Breaking away from industrial commodity production in Central American coffee-growing communities.

SAN RAMÓN NICARAGUA VERACRUZ MEXICO

Community youth group workshop on bio-fertilizer production. San Ramón, Nicaragua.
In the late 1990s, with coffee prices plummeting and a handful of multinational buyers able to set prices, coffee growers around the world found themselves in crisis (Bacon et al., 2008). In many regions, farmers planted more coffee in an attempt to increase their incomes, reducing or eliminating the crops that previously provided local food security. In Nicaragua, coffee farmers and their families experienced severe hunger (Bacon et al., 2014).

It was into this environment that researchers from the Environmental Studies Department at the University of California at Santa Cruz (UCSC) established a new non-profit organization: the Community Agroecology Network (CAN). In 2011, the NGO joined forces with local organizations in smallholder coffee-growing communities in San Ramón, Nicaragua, and Veracruz, Mexico. Together they launched a project to accompany the communities through a transition to reduce dependency on export-oriented industrial commodity production.

The project was rooted in participatory exercises to harness local experience, experimentation, and knowledge. As the project fostered both positive and negative results, the partner communities developed greater ownership of the change process and adapted their approaches along the way in response to evolving challenges. After five years of participatory interaction, learning, and monitoring, coffee-growing communities in San Ramón and Veracruz have been able to transition towards sustainable food systems in a variety of ways.

The project built immediate resistance to diseases afflicting coffee crops through agroecological practices, while diversifying production in order to build resilient livelihoods over the long-term. It also built the capacity of women and youth in the communities. Through the project, a new coffee export brand emerged built on long-term relationships, predictable demand, and price premiums well above Fair Trade or organic prices.

These integrated approaches allowed San Ramón and Veracruz to increase food security, improve overall nutrition, and reduce the ‘thin months’ (los meses de las vacas flacas), helping to create a viable future in coffee production for the next generation. Furthermore, the project paved the way for local stakeholders, particularly the cooperative movements in Nicaragua and Mexico, to become important political actors and advocates of institutional change.

The transition initiatives in San Ramón and Veracruz — which linked household nutrition, local food production, building alternative markets (locally and globally), diversification, improving natural soil fertility, and empowering community members — underline the benefits of casting the net wide in order to build sustainable food systems.

19. CAN has been actively working for seventeen years in Mexico and Central America, using an agroecological approach to foster food systems change. For more information, see: www.canunite.org.

20. The ‘Youth Leadership and Education for Sustainable Agriculture and Food Sovereignty Project’ (Youth Leadership & Food Sovereignty for short) was launched in 2011 as a collaborative initiative of the Community Agroecology Network (CAN), the Union of Cooperatives San Ramón (UCA San Ramón) in Nicaragua, and the local NGO Vinculación y Desarrollo Agroecológico en el Café (VIDA) in Mexico, funded by Keurig Green Mountain and individual donors.

21. The cooperative movement in Nicaragua was rooted strongly in the Sandinista resistance during the years of conflict, and flourished after the Peace Accords. Central and Latin America in general has a long history of cooperativism that has been well documented in recent studies, and provides an important basis for agroecological transitions for food security and food sovereignty (ICA, 2017; Leindecker and Fox, 2016).
3.2 SAN RAMÓN, NICARAGUA & VERACRUZ, MEXICO

CHANGES IN PRODUCTION PRACTICES

The project was focused on coffee farming families and cooperatives in eight communities in San Ramón, Nicaragua and four community groups in Veracruz, Mexico. At the outset of the project, the communities were experiencing many of the challenges faced by smallholder cash crop producers around the world, including seasonal food insecurity.

Following participatory knowledge-generating exercises (see below), a series of ‘action plans’ were developed to focus on diversification of production in order to improve both household dietary diversity and women’s income options. The project thus began with capacity-building activities in agroecological food production, the establishment of home gardens, the reforestation of coffee plantations with fruit, wood, and fuel trees, and diversification into chicken and egg production. Steps were also taken to find outlets for this produce via farmers’ markets.

