

Can Israel Find the Water It Needs?



Shawn Baldwin for The New York Times

A drought has intensified Israel's water troubles. At Kibbutz Ein Zivan, farmers tore apples from trees to save water.

A SOUVENIR in the corner of Doron Ovits's office attests to the challenges of farming in Israel.

It's a mangled piece of metal, and Mr. Ovits says it came from a rocket that landed in a field recently, lobbed from the nearby Gaza Strip.

But Mr. Ovits may have a bigger long-term problem than rockets.

Israel is running short of water. A growing population and rising incomes have increased demand for fresh water, while a four-year drought has created what Shalom Simhon, the agriculture minister, calls "a deep water crisis."

The problem isn't only in Israel. Many arid regions of the globe, including the American West, are dealing with growing populations and shrinking water supplies. Global warming could make matters even worse.

In a speech earlier this year, the secretary general of the [United Nations](#), [Ban Ki-moon](#), said the shortage of water could lead to violence.

“Our experiences tell us that environmental stress, due to lack of water, may lead to conflict and would be greater in poor nations,” he said. “Population growth will make the problem worse. So will [climate change](#). As the global economy grows, so will its thirst. Many more conflicts lie just over the horizon.” Some economists suggest that arid countries should focus on growing only those crops that give them a competitive advantage, like water-sipping grapes and vegetables, and buy everything else on the world market.

But the recent volatility and high prices in commodity markets have made many world leaders reluctant to rely on global markets. Some oil-rich countries like Saudi Arabia are now shopping for farmland in more fertile countries like Sudan and Pakistan.

Others are now more determined than ever to increase their own food production, Israel among them. The question now becomes, at what cost?

“The greatest challenge we face is to try and reduce the dependence on the import of grains, whether by increasing local production or whether by making more efficient use of raw materials in feeding livestock,” Mr. Simhon said in an e-mail exchange. “This must be done, despite all limitations, mainly the lack of water.”

Israel has always been considered to be at the forefront of water efficiency in agriculture. Modern drip irrigation was invented in Israel, and Israeli companies like Netafim now ship drip-irrigation systems all over the world.

Israel has also aggressively pursued the use of treated sewer water for irrigation. Mr. Ovits’s tomatoes and peppers, for instance, are irrigated with recycled sewer water that he says is “even cleaner than the drinking water.”

For all the country's efforts though, it can't control the weather. But Israeli officials say they believe they have a solution.

Agriculture in Israel now consumes 500 million cubic meters of potable water and an equal amount of other types of water, primarily treated sewer water. The country plans to provide a further 200 million cubic meters of recycled sewer water and build more desalination plants to supply even more water.

"If the desalination and recycling projects are implemented, a lack of water is not expected in 2013," Mr. Simhon said.

But is such an investment wise for a sector that contributes just 2 percent to the gross domestic product? Some critics suggest that Israel would be better off focusing on conservation.

Others have predicted a dire future. The chief scientist in the environment ministry, Yeshayahu Bar-Or, was quoted in *The Economist* in June as predicting that global warming would cause 35 percent less rainfall, contamination of underground water sources and pollution of the Sea of Galilee, this nation's largest source of fresh water.

In the Golan Heights, Roni Kedar, 46, hopes his farm can survive long enough for a solution.

As a farmer for Kibbutz Ein Zivan, which abuts the Syrian border, he has spent the last 30 years trying to conserve water while growing grapes, apples, flowers and berries.

HIS crops are irrigated with treated sewer water and rain runoff that is captured in a nearby reservoir, which is now severely depleted. He grows plants that do not require much water and feeds them with irrigation lines that drip water directly onto a plant's roots, minimizing waste. And he is now experimenting in his apple orchards with mesh nets that may further prevent evaporation.

But because of the drought, Israeli officials have cut the kibbutz's annual quota of water. This year's cuts were particularly harsh, to 1 million cubic meters from 1.8 million, forcing Mr. Kedar to tear out some of his orchards and rip the fruit off of some of his apple trees, to keep the trees alive but preserve water.

"I don't even like to go there. It's a disaster," he said, motioning toward an apple orchard where the fruit covers the ground. "We just threw everything to the floor and hope that next year is better."

He estimated that he would not harvest a third of his fields because of the water restrictions. "The decision is really simple. You choose the part of your fields that are hardest to get water to and you destroy them."

"We just don't have enough water," he said later. "It's frustrating because you work hard to make it grow. The point is to be big and efficient enough to survive. But right now it's hard."