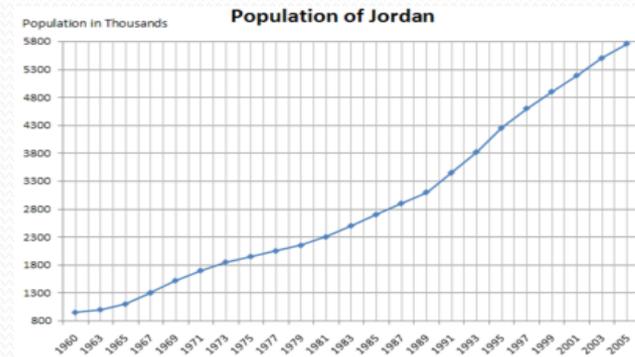
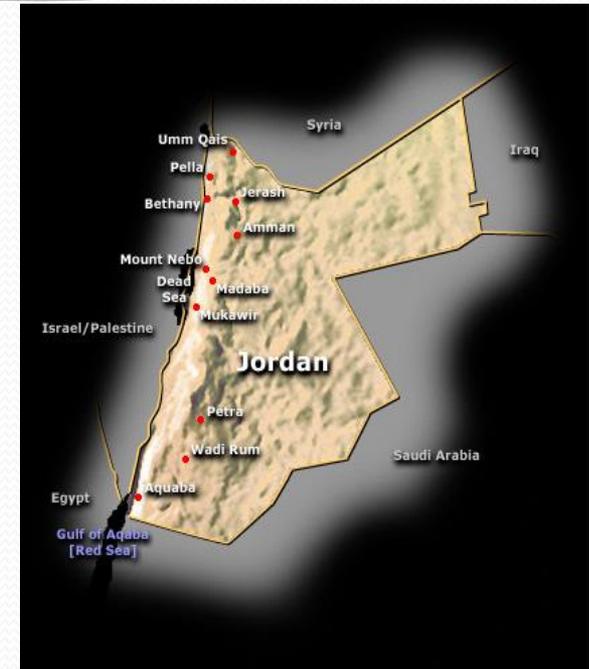




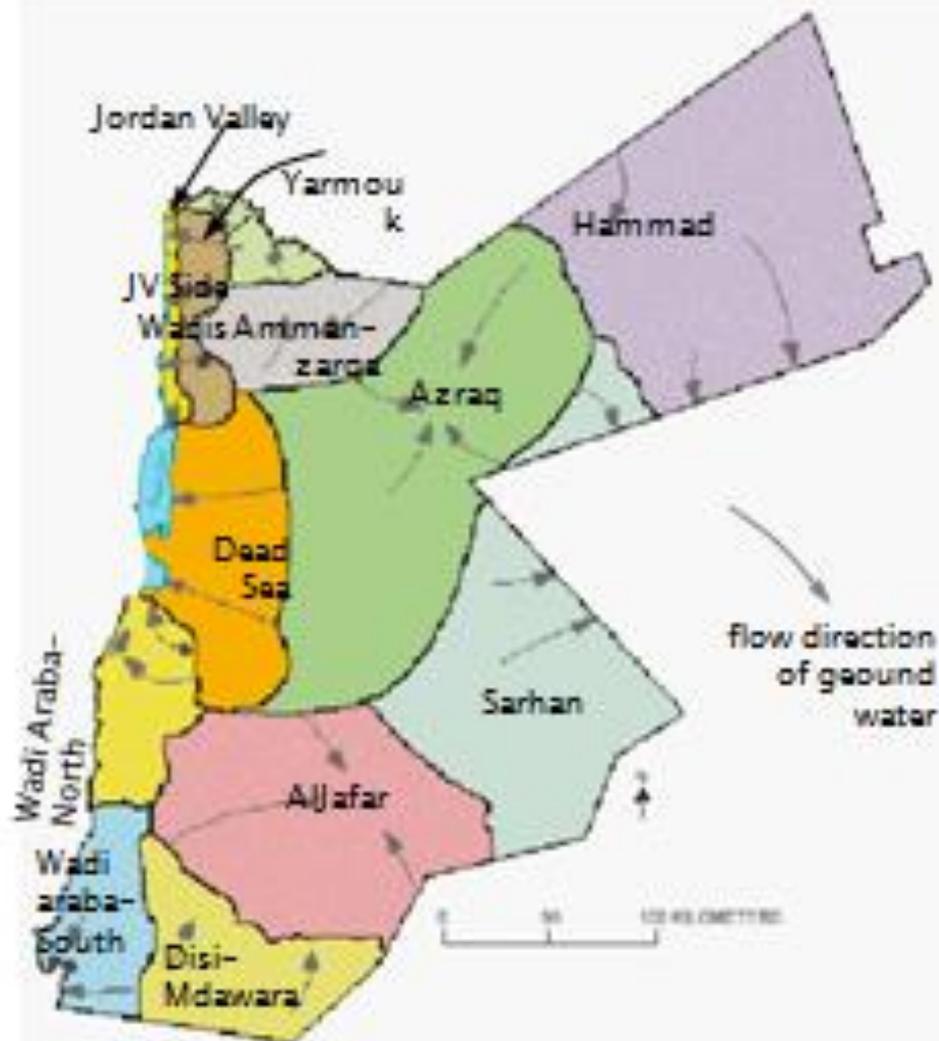
Jordan- Saudi Arabia, 2015 Agreement for the management and Utilization of the Ground Water in the Disi- Saq Aquifer

