

Making agriculture sustainable in one of India's poorest states

September 10 2015, by Sandeep Dixit, Arth Institute, Columbia University



Farming in Jharkhand, India. Credit: CIPT

Jharkhand, India is one of the nation's poorest and most food-insecure states, with over 45 percent of the population living below the poverty line. Even though more than 75 percent of Jharkhand's citizens rely on farming for their livelihood, agriculture accounts for only 15 percent of Gross State Domestic Product. Groundwater depletion and periodic drought compound the state's difficulties and low agricultural productivity, even as a changing climate threatens to make the situation

worse.

To help address these challenges, the Centers for International Projects Trust, the Columbia Water Center's India affiliate, has teamed up with Birsa Agricultural University to develop a Sustainable Agriculture and Farmers' Livelihood Villages Program in Jharkhand.

The aim of this program is to transform village economies and farmer livelihoods by promoting the use of modern inputs such as improved seeds and fertilizers, teaching rain-water storage for crop irrigation, building agricultural information networks in the villages, encouraging climate resilience, and developing value chains for crops for enhancing the farm incomes. The initiative is supported by the USAID Water-Agriculture-Livelihood Security program.

The program will pilot-test a series of interventions at 10 villages of the Angara block in the Ranchi district in Jharkhand, benefitting around 700 farmers and putting them on a path toward long-term agricultural and livelihood sustainability.

The team's preliminary assessment of the target villages revealed that farmers had poor access to improved seeds, fertilizers and irrigation, which in turn leads to poor production and low yields. This gap, coupled with an overall lack of access to markets, severely limits farmer income.

To address each of these problems, the team organized a suite of interventions for the participating farmers. These included the introduction of modern, high-yielding varieties of maize and rice (depending on farmer preference). In the end, 320 farmers opted to pursue rice cultivation and 310 were selected for maize. Seeds were distributed and farmers trained on the potential benefits of the introduced crop varieties, how to raise and transplant seedlings, and how to make use of weather-based advisories. The farmers were also trained

on the standard operating practices and techniques to realize the full potential yield from the introduced crop varieties.



Fishing at Subarnarekha river near Domohani (River meets). Credit: Sumita Roy Dutta, via Wikipedia

But while these interventions were important, none of them would work well without improved water use.

The Jharkand region receives significant rainfall each year—nearly 1400 mm, (55 inches), more than much of the East Coast of the United States. However, the sporadic pattern of precipitation leads to frequent agricultural drought. The state's irrigation potential is a meager 12 percent, which makes harvesting and reusing every drop of rainwater

absolutely essential for life-saving crop watering during dry spells.

To address the water challenge, the researchers identified 20 sites (two in each village) to construct small water-harvesting ponds with the help of earth-movers. Construction was preceded by outreach and education of farmers in the respective villages.

Finally, the researchers devised a simple system address a crucial information gap: weather and climate forecasting. For farmers, weather- and climate- related information play a critical role before and during the cropping season. Reliable forecasts that are provided at the appropriate time can help farmers time their planting, irrigation and other activities in ways that can greatly enhance production. Farmers in Jharkhand, however, have limited access to reliable agro-advisory services for weather forecasts.

In order to provide real-time weather information, the project research team installed wooden display boards in each of the villages to provide weekly weather information to farmers. Weather-based advisory bulletins prepared by the Birsa Agricultural University will be displayed on the boards twice a week. The bulletin contains weather forecasts for the next five days, along with relevant farming advice on best practices for the given conditions. In addition, farmers will receive daily mobile phone SMS advisories.

The research team plans to implement the suite of interventions over the next two years, along with additional measures as appropriate. The team will regularly monitor and document the entire process and results, and will use these results to advocate for broader policy changes to help [farmers](#) throughout the state.

Provided by Earth Institute, Columbia University

Citation: Making agriculture sustainable in one of India's poorest states (2015, September 10)
retrieved 18 April 2024 from

<https://phys.org/news/2015-09-agriculture-sustainable-india-poorest-states.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.