

EarthTrends: Featured Topic

Title: **Birds and Beans: The Changing Face of Coffee Production**

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Is your morning brew friendly to birds? Growing coffee, one of the world's most popular beverages, isn't always easy on wildlife and the environment. How the coffee plants are grown—whether under a bird-friendly canopy of trees or in modern monocultures stripped of large trees—makes all the difference.

As coffee producers have adopted modern tree-sparse coffee cultivation methods in the last few decades, songbirds have suffered, particularly in Latin America, where many songbirds migrate seasonally and depend on coffee plantations for habitat. But a surge in the popularity of organic and shade-grown coffee could help preserve some of the benefits of traditional bird-friendly coffee cultivation and highlight the role of consumers in driving—or reversing—environmental damage.

In effect, coffee drinkers can have their beans and biodiversity, too.

A trend toward bird-friendly coffee could also benefit small farmers, who may get higher prices for their beans and healthier working conditions by continuing their traditional low-impact growing methods.

More Coffee, Fewer Birds?							
Figure 1: Coffee Production in Northern Latin America 1950-2000							
REGION	PRODUCTION (thousand metric tons)						PERCENT GROWTH
	1950 ^a	1960 ^b	1970	1980	1990	2000	1950-2000
World	2222	4268	3850	4829	6063	7263	227%
Central America ^c	189	341	413	599	660	848	349%
Caribbean ^d	107	136	114	138	138	105	-1%
Northern Latin America ^e	711	1102	1219	1681	2083	1918	170%

Notes: a. 1948-52 average. b. 1961-65 average. c. Production figures for Central America include Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. d. Production figures for the Caribbean include Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico, and Trinidad and Tobago. e. Production figures for Northern Latin America include all the countries listed above, plus Colombia and Mexico.

Source: Data from 1950 and 1960, Rice and Ward, 1996; data from 1970 to 2000, FAOSTAT 2002.

Coffee Context: The Ubiquitous Bean

After oil, coffee is the highest-valued (legal) commodity traded from the developing world, with world coffee exports valued at \$11.2 billion in 1999 (FAO 2001). In many developing countries, coffee beans are the primary export and a significant source of employment. Worldwide, 20-25 million people—most of them small farmers—depend

on income from coffee crops (IIED 1997:36).

Nowhere is coffee more important than in Latin America, where farmers raise more than half of the world's coffee—some 4.2 billion kg out of the total 7.3 billion kg harvest in 2001 (FAO 2001) (see figure 1). For well over a century, coffee has been a major export from Latin America, shaping both the economy and the natural landscape of the region. In the past, coffee has represented as

much as one-third of export earnings in several Latin American countries, and it remains a vital element of the agricultural economy today (Rice and Ward 1996:41). Coffee is also an important crop in a variety of Asian and African nations, such as Viet Nam, Indonesia, Côte d'Ivoire, and India (FAO 2001).

Although developing nations produce most of the world's coffee, it is coffee drinkers in developed nations that generally consume it. The United States and Western Europe together import three out of every four bags of coffee produced in the world (FAO 2001). The United States alone imports an average of 20 percent of the world's crop, making it the biggest national coffee consumer (FAO 2001).

Overall coffee production has increased almost fourfold since 1950 (FAO in Rice and Ward 1996; FAO 2001). However, growth in demand for specialty coffees such as gourmet blends, flavored coffees, and organically grown coffee is even more impressive, particularly in the last few years. In the United States specialty coffees accounted for \$5.6 billion of the nation's \$17.9 billion coffee market in 1998 (Bachman 2001).

Shade vs. Sun Coffee

New consumer trends in coffee drinking are not the only change in the global coffee business. In a bid to modernize, the coffee industry

in Latin America has shifted from its traditional reliance on small coffee producers growing their coffee plants in fairly low-density, diversified plots to industrial cultivation on larger plantations. Much of this shift has been promoted and subsidized by government and international aid organizations as a way of raising the coffee sector's productivity and promoting rural development. However, as with other agricultural modernization efforts, the changes in coffee production have broad environmental and social repercussions.

