

GLOWA Jordan River

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GLOWA

GLOWA **Activities in Jordan**

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Arab Technologists for Economical and Environmental
Consultations

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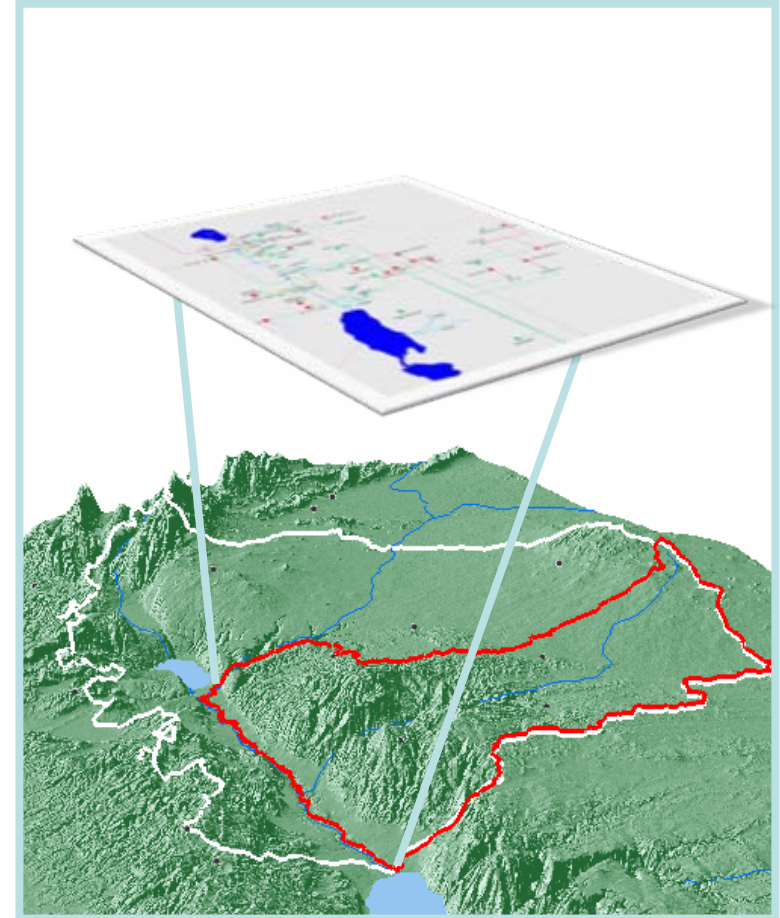
The development of the Jordan Valley WEAP

Linking the Jordan Valley WEAP to Amman Zarqa basin

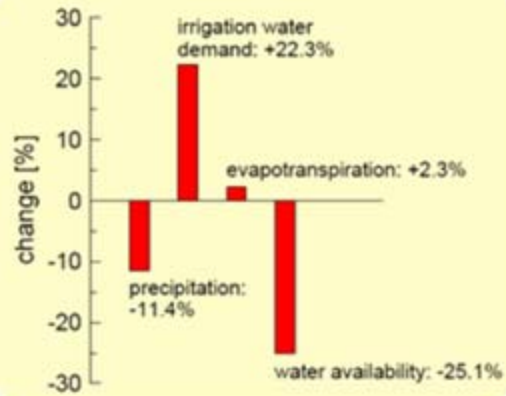
Training workshops at the Ministry of Water and Irrigation in cooperation with GIZ between 2009 and 2011

IWRM master's students at WERSC , University of Jordan and ITT, Cologne University used WEAP for their masters' thesis

WEAP implementation to 15 surface basins is underway by the National Water Master Plan directorate in cooperation with GIZ

