

## Outcome Story 1

### Managed Aquifer Recharge Plan Accepted for Implementation by the Government of Gujarat

#### The Outcome

A report on managed aquifer recharge produced by a state task force chaired by IWMI Senior Fellow Tushaar Shah represents a new direction for irrigation policy in India. The plan, approved by the Water Advisor to the Chief Minister for the State of Gujarat, recognizes groundwater, along with rainwater harvesting, as the basis for sustainable agricultural productivity and marks a significant departure from the decades-long focus on irrigation based on surface water. The report includes an implementation plan with a budget of Rs 3,500 crore (US\$ 700 million).

Over the past eight years, IWMI scientists working under the IWMI Tata Water Policy Program have been researching groundwater depletion and recharge issues in India. In response to recent media coverage of IWMI Tata publications, Tushaar Shah, head of the program, was invited by the Water Advisor to the Chief Minister of Gujarat to chair an Expert Committee on Increasing Groundwater Recharge. The Committee's report entitled "First Approximation Report to Increase Ground Water Resources through Artificial Recharge in Gujarat State" was published in August 2009.

The input made by IWMI is demonstrated by the influence of a number of IWMI publications which fed into the Expert Committee's managed aquifer plan. These publications arose from work on MTP Project 3: Groundwater Management, in the 2005-2007 MTP, specifically the analysis of aquifer characteristics and groundwater depletion patterns in Gujarat; assessment of the availability of uncommitted surface water resources in the state; economics of Managed Aquifer Recharge in Gujarat; and estimation of energy savings in pumping through MAR.

#### Documenting Outcomes

Coverage of IWMI-Tata work in the Indian Express, September and October 2009, both of which quoted IWMI scientist Tushaar Shah and which led to the invitation:

<http://www.indianexpress.com/news/deep-pumping-has-led-to-groundwater-deficit-of-30-billion-cubic-metres-report/512724/0>

<http://www.indianexpress.com/news/task-force-suggests-fourpronged-strategy-to/531646/>

Government of Gujarat, Narmada, Water Supply and Kalpasa Department (2009) First Approximation Report to Increase Ground Water Resources through Artificial Recharge in Gujarat State. Prepared by a Government of Gujarat appointed Task Force, chaired by Tushaar Shah, IWMI.

You Tube video

[http://www.youtube.com/watch?v=00BUcujrnko&feature=player\\_embedded](http://www.youtube.com/watch?v=00BUcujrnko&feature=player_embedded)

### **Significance and Magnitude**

The plan specifically recommends construction of 21,200 percolation tanks, 22,400 recharge wells and 23,600 check dams, and modification of 42,000 existing wells. This is to be followed by a plan to store 3,520 million cubic meters of water which runs off due to flooding of the Narmada River each year. Benefits of the plan, accepted in principle by the Government of Gujarat and now being piloted, will reach some 1.8-2 million small farmers living on 4 to 5 million hectares of land in Saurashtra, Kutch and North Gujarat regions in terms of improved groundwater regime and reduced dependence on energy for pumping groundwater.

A number of other state governments have expressed interest in managed aquifer recharge following positive media coverage and a TV9 Gujarat broadcast of a speech by Indian parliamentarian Sushma Swaraj crediting the work of IWMI scientists, Tushaar Shah in particular, as the basis for Gujarat's impressive agricultural growth.

The outcome relates to the following CGIAR research goals:

- Promoting opportunities for economic development and through agricultural diversification and high-value commodities and products;
- Ensuring sustainable management and conservation of water, land and forests; and
- Improving policies and facilitating institutional innovation.