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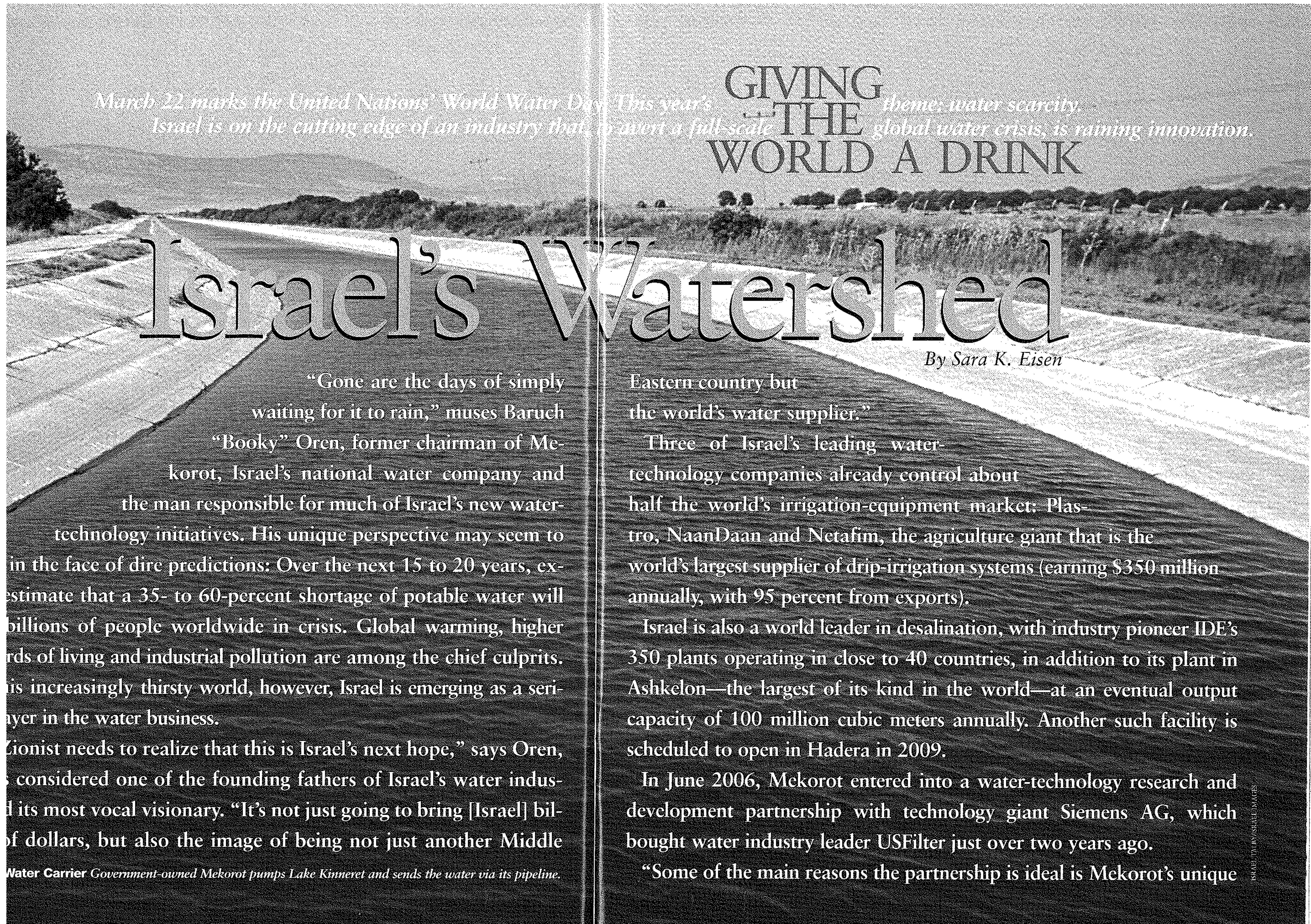
In this increasingly thirsty world, however, Israel is emerging as a serious player in the water business.

