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# Sustainable Coffee Certification as a Forest Conservation Policy in Mexico

*Prospects, Constraints, and Policy*

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**Beatriz Ávalos-Sartorio, Allen Blackman,  
and Heidi J. Albers**

1616 P St. NW  
Washington, DC 20036  
202-328-5000 [www.rff.org](http://www.rff.org)



# **Sustainable Coffee Certification as a Forest Conservation Policy in Mexico: Prospects, Constraints, and Policy**

Beatriz Ávalos-Sartorio, Allen Blackman, and Heidi J. Albers

## **Abstract**

An unprecedented decline in international coffee prices over the past two decades has spurred deforestation in Latin America's ecologically sensitive shade-coffee areas. This paper considers the role that sustainable coffee certification can play in stemming this problem in Mexico. We argue that for sustainable certification to be an effective forest conservation tool, it must be made more accessible to the poor, small-scale growers who are associated with the lion's share of deforestation in at least some coffee areas. This can be accomplished by ensuring that government coffee sector programs, such as the Price Stabilization Fund, target small-scale growers; by supporting efforts to enhance coffee quality; and by lowering the costs small-scale growers pay to certify their coffee by, for example, developing blanket certification schemes covering areas where virtually all growers meet minimum certification criteria.

**Key Words:** shade-coffee, sustainable certification, Mexico, forest conservation

**JEL Classification Numbers:** Q15, Q23, Q28, Q56, Q57

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## Contents

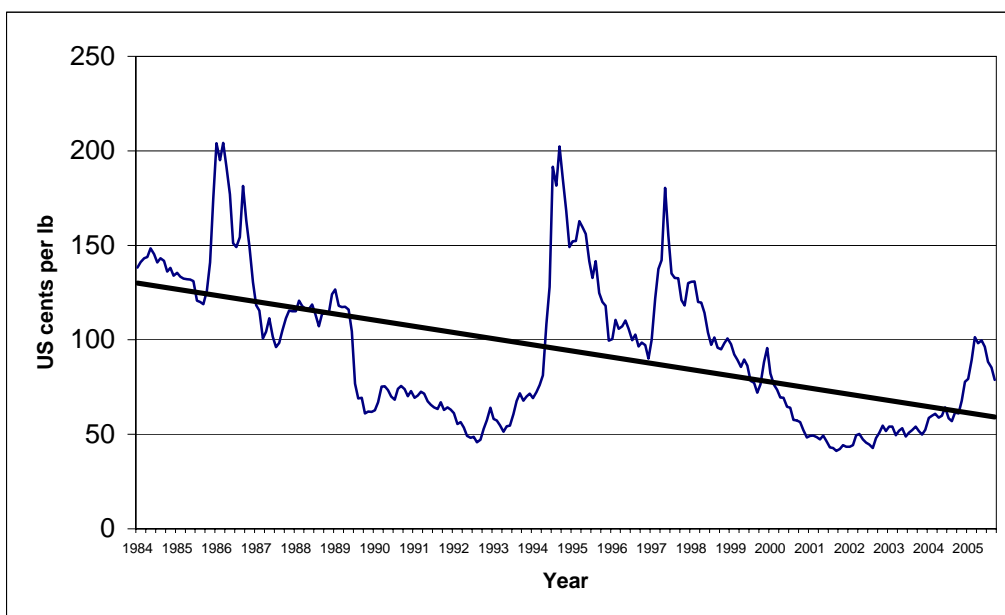
<b>Introduction</b> .....	<b>1</b>
<b>Background: What is certified sustainable coffee?</b> .....	<b>3</b>
<b>The supply side: Barriers to expanded certification</b> .....	<b>4</b>
Certification and quality .....	5
The cost of certification .....	5
Barriers faced by small-scale, unorganized farmers .....	6
<b>A role for policy</b> .....	<b>6</b>
Improving access to certification .....	6
Complementary government programs.....	7
Coffee quality.....	9
<b>Conclusion</b> .....	<b>9</b>
<b>References</b> .....	<b>10</b>

## Sustainable Coffee Certification as a Forest Conservation Policy in Mexico: Prospects, Constraints, and Policy

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### Introduction

In 2000 and 2001, after a decade of gradual decline interrupted by short-term spikes, inflation-adjusted world coffee prices dropped to their lowest levels in a century (Figure 1). The causes of this price shock, commonly referred to as the coffee crisis, include increased production in Vietnam and Brazil, weak demand for low-end coffee, and growing concentration in the roasting sector. Because these factors are structural rather than cyclical, prices are unlikely to rebound dramatically in the short term (World Bank 2005).



