Water Supply and Demand and the Climate Crisis in the Jordan River Basin

Clive Lipchin, PhD

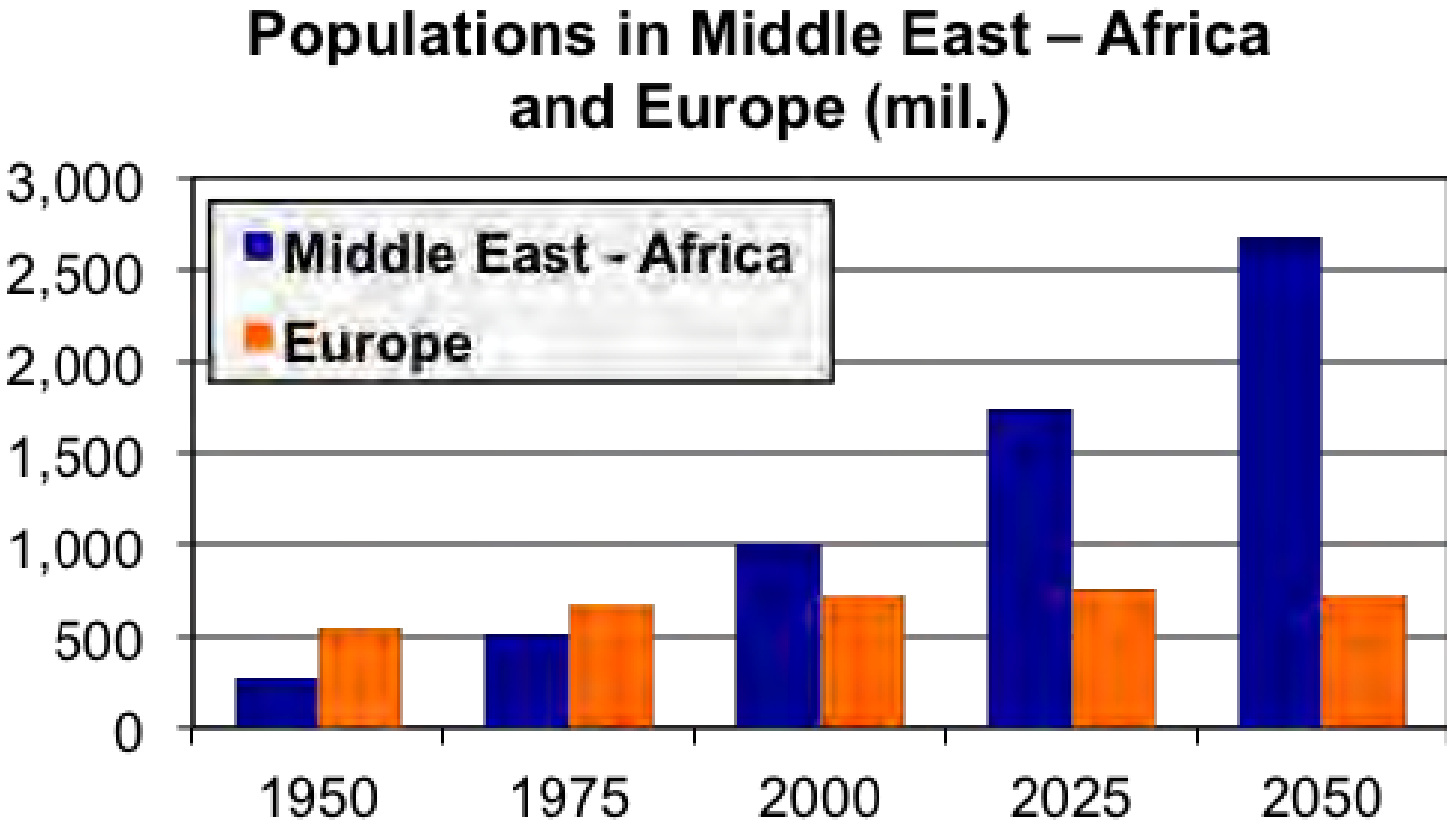
Director, Center for Transboundary Water Management

clivearava@gmail.com

Two Fundamentals

- All water resources are transboundary
- Water supply and demand deficits are growing

- The Middle East will be uninhabitable by the end of this century if we don't cut CO2 emissions, so say a growing number of climate change scientists. This summer’s extreme heat will become the norm, with temperatures of 60°C commonplace. Sound implausible? Recall the 4-day “health holiday” imposed in Iraq during the July 2015 heat wave.



