



Ministry of Water & Irrigation Water Authority of Jordan

Perspectives on the development of the Jordanian Water Sector



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General Data

Jordan Area: 89,318 km2

Population: 6,850.128 people (2015) Population growth: 2.18 %

No. of Governorates: 12 No. of water Sectors: 3 (4 Gov. each)

Water service coverage 98% Wastewater coverage ; 62%

No. of Water Customers: 1,3 million No. of Wastewater Customers: .75 million



The Water Authority of Jordan is in charge of water & sewage systems



GENERAL OVERVIEW



- Jordan is classified as arid and semi-arid areas
- Jordan is the 3rd water scarce country in the world
- Jordan annual per capita share of water is 145 m₃ (poverty line 1,000 m₃/year)
- Jordan is Divided into (15) surface aquifers and (12) aquifers some stretches the territory of neighboring States
- Jordan aquifers relay on the downpour rain water sources fluctuating in quantities and annual distribution

Water Sector in Jordan



Water Authority of Jordan Current Functions



Bulk Water	Domestic Water	Regulator	Owner of water
Provider	Supply		companies
 Drilling Water Basins Workshops Licensing 	 O&M Administrations 3 Geographical Sectors Technical Quality Tendering 	 Water tariff Monitor performance 	•Meyahuna •Yarmouk •Aqaba

- 1. North (4 governorates) all operated by Yarmouk Company (Irbid, Jerash, Ajloun, Mafraq)
- Middle (4 governorates) Amman and Madaba operated by Meyahuna, 2 run by WAJ (Zarqa & Balqa)
- 3. South (4 governorates) Aqaba is run by AW, 3 run by WAJ (Ma'an, Tafileh, Karak)



National Challenges



- Regional Circumstances
 - Huge influx of Syrian refugees (22% population increase, 20% water demand increase)
- Fiscal Crisis
 - > Energy bill went up to 140,000 Million JOD compared to 104,000 JOD in 2014
- Social perception of water serving
 Water is a "god-Given" right)

(EXAMPLE of Regional Circumstances) Za'atary Syrian Refugee Camp May 2009





0 refugee

Za'atary Syrian Refugee Camp September 2012





≥ 50,000 refugee

Za'atary Syrian Refugee Camp July 2013





≥ 120,000 refugee

Za'atary Syrian Refugee Camp 2015







- Diminishing water resources which are over-exploited
- Jordan's water problem is also a financial problem
 Existing supply is cheap compared to new supplies
 Extent of water sector subsidies (around 60%)
- Water is central to economic and social well-being of Jordan – best possible management of this resource is critical
- Dynamic changes— future challenges growing (Disi water, technology, climate change, transboundary issues, etc.)

Current Institutional Issues



- Overlapping mandates, roles and responsibilities between the three major bodies in the sector
- Heavily subsidized sector (energy prices, water tariffs, etc.)
- Previous reforms only partially implemented (unforeseen circumstances changes the priorities)
- Weak accountability and incentive systems



- Establish National Water Advisory Council
- Consolidate Water resources planning and management in the MWI
- Reorganize WAJ to focus on Bulk Water Supply
- Fully corporatize water utilities
- Develop efficient utility regulation for the sector

Water Strategy





Total Area of the Kingdom = 89,318 km2

- 78.4% Badia (Semi Desert)
 9.2% Rift Valley
 11.2% Plains
 0.6% Territorial Waters
 - •0.6% Hights

Major pillars of the water strategy



- Development of water sources, both traditional and non-traditional (strategic projects – Disi, Red-Dead, dam projects and water harvesting).
- 2.Update networks, improve efficiency and NRW
- 3.Reduce drain basins groundwater by reducing pumping from wells, especially illegal use
- 4. Big Gap between Demand & Supply
- 5.Flexible infrastructure to facilitate the reallocation of water (for drinking, irrigation and industry)
- 4. Bridge the gap between expenditure and revenue especially operating expenses
- 6.Relying mainly on reclaimed water in irrigated agriculture in the Jordan Valley (110-180), and the largest possible quantity of fresh water for drinking
- 7.Completion of the national carrier (Red-Dead) to ensure a fair distribution of drinking water



Jordan Water Sector Priorities Water Sector





Major strategic projects

water Sector



Disi Project



- Extraction an average of 100 m m3/year for drinking purposes
- Digging 55 wells in the Disi-rotator
- Pumping stations, reservoirs and pipes of the carrier
- 325 km in Diameter 1600 mm.
- Started with full capacity on 27/1/2014





Red Sea-Dead Sea Carrier



Why Red-Dead

- Ensure Jordan needs of fresh water up to 2040
 Maintain the environment of the Dead sea from degradation
- •Reduce dependence on over abstracted existing underground resources
- •To have a reliable and sustainable new source (Desalination of sea water)
- •Plan for future Generation of Jordan

Phase 1

Desalination of 100 million m₃
Expected cost around 900 million based on BOT



Deep Wells



•First explored deep well was excavated awaiting testing results.

•4 priority areas within the Kingdom were indentified

•Accordingly the investment will be allocated within the explored wells.





Wastewater Strategy





Overall Objectives

Develop a simple national **Strategic Wastewater Master Plan** to assist the Ministry to identify national investment priorities for wastewater systems, services improvement, infrastructure development and management needs in Jordan.





Nationwide Wastewater System Overview (Current Situation)

WASTEWATER TREATMENTS PLANTS

- Total No. of Plants
- Total Capacity

31 (27 existing + 4 under construction)

605,000 m³/day (Al Samra BOT 360,000 m³/day)

Total BOD Design load

433,000 kg/day

(Including plants under expansion or currently committed)

National Wastewater Collection & Treatment System



Wastewater collection and wastewater treatment projects been made on the basis of the following priority considerations

Priority I projects proposed for implementation immediately (2013-2015). **Priority II** projects proposed for implementation from year 2016-2025 **Priority III** projects proposed for implementation from year 2026-2035, or when excess funds are available after meeting the needs of priority I and priority II projects





Opportunities and possible areas of focus for Portuguese entities interested in participating in the Jordanian water sector

- 1. Institutional
 - Asset management tools
 - GIS
- 2. Infrastructure
 - Water projects
 - Wastewater projects
- 3. Operations & Maintenance
 - BOT
 - PSP

•Latest Capital Investment program will be issued soon showing all upcoming projects



Thank You!

