A Hotter Holy Land

Israel, a minute contributor to overall global emissions, could face less rain, higher temperatures, more floods and increasingly unstable neighboring regimes in the coming decades as a result of global warming. Yet the public, and most public servants, remain apathetic.

Mitch Ginsburg

The global forecast calls for increasingly warm and erratic weather. If the predictions are to be believed and the hypothesis of global warming as a human-induced malady was confirmed to a 90 percent certainty by the highly conservative Intergovernmental Panel on Climate Change (IPCC) in April and the ever cautious U.S. National Academy of Sciences in 2005 then the world will, over the coming 50 years, witness the melting of glaciers and polar ice and the rising of the seas.

The summer sunlight, no longer reflected off the ice around the North Pole, will seep into the oceans' water, warming it. Average global temperatures will rise; precipitation rates will fall. The Brazilian rainforest, the earth's largest carbon sink, will wither, further increasing our carbon emissions. These trends are predicted to progress in a non-linear fashion, each playing off the other, exacerbating the problem.

For some regions, the warming will be a blessing; for others a curse. Russia, for instance, stands to gain more than any other country from the predicted trend. A snow-free Siberia may reveal vast mineral resources and fossil fuels, as well as some of the Earth's richest soil. The United States, Canada and the Scandinavian countries all seem poised to gain from global warming; the rest, particularly the poor, will suffer. The coastal lowlands of India and Bangladesh will face monsoons and lowland flooding; the Asian tigers, like Hong Kong and Singapore, both perched by the sea, will be in danger of being overrun.

China will be menaced by drought; sub-Saharan and equatorial African countries by famine, rampant desertification and the spread of already catastrophic disease. The North Atlantic currents, which bring Europe its temperate weather, may stop pumping warm equatorial water, threatening the continent with both rising seas and a return to the frigid temperatures of 1,000 years ago.

Optimists see opportunities for Israel, once a leader in alternative energy. Innovative high-tech companies, with which Israel abounds, could make a major contribution in this area. Yavneh-based Ormat is already the world's top power in the use of geothermal energy. And Israel could harness its unsurpassed knowledge of afforestation in arid regions, an effective means of sequestering carbon. (Trees inhale CO₂, the primary greenhouse gas.) But that is just the silver lining. The increased emissions of greenhouse gases—carbon dioxide, methane and nitrous oxide, which thicken the Earth's atmosphere and bar the escape of heat from our planet—will profoundly affect this small patch of earth.

Leading Israeli climatologists and environmentalists predict that in the coming years Israel will face multiple threats with potentially devastating consequences, particularly on the country's water supply.

An increase in average temperatures of 1.6° to 1.8° Centigrade (2.9° to 3.2° Fahrenheit) would increase the rate of water evaporation by a possible 10 percent. The higher temperatures would necessitate more irrigation in agriculture, which already takes the lion's share of Israel's water, and reduce the water level in the wide, shallow, evaporation-prone Sea of Galilee. (The lake's famous "red line" was drawn in part because it denotes a mark below which the fresh water in the lake may not be able to keep the saltwater beneath it from percolating up and tainting the reservoir.)

Moreover, if greenhouse gas emissions continue unabated, we will witness a drop of 4 to 8 percent in overall precipitation, and the rains that do fall will be far more intense, increasing flooding—a phenomenon already commonplace in the low-lying areas of Cush Dan and Wadi Ara—while reducing the amount of fresh water absorbed in the aquifers. The sea level is expected to rise between 12-88 centimeters, an increase that would further contaminate the coastal aquifer—which supplies
between a third and a quarter of Israel's fresh water — and necessitate a costly infrastructural response from the cities by the sea. Less rain would also hasten desertification. Friends of the Earth Middle East researcher Karen Ruler says, "Beersheba climate could move 500 kilometers (300 miles) north within 100 years."

Finally, perhaps most critically, these climatic changes could destabilize the regimes of many of Israel's already poor, largely agriculture-dependent neighbors.

The country is already feeling some of these changes. "The main things we're seeing now are hotter temperatures and shorter winters," says Rana Samuels, a researcher at the country's leading atmospheric dynamics and climate lab in Tel Aviv University. She explains that in the future, as temperatures rise, the seas warm, creating fewer low pressure systems over the Mediterranean, which, in theory, translates into less rain.

Thus far that hasn't happened. "It's one of the paradoxes of our region," says geophysicist Prof. Pinhas Alpert, the head of the TAU climate department. "It's as though someone's watching over us."

But having studied data from hundreds of stations across the Mediterranean and analyzed the computer models, Alpert, a cautious man who completed his post-doctoral research in dynamic meteorology with world-renowned skeptic Harvard professor Richard Lindzen, says, "nine out of 10 models show that we'll see reduced overall precipitation and an increase in torrential storms" in our region.

Warmer temperatures, less rain, more flooding and shrinking water reserves will not make life impossible in Israel. "We won't watch the temperature rise and choke to death in our apartments," says Prof. Dan Robinowitz of Tel Aviv University and the chairman of Life and Environment, an umbrella group of 100 environmental organizations in Israel. "We have an average per capita gross domestic product of $20,000. We can buy our way out of our problems. But our neighbors can't."

