

Revisiting the “Thin Months” – A Follow-up Study on the Livelihoods of Mesoamerican Coffee Farmers

Martha Caswell, V. Ernesto Méndez, María Baca, Peter Läderach, Theresa Liebig, Sebastián Castro-Tanzi, and Margarita Fernández

Smallholder coffee farmers in Mesoamerica face formidable challenges, including highly variable coffee prices, increasing climate change impacts, and worsening outbreaks of pests and diseases, which contribute to chronic debt and food insecurity. Despite these difficulties, the results of a recent follow-up or longitudinal survey show improvement in key aspects of farmers’ livelihoods, though there is an urgent need to continue working with farmers on these issues. The findings point to promising strategies for enhancing livelihoods, including carefully selected crop diversification practices to improve food security; site-specific instead of blanket recommendations for improved agricultural management and livelihood diversification; access to affordable financing and training in financial literacy; and other education and training programs for farmers.

Key messages

- Over a 6-year period, coffee producers experienced less seasonal food shortage, on average (1.3 fewer months per year), but the majority of families still reported food shortages during an average of 3–4 months per year.
- Farmers’ ability to invest in new on-farm enterprises depends greatly on their access to financial support. In general, interest rates remain high everywhere (averaging $\geq 18\%$ annually), and a lack of cash income to pay off annual loans leaves many producers in a poverty trap. They either escape debt only temporarily after coffee harvest payouts or carry ever-increasing debt burdens, which threaten both production and family well-being.
- Income diversification proved effective for reducing the number of reported “thin months.” As the number of income sources increased, the thin months tended to decrease. An assessment of livelihood factors showed that social networks, income diversification, and subsistence food production each contribute to farmers’ well-being.

Making and measuring changes in farmers’ livelihoods

In 2013, Keurig Green Mountain (formerly Green Mountain Coffee Roasters) worked with the International Center for Tropical Agriculture (CIAT) and the Agroecology and Rural Livelihoods Group (ARLG) at the University of Vermont, USA, to replicate a study of coffee farmers’ welfare in Guatemala, Mexico, and Nicaragua, which CIAT had originally conducted in 2007 (Fujisaka, 2007). A key finding of the 2007 study was that the majority of households experienced 1–8 months of seasonal hunger (a period referred to locally as the “thin months”). This alarmed the specialty coffee industry and prompted Keurig Green Mountain to undertake new initiatives in collaboration with coffee cooperatives and NGOs, aimed at strengthening food security in the three study countries. The projects focused on such activities as diversification of employment and food production, and education scholarships.

To determine whether the same problems persisted or new challenges had arisen in the target communities¹, CIAT and the ARLG agreed to “revisit” the thin months issue by conducting a longitudinal study (i.e., one that would repeat the observation of key livelihood variables after a given time). For this purpose, CIAT’s original survey tool was modified to gauge the welfare of coffee farmers in 2013, providing a longitudinal comparison with the original 2007 study. This policy brief describes current livelihood strategies of Mesoamerican coffee-farming households, comparing selected indicators with those from 2007, with emphasis on coffee production and food security challenges. The outcomes depend on farmers’ access to a variety of human, natural, financial, social, and physical assets. To explain the complex interactions between livelihood choices and well-being, particularly in relation to both income and non-income generating activities, we used the Sustainable Livelihoods and Community Capitals Framework to guide our research design (Gutiérrez-Montes et al., 2009).

1 The 2013 sample included a large cooperative in Matagalpa, Nicaragua (2007 n=33, 2013 n=28); a small cooperative in Chiapas, Mexico (2007 n=30, 2013 n=24); a large cooperative in Veracruz, Mexico (2007 n=23, 2013 n=22); and producers in Huehuetenango, Guatemala, who have a long-term affiliation with an exporter but are not organized under a cooperative (2007 n=32, 2013 n=35).