"A Zionist needs to realize that this is Israel's next hope," says Oren, who is considered one of the founding fathers of Israel's water industry and its most vocal visionary. "It's not just going to bring [Israel] billions of dollars, but also the image of being not just another Middle

National Water Carrier *Government-owned Mekorot pumps Lake Kinneret and sends the water via its pipeline.*



GIVING THE WORLD A DRINK

March 22 marks the United Nations' World Water Day. This year's theme: water scarcity. Israel is on the cutting edge of an industry that, to avert a full-scale global water crisis, is raining innovation.

Israel's Watershed

By Sara K. Eisen

"Gone are the days of simply waiting for it to rain," muses Baruch "Booky" Oren, former chairman of Mekorot, Israel's national water company and the man responsible for much of Israel's new water-technology initiatives. His unique perspective may seem to in the face of dire predictions: Over the next 15 to 20 years, ex- stimate that a 35- to 60-percent shortage of potable water will billions of people worldwide in crisis. Global warming, higher rds of living and industrial pollution are among the chief culprits. is increasingly thirsty world, however, Israel is emerging as a seri- ayer in the water business.

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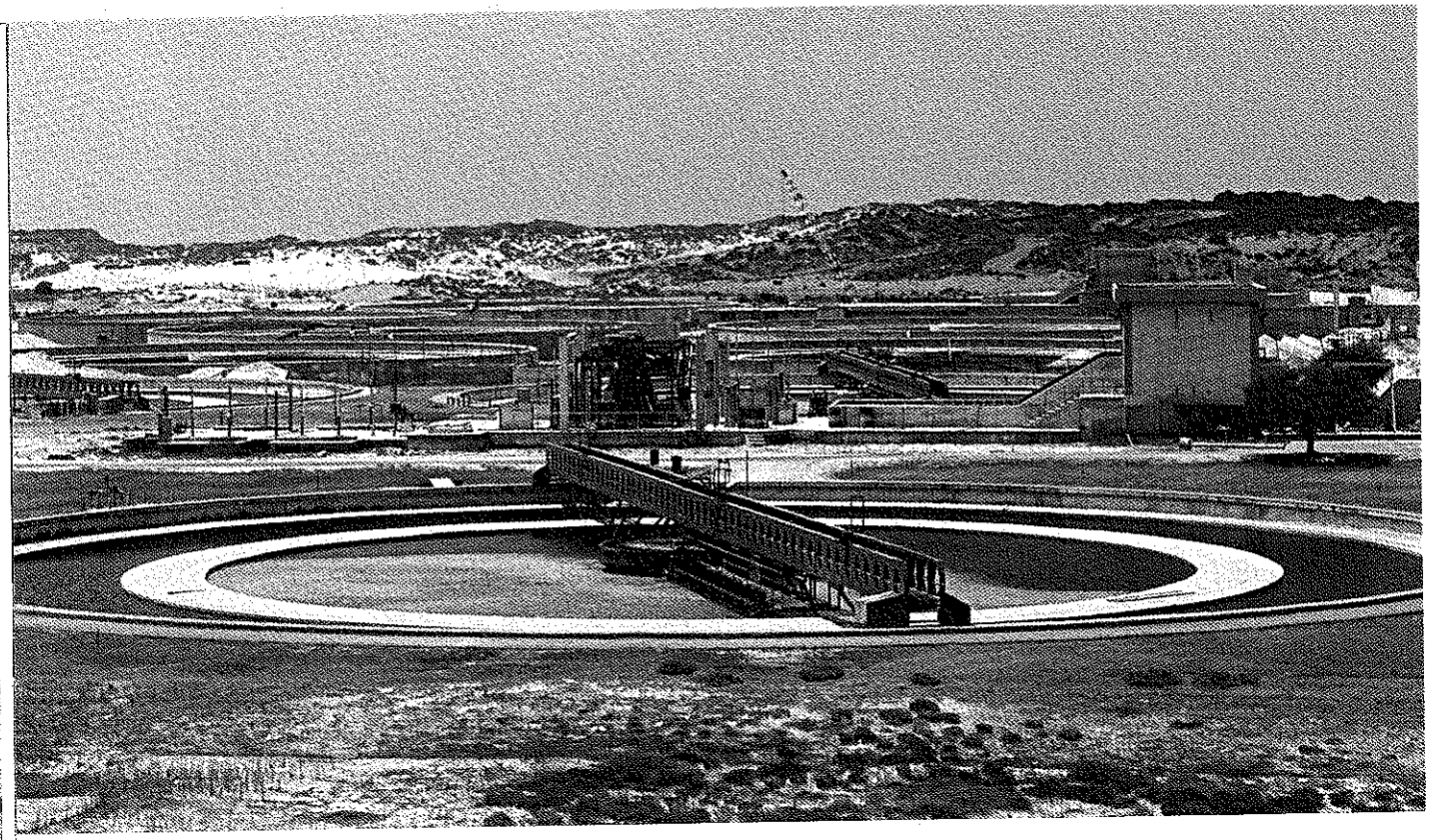
Three of Israel's leading water-technology companies already control about half the world's irrigation-equipment market: Plastro, NaanDaan and Netafim, the agriculture giant that is the world's largest supplier of drip-irrigation systems (earning $350 million annually, with 95 percent from exports).

