



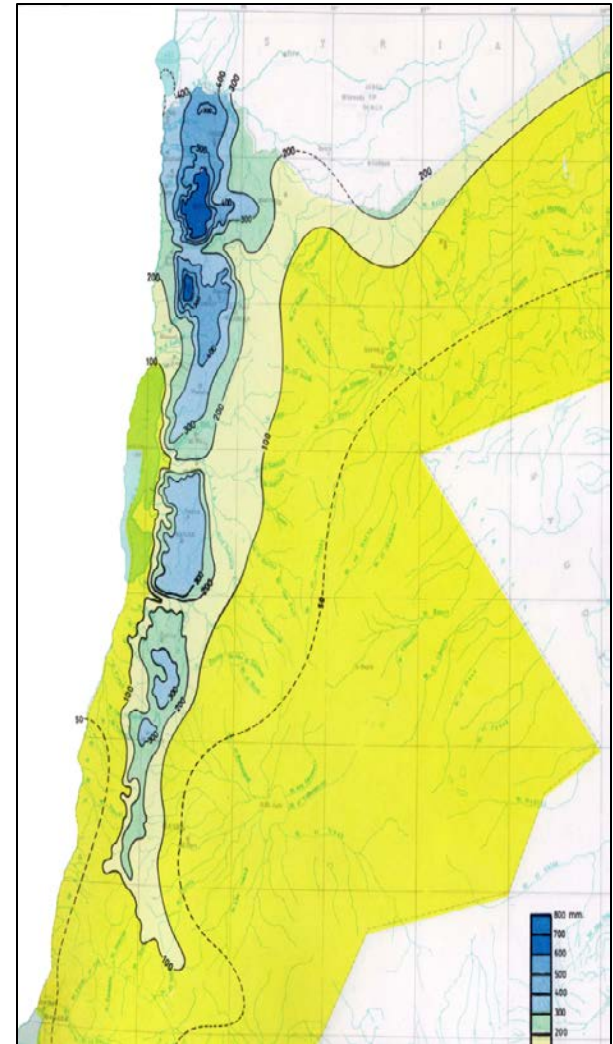
# Transboundary Water Cooperation Management in Jordan and neighboring countries

Ministry of Water and Irrigation

10 March 2015

# Jordan Country Profile

- Area: 90000 square km
- Population: 6.5 million
- Annual growth rate: 2.2%
- Climate: Arid, Semi-arid
- Rainfall:
  - ❖ High land(400-600)mm (3%)
  - ❖ Jordan valley(50-300)mm(6%)
  - ❖ Desert area(50-200)mm(91%)
- Evap. Rate around 93%



# Available Water Resources

## Groundwater Resources:

- Average annual safe yield = 275 MCM
- Average annual return flow = 56 MCM
- Total groundwater abstraction (2013)= 540 MCM, out of which 209 MCM over abstraction.

