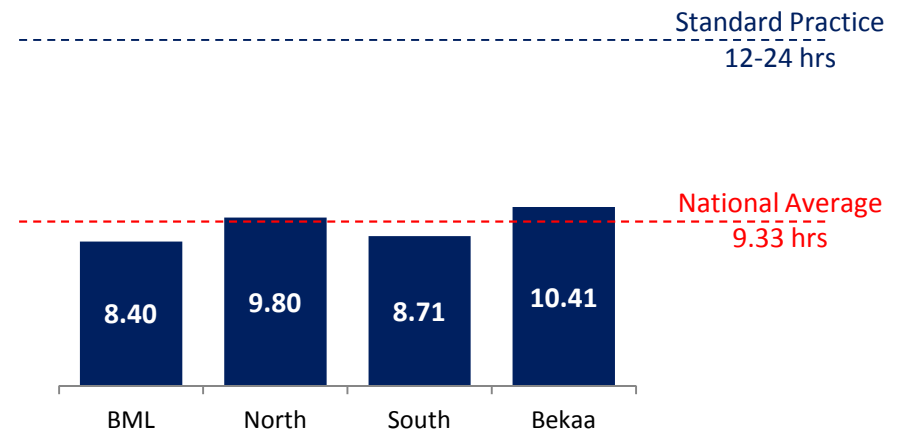
Transmission



Distribution



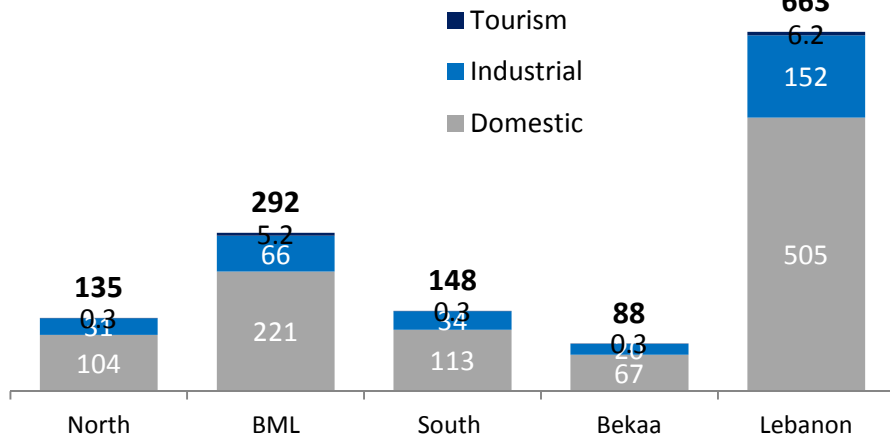
Tank Storage Times, 2010 (Hours)



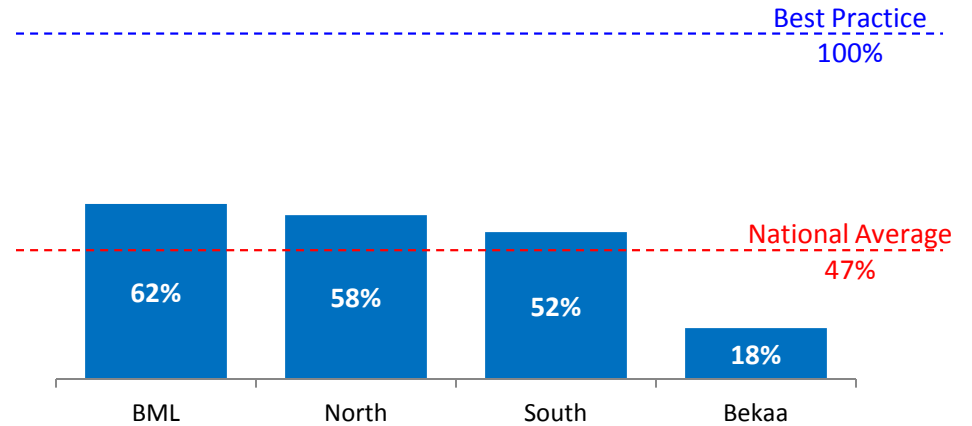
Source: MEW, WEs, WB, CAS, Water Market Middle East