Eng. Mohamad Alatrash
Ministry of water -Jordan
Date: 4 July 2017

- **Jordan is an arid to semi arid country**
- **An area of about 90.000 km².**
- **A population of 6 million.. Annual growth rate of about 3 %**
- **High flow of refugees from surrounding countries adds burden to water supply system due to instability in the region .**
- **About 73% of the population lives in urban areas concentrated in the northern and middle parts of Jordan .**



Ground Water Basins

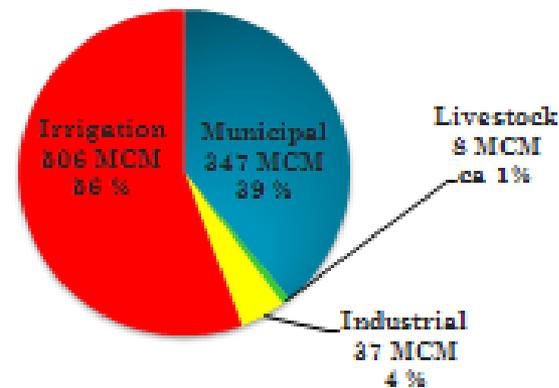


Safe Yield MCM/yr	Aquifer
60-70	1) Amman-zarqa
30-35	2) Azraq
30-35	3) Yarmouk
28-32	4) Jordan River Side Wadis
18-20	5) Jordan River
40-50	6) Dead Sea
11-12	7) Hammad
7-10	8) Sarhan
7-10	9) Jafir
2-3	10) Disi / Mdawara
5-7	11) Wadi Araba / North
4-6	12) Wadi Araba / South
240-294	Total

GROUNDWATER RESOURCES

- Jordan is heavily dependent on groundwater resources (over 50% of supply).
- 10 out of the 12 groundwater basins are over-exploited.
- Agriculture is the largest water consumer with 56% of the water use in Jordan in 2011.

**Water consumption in Jordan
by sector (2011)**



The Aquifer:

The Aquifer, known as Al Sag in Saudi Arabia and Al-Disi in Jordan,

is a fossil transboundary aquifer containing water that accumulated 10,000-30,000 years ago. It is part of the western section of the Saq-Ram Aquifer System, a Paleozoic carbonate aquifer
Only 10% of the aquifer in Jordan





Disi is

- **A shared groundwater basin**
- **A non renewable aquifer**
- **A project with a heavy environmental impact**
- **Far from Amman and consequently costly**
- **During the 1990s Disi aquifer was targeted as aquifer a short-term due to the political term solution by Jordan**



Both countries began exploiting the Al-Sag /Al-Disi Aquifer in the 1980s soon after its discovery.

In the 1980s, Saudi Arabia dramatically increased its extractions to support its agriculture production.

- 
- **In Jordan, the Al-Sag /Al-Disi Aquifer was initially only used as a local water supply.**
 - **In the 1990s, Jordan began developing agricultural activities along its southern border and now withdraws some 60 MCM**



The Agreement over the Al-Sag /Al-Disi Aquifer is concise with four main articles :

