



Honduras

UN Human Development Index Ranking: 115

Population: 7.1 million (UN 2007)

Agricultural population: 54% of the population

Proportion of undernourished in the population (2002/2004): 23%

Share of women in the agricultural labour force: 21%

ODA for agriculture (2004 prices \$ millions 2003-05): \$54.2 million

Percentage of total ODA to agriculture: 6%



Growing Resilience: Seeds, Knowledge and Diversity in Honduras

Organization: USC Canada/Seeds of Survival

This case study highlights the work of farmers in Yoro and Otoro regions of Honduras, supported by USC partner FIPAH (Foundation for Participatory Research with Honduran Farmers). Farmers organize community-based agricultural research teams (called CIALs), to diversify their plant genetic resources and to develop hardier plant varieties that grow well on their soils. As part of USC Canada's global Seeds of Survival (SoS) program, FIPAH considers farmers local experts whose knowledge is essential to building resilient food systems to solve food security challenges, as well as to promote food sovereignty—farmers' ability to stay on their lands, grow their own food and control their food production systems.

FIPAH provides technical training and financial support to these capable on-farm scientists for participatory plant breeding in order to enhance crop yield, market value, taste and nutritional value, as well as traits critical in responding

to climate change—drought and salinity resistance, wind and water absorption. More than 60 CIALs and their 850 members are building vibrant food and livelihood systems, strengthening their capacity to feed their families and to deal with increasingly extreme weather conditions.

Resilience Principles:

FIPAH's work with Honduran farmers highlights the resilience principles of diversity and innovation/knowledge, as outlined in the main document¹:

- Resilient small scale agriculture systems recognize the importance of local knowledge and indigenous technologies for reducing uncertainty and risk.
- Resilient small scale agriculture systems build on biological diversity; they nurture heterogeneity in genetic resources, which allows local ecosystems to absorb shocks and adapt to change.

Country Context: A Century of Industrial Farming

Honduras is the original 'banana republic'. This ecologically diverse country located in the Central American isthmus has

¹Canadian Food Security Policy Group (2008). *Pathways To Resilience* available at www.ccic.ca/e/003/food.shtml.



Simeona Perez of Santa Cruz CIAL in her corn field.

experienced more than a century of industrial agriculture. Beginning in the late 1800s, transnational fruit companies acquired control of much of the country's arable land, producing pineapples, bananas and other fruits for export. Even today, the country's flattest land is reserved for plantation agriculture, with commercial farms supplying fruits to transnational corporations for export. The methodology is intensive monoculture with significant use of chemical inputs as fertilizers and pesticides. Farming has become dependent on 'improved' seeds from companies, undermining the resilience that farmers had built using local knowledge and biodiversity. Large companies control the market, largely unregulated by the government.

In the less accessible mountainous regions of the country however, Honduras' farmers would like to be recognized not as banana republicans but rather as the vanguard of a different movement: One that is relying on farmers' time-tested knowledge to maintain resilient food and seed supply systems, leading to healthy and food secure communities that are able to face the challenges of climate change.

Building Resilience: Participatory Breeding and On-farm Conservation

FIPAH's program supports farmer research teams known as CIALs (Comite de Investigacion Agricola Local) for participatory plant breeding, the establishment of secure seed supply through on-farm conservation, household vegetable gardens and cooperative grain storage systems. Much of these objectives are achieved through community-run seed and gene banks. The aim is to significantly improve farmer access to diverse and high quality, locally adapted seeds - preserving genetic resources and further enhancing farmer knowledge and experience with these seeds.

Farmers are constantly experimenting with indigenous varieties, adapting them to suit their emerging needs. They select varieties not only for productivity, but also for higher nutrition, for better cooking and storage traits, and the plant's ability to adapt to changing growing conditions. Women play a lead role in selecting for traits, as they are the keepers of seeds, possessing a more intimate knowledge of plant characteristics and how they might perform in different conditions.

CIAL leader Isidora Garcia with her organic compost.

Currently, 60 CIALS (farmer research teams) and 11 youth CIALS are operating in 5 districts of Honduras. They directly reach about 12,000 people in various communities through seed exchanges and access to grain stocks.

FIPAH is recognized by the government as one of only a handful of research NGOs providing technical assistance to farmers. Working with FIPAH, farmers have achieved many successes:

- They have enhanced productivity (by 20-30%) of local corn varieties, while making these varieties hardier and more adaptable to climate change.
- They continue to not only maintain but grow biodiversity, selecting and building upon desirable qualities in corn and beans.
- They have increased local ownership and sovereignty over genetic and ecological resources – seeds, land and food.
- Women have strengthened their role as stewards of diverse agricultural knowledge, and as partners in agriculture.
- Community income and food security have been enhanced.
- Practicing organic agriculture has led to a range of ecological and health benefits.

Farmer Innovation: Improving Corn Varieties

In October 2006, farmers of Santa Cruz CIAL in the mountainous Yoro region released two varieties of corn they had developed, based on a local or ‘land race’ variety that produces large cobs, but their height had become a problem in a region increasingly vulnerable to hurricanes. Large cobs are linked genetically to tall stalks which, over time, produced taller and taller corn plants, that although beneficial for animal fodder, run the risk of being knocked over by winds. Through a participatory breeding process, farmers were able to produce two improved varieties—Santa Cruz and Capulin Mejorado—that are shorter, with a higher yield and still adapted to high altitude conditions.

One of the agricultural experts who have developed



these corn varieties is Simeona Perez, a farmer in the Santa Cruz region. Small farmers have been largely ignored by government and agricultural scientists, and so Simeona, Amalia, Pedro, Fatima and others took matters into their own hands. With FIPAH’s support, their farmer research team (CIAL) developed corn varieties that could withstand the annual bouts of heavy rains and winds that—beginning with Hurricane Mitch in 1998—have become a constant sign of climate change in the region, causing crop failure by flattening the corn in their fields.

Through a participatory breeding process, farmers were able to produce two improved varieties...

Through continuous selection and breeding, farmers in Santa Cruz CIAL succeeded in reducing the stature of Capulin and Santa Cruz corn, while increasing average yield. Capulin is an indigenous corn variety that already grows well in high altitudes. Farmers collected seeds for the community seed bank to secure a healthy seed supply. The release of this corn coincided with one of the heaviest hurricane seasons on record. Simeona said “this year, because of the enormous amount of rain, many people had almost nothing to harvest, and will have no decent seed to sow in May. But because of the quality of our seed, combined with conservation practices, we were hardly affected.” Farmers and officials across Honduras have applauded their success, and have received Capulin Mejorado seeds for their own communities.



Luis Alonso Pacheco, farmer and community leader in Yoro. All photos: Faris Ahmed, USC Canada

Building a Movement, Spreading the Solution

Farmers in Yoro and Otoro are justifiably proud of their accomplishments, which have not only earned them national and international recognition, but significantly strengthened their food and livelihood security, in harmony with their genetic and ecological resources. They have succeeded in creating an alternative community seed system that taps the knowledge of farmers, to create a resilient food system that is owned by, and serves the needs of those who depend on it most.

The 60 CIALs across Honduras are collaborating to ensure that their successes go well beyond their own communities. Regional and national associations of CIALs (known as AHSOCIALs) are working with FIPAH and USC's Seeds of Survival program to share knowledge, research and seeds across CIALs, spreading innovation and biodiversity across the country. Community leaders like Luis Alonso Pacheco have shared the experiences of Yoro's farmers with agriculture specialists at international seminars in Ethiopia and Germany.

“To us” says Pacheco, “resilience means that we are increasing the adaptive capacity of people and their ecosystems to cope with uncertainty and change.”

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