

2012

Food security and smallholder coffee production: current issues and future directions

Martha Caswell

V. Ernesto Méndez,

Christopher M. Bacon

Santa Clara University, cbacon@scu.edu

Follow this and additional works at: <http://scholarcommons.scu.edu/ess>



Part of the [Environmental Studies Commons](#)

Recommended Citation

Caswell, M., V.E. Méndez & C.M. Bacon (2012) Food security and smallholder coffee production: current issues and future directions. ARLG Policy Brief # 1. University of Vermont: Burlington, VT

Copyright © 2013 by the author(s). Originally published by University of Vermont for the Agroecology and Rural Livelihoods Group (ARLG)

This Article is brought to you for free and open access by the College of Arts & Sciences at Scholar Commons. It has been accepted for inclusion in Environmental Studies and Sciences by an authorized administrator of Scholar Commons. For more information, please contact rscroggin@scu.edu.

Food Security and Smallholder Coffee Production: Current Issues and Future Directions

Martha Caswell and V. Ernesto Méndez - Agroecology and Rural Livelihoods Group, University of Vermont
Christopher M. Bacon - Department of Environmental Studies and Sciences, Santa Clara University



EXECUTIVE SUMMARY

In recent years, there has been growing discussion within the specialty coffee industry about the prevalence of seasonal food insecurity in coffee growing communities. The idea that coffee producers lack resources to feed themselves and their families flies in the face of Fair Trade and other sustainable coffee initiatives, which were designed to ensure a viable livelihood and improved conditions for small-scale coffee farmers around the world. Though these certifications represent an important step toward delivering better prices to farmers, they are inadequate tools to stand alone against the formidable and entrenched barriers faced by this population. Small-scale farmers are estimated to produce 70% of the world's coffee supply (Eakin et al, 2009), within an industry supported by up to 25 million coffee producers. If you also include coffee harvesters, processors, and industry workers, the total is closer to 100 million people whose livelihoods depend on the crop in some way (Jha et al, 2011).

Several questions persist when considering the intersection of coffee and food insecurity, including: why and how the issue has remained hidden for so long, what factors contribute to its pervasiveness, and what can be done to bring about its end. Missing from the dialogue is sufficient empirical evidence to clarify the causes and inform effective responses to this problem. The objectives of this policy brief are to summarize the existing knowledge of the extent and causes of food insecurity in smallholder coffee growing households, and to use this information to explore potential solutions.

Our results point to a problem that is global in scale, deserving of a response that reflects its reach. The isolated rural areas where the world's best coffee is grown are exposed to multiple food insecurity risk factors, including: 1) depletion of natural resources from which the population makes its living; 2) environmental degradation; 3) shocks such as natural disasters and conflict; and 4) seasonal changes in food production and food prices (FIVIMS, 2012). This is not a problem that is unique to one particular region or to only a subset of the population. Food insecurity exists in the homes of coffee producers who grow Robusta and Arabica coffees, and touches those who are farming both organically and conventionally.

Small-scale coffee producers are trying to eke out a sustainable livelihood with modest land holdings, high levels of initial capital investments in their coffee plants and a vulnerability to a volatile international price structure for their cash crop. Many small-scale coffee producers inhabit a fragile space, living in countries with relatively weak trade positions and facing supply chains that are merging to give greater power to importers, while also being held to the same high production standards as larger-scale producers who have additional resources to invest. These and other factors limit smallholders' flexibility for making adjustments toward more productive or profitable crops, leaving them with insufficient cash resources to purchase food and limited time and/or land to dedicate to cultivation of food crops.

Although there is recognition that food insecurity persists in coffee-producing communities, we are still grappling with understanding the particular dynamics between coffee production and food security. A current limitation is the lack of empirical research, specifically focused on food security in coffee regions, which could better inform our search for sustainable solutions. Extrapolating from various sources brought this issue to the table, but there are likely unique characteristics and opportunities specific to food insecurity in coffee communities that could contribute to its resolution. In

order to gain insight into the complexities, it is necessary to undertake an interdisciplinary review of circumstances in coffee-growing communities across the globe. This endeavor should assess the specific conditions that contribute to the occurrence of food insecurity in coffee-growing regions, including issues such as agrobiodiversity and food sovereignty, international trade dynamics, and the socio-political landscape. Instead of merely surveying to confirm that food insecurity exists in coffee-growing communities and marching forward with top-down interventions, this issue requires systems-level analysis of root causes including an identification of local challenges and opportunities that is led by the small-holder farmers themselves.

Action-oriented strategies to address this issue include:

- Supporting livelihood diversification so that coffee growers have multiple sources of income and food (not just coffee).
- Providing farmers with adequate support and technical assistance to maximize their food production potential and attain balanced nutrition.
- Increasing awareness/initiatives to address food insecurity in coffee regions within the coffee industry.
- Developing multi-stakeholder, long-term interventions.
- Encouraging and supporting research that contributes timely empirical evidence.

Many of these approaches are well known in the field of international development. However, our recommendations emphasize the importance of beginning with sufficient knowledge, using an integrated approach, allowing an extended timeline for interventions, and call for the engagement of players from the whole span of the supply chain - from producer through to consumer.

The Agroecology and Rural Livelihoods Group (ARLG) at the University of Vermont is a unit within the Department of Plant and Soil Sciences. Our research and teaching efforts focus on developing and applying interdisciplinary approaches that analyze interactions between agriculture, livelihoods, and environmental conservation in tropical and temperate rural landscapes. Most of this work also utilizes a Participatory Action Research Approach (PAR), in an effort to directly support conservation and rural development. To learn more about our work, please visit: www.uvm.edu/~agroecol/

This publication was funded in part by a grant from Green Mountain Coffee Roasters, Inc. (GMCR). The views expressed in this document are those of the authors and do not necessarily reflect the views of GMCR, the University of Vermont or Santa Clara University.