Israel is also a world leader in desalination, with industry pioneer IDE's 350 plants operating in close to 40 countries, in addition to its plant in Ashkelon—the largest of its kind in the world—at an eventual output capacity of 100 million cubic meters annually. Another such facility is scheduled to open in Hadera in 2009.

In June 2006, Mekorot entered into a water-technology research and development partnership with technology giant Siemens AG, which bought water industry leader USFilter just over two years ago.

"Some of the main reasons the partnership is ideal is Mekorot's unique

Water Carrier *Government-owned Mekorot pumps Lake Kinneret and sends the water via its pipeline.*



Largest in the World *After going through the Dan Region Recycling Facility, wastewater can be reused for agriculture; (opposite page) Eytan Levy and the cylindrically shaped purifying filters his company, AqWise, produces for global use.*

experience with water reuse and desalination, interest in a technology partnership and strategic location to developing markets," says Joe Zuback, vice president of research and development at Siemens Water Technologies, Siemens' water-tech division based in the United States. "Israel provides a unique testing location because of its diverse landscape and water applications...."

Indeed, for years, Mekorot, the company that supplies Israelis with about 70 percent of their water (1.3 billion cubic meters), has been at the forefront of the water revolution. Uniquely, Mekorot uses the entire spectrum of available methods to bring water to the people. It pumps Lake Kinneret, sending the water down to the center of the country via its renowned pipeline, the National Water Carrier; desalinates brackish water and seawater at its roughly 30 desalination plants, the largest of which is in Eilat; drills for groundwater; and recycles wastewater for agriculture at, among others, the Dan Region Recycling Facility (known by its Hebrew acronym, Shafdan), the largest plant of its kind in the world.

Because its infrastructure is so well-developed and diverse, Mekorot is ideal as a testing site for Israel's up-and-coming water technologies, researching and using products before start-up companies take them overseas. Mekorot's new technology incubator and R&D arm, Watech, hopes to match entrepreneurs with academics and start-ups to help pilot projects, all with the aim of introducing market-ready products to big business.

Although he looks like a high school science teacher, Oren sounds like an enthusiastic sportscaster. When asked if he sees water as the new oil, he answers playfully: "Oil pollutes, water doesn't."

The immediate goals of the industry, he says, are to reduce the cost of available technology—today, desalination is 5 percent of what it cost in the 1960's and gets cheaper every year—minimize waste and conserve water. According to Oren, the only restriction on water supply is money, since the methods to produce drinkable liquid already exist.

In late November 2006, Oren became CEO of billionaire businesswoman Shari Arison's newly established $100-million water-technology investment company. This is encouraging, since, unlike their American counterparts, Israeli venture capitalists have been comparatively slow to invest in renewable energy, water and waste management (called clean technology); one estimate has 12 percent of United States venture capital funds invested in this technology, double what it was only a few years ago.

