



SEEKING WATER
NARESH KUMAR (LEFT) INSTALLS A DRILL ON A FARM IN INDIA'S PUNJAB.

India's Water Shortage

Farmers are having a harder time finding ground water to grow their crops. BY DANIEL PEPPER

JUST BEFORE DUSK, on the plains of India's northern Punjab region, 22-year-old Naresh Kumar sprinkles mustard oil, turmeric, and raw sugar inside a ten-inch circle traced in the rich soil. Hands clasped, head bowed, he prays for a bountiful supply of ground water. Then he cranks a wheezing diesel engine, lines up a drill over the offerings, and releases a lever that brings an iron cylinder crashing into the earth. "Business is growing," says Kumar. "But we've placed about as many tube wells as we can in this area."

Indeed, the ground here in India's fertile breadbasket is beginning to look like Swiss cheese. On either side of Kumar's drill the calm beauty of emerald rice paddies belies a catastrophe brewing hundreds of feet beneath the surface. As the water table drops dangerously low, farmers are investing heavily—and often going into debt—to bore deeper wells and install more powerful pumps. A prayer might just be the best chance for survival.

Punjab has only 1.5% of India's land, but its output of rice and wheat accounts for 50% of the grain the government purchases to feed more than 400 million poor Indians. Experts say the 375-foot-deep tube well and 7.5-horsepower pump Kumar is installing for a farmer are at the eye of a storm that threatens India's food security, environmental health, and economic progress. "We have depleted the ground water to such an extent that it is devastating the country," says Gurdev Hira, an expert on soil and water at Punjab Agriculture University in Ludhiana. Hira estimates that the energy used to subsidize rice production in the region costs \$381 million a year. He and other experts warn that, if left unchecked, future drilling will bleed state budgets, parch aquifers, and run farmers out of business.

The problem is not only that farmers are mining aquifers faster than they can be replenished. As water levels drop, pumps are also sapping an already fragile and overtaxed electricity grid. And because farmers in Punjab pay nothing for electricity, they run their pumps with abandon, which further depletes the water table. "All these issues are interconnected," says Saurabh Kumar, who heads the government's Bureau of Energy Efficiency in New Delhi. "But agreeing on a simple thing is asking for the moon."

That's exactly what Kumar hopes to do: Get politicians, farmers, and bureaucrats to sign on to reforms that will save billions of dollars and reduce the amount of water pumped out of the ground. A pilot program for his nationwide scheme is expected to launch early this year. Farmers will receive new, efficient pumps with meters and prepaid



electricity credits allowing them to draw roughly the same amount of water they use now and either pocket the savings if they pump less or pay to pump more. Utilities will be required to upgrade transmission lines to cut losses and improve service.

The program comes at considerable cost (about \$7.5 billion) but promises great savings (\$2.2 billion a year). Unlike many experts who say the answer to India's water and energy problems is to charge farmers the real cost of electricity, Kumar argues that "for political reasons, for the next 50 years you cannot charge for energy in the agriculture sector. There would be riots."

Farmers like Darshan Singh, 55, who grows rice and wheat on 25 acres of Punjab land that has been in his family for generations, say they would be happy to pay for electricity if it was constant and didn't burn out their pumps. "Managing water is the biggest problem we have," says Singh, who has 9½ fingers on his thick hands. "This problem doesn't just have to do with farmers—it affects everyone."

The profusion of pumps and tube wells is also a result of a lack of infrastructure investment in rural areas. "No new irrigation potential has been created for about 20 years," says Mohan Guruswamy, who runs the Centre for Policy Alternatives in New

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Delhi. "The state prefers to dole out subsidies rather than make capital investments."

India's power sector loses as much as \$9 billion a year subsidizing farmers' use of electric pumps. That's half of what the country spends on health and twice what it spends on education. Says Shreekanth Gupta, a professor of economics at Delhi University: "It's a classic example of bad economic policies having serious environmental consequences." ■

Wal-Mart Banks On Mexico

THE RETAILER IS PUSHING SAVINGS ACCOUNTS FOR LOW-INCOME CUSTOMERS.

TOLUCA, A SPRAWLING INDUSTRIAL TOWN near Mexico City, is an unlikely place for Wal-Mart's maiden push into banking. But there, in a strip mall, beside a bakery and a beauty parlor, Norma Pacheco is mulling a Wal-Mart account. "I'd use it to pay for my Wal-Mart purchases," says Pacheco, a 42-year-old engineer. "The brand gives me confidence."

Pacheco isn't the client Wal-Mart de México is ultimately after. Mexico's biggest retailer, with 668 stores, wants to crack the low-income market in a country where just 24% of households have savings accounts, compared with 55% in Chile. Wal-Mart plans to boost sales via debit cards, later ease users into more profitable services like insurance, and make money on interest-rate spreads.

Early signs are promising. Héctor Aguila, the bank's manager, says that about 40% of the new clients who have signed up at dedicated desks in the store since the bank's November launch have never had an account of any kind. Wal-Mart's mission is to lure newcomers with easy instructions and entry points, like minimum balances of less than \$5 and no commissions, compared with \$100 minimums at competing banks. (But interest rates are only 1%, half what most banks pay, and Wal-Mart's annual rate for consumer loans is 75%.) The retailer, which opened three branches in Toluca, plans to have as many as 80 by the end of the year, before an even bigger push in 2009.

Wal-Mart, which has been thwarted from getting into commercial banking in the U.S., is also eyeing the \$23 billion remittances market—the amount sent home every year by Mexican immigrants in the U.S. Because it forged a cut-rate deal with MoneyGram, Wal-Mart is outpacing the overall growth in the money-transfer market, says Robert Dodd, an analyst at Morgan Keegan, but its share remains tiny. The retailer says it has no plans to revisit the U.S. bank market soon, though Jan Smith, managing director of InfoAmericas in Miami, says Mexico is "a good dress rehearsal."

Wal-Mart isn't the first bank to court Mexico's low-income earners. In 2002 appliances retailer Grupo Elektra started Banco Azteca. Today it has nearly 1,500 branches and more than seven million savings accounts. A spinoff from microfinance firm Compartamos followed in April with similar services and an IPO that was 13 times oversubscribed. But Wal-Mart's broad appeal, high traffic, and low fees give it an edge, analysts say.

The retailer's entry into Mexican banking follows reforms by the Calderón administration, which wanted to make it easier for low-income earners to open accounts. Now other big banks may try to get in on the action. Says HSBC corporate accounts manager Julius Cardoza: "We're curious about Wal-Mart's strategy." —Carolyn Whelan



CHECK IT OUT WAL-MART OPENED ITS FIRST IN-STORE BANK IN TOLUCA, MEXICO, IN NOVEMBER.