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Research Brief #12

Will "We" Achieve the Millennium Development Goals with Small-Scale Coffee Growers and Their Cooperatives? A Case Study Evaluating Fair Trade and Organic Coffee Networks in Northern Nicaragua

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The people who sustain more than half of the world's biological and cultural diversity live in the world's leading coffee export countries (Topik and Clarence-Smith 2003). Small-scale coffee-growing farm families sustain much of this diversity through the way they live and manage natural resources (Gliessman 2006, Moguel and Toledo 1999). Most Mesoamerican smallholder coffee-producing households grow half or more of their food (Bacon et al. 2008, Jaffee 2007, Méndez et al. 2006) while at the same time taking part in the monetary economy through commodity production and wage labor (Hernandez-Navarro 2004).

The coffee-growing regions in many of these same tropical countries, including Nicaragua, Guatemala, Colombia, and Mexico, also have some of the highest levels of economic poverty in the world (UNDP 2006). Smallholder livelihoods suffered when international coffee commodity prices plummeted from 1999–2004. In response to the coffee crisis, non-governmental organizations (NGOs), selected coffee companies, and several coffee producer cooperatives spearheaded efforts to expand sustainable coffee certification programs (Bacon et al. 2008, Oxfam 2003). These markets, including certified Fair Trade, organic, and Rainforest Alliance coffees, have grown rapidly since the late 1990s (Kilian et al. 2006, Daviron and Ponte 2005).

This study of 177 Nicaraguan households involved in small-scale coffee production contributes to a growing body of interdisciplinary research assessing household- and community-level effects of participation in sustainable coffee certification programs.[1] Nicaraguan small-scale coffee farmers are broadly similar to millions of small-scale farmers throughout Latin America and the Caribbean. Nicaragua has also emerged as a leading producer of specialty and sustainable coffees. Thus we feel that our research is representative of the situation in which many small-scale coffee producers find themselves today.

In examining the effects of certified coffee markets, we also use the results of long-term empirical research on the ecologies and livelihoods of coffee farmers in Central America and Mexico (Bacon et al. 2008) to raise critical questions about the ability of voluntary certification programs to deliver on their goal of improving small-scale farmer livelihoods (Méndez et al. 2006). Our work contributes to a growing literature that uses coffee as an entry point to study the relationships connecting consumers, industry and civil society with sustainable development in the tropics (e.g., Bacon et al. 2008, Goodman 2008, Jaffee 2007, Lyon 2007, MacDonald 2007, Raynolds et al. 2007, Daviron and Ponte 2005, Goodman 2004, Mutersbaugh 2004, Levi and Linton 2003, Renard 1999).

We begin this research brief with a short history of coffee growing in Nicaragua, examining changes in land ownership, the growth of cooperatives, and the way that the coffee crisis has spurred the growth of specialty markets and sustainable community development efforts. We then describe our research approach and use the Millennium Development Goals (MDGs; see sidebar, page 2) to frame our results. After summarizing our research findings in the context of the MDGs, we discuss some of the reasons that most coffee farmer livelihoods remain precarious, and suggest several strategies to improve the more promising sustainable coffee partnerships.

The core findings of this research show that despite some recent gains in terms of coffee price increases (Figure 1, page 9), small-scale growers—no matter whether they sell to certified or conventional markets—are in fact losing economic ground due to declining real prices and the rising costs of sustainable production, a situation that needs to be addressed by the coffee industry, certification groups, producer organizations, and governments.

The results also demonstrate that the combination of effective small-scale farmer cooperatives and participation in Fair Trade and organic networks are often associated with several important tangible benefits, including

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collective empowerment, educational achievement, and more environmentally friendly farming practices. Participation in these networks and closer ties to the industry have also led to more efficient coffee production and higher coffee quality. However, persistent livelihood insecurities for small-scale growers suggest the urgent need for a renewed partnership with all stakeholders in sustainable coffee.

The Millennium Development Goals

The Millennium Development Goals (MDGs) are intended to address the conditions for some of the world's poorest people. Following the United Nations Millennium Declaration in 2000 (UNDP 2006), 189 countries adopted the MDGs. The goals are accompanied by indicators and targets to achieve by 2015. The basic eight goals are to –

1) Eradicate extreme poverty and hunger
2) Achieve universal primary education
3) Promote gender equality and empower women
4) Reduce child mortality
5) Improve maternal health
6) Combat HIV/AIDS, malaria, and other diseases
7) Ensure environmental sustainability
8) Develop a global partnership for development

COFFEE AND REVOLUTION: A SHORT HISTORY OF THE GOLDEN BEAN IN NICARAGUA

To understand the context of the coffee crisis and emerging solutions, it's important to briefly review the development of coffee growing, the history of coffee cooperatives in Nicaragua, and the current coffee economy.

Two centuries after coffee was introduced to Nicaragua, the "golden bean" has become an important crop for small-scale farmers. However, this was not always the case.

In the late 19th century, the Nicaraguan government offered large land grants, infrastructure and credit to encourage its political allies—mostly foreigners and elite nationals—to expand coffee production into lands that were then controlled by Chorotegas, Náhuatls, Summo, Matagalpas, and other indigenous peoples. German and Italian immigrants were among the first to settle in these areas. As outlined below, during the last century, indigenous small-scale farmers, many of whom were once workers on large estates, have gained access to land and incorporated coffee into their diverse farming systems (Westphal 2008). In this way, coffee also became an important crop for small-scale farmers.