A few of the new, homegrown technology companies are already making waves internationally. One of the leading success stories is AqWise, a 7-year-old start-up conceived at Haifa's Technion Institute. Its water-purifying filter—a floatable, half-inch-long, cylindrically shaped biomass carrier—is thrown into existing industrial plants

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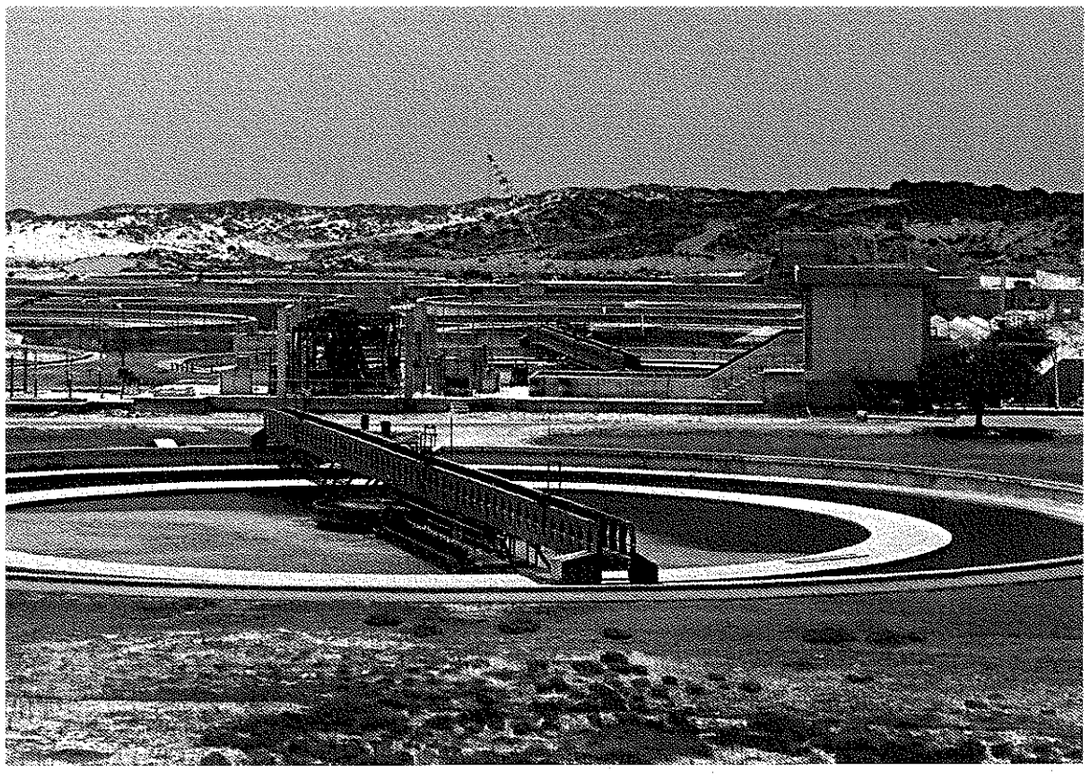

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ISRAEL TALBY/ISRAEL IMAGES

The filters' advantage is economic: Industrial plants can maintain their current wastewater treatment facilities yet comply with ever-stricter environmental standards.

AqWise started selling the filter in 2003; by 2005, sales were at $15 million, and the company had opened a second headquarters in Mexico. It has clients in the United States (Siemens has a license to use and market their patented process), Canada, Italy and Spain.

The company's cofounder, president and CEO, Eytan Levy, a thirty-something chemical engineer-turned-businessman, points out that Israel's strengths lie in doing exactly what AqWise did. "[It involves] making what exists better," he says, upgrading and optimizing infrastructures where the key is portable technology, rather than investing in huge building projects.

Another water-tech company, Atlantium, which started in 2003, has brought together experts in the fields of physics, chemistry, microbiology and electrooptics to create the Hydro-Optic Disinfection System for industrial and municipal use.

The company has an ultraviolet filter system that will consistently kill microbes; it is currently being used in fish hatcheries, increasing fish production and reducing the use of antibiotics by 90 percent. The system's light is separate from the wet water chamber: Clear pipes trap the surrounding light in the water as it flows. HOD allows water to run through special quartz tubes unimpeded during lamp replacement, remaining "unfouled" by the heat produced by the purifying light.

David Waxman, Atlantium's former CEO and currently one of its directors, points out that Israel is the only place where top scientists in disparate fields can be easily brought together to work with businesses—a key to the country's high success rate in technology fields.

The challenge, adds Waxman, who also serves as the chairman of several other water-related organizations including the Water Industry Forum, is to adopt a more American model of marketing. "From day one," he says, "[we have] to get to the point where there are waiting clients for the developing technology."

