



Improving water use for dry-season agriculture by marginal and tenant farmers in the eastern Gangetic Plains

Overview

This project is improving the livelihoods for woman, marginal and tenant farmers in the eastern Gangetic Plains through improved dry season irrigated agriculture.

The eastern Gangetic Plains, which include the Nepal Tarai, Bihar and West Bengal regions, is one of the most densely populated and poverty-stricken belts in South Asia. Behind this persisting poverty are deeply entrenched social structures of class and caste, with a high incidence of inequitable landlord-tenant relations. This is combined with poor access to irrigation water in the dry season, limited irrigation capacity and low agricultural innovation.

There are strong linkages between poverty and access to water. At present technical, social and economic constraints have limited the effective use of groundwater and ponds for irrigation, and large areas of land remain fallow during the dry months. Access to year-round water for irrigation would significantly promote the productivity of agriculture, improving incomes and food security.

Research

The key elements of the project are to:

- » determine existing water resources and sustainable utilisation for irrigation from tanks and groundwater.
- » determine the socio-economic, structural and institutional constraints to sustainable water use.
- » determine and evaluate approaches for access to water for irrigation focusing on using renewable technologies and alternate approaches to land tenure and their impact on livelihoods and resilience
- » facilitate long-term up-scaling and out-scaling of approaches and alternative opportunities.

ACIAR project number	LWR/2012/079
Start date and duration (years)	September 2014 (4 years)
Location	India (West Bengal and Bihar), Nepal (Tarai) and North-West Bangladesh
Budget	\$2,250,000

Project leader(s) and Commissioned Organisation

Erik Schmidt, University of Southern Queensland, Commissioned Organisation

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Partner country project leaders and their institutions

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Achievements

- » 35 pilot sites have been established across 12 villages in Saptari (Nepal), Madhubani and Cooch Behar (India) and NW Bangladesh.
- » Sixteen farming collectives have been established in Nepal and India and new dry season cropping systems and irrigation practices have been initiated.
- » Capacity of local communities has been developed through more than 100 training events and 250 farmer group meetings.
- » Social, biophysical and economic profile of target communities has been assessed through comprehensive surveys.
- » Greater understanding on tenure, institutions and policies shaping capacity of marginal farmers to access water and documentation prepared.
- » Focus group discussions held and training provided on gender relations, migration and irrigation access and impact of feminisation on agriculture.
- » Assessment completed of institutional aspects of ground/surface water interventions in Bangladesh and implications for India and Nepal.
- » Implementation of programs for monitoring water resources, irrigation practice and field production, including development of a novel mobile field data collection smartphone application to support biophysical data, mapping and monitoring.
- » Installation of new or improved infrastructure for dry season irrigation including tubewell's, ponds, infield irrigation equipment, solar irrigation systems and water management technologies.
- » Capacity development of project partners and staff many of whom have not worked on similar research for development projects before.

Impact story

Kanakpatti is a village in Khoksar Prabaha in the Saptari District of Nepal. The community has different ethnic groups, including a Dalit group who have no agricultural land and traditionally have depended on labour wages and firewood collection.

A farmer group has been formed within the Dalit community called Gadhi Mai farmer group. This group has eight members—five males and three females. The group has leased 0.42 ha of land and is being trained in crop production, water management and capacity/leadership development. The group recently visited a project site in Madhubani, India where they learned how farmers can work effectively as a collective.

Cropping in the region is mainly paddy rice during the monsoon. Access to reliable irrigation is key and an electric pump and tubewell has been installed satisfying all year irrigation. The farmers have built furrows to improve irrigation efficiency and flat hose pipe is used to deliver water efficiently to each plot. Additionally, a small solar pump has been installed and irrigates 0.15 ha. The farmer group is now able to grow vegetable crops throughout the year on previously barren land. Each farmer is now contributing to a saving and credit scheme.

The local project team are working with the group to continue training to improve agriculture and water management practices and support progression to a sustainable collective model of farming. Measures are underway to improve the soil fertility and the project aims to increase the area of leased land. Farmers are being supported to grow high value crops that could maximise their income and reduce their dependency on traditional occupations.



“Gadhi Mai farmer group” discussions with project team from IDE.
Photo E Schmidt