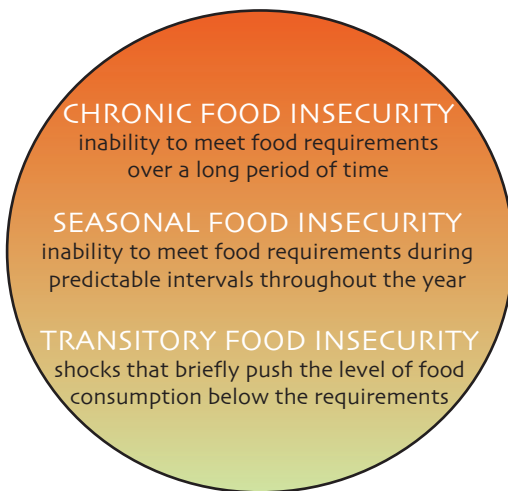
BACKGROUND/FRAMING

While food security is now part of the general lexicon, its definition has evolved over time. According to the United Nation's Food and Agriculture Organization (FAO) food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems - of assuring the availability and, to some degree, the price stability of basic foodstuffs at the international and national levels (FAO, 2003). Amartya Sen is widely credited with altering the dialogue about food security by bringing attention to questions of individual access and entitlement (Sen, 1981). The FAO acknowledges that food security has been a "flexible" concept, but as of 2001 defines food security as, "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2003). This definition is generally perceived as being comprehensive because it includes the concepts of food availability, food access, and how food is utilized.

Regardless of the specific definition for food security, its opposite - food insecurity - denotes hunger. In simple terms, those who are food insecure are either currently experiencing periods of insufficient food, insufficient dietary diversity, or are vulnerable to this risk. The International Food Policy Research Institute (IFPRI) cites that hundreds of millions of people are food insecure because they cannot afford to buy all the food they need and do not have access to the resources to produce it for themselves. Besides poverty, they mention causes of food insecurity including powerlessness, conflict, discrimination, demograph-



ic factors, and unsustainable natural resource management (Pinstrup-Anderson, 2002). Food insecurity can either be a chronic condition, or one that is transitory – following systemic shocks or emergencies. A third concept, that of seasonal food insecurity, lies somewhere between chronic and transitory. As the FAO explains, it is similar to chronic food insecurity as it is usually predictable and follows a sequence of known events. However, it can also be seen as recurrent, transitory food insecurity. Seasonal food insecurity occurs when there is a cyclical pattern of inadequate availability and access to food. This is associated with “seasonal fluctuations in the climate, cropping patterns, work opportunities (labour demand), markets and disease” (FAO, 2008a).



Food insecurity occurs worldwide, but is most entrenched in sub-Saharan Africa and Asia. It is especially prevalent in countries where the trade balance tilts toward exports, and in rural areas, where there is often limited access to any food imports. In rural communities, smallholder farmers must divide their land, time, and resources between crop production for income and subsistence agriculture for household food consumption (Morris, forthcoming). According to the UN’s Economic Commission for Latin America and the Caribbean (ECLAC), over one-half of the rural population of Central America is living below the poverty line and nearly one-third are not able to meet basic food needs (Gordillo de Anda, 2004). Similarly, much of the population in Sub-Saharan Africa, particularly in rural areas, experiences “some degree of hunger over the rainy,

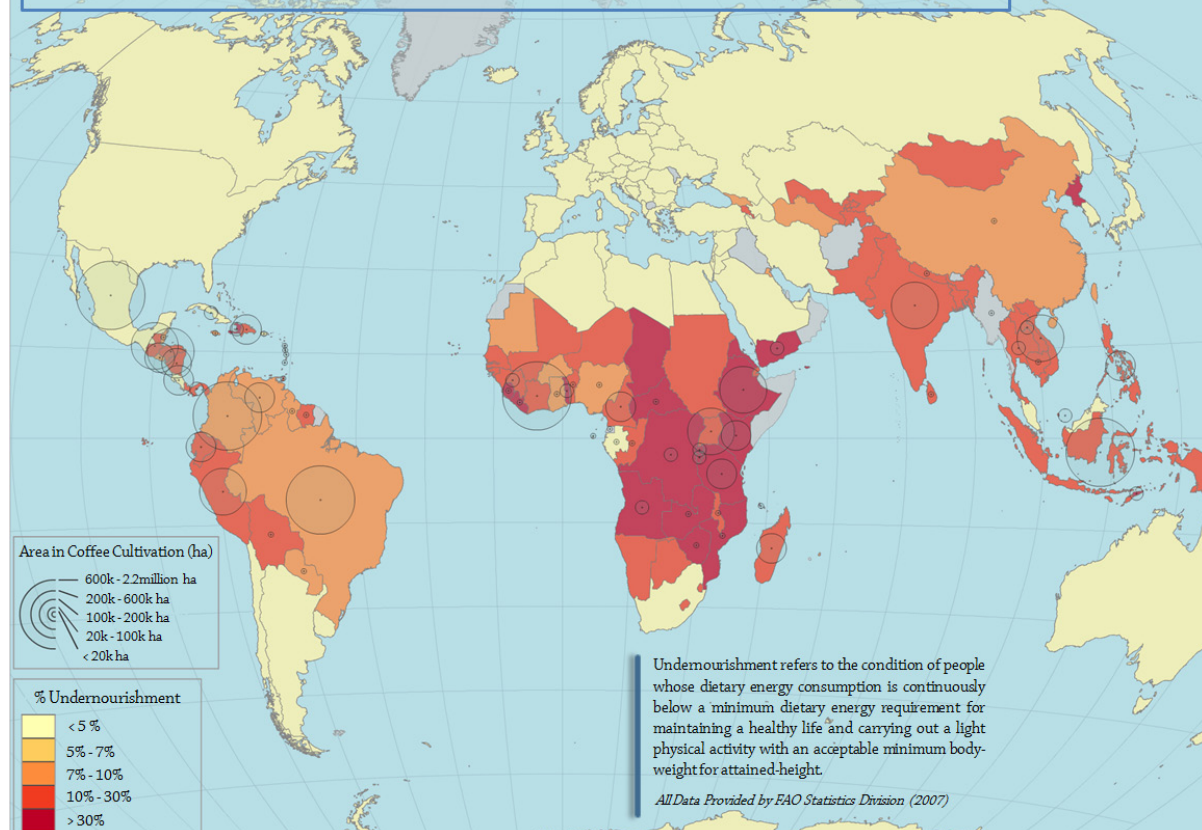
or “hungry” season, when food stocks dwindle and roads become muddy and impassable” (Bonnard, 1999 cited in Tolosa, 2002). In Vietnam, the relationship between food security and poverty is explicit – as the national poverty rate represents the fraction of people who cannot attain 2,100 calories per day (Eakin et al, 2009). Poverty rates in Vietnam’s Central Highland region (home to over a half-million coffee growing households) have been persistently high, reflecting the constraints of “a difficult physical environment limiting agricultural development and restricted access to infrastructure, markets and social services” (Cervantes-Godoy, 2010).

