

Pounds of Prevention

- A Disaster Risk Reduction Story -

"Pounds of Prevention" is a series of short articles that illustrate how disaster risk reduction works and why it is important. Take a behind-the-scenes look at aid work in action, long before the disaster occurs. How is that possible? Read on!

FOCUS: BRAZIL

The semi-arid regions of Ceará State in northeastern Brazil receive some of the country's lowest annual rainfall. When the rainy season is below average or rains fail altogether, drought conditions are common.

Increasingly, farming families in rural communities are experiencing the damaging and compounding effects of repeated droughts. Many people have moved to cities to support their families. Others rely on water and food trucked in by the government.

In recent years, disaster risk management experts from USAID reached out to affected communities and local officials in Ceará State to discuss ways to reduce the constant risks from drought. In 2011, USAID and partners from Cáritas Brasileira and the local Catholic Diocese of Crateús selected three drought-prone municipalities—Crateús, Quiterianópolis, and Tamboril—to participate in a program to mitigate the effects of drought and diversify how farmers earn their living.

First, USAID partner Caritas introduced farming techniques that use scarce water resources more efficiently. One method—the *mandala* system—constructs circular fruit and vegetable gardens around a pond. The gardens' organic matter feeds the fish and other animals stocked in the pond, while the nutrient rich water



Residents of Ceará State employ many techniques to protect their livelihoods from the negative effects of drought. Community members work to construct cylindrical wells (A) and underground reservoirs (B) that collect and conserve water. Others tend crops in circular (C) and household gardens (D) designed to use scare water resources more efficiently. All photos courtesy of Cáritas Brasileira.

irrigates and fertilizes the gardens through drip hoses. Another method involves planting food crops among native vegetation, naturally protecting against soil erosion and pest infestations. The communities have also revived a tradition of planting gardens near their homes, utilizing recycled plastic bottles in a low-evaporation, slow-release watering system that promotes healthy plant growth. These cleverly designed gardens also provide shade, food, and habitat for animals.

Second, program participants are improving water conservation, storage, and quality, allowing farmers to grow grains and beans, as well as tropical fruits such as mango and guava. Household cisterns collect and store rainwater for use in times of drought. Additionally, protected wells accumulate groundwater, while large, underground reservoirs built using trenches dug deep into the earth capture rainwater.

Third, participants established an environmentally friendly cooperative that converts recycled plastic bottles into household brooms. This alternative source of income has given the cooperative members the confidence to withstand hard times during drought and enabled families to stay together in rural areas, reducing migration to urban centers.

While some disaster risk reduction programs require high-tech solutions, this one costs relatively little but the hard work and commitment of the residents. Communities are much more resilient to the effects of drought. Where people once depended solely on outside assistance, they are now improving the quality and variety of their food, investing in their businesses, and once again hopeful for the future.