The beginning of the second project phase in 2013 coincided with the onset of a severe coffee rust disease known as la roya, followed in 2014 by a two-year drought in Northern Nicaragua and reduced rainfall in Veracruz that severely impacted food production. These shocks reinforced participants’ understanding of the positive mitigating effects of the agroecological strategies being promoted, and reinforced the project’s focus on climate resilience and sustainable livelihoods. However, they also made it harder to convince people to take on new risks and move into uncharted territory.

For example, participating farmers proved particularly risk averse in regard to soil practices. Growers in one cooperative recognized the necessity to improve organic soil fertility, and considered supporting a composting project to produce compost from local resources. However, they remained hesitant despite having participated in farmer-to-farmer exchanges with communities already engaged in similar soil building projects.
After extensive dialogue between CAN researchers, youth leaders, and cooperative extension agents in Nicaragua, a group of women farmers stepped forward and convinced their male counterparts to invest in buying natural materials and inputs (raw flour, molasses, rock minerals, etc.) for making artisanal fertilizers, as well as culturing fungi in leaf litter from the mountains above their communities to make foliar sprays for disease suppression. At about 10% of the cost of conventional fungicides and fertilizers, the new practices enhanced disease resistance and paved the way for speedy recovery from the disease outbreak (CAN, 2015a).

The efficacy of agroecological soil health and plant nutrition techniques became evident one year after they had been applied to vegetable gardens and coffee had been replanted with seedlings; the new coffee plants were robust and started to fruit after only 17 months in the ground. Following successful experimentation in the pioneering cooperative, CAN and the Union of Cooperatives (UCA) San Ramón facilitated a process of horizontal exchange so that the other seven cooperatives engaged in the project could learn the same techniques.22

A similar process unfolded in the Central Highlands of Veracruz, where CAN researchers, working with the local NGO Vinculación y Desarrollo Agroecológico en el Café (VIDA), performed a full diagnosis of the impact of la roya on the coffee parcels of 151 farmers in 2014, as well as an inventory of agroecological practices already being used. They subsequently identified twelve soil fertility improvement applications and other agroecological techniques including mineral foliar sprays, and began implementing farmer-to-farmer learning exchange workshops.

Since la roya fully hit the Veracruz region approximately eighteen months after it hit Nicaragua, farmers are still in the process of implementing recovery and resilience-building measures. These include agroecological soil building and plant nutrition practices to protect seedlings against the rust and other infestations like anthracnose.

Seed availability has arisen as a potential obstacle to shifting production practices. However, when it was found that there were no local sources for seeds or that people were not saving seeds in San Ramón, a system of seven cooperative-level seed banks was developed to facilitate the collection, storage, and distribution of basic grains seed.

### CHANGES IN KNOWLEDGE GENERATION AND DISSEMINATION

The first step in the project was a comprehensive baseline study of food insecurity and household livelihoods, and the creation of a participatory monitoring and evaluation system. Subsequently, the project was built around Participatory Action Research (PAR) cycles to develop action plans in line with the ideas and expectations of the local partners.

Horizontal farmer-to-farmer and cooperative-to-cooperative learning exchanges were central to the project, for example in regard to spreading knowledge on agroecological soil fertility techniques. As agroecologists, CAN

22. The exchanges included capacity building through the development of nine different soil and foliar applications, including compost, worm compost, effective microorganisms, biofertilizers and mineral foliar applications for both food and coffee production areas. Investments were made in barrels and other equipment to allow groups to produce the fertilizers and preparations collectively where appropriate.
Researchers had an understanding of sustainability and alternative farming practices and designs. As farmers, the community members had generations of farming experience and understanding of their local environment. These ‘ways of knowing’ came together in a transdisciplinary and mutually-respecting approach to knowledge. Trust and transparency were built, for example, through joint observation and monitoring exercises; project partners taught local youth to record and analyze data. Findings were shared, discussed, and used to take new steps, try alternative management practices, and begin diversifying and redesigning farms.