Approaches to alleviating food insecurity vary based on several conditions, including the type of food insecurity (whether it is related to food availability, access or utilization), its severity and the social, political and environmental conditions of a particular region. The intervention spectrum ranges from initiatives that address the symptoms – for example, emergency food aid or cultivation projects directed at household, community or regional levels – to those that target the causes, for example, seeking systemic change that confronts inequality in the access to resources and markets.

Ideally, comprehensive food security programs would include a combination of interventions to address both the symptoms and causes. Below are some of the more common types of food security interventions we have observed in the field:

- production of subsistence crops (including fruits and vegetables) and management of small-scale livestock;
- promotion of alternative livelihoods for additional income generation and diversifying farms;
- activities to increase agricultural yields and introduce enhanced technologies for production as the primary livelihood strategy;
- nutritional education and diet diversification;
- changes to food-use patterns (including food processing, storage and preservation); and
- direct food assistance to vulnerable groups facing severe acute to moderate acute malnutrition (SAM or MAM).

Prevalence of Undernourishment in Coffee-Growing Countries



CURRENT KNOWLEDGE OF FOOD SECURITY IN COFFEE REGIONS

There is a growing movement among international development practitioners and academics to better understand causes and explore solutions to mitigate the vulnerabilities of rural agricultural families in coffee communities (Morris, forthcoming; Bacon, 2005; Eakin et al, 2006). Coffee is produced mostly in the global South, in communities facing multiple resource challenges, including food access and availability. Over time, communities have developed their own coping strategies to deal with food insecurity. While governments and large international NGOs finance and direct most of the large-scale food security initiatives in the world, the vast majority of these initiatives have not focused on coffee producing farmers and communities. Meanwhile, over the past five years, members of the specialty coffee value chain – some with long histories of investment in poverty alleviation projects at origin – have begun to direct their efforts specifically toward improving the food security of smallholder coffee farmers.

Figure 1. Overlap of food insecurity and coffee production.

The isolated rural areas where the world's best coffee is grown are exposed to multiple food insecurity risk factors, including: 1) depletion of natural resources from which the population makes its living; 2) environmental degradation; 3) shocks such as natural disasters and conflict; and 4) seasonal changes in food production and food prices (FIVIMS, 2012). Most of these factors are by-products of poverty and marginalization, which represents the reality of many coffee producers. In combination with international trade agreements that favor the global North, increased migration of rural residents to urban areas or abroad, and the impacts of climate change, the depth and breadth of this problem reveals its critical implications for the sustainability of the coffee industry. Called "los meses flacos" or "the thin months" in many Latin American countries, seasonal food insecurity is an issue that affects coffee growing areas across the globe. A recent FAO report shows that of 34 countries listed as in food crisis or at risk due to high food prices, over one-third (38.2%) are coffee producing countries (Figure 1, data from FAO, 2008b).

Despite the prevalence of food insecurity in coffee growing regions, there has been relatively little analysis with a specific focus on this link. Awareness of food insecurity in coffee communities is growing among members of the specialty coffee industry, but many of the recommendations about how best to address the issue have been based on anecdotal evidence or outcomes generated by organizations as part of internal evaluations. Within the scarce empirical research that exists, the situation in Latin America has received more attention than other coffee regions of the world. Recent publications with food security information include studies on the implications of coffee certifications for food security (Bacon, 2008; Beauchelt, 2011; Méndez, 2010a; Jaffe, 2007), case studies on food security and crop production in coffee communities (Morris, forthcoming; Olson et al, 2012), and unpublished studies on the severity and characteristics of food insecurity in Mesoamerica (Fujisaka, 2007; Bacon unpublished data; Gross, 2011; and Pino unpublished data).

A study by the International Center for Tropical Agriculture (CIAT), funded by Green Mountain Coffee Roasters (GMCR), found that anywhere from one-third to two-thirds of households in Mexico, Nicaragua and Guatemala experienced at least one and up to eight months of seasonal food insecurity each year. This report was the driver for much of the early work focused on food security within the specialty

coffee industry, and generated interest for additional studies (see Table 1). According to this research and anecdotal evidence, timing for periods of food insecurity in coffee-growing communities is most often linked to three periods: 1) the rainy season when travel and the delivery of goods is compromised (After the Harvest, 2011); 2) the planting season for food crops when scarce resources are being directed to the application of farm inputs (Morris, forthcoming); and/or 3) the early months of the coffee harvest – when money from the previous year's crop is gone and payment has not yet been received for the current crop (Méndez et al, 2010b). Food insecurity, as defined in these studies, ranges from periods when diets are restricted to food staples like beans and maize – risking malnutrition, to insufficient caloric intake, to cases where meals are skipped or portions reduced.

