Photo Credit: Chhandak Pradhan/IWMI

successstories

Issue 14 - 2012

Boosting water benefits in West Bengal

Agricultural growth in West Bengal had slumped by more than half. As Eastern India's most populous state it was critical that scarce land resources were made as productive as possible. Research identified that a major hindrance to agricultural productivity was getting access to groundwater which, unlike in some other parts of India, is plentiful. New policies recommended by IWMI were adopted to improve groundwater access for smallholder farmers.

IWMI
International
Water Management
Institute

Photo Credit: Chhandak Pradhan/IWMI

Under previous groundwater regulations, many poor farmers in West Bengal were forced to water by hand. The reformed policy should open up new opportunities.

Groundwater gold rush

In India, pumping aquifers for agriculture is growing at an astonishing rate. The country has an estimated 20 million tube wells, and a new one is dug every 15 seconds. The consequences of this groundwater boom have been mixed. Productivity gains have come amidst concerns over long-term sustainability. This is especially true in the semi-arid areas of western and southern India.

However, in the Ganges Basin of eastern India water is more plentiful. Here, actively encouraging groundwater use can benefit small farmers without significantly affecting sustainable supplies.

With a population of 91 million, West Bengal is eastern India's most populous state and land is scarce. In order to sustain such a large population, farmers need to harvest two to three crops per year. Given the climate, this is entirely possible, but access to water is often a limiting factor. Tanks and ponds in the state are often dry by January leaving little surface water available for crops until the monsoon rain starts in June. This makes groundwater a vital resource during the dry part of the year.

An appropriate response?

The state government's groundwater legislation of 2005 compelled farmers to apply for permits for using tube well pumps. The intention was laudable: achieving sustainable groundwater use and maintaining an inventory of wells. However, applying for a permit was costly and time consuming. As a result, most poor farmers were forced to hire expensive diesel pumps for irrigation. Agricultural growth in the state slumped from 6% per annum in the 1990s to just under 2%.

A research team from the International Water Management Institute (IWMI), led by Dr. Aditi Mukherji, was asked to help. Using data collected during several years of fieldwork, the team conducted a detailed analysis of the situation, looking at the economics of smallholdings, farmer behavior, and the costs and benefits of the various options for providing groundwater to small farms.

"Based on our research, we suggested that the authorities scrap the permit system for small pumps," says Mukherji. "The existing system was not really appropriate in a region where agricultural water scarcity is rare. Groundwater aquifers in West Bengal are regularly replenished by monsoon rains and their productive use should be encouraged."

A further proposal was made to introduce a fixed fee for connecting a tube well to the electricity grid. "Previously farmers had to pay for the full cost of wires, poles and transformers; something that most urban customers did not have to do," says Mukherji. "This was prohibitively expensive for many smaller farmers, especially if they were far from the existing electricity supply line."

Policy change

The policy recommendations were presented to the Water Resources Investigation and Development Department (WRIDD) in September, 2011. Within two months the state government had accepted both propositions, scrapped small pump licenses and introduced a flat connection fee.

"The research of IWMI has been crucial in bringing the policy changes," said Subrata Biswas, Secretary of the WRIDD of the Government of West Bengal. "Existing permit holders had acquired a monopoly over groundwater, creating a sense of scarcity among farmers. However, water resources are best managed when all the local community is involved in decision making"

Drawing on IWMI's research in the west of India, further investigation is needed to find out what effect these changes will have on the power sector and on groundwater levels generally. "Policy changes like these need to be tailored to local needs," says Mukherji. "There is no one-size-fits-all solution to sustainable groundwater use."

Donors and partners

Bill and Melinda Gates Foundation, CGIAR Challenge Program on Water and Food (CPWF), International Initiative for Impact Evaluation (3ie).

For more information

Contact Aditi Mukherji (a.mukherji@cgiar.org) at the New Delhi office of IWMI.

International Water Management Institute

All IWMI Publications are available online free of charge at www.iwmi.org/Publications
Comments and questions are welcome. Please contact us at: IWMI-Publications@cgiar.org
Publications Unit, International Water Management Institute, PO Box 2075, Colombo, Sri Lanka
Tel: +94 11 2880000 Fax: +94 11 2786854

www.iwmi.org

Improving the management of land and water resources for food, livelihoods and the environment