Land reform and the first generation of coffee cooperatives

Rural land ownership patterns changed after the Nicaraguan people consolidated decades of resistance and overthrew a 40-year rule by the U.S.-backed Somoza family dictatorship in July 1979. The subsequent Sandinista government seized political control of the Somoza dynasty, which once included an estimated 17% of the coffee lands (Rocha 2003:74, Austin et al. 1985).

The Sandinista government managed a series of land reforms throughout the 1980s, which eventually affected an estimated 50% of the 5.6 million hectares in agricultural production (CIPRES 2006). Most—but not all—of this land was redistributed from large holdings into state run enterprises and thousands of cooperatives (Austin et. al 1985). The land reforms significantly diminished the percentage of land in the largest landholdings (larger than 360 hectares [890 acres]) and helped more than 100,000 small-scale farm families access land (CIPRES 2006, Saldaña-Portillo 2003). The case study for this research occurs in the department of Matagalpa. Approximately 42% of coffee producers in Matagalpa and Jinotega received land titles through the agrarian reform in the 1980s (Rocha 2003: 72).

The Nicaraguan revolution and the Sandinista government-led agrarian reforms planted the organizational seeds and influenced the landownership patterns that would make possible the rapid growth of Fair Trade cooperatives in the 1990s (see below). In addition to forming the core component of a coalition that defeated a dictatorship, several of the most positive changes that occurred during the 1980s included: 1) a transformative national literacy campaign that reduced adult illiteracy rates from 50% to 20% (UNESCO 2005); 2) a land reform program that redistributed some of the nation's largest landholdings and promoted peasant organizations, and 3) the implementation of several community-based public health campaigns, civilian-friendly security forces, and more participatory local development institutions (Cardenal 2004).

However, this period was not without Sandinista government-sponsored injustices and mistakes, including the displacement of indigenous groups on Nicaragua's Atlantic Coast, attempts to centralize, control, and modernize agricultural systems in ways that initially failed to recognize the many benefits of small-scale farmers' diverse agroecological systems (Westphal 2008), and increasing corruption among some party leaders in the late 1980s. Many observers, including the International Court of Justice, identified the U.S.'s political, economic, and military interventions to equip and train the Contra resistance force inside Nicaragua as illegal and a significant contributor to violent wars that killed more than 50,000 Nicaraguans in the 1980s (Cardenal 2004).

Fair Trade cooperatives

In the 1990s, Nicaragua's civilian population voted out the Sandinista government. Most of the cooperatives created by the government in the 1980s collapsed. However, others survived thanks to several factors, including bottom-up organizing, effective leadership, and business and social development, combined with support from alternative trade organizations and international NGO networks. Once the site of violent conflicts, in the 1990s many cooperative landscapes became places for reconciliation as ex-combatants from both the Sandinista and Contra groups came together in search of peace, community development, and a better livelihood (Bacon, personal observation).

The combination of committed alternative trade organizations, such as Equal Exchange, and rapidly expanding

certified Fair Trade and organic specialty coffee markets, led to the emergence and rapid growth of a second generation of small-scale Fair Trade cooperatives unions that attracted many small-scale coffee producers.

Landscape change related to the coffee crisis: on this farm in Nicaragua, growers cut down their coffee bushes and shade trees to plant beans. (Photo by Chris Bacon)

THE COFFEE CRISIS, SPECIALTY MARKETS, AND SUSTAINABLE COMMUNITY DEVELOPMENT

Beginning in 1999, prices for the green (unprocessed) coffee commodity began to drop, hitting a 30-year low in December 2001; discounted for inflation, real coffee prices were among the lowest in history. Small-scale farm families initially reacted to their plummeting household incomes by leaving to look for alternative work and by cutting spending on education, health care, and housing (Varangis et al. 2003). In Central America, the World Food Program declared a food security emergency as farmers went hungry in most coffee producing regions (2003). Primary school attendance rates also dropped.

Smallholders' efforts to meet basic human needs halted nearly all on-farm investments, while other coffee farmers sacrificed the biodiversity associated with shade coffee when they switched from coffee production to cattle ranching. The economic impacts rippled through coffee-dependent economies as millions of jobs disappeared and thousands lost their farms (CEPAL 2002, Oxfam 2002).

A size-based producer typology provides background for this analysis and an entry point for discussing several impacts of the coffee crisis. There are about 31,000 coffee farming operations in Nicaragua, of which 94% are small-scale family farms managing fewer than 10 hectares (25 acres). Land distribution and coffee production remain uneven: 6% of the coffee farmers control 42% of the land in coffee production (UNICAFE 2003).

The impacts of the drop in coffee prices on small-scale and micro producers (fewer than 14 hectares) included rapidly declining incomes, resulting in hunger, crop abandonment, and a series of issues that we explore more deeply in the following sections. The owners of medium-scale farms (14 to 35 hectares) often stopped employing farm workers and decreased management intensity. The largest plantations (more than 35 hectares) employed most of the farm workers and had higher monetary costs of production due to dense cropping patterns, dependence on paid labor, and intensive chemical inputs. When international coffee prices were high, high yields and low wages contributed to a profitable operation. When the prices fell below the costs of production, banks stopped offering credit and foreclosed on debt-ridden large landholdings.