In addition to research that examines food security in coffee communities, some studies have focused on strategies to improve food security in regions where coffee is grown (although not necessarily with coffee farmers). Examples of this are discussions of household seasonal food insecurity in Ethiopia (Tolosa, 2002), crop/livestock modeling in the Ethiopian Highlands (Amede, 2008) and fruit cultivation in Kerala, India (Chandrashekara, 2009), among others. Researchers have also addressed the causes and consequences of poverty in coffee communities without an explicit focus on food se-

Table 1. Summary of studies that have generated empirical data on food insecurity in coffee regions.

| Region | Study size | Study type/Research date | % Experiencing Food Insecurity | Reference |
|---|----------------|--|--|------------------------------|
| Nicaragua, Guatemala, El Salvador, Mexico | 469 households | Stratified survey, 2004-05 | 63% struggle to meet basic food needs | Méndez, VE et al, 2010 |
| Northern Nicaragua | 177 households | Participatory Action Research (focus groups, surveys and long-term case study), 2006 | 69% unable to meet basic food needs at some point | Bacon, CM et al, 2008 |
| Nicaragua, Mexico, Guatemala | 179 households | Household level surveys and interviews (unpublished), 2006-07 | 31% in Mexico, 44% in Nicaragua, and 61% in Guatemala, unable to meet food needs at some point of the year | Fujisaka, S (CIAT), 2007 |
| Western El Salvador | 29 households | Semi-structured interviews, 2008 | 97% Unable to meet basic food needs at some point | Morris, K, forthcoming |
| Northern Nicaragua | 256 households | Stratified survey and household interviews, focus groups, anthropometric measures (unpublished), 2009/10 | 82% unable to meet basic food needs at some point | Bacon, CM et al, unpublished |
| Northern Nicaragua | 87 households | Household surveys and interviews stratified by participation in a food security initiative, 2009. | 100% unable to meet food needs at some point during the year, avg. of 3 months of food insecurity/year | Pino, M, unpublished |
| Pico Duarte Region, Dominican Republic | 41 households | Participatory Action Research, 2011 | 82.9% have trouble covering basic food necessities | Gross, L, 2011 |

curity, including more general discussions around strategies to improve farm income in Mesoamerica (Kilian et al, 2006); increasing agricultural sustainability in developing countries (Pretty et al, 2003); coffee and household poverty in Uganda (Seaman et al, 2004); and implications of Fair Trade (Arnould et al, 2009; Ruben & Fort, 2012; Barham et al, 2011), among many others. These studies provide important context, but there is still a need to specifically consider the complexities and unique circumstances of coffee producers who are food insecure. Without this, proposed interventions risk missing the mark.

Although there is recognition that food insecurity persists in coffee-producing communities, we are still grappling with understanding the interconnection between coffee production and food security. In order to gain insight into this complex issue, it is necessary to undertake an interdisciplinary review of circumstances across the globe. This endeavor should assess the specific conditions that contribute to the occurrence of food insecurity in coffee-growing regions, including issues such as agrobiodiversity and food sovereignty¹, international trade dynamics, and the socio-political landscape. Instead of merely surveying to confirm that food insecurity exists in coffee-growing communities, and marching forward with top-down interventions, this issue requires systems analysis of root causes and producer-led identification of distinctive local challenges and opportunities.

CAUSES OF FOOD INSECURITY IN COFFEE REGIONS

A combination of causes contributes to persistent food insecurity in rural communities around the world. Many of these causes influence smallholder coffee farmers, who grow almost three-quarters of the world's coffee on small farms of less than 10 hectares. These producers often rent part of the land they manage, which leaves them with less decision-making power when it comes to what, when and how to grow some of their crops. The price variabil-

¹According to Via Campesina's Nyéléni Declaration: Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. (Patel, R 2009)

ity of coffee and reliance on a single export crop add additional layers of vulnerability for producers. National policies, subsidies, and incentive programs to encourage the conversion of land for mono-crop coffee cultivation (replacing traditional strategies that combined subsistence food and coffee cultivation) resulted in catastrophic impacts on farmers in Mexico and Central America during the coffee crisis, especially at its height in 2001 (Eakin et al, 2006).

With higher coffee prices in the international market, the desire for a profitable cash crop means stakeholders often encourage farmers in traditional coffee growing areas to "increase their production, while advising those in non-traditional areas to establish coffee farms" (CoDF, 2012). To hedge against another coffee/food crisis, mitigation strategies are being suggested. For example in Kenya, there are efforts to increase the productivity of acreage that is used for cultivating cereals so that other land can be transitioned to cash crops (including coffee). In this context, James Nyoro, managing director for Africa of the Rockefeller Foundation, warns against the transition to cash crops saying, "It is unsafe to use our land for (cash) crops with the hopes of being fed by other countries." (IRIN, 2011).

Export crops, such as coffee, may offer the promise of a better life – an escape from what is often seen as the poverty trap of subsistence agriculture. In rural Vietnam, for example, "rural residents entered the 1990s with unprecedented opportunities for improving their livelihoods, of which coffee was one of the most promising" (Eakin et al, 2009, p.40). Vietnam is now the world's second largest exporter of coffee (behind Brazil) and is one of a long line of countries that have looked to coffee as part of a rural development strategy. With the prospect of participating in a cash economy, many producers weight their investments toward coffee or other cash crops and away from subsistence food production – accepting the gamble that extra money will allow for additional food purchases.

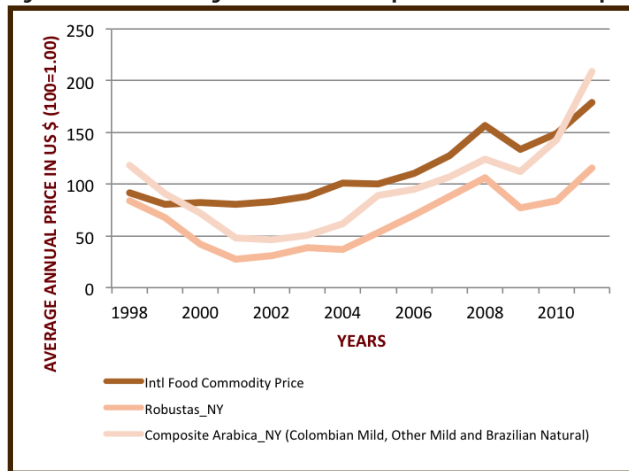
Because coffee is a perennial crop requiring high levels of initial capital investments, there is strong



incentive on the part of producers to continue cultivation once the coffee plants are established. The opportunity cost of growing coffee is very high due to the average wait of five years for coffee plants to bear fruit – this means it is not feasible to switch back and forth between using land for coffee and food crops. In spite of the wide range of production efficiencies and prices, there is optimism during periods of low coffee profits that at some point prices will rebound. In years of poor yields or low prices, however, the producers with heavier investment in coffee are left with a surplus of a commodity that they can't eat, few or no cash resources and a food deficit (Jaffee, 2007).