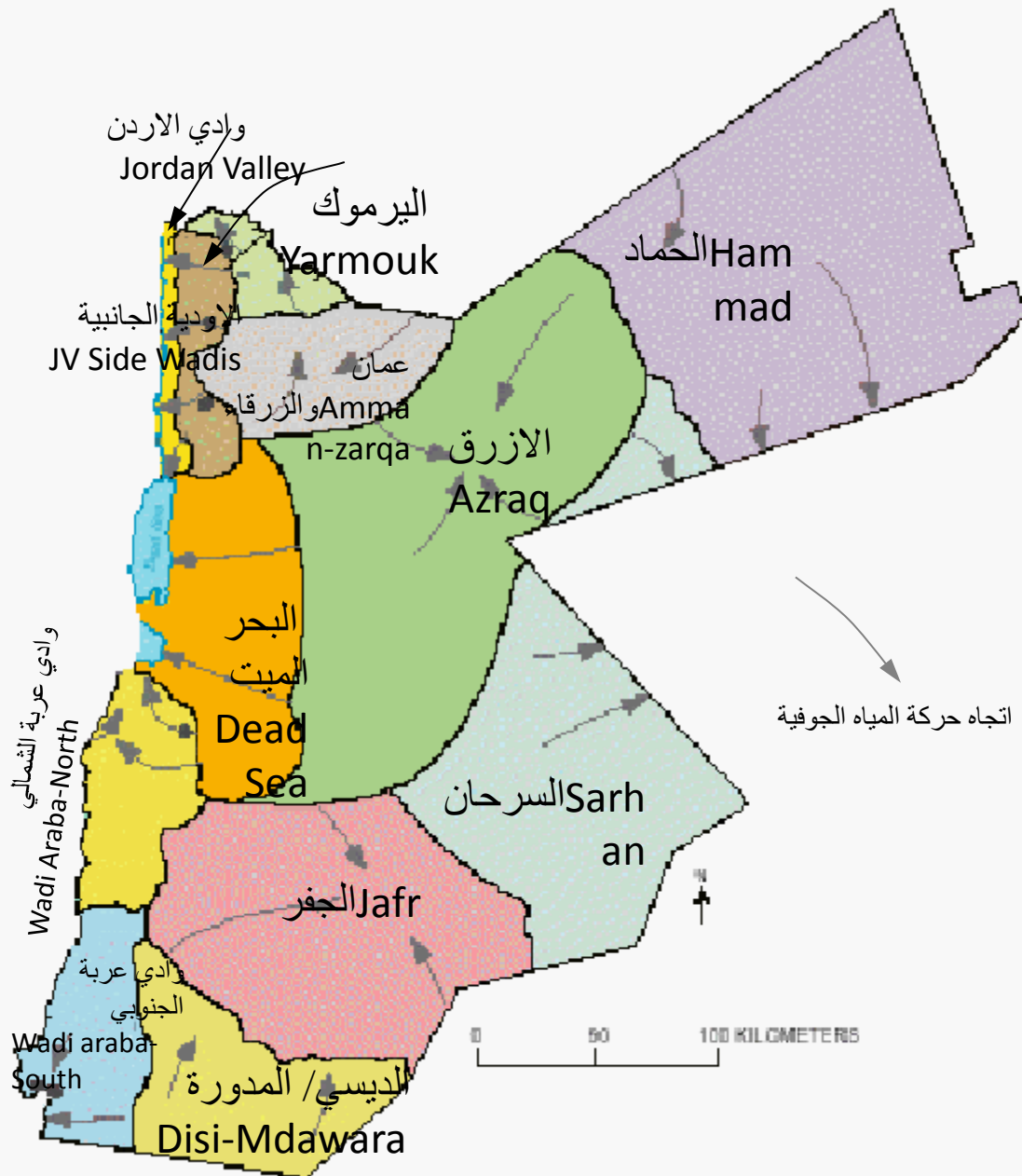
## Surface Water Resources:

- Average annual long term flow = 613 MCM
- Average annual exploitable = 535 MCM
- Current uses (2013) = 361 MCM (including 109 MCM Treated wastewater)