Months of adequate household food provisioning (MAHFP)

We asked farmers to report on the number of months in which food provisioning was not adequate rather than the number in which it was adequate. Interviewees in all three countries reported a decrease in the thin months over 6 years. As revealed in the original 2007 study, the period of food shortage tends to occur annually

and predictably during the rainy season, which is why this type of food insecurity is referred to as "seasonal" (Caswell et al., 2012). The majority of families defined food shortage as having the income or resources to provide a certain part of their basic diet but not enough to diversify their diet and/or consume the necessary and/or desired quantities of food. For the families participating in both the 2007

and 2013 surveys (n=52), the reported average number of thin months across sites decreased from 3.81 in 2007 to 2.84 in 2013 (Figure 1). This represents a reduction of nearly 1 month, on average. Despite this improvement, the majority of people interviewed in the three countries during 2013 still considered that they have no guarantee of food security for 3–4 months out of the year.

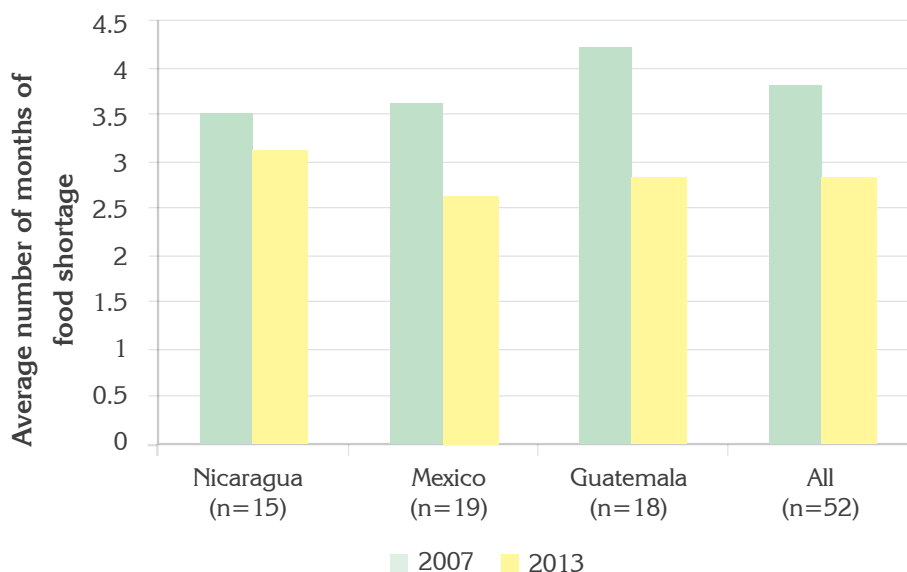


Figure 1. A comparison of the average number of months of food shortage reported for families surveyed in both 2007 and 2013, by region and for the entire sample.

Farm size and coffee land allocation

In 2013, farm sizes across the countries were relatively similar – averaging around 8.5 ha in both Nicaragua and Guatemala, and 7.6 ha in Mexico. Farmers in Nicaragua and Mexico typically devoted more than half of their land to coffee production, while in Guatemala the total was closer to a third. In all three countries, the average land area allocated to coffee increased between 2007 and 2013. This rise was considerable but not statistically significant in Nicaragua (with an average expansion of 1.02 ha). In Mexico and Guatemala, the average increase in coffee area was 0.81 and 0.40 ha, respectively.

Many of the farmers surveyed also manage agricultural land dedicated to crops other than coffee. This activity is

potentially important for food security, as it may represent other sources of income and involve subsistence food production for the household. Even so, in all three countries, families reported purchasing more than 50% of their food (55% in Nicaragua, 73% in Mexico, and 63% in Guatemala) – indicating that subsistence production accounts for only a portion of the food consumed by these families.

We saw an increase in the number of farmers maintaining land allocated to maize or combinations of maize and bean (referred to locally as milpa) – from 15% in 2007 to 34% in 2013, with a varied trend in parcel size over the years in the four study areas. The average land area allocated to milpa for the sample ranged from a high of 1.8 ha in Nicaragua to just 0.61 ha in Guatemala. In Nicaragua and Chiapas,

the land area allocated to milpa declined by 43% and 37%, respectively. In contrast, milpa land increased by 2.4% in Veracruz, Mexico, and 10.6% in Guatemala over the 6 years covered by the study.