Participation in global markets further complicates the situation. Recently, for example, prices for much of the specialty coffee market reached all-time highs (ICO, 2012); but during this same period there were spikes in prices for standard food staples (FAO, 2012), maintaining the fragile position of coffee producers in terms of purchasing power for their basic food necessities (Figure 2).

Figure 2. Prices for green coffee compared with food staples.



Source - International Coffee Organization (ICO) and the Food and Agriculture Organization of the United Nations (FAO) statistics, 2012

STRATEGIES TO COMBAT FOOD INSECURITY IN COFFEE REGIONS – STRENGTHS AND WEAKNESSES

Increasing production of food crops for consumption is one of the most common intervention strategies proposed as a means for ensuring food security in coffee growing areas. This sounds more straightforward than it is, since debates around

the advantages and disadvantages of conventional versus organic production and the use of genetically modified seeds remain contentious. Even as price premiums, health, and environmental considerations have convinced some producers to switch from conventional to organic coffee production, many continue using synthetic inputs and/or genetically modified seeds for their food crops.

In El Salvador, during the 1970s, many smallholder coffee farmers began to “manage their personal food plots using chemical fertilizers, herbicides, and pesticides to produce higher yields with lower labor investments” (Morris, forthcoming, p. 11). However, even when the use of synthetic fertilizer came at greater economic cost than gain for farmers (Morris, forthcoming), they were resistant to try other methods (i.e. organic or agroecological) because they did not want to risk lower food yields. Demonstration projects and technical assistance from extension agents have the potential to help these types of farmers decrease their dependence on costly chemical inputs, which could lower vulnerability to price increases and limit the food insecurity they currently face (Morris, forthcoming; Olson et al, 2012).

Viewing the recommendation for increasing agricultural productivity through the lens of food justice, it is important to acknowledge that “hunger is caused by poverty and inequality, not scarcity. (Currently,) the world already produces more than 1½ times enough food to feed everyone on the planet” (Holt-Giménez et al, 2012, p. 1). Although large areas where monocropping is utilized boast the highest yields, they also require capital-intensive and environmentally damaging practices (Gliessman, 2007). This is neither desirable nor feasible in places where coffee is grown based on the limitations of landholdings and an increasing interest in conserving biodiversity and natural resources in these regions. In fact, given the uncertainties of a changing climate, agroecological practices may represent the best strategies to food security, as the increasing homogenization of agriculture often raises the vulnerability of smallholders (De Schutter & Vanloqueren, 2011; IAASTD, 2009; Seufert et al, 2012).

The active protection and promotion of landrace² varieties proposed by food sovereignty advocates is attractive, therefore, not only for its inherent links to self-determination and local control, but also because “non-commercial poly-cultures are better for balancing diets and reducing risk” (Holt-Giménez et al, 2012, p.2). A recent study in El Salvador showed that landrace corn varieties outperformed hybrid seed on the steep slopes found in the western coffee regions of El Salvador (Olson et al, 2012).

While subsistence food production is thought to be a necessary component for addressing food insecurity in coffee communities, it appears not to be sufficient on its own. Often included under the **livelihoods diversification model**, subsistence agriculture is one of a variety of strategies that are combined to improve the wellbeing of families and communities. It is generally accepted that since the dissolution of the International Coffee Agreement (ICA) in 1989, prices are more volatile and the “capture of coffee profits has become even more concentrated in the last stages of the commodity chain, leaving smallholders with little leverage to improve their livelihoods through primary production” (Ponte in Eakin, 2006 p.157). Because of several factors including small land holdings, low coffee prices, and the seasonal fluctuation of cash and food availability (Morris, forthcoming), almost all coffee-producing families hedge their investment in coffee by pursuing other livelihoods. For these producers, livelihood diversification consists of basic cropping, animal husbandry and/or temporary off-farm wage work (including migration), among other activities (Valkila & Nygren, 2009; Bacon, 2008).

There is variability in the level to which producers invest in subsistence food production, as was demonstrated in a recent study of the effects of certifications on coffee producers in Mexico and Central America by Méndez et al. Of 469 families surveyed across four countries, the average percentage of purchased food that was consumed was 61% across the entire sample, with a range of between 0 to 100%.

² A landrace is defined as a population of a cultivated plant having historical origin, distinct identity, and lacking formal crop improvement (Camacho Villa et al., 2005)



An example of a diversified plot for shade-grown coffee.

These figures varied by country, with farmers in El Salvador buying the least amount of food (38%) and farmers in Mexico buying the highest amount (68%) (Méndez et al, 2010a).

Ellis defines rural livelihood diversification as “the process by which households construct a diverse portfolio of activities and social support capabilities for survival in order to improve their standard of living” (Ellis, 1999, p. 2). This is an important consideration for coffee growers because, as is exemplified in Nicaragua, earnings from coffee are not high enough to enable farm households to meet all basic needs, since per capita coffee incomes are below the national and the international ‘\$2 per day’ poverty line (Beauchelt and Zeller, 2011). Living with scarcity, while trying to ensure both a healthy coffee crop and sufficient food for the family, means that producers are deliberate in their resource allocation, including considerations for land, labor (whether provided by family members or hired out) and other inputs (fertilizers, etc). In some instances multiple livelihood strategies can provide both food and income. For example, it has been shown that even though coffee is self-pollinating, there is potential for up to a 36% increase in the volume of coffee produced with bee pollination (Rice, 2003), and apiculture also provides byproducts of honey, wax and pollen. Regardless of the diversification scheme, Méndez and colleagues found that having more income sources was associated with being better able to meet food needs (Méndez et al, 2010b).