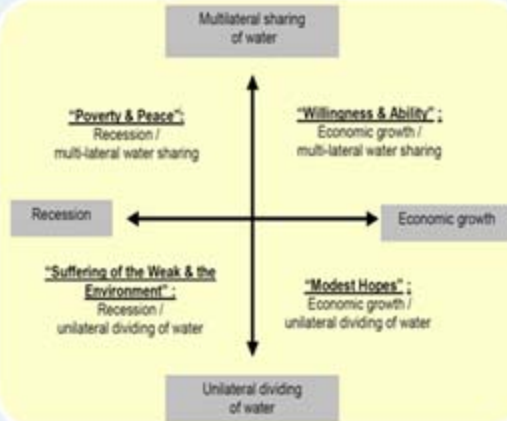


Uncertainty under Global Change

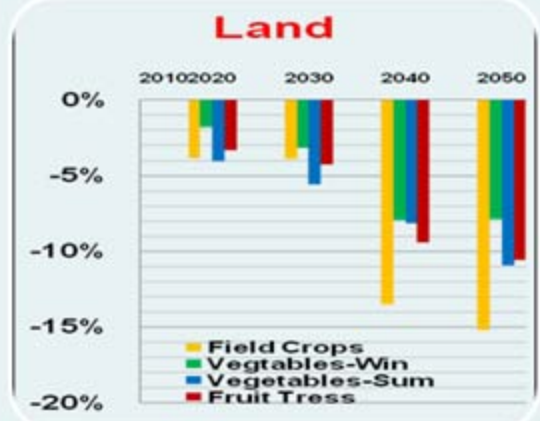


Climate Change

Input is based on Menzel, L. (2007). Uncertainties in the findings of Menzel L. (2007) as related to the reduction in rainfall, reduction in surface runoff, reduction in groundwater recharge and increase in agricultural demand will result in different results and probably different strategies. Sensitivity analysis is needed to find out how these uncertainties will transfer into WEAP results.



SAS-Scenarios:



Land Use Change



Strategies implemented in WEAP

Red-Sea-Dead-Sea Channel