Across all study locations, the number of reported thin months decreased, as total farm area and total coffee area increased. The design of this study does not allow us to determine whether fewer reported thin months is a result of families using more land for subsistence food production, allocating more resources (from the sale of coffee and/or other marketable products) to food, or both. However, our findings do demonstrate that increased access to land made a positive contribution to household food security.

Coffee production and prices

Trends in coffee production varied over time at each of the study sites (Figure 2). In Nicaragua and Chiapas, average production rose by about two-thirds (though the seasonal harvests reported by producers in Nicaragua were consistently higher). In Veracruz, production was relatively stable, while Huehuetenango showed an irregular pattern, with production increasing between 2009 and 2010, and then consistently declining to near 2009 levels in 2012.

During the 2012 harvest, a third of farmers surveyed reported losses of 50% or more, compared with the levels expected, citing coffee leaf rust (known locally as roya and caused by the fungus *Hemileia vastatrix*) and climate change most frequently as the causes. Reported signs of climate variability include intense precipitation, a prolonged dry season (1–3 months), and/or higher observed temperatures – each of which can directly affect farmers’ production of basic grains as well as coffee and fruit.

In general, average composite prices (for both conventional and certified coffees) varied over the study period, showing an increasing trend with a peak in 2010 and 2011, and a decreasing trend towards 2012. Chiapas captured the highest reported prices in all years, with an average of US\$4.0/kg (\$1.81/lb) for the 5-year period. Nicaragua saw the lowest average price over the 5 years of coffee-price data (\$1.57/kg or \$0.71/lb). While most growers produced certified coffee, they were able to sell only a portion of their harvest at certified prices.

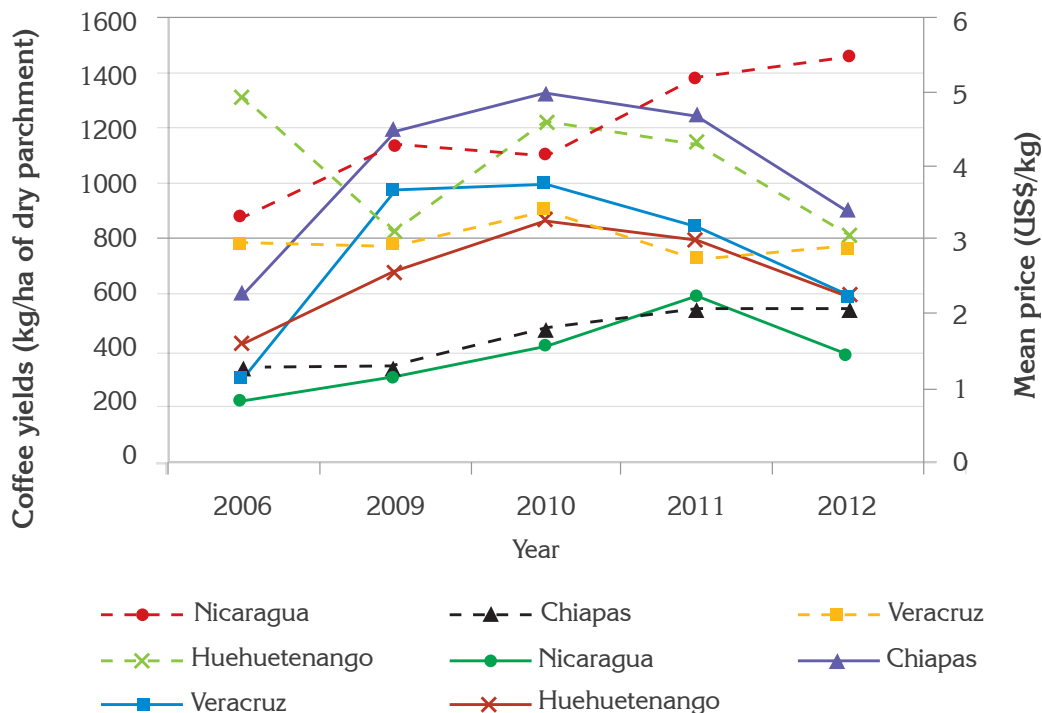


Figure 2. Longitudinal yield and price data from 2006 and 2009 to 2012 in four coffee-growing regions of Mesoamerica. The mean coffee prices shown here are for both conventional and various certified coffees.