## 2 ... leading to Unaccounted for Water levels 13% higher than world average

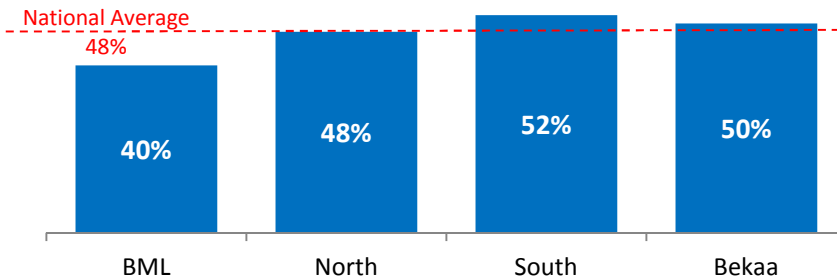
Demand for Water Supply, 2010 (MCM/yr)



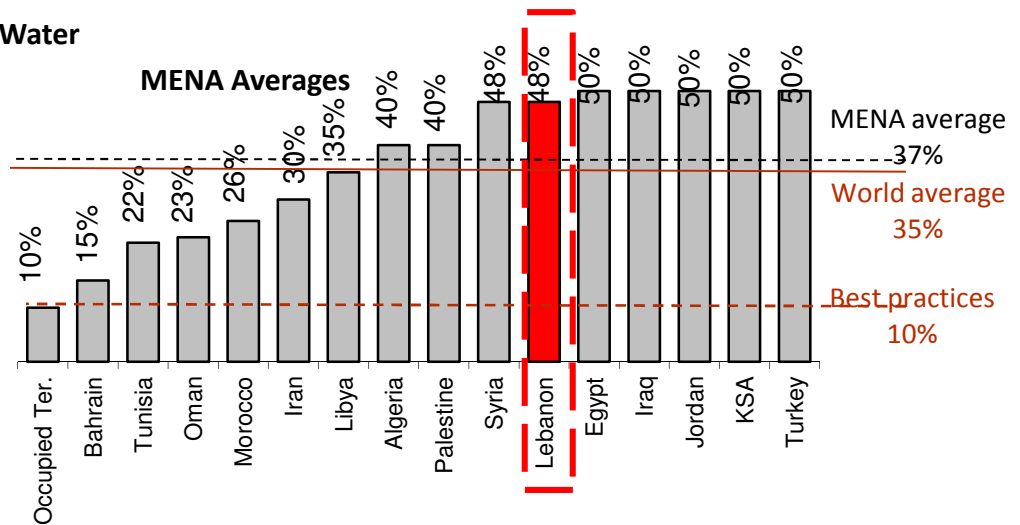
Collection Rates, 2010



In WEs, 2010 Unaccounted For Water (%)



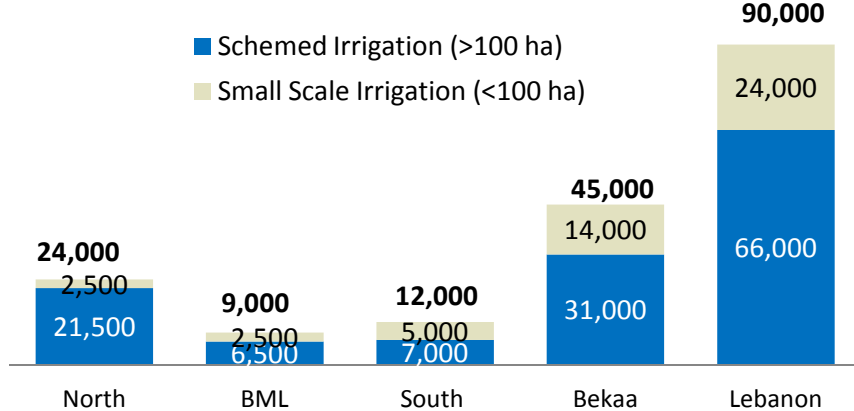
MENA Averages



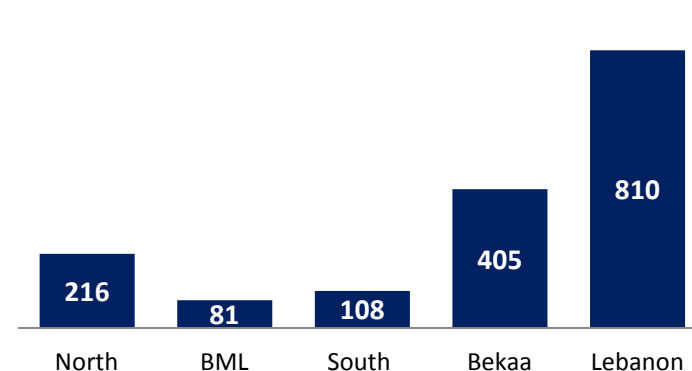
Source: MEW, WEs, Water Market Middle East