Traditionally, coffee has been grown within a mixed shade cover of fruit trees and other hardwood species, which together form a forest-like agroecosystem. Such "shade" coffee plantations—which are, more often than not, small farms—aid in soil protection and provide a rich habitat particularly valuable to migratory birds, many of them songbirds (SMBC 2001:slide 24). Researchers in Mexico and other Latin American countries have found that traditionally managed coffee farms support at least 180 species of birds, a number exceeded only in undisturbed tropical forests (Greenberg 1994:24). Besides coffee, these typical mixed plantations also provide fruit, firewood, timber, and other products that can be used directly or sold for cash. Studies in Guatemala and Peru suggest that these non-coffee products can provide as much

as 25 percent of the total value of products from a shade coffee farm (Rice 2001b). Such diverse crops and alternative sources of income can be especially important to the many small coffee farmers living at or below the poverty level (Greenberg 1994:24).

In the past 30 years, coffee farmers have increasingly converted to more intensive systems, involving high-yielding coffee varieties grown with no shade and high applications of chemical fertilizers and pesticides. Some 30-40 percent of the coffee planted in Colombia, Mexico, Central America, and the Caribbean has been converted to this so-called "sun coffee" (Rice 2001a; Rice and Ward 1996:12). While planting sun coffee has increased short-term production, it has involved some significant environmental trade-offs. For one, these more intensive plantings are associated with higher rates of soil erosion and greater water pollution from chemical runoff.

More significantly, the conversion to industrial coffee production systems may have devastating consequences for migratory bird populations and other species. Globally, the world's 11 million hectares of coffee plantations play an important ecological role (SMBC 2001:slide 2). This is especially true in Central America, Colombia, and Peru, where many migratory routes converge and natural forests have shrunk to small islands,

making coffee plantations all the more crucial as habitat. Indeed, in many parts of Central America, shade coffee plantations account for the bulk of the remaining forest. In El Salvador, for instance, they make up 60 percent of the nation's total forest area and serve as sanctuaries for the more than 520 bird species that migrate through the area (Itzalco Premium 2001; Rice and Ward 1996:1). In effect, conversion to sun coffee represents a form of deforestation, with consequent effects on species diversity.

Bird surveys comparing sun coffee plantations to traditional shade coffee plantations tell us those effects are already significant. Studies in Colombia and Mexico show that sun coffee plantations support 90 percent fewer bird species than traditional shaded coffee plantations (Rice and Ward 1994:17 citing SMBC 1994). The danger this represents to migratory birds is reflected in the fate of the Baltimore Oriole, a songbird that favors shade coffee plantations in Mexico and Central America. The oriole's population has declined significantly as the shade coffee plantations along the oriole's route have been progressively converted to sun coffee (SMBC 2001:slide 25).

There are also human costs to sun coffee conversion. Although some farmers and large producers may benefit, especially when coffee prices are high, many small farmers

may suffer with the conversion to sun coffee, because conversion involves considerable use of harmful pesticides under conditions that can lead to unhealthy exposures for farm workers. Pesticide levels in the blood of many coffee plantation workers have been shown to be high (Agudelo 2001). Loss of the non-coffee products that shade plantations produce can also represent economic setbacks, as farmers become more dependent on the notoriously volatile coffee market as their sole income source.

Friendly Beans, Fair Beans

Countering this trend toward sun coffee are small but encouraging signs of growing consumer interest in sustainably grown coffee, produced under conditions that are better both for the environment and for small farmers. Sales of certified organic coffee beans, which generally come from coffee plants grown under more traditional shaded conditions, are currently growing faster than any other type of specialty coffee. In the United States, they now represent sales of almost 2 percent of the more than \$5 billion specialty coffee market (Raynolds 2000:304; Bachman 1999). In fact, organic coffee is the world's most well-established organic export crop, with yearly shipments of over 100 thousand metric tons

(Raynolds 2000:302). Mexico is the largest supplier of organic coffee, with Peru, Indonesia, and Ecuador following as pioneers in the field (Raynolds 2000:302).