New and creative ways of spreading knowledge were also developed in response to emerging obstacles to the transition process. For instance, the home gardens initially faced many challenges. At first, people were not eating the food they were growing, and were feeding the produce to their pigs instead.

In response, a series of nutrition workshops were developed and led by local women and youth. In Veracruz, a cookbook of traditional and innovative recipes was also produced by community members, promoting dietary diversification and providing hands-on advice on new ways to feed one’s family. Meanwhile, when issues with seed availability arose in San Ramón, families were trained in household seed saving techniques for vegetable and fruit seed and reproductive material, in addition to the creation of cooperative seed banks described above.

Changes in Social and Economic Relations

Coffee farming faced a major crisis in the 1990s. The International Coffee Agreement – which had maintained global price levels and governed coffee exports – expired in 1989, prompting wide fluctuation in coffee supplies and prices. Meanwhile, the industry was consolidating, with five transnational corporations accounting for more than 70% of the world coffee market by the mid-2000s (Bacon et al., 2008). This market power increased their ability to consolidate supply chains and dictate purchasing conditions. By the early 2000s, prices paid to farmers fell below the cost of production, such that farmers could not even afford to harvest their coffee.

In San Ramón, households only had adequate access to food for seven months of the year. Diets were highly uniform, with only 12% of households consuming more than six food groups daily – reflecting broader trends across Nicaragua. People struggled to feed their families for at least four months per year, between the time when coffee harvest income ran out and the grain harvest began – the ‘thin months’ (Bacon et al., 2014). Food security was also a concern in Veracruz: Mexican coffee-producing families experienced two ‘thin months’ per year.

Given limited domestic consumption of coffee in producing nations such as Nicaragua and Mexico, CAN focused on shifting socio-economic relations and developing new coffee export supply chains in order to generate cash income for farmers, alongside steps to diversify production. In a first phase, CAN-affiliated researchers working in these communities found that approaches based solely on finding higher value markets (e.g. via certified fair trade or organic premiums) did not...
reduce vulnerability. Even as coffee prices picked up, CAN found that farmers continued to face seasonal hunger and food insecurity.

In response, a branded agroecological coffee called AgroEco® Coffee was developed, based on involving the key stakeholders of a much-shortened coffee commodity chain in a new collaborative process. Rather than providing a certification, the brand is based on a commitment among suppliers to transition to an agroecological production model. A price-setting process was developed for AgroEco® coffee based on shortening the commodity chain and bringing

<table>
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<tr>
<th>INDICATORS OF CHANGE</th>
<th>2011</th>
<th>2012</th>
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<th>2014</th>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Months of adequate provisioning</td>
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<td>7.3</td>
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<td>Length of “thin months”</td>
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<td>3.88</td>
<td>2.24</td>
<td>2.3</td>
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<td>6.61</td>
<td>7.84</td>
<td>7.06</td>
<td>7.46</td>
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<td>12%</td>
<td>83%</td>
<td>100%</td>
<td>83%</td>
<td>82%</td>
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<td>Coping Strategies Index (CSI)</td>
<td>16.83</td>
<td>10.98</td>
<td>17.53</td>
<td>15.08</td>
<td>8.14</td>
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<td><strong>VERACRUZ</strong></td>
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<tr>
<td>Months of adequate provisioning</td>
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<td>10</td>
<td>9</td>
<td>10</td>
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<tr>
<td>Length of “thin months”</td>
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<td>2</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Dietary Diversity Score</td>
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<td>6.9</td>
<td>6.86</td>
<td>7.3</td>
<td>8.5</td>
</tr>
<tr>
<td>% households consuming more than 6 food groups daily</td>
<td>-</td>
<td>100%</td>
<td>84%</td>
<td>94%</td>
<td>100%</td>
</tr>
<tr>
<td>Coping Strategies Index (CSI)</td>
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<td>20</td>
<td>24.35</td>
<td>9.3</td>
<td>4.4</td>
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</table>