Source: ISA (International Strategic Analysis)

Water Supply and Demand

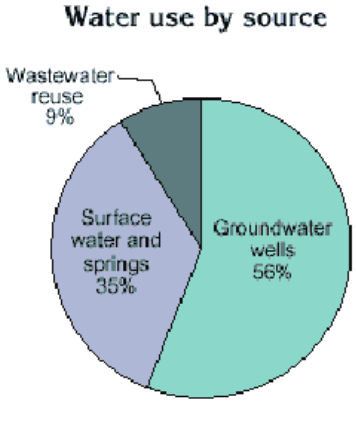
- Israel's total average annual potential of renewable water amounts to some 1,800 MCM whilst demand is greater than 2,000 MCM
- Palestine's (West Bank and Gaza) total average annual potential of renewable water amounts to some 200 MCM whilst demand is greater than 400 MCM
- Jordan's total average annual potential of renewable water amounts to some 1,000 MCM whilst demand is greater than 1,500 MCM

Sources: Israeli Water Authority, Palestinian Water Authority, Jordanian Ministry of Water and Irrigation, World Bank

SOURCES OF WATER

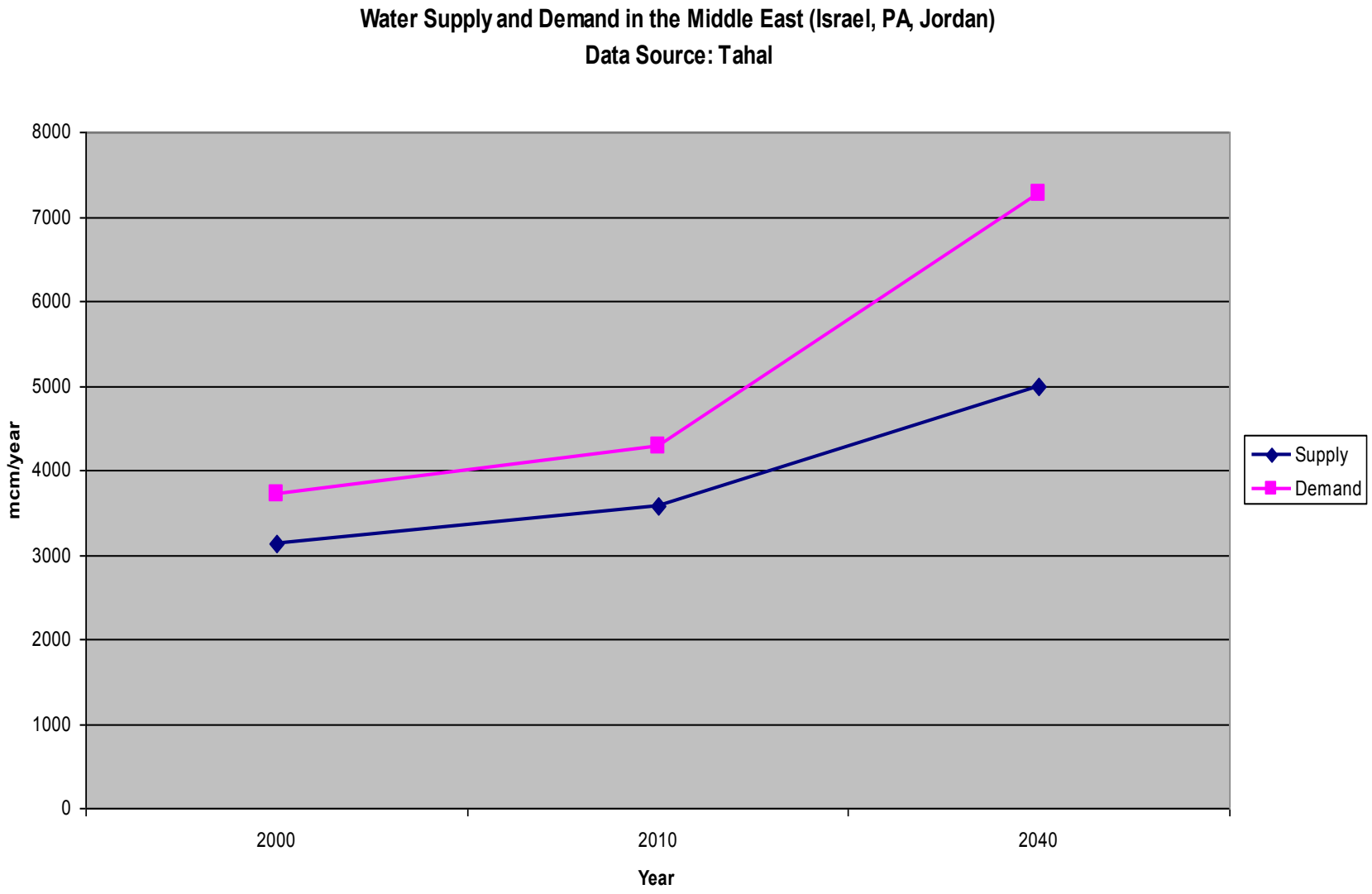
3 Major Sources:

