

Outcome Story 4

Improved Groundwater Governance – Development of the Punjab Preservation of Sub-Soil Water Act

The Outcome

IWMI research outputs were the basis for the development of the Punjab Preservation of Sub-Soil Water Act, 2009 enacted by the Directorate of Agriculture, Government of Punjab.

The Act includes a penalty clause for non-compliance which is enforced by officials from the Irrigation Department.

Documenting Outcomes

The project Capacity Building through Action Research in Indo-Gangetic (IGB) and Yellow River (YRB) Basins was an inter-disciplinary training program with a practical toolkit for improved groundwater governance in different socio-economical and physical settings. It was aimed at senior officials from government and civil society, media and academia. The lectures and course material given during the training program created awareness among the participants about the importance of groundwater management and the need for effective legislative instruments to facilitate this effort.

The architect of the Punjab Preservation of Sub-Soil Water Act, Dr Balwinder S. Sidhu, Director of Agriculture, Punjab, was a participant in IWMI's five-month international training program on theory and innovative practices for groundwater. Through this program, which included field work in India and Australia, Dr Sidhu recognized the need for legislation for effective management of groundwater resources and for strict enforcement of that legislation. The enactment of the Punjab Preservation of Sub-Soil Water Act was a result of this influence.

Groundwater managers from India, Pakistan, Nepal, Bangladesh and China. Also participated in the training. The program exposed the participants to action research and field visits in 15 locations in 5-different countries including Australia and the USA. The key message was that appropriate legislative instruments are needed to moderate excessive GW withdrawals in north-western India. Participants from the five countries have influenced the changes in the existing groundwater policies of their countries, mainly to recognize groundwater as the main source of water for irrigation.

The Act is titled "The Punjab Preservation of Sub Soil Water Act 2009", Punjab Act No. 6 of 2009 notified by Department of Legal and Legislative Affairs, Punjab on the 28th April, 2009 and registered as No.7-Leg./2009.b

Key publications used in the training program:

- Capacity building Program on "Groundwater Governance" for Senior Fellows; available at www.waterandfood.org/gga

- Mukherji, A., Villholth, K.G., Sharma, B. and Jinxia Wang. 2009. Groundwater Governance in the Indo-Gangetic and Yellow River Basins: Realities and Challenges, International Association of Hydrologists Selected Papers, Vol. 15, CRC Press/Balkema, Taylor and Francis Group, London.

Significance and Magnitude

The Punjab Preservation of Sub-Soil Water Act, 2009 helps effect water savings of 7% in annual groundwater draft through mandatory shifting of the transplanting dates of paddy to avoid the high evaporation rates in early summer. Estimates show that the Act has the potential to achieve annual savings of about 2,180 million cubic meters of water and 175 million KWh of energy used for pumping groundwater

The Act has been successfully implemented and has shown positive benefits to check the over-exploitation of groundwater resources. Irrigation Department officials applied what they learned in the training program to formulate and implement a number of interventions, policies and regulatory laws, including a program on precision leveling through laser assisted levelers to improve application of irrigation water. See <http://ageconsearch.umn.edu/bitstream/57482/2/6-Karam-Singh.pdf> and <http://www.tribuneindia.com/2009/20090605/punjab.htm#1>.