Along with the plunge in coffee prices from 1999–2004, the combined effects of war, political change, and natural disasters left most Nicaraguan coffee growers with precarious livelihoods and semi-abandoned farms in the early 21st century. Many producers had not applied any type of fertilizer (organic or synthetic) in more than 15 years. Coffee trees were old and damaged and their total production low. Although it is important to note that smallholders measure total yields in terms of the fruits, firewood, and other plants harvested from the shade trees above their coffee plots, overall coffee yields averaged only 406 pounds of exportable coffee per hectare in 2005 (UNICAFE 2003, CAFENICA 2006). In contrast, conventional high input systems, which include very few or no shade trees and high levels of agrochemical and pesticide applications, can generate coffee yields up to five to ten times the levels of these traditional systems.

In response to the coffee crisis and other challenges, many development agencies advocated increasing coffee sales into certified coffee networks (see sidebar on page 4 and Table 1) and the rapidly expanding specialty coffee market. By 2005, 20% of Nicaragua's 31,000 coffee farmers were connected to cooperatives selling into Fair Trade networks (TransFair USA 2005, UNICAFE 2003), although, most of these farmers sold less than 20% of their coffee via these preferred markets and very few households were even aware of their participation in Fair Trade networks (Bacon 2005).

Companies within the $11 billion specialty coffee industry invested more resources to improve the condition of coffee farming operations in order to increase coffee quality and further promote a degree of environmentally friendly social development. This initiative was not adopted by their counterparts that sell conventional coffees into the $80 billion global coffee market (Bacon et al. 2008, Liu 2007).

In coffee-producing countries, more small-scale farmers united to create stronger producer organizations. International NGOs, such as SETEM, Lutheran World Relief, Oxfam, Coffee Kids, and Twin Trading, have also supported producer-led efforts to build effective cooperatives. Several coffee companies, governments, and foundations invested in building more demand for certified sustainable coffees and undertook social development projects.[2]

Sustainability Certifications in Coffee

Sustainable coffee certification is an umbrella term encompassing several types of certifications, and combinations of certifications. Several macro level studies have described these types of certifications (Ponte 2008, Raynolds 2007, Giovannucci 2005), and documented cases in which certified producers received from US$0.05 up to US$0.80 per pound above non-certified growers (Giovannucci et al. 2008, Kilian 2006). In these studies, organic and Fair Trade certifications have consistently demonstrated price premiums that are significantly higher than those provided by the other leading certifiers.

Table 1 offers a comparative analysis that considers the largest third-party sustainability certifications in the coffee industry. While all five programs have initially targeted the rapidly expanding specialty coffee market segment, both the Rainforest Alliance and Utz Certified have started to sell large volumes of certified products to the conventional coffee industry.

In a recent article, Stephano Ponte addresses the role of multiple stakeholders (civil society, corporations, consumer groups, producer associations, etc.) in deciding the standards, prices, and strategies of several eco-labels (Ponte 2008). One systematic challenge to providing an equal voice for multiple stakeholders is the fact that most NGO-led certification efforts depend on licensing fees from the same corporations and producers they hope to regulate. In some cases, representatives of these companies sit on the board of directors of the certifiers and organizations. The organic system is the only one that is mediated by national governments. The contested nature of Fair Trade is evident in the fact that Fair Trade Organizations International has board members from representative small-scale farmer associations as well as staff from publicly traded coffee companies.

Most certifications have higher production standards and offer price premiums above those received in the conventional markets. However, the premium amounts vary according to the changing prices in the international coffee commodities market, coffee quality, and different certification program. Fair Trade is the only program that provides a guaranteed minimum floor price; this can result in significant premiums when conventional market prices are low. In general, the organic and Fair Trade programs offer producers and exporters the largest and most consistent price premiums.

However, price premiums have not kept up with inflation (CLAC 2006). This is true even when dollars are converted into the local currency in producing countries, and especially evident when analysts compare the declining value of the US dollar against the Euro. When price premiums are discounted for inflation, it becomes clear that real price premiums have declined. In a response to several of these concerns, the certified Fair Trade system recently increased nominal price premiums—other certifications have yet to follow suit. However, even with these increases real premiums have declined.

The final column in Table 1 shows that Fair Trade, organic, and the Smithsonian's Bird Friendly certification programs have first sought to partner with small-scale farms and their collective organizations (Ponte 2008). In fact, Fair Trade claims to only work with small-scale organizations. Rainforest Alliance and Utz Certified started by certifying large-scale coffee plantations. They developed standards that permitted some synthetic fertilizers and pesticides, but sought to reduce damaging environmental practices. They also include several standards aimed at improving living and workplace conditions for coffee workers. Although farms in this study were certified by Rainforest Alliance and Utz, the results are not reported in this paper because these certifications were awarded within the last one to two years and it is still too early to assess their effects.

Table 1. Summary of sustainability certifications in coffee.