- RSDSC project is expected to provide a total of 850 MCM of desalinated water
- 550 MCM allocated to Jordan, the rest will be allocated to Palestine and Israel
- Impact of RSDSC: Additional wastewater generated in Amman and Zarqa will reach the Jordan Valley through the Zarqa River.

Agricultural crop management

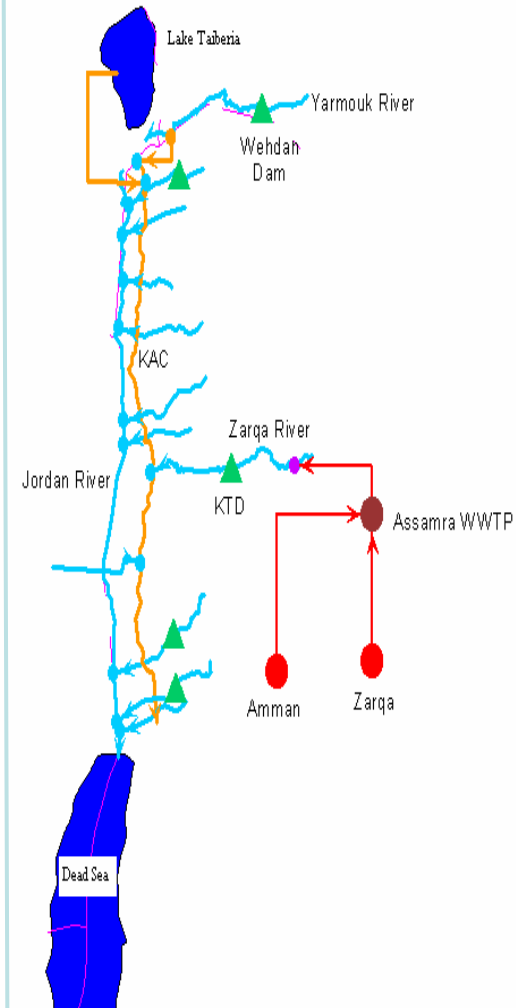
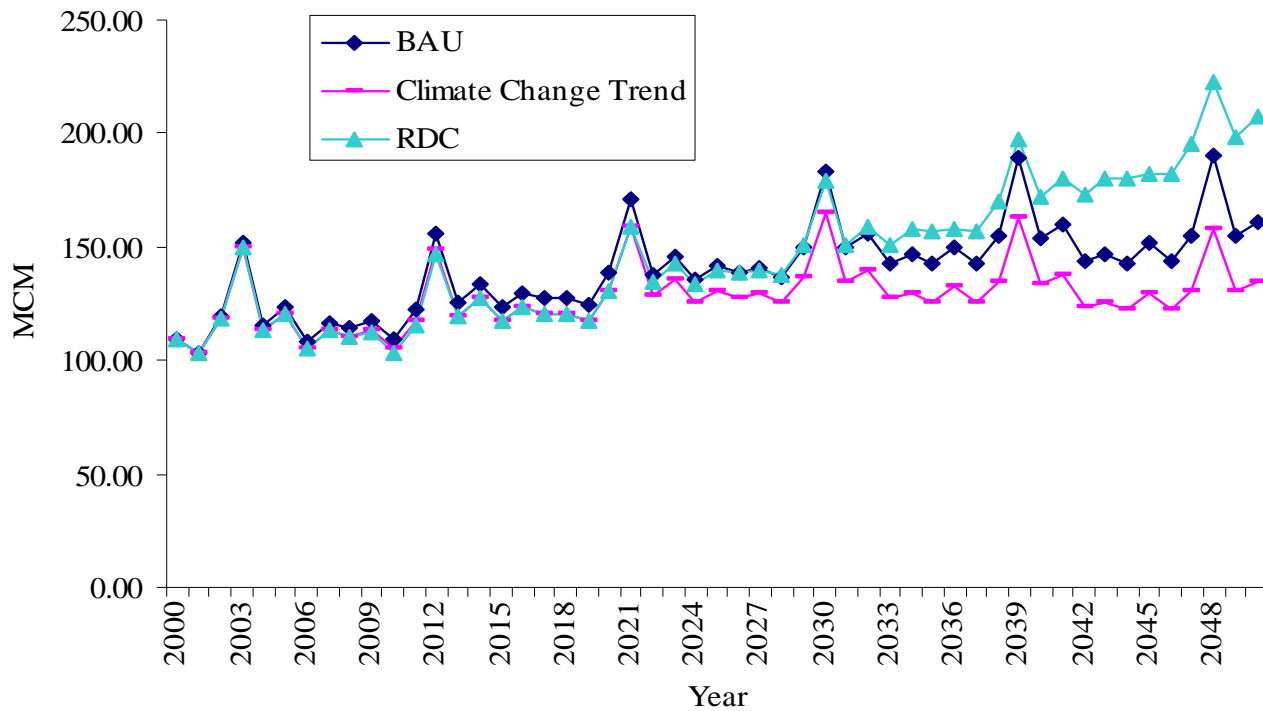
- Increase in the net irrigation requirements and the reduction in crop yield
- Introduction of water-saving irrigation technologies
- Improve irrigation scheduling
- Optimal reallocation of water between crops and stress-tolerant crops