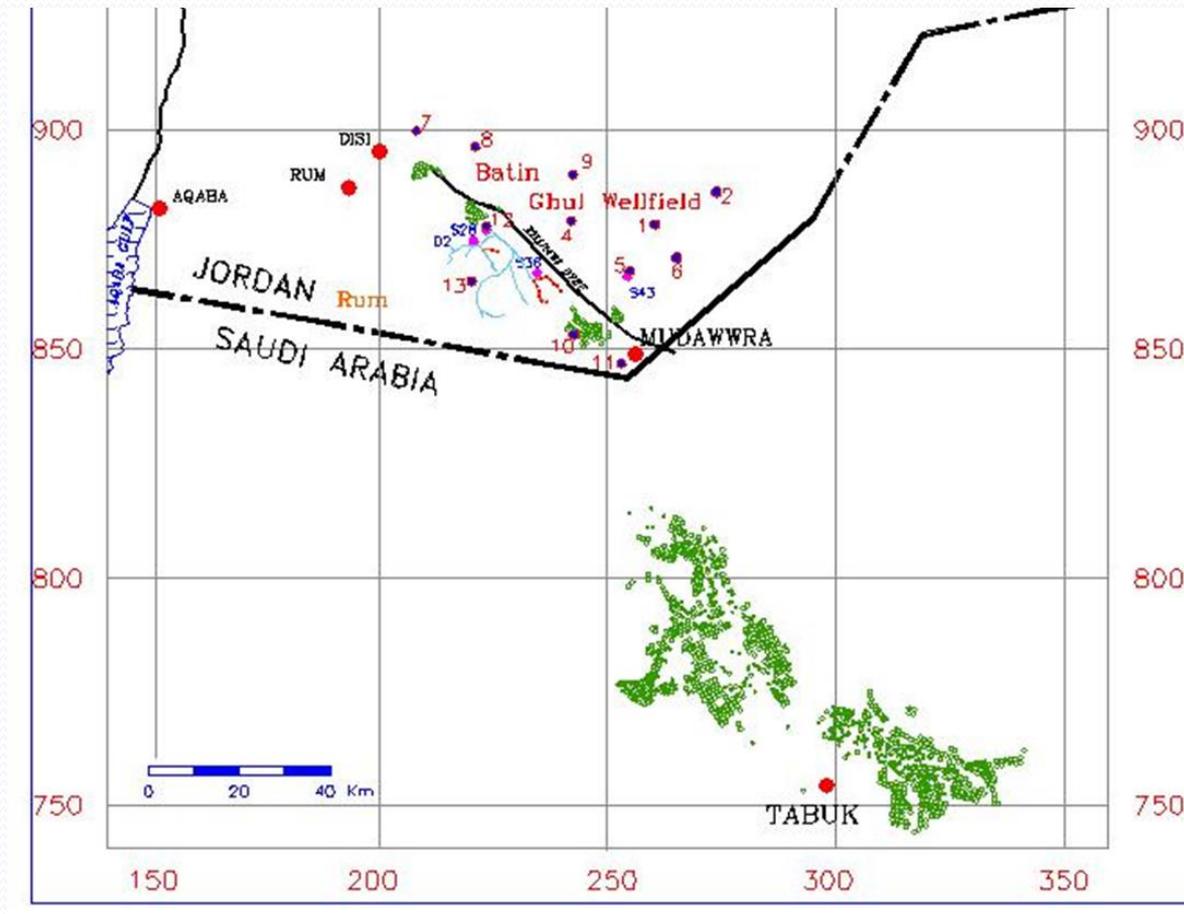
Article One- contains terms and definitions;

Article -Two describes the main norms for managing the aquifer

Article -Three discusses the creation and responsibilities of a Joint Saudi/Jordanian Technical Committee

Article- Four contains administrative provisions related to the implementation of the Agreement.