## 2 Irrigation is the largest water consumer with low efficiencies, as open channels still constitute the majority of the networks

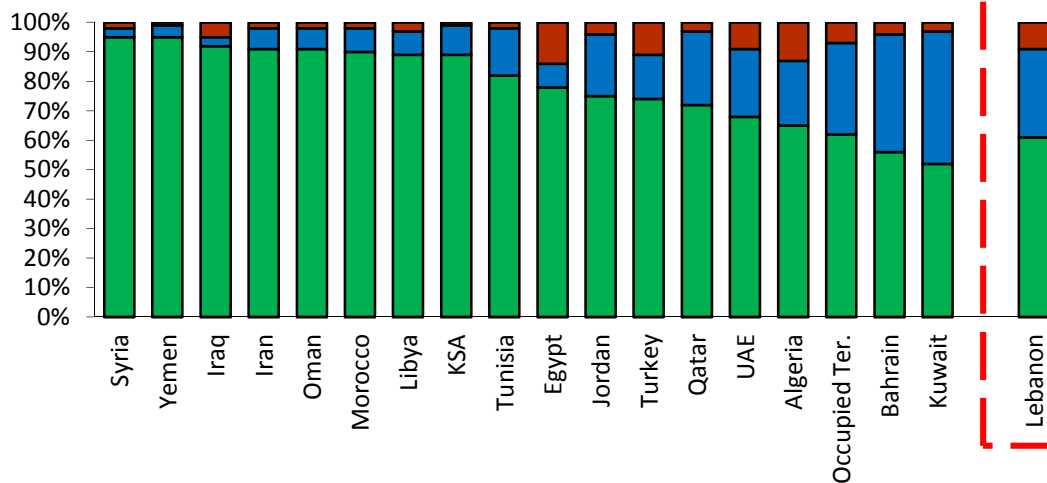
Irrigated Areas in Lebanon, 2010 (ha)



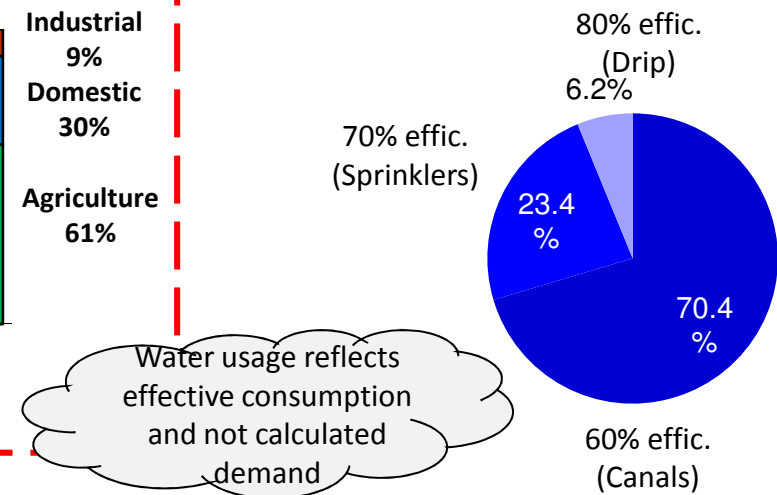
Irrigation Water Requirements, 2010 (MCM/yr)



Water Usage by Sector (% of Total Water Consumption)



