Increasing Productivity and Quality of Life in Northeast Brazil

Location
Bahia,
Northeastern Brazil

Problem
Long dry periods in this semi-arid region limit agricultural production and create difficult living conditions, resulting in high rural migration to urban centers and other rural areas.

People
Thirteen families in Cabonchard, a poor community in the Municipality of Valente, are directly involved in the project.

Solution
Increase agricultural productivity and improve living conditions through the design and construction of reservoirs and use of solar-powered drip irrigation systems and water pumps. Electrify homes and schools with photovoltaic (PV) systems.

Timeframe
2000-2003, revolving fund continuing to present

Results
Reservoirs and renewable energy systems now supply sufficient water for household use and the irrigation necessary for commercial organic vegetable production that benefits 13 families. Some 200 families have taken advantage of a loan program to finance solar home energy systems. The project also provided computer and Internet access benefiting 8 adults and 96 students.

To address severe water scarcity in Bahia, as described at left, Winrock International, through the USAID-Brazil Mission's Brazil Clean and Efficient Energy Program (BCEEP), and with USAID/EGAT support, joined forces with the Bahia State Small Rural Producers Association (APAEB), a nonprofit organization based in Valente, in one of Bahia's most drought-stricken areas.

With USAID support, Winrock provided technical assistance to design and construct a water collection system and an underground reservoir that is less expensive, larger, and more efficient than traditional above ground reservoirs. The new reservoir reduces water loss through evaporation and can store 24 times as much water. A 100-watt solar-powered pump carries water from the underground reservoir to an elevated cistern, from which the water flows to the micro irrigation system via gravity. Local people were trained to install, operate, and maintain the systems and take part in the community planning needed for long-term success.

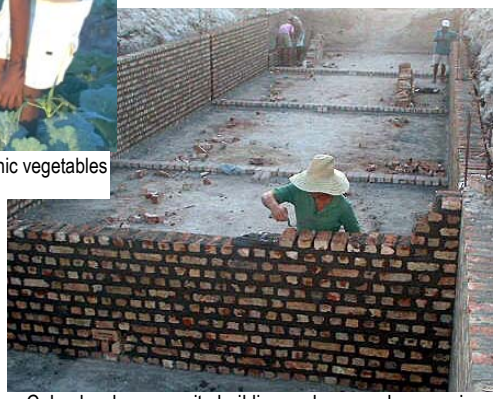
"The activities carried out in this project fill with hope the hearts of youth that believe, as Winrock International and APAEB, in the role of community members towards integrated sustainable development."
- Misael Lopes da Cunha, APAEB President

The APAEB supports installation of 50 to 70-watt solar home systems and maintains a revolving loan fund to enable families to purchase equipment. More than 500 home systems have been installed in the region, almost half of which have been financed by the revolving fund. This financing mechanism allows families to pay for the equipment with cash or products of a comparable market value over eight years. With USAID support, Winrock provided support for management software for the fund, as well as software training. Maintenance, included in the purchase price, is guaranteed for three years after installation.


PV-powered drip irrigation organic vegetables

In addition to solar home systems and water projects, renewable energy is serving other community needs. The Família Agrícola School's 2,000-watt PV system powers newly donated computers connected to the Internet through a solar powered wireless system, as well as a TV and video player, a refrigerator and a freezer. A website was developed for APAEB, members were trained to use the Internet, and the association's electronic newsletter *Folha do Sisal* is published regularly online.

Winrock International plans to collaborate over the next four years with other local organizations and support similar renewable energy initiatives in northeast Brazil under the USAID/Brazil Productive Energy program.


Cabochard community building underground reservoir.