1. Based on 95 households in eight communities in San Ramón (Nicaragua), and 139 households in four communities in Veracruz (Mexico).
2. Dietary Diversity Scores based on the number of food groups consumed during a given time period, with 12 food groups used as a foundation (based on methods reported in Swindale, & Bilinsky (2006).
3. These slightly lower numbers can be explained by the drought, which affected some families in the sample who had less access to water to irrigate their gardens.
4. CSI=Coping Strategies Index: this score measures the variety of behaviors that people implement to cope with scarcity. Lower score means the usage of less severe strategies or less frequency use of strategies, hence less scarcity. Strategies based on activities described in Levels 1-4.
all relevant voices to the table. Farmers received a base price for their coffee that exceeded the premium for fair trade or organically certified coffee. An additional 5% of the price paid by the roaster goes to a “Sustainable Agriculture Fund” to finance coffee innovation projects decided upon by the communities themselves.

A highly targeted customer base has been built around Café AgroEco®, including institutional and individual purchasers. Building on initial advances, the project collaborators decided to return to the bargaining table. With buyer, importer, cooperative leaders, CAN, and men and women farmers all present, a second fund was created, the Women’s Unpaid Labour Fund, which added another 4% to the price of the coffee, to be invested in initiatives led by the women themselves.

This relationship has continued through the 2017/18 harvest. Today, AgroEco® coffee continues to provide a premium of at least 15% beyond Fair Trade certified, thanks to the 4% premium paid into the Women’s Fund, 5% to the Sustainable Agricultural Fund, and an additional 5-6% premium paid by the roaster. AgroEco® coffee’s approach to value chain integration and institutional strengthening further represents best practices in ensuring that alternative coffee brands actually provide livelihood benefits (c.f. Bray and Neilson, 2017; Méndez et al., 2010).

In Nicaragua, the women’s group decided to invest their fund in the agroecological renovation of 0.5 hectares in each of their family coffee parcels. Since then, the women have expanded their agroecological coffee plots to a total of

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24 The customer base is comprised of: i) the dining halls of UC Santa Cruz, through a long-term contract to purchase CAN coffee in solidarity with the NGO’s work; ii) consumers who visit the cafés of Santa Cruz Coffee Roasting Company (SCCRC), which has an agreement to source from the growers in Nicaragua and Mexico; and iii) individual consumers who subscribe to SCCRC to establish a standing order for delivery of AgroEco® coffee. For the 2013/2014 harvest, the brand moved 25,000 pounds of coffee beans from the farmers in Nicaragua to consumers, and 18,000 pounds of coffee from Mexico.
approximately ten hectares, and men and women gather every two weeks to make organic fertilizers to support the process.

In Mexico, the women’s group invested the premium in the development of a branded coffee, FEMCAFE, to be sold locally and via direct sales throughout Mexico, and investment in a roasting facility. In 2016/2017, five years after initiating FEMCAFE, the women were able to export a shipping container of unroasted beans to the US. However, the greatest returns have come through the roasting facility. For the 2016/17 season, the equivalent of almost four containers of coffee was sold to a solidarity network of women in cities across Mexico via a passenger bus-based shipping service. Most of the value added goes back to the women and their communities – not to distributors in the middle of the chain.

Enabling local social organizations to build capacity, share knowledge and build shared ownership was an essential ingredient of the project from the outset. In particular, steps to empower youth and women were prioritized: a youth- and women-centred methodology was employed, as well as targeted training programs. Fundamental changes in culture and custom were required in order to create the conditions for women to take the lead, and be rewarded, in key steps towards meeting the project’s goals, e.g. installing home gardens, planting coffee plots, and building a café and farm store in a nearby urban centre.