Rain Water Harvesting

- 50 MCM per year between October and April within AZB.
- This additional water will affect the Jordan Valley through the additional wastewater generated in Amman and Zarqa cities.

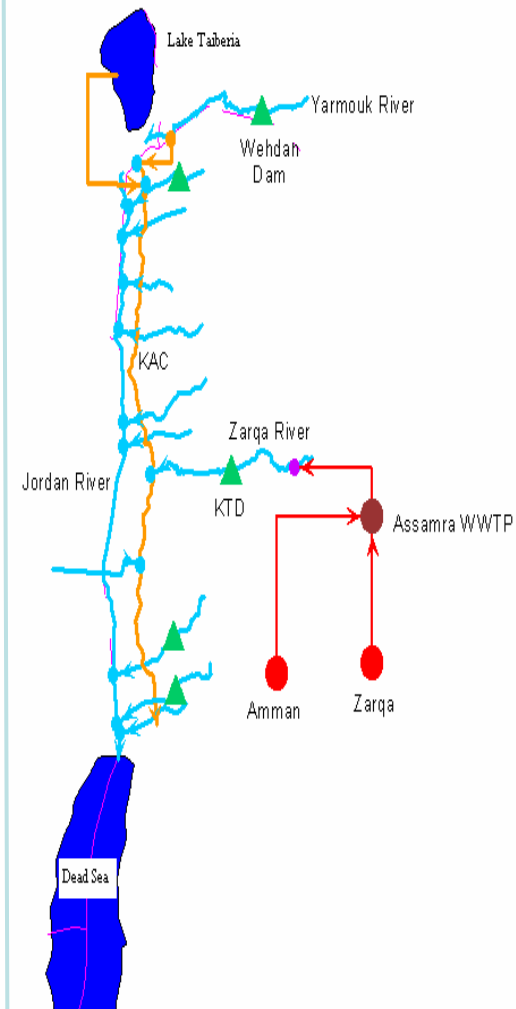
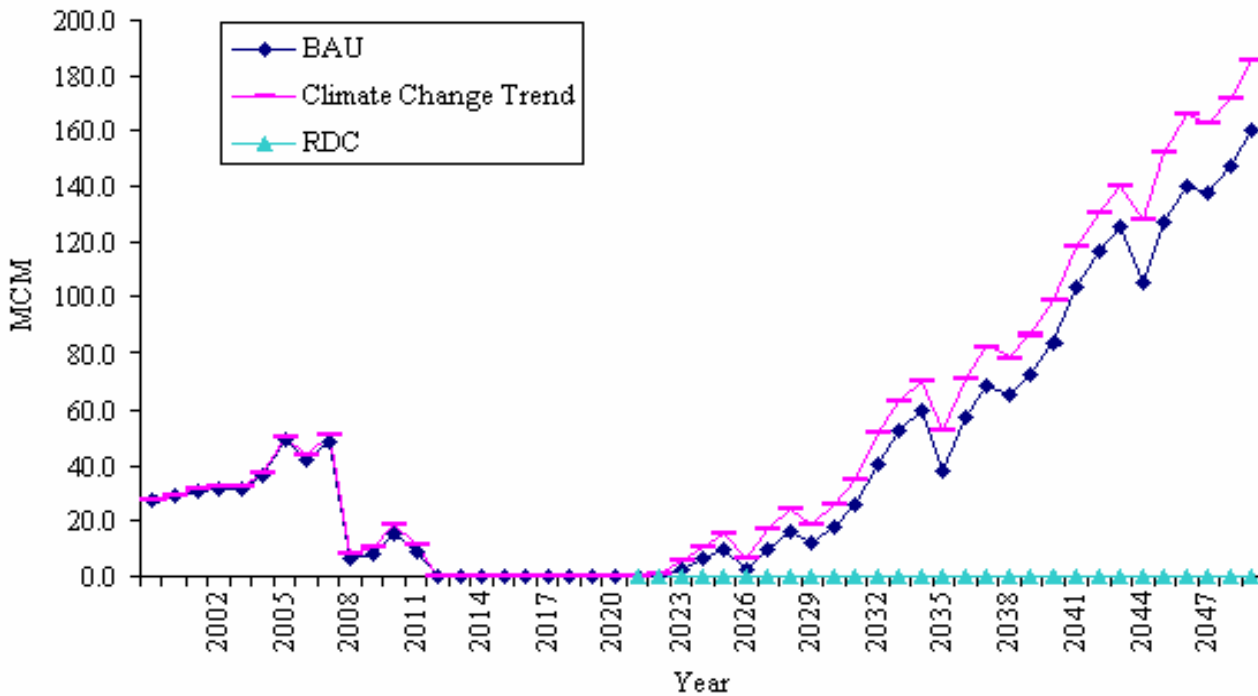


