



Public Policy Review

by Sharon Megdal

Visit Shows Israel Faces Similar Water Management Issues as Arizona



I traveled to Israel this summer to present a paper at a conference and to meet with researchers and other water professionals to learn about Israeli water management and policy. My perception was that, while quite a bit of Arizona-Israeli collaboration on technical water issues seemed to have occurred, less had taken place in the social science and policy arenas. I hoped to build upon recent col-

laboration with an Israeli resource economist. My trip was extremely productive. Fortunately my travels were unaffected by the violence in Gaza; the trouble to the North did not erupt until after I returned to the United States.

I met with officials from the Israel Water Commission and Mekorot (the national water supplier); I also met with researchers from several disciplines and university campuses. I heard conference presentations on issues relating to water for the environment and water levels in the Sea of Galilee.

Although Israel and Arizona have much different systems for managing water resources, the water management issues are very similar: drought, salinity, seawater desalination, effluent re-use, institutions, water pricing, and allocation across water using sectors (including the environment). I will discuss a few of these issues.

The institutional setting for water policy in Israel is changing. The Ministry of Infrastructure's Water Commission had set water allocations and oversaw much water policy. Different ministries handled other water matters, such as water quality and determining allocation of water for the environment. I was told, however, that a new Water Authority, recently established by the legislature, will bring together various ministries to promote better coordinated water management. The head of the Water Authority, to be housed in the Ministry of Infrastructure, will have a five-year appointment and will work with a board of representatives from the various ministries (Agriculture, Treasury, Infrastructure, Environment, Interior Affairs) plus two appointees from the public. Time will tell if the Water Authority, which is just being implemented, will work as envisioned.

Israel has a very centralized approach to allocating water. The country faces the same issues as Arizona does in times of drought: how much water to take out of storage and the extent of water cuts. Israeli agriculture is viewed as a sector more able than the municipal sector to cut back water use during drought. Agricultural water allocations are largely at the discretion of the central government; cutbacks do not depend on voluntary arrangements for water transfers, as contemplated in the western United States. The papers I read in preparation for my trip noted that the agricultural sector represents a strong lobby in Israel; it emphasizes the importance of its operations for providing home-grown food supplies and preserving open space and green areas.

Israel has the advantage of a seacoast. I visited what is said to be the world's largest operating seawater RO (reverse osmosis) desalination plant and surprised Israelis with my interest in seawater desali-

nation. I explained that desalination along coastal California has the potential to enable landlocked Arizona to gain more Colorado River water. Israel, like the United States, has long considered seawater desalination. Repeated droughts there have prompted a program to construct several plants over a five-year period to eventually deliver 315 million cubic meters of freshwater. With construction having begun in 2003, the plant in Ashkelon was built through a public-private partnership as a build-operate-transfer (BOT) facility. Fully operational in 2005, the plant produces 100 million cubic meters (approximately 81,100 af) of desalted water per year. It is a 20-minute process to produce fresh water. Also Israel shares Arizona's interest in removing salts from brackish groundwater, with projects underway in the southern part of the country.

Using detailed hydrologic information, the Water Commission and Mekorot, which supplies about two-thirds of the water used in Israel, have developed a management system to limit the amount of high-salinity water entering the water system from the Sea of Galilee. The Galilee's lowering water levels, however, are a concern, reflective of recent drought conditions and decisions regarding how much water to draw out of storage.

An important global concern is environmental water needs, an issue the Israeli Ministry of the Environment must consider in response to recent legislation. As we in Arizona know, restoring lost riparian areas, necessary for flora and fauna and valued by people, is difficult. Yet Arizona has not developed a strategy for recognizing the environment as a water-using sector. Observing Israeli efforts as well as those of other locales, including Victoria, Australia (the subject of two presentations at the conference), could be of value to Arizona and other semi-arid or arid regions.

Water re-use is an important issue. The Israelis hope to increase agriculture's approximately sixty percent use of the country's effluent to 80 to 85 percent. Arizona's effluent picture is much different, with reclaimed water mostly used for golf courses, turf irrigation and as cooling water for the Palo Verde Nuclear Power Station. Various factors limit Arizona's agricultural use of effluent, including a lack of proximity to sources of effluent, as well as cost and other considerations.

My limited introduction to Israeli water pricing indicated that, as is true elsewhere, water pricing involves economic as well as political/policy considerations. Compared to Arizona, water pricing is a much more centralized function. Prices are set in ways, however, that do not necessarily cover costs of service. Tiered pricing has been introduced in the agricultural sector, and an extraction levy has been assessed to reflect the scarcity value of the water resource, a policy economists advocate but rarely see considered, let alone adopted, by policy makers.

Water resource management concerns across the globe are frequently very similar, although countries often approach them differently. That we can learn from each other's experiences is clear. I hope my visit leads to future collaborations and additional learning opportunities for myself and others. ■