Even as the first home gardens flourished and the farmers’ markets allowed women to generate additional income, CAN, the UCA San Ramón, and VIDA sought to further strengthen women’s access to capital, since it was evident that women were contributing more labour to coffee production (and other agricultural and household tasks) than they were being compensated for.

Capacity-building and broad ownership of the project proved essential in keeping it moving forward as challenges emerged. For example, in the absence of formal markets for the vegetables produced in home gardens, the cooperatives established monthly farmers’ markets in the nearby municipal centre of San Ramón, and a group of women set up a café to sell their coffee and surplus fruits and vegetables directly to consumers.

As Don Pedro, a farmer from La Pita, noted during an exchange about halfway through this five-year project: “When you first came to our community, you said that we had in our own hands what we needed to change. We did not understand what you meant at that time. But now we do. And we are making the change happen.”

**CHANGES IN INSTITUTIONAL FRAMEWORK**

While the impetus for changes seen in this project came from civil society groups (CAN and local partners), it is important to acknowledge the regional institutional context, namely the strength of the cooperative movement in both Mexico and Nicaragua.

CAN chose early on to work closely with farmers and their cooperatives as equal partners in the change process. This empowered the cooperatives to become involved in local and national politics, especially in Nicaragua, where cooperatives operate at three different levels and...
play an active political lobbying role. In 2004, a process began to reform Nicaragua’s rules governing cooperatives. The UCA San Ramón participated in the dialogues and promoted the Ley General de Cooperativas once it passed in 2006; the new law broadened the focus beyond a strictly economic one, to include areas such as gender, environment and youth.

The project was embedded in this complex institutional framework through the collaboration with the UCA San Ramón, a second-level cooperative. This allowed the project to amplify its outreach and knowledge dissemination, while also providing local institutional structures with greater resources to lobby on behalf of their farmers.

The multi-stakeholder price-setting process and solidarity-based relationships underpinning AgroEco® coffee may also represent a new institutional/governance structure – underlining the importance of looking beyond formal institutional frameworks for levers of change.

26. In Nicaragua, cooperatives operate at three different levels. The first level is a cooperative of farmers dealing mostly with local production issues in their own community. The second level is a “cooperative of cooperatives” where anywhere from 10-20 first level cooperatives form a second level cooperative to aggregate support for finances, product procurement, and social programs relating to health, education, training, and extension. Third level cooperatives are focused on negotiating international sales, and lobbying the government for political and policy support for their farmers and their cooperatives.

27. Information on the reform of cooperative laws was provided by Yadira Montenegro, CAN’s local coordinator at the UCA San Ramón cooperative, in a September 2018 interview.
### Figure 7 - Five Levels of Change in San Ramón and Veracruz

(Data Source: Putnam et al., 2016; CAN, 2015a)

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>San Ramón</th>
<th>Veracruz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Households with garden irrigation systems installed</td>
<td>35</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Soil fertility and conservation practices implemented</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>Households diversifying with fruit trees and vine crops, vegetable crops</td>
<td>95</td>
<td>139</td>
</tr>
<tr>
<td>4</td>
<td>Number of households adopting Best Agricultural Practices promoted by the project</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>Species of heirloom vegetable seed being saved by households</td>
<td>0.73</td>
<td>-</td>
</tr>
</tbody>
</table>

1. Data for 95 households in San Ramón and 139 households in Veracruz. In most outputs the initial value was at or close to zero.
2. For example, cover cropping, composting, reduced tillage, etc.
3. Based on community-based experiences developed by CAN (CAN, 2015b).
4. In Nicaragua, approximately 0.7 hectare or ~7000 sq. meters.
5. CADAs (Spanish acronym) are Food Storage (especially corn and bean grain for consumption) and Distribution Centers of basic household goods purchased in bulk and housed at the cooperative for cooperative members at a reduced price.
6. Community Seed banks are part of CADAs, where local seed for planting is properly stored and made available to cooperative members through a 2:1 exchange and return system.