Projected Zarqa River flow downstream of the confluence with As Samra effluent



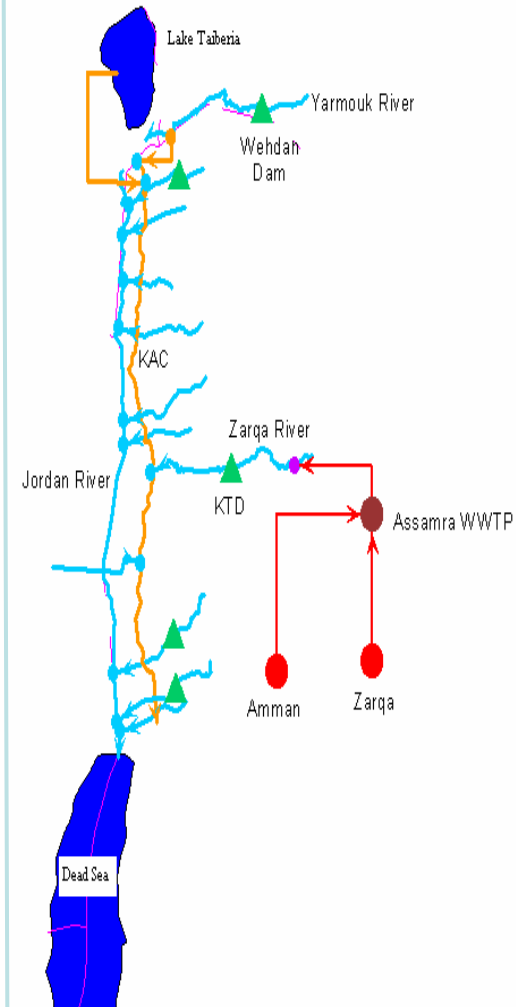
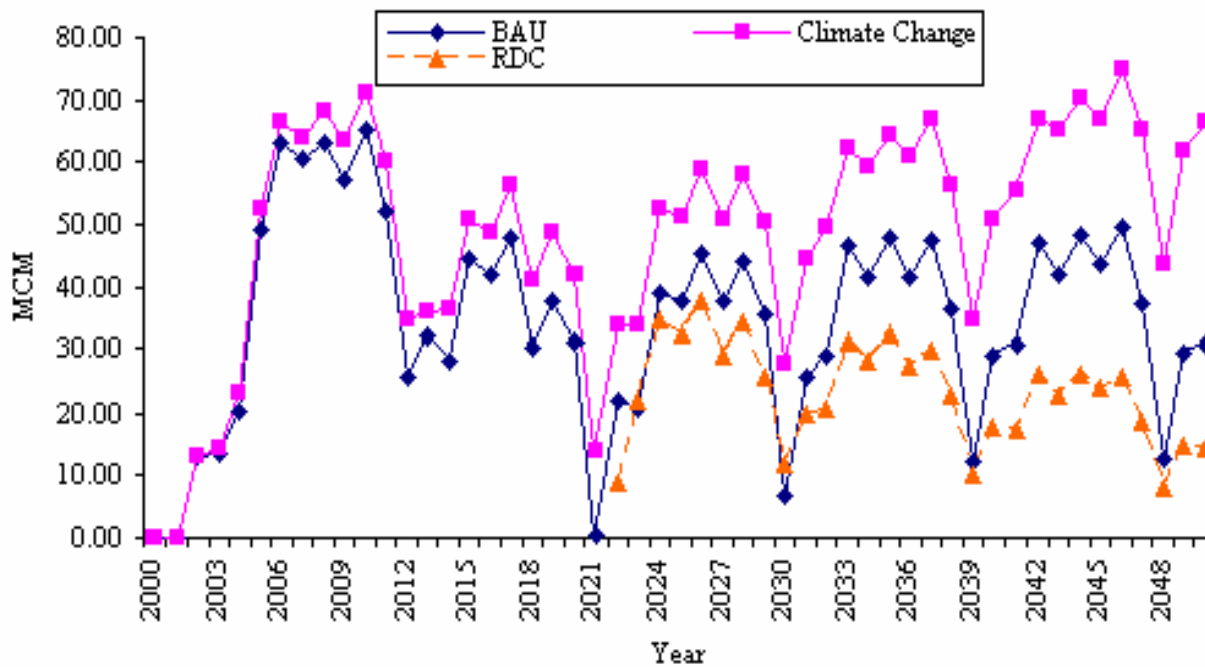


