

Big Gulp

A massive Indian irrigation project is indicative of the costs and rewards of a global obsession with water resources. Closely held MEIL is awash with business. **By Megha Bahree**

IN THE REMOTE hills of the southern Indian state of Andhra Pradesh, privately held engineering firm Megha Engineering Infrastructure (MEIL) is drilling tunnels. These will be used to pipe water to one of the world's largest irrigation projects.

Andhra Pradesh, the second-largest rice producer after West Bengal in a rice-eating nation, is as susceptible to the vagaries of the Indian monsoon as the rest of the country. This project is the state and central government's attempt at simultaneously securing the region's food and water needs. Once completed it will add 11 million acres to the existing 13 million acres under irrigation in Andhra Pradesh.

The five-year, \$16 billion project has two parts. First is interlinking two of the major rivers in the state to transfer excess water from the one that usually overflows, Godavari, to the one that tends to run low, Krishna. The other part is to capture more of the water flowing to the sea from these rivers, especially from Godavari as at least 60% of its water goes on to the ocean. This water will then be moved through lift irrigation, where a series of pumps pushes the water up via these tunnels so it can be piped to farmers and villages situated on upper

reaches of the area—free of cost.

The undertaking is only part of the massive Indian push to manage water resources. Such activity means burgeoning business for domestic outfits like MEIL—it says revenues grew from \$34 million to \$464 million in three years and should hit \$700 million in the current one—as well as a venerable multinational like ITT Corp.

(In a separate project in another part of the state the government is building a dam to link further the two rivers. It will submerge 276 villages and displace at least 150,000 people.)

The River Interlinking Project appears settled as official policy but, this being India, is of course not free of controversy. The Godavari, which emanates in Maharashtra state, flows across India and drains into the Bay of Bengal at Rajahmundry in Andhra Pradesh. The International Water Management Institute, headquartered in Colombo and funded by 60 governments, says the Godavari doesn't have surplus water, the main assumption behind this project, and three-crops-a-year paddy farmers will suffer.

India's water ministry disagrees on both counts, citing detailed studies.

"This is almost like moving a river," says P.V. Krishna

Reddy, MEIL's chief executive, and ordinary pipes just aren't big enough to do the trick. As a result the company is drilling two tunnels 120 kilometers long and 10.5 meters wide. Nor are ordinary pumps good enough. ITT has specially designed pumps large enough to power this water up to 500 meters uphill. This piece, which is known as the Pranahita Chevella project, will divert water to a tributary of the Godavari across 320 kilometers. At peak of the monsoons the pumps will require juice of 3,500 megawatts, which in India can power 1.2 million homes for a year. It will irrigate 1.6 million otherwise fertile acres, mostly in small plots, which are uncultivated or good for only one crop a year, at best. En route the flow will also supply water to villages for drinking and to growing business in Hyderabad.

The famous ITT conglomerate today has three main businesses, including fluid technology, which makes wastewater treatment plants and pumps. This unit, with \$3.2 bil-

RAJAT GHOSH FOR FORBES (2)





"Like moving a river": MEIL CEO P.V. Krishna Reddy and Samir Yamdagni of ITT India.



lion in revenues last year, is making bigger forays into India, where it has 200 staffers, and other parts of the developing world. "All around the country there's a dire need to treat wastewater and provide the populations coming into growing cities with clean water, and this is a huge opportunity for us," says Samir Yamdagni, president of IIT's India operations.

Of all fresh water, 70% is used in agriculture, 14% for personal needs and the rest by industry. A world population expected to balloon to 9 billion by 2050 has sparked

concern that human demands will severely strain the planet's water resources. Last January at Davos a World Economic Forum report saw impending crisis—a possible loss by 2025 of annual global yield equivalent to the combined grain crops of India and the U.S. (30% of world cereal consumption), even as appetites grow.

On the supply side the report declared that glaciers, which act as huge water banks, could disappear by the year 2100. The snowcap of the Himalayas and Tibet alone feeds seven of the world's greatest rivers and pro-

vides water to more than 2 billion people.

However, an Indian engineer who has advised governments on water management for nearly four decades, advises calm. "There is enough water until 2050 and even 2060," says Asit Biswas, who runs a think tank, Third World Center for Water Management, out of Mexico City. "The main problem is the way we are managing our water is abysmally poor in most countries. . . . Water isn't like oil, that once you use oil it breaks up and can't be reused. Water is renewable and can be reused umpteen times. You [companies and governments] get much more mileage by saying there's a water crisis." (See box.)

China has the world's fourth-largest surface and groundwater resources, but with its 1.4 billion people the supply per capita is only a fourth of the global average. Beijing is hoping the answer lies in the South-to-North Water Transfer Project, where it is attempting to move Yangtze River flow in the south to the arid northern area, including the Yellow River, the Huai River and the Hai River basins. The Huang-Huai-Hai area, as it's known, houses 35% of the country's population and contributes 35% of GDP but has only 7% of its water. Although the project has no hard cost attached to it yet, it is estimated to run into tens of billions of dollars. (This follows on the similarly huge and controversial Three Gorges Dam, the world's largest hydroelectricity project, which has displaced 1.9 million people, flooded archaeological sites and increased the risk of landslides.)

Crisis or not, the Indian urgency is a gold mine for MEIL, headquartered in Hyderabad. Nearly 60% of its revenues come from water-related projects, and it has an order book of \$5 billion, says Reddy. Last year it earned \$31 million.

The founder and now chairman, P.P. Reddy, Krishna's uncle, belongs to a family of farmers from the outskirts of Vijayawada, a busy commercial city in Andhra Pradesh. He moved to Hyderabad and launched his business in 1989 with \$40,000. It started making small pipes for municipalities, and in 1991 he was joined by his nephew Krishna, then just 20. Today MEIL's engineers range across sectors and all but have a lock on lift irrigation schemes. **F**

NO FREE LUNCH DRINK

Asit Biswas, 70, visiting professor at Singapore's Lee Kuan Yew School of Public Policy, has advised six heads of UN agencies and 18 governments on water. He contends that 40 years of studies show no sign of a crisis because of a physical lack of water. "Crisis is not because of a scarcity of water but because of the current and past terrible management practices," he says. He has a simple solution: Water must have a price, as that is the only way people, and industry, will use it prudently.

In India the agriculture sector gets water nearly free of cost. Farmers have to pay only a paltry \$20 per 100 acres, money that goes usually toward the maintenance of their distribution network. People in rural areas and small towns don't pay for water, and it's only in the bigger cities that residents—those who are on the meter and aren't stealing water—pay for what they use. The World Health Organization recommends a poor family should not spend more than 3% of its monthly income for water. "In the rich countries very few people, if any, pay 3% for their own consumption," says Biswas. "So if something's recommended for poor countries, the richer ones can immediately afford to do that."

Biswas loves to give the example of Phnom Penh. In 1993 the city's water authority was broke and only the really rich had access to clean water. Yet 72% of water being piped out of the reservoirs was unaccounted for. That year a new manager took over and instituted a tiered system of payment: If your household consumption was not more than 7.5 cubic meters per month (this would take care of water required for drinking, cooking and some hygienic needs of an average family of eight), you paid a subsidized rate, but if your monthly consumption was more, you paid a market rate. Today everyone in the city, including in the slums, has access to potable water, only 7% of the water is "lost" (comparatively, in London 28% of the water is not metered or billed for) and the public utility is making money. —M.B.



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