Note: Continuous line is price and refers to legend on the right-hand side of the graph and interrupted line is yield.

Reasons for this included quality standards, limited market demand, cooperative quotas, and the need to sell a portion of the harvest to intermediaries for “cash in hand” during the harvest season.

With regards to food security, the size of the coffee harvest was inversely related to the number of thin months in 2007, while in 2013, this relationship was positive (though not statistically significant). The percentage of income that farmers derived from coffee was also inversely related to the number of thin months in 2013. These data

suggest that households may be investing more of their cash income to address food security – a conclusion supported by Nicaraguan farmers’ high degree of awareness about this issue.

Cash income and subsistence production

Another important trend we observed in this study is the shift away from pure dependence on coffee to more diversified livelihood strategies. In 2013, farmers in all three countries singled out coffee as their households’ most valuable source of cash income, followed by diverse small businesses

(including stores or *bodegas*, sewing, cooking for events, and cheese making), the sale of other agricultural goods, apiculture, nurseries, off-farm employment, and financial support from government programs (which amounted to 13% of household income in Nicaragua, 19% in Mexico, and 20% in Guatemala). In all three countries and in 2007 as well as 2013, coffee contributed more than 70% of total cash income, on average, followed by other activities (averaging 16–28%). Except in Mexico, remittances received by family members working abroad were

relatively minor, contributing the lowest portion of total income (0–9%, on average) (Figure 3).

In 2013, we asked farmers to assess the percentage contribution to their livelihoods of a range of non-cash and cash assets. Besides coffee, these include various agricultural goods

produced on a subsistence basis as well as poultry and other livestock. Farmers consider goods produced on a subsistence basis – maize, beans, plantains, other fruits, vegetables, and animal products – to have significant value, as these items are either directly consumed by the family or traded through community bartering systems.

We also asked survey participants to assess the value of both market and non-market goods. The sum of non-market products constituted 41% of overall household value in Nicaragua, 26% in Mexico, and 38% in Guatemala, where maize and beans appear to provide the biggest share.