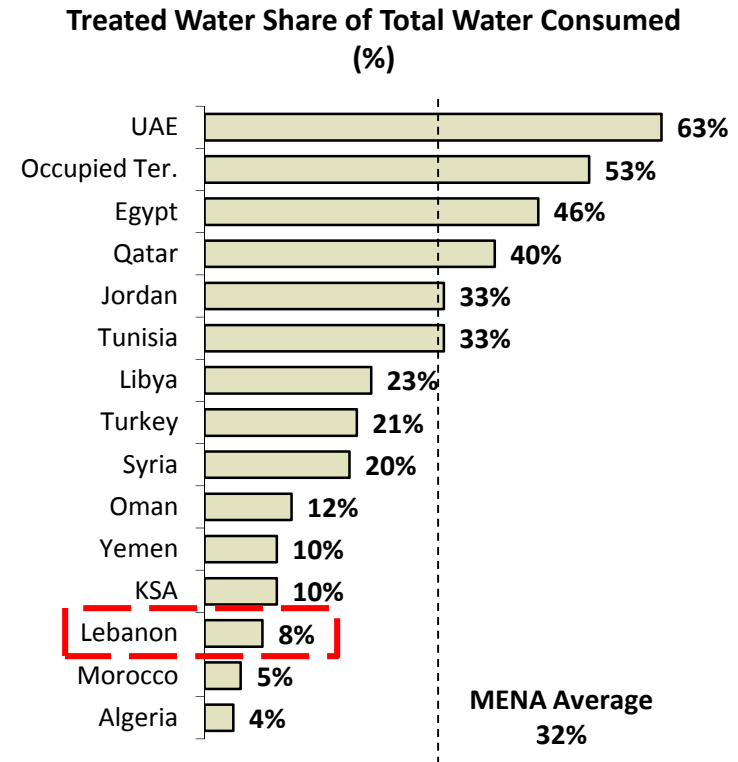
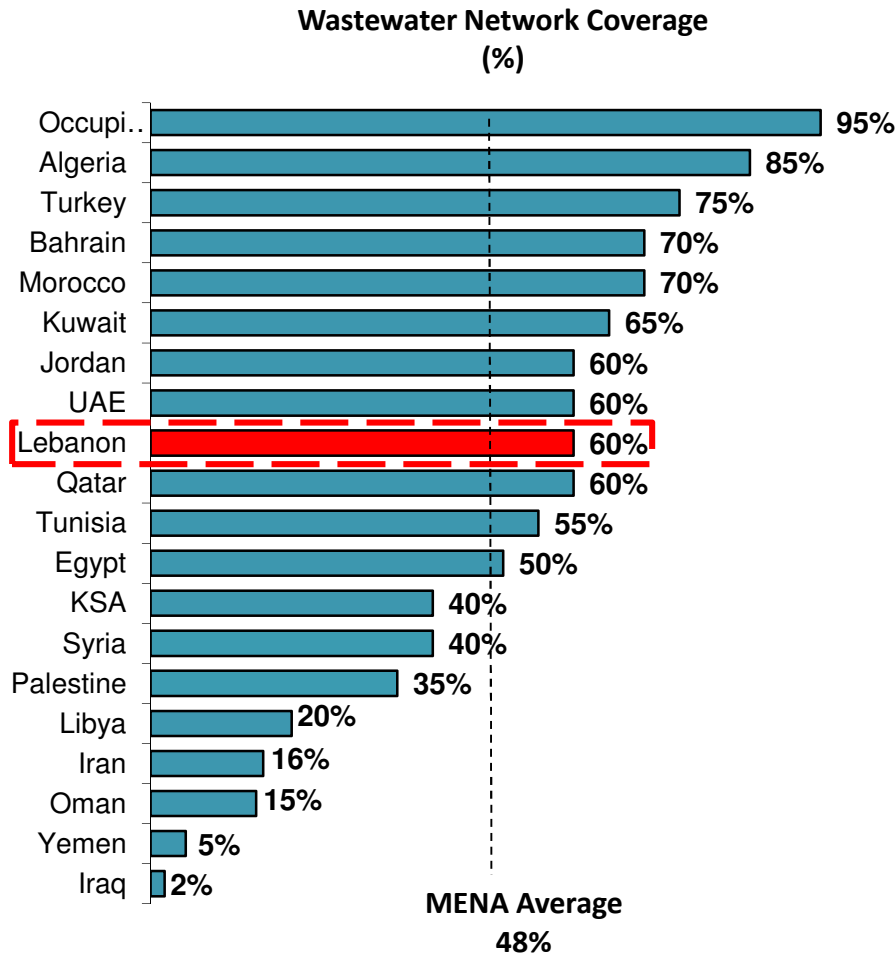
Network Efficiency (%)



Source: MEW, WEs, World Bank

3

### Wastewater network coverage of 60% is higher than regional average, coupled with significantly low treatment levels (<8%)



Note: Data not available for Bahrain, Kuwait, Iran, Iraq, Palestine

Source: Water Market Middle East, Web search