Today, clients have much to choose from. The list of developing and established water-technologies includes laser-based particle analyzers used for filtration in major industry (PML); and pocket-sized drinking filters for travelers and soldiers, which eventually could be distributed by the United Nations to third-world countries to facilitate its vision of "water for every person" (Sulis). IDE's $106-million annual desalination solutions include applying the same technology to cooling mines and creating environmentally safe snow for ski resorts. Checklight's innovation is portable water-quality monitoring kits.

> From desalination to economical water filters, from portable water-quality testers to water security, Israel is the go-to country.

These solutions are attracting countries worldwide that specifically seek to contract Israeli companies to solve their diverse water issues, much as one would want to buy a Swiss watch or a German car.

Heading up much of the effort to bring together industry, academia, investors, start-ups and technological incubators—and pressing the government to set development of the water sector as a top legislative and financial priority—is Waterfronts–The Israel Water Alliance, chaired by Plastro president Ori Yogev and managed by powerhouse Mira Rashty.

One of Waterfront's achievements is the 2005 launch of Agamim 10, a cross-ministerial national program designed to encourage research and investment in water-technology incubators; promote investments in the water sector and

COURTESY OF AQWISE

innovations in municipal water infrastructures; organize international conferences; advocate Israeli involvement in international water standards committees; and advance global-marketing efforts.

Progress is also being made on the local level as well. A domestic program under the aegis of the new Water Authority, operational as of January 1, has major corporations bidding on tenders to save money and water in municipalities throughout the country, with fabulous bonuses awaiting the greatest, most innovative savers. A European Union-sponsored project on water management in cities of the future has Tel Aviv serving as a testing site for new wastewater-treatment technologies being developed jointly by the Hebrew University of Jerusalem and Mekorot.

The Water Authority is under the directorship of Professor Uri Shani of the Hebrew University's Agriculture Faculty. It will have broad regulatory and strategic powers, doing the jobs that used to fall to the more limited Water Commission and at least 10 government ministries, including industry and trade, infrastructure, finance, interior and agriculture as well as Mekorot and several other organizations.

Until the establishment of the Water Authority, decisions on water policies and projects were a bureaucratic nightmare, often made independent of those regarding their funding. Frequently, this put the Water Commission and the Finance Ministry at odds with each other.

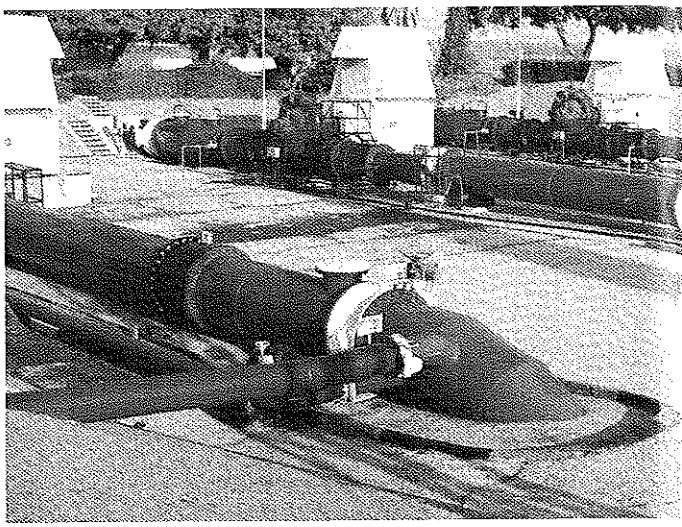
All players are hopeful that the new body, with representatives from every aspect of water management serving under one director, will bring the industry to good order, essential for the successful implementation of Agamim 10 in both its domestic and global embodiments.

It's not only the bureaucracy that can be a hurdle in these parts. Although Watech's Assaf Barnea optimistically calls Israel "the Silicon Valley of Europe" (the implication being that the Middle East is just an address), political and security issues affect the water industry, as they do everything else in the country.

Every pipe has a silver lining, though. Because of Israel's longstanding need to guard against sabotage to its water sources, the country has developed expertise in securing those sources from obvious threats. There are at least seven "elusive" start-ups related to this side of the business. They possess the know-how and technology to secure its water sources from biological and chemical terrorism. The technology is available for sale and consultancy to other nations—the EU chief among them—that look to Israel to help their cities avoid similar threats (or from polluting bio-disasters like Hurricane Katrina). This knowledge is apparently disclosed only on a strict need-to-know basis.