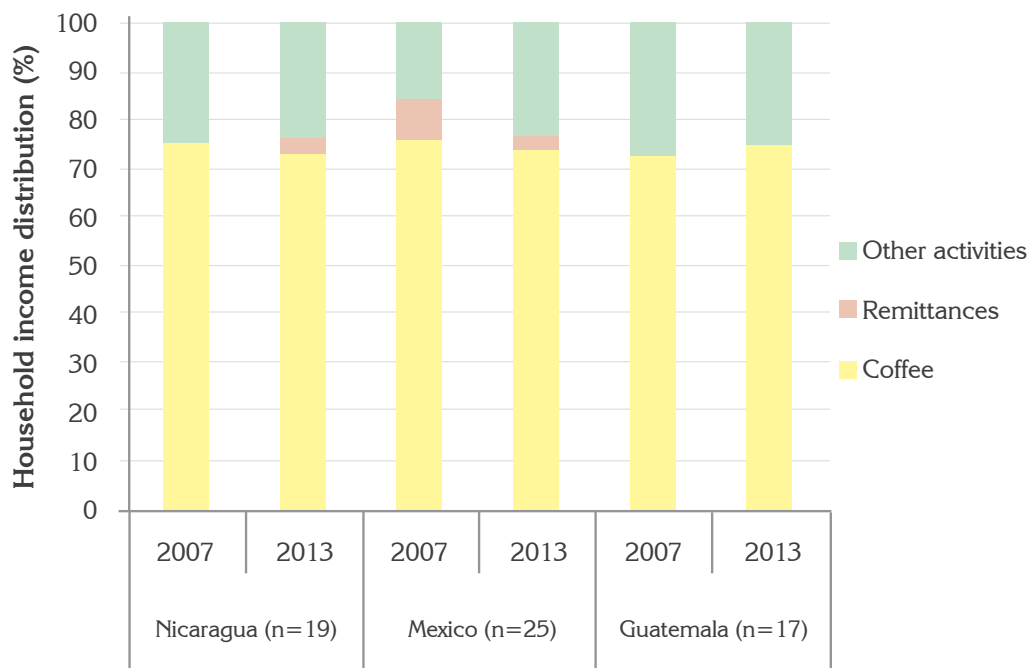


Figure 3. Comparative distribution of monetary income sources in three Mesoamerican coffee regions from 2007 to 2013.

Especially in Nicaragua and Guatemala, farmers perceived the production of maize and beans to be just as important for their livelihoods as the other activities. This finding seems counterintuitive, given the small average size of the milpa plantings in these countries. Although the production of coffee remains farmers' most important source of cash, subsistence food production tempers farmers' apparently high degree of dependence on coffee (Figure 4) and other sources of cash income in this analysis. Even while relying heavily on coffee as a cash crop, these farmers consider subsistence production to be a viable livelihood strategy, so it should be taken into account in development strategies.

Though the findings were not statistically significant, as the number of income sources increased, the

reported number of thin months decreased, suggesting that reducing farmers' dependence on coffee income by diversifying livelihoods could be a viable strategy for banishing the thin months.

Availability and pricing of loans and financing

Because farmers have only limited cash income and need liquidity precisely when cash resources have been spent, they often seek financing to purchase inputs for coffee production or to cover household expenses. Farmers' access to credit varied across the sample. In Nicaragua, the percentage of households reporting access to credit decreased from 82% in 2007 to 64% in 2013 because of reduced availability of funds for loans and increased restrictions on lending from some cooperatives (much of which resulted from previous difficulties in debt

collection). Meanwhile, in Guatemala, access to credit increased from 57% in 2007 to 100% in 2013, and in Mexico it improved from 60% in 2007 to 78% in 2013. Better access to credit in Guatemala and Mexico did not result from cooperatives providing low-interest loans but rather from private sources offering high-interest loans.

In all countries, producers reported that their investments in coffee production (even with loans) were insufficient or just barely covered their agricultural management needs. Lack of financing directly influenced coffee production levels, as evidenced by producers' comments about sacrifices in purchasing inputs and maintenance (such as annual pruning), which occur when insufficient resources are available. This irregular management weakens the plants and reduces their resistance to disease – impacting not