- Jordan River System / Kinneret
- Mountain Aquifer
- Coastal Aquifer

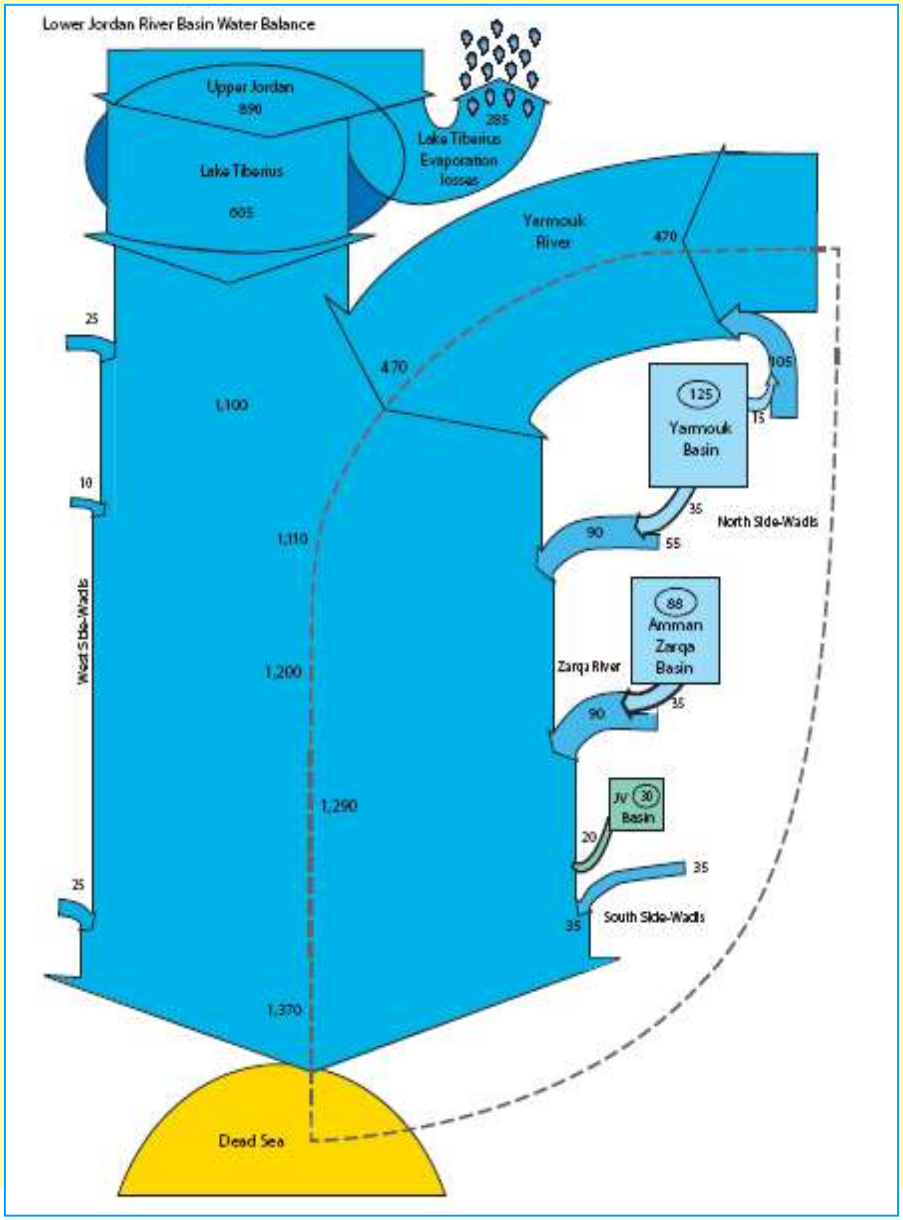


Basing on: Assaf, Karen; al Khatib, Nader; Kally, Elisha; Shuval, Hillel: A Proposal for the Development of a Regional Water Master Plan. IPCRI: Jerusalem 1993.