Certified organic coffee beans can sell for as much as 60 percent more than standard gourmet beans, and so can translate into higher returns for growers (Lafaye 2001; Rice 2001). In addition, some coffee producers are finding that organic practices can extend the productive life of their land relative to conventional chemical-intensive cultivation (Lafaye 2001).

However, the cost associated with the certification process itself is high—several hundred dollars or more—taking it out of the reach of many small producers (Rice 2001b; Raynolds 2000:302). Also, the transition from conventional to organic coffee takes 3 to 4 years, demands more hand labor, and requires investments in new cultivation techniques and fertilization methods. Although these investments may pay off in the long run, the transition to certified organic production can lead to economic hardship in the short term. Together, these factors form a significant obstacle to the quick adoption of organic methods and call into question how fast and how far the transition to organic coffee-growing methods will proceed.

Beyond growth in the sales of organic and shade-grown coffee beans, another trend

influencing the impacts of coffee production is the development of the “fair trade” movement over the last decade. The fair trade movement's goal is to achieve a fair price paid to small growers for their coffee, which is distributed through small, democratically run cooperatives that bypass the middlemen and speculators who dominate the coffee market. The difference in earnings is small but significant: fair trade coffee growers are usually guaranteed \$0.10 per kilogram above the world price (Raynolds 2000:301, 304). The movement's explicit social goals of supporting small farmers and sharing profits equitably are used as the main commercial selling point for fair trade coffee.

Fair trade cooperatives do not explicitly require their members to raise shade coffee, but they encourage sustainable production methods and organic methods as well. For example, Coocafé, a fair trade cooperative in Costa Rica that currently produces about 3 percent of the country's coffee crop, offers its members financial and technical assistance to ease

the transition into organic production (Lafaye 2001). Coocafe's emphasis on the benefits of sustainable production is part of a long-term economic and marketing strategy based on the financial,

Fair Trade Coffee: Small but Significant	
Figure 2: Market Share of Fair Trade Labeled Coffee in European Countries, 2000	
COUNTRY	MARKET SHARE, % IN LABELED COFFEE
Luxembourg	3.0%
Switzerland	3.0%
The Netherlands	2.7%
Denmark	1.8%
United Kingdom	1.5%
Belgium	1.0%
Germany	1.0%
Sweden	0.8%
Austria	0.7%
Ireland	0.5%
Finland	0.3%
Norway	0.3%
France	0.1%
Italy	0.1%
Source: European Fair Trade Association, <i>Fair Trade in Europe 2001</i> .	

environmental, and health and safety considerations of its members.

Fair trade coffee has been most successful in Europe where it was introduced over a decade ago and now holds more than 3 percent of the coffee market. Penetration into large supermarkets has brought fair trade coffee into

mainstream distribution, particularly in Germany, Switzerland, the Netherlands, and the United Kingdom (EFTA 2001:16, 71-73) (see figure 2). For example, fair trade coffee is available in 90

percent of supermarkets in the United Kingdom (IIED 1997:36). The fair trade movement has also started to take root in the United States in the last few years.

Farmers producing for both fair trade and the organic coffee markets receive not only higher prices for their coffee, but also benefit from a more secure—and growing—market. Meanwhile, sip by sip, consumers make small investments in preserving biodiversity and maintaining the environmental integrity of coffee plantations. Coocafe's bet, and the bet of organic and shade coffee producers throughout Latin

America, is that today's growth in sales of organic and fair trade coffee signals a growing belief by consumers that coffee, birds, and better treatment for farmers can all fit nicely in a single cup.

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