**Figure 1. Composite coffee price index, 1984–2005**

Source: International Coffee Organization

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\* Beatriz Ávalos-Sartorio, Senior Agricultural Research Officer, Consultative Group for International Agricultural Research ([Beatriz.AvalosSartorio@fao.org](mailto:Beatriz.AvalosSartorio@fao.org)); Allen Blackman, Senior Fellow, Resources for the Future, 1616 P Street, N.W., Washington, DC 20036, (202) 328-5073 ([blackman@rff.org](mailto:blackman@rff.org)); and Heidi J. Albers, Associate Professor, Oregon State University, Corvallis, OR 97331, (541) 737-1483 ([Heidi.Albers@oregonstate.edu](mailto:Heidi.Albers@oregonstate.edu)).

The coffee crisis has caused serious hardship in Mexico. Coffee is an important source of income for 481,000 Mexican households, which cultivate 665,000 hectares of coffee and hire at least 1 million laborers annually. Most of Mexico's coffee farms are smaller than 3 hectares and are concentrated in some of the country's poorest regions (CMC 2004). Between 1990 and 2004, years generally associated with the coffee crisis, Mexican coffee production fell 21 percent, exports fell 56 percent, and export revenues fell 80 percent (ICO 2005; SourceMex 2004). By the end of the 1990s, farm-gate coffee prices in Mexico had dropped to levels below average production costs in many coffee-growing areas, severely affecting the rural economy. Indeed, experts frequently blame the coffee crisis for the rise in Mexican migration—both domestic and international—during the late 1990s, as well as social unrest in country's rural areas.<sup>1</sup>

Such economic and social dislocation has received considerable attention. Less well known is that the coffee crisis has led to significant deforestation and the loss of critical ecological services. Why? More than three-quarters of Mexico's coffee is grown in the shade of woody perennials—either the existing forest or managed tree cover. Because it preserves tree cover, this “shade-coffee” generates ecological services, including harboring biodiversity, facilitating aquifer recharge, preventing soil erosion, controlling runoff, and sequestering carbon (Perfecto et al. 1996; Rice and Ward 1996). The biodiversity and water-related benefits are particularly notable. Shade-coffee typically grows on steep mountainsides at altitudes where tropical and temperate climates overlap. Such areas are extremely rich in biodiversity and are also subject to rapid soil erosion and flooding when cleared of tree cover.<sup>2</sup>

As coffee prices have declined, many Mexican shade-coffee growers—particularly those who are small-scale, poor, and unorganized—have migrated to cities to find employment, abandoning their farms and leaving them vulnerable to encroachment by conventional farmers, ranchers, and loggers. Others continue to grow coffee but have cleared forest on and around their farms to sell the timber and sometimes substitute more other land uses, including subsistence crops and pasture. The result is significant loss of tree cover, along with associated ecological services. The environmental damage from deforestation in shade-coffee regions can be

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<sup>1</sup> The impact of the coffee crisis has been exacerbated by the dismantling (in 1990) of INMECAFE, the parastatal organization that subsidized coffee production and marketing.

<sup>2</sup> The Mexican government has designated all 14 of the country's main shade-coffee growing regions as biodiversity hotspots (Moguel and Toledo 1999).

significant, and some of it—notably species loss and soil erosion—may be nearly or totally irreversible.

Over the past five years, with funding from the Tinker Foundation and the Commission for Environmental Cooperation, Resources for the Future (a nonprofit research institute in Washington, D.C.) and Universidad del Mar (a public university in Puerto Angel, Oaxaca) have undertaken research on deforestation caused by the coffee crisis in a 250,000-hectare study area in the Southern Sierra and Coast (*Sierra Sur y Costa*) region of Oaxaca. The study relied on econometric analysis of land cover maps derived from aerial photography, satellite images, and numerical simulation models of a typical coffee farm (see Blackman et al. 2005 and Batz et al. 2005 for details). It suggests a variety of mechanisms for mitigating the adverse effects of the coffee crisis by making coffee more profitable for those poor, small-scale, unorganized farmers who have been particularly hard hit by the crisis and who are most likely to clear trees on and around their farms or abandon their land altogether. These mechanisms include improving growers' access to credit, establishing a price floor for coffee, paying the grower for the environmental services her coffee provides, and certifying shade-coffee as “sustainable” so that it commands a price premium.