Certification and labels	Sector of the coffee market	Stakeholder driven (in 2007)*	Small-scale producer organizations on board of directors	Price premiums to exporters/producers *** (US $/lb of exportable coffee)	Change in real value of prices paid to producers/exporters, 1997-2007	Special focuses on small-scale producers*
Fair Trade	Specialty	Contested	Yes	Price floor US $1.35/lb for Fair Trade conventional and $1.55/lb for Fair Trade organic; premiums $0.10 to $0.80 /lb	Decrease**** (recent price premium increases mandated)	Yes
Organics	Specialty	Yes	Yes/No**	$0.24/lb (range of $0.10 to $0.60 /lb)	Decrease	Yes
Utz certified	Specialty and conventional	No	No	$0.03 to $0.05/lb (range of $0.01 to $0.12/lb)	Decrease	No
Rainforest Alliance	Specialty and conventional	No	No	$0.08 to $0.12 (range of $0.04 to $0.20)	Decrease	No
Bird-friendly	Specialty	No	No	$0.05 to $0.10 (range of $0.05 and $0.28/lb)	Decrease	Yes

Sources: Modified and adapted from Bacon et al. 2008, Giovannucci et al. 2008, Ponte 2008, Raynolds et al. 2007

*Ponte 2008. **The organic certification programs started with ecologically oriented producer organizations developing their own standards; over time, more stakeholders became involved. Currently international associations in combination with national governmental agencies and multi-stakeholder advisory groups establish much of the policy related to standards for organic agriculture. ***Price estimates based on Giovannucci et al. 2008 and Bacon 2005. ****In 2007 and 2008 the Fair Trade Labeling Organizations International increased the final Fair Trade prices by seven to eleven percent; this included a doubling of the social premium from $0.05 to $0.10/lb. Although other certification programs have yet to follow suit, these increases are not large enough to compensate for the declining real value of final Fair Trade prices paid to producers for organic and conventional coffee.

RESEARCH METHODS AND POPULATION

How does participation in organic and Fair Trade certified coffee markets (see sidebar at left) affect producer livelihoods? In order to answer this question, we developed a long-term case study based on more than six years of fieldwork. This research focused on relationships that connect small-scale farmer livelihoods to producer cooperatives, Fair Trade networks, and organic certification systems.

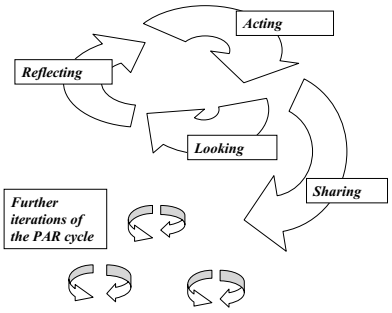
After conducting a household-level baseline survey in 2000, we returned to survey 177 households in northern Nicaragua between June and September of 2006. Many of these farmers were part of the population surveyed in 2000 (Bacon 2005). The research team, which included researchers from the local university and youth from the coffee-growing communities, also conducted six focus groups with farmers and cooperative leaders in order to record their qualitative assessment of the costs and benefits associated with sustainable coffee certification and cooperative membership. In addition, the team conducted key informant interviews with cooperative managers, certification agencies, exporters, roasters, and others. Survey data results were reviewed and triangulated within the database and against cooperative records.

To assess the effects of sustainable coffee certification programs, the 177 households in this study were stratified in the following way: 101 households were members of the CECOCAFEN cooperative union, which has been Fair Trade certified since 1997; 61 farmers sold their coffee via conventional markets; and 15 growers had sold certified organic coffee for the past three years.

This research combines a careful background study of coffee and rural development processes in Nicaragua with a participatory action research (PAR) approach (see sidebar, this page) to analyze small-scale farmers' efforts to create more sustainable livelihoods today(Fox 2006, Bebbington 2000: 498, Scoones 1998). The team used five of the eight Millennium Development Goals (MDGs)—those associated with poverty reduction, education, gender equity, environmental sustainability, and partnerships for development—to frame results. The Goals contain a set of common indicators useful for comparing social development conditions among coffee smallholders with national and international averages.

Community Agroecology Network and Participatory Action Research

The lead researchers on this project are affiliated with the Community Agroecology Network's (CAN's) Participatory Action Research (PAR) initiative. This initiative unites our partners in a collective effort to document and support sustainable livelihoods and biodiversity conservation. As the graphic at right illustrates, PAR is a continual cycle of working with stakeholders to look, reflect, act and share information to accomplish this goal. CAN is currently exploring partnerships to link the outcome-based measures associated with PAR to innovative sustainable coffee partnerships (Bacon et al. 2005).



CAN also links PAR work with education and marketing innovations. By connecting small-scale grower cooperatives directly with individual consumers and University markets, CAN generates better than Fair Trade prices to growers while developing a consciousness of sustainability among both consumers and growers. Through CAN, university students also have the opportunity to affect their school's buying policies and conduct internships in coffee-growing communities.

To learn more about CAN's dynamic work, see www.communityagroecology.net.

CASE STUDY FINDINGS: COFFEE FARMER LIVELIHOODS AND THE MILLENNIUM DEVELOPMENT GOALS

This section presents household-level findings within the context of the Millennium Development Goals. The results for all 177 households are presented together, except in cases where the authors identified a significant effect related to participation in different cooperatives and certified coffee networks. The median coffee production area was 2.1 hectares (excluding outliers, the range was from 0.7 to 25.9 hectares). All farms were located in prime coffee growing territories and more than 80% were at altitudes above 900 meters.

Eradicate extreme poverty and hunger (Millennium Development Goal 1)

Coffee is an important part of the small-scale farm household economy. All the surveyed households used coffee sales to pay for basic needs including food, clothing, education, healthcare, and housing. Small-scale farmer coffee cooperatives have helped producers receive better prices and provided access to credit and technical assistance. They have also provided emergency food aid during times of crisis and promoted a wide diversity of economic, environmental, and social development projects. All of these programs have helped reduce the effects of extreme poverty and hunger.

