

Climate Change in Latin America, a Perfect Storm

It's market day in Sibinal, a town in Guatemala's south-western department of San Marcos, and farmers gather from neighboring villages to buy everything from beans to toothpaste. It doesn't take long for the conversations to turn to "El Stan." The hurricane tore through Central America in 2005, killing more than 1,500 people, most of them in Guatemala. Stan hit in October, at the tail end of what farmers call "the hungry season," as families eagerly anticipated the harvest. But the days-long rain wiped away crops, drowned livestock and washed away roads. A food crisis followed. Four years later, the experience is still fresh on the minds of people in San Marcos. The landscape still bears the scars.



Landslides scar the hillsides in San Marcos. This photo was taken in the Municipality of Tajumulco shortly after Hurricane Stan, though many of these landslides are still visible four years later
Photo by Hugh Aprile/CRS

"It rained for eight days, 24 hours per day. The rivers rose. In my village we lost 27 houses. Eight people died in one house. We lost our entire crop—maize, beans, wheat—then we lost the potatoes to rot because of the water," says 60-year-old farmer Efrain.

Scientists predict that hurricanes will continue to become more frequent and intense as a result of climate change,

turning a difficult situation into a dire one. In recent years, the frequency of climate-related disasters in the region has more than doubled. But tropical hurricanes are not the only concern. Windstorms, tornadoes, hail, heat-waves, gales and heavy rains are becoming more common. The impact is magnified in Latin America by the poor management and abuse of the natural environment.

Farmers and agricultural experts in Guatemala say that weather in general is becoming more severe and unpredictable. The first rains come later and end earlier than previously recorded. For many farmers that means one annual maize harvest instead of two. Sometimes rains are concentrated in heavy downpours within shorter periods or drop out entirely for a month at a time. In the heavily deforested regions of Guatemala, poor soil management, steep road cuts and heavy rains conspire to trigger landslides every few days during the rainy season. Meanwhile, intense winds strip leaves and break stalks of coffee plants. Two years ago, a hailstorm damaged the maize and potato harvests. Sometimes the rain doesn't come at all, wiping out entire harvests.

Many farmers now talk about the absence of the "canicula," a dry spell of up to ten days that traditionally falls in the middle of the rainy season. The short break from rain was important for keeping in check funguses that flourish under humid conditions. Area coffee bushes become stained yellow and full of round holes as diseases spread.

Coping Strategies

How are people coping with these challenges? Migration, which has always been a coping strategy, is on the rise as farming families are faced with decreasing yields, rising prices and natural disasters. Many local farmers earn money as day laborers on nearby coffee and rubber plantations. Others trek to bigger cities, Mexico, or the United States in search of work.

With help from CRS, Oscar Bodines has worked to help his family and the forty neighbors in his farmers' group adapt to these changes without leaving home. He has diversified his crops and implemented a number of soil management practices. In addition to bananas and coffee, he grows pacaya palms (*Chamaedorea tepejilote*) for erosion control

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on steep slopes. Often planted between rows of beans and maize, these palms grow several meters tall, have edible shoots and attractive leaves used for decoration at festive events. He also cultivates hoja de maxán (*Calathea lutea*), a native plant which tolerates heavy rains and whose large leaves are sold commercially for wrapping tamales. He grows green beans and tomatoes in his new greenhouse, and medicinal plants in a small kitchen plot. Rather than buying expensive and potentially harmful agrochemicals,



he produces his own organic fertilizer from poultry droppings and his own pesticide from home-grown chili peppers.

Maria (38) is the mother of seven and active in her community's Mother and Child Health Program. She says rising prices and falling crop yields are forcing children as young as 12 to migrate to work on Mexican coffee plantations for 3–4 months per year.

Photo by Elke Jahns/CRS

CRS Adaptation Activities at a Glance:

CRS and its Caritas partners in the region are helping the poorest and most vulnerable families address some of the many challenges related to climate change and environmental degradation through a variety of programs:

- Emergency programs provide food when people's normal ability to access food is disrupted by disaster.
- Longer term food security programs are helping farmers increase their production, reduce post-harvest losses and improve access to credit and local markets.
- Integrated watershed management programs are protecting natural resources and improving the availability of safe drinking water.
- Reforestation and training in soil management practices are helping to counteract erosion and maintain soil fertility.



With help from Caritas, Oscar and other farmers in his community of Tocuto are diversifying their crops and implementing soil management practices. These pacaya seedlings will be used as living barriers for erosion control on steep slopes while supplementing the household food supply.
Photo by Elke Jahns/CRS

- Introduction of drip irrigation and alternative, drought-tolerant crops such as sweet potato, yucca, cashew, tamarind and aloe vera are reducing farmers' vulnerability to droughts.
- Across the region, sustainable and conservation agriculture practices combine new technologies with traditional know-how. From organic farming to increased use of green fertilizers, these approaches help communities grow more food and increase their income, while safeguarding environmental resources of future generations.
- Land tenure advocacy programs are helping farmers secure the rights to their land, assuring farmers that adopting sustainable agriculture techniques is a worthwhile investment.
- Disaster management programs are helping communities prepare for and respond to emergencies such as extreme weather events.

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 or www.crsespanol.org.

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