This paper focuses on the last mechanism—sustainable coffee certification. It provides background on certified sustainable coffee, considers the market potential of such coffee, discusses the barriers to making certification an effective tool for conservation and economic recovery, and reflects on the role that public policy can play in such efforts.

### **Background: What is certified sustainable coffee?**

Coffee consumers are willing to pay price premiums both for coffee that has desirable explicit characteristics, such as good taste and aroma, and for coffee that has the desirable implicit characteristic of having been produced in a manner that minimizes environmental degradation and social injustice. To cater to this demand, third-party organizations certify that coffee possesses such explicit and implicit characteristics. At least a portion of the price premiums consumers pay for certified coffees is usually passed on to growers. Hence, certification represents a market-driven mechanism for boosting growers' profits—that is, one that does not involve direct public sector funds to growers.

Certification for explicit coffee characteristics is well established. International markets for coffee recognize that the taste of coffee varies significantly, depending on the species (*Coffea arabica* or *C. robusta*), the altitude at which coffee is grown, the region in which it is cultivated,

and the manner in which it is harvested and processed, from cherry to green coffee. For example, most of the coffee produced in Mexico is sold overseas as “other mild arabica,” at a price that is lower than “Colombian mild arabica” but higher than “Brazilian robusta.”

Certification of so-called sustainable coffees—coffees certified as having been produced in accordance with certain social, environmental, and health standards—is relatively new. The most common sustainable certifications are “bird friendly,” “fair trade,” “organic,” “Rainforest Alliance,” “shade-grown,” and combinations of these certifications, such as “organic/fair trade” (see Giovannucci 2001 for definitions).

Price premiums passed on to certified producers selling sustainable coffee can be substantial, even if significantly below the premiums captured by exporters and processors. For example, Calo and Wise (2005) report that in 2003–2004, producers of organic coffee in Oaxaca received a 40 percent price premium compared with conventional coffee, producers of fair trade coffee received a 50 percent premium, and producers of organic fair trade coffee received a 70 percent premium. Additionally, growers selling fair-trade coffee can receive prefinancing of up to 60 percent of contract value from coffee importers, if requested by growers.

Although such high premiums appear to be promising means of raising profit and incomes for coffee growers, they are still relatively rare. So-called specialty coffees are mainly high-quality coffees but also include coffees with certified implicit characteristics. Specialty coffee accounted for just 6 percent of world consumption in 2002, and sustainable coffee markets account for only 7 percent of specialty coffee sales and less than 1 percent of global coffee sales (Technoserve 2003).

That said, the prospects for future growth of sustainable coffees are promising. Recently, the market share of specialty coffees has grown by more than 10 percent annually—from 2.3 million 60-pound bags in 1992 to 6 million bags in 2002—while the market for commercial-grade coffee has stagnated. Experts predict that the demand for specialty coffee will grow by another 2.6 million bags by 2007 (Technoserve 2003). Among sustainable coffee market niches, organic coffee has experienced the most rapid growth: its market has doubled every five to six years (Calo and Wise 2005).

### **The supply side: Barriers to expanded certification**

Although 90 percent of Mexican producers still sell their coffee in conventional markets, the country is one of the leading exporters of certified sustainable coffees (Gómez-Cruz et al. 2005). In what follows, we discuss the major barriers to increased participation by Mexican

producers in the market for certified sustainable coffee: the need to produce high-quality sustainable coffee, certification costs that are high relative to price premiums, the lack of harmonization among different certification schemes, and a pervasive bias against small-scale farmers.

### ***Certification and quality***

Certification is a necessary—but not sufficient—condition for growers to reap the benefits of sustainable coffee markets. To sell certified coffee at a premium, growers also need to offer consistently high quality (cup taste). A recent study of markets for sustainable coffee in 11 European countries and Japan finds that consistently high quality and reliable supply are the most important drivers of the expansion of these markets (Giovannucci and Koekoek 2003). Similarly, in his survey of the North American market for sustainable coffees, Giovannucci (2001) finds that quality is the most important determinant of coffee-purchasing decisions. He states that

the survey indicates that coffee quality and consistency of supply are the two most important attributes in the specialty coffee trade. Producers who seek to be competitive must consider how well they can fulfill these two expectations in the future.