And then there is the even more dicey issue of relations with neighbors. Jacob Kedar, deputy director general for Middle East affairs at the Foreign Ministry and director of multilateral peace talks and water issues, points to Israel's water agreements with Jordan, signed in 1994, as a good example of successful, cooperative sharing of regional water sources. Across the board, it is acknowledged that water, specifically the joint use of the Yarmuk River, played a large part in making peace with Jordan.

The Palestinian picture is not as rosy. Although Israel does provide many millions of cubic meters of water to



Salt-Free *A water desalination plant in the Negev.*

PAUL VAZ/ISRAEL SUN

Wanted: Water Solutions

A quiet revolution is taking place in Israel, one that is being measured both in dollars and in cubic meters. Led by scientists, engineers, businesspersons, politicians, diplomats and lobbyists, here are some of the absorbing numbers they brandish about water technology:

* The world water market is currently worth $400 billion but is growing by some 7 to 8 percent each year; it is the world's 5th-largest industry. Roughly $100 billion of this annual market comprises technological solutions aimed at preempting an impending water crisis, security concerns and, crucially, conserving existing resources. Upward of 40 percent of the world's municipal water is lost to leakage.
* Israel annually exports $800-$900-million worth of water solutions. By 2010, this number will increase to $2 billion, and to $10 billion by 2020.
* Israel recycles over 70 percent of its graywater (sewage or brackish water) for agricultural use, which makes it, per capita, the world's leader in wastewater reuse. Over half of Israel's agricultural water is treated.

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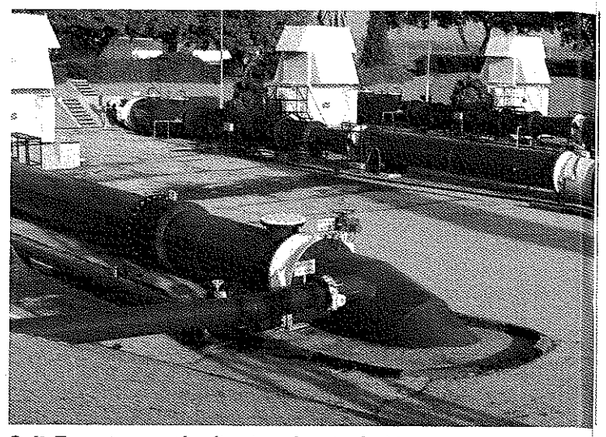
The Palestinian picture is not as rosy. Although Israel does provide many millions of cubic meters of water to the Palestinian Authority through various methods, roughly twice what was agreed on in the Oslo Accords (around 60 million cubic meters, Kedar estimates), the joint Israeli-Palestinian water committee, which decides on such things as future needs and projects and their financing, has not met since Hamas took office in January 2006. One project was the Eastern Aquifer in the Judean Desert, meant to eventually supply West Bank residents—Arabs and Jews—with 70 to 80 million cubic meters of water annually.

"The only long-term solution to regional water poverty is not joint sharing of scarce resources, but the creation of new ones," Kedar says. In fact, before the rise of Hamas, Israel offered to facilitate the building of a PA desalination plant, to be financed by donor nations, to provide about 50 million cubic meters of water annually to West Bank Palestinians; the plan was rebuffed for political reasons. According to a source in the Foreign Ministry, a similar desalination project in Gaza, to be funded by the United States, was scrapped after members of the American Embassy were killed in an infamous terrorist attack near Gaza City in 2003.

Still, even given the ascendance of Hamas, Israel tries to meet humanitarian needs in Palestinian areas, with varying levels of success. Other humanitarian efforts, such as information sharing with third-world countries like Senegal—where Avner Adin, founder of the Israel Water Association and industry guru, taught locals to build massive water filters using only layers of sand, gravel and earth—are always under way.

It's only a matter of time before Israel's liquid assets benefit all humanity. And it may not be too early to name 2007 the Year of the Water-Tech Revolution, with Israel its leading light. Investors, take note. **H**



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