Ensuring a better price for producers of cash crops is yet another strategy for improving the economic situation for smallholder farmers. In the interest of ameliorating inequities that advantage consumers from the global North and to provide some insurance against market uncertainties, **certifications, such as fair trade**, have been implemented to provide a price floor for goods that are produced in adherence with predetermined standards. Sales of Fairtrade certified coffee launched in 1988 when coffee from Mexico that carried a special label was sold into Dutch supermarkets (FLO, 2012). Since then a range of certifications have been developed for specialty coffee (including organic and environmental certifications) with emphasis on benefitting historically disadvantaged farmers, environmental sustainability and improved working conditions.

While there have been important gains for producers from certifications, most small-scale farmers still annually generate less than a dollar per day per person from their coffee sales (Bacon et al, 2008). This level of subsistence is not enough to enjoy even the basic human needs codified in the United Nation's Millennium Development Goals (MDGs)³. When it comes to food security and the wellbeing of coffee producers, price premiums have not done enough to solve the problem (Méndez et al, 2010a). For example, due in part to expenses associated with attaining certification increased input costs and, for some producers, lower yields, "compared to one-third of conventional producers, 45% of the organic and organic-fair trade certified producers have per capita incomes below the extreme poverty line—which means that they cannot cover their (basic) food requirements" (Beauchelt and Zeller, 2011, p. 1321).

In sum, certifications have not resolved the challenges of food security and poverty for small-scale farmers (Bacon et al, 2008). Despite good intentions on the part of certifiers, there are ongoing barriers within the certification systems that result in con-

³ The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world's countries and all the world's leading development institutions. (United Nations, 2012)

tinuing struggles for smallholder farmers. The first has to do with the calendar for coffee production and payments to farmers. Many coffee producers are paid only once – in the period directly following the coffee harvest. This single influx of cash then needs to be managed to last the entire year. As a function of certifications, there have been schemes to break up payments so that there is a pre-payment, and then one or two additional payouts after the harvest (sometimes with delays of as much as four to six months). However, whereas selling coffee conventionally might mean accepting a lower price point, it also means immediate cash in hand during the harvest of many staple foods as opposed to delayed payment from certified buyers. As one producer shares, "sometimes we say it is better to sell the coffee at harvest time although we will give it away for nothing but we will buy cheaper beans and maize." (Beauchelt and Zeller, 2011, p. 1322) Although the organizational structure, administrative costs and capital investments required from farmer cooperatives to participate in certified markets may benefit entire coffee-growing communities, some argue that these investments are often too small to reach the household or family level (Méndez et al, 2010a).



THE WAY FORWARD: ENHANCING FOOD SECURITY IN COFFEE REGIONS

Small-scale coffee producers are up against human, natural and economic barriers that challenge the viability of continuing in coffee production. The problem of seasonal food insecurity for this population is global in scale, deserving of a response that reflects its reach. Food insecurity exists in the homes of coffee producers who grow Robusta and Arabica coffees, and touches those who are farming both or-

ganically and conventionally. The Specialty Coffee Association of America (SCAA) has pledged to work toward the MDGs, including the first – to end poverty and hunger – and yet this is not just the realm of those tasked with corporate social responsibility. This is a situation that calls for changes at a systemic level. It is an opportunity to engage the interest and resources of the multiplicity of stakeholders who are involved in the entire coffee value chain, including the governments of producing countries. Below we provide some of the key strategies that could have immediate and considerable impacts on improving food security in coffee growing regions. Although many other valuable approaches could be added to this list, we believe that these represent some of the most pressing issues that need to be addressed to confront food insecurity in coffee growing regions:

- **Support livelihood diversification so that coffee growers have multiple sources of income and food (not just coffee).** To become less risk sensitive and better able to survive market fluctuations, diversification strategies can provide coffee farmers with a certain level of stability. In general, if food security is our goal, then these diversification initiatives should be mindful of a producer's limited resources and time, and include food production for consumption and not just income generation.
- **Provide farmers with adequate support and technical assistance to maximize their food production potential and attain balanced nutrition.** Although we believe it is important to support coffee growers to more adequately interact with markets, it is also imperative that they are able to produce the food they consume, if they consider this a priority for the food security of their household. Many in the rural development community disagree with this, and propose that market and income generation options should be prioritized. However, coffee farmers face considerable risk with the instability of green bean coffee prices, and adding to this the risk of fluctuations in food prices increases the food vulnerability of these communities. An expanding body of research points towards providing smallholders with support to transition to more agroecological practices that are well adapted to their socio-ecological conditions (De

Schutter and Vanloqueren, 2011; IAASTD, 2009; Seufert et al, 2012). This includes strategies that increase access to food not only through production, but also improved practices for post-harvest storage, decreasing food waste and more substantial strategies that could change the structure of the food system. These innovations are especially important for coffee growers because the landscapes where coffee is grown (i.e. higher elevations and mountainous) are usually not well suited for annual subsistence grain production.

- **Increase awareness and initiatives within the coffee industry to address food insecurity in coffee regions.** The specialty coffee industry includes many companies that are seeking to invest in ending food insecurity. These initiatives include formal corporate social responsibility and investment in coffee suppliers (e.g. Green Mountain Coffee Roasters-GMCR), more direct and supportive relationships between importers/roasters and coffee growers (e.g. Cooperative Coffees and Equal Exchange), as well as funding from coffee companies to rural development organizations. A recent film titled "After the Harvest" (<http://aftertheharvestorg.blogspot.com/>) was screened at the 2011 conference of the Specialty Coffee Association of America (SCAA) and served as a wake-up call to action with regard to food insecurity in the coffee lands. To prevent this from being a flash in the pan, other leaders in the industry, governments and producer organizations must commit to continued investment until food security is improved in all coffee growing communities.
- **Develop multi-stakeholder, long-term interventions.** Unequal power dynamics are a fundamental part of the problem that leads to food insecurity. By raising awareness of the issue both in the global North and South (which means including coffee farmers in discussions both about the situations and proposed interventions), there is a better chance that interventions will be adequately resourced, and be more appropriate and effective for the context in which they are implemented. This problem has been decades in the making, so expectations for a quick fix should be tempered with patience and investments should be directed toward long-term solutions (e.g. a recently announced 10-year partnership between the Community Agroecology



Network (CAN) and PRODECOOP cooperative in northern Nicaragua). Ideally, this work will be achieved through broad-based initiatives including the participation of governments, international NGOs and actors along the entire coffee supply chain, in complementary coordination with efforts led by farmers and their organizations.