Thus, the price premium for organic, fair-trade, bird-friendly, and other sustainable coffees depends fundamentally on quality.

### ***The cost of certification***

The cost to growers of first obtaining and then maintaining sustainable coffee certification constitutes a significant barrier to entry into the market for sustainable coffee. For example, to obtain an organic certification, not only must growers pay a certification fee covering the certifying agency's costs of inspection, they must also invest in on-farm activities required for certification, including terracing and composting, a full year or two prior to applying for certification or reaping any benefits from it. Often, farmers who would like to obtain organic certification are not able to cover these fixed setup costs. In their study of certified coffee producers in Oaxaca, Calo and Wise (2005) find that “the cost of meeting the standards, particularly for organic certification, can be prohibitive.” Furthermore, they argue, because of the lack of harmonization of standards between certifying bodies, coffee producers frequently need to pay for more than one certification label to guarantee access to all markets. They conclude,



“even access to these niche [sustainable coffee] markets left overall returns from coffee production low.”

### ***Barriers faced by small-scale, unorganized farmers***

As noted above, our previous research has established that in the Southern Sierra and Coast region of Oaxaca, poor, small-scale growers who do not belong to marketing cooperatives and who are increasingly engaging in shifting subsistence agriculture have been mainly responsible for the deforestation in shade coffee areas during the past decade. Presumably, these findings also apply to other coffee-growing areas in Mexico, including Chiapas. Therefore, if sustainable certification is to help stem such deforestation in Mexico, it will need to target these growers.

Unfortunately, however, the barriers to sustainable certification are particularly onerous for poor, small-scale growers, for at least two reasons. First, such growers often have the greatest difficulty meeting quality standards because they tend to be located at low altitudes, where climatic conditions do not favor quality; they often lack access to technical extension and credit; and they typically do not have access to well-functioning coffee-processing equipment.

Second, buyers and certifiers face higher costs when they deal with numerous small-scale growers. Because each deal involves transportation, quality checks, and other fixed transaction costs, few buyers are interested in making deals for the 100 to 200 pounds of coffee harvested by the average individual Mexican coffee grower (CMC 2004). Most buyers prefer to deal with large growers or cooperatives. For similar reasons, many certifying agencies deal only with cooperatives. For example, Fair Trade and most organic certification schemes require producers to be organized into marketing cooperatives. Unfortunately, this requirement shuts out most growers who are not organized into cooperatives. Moreover, most such growers are not likely to form cooperatives: many lack the necessary organizational and management skills and/or are wary of being cheated by corrupt cooperative leaders (Ávalos-Sartorio 2005).

### **A role for policy**

#### ***Improving access to certification***

To have an impact on the poor, small-scale growers who are most vulnerable to price shocks and most likely to clear forest cover, policymakers must find ways to lower the transaction costs involved in certifying them. One possibility is for the government to subsidize

certification costs. Another would be to modify certification standards to make them more appropriate to small-scale farmers.

Ironically, many small-scale, shade-coffee farmers in the Southern Sierra and Coast region, as well as other parts of Mexico, already meet criteria for sustainable coffee certification, including those for organic certification. They already grow coffee under a dense and diverse canopy of shade trees and rely upon nutrient-rich fermented coffee cherry pulp, not chemical inputs, for fertilizer.<sup>3</sup> Also, shade trees and coffee shrubs along with permanent herbaceous vegetation soften rainfall and protect even the steepest soils against erosion. This makes the soil conservation investments required by organic certification redundant. Unfortunately, many sustainable coffee schemes still require growers to meet exacting one-size-fits-all requirements. For example, the Smithsonian Migratory Bird Center's Bird Friendly Coffee® label requires growers to obtain organic certification in addition to maintaining a particular mix of shade-tree species.

