

## MIDDLE EAST NOTES AND COMMENT

## Clear Gold

by Jon B. Alterman

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The most likely source of political and social unrest in the Middle East over the next twenty years is not warfare or military coups—it's water. Military threats get all the press, but it's water that is the real game-changer.

It is no secret that the Middle East is a water-starved part of the world. Of the 15 most water-poor countries in the world, ten are in the Middle East. When King Abdul Aziz Al-Saud first brought geologists to the Kingdom of Saudi Arabia, they were there to look for water, not oil. What they found changed the Kingdom, and changed the region.

Over the twentieth century, wealth—and water—changed living patterns dramatically. Populations flooded into cities from the countryside, abandoning grazing and subsistence agriculture. Vegetables began to make a regular appearance in daily diets, and meat consumption grew. Populations grew, too. Governments began to talk about food security and established elaborate schemes to become self sufficient in dietary staples such as wheat and dairy products. In time, farming accounted for upwards of 80 percent—and in some cases, more than 90 percent—of water use in desert countries.

What made all of this possible was the exploitation of underground water supplies for agricultural use. Deserts and scrubland had little visible water, but massive reservoirs beneath them were able to turn the dun-colored earth green year after year.

The search for water had dominated lives in the Middle East for millennia, and the reliable supply of water was one of the most visible signs that Middle Eastern governments were making a difference for their people. Especially in the desert states of the Arabian Peninsula, governments supplied water for free, or nearly so. Suddenly, people could reliably find water to drink and in which to wash, and sanitation improved. Equally noticeably, flowers and trees began to crop up in the medians of newly built highways. In countries such as Jordan, underground water allowed fruit trees to flourish, and in Yemen, underground

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## Dairy Kingdom

Mooove over, Europe - Saudi Arabia's dairy industry is booming thanks to Al-Safi Dairy Farm, the largest in the world. Conceived in the 1970s in the midst of the oil embargo, Al-Safi is twice as large as the largest American dairy farm and houses 37,000 cows that produce more than 58 million gallons of milk a year.

Entirely self-sufficient and operational year-round, Al-Safi thrives in the middle of the desert. The milking parlors, processing and packaging plants, and distribution system are all on-site, and the farm grows enough fodder to feed all of its cows. To protect the cattle from the summer heat, pens are equipped with air-droplet cooling fans and special awnings.

This innovation comes at a high cost: in water-scarce Saudi Arabia, it takes nearly 2,300 gallons of water to produce 1 gallon of milk, nearly three times the amount required for production in the United States. In 2007, Saudi Arabia used more than 19 billion gallons of water to produce dairy products it then exported—the equivalent to seven hours worth of water crashing over Niagara Falls.

Recognizing the toll agriculture is taking on water supply, the Saudi government is phasing out the wheat subsidies that had made the desert kingdom a grain exporter. But ending subsidies doesn't solve the problem, as some farmers are switching to alfalfa, an even thirstier crop. With the Kingdom's water supply under stress, Al-Safi may not be able to produce milk until the cows come home. ■KS

## CSIS Hosts U.S. Release of "On the Road in America"

CSIS hosted the U.S. release of "On the Road in America: Season 2" on April 13, 2010. Produced by Layalina Productions in association with Visionaire Media, the television series follows four young Arabs as they embark on a roadtrip across America. Traveling from Los Angeles to Washington, DC via the Southwest, Deep South, and Mid-Atlantic states, the cast members explore issues of race relations, religion, and poverty through an Arab lens. The creators showed a short clip of the show, and Hisham Melham, Washington Bureau Chief for Al-Arabiya News Channel, moderated a subsequent panel. Melham lauded the show both for showing a complex view of the United States to Arabs, and for showing Americans how others perceive their country. Click [HERE](#) to learn more about the event. ■

water irrigated ever-growing crops of qat, the stimulant leaf around which business and socializing are structured. An agricultural revolution swept the Middle East. Water, which many always saw as a gift from God, had become a right, and water use had become patriotic.

Scholars have written about water in the Middle East for years, but many of them have been looking at the wrong end of the equation. Most of their writing has involved sharing the great river basins that dot the region: the Jordan, the Nile, the Tigris and the Euphrates. For more than a half century, diplomats have haggled over the rivers' flows across borders. They have largely been successful, and the rivers have not spawned armed conflict.

But the rivers are not at the heart of the story. Rivers are a renewable resource, refreshed every year by winter snows and spring rains. They are visible as well, and when drought hits a river, what is happening is clear early on. It is not so with wells.

The wells that feed much of the agriculture in the Middle East are a finite resource, and they are being exploited far beyond their capacity to restore themselves. Rains that fell on the earth tens of thousands of years ago are being poured into crops of cucumbers and tomatoes, figs and peaches, wheat and alfalfa. Once they are used up, they are used up.

In the early years of this century, abundant signs have emerged that the policies of the 1970s that were intended to create food security have created societal vulnerability. Wells must be dug deeper, and well water is becoming less pure. Geologists worry that a hard landing is ahead. Yemen's capital, Sana'a, may run out of water in five years; Jordan's capital, Amman, may have only 15 more years of water.

Once the water runs out, there are no good choices. Not only will agriculture collapse, but cities will find themselves hard pressed to find basic water supplies to serve their populations. Desalination is an option for some, but it is expensive and energy intensive, especially if the end users are far from the coast, at high elevations, or both.

When true water scarcity hits, the politics will go into overdrive. Water is political in any arid society, as the powerful farmers' lobbies in the American West can attest. Middle Eastern governments have rarely done well allocating scarce resources, and decades of plenty have made choices easier. That time is coming to an end.

In addition, some of the largest agricultural water users in the Middle East are also some of the most powerful families (if they aren't the ruling ones themselves), making curbs on water use especially hard to impose. Money and geography will soften the blow for some of the wealthier countries, especially in terms of providing relatively limited amounts of water for domestic use. Still, it is hard to imagine a future that does not involve the movement of millions of people, dramatic changes in living patterns, and a strong and widespread feeling of governmental failure.

The situation is not all hopeless. Revised agricultural policies, enhanced farming methods, and aggressive recycling of wastewater all would make a difference. So would efforts to improve government oversight of wells, pricing policies that encourage conservation, and renovations to water supply systems. A combination of government action and inaction has led to this problem, and only government action can blunt its most devastating effects. To be successful, Middle Eastern governments must muster all of their political will, governance skill, and leadership to create new patterns of behavior. It is a high bar for any government to meet, let alone ones whose effectiveness has often been in question, but the alternatives are truly frightening. ■4/15/10

## Links of Interest

Haim Malka was quoted by the Associated Press in "[Obama Risks Alienating Jewish Voters.](#)"

Haim Malka was quoted by the Associated Press in "[Flareup Adds to Obama's Mideast Trouble.](#)"

Jon Alterman was [interviewed](#) by the Saudi-US Information Service on regional challenges for U.S. and Saudi policymakers.

Haim Malka was [interviewed](#) by CBS News on US-Israeli relations.

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