Projected unmet domestic demand in Amman for the three scenarios



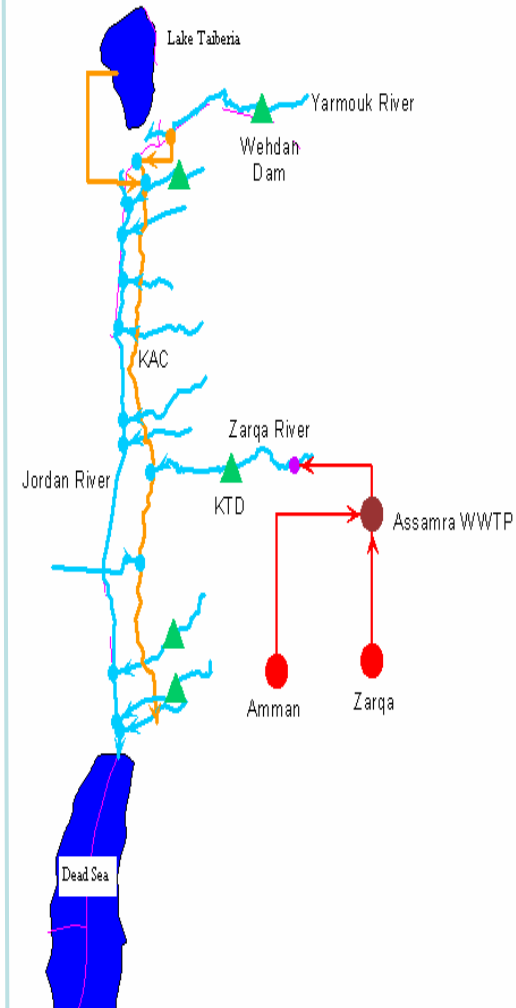
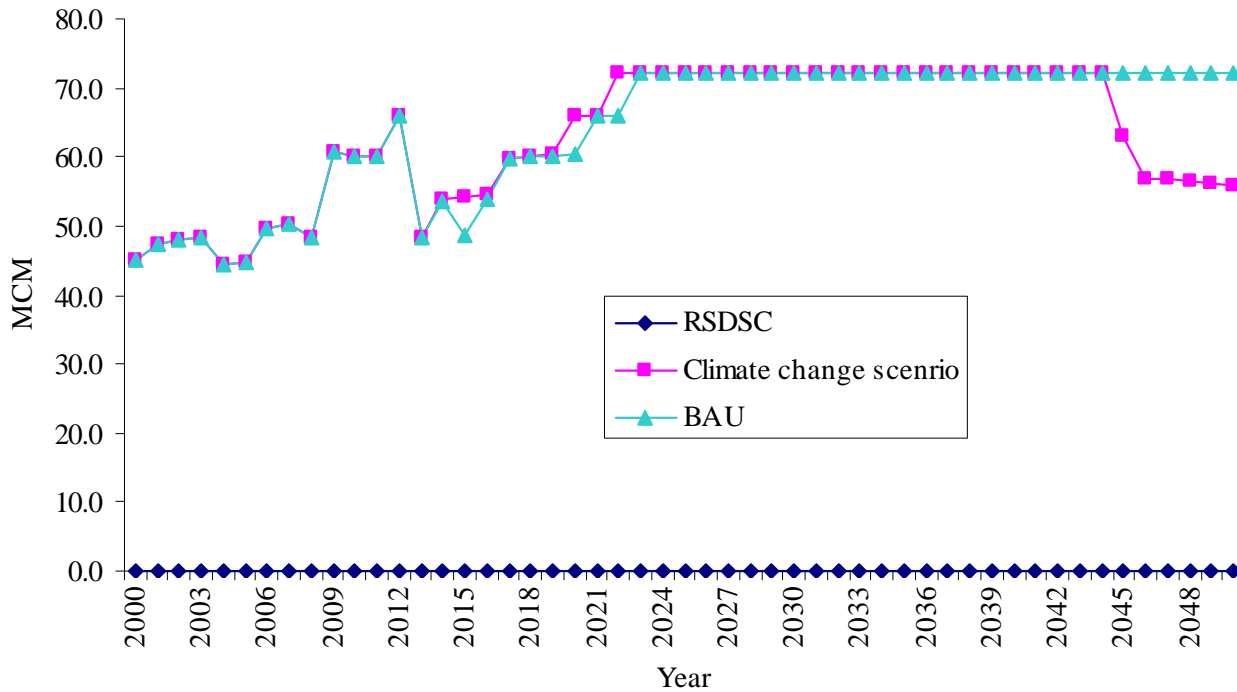


