

MAKING THE DESERT BLOOM

SHEET 1

“Camels don’t fly and deserts don’t bloom”

A decade ago, reports began emerging of a strange occurrence in the Saudi Arabian desert. Ancient desert springs were drying up.

The springs fed the lush oases depicted in the Bible and Quran, and as the water disappeared, these verdant gardens of life were returning to sand.

“I remember flowing springs when I was a boy in the Eastern Province. Now all of these have dried up,” the head of the country’s Ministry of Water told *The New York Times* in 2003.

The springs had bubbled up for thousands of years from a massive aquifer system that lay underneath Saudi Arabia. Hydrologists calculated it was one of the world’s largest underground systems, holding as much groundwater as Lake Erie.

So farmers were puzzled as their wells dried, forcing them to drill ever deeper. They soon were drilling a mile down to continue tapping the water reserves that had transformed barren desert into rich irrigated fields, making Saudi Arabia the world’s sixth-largest exporter of wheat.

But the bounty didn’t last. Today, Saudi Arabia’s agriculture is collapsing. It’s almost out of water. And the underlying cause doesn’t bode well for farmers in places like California’s Central Valley, where desert lands also are irrigated with groundwater that is increasingly in short supply. Here’s a look at what happened, and what the United States, China and the rest of the world can learn from Saudi Arabia.

Saudi Arabia’s mysteriously disappearing water came to light around the turn of the century. By 2002, the government had formed the Ministry of Water to search for answers. But the Sherlock Holmes of this story came from a surprising background.

A Saudi banker turned water detective put together the pieces in 2004 and published the now seminal report “Camels Don’t Fly, Deserts Don’t Bloom.” Elie Elhadj’s investigation revealed the culprit: Wealthy farmers had been allowed to drain the aquifers unchecked for three decades.

Beginning in the late 1970s, Saudi landowners were given free rein to pump the aquifers so that they could transform the desert into irrigated fields. Saudi Arabia soon became one of the world’s premier wheat exporters.

By the 1990s, farmers were pumping an average of 5 trillion gallons a year. At that rate, it would take just 25 years to completely drain Lake Erie.

The Saudi government’s policy largely enriched the ruling elite and resulted in a near total depletion of its precious aquifers, Elhadj wrote.

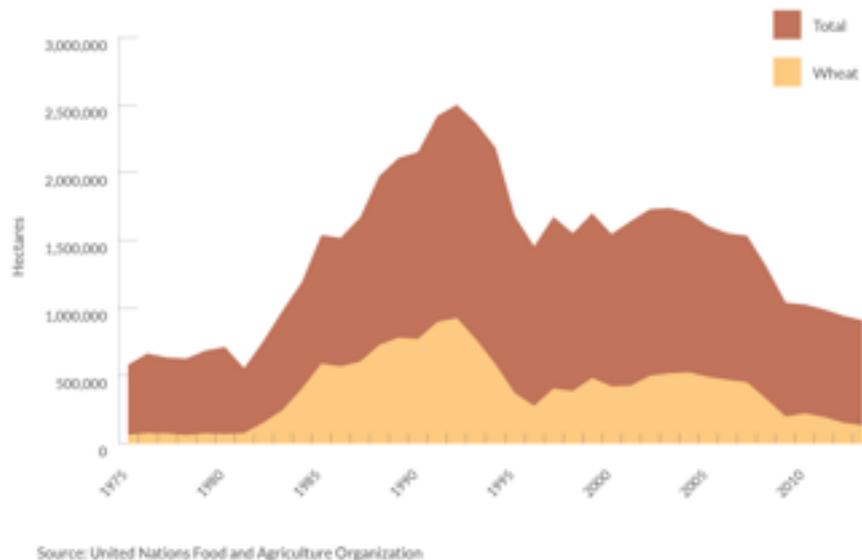
“A combination of money and water could make even a desert bloom, until either the money or the water runs out,” Elhadj said. For Saudi Arabia, it was the water.



Now the water is nearly gone. Most of that underground water came from ancient aquifers that are deeply buried and don't naturally refill for tens of thousands of years.

In the historic town of Tayma, which was built atop a desert oasis mentioned several times in the Old Testament, researchers in 2011 found most wells were almost dry. The once-green Tayma oasis that had sustained human life for millennia – archaeologists have found stone tablets there dating back 2,500 years – was drained in one generation.

Land dedicated to agriculture in Saudi Arabia, 1975-2013



The government announced next year's wheat harvest will be the country's last. The Saudis are drinking desalinated water from the ocean – a process too expensive to irrigate farmland.

Agricultural production is in free fall. The country has less than half the farmland it did in the mid-1990s, according to the Food and Agriculture Organisation of the United Nations.

Its fling as a major food exporter was nothing but a brief mirage in its long history. Instead, the government announced that to feed its 30 million people, it will rely almost entirely on crops imported from other countries.

Saudi Arabia has similar ground water conditions to Jordan.