

# Will Desalination Resolve the Israeli-Arab Water Conflict? And if not, why?

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The background of the slide is a solid blue color. In the lower half, there are several faint, concentric white circles that resemble ripples on water, scattered across the bottom right and bottom center areas.



- - - 1949 Armistice Line
- - - 1974 Disengagement Lines
- Mountain aquifers
- Hydrological water divide
- Jordan river basin

Karak 0 50 km

# Background

- Most of Israel's water is derived from shared resources:
  - Mountain aquifers (mainly western and NE)
  - Jordan River
- Israel has exploited the W and NE Mtn aquifer fully before 1967
- There is a wide discrepancy in water use between Israel and its neighbors (Palestinians and Jordanians)
- Palestinians raise claims to almost half of Israel's freshwater resources
- Jordan contends with increasing water stress, having absorbed both Syrian and Iraqi refugees

# The Zero-Sum Game View ('water wars')

- Limited Water Resources – extreme water scarcity
- Increasing Demand:
  - Due to population growth
  - Due to increasing demand per capita
- Inequitable division of existing supplies
- Deteriorating state of existing water resources
- Increasing frequency of multi-year droughts due to climate change

# However, the Zero-sum Game View is Outdated

- Better use of existing water resources – conservation (decoupling growth and agriculture from water)
- Joint concerns - both sides share same aquifers (storages) and hence share concerns over quality
- Virtual water - all parties are not dependent on local food production
- Wastewater recycling – re-use of existing water resources
- It is possible to augment the total amount of water – most readily through desalination

# The Israeli Desal Plan

- Built (587 MCM):
  - Ashkelon (120MCM)
  - Palmachim (90 MCM)
  - Hadera (127 MCM)
  - Soreq (150 MCM)
  - Ashdod (100 MCM)
- Planned:
  - Palestinian Site
  - Site in western Galilee
  - Long-term (to 750 MCM)



The Israel Water Supply System (1995)

# Desal as a regional solution

- All parties agree that desal is necessary at some stage
- Desal costs are declining and can decline more
- Desal is insensitive to climate change and weather
- With the advent of desal there is more wastewater available (and sweeter)
- Agriculture in Israel is shifting to wastewater (except northern Jordan basin):
  - Cheaper
  - More reliable than freshwater
  - Supply increasing
  - Has nutrients



# So, what is there to disagree about?

- Palestinian position:
  - Israel will desalinate
  - Palestinians will get most of mtn aquifers and 200 MCM from Jordan River
- Israeli position:
  - Israel will continue to use W and NE aquifers
  - Desal for Pals in WB in Hadera and in Gaza
- Jordanian approach:
  - Red-Dead Canal with desal for Amman

# What Stands Behind these Positions?

## ➤ Power:

- Desal changes basic flows reversing upstream-downstream relations
- Jordan and Pals do not want to be downstream on desal flows

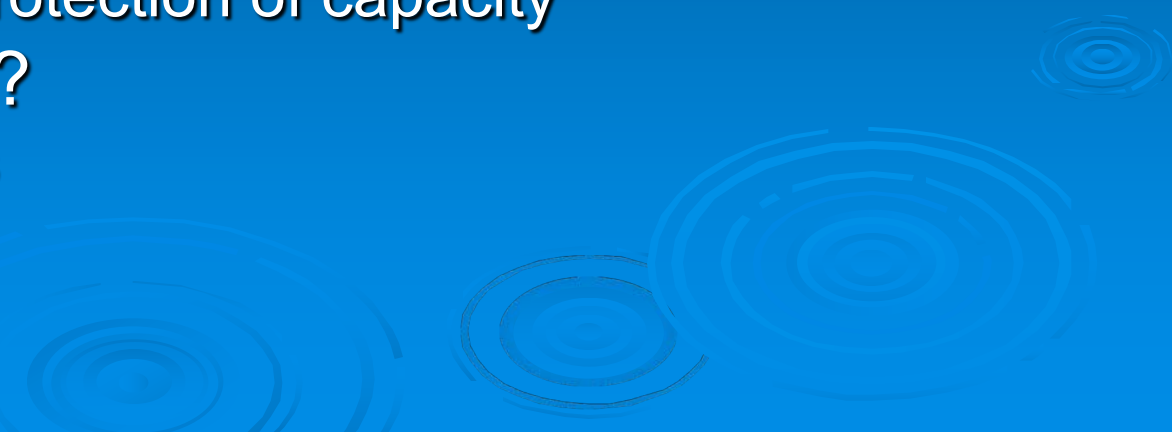
## ➤ Storage:

- Central in arid and semi-arid regions
- Israel does not want to lose storage, which will imply additional inefficient desal

## ➤ Cost:

- Who should pay for the additional water

# The More Fundamental Questions

- Is 'produced' water a substitute for natural fresh water?
    - Not covered by international law that pertains only to freshwater courses
    - Desal function of investments – bought and sold
    - If a substitute – disincentive to desalinate
  - The role of storage capacity
    - Critical for flexibility in operation
    - Importance of protection of capacity
  - What is at stake?
    - Rights vs needs
- 

# Rights or Needs

- Rights – Inflexible, compensation
- In practice agreements are about needs – Johnston as an example
- Needs – what are they?

# (cooperative) Study on Needs

## ➤ Idea:

- bottom-up rather than top-down
- How to supply rather than allocation of existing water

## ➤ Definition of needs:

- Domestic (not basic need, relate to 'right to water')
- Cultural
- Environmental
- Social (peripheral agriculture)

## ➤ Scenarios of the ability to supply needs

# Main insights from water needs study (Israel & Pals. Only)

- Can differentiate between need and demand
- Differentiation has implications for financing – whether should be subsidized
- There is sufficient water for most needs (except social) except in Gaza and under extreme climate change + massive return of refugees scenarios
- Desalination merits subsidization only for Gaza – and can be built there

# What about Jordan

- Acute water stress:
  - do not have 24/7 even in Amman
  - Large number of refugees, and rapid population growth raises needs
- Disi fossile aquifer water is problematic
- Red-Dead is not a real solution
  - Cost
  - Implications for Dead Sea
- Do not want to be seen as dependent on Israel

# Can Desal relieve the Jordanian water stress?

- Israel plans conveying desal water to Sea of Galilee
- If more water is available in Jordan basin Jordan's water share can conceivably be increased
- Existing precedents:
  - Israeli-Jordanian Peace Treaty
  - Desal water from Aqaba in return for freshwater from river
- Israel has a strategic interest in Jordan's stability
- Cost sharing?



# Conclusions

- Water should be differentiated according to source and use
- Desalinated seawater is not part of water under contention – it is an industrial product and thus should be bought, not allocated
- Storage capacity is important and should be managed as such – joint management
- Attempts merely to allocate existing resources are useless, and exacerbate conflict and miss main issues.

# Conclusions

- Desalination opens positive sum game and thus is important, but allocation of cost is critical
- By mixing desalinated seawater with Jordan River water, it may help alleviate the worst crisis – in Jordan
- Desalination is not a panacea as it does not address the fundamental underlying issues and questions:
  - Balancing of power and distrust
  - How water is viewed and portrayed
  - What is water – a resource? a product? A need? A right (and of whom – the person or nation)? A commodity?

# Personal View

- Water should be differentiated
- Palestinians should get needs from natural sources
- Storages under WB should be managed jointly
- Alleviating shortages in Jordan is critical
- Desalination can contribute to resolving water issues, if underlying issues are addressed – it is not a panacea
- Most important: water is basis for cooperation and confidence building