

## From New Delhi by Susan Maitra

### Ground water potential highlighted

*South Asia has enormous water resources that could give growth a quantum boost.*

**S**outh Asia has the best and most extensive underground water resources in the world, and the Upper Gangetic plain alone has some 26 billion acre-feet of fresh water in storage, Paul H. Jones, an international expert on ground water, told a recent seminar in Washington, D.C.

"The resource development potential of deep aquifer systems of South Asia appears to be very large, and the economic feasibility of large-scale development appears favorable," Dr. W. David Hopper told the same seminar. Hopper, World Bank vice-president for South Asia, added that large-scale deep aquifer development could benefit 500 million people living in the Ganges, Bramaputra, and Irrawaddy river basins by providing a reliable source of agricultural, industrial, and drinking water.

The two-day Washington, D.C. seminar, organized by World Bank special adviser A. H. Shibusawa, focused on advantages of ground-water development in various parts of the world.

It was not the first time the enormous benefits and, indeed, the urgency of tapping ground water resources in the Gangetic plain have been addressed. There have been persistent voices in India urging this line of action, and in April 1985, a two-day seminar sponsored by *Fusion Asia* in New Delhi on India's economy featured a proposal for comprehensive development of the Ganges basin, in particular its ground water resources.

"We need a 'task force' approach

to the problems," *Fusion Asia* editor Ramtanu Maitra said. "Taking the valley as a whole, we need to formulate a comprehensive water-management program—including most emphatically the ground-water as well as surface-water subsystems. This program must be the basis for systematic development of the enormous economic potential of this mighty river and the basin it defines. As a first step, a time-bound professional technical survey of the basin as a whole should be undertaken."

More recently, in a talk here on India development perspectives for the year 2000, former Reserve Bank governor R. K. Hazari emphasized the potential of Ganga basin ground-water development. Hazari pointed to this project in a plea to shift the focus of planning from "preoccupations with accounting to a more visionary outlook for programs of wholesale transformation."

Exploitation of ground water resources in the Ganges and Bramaputra basins, he said, "would completely alter the poverty and unemployment situation in Uttar Pradesh, Bihar, Madhya Pradesh, Orissa, and, provided adequate care is taken of extension, marketing, processing, and transportation, it would also generate large agricultural surpluses for export."

Presently, the Ganges basin, with nearly half the population of India and dominated by subsistence agriculture, is perhaps the single biggest drag on the overall economy.

Water management has been a part

of India's development efforts from the outset, but so far it has been approached in a narrow, piece-meal fashion and results have been far below potential. Nowhere has the river-basin system of the Ganges, for instance, been looked at as an ecological whole, much less from the standpoint of leveraging overall economic development.

A study, "The Ganges Water Machine," by Harvard professor Roger Revelle and Z. Lakshminarayana of the Indian Institute of Technology in Uttar Pradesh, threw light on the potentials of the basin water system in 1975. The study showed how, with a program of ground-water pumping during the dry season and use of underground aquifers to store monsoon flows in the rainy season, maximum use could be made of the river system's total water resources, 80% of which are presently unused.

But it doesn't seem to have made much of an impact here, where the central ground-water board, just one of a plethora of water-related agencies, is still plugging away on a "hydrological survey" it doesn't intend to finish until 1995!

Now, however, the tide may be turning. Already, a committee set up by the Reserve Bank of India to look into the question of agricultural credit has recommended that before acting for construction of high storage dams in the Himalayan region, the technical feasibility of tapping deep aquifers, 4,500 feet or more, in Eastern Uttar Pradesh, Bihar, and West Bengal, must be explored.

In particular, the area between Kosi in Behar and Saizabad in Uttar Pradesh has been identified for development. According to newspaper reports here, the exploratory part of the program, in which modern drilling tools are to be utilized, has been estimated at \$23.8 million.