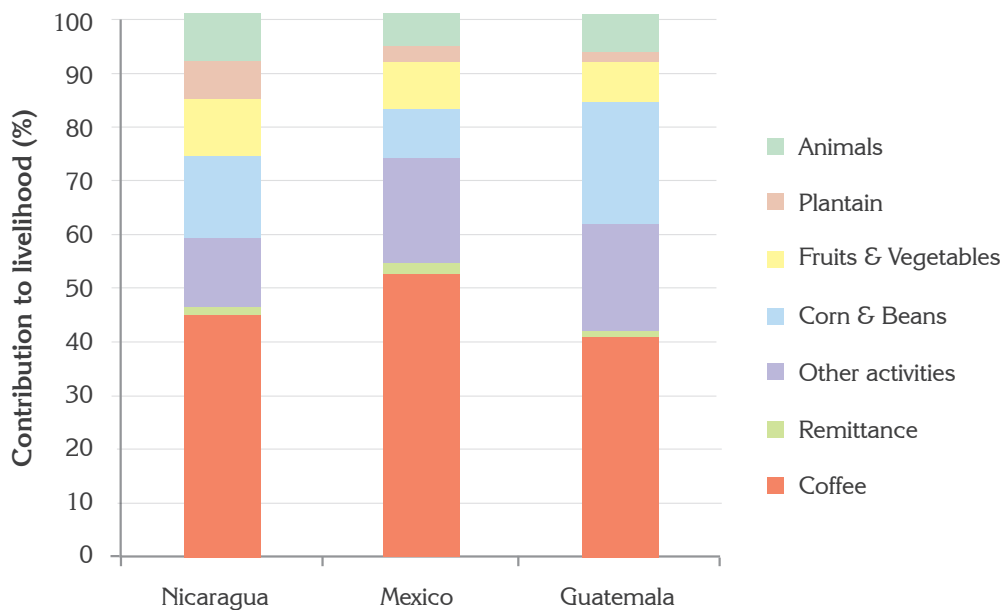


Figure 4. Contribution of different income sources to household livelihoods, as reported by farmers in three coffee-producing countries of Mesoamerica.

only the harvest at hand but also threatening future production.

Farmers also sought loans to cover household expenses. Only about one-third of respondents from Nicaragua and Mexico, and one-fifth

from Guatemala said that they had enough money to meet basic family needs (including medical care and medicine, clothing, food, education, and transportation), even when they had borrowed money. In all three

countries, families mentioned that they seek loans to purchase food, demonstrating yet another link between access to finance and food security.

Policy recommendations

Livelihood diversification

Livelihood diversification in coffee communities of Mesoamerica has been shown to have positive effects on food security, income generation, and general household stability (Bacon et al., 2008). Our results show that some farmers are increasingly able to leverage their coffee harvests together with income from other sources to improve their livelihoods. However, there is a demonstrated need for deeper investigation of the conditions under which income, crop, and land-use diversification strategies are most favorable and of their trade-offs and combined effects as well as the degree to which these approaches contribute to farmers' overall well-being. Livelihood diversification merits continued and expanded support from governments, development agencies, and coffee cooperatives, with a particular focus on farmer-led diversification strategies developed in specific contexts. Support for training and microfinance schemes – activities that overlap and interact with diversification – could also provide opportunities for positive synergy.

Food security

A key challenge in strengthening food security is to ensure that development interventions strike the right balance between site specificity and scalability. Effective strategies are those designed with active farmer participation, leading to greater control by producers over food access and the type of food they consume. Successful examples of interventions currently being tested in Mesoamerica include seed banks, community food storage and distribution centers, access to land for milpa, intercropping, kitchen gardens, wild foraging, and farmyard animals (Bacon et al., 2014).

Agricultural management

Farmers report significant crop losses, primarily due to coffee leaf rust, and call for additional training and technical assistance in basic crop production. Projections of climate change (Läderach et al., 2010) and the associated risks for coffee farms (e.g., increased pests and diseases) are especially relevant to families depending on major ecosystems for food and income, and underline the need to strengthen adaptive management strategies. Participatory research and technical assistance should focus on agricultural management practices that are site specific but can be scaled up for the production of coffee, basic staples, and/or alternative cash crops, with emphasis on making production more resilient through approaches such as agroecological management, soil and natural resource conservation, and

diversification (see Baca et al., 2014). In addition, it is important to share and disseminate new knowledge concerning coffee as well as other food and cash crops among producers. Cooperatives are well positioned to facilitate such exchanges. Initiatives like *Campesino a Campesino* offer an alternative peer-to-peer education model.

Financial Tools

Access to credit remains a challenge in all developing countries. There is a great need for long-term financial planning and resource management strategies that cater to the most vulnerable producers in cooperatives and rural households. These strategies should ideally include low-interest loans and revolving credit accounts; cost-benefit and market analyses for coffee as well as food and other cash crops; training in financial literacy; and appropriate technologies to improve crop management. Whether provided through access to microloans or formal credit, financing for farm-level investment will help households invest strategically in new coffee varieties, complementary crops, and livelihood improvements that reduce risk and improve social welfare (Eakin et al., 2011).