Increasingly, global warming is being seen as a security issue. On April 17, British Foreign Secretary Margaret Beckett brought the issue of global warming before the U.N. Security Council for the first time. The Security Council is the forum to discuss issues that threaten the peace and security of the international community," she said. "What makes wars start? Fights over water. Changing patterns of rainfall. Fights over food production, land use... There are few greater potential threats to our economies, too... but also to peace and security itself."

A day earlier, the American federally funded Center for Naval Analyses released a report written by 11 senior retired generals and admirals. It presented global warming as a "grave" threat with "equally grave implications for our national security," and as "a multiplier of instability in some of the most volatile regions in the world."

The Middle East looms large in the report. Former Marine General Anthony Zinni, a special envoy to this region in 2002, foresees collapsing Middle Eastern states, which would become "breeding grounds for instability, for insurgencies, for warlords... These places act like petri dishes for extremism and for terrorist networks," he writes in the report.

In fact, some of the fiercest global conflicts of recent years should be viewed through the lens of climate change rather than ethnic strife, argues Gilad Bromberg, head of the Israel branch of Friends of the Earth Middle East (FOEIME). "Look at Darfur, it's a conflict presented on ethnic grounds, but to a great extent it's a fight over natural resources," he says, noting that Arab herders and African farmers have largely clashed over water.

**BROMBERG CAN SEE A SIMILARLY disastrous scenario unfolding here.**

Egypt, he says, has most of its population concentrated along the banks of the Nile, where many live off agriculture. With the increased likelihood of flooding in the Nile Delta, on the one hand, and severely reduced flow, on the other, they would be forced off their land. Jordan, another nation which, he notes, has a peace treaty with Israel that relies solely on the power of a strong leader, could be "dramatically destabilized" by a dwindling water supply.

The same is true for the Palestinians.

While the average Israeli uses 300 liters of water a day, causing environmentalists to blast what Robinowitz calls the "agro-colonization" of the Negev (a practice that translates into Israel exporting water in the form of tomatoes and oranges), the average Palestinian uses 60 — a figure already well below the World Health Organization's recommended minimum of 100. Moreover, while Israel's kore is deeply rooted in agriculture, its economy is not. Only 2 percent of the country's GDP comes from that influential sector. Among Palestinians, it is up to 25 percent. "We've seen bread riots in Jordan," says Bromberg. "We may well see water riots and mass destabilization."

Across the border, in Jordan, Munath Mebyar, the chairman of FOEIME, sees water as the basis for cooperation between Israel and Jordan. "Mark Twain had it right when he said that water was for fighting and thirsty for drinking," he says. Instead, he asserts that the Israeli water commission, which passes 50 million cubic meters of water to Jordan a year under the 1994 peace treaty signed between the two nations, has been the only official body to maintain ties with its Jordanian counterparts throughout the intifada years.

Bromberg agrees that water conservation and alternative energy technologies could form the basis for greater cooperation between Israel and its neighbors, but says he is sounding the alarm in order to alert Western powers to the dangers lurking behind their greenhouse gas emissions, and to stir Israel to action.

Israel itself has been slow to respond to the challenges. As a party to the United Nations Framework Convention on Climate Change...
supposed to have solar panels for water heating, saving an estimated 3 percent of national energy consumption and, in February 2007, Minister of National Infrastructures Binyamin (Faud) Ben-Eliezer announced plans to build a 250-megawatt solar energy plant in the Negev.

In addition, Israel is a party to the U.N.'s Clean Development Mechanism (CDM), which allows it, as a developing nation, to receive payment for carbon emission reduction. Thus far it has five such U.N.-approved projects running (and an additional 18 waiting for final approval), saving

the Knesset. "What we need is a national response to a global challenge." In an attempt to enliven the public before the July 7 Live Earth festivities — a series of seven concerts within 24 hours that will reach an estimated 2 billion people and raise proceeds for the creation of a new global initiative to stop climate change, which will be run by Al Gore — Khinsh recently called 10 environmental leaders together at the Heschel Center for Environmental Learning and Leadership, Israel's foremost center for environmental thought.

Talk swirled around the green conference table. One thing was clear to the participants: Almost no one in the general public is willing to accept sacrifice as part of the solution to global warming. They drafted a list of measures that could reduce Israel's carbon footprint, but Elion Schwartz, the founder and director of the Heschel Center said later that what is needed is repentance — that is, a cutback in consumption.

Schwartz sees global warming as the first post-modern disaster. That is, if once disasters were tied to wrongful human behavior, as in Noah's flood or the Ten Plagues, and then later, as a result of the enlightenment, as detached from human action, they should now be seen as intrinsically tied to human behavior within nature. "In Biblical terminology they are called plagues, not natural disasters," he says. "And they are retribution for human sins."

Still, few are willing to make amends. The public, both in Israel, where fears tend to focus on the present more than the future, and the world, have long treated the atmosphere as open, unrestricted space. In his seminal 1968 essay for "Science Magazine," Garrett Hardin compared different aspects of the environment — from over-fished oceans to rising human populations — to a common pasture. Barring specific laws for the use of the commons, he argued, each herdsmen would add as many cows as he could, seeking his own individual gain at the cost of the common good. "Freedom in the commons," he warned, in this case the atmospheric commons, "brings ruin to all."

Israel is not a small commons. It may be a herdsmen with a small but growing herd. And the commons is the atmosphere.