Water Insecurity



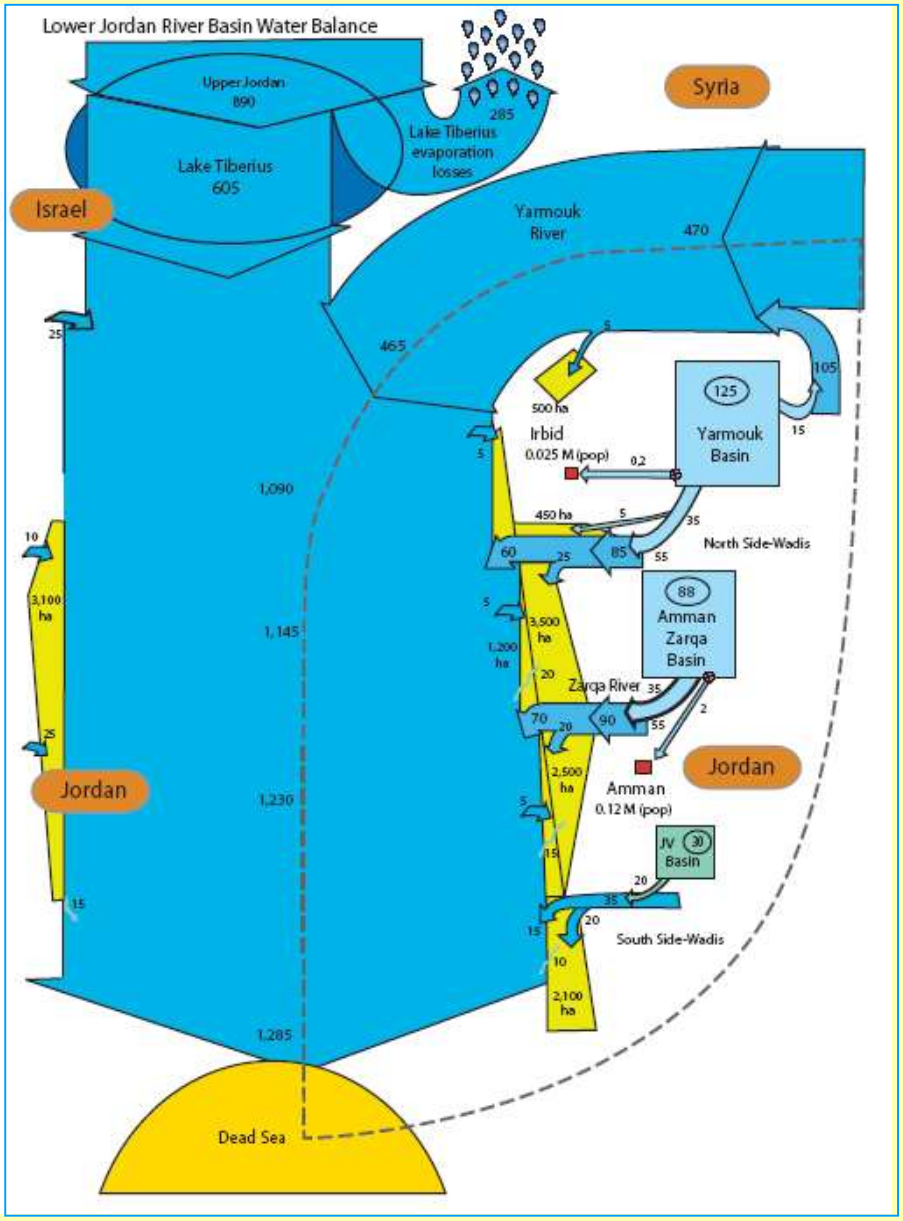
The Jordan River water resources



natural

Courcier et al. 2005