References

- Baca M; Läderach P; Haggard J; Schroth G; Ovalle O. 2014. An Integrated Framework for Assessing Vulnerability to Climate Change and Developing Adaptation Strategies for Coffee Growing Families in Mesoamerica. *PLoS ONE* 9(2):e88463.
- Bacon CM; Méndez VE; Gliessman SR; Goodman D; Fox JA. (eds.). 2008. *Confronting the coffee crisis: Fair Trade, sustainable livelihoods and ecosystems in Mexico and Central America*. MIT Press. Cambridge, MA, USA.
- Bacon C; Sundstrom WA; Flores-Gómez MA; Méndez VE; Santos R; Goldoftas B; Dougherty I. 2014. Explaining the 'hungry farmer paradox': Smallholders and fair trade cooperatives navigate seasonality and change in Nicaragua's corn and coffee markets. *Global Environmental Change* 25:133–149.
- Caswell M; Méndez VE; Bacon CM. 2012. Food security and smallholder coffee production: Current issues and future directions. ARLG Policy Brief # 1. Agroecology and Rural Livelihoods Group (ARLG), University of Vermont: Burlington, VT, USA. http://www.uvm.edu/~agroecol/CaswellEtAl_FoodSecurityCoffeeARLG%20pb1_12.pdf
- Eakin H; Bojórquez-Tapia LA; Monterde R; Castellanos E; Haggard J. 2011. Adaptive capacity and social-environmental change: Theoretical and operational modeling of smallholder coffee systems response in Mesoamerican Pacific Rim. *Environmental Management* 47(3):352–367.
- Fujisaka S. 2007. Coffee farmer welfare in Nicaragua, Mexico, and Guatemala. Final Research Report. International Center for Tropical Agriculture (CIAT) – Green Mountain Coffee Roasters (GMCR).
- Gutiérrez-Montes I; Emery M; Fernández-Baca E. 2009. The sustainable livelihoods approach and the community capitals framework: The importance of system-level approaches to community change efforts. *Community Development* 40(2):106–113.
- Läderach P; Haggard J; Lau C; Eitzinger A; Ovalle O; Baca M; Jarvis A; Lundy M. 2010. Mesoamerican coffee: Building a climate change adaptation strategy. Policy Brief No. 2. Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia. 4 p. http://ciat.cgiar.org/wp-content/uploads/2012/12/policy_brief2_mesoamerican_coffee.pdf
- V. Ernesto Méndez leads the ARLG in the Plant and Soil Science Department at the University of Vermont in Burlington, VT, USA. ernesto.mendez@uvm.edu
- María Baca is a specialist in ecological agricultural systems and vulnerability analysis with a focus on farmer livelihoods and climate change in CIAT's Decision and Policy Analysis (DAPA) Research Area, Cali, Colombia. magubago@gmail.com
- Peter Läderach is senior researcher on climate change and value chains in CIAT's DAPA Research Area, Cali, Colombia. p.laderach@cgiar.org
- Theresa Liebig is a PhD student working on Arabica coffee pests and diseases in cooperation with CIAT's DAPA Research Area, Cali, Colombia, and with the International Institute for Tropical Agriculture (IITA), Kampala, Uganda. theresa.liebig@gmail.com
- Sebastián Castro-Tanzi is a science consultant working in agroecology and food security projects in Mesoamerica and a member of the ARLG at the University of Vermont, USA. sebastiancastro28@gmail.com
- Margarita Fernández is a PhD Candidate with the ARLG in the Plant and Soil Science Department at the University of Vermont, USA. margarita.fernandez@uvm.edu

Correct citation

Caswell M; Méndez VE; Baca M; Läderach P; Liebig T; Castro-Tanzi S; Fernández M. 2014. Revisiting the “thin months” – A follow-up study on the livelihoods of Mesoamerican coffee farmers. CIAT Policy Brief No. 19. Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia. 6 p.

About the authors

Martha Caswell is the research/outreach coordinator for the ARLG in the Plant and Soil Science Department at the University of Vermont, USA. martha.caswell@uvm.edu

Links to full report and other resources: <http://aftertheharvestorg.blogspot.com/p/resources.html>
<http://www.slideshare.net/AfterTheHarvestOrg/thin-months-revisited-final-public-versionclean>



The University of Vermont