

## WATER MANAGEMENT KEEPS FARMERS AFLOAT

Byline: Goswami, Rahul

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HYDERABAD, India, Jul. 22 (IPS/GIN) -- Narayan Reddy, a sorghum farmer in the central Indian state of Andhra Pradesh, pointed out two wells adjoining fields near his village. "There's still some water in them at the bottom," he said with some pride. "If we hadn't built check dams and percolation tanks, we would have had none."

Those water management techniques have indeed helped Reddy's village of Kothapally, which is home to about 1,500 people and lies about two hours away by road from Hyderabad, the state capital that is considered India's biotechnology hub.

Reddy though had more on his mind than biotechnology aspirations when IPS met him. "If it doesn't rain soon we're in trouble," he said. "It's been two years of below-average rain and this village at one time had people migrating away. No rain and that could happen again."

The region does not get very much rain at all - about 760 mm a year, which hardly compares with, say the Konkan coast in western India, for which 3,500 mm a year is routine. Even so, the structures the villagers built have helped recharge the groundwater table around Kothapally.

In part, they have been designed according to a water management model promoted by the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), which is one of the 16 global centers of the Consultative Group on International Agricultural Research (CGIAR).

The management of the village's watershed, which began in June 1999, has increased water levels, expanded green cover and enhanced productivity of crops, particularly of maize and sorghum, says ICRISAT.

Spearheaded by the crop research institute and including a consortium of partners, like the state government's Drought-Prone Areas Programme and the Rural Livelihood Programme, and centrally- run bodies like the Central Research Institute for Dryland Agriculture and the National Remote Sensing Agency, the Kothapally project has become a model of watershed development.

Now, Reddy and his neighbors seem used to visitors descending upon them, displaying varying levels of interest in the systems and structures of rural Andhra Pradesh.

But it is not really as rural as it seems out there in the fields of chickpea, maize and pigeonpea. The industries that surround the state capital - where the farmer's children seek to make their careers - lie just over the horizon.

One of his sons, he told IPS, has an MBA degree. Of the rest he said: "They work in Hyderabad and aren't as keen about farming as I am." Reddy said they have jobs in the city and are considering setting up businesses of their own.

Kothapally is blessed with rich black soil but little rain. It is not a poor village - according to ICRISAT the watershed programme has increased farmer incomes in the village to about 20,500 rupees (about \$445 per hectare). The village children look healthy, are well clad and bright-eyed. Yet water is a luxury, which is why Reddy uses drip irrigation too in his fields: "It's worked well, and the government subsidy makes it affordable."

Then there's the compost that he feeds his sorghum crop with. Prepared from farm waste by vermiculture, it costs Reddy four rupees a kilogram, but he knows his money is returning to the village economy - the group of women that maintains the vermiculture shed say they can save up to 30 rupees a day from their sales.

The water management project had initially focused on implementing soil and water conservation measures and crop improvement techniques for individual farmers.

An ICRISAT scientist said that when the project group first spoke to the village residents about trying out their techniques, Reddy had carefully sized them up, apparently gauging their sincerity before agreeing to cooperate. Thereafter, they contributed to build community structures.

The enhancement of food productivity, said Jayanta Bandyopadhyay, professor at the Center for Development and Environment Policy of the Indian Institute of Management in Kolkata, "is both needed and possible, without any extra drop of water being used for irrigation".

"If only India can increase its food productivity by a small fraction and improve its distribution, food security for all people can be assured," Bandhopadhyay told a group of South Asian journalists here at a workshop last month on water and sanitation for the poor.

The meeting was organized by the Geneva-based Water Supply and Sanitation Collaborative Council and the Forum of Environmental Journalists of India.

Of particular interest, added Bandhopadhyay, is how enhanced water-use efficiency in irrigation may be

another way of increasing food production. Indeed, according to ICRISAT, the Kothapally project is being replicated in China, Thailand and Vietnam with funding from the Asian Development Bank.

Narasimha Reddy, resident of the village watershed association, explained how food production can be dramatically increased.

"Much of our farm area was under cotton cultivation," he said. Kothapally and the surrounding regions contain black soil, where traditionally cotton has been grown. "But with this crop there were more expenses and less benefit." The village elder also points to lower insecticide use as a cost saving.

"Now we intercrop maize and chickpea, which gives us higher profit and helps control pests," he went on. "We use an extract of the "neem" seed to spray crops, and have planted a variety of pigeonpea that is high-yield - where earlier we harvested 50 kilogram per acre today it is 500 per acre."

Just as important for the village and the farmers is the improvement at the catchment level. The more than 100 water- harvesting structures the village has constructed can capture an extra 15,000 cubic meters of water.

That can make the difference between a good and a bad crop for many of the village's farmers - or the difference between a degree and none for a farmer's son.

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