**Total Used Water Resources (2013) = 540 +361 = 901 MCM**

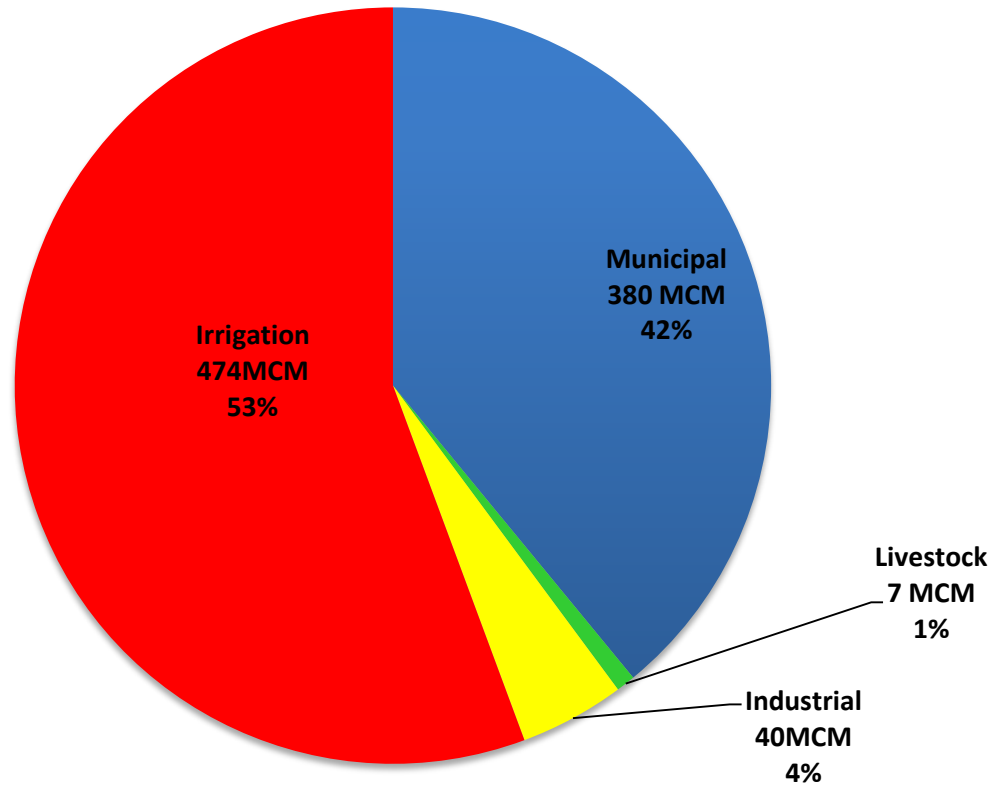
**Total water demand (2013)= 1300 MCM**

# Ground Water Basins



Safe Yield MCM/yr	GW Basin
60-70	1) Amman-zarqa
30-35	2) Azraq
30-35	3) Yarmouk
28-32	4) Jordan River Side Wadis
15-20	5) Jordan River
40-50	6) Dead Sea
11-12	7) Hammad
7-10	8) Sarhan
7-10	9) Jafr
2-3	10) Disi/Mdawara
5-7	11) Wadi Araba /North
4-6	12) Wadi Araba /South
240-294	Total

# Water Use Per Sector





# Water sector Challenges

- Population growth (2.2%/year) and large refugee influxes.
- Rising water needs for expanding economic sectors, such as industry and tourism.
- High rate of non-revenue-water at around 42%.
- Limited funding and private sector participation.
- Weak coordination with neighboring countries of shared water resources.
- Limited energy sources and high dependency on foreign sources (96% of energy comes from imported oil and gas ).
- Climate change predictions: 20-25% decrease and strong variability of rainfall; temperature rise of 2°C

# Shared water Resources

## Jordan River

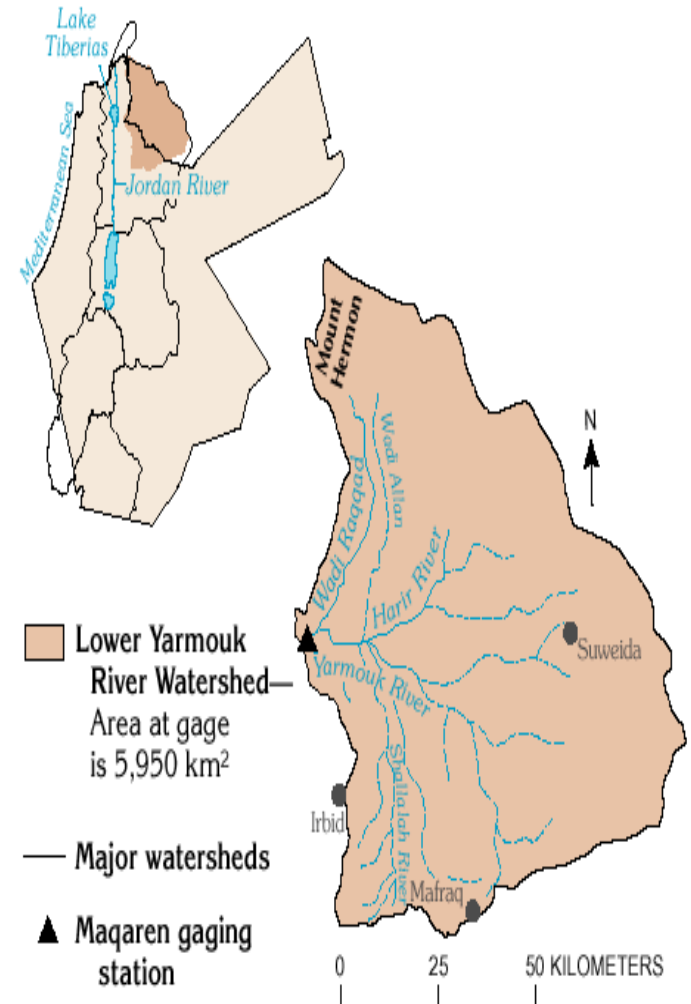
- The longest river in west Asia (250 km)
- Five countries sharing this river (Jordan, Israel ,Palestine Lebanon and Syria )



# Shared water Resources

## Yarmouk River

- Yarmouk River is the biggest tributary of the Jordan River.
- The Yarmouk is an international river, forming the border between Jordan and Syria for about 47 km.
- Its flows are originating from Syrian and to a smaller extent from Jordanian territory.