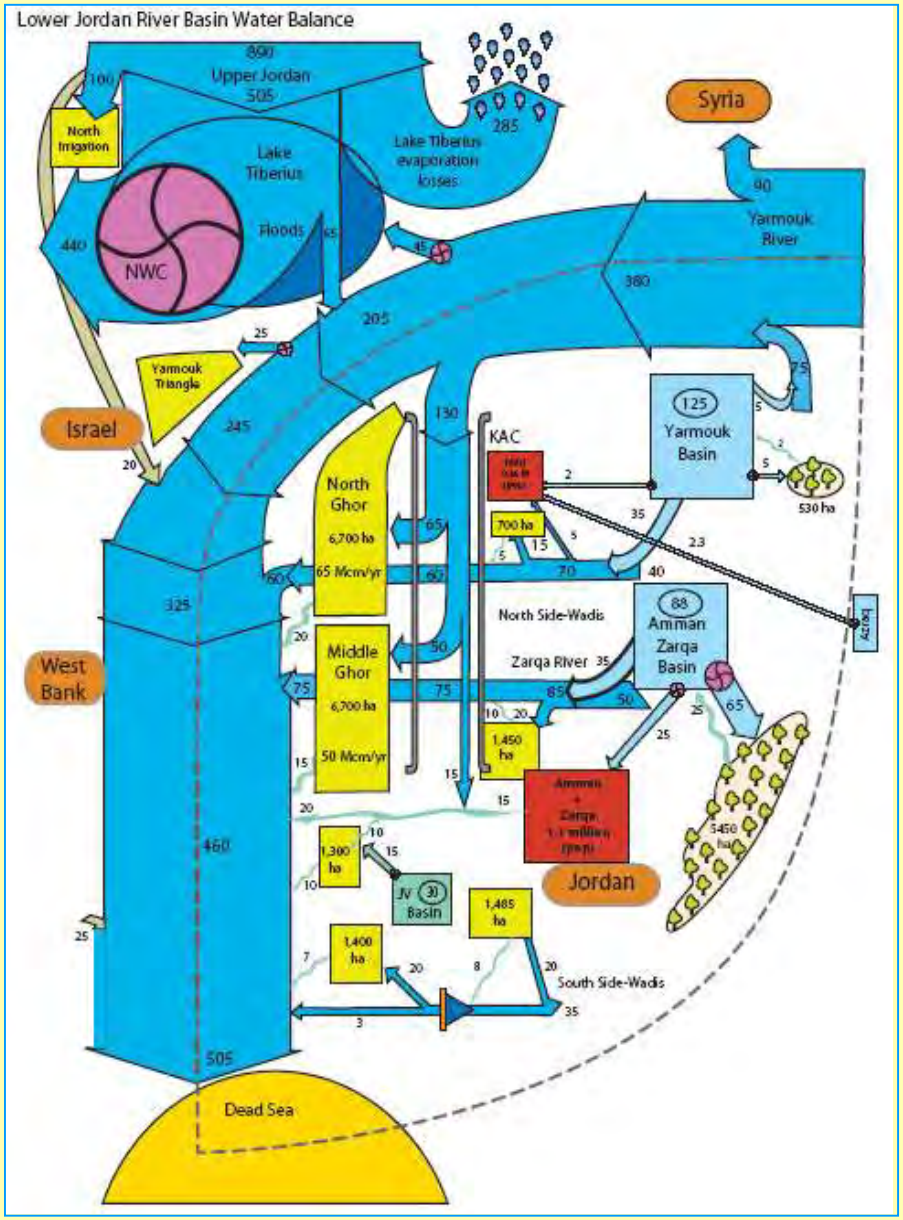
The Jordan River water resources



1950
add engineered systems...

