

## Water Management in the Eastern Gangetic Plains: Revving up the Ganges Water Machine

A focus area within the CGIAR Research Program on Water, Land and Ecosystems



### THE CHALLENGE

Poverty levels in Eastern Uttar Pradesh, Bihar, West Bengal, Assam, the Nepal Terai and Bangladesh are low and similar to those in sub-Saharan Africa. It is estimated that it has world's highest concentration of rural poor with more than 300 million people spread across Bangladesh, India and Nepal. These people depend upon agriculture for their livelihoods.

The Eastern Gangetic Plains has huge potential for economic growth based on agricultural production derived from sustainable utilization of the region's natural comparative advantages. The region has fertile alluvial soils and significant water resources: there is high annual rainfall, significant ground water resources and the River Ganga and its tributaries provide abundant surface water. On the other hand, the region also suffers from devastating floods.

In addition to the above, the increasing outmigration of men in the region has led to a small-scale female dominated agricultural sector. New and innovative research is needed to better understand the opportunities, constraints, and solutions for female farm managers to improve access and utilization of water resources for agricultural production.

The challenge is to harness this potential by developing investment solutions to eliminate poverty while safeguarding the productive ecosystems upon which millions of lives and cultures in the region depend.

### DID YOU KNOW

- In Bangladesh, poverty was reduced by more than 6 percent from 2005-2010 but still almost 45 million people are poor
- In Nepal, 42% of the cultivated area has access to irrigation – but water available varies across the year
- Bihar has the highest density of rural poverty in the World as agriculture growth stagnated – despite policy interventions and increased use of inputs
- Part-time tenants, laborers and women dominate small-scale agriculture

Photo: B. Saugat/BioversityInternational



Photo: cc: Tom van Cakenberghe/IWMI



## OBJECTIVES

- To better understand how different drivers of change impact on agriculture production including: feminization of agriculture, water quantity, access to water resources and utilization of water resources.
- To improve how policies are formulated which facilitate equitable access to groundwater, and adequate energy to pump groundwater at affordable prices.
- To strengthen farmers' capacity to manage surface and groundwater resources and adaptation to climate change will be strengthened through better access to information and training.

## THE APPROACH

Water resources management agencies in the Plains lack information and knowledge of potential effects of groundwater development. In some areas, groundwater development is restricted due to fears that over-abstraction of water will have devastating results similar to the northwestern part of India, even though groundwater resources in the two areas are different. This research portfolio engages with water management agencies to share research and information to support improved decision making regarding water resources.

In addition, national government decision makers and development banks are desperate for solutions that provide political and development dividends during their tenure, so this research portfolio engages them to support development of cost-effective solutions for poor farmers in the region. Innovative research will be carried out to understand the demographic changes occurring in farming communities and how the feminization of agriculture can be harnessed to transform agriculture systems and improve livelihoods since women run households are often the engine of growth in rural areas.

## CURRENT & POTENTIAL PARTNERS

We will work with a range of research partners including: CSIRO LWR Australia; University of Southern Queensland, Australia; University of Wisconsin, USA; national research bodies, including ICAR in India, NARC in Nepal and BARI in Bangladesh. We will also work with international NGOs such as IUCN and local ones NGOs, including PRADAN and SAKHI; and the private sector, such as Jain Irrigation, a major private sector irrigation company.

## CONTACT

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