Major Wellfields in Southern Jordan and Northern Saudi Arabia



Transboundary cooperation and agreement Disi-Saq Aquifer

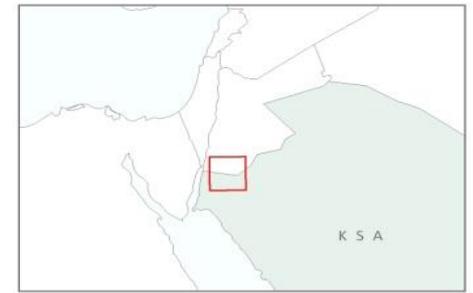
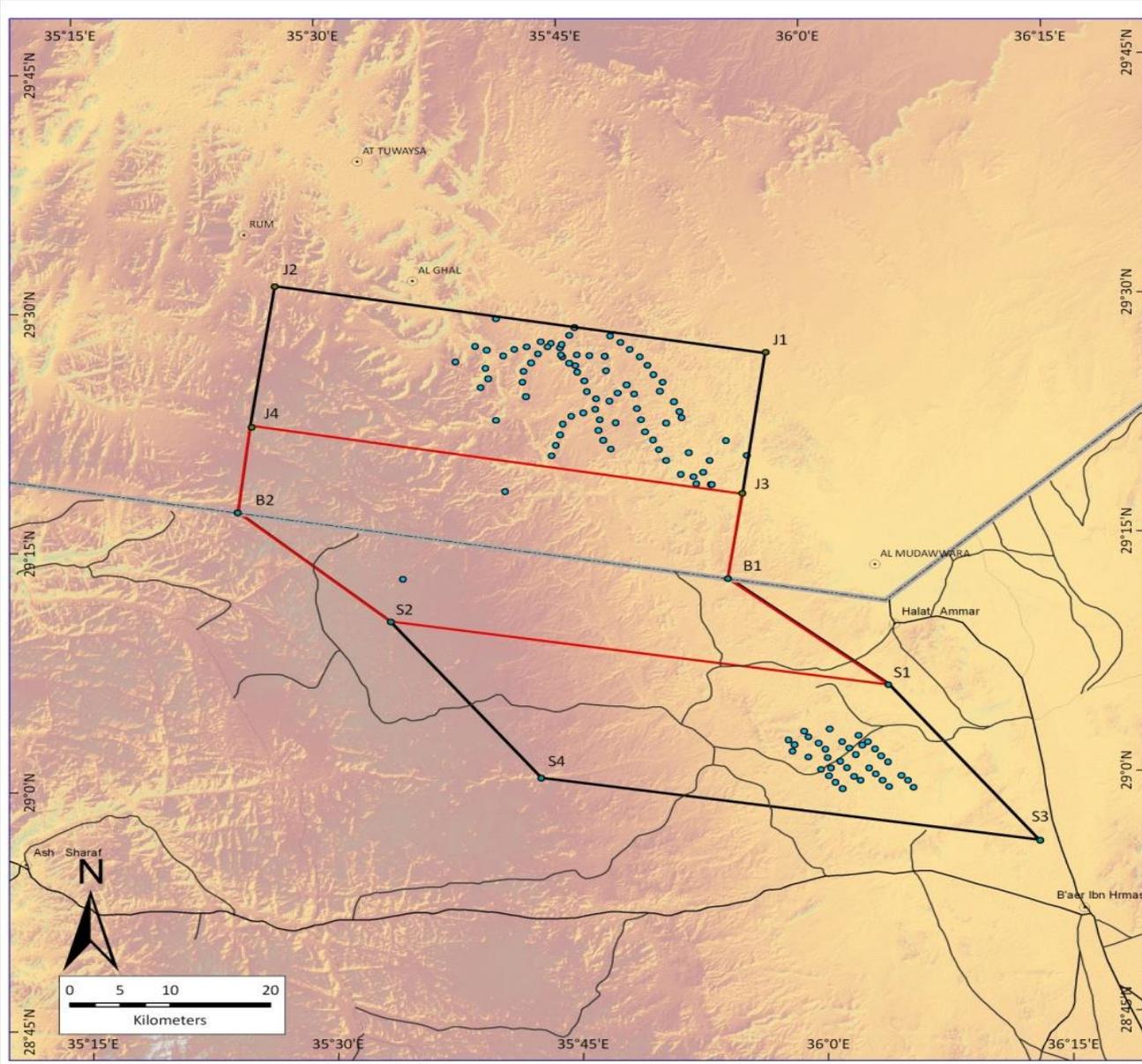
- An Agreement was signed between Jordan and Saudi, 2015.**
- Mathematical model to be upgraded .**
- Annual monitoring of Aquifer regarding existing wells which does not reflect real picture, minimal changes have been encountered.**
- Agreement with farmers using Disi aquifer's water ends 2012, No additional expansion of agricultural farming shall take place in Disi area.**

Disi-Saq Aquifer

- Buffer zone of 10km on both sides have been agreed upon with Saudi side. (10 km each side)**
- The agreement created a Joint Water Committee (JWC).**
- Quality of water is within international and Jordanian standards.**
- Monitoring dynamic water level due to water extraction .**

Joint Water Committee

- The agreement created a Joint Water Committee (JWC) as a permanent institution charged with implementing the agreement and addressing additional water that may arise.
- The aim of the joint Jordanian Saudi Cooperation is to manage the shared Ground water of the Disi-Saq Basin.
- A number of professional advisors attend the Committee meetings.



- Wells
- ▭ Groundwater protection zone (10 km)
- ▭ Groundwater management area
- International border
- Road
- City

	UTM 36		decimal minute		decimal degree	
	EAST	NORTH	EAST	NORTH	EAST	NORTH
J1	786825	3260979	35 57.414	29 26.726	35.95690	29.44544
J2	737847	3268607	35 27.244	29 31.469	35.45407	29.52448
J3	735541	3252267	35 25.607	29 22.655	35.92853	29.29871
J4	784480	3244641	35 55.712	29 17.923	35.42678	29.37758
B1	783061	3234755	35 54.685	29 12.595	35.91142	29.20992
B2	734145	3242374	35 24.619	29 17.318	35.41031	29.28863
S1	799057	3222466	36 04.345	29 05.727	36.07241	29.09545
S2	749419	3229734	35 33.874	29 10.304	35.56456	29.17173
S3	814205	3222466	36 13.365	28 55.758	36.22275	28.92930
S4	767363	3208620	35 44.631	28 58.663	35.74385	28.97772



خريطة تفصيلية للمنطقة الحدودية
بين المملكة العربية السعودية والأردن

DETAILED MAP OF THE BORDER AREA
OF JORDAN AND SAUDI ARABIA

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.
- Water resources in transboundary basins will stabilize the political situation in the region



Thank you !