To supplement coffee income, most households also grow their own food, migrate, and seek off-farm employment. However, job opportunities are limited in a country with an unemployment rate of over 40%. In Nicaragua, extreme poverty rates (the number of people surviving on the equivalent of less than $1 per day) are estimated at 42 and 45% (World Bank 2007, CEPAL 2006, ASDI 2004).

The study results offer three insights into the limitations of coffee production in addressing the first Millennium Development Goal. First, small-scale farmer coffee sales contributed less than a dollar per day per person within the surveyed households. The 171 households produced an average of 2,490 lbs. of green coffee per year.[3] The average price farmers received for their coffee was US$ 0.93/lb., thus the estimated annual gross income from coffee sales was $2,315.70. The minimum estimated monetary production costs, which are not sufficient to cover the costs of sustainable production, since they neither compensate farmers for their labor nor

include depreciation costs, were about $0.54/lb.[4] This results in an average net household income of about $971.10 per year. There was an average of seven people per household, which amounts to a revenue of $137.73 per person per year from coffee sales. The final step in this calculation shows that average net coffee sales contributed about $0.38/day per person. It is important to note that these averages obscure a wide range of results depending on total coffee yields, prices, and the number of individuals per household. Yet, it is clear that income from coffee sales alone—whether from certified or conventional markets—is not enough to eliminate extreme poverty.

A second issue concerns the implied wage that small-scale farmers receive for work in the coffee fields (Calo and Wise 2005). The wage is implied since small-scale producers do not receive a daily wage for their coffee work, but a combination of credit and payments for the coffee produced and sold. This study did not gather enough data to directly measure the income from days worked in coffee production. However, most households did contract some external labor and were generally paid $1.50 to $4 per day for this work.

Finally, hunger is a pressing issue in Nicaragua. A recent report estimates that 27% of the nation's population was below minimum nutrition levels in 2005 (World Bank 2007). Sixty-nine percent or 123 of the surveyed households stated that at some time they have been unable to meet their basic nutritional needs. Most coffee farm households annually suffer hungry periods during the thin months—or *meses de las vacas flacas* (months of the thin cows). Small-scale coffee farm households use harvests from the land they farm, family/community social networks, government and United Nations food support programs, monetary income—including the revenue generated from coffee sales—and access credit in their effort to ensure that everybody in the house has enough to eat each day, or household food security. They also seek to maintain their traditional diets, consisting primarily of red beans, corn, fruits and vegetables, and dairy, and occasionally meat when available.

Small-scale coffee growers' ability to have a degree of sovereignty over the foods that they eat is threatened because many farmers fear losing their land. Of the surveyed households, 20% perceived a risk that they could lose their farm. During the worst periods of the coffee crisis (1999–2002), more than 3,000 farms—close to 10% of Nicaragua's coffee farmers—lost their land to bank foreclosures and debt accumulation (CEPAL 2002). Meanwhile, 33% of the surveyed households have at least one family member who emigrated during the last two years; 28% stated that the migration was for economic reasons. The most common destinations were other Central American countries (69% of the households with a migrating member) and the U.S. (10%).

Achieve universal primary school education (Millennium Development Goal 2)

The average adult surveyed in this study completed five years of public schooling. The results summarized in Table 2 separate households affiliated with Fair Trade cooperatives for more than seven years and those affiliated with cooperatives selling into conventional markets. There are significant differences between the two groups. It should be noted that these strong differences were not detected in comparable international surveys conducted in Peru, El Salvador, Mexico, and Guatemala (Arnould et al. 2006, Méndez et al. 2006). However, some of these differences are probably due to the strong commitment to education demonstrated in the early 1980s in Nicaragua, and the fact that leaders within many Fair Trade cooperatives have sought to expand upon this ethic. Forty-nine percent of the households affiliated with Fair Trade cooperatives said they have received support for their educational efforts, while only 20% of the households affiliated with cooperatives selling into conventional markets received this assistance. Nicaragua's two largest Fair Trade cooperatives, CECOCAFEN and PRODECOOP, awarded more than 370 scholarships and provided basic literacy training to more than 350 adults by the end of 2006 (Bacon 2006, PRODECOOP 2005).

Promote gender equality and women's empowerment (Millennium Development Goal 3)

This survey shows uneven progress toward achieving women's equality in terms of both political participation and productive asset ownership within small-scale farm households and their cooperatives. A recent study estimated that 20–30% of Nicaragua's co-op members were female (Chamorro 2005). The three leading Fair Trade cooperatives also have female managers, but within these cooperatives gender relationships remain uneven.

Other indicators for assessing gender equality are women's access to financial resources (credit and savings) and their legal ownership of productive assets, such

Table 2. School attendance toward achieving formal education in Nicaragua.

Indicators	Households in cooperative unions selling to Fair Trade markets	Households in co-ops NOT selling to certified markets	National average	Millenium Development target
Primary school attendance (7-12 years), children currently attending class	124 of 128 97%	48 of 65 74%	88%*.	100%.
Secondary school attendance (13-17 years)	110 of 131 84%	27 of 51 53%	41%*	No target set
Youth (18-25 years old) who have completed primary education	73 of 270 27%	11 of 100 11%	**	100% by 2015**

Sources: Household surveys for this population; *Data from 2005, PNUD, 2006: 325.
**86% literacy rates in this age group based on data for 2003 from World Bank, 2007.

as land titles (CINCO 2005, CMRDPT 2007). In this population, 47% of the 37 women who answered questions about credit claimed to have access; the percentages were higher among female members of the cooperatives connected to Fair Trade networks. A national survey in Nicaragua found that only 14% of the women in rural areas had access to credit in 2001 (CENAGRO 2001).

