ICRISAT has developed an innovative landscape management approach of rainwater harvesting through a large-scale field bunding (~2,800 hectares) along with masonry structures with about 3.0 million cubic meter (MCM) storage capacity which has been crucial in helping farmers double their incomes and for long term sustainability.

The objective of this innovation is to rejuvenate the traditional rainwater harvesting called haveli system by introducing core wall and constructing masonry outlet at suitable location. Traditional practices of earthen embankments breach frequently especially during heavy rains. The capacity of this new approach helps increase water supply in the villages for domestic and farm use.

The innovative reviving traditional practice has helped enhancing water availability across the area. Rainwater harvesting through check dams, farm/community ponds, check walls and well recharge systems have increased water availability for irrigation, ensuring good crop growth besides helping improve food security and nutrition and poverty reduction in the area.

CHALLENGES AND RESULTS

The innovation addresses water scarcity, land degradation in the fragile dryland ecosystem of Central India. Harsh climatic conditions have made the landscape infertile for growing crops due to frequent drought, dry spells, and flooding.

Often traditional practices of water harvesting called havelis imply the practice of harvesting surface runoff in the fields during the monsoon by constructing earthen embankments across the field. These old practices became obsolete and therefore did not survive the collapse of local institutions and the lack of collective action after the independence of India in 1947.

This innovation has helped address these challenges effectively by increasing groundwater recharge potential to 5.0 MCM per year, improved crop productivity by 30% as 1,000 hectares of fallow lands have been brought into productive cultivation etc.

This has led to enhanced water availability, increasing the demand for manpower for agricultural activities, and return of villagers to their homes and farms after decades of migration.

PARTNERSHIPS DELIVER INNOVATIONS

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
ICRISAT Development Center
Department of Agriculture, Government of Uttar Pradesh, India
CRP Water Land and Ecosystem
CRP Grain Legumes and Dryland Cereals
Indian Council of Agriculture Research (ICAR)-Central Agroforestry Research Institute (CAFRI)
ICAR-Indian Grassland and Fodder Research Institute (IGFRI)
Krishi Vigyan Kendras (KVKs)
Non-Governmental Organisations

The designing and pilot phase of this innovation was carried out from 2010-2018 originally, increasing to 35,000 hectares across 7 districts of Bundelkhand region of Uttar Pradesh by 2021. Today, the innovation is being scaled up across various Indian districts.

Innovative scaling up has benefited more than 25,000 households in the project areas by addressing water scarcity, land degradation, improving crop productivity and income levels.

BROADER RELEVANCE

This innovation contributes to SDG 1 “To end poverty in all its forms, everywhere” SDG 2 “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”, SDG 6 “Ensure availability and sustainable management of water and sanitation for all” and SDG 15 “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.

This water and land management technique has been taken up by users, and is at Maturity Level 3 i.e. policy and/or practice changes influenced by these new methods have led to adoption or impacts at scale or beyond the direct CGIAR sphere of influence. Among others, this is evidenced by more than 25,000 households in the project areas having effectively addressed water scarcity, land degradation, improving crop productivity and income levels besides returning of residents to farming after migrating for work to other regions years ago.