



Photo Credit: Paul Pavelic

Influencing irrigation policy in India

A new trend

India has a long tradition of irrigation, but in the past 40 years a new trend has emerged. As the infrastructure and management of large-scale irrigation schemes have deteriorated, farmers have begun taking water supply into their own hands by extracting groundwater, which has become the mainstay of agriculture in 85% of India's farming areas outside large canal commands. Many are now growing a wider range of crops than the old staples of rice and wheat, and so require a water supply that is more flexible than the old supply-driven schemes. However, with millions of farmers pumping water from tube wells when and where they choose, groundwater supplies are rapidly shrinking.



Over 80% of irrigated agriculture in India is supported by groundwater.

Research into action

IWMI began working extensively in India from 2000, when the first five-year phase of the IWMI-Tata Water Policy Program (ITP) began. Indian institutions already had considerable scientific data related to irrigation but little knowledge of how to use this to influence policy. IWMI's involvement was aimed at bridging this gap. The ITP put together a team of 30 or so social scientists and management graduates and set about finding ways to meaningfully integrate centrally managed irrigation systems with the new trend for intensive groundwater use.

One impact of IWMI's involvement was that, through its global research remit, researchers helped Indian policymakers learn lessons from efforts to overhaul irrigation schemes in China, Mexico and Africa. A second impact was that it brought the topic of groundwater use in India to the center stage of the irrigation debate for the first time.

The Indian Government allocated US\$400 million to fund well recharge projects in 100 districts in seven states where water stored in hard-rock aquifers has been overexploited. These geological formations have a much lower capacity to store rainwater than alluvial areas with porous sand or clay rocks, and hence were given priority. The money will pay for seven million structures to divert monsoonal runoff. The structures include a desiltation chamber, plus pipes to collect surplus rainwater and divert desilted water from the chamber to the well. Small and

marginal farmers will receive 100% subsidies for the equipment, with others receiving 50% subsidies. So far, Tamil Nadu, Maharashtra and Gujarat have begun using the fund to implement groundwater recharge programs.

A leading light

IWMI has recently been working with senior policy managers in the Indus-Gangetic and Yellow River basins through its large projects, *Ground Governance in Asia* and *Basin Focal Project for the Indus-Gangetic Basin*. These research projects involved analyzing the physical, socioeconomic, governance and policy perspectives of groundwater to see how it can be used in a productive and sustainable way. The work has helped decision makers to think seriously about groundwater exploitation issues, emulate strategies adopted by more mature groundwater economies and form some effective groundwater management policies.

One such policy was the *Punjab Preservation of Sub-Soil Water Act 2009*, which was enacted by the Directorate of Agriculture, Government of Punjab. The Act helped achieve water savings of 7% in annual groundwater draft, by mandating farmers to delay paddy transplanting until after the 10th of June to avoid the extremely high evaporation in early summer. IWMI's estimates show that such an act has the potential to annually save 2,180 million cubic meters of water and 175 million kilowatt-hours (KWh) of energy used for pumping this groundwater. As a result of IWMI's successes in India over the past decade, the Planning Commission of India has now issued a formal invitation to IWMI scientists to write a forward-looking paper on what the future of government irrigation projects should be as well as how to rationalize the Accelerated Irrigation Benefits Program – the vehicle through which the central government provides funds to states for irrigation development.

Donors and collaborators

The IWMI-Tata Water Policy Program is supported by the Sir Ratan Tata Trust. IWMI's principle partners and collaborators for its work in India are the Indian Council of Agricultural Research (ICAR), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and a host of state irrigation departments, agricultural universities and non-governmental organizations (NGOs).

For more information

IWMI report:

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