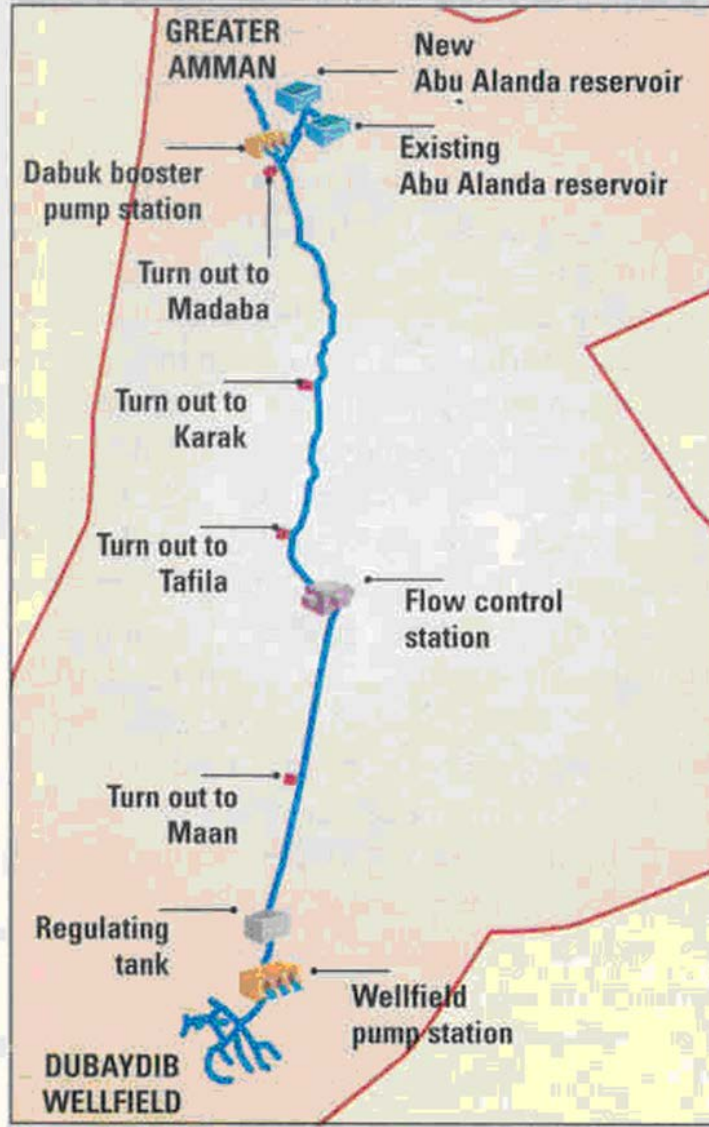
# Shared water Resources

## Disi – Saq Groundwater Basin

- Shared between Jordan and Saudi Arabia
- Fossil water
- Small portion lies beneath Jordan territory
- Jordan extracts Around 100 MCM per year



# Disi water conveyance system





# Transboundary cooperation and agreements

## Peace Treaty

- On the 1994, Jordan and Israel signed a historic peace treaty between the two countries.
- Annex II of the treaty included an agreement on the 'rightful allocation' of the Jordan River Basin water resources.
- The agreement was bilateral and the three other riparian countries of the Jordan River -Palestine, Lebanon and Syria -were not included.

# Joint Water Committee



- The agreement created a Joint Water Committee (JWC) as a permanent institution charged with implementing the agreement and addressing additional water matters that may arise.
- A number of professional advisors attend the Committee meetings.
- The JWC was meant to be a means of resolving the ambiguities in the agreement through compromise building.