Projected unmet agricultural demand in the Jordan Valley for the three scenarios



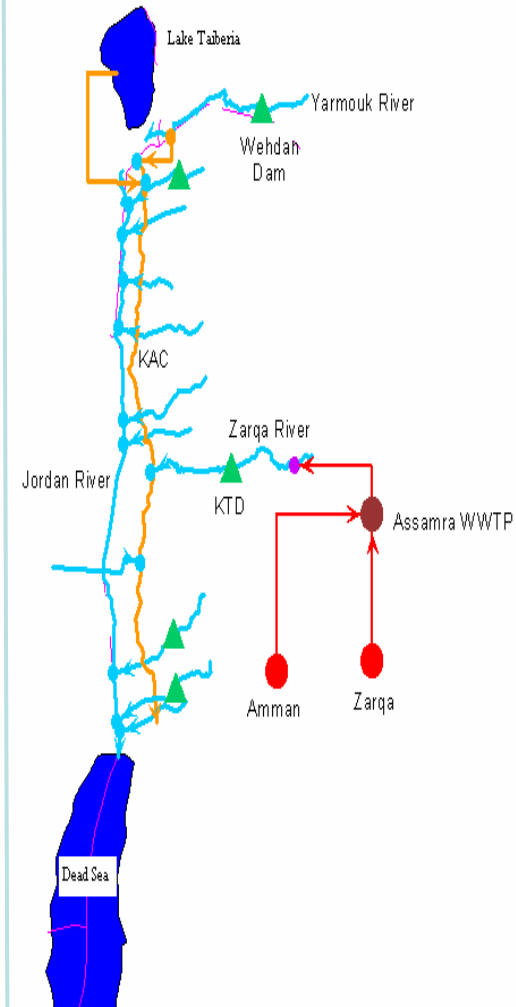
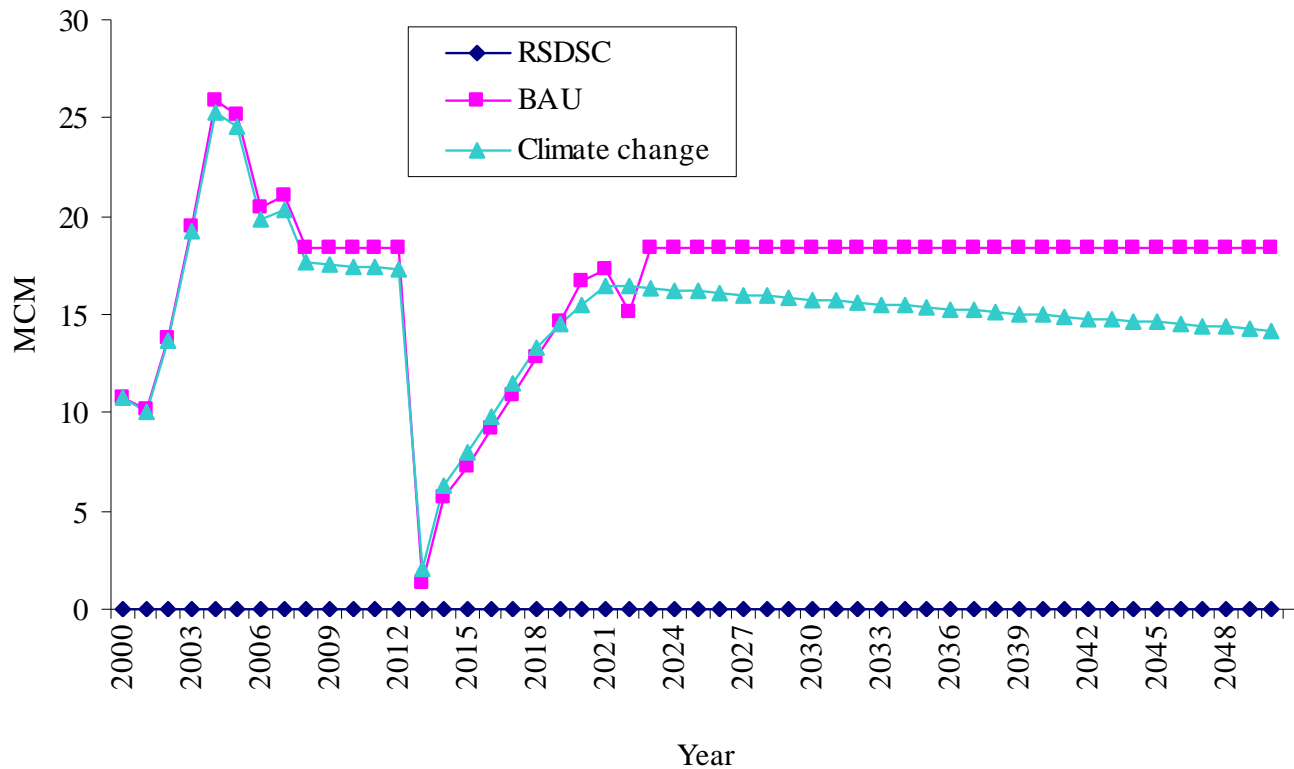