- **Encourage research that contributes timely empirical evidence.** Research done with farmers and other stakeholders (e.g. participatory research), which can inform on best practices and policy directions, needs to be supported. This research should include all coffee-growing regions of the world, and go beyond 'technological fixes' for coffee production to also include analysis of household livelihoods. This way farmers and their families will have access to better information as they assess the feasibility and ideal balance of alternative livelihoods in terms of time, energy, investment and profit.

Although there is still much to be learned and done about food insecurity in coffee communities, the strategies mentioned above are not necessarily new in the international development context. However, the use of these interventions in the context of coffee regions and the coffee industry (i.e. with coffee farmers instead of vulnerable communities more broadly) requires creativity and innovation that presents a series of challenges. Some of the initiatives already underway are poised to provide lessons learned for future food security interventions. For example, international organizations, such as Café Feminino, Catholic Relief Services (CRS), Coffee Kids, Community Agroecology Network (CAN), Food 4 Farmers, Fundación Ixil, Heifer International, Lutheran World Relief (LWR), Mercy Corps, Pueblo a Pueblo, Save the Children, and USAID, are actively investing in food security projects connected to coffee communities throughout Latin America, Africa and Asia. Stakeholders in the coffee value chain support many of these projects through funds and relationships within the industry. A positive next step will bring the lessons from these initiatives into a process of reflection and action, thereby advancing our efforts to better support smallholder coffee households to achieve sustainable food security.

Food insecurity in coffee communities is incompatible with the idyllic image that is sold to us with each morning cup. It is no longer acceptable to claim ignorance – coffee's problem with seasonal food insecurity is gaining attention and deserves resolution. With improved understanding and greater investment directed towards the strategies detailed in this paper, there is hope of overcoming food insecurity for coffee farmers around the globe.

REFERENCES



After the Harvest (Video) 2011. (Available from <http://blip.tv/aftertheharvestorg/after-the-harvest-fighting-hunger-in-the-coffeelands-5131237>)

Amede, T, Delve RJ. 2008, Modelling Crop-Livestock Systems for Achieving Food Security and Increasing Production Efficiencies in the Ethiopian Highlands. *Experimental Agriculture* 44(4): 441-452.

Arnould, EJ, Plastina, A, Ball, D. 2009. Does Fair Trade Deliver on Its Core Value Proposition? Effects on Income, Educational Attainment, and Health in Three Countries. *Journal of Public Policy & Marketing* 28(2): 186-201.

Bacon, CM. 2005. Confronting the coffee crisis: can fair trade, organic, and specialty coffees reduce small-scale farmer vulnerability in northern Nicaragua? *World Development* 33(3): 497-511.

Bacon, CM, Méndez, VE, Flores Gomez, MA, Stuart, D, Díaz Flores, SR. 2008. Are sustainable coffee certifications enough to secure farmer livelihoods? The Millennium Development Goals and Nicaragua's Fair Trade cooperatives. *Globalizations* 5(2): 259-274.

Barham, BL, Callenes, M, Gitter, S, Lewis, J, Weber, J. 2011. Fair Trade/Organic Coffee, Rural Livelihoods, and the "Agrarian Question": Southern Mexican Coffee Families in Transition. *World Development* 39(1): 134-145.

Beuchelt, TD, Zeller, M. 2011. Profits and poverty: Certification's troubled link for Nicaragua's organic and fairtrade coffee producers. *Ecological Economics* 70(7): 1316-1324.

Bonnard, P.1999. Increasing the nutritional impacts of agricultural interventions. A paper presented at the Horn of Africa Workshop on Agricultural Policy, Resource Access and Human Nutrition, Addis Ababa, November 3 -5, 1999.

Camacho Villa, T.C., Maxted, N., Scholten, M., Ford-Lloyd, B., 2005. Defining and identifying crop landraces. *Plant Gen. Resour.* 3: 373-384.

Cervantes-Godoy, D. 2010. Economic Importance of Agriculture for Sustainable Development and Poverty Reduction: The Case Study of Vietnam. Paper first presented to the Working Party on Agricultural Policy and Markets, 17-20 May 2010. (Available from www.oecd.org/dataoecd/12/45/46378758.pdf) (Accessed on 7 May 2012)

Chandrashekhara, UM. 2009. Tree species yielding edible fruit in the coffee-based homegardens of Kerala, India: their diversity, uses and management. *Food Security* 1(3): 361-370.

CoDF (Coffee Development Fund). 2012. News Updates – Coffee Growing Taking Root in Nontraditional Areas. (Available at <http://www.codf.co.ke/news.php?nid=13>) (Accessed on 16 April 2012)

De Schutter, O, Vanloqueren, G. 2011. The new green revolution: how twenty-first-century science can feed the world. *Solutions* 2(4): 33-44.

Eakin, H, Tucker, C, Castellanos, E. 2006. Responding to the coffee crisis: a pilot study of farmers' adaptations in Mexico, Guatemala and Honduras. *The Geographical Journal* 172(2): 156-171.

Eakin, H, Winkels, A, Sendzimir, J. 2009. Nested vulnerability: exploring cross-scale linkages and vulnerability teleconnections in Mexican and Vietnamese coffee systems. *Environmental Science & Policy* 12(4): 398-412.

Ellis, F. 1999. Rural livelihood diversity in developing countries: evidence and policy implications. London: Overseas Development Institute (ODI). (Available from www.odi.org.uk/resources/docs/2881.pdf)

FAO. 2003. Trade Reforms and Food Security. Rome: FAO. (Available from <http://www.fao.org/docrep/005/y4671e/y4671e06.htm>) (Accessed on 16 April 2012).

FAO. 2008a. Food Security Information for Action Practical Guides. Rome: FAO. (Available from www.fao.org/docrep/013/al936e/al936e00.pdf) (Accessed on 6 May 2012)

FAO. 2008b. The State of Food Security in the World: High food prices and food security – threats and opportunities. Rome: FAO.