This research uncovered at least one way that uneven gender relationships contributed to unequal compensation for women's work on coffee farms. Women worked an average of 77 days per year in coffee farms affiliated with Fair Trade networks, but only 33 days per year in cooperatives selling to conventional networks. However, only 45% of the men in both Fair Trade and conventional cooperatives claimed to share coffee sales with their spouses. In most cases, men were the official members of the cooperatives and they received the payment for their coffee. The consequences of this inequality are exacerbated by high rates of male alcoholism.

Support environmental sustainability (Millennium Development Goal 7)

Shade coffee landscapes conserve biodiversity, mitigate some effects of climate change, produce clean water, and reduce soil erosion (Dietsch and Philpott 2008, Méndez et al. 2007, Méndez and Bacon 2006, Moguel and Toledo 1999, Perfecto et al. 1996). Although shade coffee farms help conserve surface water and soil, coffee farms that lack water filtration systems can also contaminate the water they use to de-pulp and wash the coffee.

In the study population, 68% of the Fair Trade farmers, compared to 40% of those selling to conventional markets, had implemented ecological water purification systems. Finally, 43% of the households selling to Fair Trade certified cooperatives had implemented soil and water conservation practices, compared to only 10% of the non-Fair Trade households. These findings demonstrate the significant—and uncompensated—contributions that many cooperatives and small-scale coffee farmers already make towards achieving the seventh MDG. A previous study also showed high levels of tree and orchid biodiversity in coffee farms of this region (Méndez and Bacon 2006).

A family tends their coffee seedlings in Matagalpa, Nicaragua. Coffee seedlings grow for about a year before they are transplanted. It takes four to six years before each coffee bush begins to produce significant harvests. (Photo by Melvin Espinosa)

Promote a global partnership for development (Millennium Development Goal 8)

The final Millennium Development Goal promotes a combination of activities intended to create a partnership for global development. This study indicates that a strong regional cooperative union, owned by small-scale farmers and their community-level cooperatives, is the primary partner supporting small-scale farmers' integration into global markets. This partnership has often been formed with importers, roasters, retailers, NGOs, and consumers within the specialty coffee industry. Certification agencies, such as the Fair Trade Labelling Organizations International (FLO), which provides Fair Trade certification, help to create, govern, and maintain many partnerships.

An important strategy related to the eighth Millenium Development Goal is to promote partnerships that build business capacity and provide access to markets. In this study, 137 out of 177 farmers stated that the cooperative provided them with better coffee prices; 100% of farmers connected to the FLO-certified cooperatives made this claim, as did 50% of the households connected to the non-certified cooperatives. Small-scale farmers associated with both types of cooperatives reported that their organizations provided valuable support during the coffee crisis and other emergencies, including food aid, emergency loans, and ad hoc support for medical care. In comparison to the rest of the farmers in the study, the households affiliated with the FLO-certified cooperatives received an average of six more days per year of technical assistance. Finally, households reported that the cooperatives helped them link to NGO-led and importer/roaster-sponsored community development projects, including scholarships for education, coffee quality training, and micro credit programs.

Members of Fair Trade certified cooperatives were also more likely to have access to pre-harvest credit—77% vs. 33%. This credit represents an important partnership for global development that includes participation from international development banks and foundations (such as the Green Development Fund and Rabobank) and mission-driven Fair Trade coffee buyers. Interest rates have declined due to admirable efforts by green development finance agencies, however many cooperatives outside the Fair Trade system do not have access to credit and the credit to Fair Trade cooperatives remains insufficient. In fact, most Fair Trade cooperatives could only access short-term financing. In 2005, interest rates were generally from 7–10% to the cooperatives. This translates to

12–18% at the farm level and millions of dollars spent in interest every year. Members of these cooperatives connected to certified markets paid an average of $158.56 in interest per year vs. $55.98 paid by the average household selling to conventional markets. However, these interest payments help to support their cooperatives and these loans are also associated with the higher investment rates found on the farms affiliated with the cooperatives connected to certified markets.

There are several other important benefits from membership in cooperative unions linked to Fair Trade markets and international development networks. Our survey results demonstrate that 61% of all surveyed households increased investments on their farms, and 31% improved their houses. In the case of house improvements, 46% of the households connected to a strong Fair Trade cooperative improved their houses, while only 10% of the households that lacked these connections made similar improvements. Furthermore, 23% of the Fair Trade households purchased land during the last three years, while fewer than 10% of the households connected only to conventional markets purchased land during the same period. These results suggest that certified coffee markets and committed coffee buyers have played an important role in small-scale farmer local development processes.

STRATEGIES TO CONFRONT THE COFFEE CRISIS

The case study findings reveal that small-scale coffee farmer livelihoods are complex and often precarious, and that their conditions still do not meet several important human development standards. These results suggest that fairer trade relationships, increased investment, and creative community development approaches are needed to achieve the targets established by the Millennium Development Goals in coffee growing territories. This analysis is consistent with many global assessments that show the inability of most countries and the international community to work effectively together and deliver on their commitment to meet the Goals by 2015 (World Bank 2007, PNUD 2006).

Why are small-scale farmers still in a difficult situation?