Courcier et al. 2005

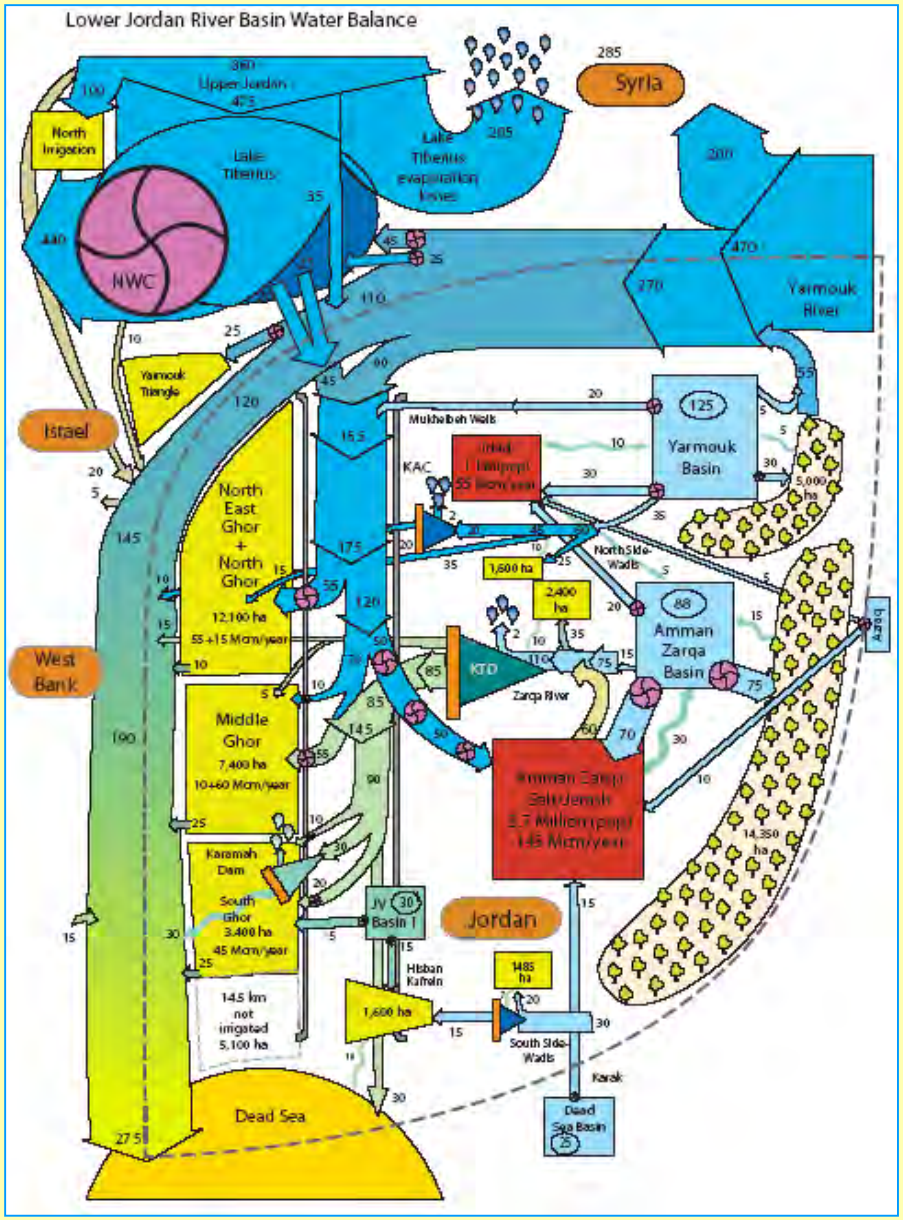
The Jordan River water resources



mid 70s
more Complex...