FAO. 2012. FAO Food Price Index. (Available at <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>) (Accessed on 18 April 2012)

FIVIMS (Food Insecurity and Vulnerability Information and Mapping System). 2012. (Available from http://www.fivims.org/index.php?option=com_content&task=view&id=54&Itemid=37) (Accessed on 12 April 2012)

FLO (Fairtrade Labeling Organization), 2012. History of Fairtrade (Available at http://www.fairtrade.net/history_of_fairtrade.html) (Accessed on 5 September 2012)

Fujisaka, S. 2007. Coffee farmer welfare in Nicaragua, Mexico, and Guatemala. CIAT-GMCR.

Gliessman, SR. 2007. Agroecology: the ecology of sustainable food systems. CRC Press/Taylor & Francis: Boca Raton, FL.

Gordillo de Anda, G. 2004. Seguridad alimentaria y agricultura familiar. *Revista CEPAL* 83: 71-84.

Gross, L. 2011. Participatory research to support rural livelihood and ecosystem services conservation in the Pico Duarte coffee region of the Dominican Republic. M.S. Thesis. Rubenstein School of Environment and Natural Resources. University of Vermont.

Holt-Giménez, E., A. Shattuck, M. Altieri, H. Herren and S. Gliessman (2012) We Already Grow Enough Food for 10 Billion People ... and Still Can't End Hunger. *Journal of Sustainable Agriculture* 36(6): 595-598.

IAASTD (International Assessment of Agricultural Knowledge, Science and Technology for Development). 2009. Agriculture at a Crossroads: Global Report by the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). Island Press: Washington, DC.

ICO (International Coffee Organization). 2012. Monthly price summary table (Available at <http://www.ico.org/prices/p2.htm>) (Accessed on 18 April 2012)

IRIN (Integrated Regional Information Networks). 2011. KENYA: Food security concern as farmers switch from maize to coffee (Available at <http://www.irinnews.org/Report/94292/KENYA-Food-security-concern-as-farmers-switch-from-maize-to-coffee>) (Accessed 17 March 2012)

Jaffe, D. 2007. *Brewing justice: Fair trade coffee, sustainability, and survival*. California: University of California Press.

Jha, S., C.M. Bacon, S.M. Philpott, R.A. Rice, V.E. Méndez and P. Laderach (2011) A review of ecosystem services, farmer livelihoods, and value chains in shade coffee agroecosystems. 141-208 In B.W. Campbell and S. Lopez-Ortiz (Eds.) *Integrating agriculture, conservation, and ecotourism: examples from the field* Springer Academic Publishers: New York & Berlin.

Kilian, B, Jones, C, Pratt, L, Villalobos, A. 2006. Is sustainable agriculture a viable strategy to improve farm income in Central America? A case study on coffee. *Journal of Business Research* 59: 322-330.

Méndez, VE, Bacon, CM, Olson, M, Petchers, S, Herrador, D, Carranza, C, et al. 2010a. Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico. *Renewable Agriculture and Food Systems* 25(3): 236-251.

Méndez, VE, Bacon, CM, Olson, M, Morris, KS, Shattuck, AK. 2010b. Agrobiodiversity and shade coffee smallholder livelihoods: A review and synthesis of ten years of research in Central America. *Professional Geographer* 62(3): 357-376.

Morris, K., V.E. Méndez & M.B. Olson & (forthcoming) 'Los meses flacos': seasonal food insecurity in a Salvadoran organic coffee cooperative. *Journal of Peasant Studies*.

Olson MB, Morris KS, Méndez VE. 2012. Cultivation of maize landraces by small-scale shade coffee farmers in western El Salvador. *Agricultural Systems* 111(0): 63-74.

Patel, R. 2009. What does food sovereignty look like? *The Journal of Peasant Studies* 36(3): 663-706.

Pinstrup-Anderson, P. 2002. Achieving Sustainable Food Security for All. Paper prepared for Mansholt Lecture, Wageningen University, The Netherlands, November 14, 2001. (Available from <http://www.ifpri.org/publication/achieving-sustainable-food-security-all>) (Accessed on 6 May 2012)

Ponte, S. 2002. The 'Latte Revolution'? Regulation, Markets and Consumption in the Global Coffee Chain. *World Development* 30(7): 1099-1122.

Pretty, JN, Morison, JIL, Hine, RE. 2003. Reducing Food Poverty by increasing Agricultural Sustainability in Developing Countries. *Agriculture, Ecosystems & Environment* 95(1): 217-234.

Rice, R. 2003. Coffee Production in a Time of Crisis : Social and Environmental Connections. *SAIS Review* 23(1).

Ruben, R, Fort, R. 2012. The Impact of Fair Trade Certification for Coffee Farmers in Peru. *World Development* 40(3): 570-582.

Sen, A. 1981. *Poverty and Famines*. Oxford: Clarendon Press.

Seufert, V, Ramankutty, N, Foley, JA. 2012. Comparing the yields of organic and conventional agriculture. *Nature* 485(7397): 229-232.

Tolosa, D. 2002. Household Seasonal Food Insecurity in Oromia Zone, Ethiopia: Causes. Addis Ababa: Organization for Social Science Research in Eastern and Southern Africa (OSSREA). (Available from http://publications.ossrea.net/index.php?option=com_sobi2&sobi2Task=sobi2Details&atid=6&sobi2Id=2620&Itemid=0) (Accessed on 12 April 2012)

United Nations. 2012. Background on United Nations Millennium Development Goals (Available at <http://www.un.org/millenniumgoals/bkgd.shtml>) (Accessed on 27 July 2012)

Valkila, J, Nygren, A. 2009. Impacts of Fair Trade certification on coffee farmers, cooperatives, and laborers in Nicaragua. *Agriculture and Human Values* 27(3): 321-333.

Recommended citation: Caswell, M., V.E. Méndez & C.M. Bacon (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. Available online: <http://www.uvm.edu/~agroecol/?Page=Publications.html>