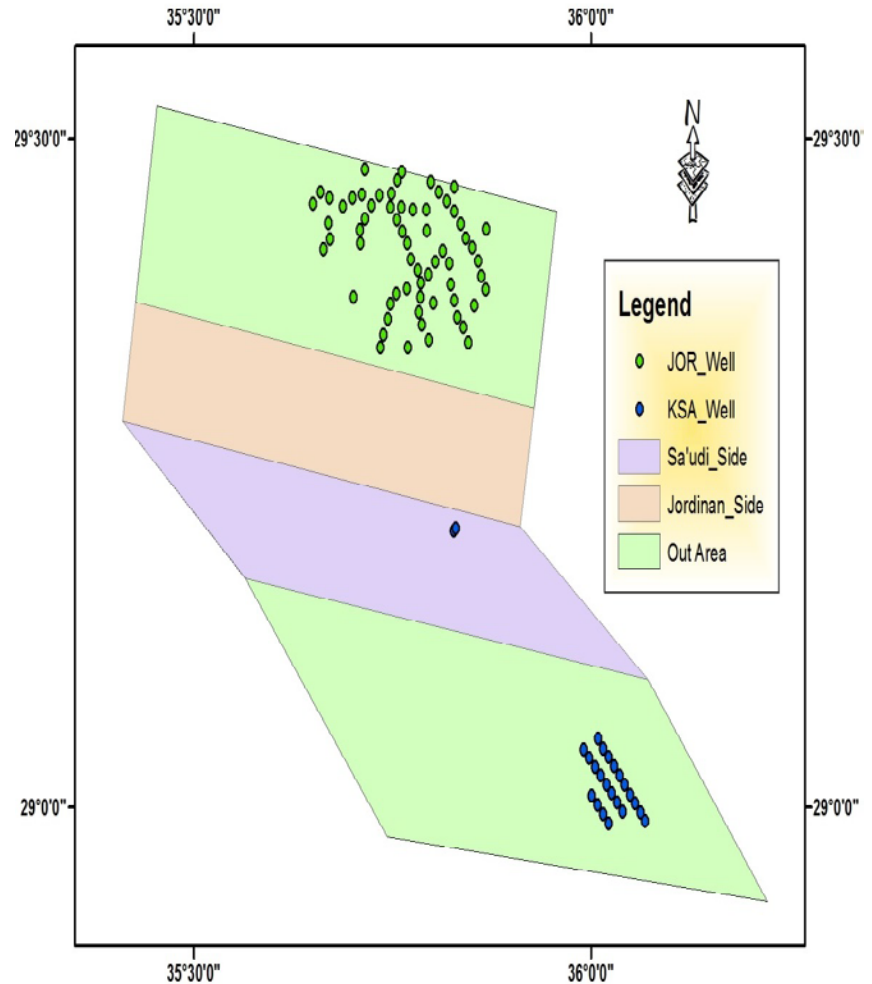
- The treaty specifies allocations of the Yarmouk River that Israel extract during the summer (12 MCM) and (13 MCM) in winter periods for its needs.
- In exchange, Jordan is allowed to store 20 MCM of its water in Lake Tiberias during the winter; Israel is to release this water back to Jordan each year during the dry season.
- The treaty specifies that on the Jordan River, Israel may maintain extraction levels equivalent to its level of use in 1994, and Jordan may withdraw an equal amount when there is sufficient supply.



- The treaty allocates specific amounts of groundwater to Israel south of the Dead Sea and it allocates certain spring water to Jordan near Lake Tiberias.
- It also stipulates that Israel and Jordan will cooperate to "find" an additional 50MCM of water for Jordan. Jordan and Israel currently cooperate through a Joint Water Committee

# Disi – Saq GW Basin

- An agreement was signed between Jordan and Saudi Arabia.
- Buffer zone of 10km on both sides have been agreed upon with Saudi side.



# Jordanian-Syrian Cooperation of Yarmouk Basin



- Agreement between Jordan and Syria concerning the utilization of Yarmouk water in 1987, Wehda dam and Joint commission.
- The aim of the joint Jordanian-Syrian Commission is to manage the shared water resources of the Yarmouk Basin following the Integrated Water Resources Management (IWRM) approach.
- This approach considers the available surface and groundwater resources in the Jordanian and Syrian parts of the shared water resources and water demand as well.
- Based on these a joint Water Resources Management Plan will be developed.
- This plan aims to achieve a long-term sustainable management of water resources and To reduce potential adverse impacts and to avoid and manage future disputes.





## Conclusion

- Contextualizing and transboundary cooperation in country and shared water context is key.
- The development and management of shared water resources between Jordan and neighbouring countries a challenge for water managers and experts.
- There is a clear need for a conceptual framework or a methodology to manage shared water resources.
- The proposed Water Resources Management Plan will help to come to a more just allocation of water resources in the transboundary basins.

**Thank you for your kind  
attention**