Courcier et al. 2005

The Jordan River water resources



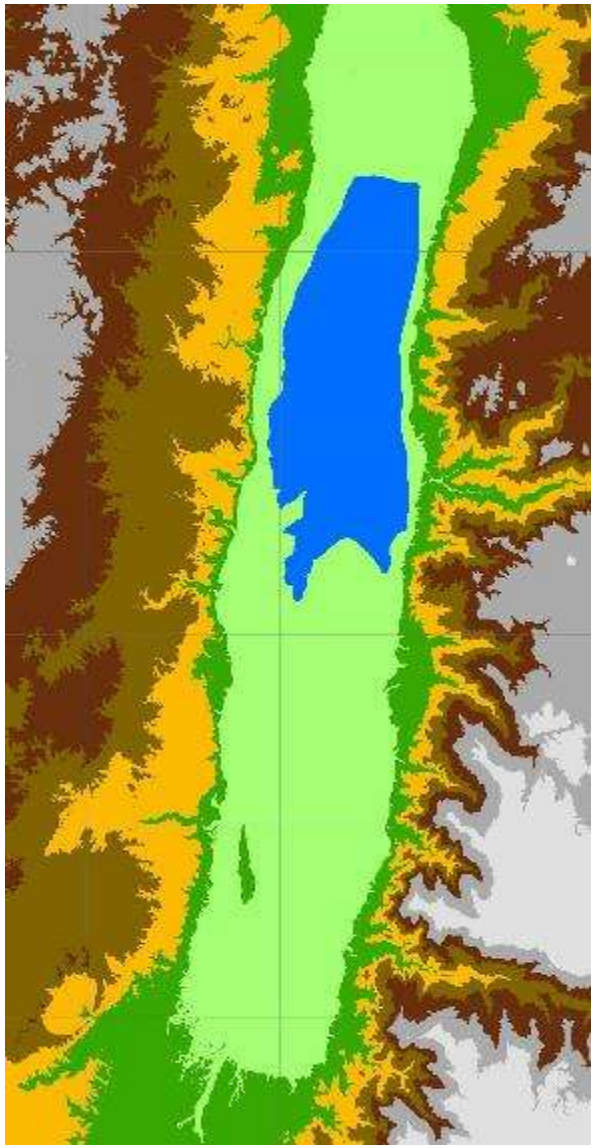
2000
even more complex...