To mitigate this problem, policymakers could develop so-called blanket certification in specified geographical areas where, for all practical purposes, all coffee growers meet criteria for certain certification schemes. These areas could be identified by a combination of field checks and remote sensing—that is, satellite imagery or aerial photography. Obviously, blanket certification would dramatically lower transaction costs for both certifiers and growers. Beneficiaries could be identified by the latest (2004) census, which contains information on the exact coordinates and size of farms in which coffee is cultivated under shade. Periodic monitoring using remote sensing and surveys could ensure continued compliance with sustainability criteria.

### ***Complementary government programs***

In their evaluation of the impact of fair trade and organic certification in Oaxaca, Calo and Wise (2005) conclude that, given the current price and cost structure of coffee production, such certification, by itself, is not sufficient to make coffee profitable for most producers. They write that “only hard-won government support programs, in the end, brought producers to a more reasonable rate of return from their coffee production.” They refer primarily to the two flagship programs the Mexican government implemented after 2001–2002 in response to the coffee crisis:

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<sup>3</sup> Lewis and Runsten (2005) find that an estimated two-thirds of farmers have no money to pay for agrochemicals.

the Price Stabilization Fund, which provides a guaranteed price to producers selling their coffee through registered buyers; and the Productivity Support Fund, which provides per hectare payments to help producers with harvesting costs. Through these and other coffee support programs, the Mexican taxpayer, knowingly or not, pays to maintain the social, economic, and environmental attributes associated with coffee production.

Unfortunately, both programs have weaknesses. Farmers participating in the Price Stabilization Fund are paid the difference between the market price at which they sell their coffee and a guaranteed price. However, the guaranteed price provided by the program is not nearly high enough to cover production and marketing costs for many farmers. Additionally, our research on the impact of the Price Stabilization Fund in the Southern Sierra and Coast region shows that the program only reached 27 percent of the approximately 33,000 coffee growers in that region in the 2002–2003 crop season, the program's second year of operation. This research also suggests that certain types of farmers consistently chose not to participate, presumably because they faced high transaction costs.<sup>4</sup> Farmers in this group included those located more than 20 kilometers away from the nearest paved road (about one-third of the farmers in our study area), those in towns with an indigenous population greater than 20 percent (about one-third of the towns in our study area), and those in towns where significant male outmigration has occurred (60 percent of towns in our study area). These findings suggest that to increase participation, those responsible for the program's design and implementation must take actions to reduce transaction costs of participation for these growers (see Ávalos-Sartorio and Blackman 2005 for details).

Although the Productivity Support Fund was created to promote productivity improvements, such as fertilization and pruning, in practice it has not had this effect. There is no farm-level mechanism for verifying output, so program payments are made per hectare. Moreover, producers receive the subsidy whether they have harvested or not (Ávalos-Sartorio 2005). One means of mitigating this deficiency would be to redirect financial resources now used for the Productivity Support Program to the Price Stabilization Fund. The additional resources could be used to create incentives for producers to enter the specialty coffee market by subsidizing certification costs. Alternatively, or in addition, producers could get an additional

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<sup>4</sup> Transaction costs include transporting coffee to the town where a registered buyer is located, which usually is farther away than the unregistered middleman; and commuting to the city, often far from the farm, to receive and cash the government check in a bank.

price premium for producing sustainable and/or high-quality coffee, subject to some verifiable monitoring mechanism.

### ***Coffee quality***

As noted above, for small-scale farmers to be successful in the specialty market, they must produce coffee of reasonably high quality. Policymakers can support such growers' efforts to enhance quality by expanding programs and policies that provide technical assistance in quality control, bolstering domestic capacity for assessing and certifying coffee quality, and helping to market Mexican specialty coffees—activities formerly undertaken by INMECAFE, the parastatal coffee marketing organization shuttered in 1990.

### **Conclusion**

Stakeholders must act quickly to stem deforestation in shade-coffee areas brought about by the coffee crisis. The first step is for government and the marketplace to recognize the role shade-coffee plays in providing environmental services. Having done so, they can act to help all shade-coffee growers—not just those who are large, relatively wealthy, or well located—obtain farm-gate prices that reflect these values. An important means of accomplishing this goal is to help small-scale growers obtain sustainable coffee certification by modifying certification requirements and helping farmers boost quality. In addition, policymakers can reform existing coffee-sector support programs to better serve the needs of small-scale farmers and those who want to enter the market for sustainable certified coffee.

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