

## Rehabilitation of Their Watershed Helps Indians Increase Incomes

In India, rapid economic development, coupled with poor management of the environment and natural resources, has left a deep impact on communities who rely on farming to make a living. In many places, people are also witnessing the impact of climate change in form of floods, droughts, irregular rainfall and rising sea levels. Changes in temperatures and rainfall patterns are likely to affect the poorest populations in India as their livelihoods are largely connected to agriculture and dependent on natural resources.



*The introduction of a short-duration and drought-resistant crop has helped farmers in Markatola to harvest a bumper yield, thus increasing their resilience to climate change induced weather patterns.  
Photo by Sunil Vishwakarma/CRS*

Farming families in Markatola, a rural village in India, have been suffering a multitude of problems due to the exploitation of their natural resources and a limited awareness of the consequences. The reduction of forest areas by more than 50 percent over the last 20 years and a practice called “mono-cropping,” a form of agriculture that relies on only one crop per year, have contributed to recurring poor harvests.

A lack of adequate structures to collect rainwater has often led to flooding and the washing away of the most fertile top layer of soil, leaving only silt that deposits in natural bodies of water, rendering them useless for irrigation. With less available water, farmers were faced with poor yields at harvest time, leading to malnutrition and even starvation.

To thwart the dramatic effects of continuous poor harvests, villagers of Markatola started migrating to bigger cities in search of work to support their families.

## Regaining Control of Local Water Sources

In 2003, almost 300 families in Markatola faced this common dilemma of having a dirty water source—a pond filled with silt as a result of recurring floods.

Recognizing the benefits that improved water access would bring villagers, Catholic Relief Services (CRS) and our partners brought the community together and, with funding from the U.S. government, developed the watershed. To rejuvenate ponds in the watershed, villagers leveled the land and built soil walls to keep water in the ponds and prevent runoff. The stabilization of the pond ensures that villagers have reliable access to water during drier periods.

As a result of this project, there has been a significant increase of available groundwater year-round. This additional water allows farmers to harvest crops twice a year, first relying on seasonal rains and a second time using irrigation.

Because the concept of a “second cropping” was a novelty in the district where Markatola is located, just 35 families were initially willing to participate. Narottam Lal Tandia, a participant in the program, took his chances by planting wheat in a small area as his second crop. Though he planted his wheat ten days late and overwatered the fields, he was still able



*Narottam Lal Tandia was one of the first villagers to plant a second crop, using his village's newly-won source of irrigation.  
Photo by Kushal Neogy for CRS*

to earn about \$125 from the irrigated crop. He used this additional income to buy good quality seed for a rainy season crop and uses the rest of the money for his children's education.

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The Markatola Watershed before and after it was rehabilitated. Photos by Sunil Vishwakarma for CRS

*“... Water levels have improved and many farmers have started cultivating second crops.”*

**Narottam Lal Tandia, Farmer  
Markatola, Kanker District, India**

“This program helped to increase the bond between the villagers and stopped migration from the village,” Narottam says. “Due to this program, open grazing has stopped and villagers have sold all unproductive animals from the

village to save their crops and jungles. Water levels have improved and many farmers have started cultivating second crops.”

The Markatola community has also created a user group to manage distribution of water stored in a tank that was built as part of the project. The water is enough to irrigate 80 acres of land and group members pay \$1.20 per acre to irrigate their fields. The group then uses the collected funds for ongoing maintenance and upkeep of the storage tank.

Because more water is available for household and agricultural needs, families are no longer migrating from the village. In fact, Narottam plans to reap an even larger harvest this year by increasing the amount of land he irrigates.

### **CRS in India**

CRS has been working in India since 1946 and has developed a strong network of more than 2,500 local partners who are reaching out to over 1.5 million vulnerable persons across 21 states of India. The India program focuses on livelihoods, disaster management, HIV/AIDS, protection of women and children, health and emergency response programs.

**About CRS** Catholic Relief Services is the international humanitarian agency of the Catholic community in the United States. The agency provides assistance to people in more than 100 countries and territories based on need, regardless of race, nationality or creed. For more information, please visit [www.crs.org](http://www.crs.org) or [www.crsespanol.org](http://www.crsespanol.org).

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