

CARE in Guatemala: Reversing Land Degradation & Building Carbon Stocks

Background

With its pristine vistas, melodic indigenous languages and *Mayan huipiles* made of colorful fabrics, the provinces of Western Guatemala hold a special allure. However, the rich sights and sounds of local villages stand in stark contrast to people's extraordinary poverty and vulnerability to climate change.

This area of dramatic landscapes is often affected by landslides, floods and even earthquakes emanating from Central America's volcanic zone. Land distribution is strikingly unequal throughout Guatemala: the poorest part of the population owns less than 20 percent of the land, and this frequently consists of steep hillsides that the rich and powerful don't want. Both forest and soil degradation are severe and release large quantities of CO₂ that hasten climate change. Crowded onto marginal lands, poor people in Western Guatemala have lost much of their natural resource base and seen agricultural productivity plummet.

Response

CARE recognized that training in effective agroforestry management and forest conservation could help people in Western Guatemala revitalize their natural resource base and regain control of their destiny. We began the *Mi Cuenca* (My Watershed) project in 1974. Energised by early successes, the project grew in response to evolving

community concerns and eventually became the *Mi Bosque* (My Forest) project. Explicit efforts to sequester carbon in trees and soils, as well as reduce emissions through avoided deforestation and forest degradation, began in 1990. With support from the giant energy company AES, *Mi Bosque* became the first project in Central America to mitigate climate change through community-based reforestation and forest conservation.

The project is currently being implemented across 11 municipalities in the Departments of Quetzaltenango, Totonicapán, Huehuetenango and San Marcos. Its main objectives are to:

- Reduce the risk of climate-related disasters
- Increase the resiliency of local livelihoods by strengthening natural resource (forest, soil and water) management skills
- Improve environmental governance by ensuring that communities can gain rights to use and access natural resources
- Make a cost-effective and verifiable contribution to mitigating climate change

The project's success is the result of communities' commitment to learn and implement new skills. Achievements have been sustained – and even expanded upon – as a result of CARE's strategy to strengthen the technical, financial and administrative capacities of municipal personnel.

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CARE & climate change

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Below is a quick snapshot of activities.

Reforestation

When *Mi Bosque* began, local deforestation was widespread and accelerating. Some areas had been stripped of trees, and heavy rainfall subsequently scoured away everything but the underlying rock. In other places, forests were still being cut. CARE helped communities establish tree nurseries and, planting mostly indigenous species, secure threatened areas before their usefulness could be similarly eroded.

Agroforestry

Agroforestry activities have included:

- Planting trees along contour lines so that they reduce erosion
- Promoting the cultivation of fruit trees to provide an additional source of food and income
- Planting fast-growing, nitrogen-fixing trees and shrubs to improve soil health
- Demonstrating the use of “living fences” (i.e. densely planted useful trees and shrubs) to mark borders and restrain livestock
- Training in reduced tillage and conservation agriculture

Methodology Development & Carbon Monitoring

CARE has teamed up with the *Universidad del Valle de Guatemala* to develop a cost-effective, participatory methodology to measure the amount of carbon stored in the *Mi Bosque* project landscape. This allows municipalities to reliably measure and monitor their growing carbon stocks as a prerequisite to accessing global markets. CARE is thrilled about the participatory nature of this methodology because it builds community members’ understanding and ownership of the land-use change/reforestation process.

Water Conservation

CARE has helped 23 water committees in the region to establish policies that protect local watersheds. Their implementation has directly benefited thousands of families. CARE has also helped construct new water collection and storage structures, thereby curbing the threat of summertime water scarcity.

Environmental Governance

CARE has helped create community-based organisations addressing local land rights. This led to new legislation acknowledging villagers’ right to participate in decisions effecting community development. By working hand-in-hand with communities and local government authorities, the *Mi Bosque* project has also succeeded in establishing a long-term stream of public financing for agroforestry. As an illustration of how highly authorities regard the project, the Guatemalan Government has contributed nearly 50 percent of projects costs in recent years.

Results

Greenhouse gas emissions from land-degradation have been reversed. Data from 43 forests shows a carbon capture rate of about 208 tons per hectare. The ability to measure carbon sequestration rates and

avoided emissions will make it possible to supplement local incomes. As such, it will provide additional incentives for sustainable land management. This promises to permanently transform the highland hills of Western Guatemala and greatly secure rural livelihoods. But here’s a look at some additional accomplishments:

- Enhanced natural resource management practices have improved agricultural productivity so much that many families no longer have to leave their homes and communities in search of waged labour. In fact, migration by households participating in the *Mi Bosque* project has declined by approximately 80 percent in the last 10 years.
- Agroforestry techniques have paved the way to establish a lucrative – and sustainable – native timber industry in Quiquívai. This began in 2002. Within a year, production had tripled.
- Agricultural productivity by households participating in the *Mi Bosque* project has dramatically improved due to soil conservation measures, the use of organic fertilizer, crop rotation and other agroforestry techniques. Healthier, more productive farms allows people to keep hens, pigs, goats and cows.
- Soil erosion has decreased and waterlogging (a side effect of deforestation) has diminished.

What’s next?

Carbon baselines have been established, and CARE is now in dialogue with interested buyers of verified emissions reductions credits. From 2008 onwards, the *Mi Bosque* project will be implemented as part of the CARE/ICRAF Carbon, Communities and Conservation Initiative. Therefore, it will receive high-level technical support from the World Agroforestry Centre (ICRAF) as well as the Universidad del Valle de Guatemala. Major new activities will include:

- Establishing carbon financing mechanisms
- Determining how to share carbon revenues
- Establishing validation & certification procedures

Conclusions

The *Mi Bosque* project has generated a wealth of direct and indirect benefits for the people of Western Guatemala. The most important of these may be the revival of local water, soil and forest resources.

The process of natural resources restoration quickly inspired local leaders like Francisco Rojas. Francisco saw *Mi Bosque’s* potential; and, in 1993, he formed a group to implement project activities in Quiquívaj village. Since then, the *Los Rojas* Group has transformed exhausted fields into a thriving agricultural centre growing peaches, avocados, plums, tomatoes, animal fodder and fir trees to supplement traditional maize and bean crops. Today, group members are even able to support hens, pigs, goats and cows on their land. So, now it is *Los Rojas* who are the inspiration. Indeed, others see them as a model for rural livelihood restoration and are beginning to copy *Los Rojas’* successes. The seeds of *Mi Bosque* are growing.

