Water Policies of Israel and Arizona: Lessons Learned and Outstanding Challenges

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Heartbeat of Israel Lecture
Tucson, Arizona
November 13, 2013
Water Management Issues/Challenges

• Growth and the need for additional supplies (competition)
• Drought/climate variability
• Water-energy Nexus
• Water quantity assessments
• Water quality
• Desalination
• Use of recycled water for potable and other water needs
• Access to and utilization of renewable supplies
• Transboundary water issues
• The surface water/groundwater interface
• Riparian areas and other environmental considerations
• Water rights settlements
• Conservation programs
• Water storage and recovery (water banking)
• Groundwater replenishment
• Water cost/pricing
• Water Planning

Uncertainty!
Transferability of water management and policy approaches and lessons learned (both + and -)
Video link
http://vimeo.com/57014686
Some commonalities

- Growing regions with populations of about 6.5 to 7.5 million people => growing municipal and industrial water demands
- Important agricultural sectors
- Semi-arid to arid regions
- Recent drought experiences
- Projected hotspot of climate change
- Shared borders
- Historical reliance on groundwater
- Water reuse is important
- Environmental degradation

WATER SCARCITY

Abraham Tenne, April 2011

The overall goal of the Israeli Water Authority

Assure that water will be sustainable, available, reliable, in the required quantities, locations and qualities.
CLOSING THE GAP

- Water saving and efficient use of water.
- Water wells purification and aquifers water quality improvement.
- Increasing capacity of waste water treatment and upgrading effluent quality.
- Desalination.
## Governance and management differ

<table>
<thead>
<tr>
<th>Israel</th>
<th>Arizona</th>
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</thead>
<tbody>
<tr>
<td>Centralized decision making – Israel Water Authority regulates, allocated, sets prices; master planning</td>
<td>Decentralized</td>
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<tr>
<td>Water allotments can be changed</td>
<td>Water rights not easily changed</td>
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<tr>
<td>Pricing the same across municipalities</td>
<td>Pricing across municipalities varies widely</td>
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<td>Law includes allocation for environment</td>
<td>Environment is “forgotten” sector</td>
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<tr>
<td>Etc…Grey water standards not established</td>
<td>Grey water use easily permitted</td>
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</tbody>
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![Israel Water Supply System](image1)

![Arizona Water Map](image2)
Recharge of water is an important water management tool.
New biofilter project at Kfar Saba

…The Kfar Saba biofilter harvests storm water and treats polluted groundwater. The treated water is injected into the groundwater aquifer, where it is stored. The water can then be recovered at any point along the aquifer for a variety of uses. In addition, the system is an integral part of the urban design and contributes to the amenity of the local park. The project is being conducted jointly by KKL-JNF, JNF Australia and Monash University in Australia.

Photo: KKL-JNF Photo Archive

http://www.kkl.org.il/eng/water-for-israel/water-installations/#{F0D4F93D-C9FD-41B1-8AC6-4B1A101AAC5A}

Yaron Zinger, Lead designer-investigator
Recharge and use of effluent
Public understanding of methods is important.

Effluent recharge basin by the Santa Cruz River next to Sweetwater Wetlands.
Farming practices and water sources
Has seawater desalination in Israel eliminated the water scarcity issue?
Border situations differ
Challenges to Cooperation
US-MX border water issues handled through the International Boundary and Water Commission (ibwc.gov)

MX Commissioner
Roberto Salmon

US Commissioner
Edward Drusina

WRRC, 2010
Minute 319: Historic agreement signed in November 2012 to share Colorado River shortage and surplus and address Colorado River Delta ecosystem

The Colorado River Delta Ecosystem

Yamilett Carrillo, Ph. D. SWES-UA

Photo Courtesy of Bryce Emily Megdal
Cooperative framework adopted by the IBWC in August 2009 has guided development of aquifer reports for the Santa Cruz and San Pedro aquifers.

Development of the cooperative framework took considerable time.

Photo taken 19 August 2009

TAAP Workshop and Binational Advisory Committee meeting
Other shared borders

- Arizona with Native American Nations and other states

- Israel with Jordan
  - Lower Jordan River
  - Red Sea
  - Dead Sea
Prince Hassan calls for equitable sharing of water resources

by JT | Nov 05, 2013 | 21:37

AMMAN — HRH Prince Hassan has called for the equitable sharing of water resources and greater collaboration to support stability in the West Asia North Africa region.
Tomorrow morning, November 14, I am participating in a panel presentation entitled “Why Cooperate?”

- Can think about this question across individuals, water using sectors, intrastate or intranational jurisdictions, and international jurisdictions
- Can think of this question across the public and private sectors, etc.
- Some simple answers…
  - Why not?
  - We’ll arrive at a better solution
  - Other?
The frog does not drink up the pond in which he lives. – *American Indian Proverb*

Thank you!
Questions?

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WRRC CONFERENCE 2014

CLOSING THE GAP BETWEEN WATER SUPPLY AND DEMAND

TUESDAY, APRIL 8, 2014
THE UNIVERSITY OF ARIZONA
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Upcoming Events

Save the Date: April 8, 2014

Up Next: Aug. 9, Prof. Amit Gross

WRRC NEWS