Projected pumping from AZB for the different scenarios



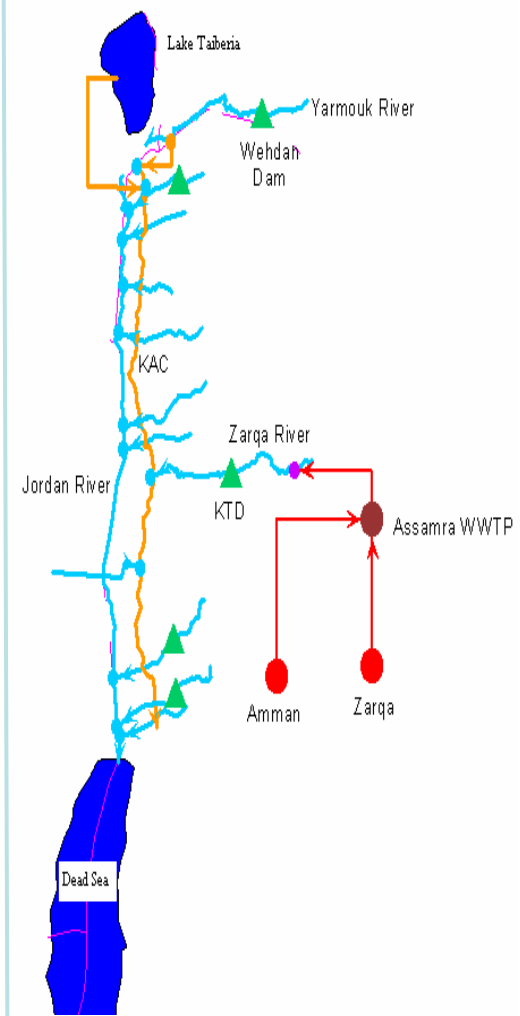
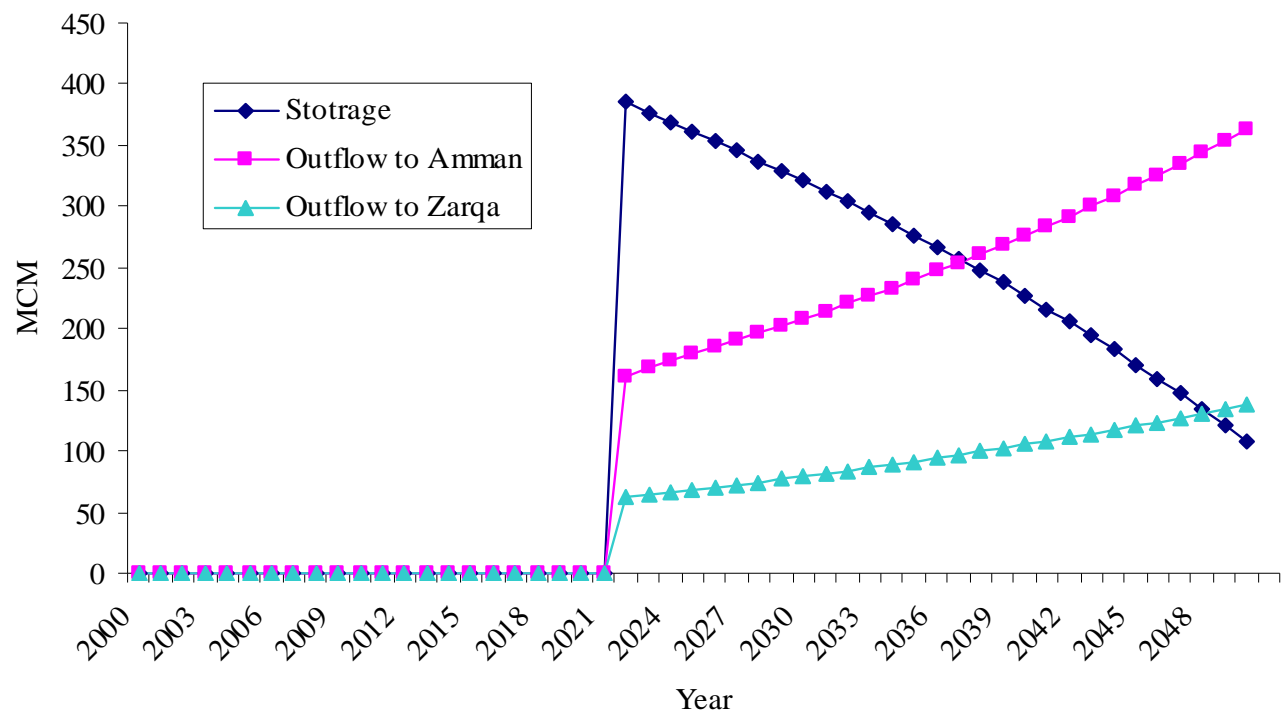


Projected pumping from GW sources south of Jordan





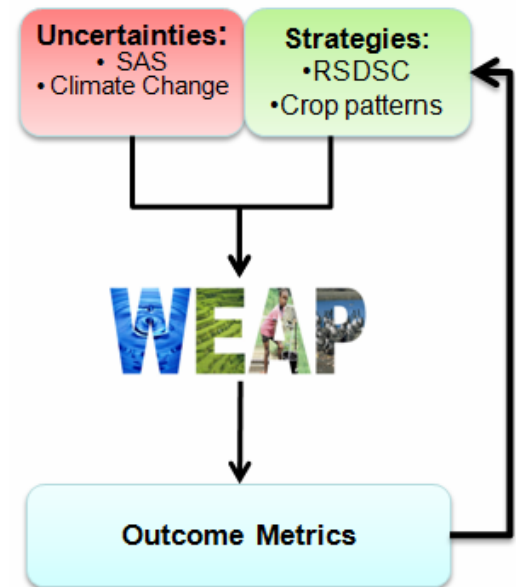
Projected RDC project water balance





Summary of results

- The RDC project will help bridge the gap between supply and domestic demand in Amman and Zarqa governorates
- The RDC will help reduce the deficit in the agricultural demand in the JV as a consequence to the increased treated WW delivered to the JV via Zarqa River



Ongoing WEAP activities

- Add Karamah desalination plant
- Refine crop water requirement

Running the JV WEAP for different scenarios as defined by MWI

Using WEAP results to update the national water master plan