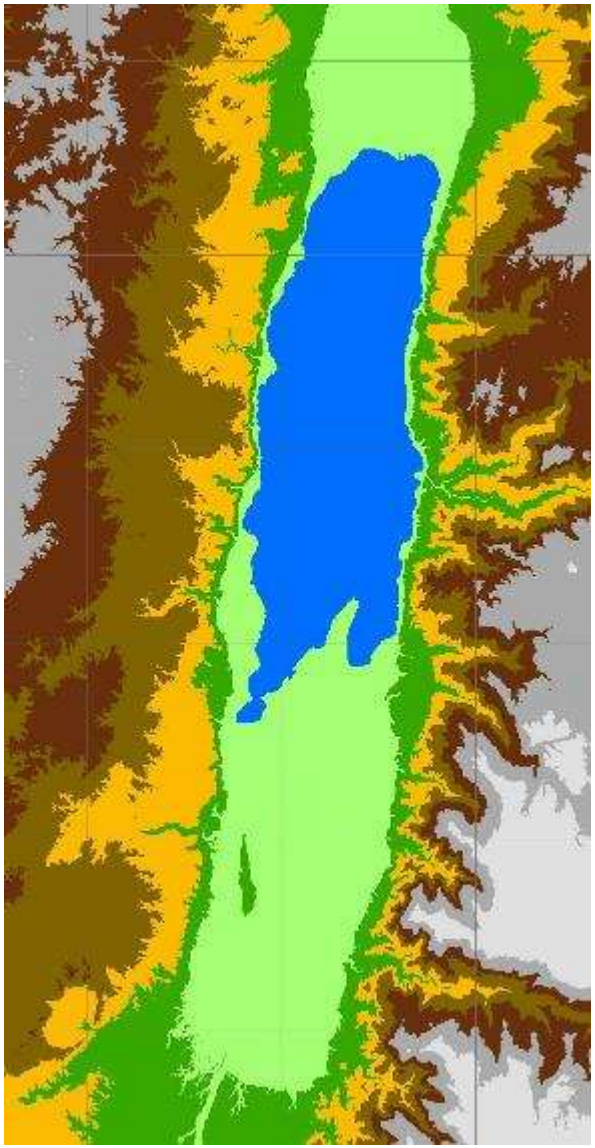
Courcier et al. 2005

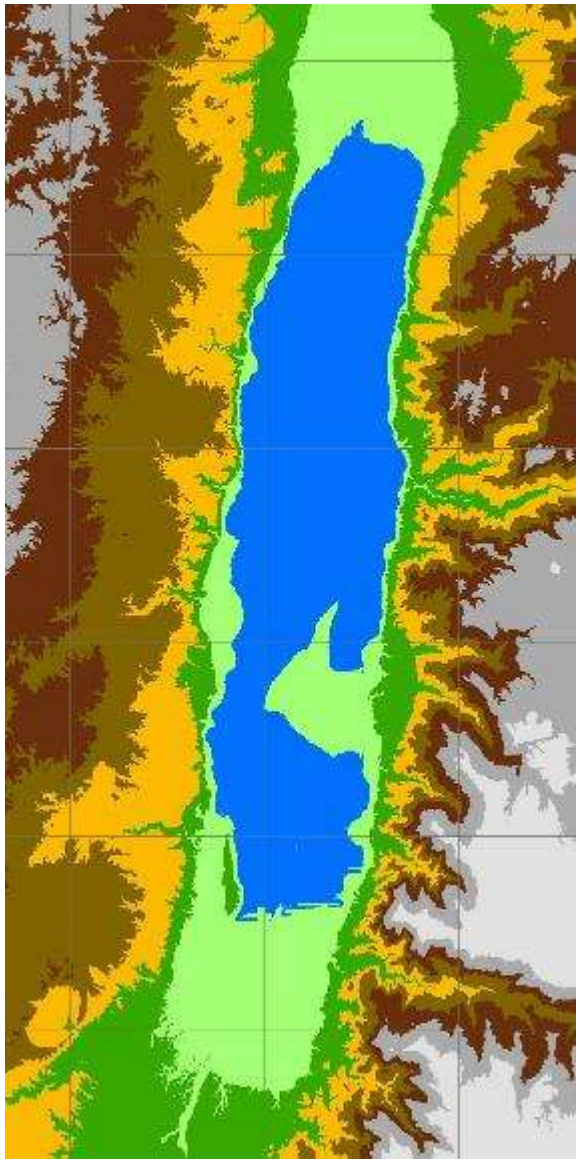
2050-550m 465 km²

1978 -400 m 747 km²

1930 -390m ~1020 km²







GIS Data, J. Hall


The Dead Sea - Red Sea Project
The cost: About $10 billion
The goal: Stabilizing the sea level of the Dead Sea, supplying electricity and water to countries in the region and promoting regional cooperation
The dangers: Changing the sea level of the Dead Sea, the development of calcium sulfates and algae and increasing the salinity of water aquifers in the Arava
Dead Sea
Israel
Point at which water will flow into the Dead Sea
Facility for producing electricity
Desalination facility
Facility for producing electricity
Petra
Pumping station
Jordan
Eilat
Pumping station
Red Sea
Dead Sea
Photograph: David Shankbone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