Declining real coffee prices and increasing costs for sustainable coffee production have caught farmer households in a dangerous price-cost squeeze (CLAC 2006, Gliessman 2006, Talbot 2004). Figure 1 shows real coffee prices discounted for inflation, including the international price and the Fair Trade minimum price.

At the same time the real price of their primary cash crop was falling, small-scale farmers faced rising costs to produce coffee with sustainable techniques (CLAC 2006). A study conducted by the Latin American and Caribbean Network of Fair Trade Small-Farmer Cooperatives demonstrates that the costs of certified organic and Fair Trade production have continued to rise while the sustainable coffee price premiums have remained relatively stagnant. The costs of sustainable production include both monetary costs directly associated with producing, processing, and certifying coffee (such as coffee quality improvement investments, marketing expenditures, and interest payments) *and* the revenues necessary to support more sustainable livelihoods, including health, education, housing, land, as well as democratic organizing practices and environmental conservation.[4]

Small-scale farmer cooperatives

Small-scale farmer cooperatives are arguably the most important institution to promote sustainable livelihoods with small-scale producers, providing credit, technical assistance, marketing channels, and access to many social benefit programs. However, many cooperatives are poorly organized and lack administrative capability, and some lack accountability to their members. A core question in developing effective strategies to improve farmer livelihoods is how to support efforts to build more effective, innovative, and accountable producer cooperatives.

This question is best asked and answered *with* the producer groups and their representative cooperative organizations. A core strategy to improve small-scale farmer livelihoods and promote collective empowerment is to develop and maintain representative, efficient, accountable, and productive cooperatives. Along with the livelihood benefits such as improved schooling and investments in housing discussed above, these cooperatives and unions (cooperatives made up of smaller community-level cooperatives), have provided valuable economic, political, and legal support to small-scale farmers seeking to defend their land against speculators, large landholders, and high debts. These cooperatives also serve as bridging partners, connecting small-scale farmers to buyers in the specialty and certified coffee markets.

Strategies for effective small-scale farmer organizational development combine local/indigenous knowledge, political legitimacy, and endogenous leadership with effective business capacity. It is difficult to find and cultivate this combination of leadership values, skills, and knowledge. Long-term partnerships with "socially responsible" businesses and international NGO networks often play an important supporting role.

In Nicaragua, many cooperatives were formed in the 1980s, but only a few have survived unsupportive neoliberal policies since 1990. Most of those continuing today have combined a collective struggle for land and political voice with internal business and local development strategies. Since the 1990s, Fair Trade certifications and "socially responsible" coffee companies have supported these processes. However, many dynamic tensions accompany this dual accountability to international markets and farmer members (Bacon et al. 2008, Mutersbaugh 2004).

Certainly more international development projects could support small-scale farmers in their efforts to hold their organizations accountable. This is illustrated by a recent example led by Twin Trading and Cafedirect. Through their long-term partnerships with producer cooperatives, these organizations have included multiple exchanges (cooperative members visiting roasters and retailers, exchanges among producer groups), coffee quality improvement workshops, and advanced accounting and leadership work organized with—not for—producer partners.

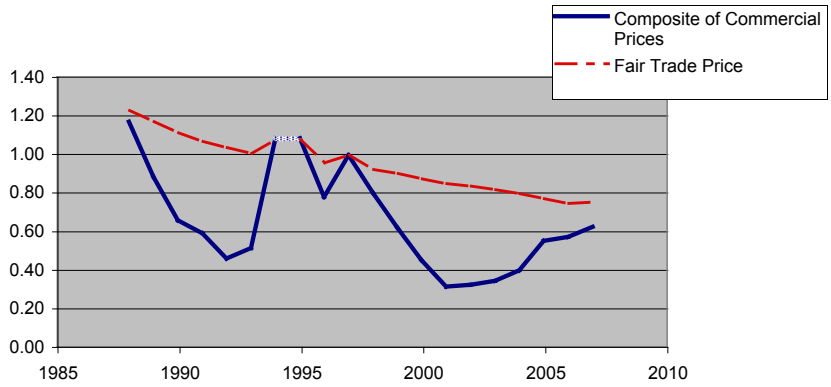


Figure 1: Real commercial vs. real Fair Trade coffee prices, 1988-2007 (1988 $US)

Sources: Updated from CLAC 2006, FLO 2007; commercial prices are a composite generated from the International Coffee Organization (ICO, 2008); prices discounted with the US Department of Labor's Consumer Price Index Inflation Calculator (US Department of Labor, 2008).
Notes: *There are several periods when the nominal international coffee prices exceeded Fair Trade minimum prices, such as the period from 1994 to 1995. This happened again in 1997. The 2007 and 2008 increases in the Fair Trade social premium and organic differential make this situation less likely to occur in the future. This figure does not include data for coffee that is certified both organic and Fair Trade. The source data for the Fair Trade price includes nominal price increases, including in 1995 and 2007, although it does not consider planned increase for June 2008 (FLO 2008).

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Sustainable coffee certification, coffee buyers and small-scale farmers

These findings, as framed by the Millenium Development Goals, suggest conditions are difficult for all small-scale farmers. However, those small-scale households linked to Fair Trade cooperatives are more educated, have improved access to credit, and have higher investments in their households and land. Fair Trade certification and the international development networks that have supported many of the producer associations and cooperatives that receive this certification have created an environment that supports the growth and strengthening of small-scale farmer cooperative unions. They have also connected many specialty coffee businesses directly to small-scale farmer cooperatives instead of private or multi-national export companies. This has resulted in several important benefits that have improved or, in many cases, decreased the vulnerability of small-scale farmer livelihoods (Jaffee 2007, Arnould et al. 2006, Bacon 2005, Raynolds 2002).

