

Sustainability through Energy and Soil Management in the Wake of Hurricane Mitch

Location

Cahabón, northern Guatemala

Problem

Land for subsistence-based agricultural community destroyed by Hurricane Mitch, lack of modern energy services.

People

Nineteen poor rural communities, with 815 households participating.

Solution

Integrated rural electrification and land management assistance to reverse damage caused by soil misuse, and minimize the effects of future disasters.

Timeframe

2000-2001

Results

50-watt solar home systems (SHS) and improved wood-burning stoves installed in 815 homes have reduced levels of indoor air pollution and fuelwood demand; women using these stoves have reported reductions in fuelwood use of at least 50%.



Alta Verapaz region, Guatemala

The arrival of Hurricane Mitch in October, 1998 caused devastation in many parts of northern Guatemala. In the municipality of Cahabón, Hurricane Mitch destroyed cropland in mainly agricultural Q'eqchi' communities. Much of the destruction was exacerbated by existing erosion in the region caused by poor soil management practices and deforestation from fuelwood extraction.

Even prior to the hurricane, the population of Cahabón lived in extreme poverty. Men worked in distant towns in casual wage labor and women stayed home cooking over open fires in bamboo houses with dirt floors. Basic services were virtually non-existent, and the communities had little access to any infrastructure, including roads, water, transportation, telephones, radios or electricity.

In order to overcome these conditions, Fundación Solar (FS) implemented a project in Cahabón, with support from Winrock International, USAID and CARE, with the objective of improving local quality of life and reducing the communities' vulnerability to future natural disasters through the sustainable management of renewable resources and adoption of rural energy services appropriate to the ecological, financial and human conditions of the communities. The project integrated the provision of rural energy services with the adoption of soil conservation techniques and diversified production to improve land management in order to reverse damage caused by soil misuse, and minimize the effects of future disasters.

Some 19 Cahabón communities in the micro-basins of Alta Verapaz affected by Hurricane Mitch were selected for integrated rural electrification and land management assistance. Between February 2000 and

October 2001, FS installed both 50W solar home systems (SHS) and improved wood-burning stoves in 815 homes. The solar systems power radio, television and domestic lighting, replacing kerosene lamps and candles. The improved stoves emit less smoke and burn fuelwood more efficiently, thereby reducing the amount of domestic fuelwood needed. The use of improved stoves thus reduces pressure on local forests, which will minimize the impact of future natural disasters; deforested land greatly exacerbated landslides caused by Hurricane Mitch.

By reducing emissions from kerosene and wood burning, both technologies decrease indoor air pollution in the home, and



Cahabón woman with improved wood stove

associated smoke-related respiratory diseases, thereby improving women's and children's health. The solar panels for the SHS were donated by USAID in exchange for the communities' cooperation in a CARE project on land conservation and maintenance.

A notable feature of this project is the close cooperation between men and women. The input given by the women provided a unique perspective on the project, as they are the primary energy consumers. Two committees were formed, and the members were trained in the operation, maintenance and administration of the technology provided. Technicians trained by Fundación Solar later became entrepreneurs in the sale and installation of PV systems on credit at their own initiative, beyond the scope of the project.

Thanks to Funcación Solar's work in Cahabón, families can breathe easier, both due to cleaner indoor air, and the knowledge that through sustainable soil management, they will be better prepared for future natural disasters.