The proliferation of sustainable certification programs, including Utz, Rainforest Alliance, Fair Trade, organic, and Starbuck's C.A.F.E Practices, has resulted in new opportunities, benefits, costs, and complications for smallholders and their organizations (Giovannucci and Ponte 2005, Mutersbaugh 2004). Organic and Fair Trade certification systems have more small-scale farmer involvement than the Utz Certified and Rainforest Alliance systems, which initially focused their efforts on larger landholdings (Raynolds et al. 2007, Kilian et al. 2004). However, since 2004, some small-scale farmer cooperatives have connected to Rainforest Alliance, Utz Certified, and Starbuck's C.A.F.E Practices certification programs.

Small-scale farmer organizations have a more active role in the governance of the Fair Trade system (including seats on the FLO board of directors). This has provided an important opening for dialogue among stakeholders and encouraged cooperative organizations to invest precious resources in attending meetings promoting this system (CLAC 2006). However, as this system becomes more dependent on the licensing fees paid by larger corporate roasters and retailers, it will be difficult to maintain a clear empowerment- and sustainable development-oriented agenda.

CONCLUSIONS—NEXT STEPS IN THE PARTNERSHIPS FOR SUSTAINABLE COFFEE

Small-scale farmer families have provided coffee to global markets for centuries. Their continued survival also gives life to many endangered indigenous cultures and sustains delicate mountain environments (Prechtel 2003). The coffee beans and marketing stories they

Segundo and his son depulp coffee at their small-scale family farm in San Ramon, Nicaragua. These small coffee mills offer an effective way to conserve water and keep the coffee pulp on the farm for making compost. (Photo by Bridget O'Brian)

export, the jobs they generate, and the taxes they pay are their contributions to a partnership with their governments and the global coffee industry. While this partnership has sustained the industry (Talbot 2004) and provided some benefits to the export elites (Paige 1997), most small-scale farmers annually generate less than a dollar per day per person from their coffee sales. Many individuals in these regions do not enjoy even the basic human needs codified in the Millennium Development Goals. In conclusion, this partnership has not worked well for most small-scale coffee farmers.

This study's findings call for a renewed commitment to existing relationships with small-scale producer cooperatives and their communities. This renewed partnership will link governments, small-scale farmer organizations, civil society organizations, certification agencies, and the specialty coffee industry in an integrated effort to achieve the Millennium Development Goals in Nicaragua and all coffee growing territories. The specialty coffee industry has been a leader among industry associations committed to both quality and sustainability. It now has a chance to take this commitment to the next level with one group of important suppliers. This commitment must offer the terms of trade (prices), access to credit, training, and social and productive development investments necessary to overcome decades of exclusion. Above all, this will be a space to encourage creative and collaborative ideas for change. The fact that most small-scale farmers work diligently to provide this coffee, yet continue to struggle to stay on their land, educate their children beyond 6th grade, and feed their families, should no longer be acceptable within this partnership.

If governments provide basic social services and the coffee industry increases prices and investment, producer organizations should be expected to increase transparency, accountability, and efficiency. Yields and coffee quality should also increase. Innovative diversification projects and mutually beneficial partnerships will grow as trust is established and a more even distribution of costs and benefits follows. These changing attitudes and actions will move all partners forward in the process of achieving basic human rights and living conditions.

ENDNOTES

1. This report is part of an ongoing participatory action research (PAR) process that seeks to assess the state of small-scale coffee farmer livelihoods and landscapes in Central America and Mexico. Collaborating organizations include the University of Vermont's Agroecology and Rural Livelihoods research group, Oxfam America, the Community Agroecology Network, Advising & Interdisciplinary Research for Local Development and Conservation (El Salvador), and the Center for Social Economy (Nicaragua).

2. See the work of Katzeff 2002, Crosby 2002, and PEARL 2007 for examples of innovative strategies and projects to create sustainable chains within the specialty coffee industry.

3. The average production increases to 4,000 lbs. when we include the six largest farms in the study.

4. This cost estimate does not include farmers' labor time, training time, costs for farm-based quality improvement investments, and the organizational costs associated with creating a participatory and democratic cooperative organization. A study of these "additional" costs for sustainable production estimated that total real costs were from 1.25 to 1.51 US$/lb for conventional Fair Trade coffee and 1.72 to 2.19 US$/lb for certified organic Fair Trade coffee (CLAC 2006).

ACKNOWLEDGMENTS

We are very thankful to Oxfam America for supporting the bulk of the field research on which this brief is based. Seth Petchers provided insightful comments on an earlier version of this paper. The Ruth and Alfred Heller Chair in Agroecology, the Community Agroecology Network, and the Center for Agroecology & Sustainable Food Systems have also provided support for this publication.

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**Selections from this paper appear in a forthcoming article in a special issue of* Globalizations *entitled, "Are sustainable coffee certifications enough to secure farmer livelihoods? The Millennium Development Goals and Nicaragua's Fair Trade cooperatives."*

Photos, page 1: Top, small-scale producer makes compost from coffee pulp (CECOCAFEN); middle, Mayra Gomez, president of an all women's Fair Trade cooperative (Chris Bacon); bottom, coffee cherries (CECOCAFEN).

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