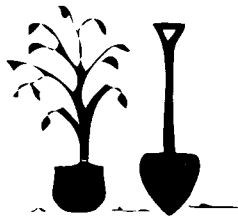
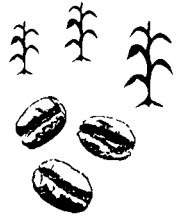


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The World Bank

Toward More Sustainable Coffee

Consumers fuel demand for more sustainable agriculture

With the current crisis in the coffee market, the potential to make coffee production, processing, and marketing more sustainable has attracted the attention of coffee market experts, national governments, and the development community.

This interest is fueled by a growing niche market for agricultural commodities that are produced in an environmentally benign and socially responsible manner. This Note builds on the experience from World Bank/Global Environment Facility projects in Mexico, El Salvador, and Uganda to develop more sustainable coffee production (Box 1).

Coffee, one of the most widely traded global commodities, is at the forefront of the debate on how consumer demand can foster changes toward sustainable agriculture. Coffee processors and marketers recognize that consumers have legitimate demands for transparent environmental and social impacts, and sustainable coffee has been gaining a foothold in high-value markets. Improving the sustainability of coffee production is currently approached from the perspectives of agronomy, biodiversity conservation, and social effects (Box 2).

This approach offers significant opportunities for developing countries to break the vicious cycle of poverty, environmental degradation, and disruption of the social fabric of local communities, as well as minimizing price volatility. However, market forces must translate the added consumer value into a tangible income transfer to rural communities, a link obfuscated in today's international coffee market dominated by large-scale roasters.



Organic shade coffee in Nicaragua grown by Cooperative Wiwili, a member of the CECOCAFEN Group

Why more sustainable coffee?

Coffee typically grows in tropical rainforests. The high-value Arabica varieties, originally native to the horn of Africa, grow in the tropical highlands. The Robusta varieties originated in Uganda and are cultivated at lower altitudes. Robusta has gained market share in recent years because of a higher yield potential and its high caffeine content. Latin America and the Caribbean dominate current world production with about two-thirds of all exports.

When grown in traditional systems, coffee is part of an integrated agroforestry

system — coffee trees and other food crops such as bananas and maize are grown with indigenous tree species that provide shade and timber, as well as non-timber by-products. In many cases, coffee grows at the interface between primary tropical forests and agricultural lands, often adjacent to protected areas. This agroforestry system supports the long-term sustainability of coffee yields and conserves water, soil, and biodiversity. The majority of coffee is produced by smallholders and is an important source of cash.

In the last few decades, the availability of external inputs such as mineral fertilizers and pesticides has increased coffee planting on clear-cut land, especially in Latin America. According to estimates of the permanent coffee plantings from the Smithsonian Migratory Bird Center, the land under modern, reduced-shade coffee systems ranges from 17 percent in Mexico to 40 percent in Costa Rica and 69 percent in Colombia. The 'intensification' or 'technification' of traditional shade coffee systems into 'sun coffee' plantations has significant environmental implications (Fig. 1). While sun coffee has higher yields in the short run, given the use of external inputs and a higher tree density, there are concerns about the long-term sustainability of the production gains. Conversion from shade coffee to sun coffee leads to clear cutting of tropical forest trees, higher soil erosion, and higher run-off of agrochemicals.

Box 1. Sustainable coffee projects supported by the World Bank/GEF

The El Triunfo project was implemented with a Global Environment Facility grant, and integrates support for organic and shade-grown coffee production and marketing into a sustainable development agenda for a marginalized, rural area in southern Mexico. The project covers nearly 800 farms organized in seven cooperatives covering about 1,800 ha. It introduced a scheme to certify and market organic and shade-grown coffee, partly to the large American retailer, Starbucks. Average net income of farmers increased by about 25 percent, and deforestation was halted. Project implementation involving local communities was managed by a local NGO, and the marketing link was brokered by Conservation International.

Since 1998, the Promotion of Biodiversity Conservation Within Coffee Landscapes project in El Salvador (also implemented with a GEF grant through the national coffee agency, PROCAFE), developed an approach to maintain or reestablish biodiversity-friendly shade coffee systems. In El Salvador, 95 percent of coffee plantations are still shade-grown. The project developed certification standards, trained extension workers, and supported farmers in the certification process. To date, 1,008 ha have been certified while another 7,695 ha are in the process of certification according to the principles of the ECO-O.K. label. Japanese importers paid a premium for this coffee.

Demand for sustainable coffee

Oil is the only commodity that is more widely traded than coffee. As the most valuable agricultural commodity, coffee is significant in the livelihoods of a large part of the tropical world in developing countries. An estimated 25 million families in 52 exporting countries depend on coffee. Countries such as Uganda, Rwanda, and Burundi depend heavily on foreign exchange from coffee exports, and the economic impact of developments in the coffee market on rural communities is thus potentially large. Price volatility in international trade has increased over the years, hurting small-scale farmers and cooperatives that cannot manage risk because they lack access to insurance or futures markets. In early 2002, prices on the coffee market reached a new low, contributing to a coffee crisis for many exporting countries. The persistent oversupply of coffee, together with new technology that has facilitated increased switching of coffee origins in blends, limits the prospects for a recovery of the coffee market in the foreseeable future.

Depending on the structure of the marketing chain, coffee certified according to sustainability standards commands a premium price that can put more money in

the hands of producers. It is one of the most promising and successful ways to harness consumer willingness to pay for the environmental and social values that sustainable coffee production encompasses.

The key to market success for sustainable coffee is a functioning supply chain and a credible and transparent certification method. The three major certification schemes (organic, fair trade, and shade-grown) focus on different characteristics, but are compatible and tend to converge, which is indicated by the inclusion of social criteria in organic certification guidelines. Producers supported by the El Triunfo project (Box 1) follow the principles of organic, shade-grown, and fair trade certification systems, and can use all three labels in their marketing.

While the market share for sustainable coffee is still small, it is growing rapidly. Today the 1 percent market share translates into US\$ 530 million in retail value (Giovannucci, 2001). Increasing demand for organic coffee is particularly significant, already estimated at 15-18 million bags. In Mexico, about 10 percent of the total coffee area is already planted to organic coffee, producing exports valued at US\$ 32.6 million in 2000 (Damiani, 2001).

Production costs and income from sustainable coffee

A large share of the existing global coffee area cultivated under traditional practices can, in principle, be called sustainable. To qualify for certification, these existing coffee growing areas must frequently change production technology. For example, shifting to organic production is relatively easy where producers have applied only small amounts of external inputs. Similarly, relatively small investments and production changes are required when coffee is already cultivated under forest shade using labor-intensive technologies. In many cases, the most

Box 2. Different sustainability standards

Organic coffee focuses on agronomic practices. It is grown without the use of synthetic chemical fertilizers and pesticides using sustainable agricultural methods. While biodiversity aspects are not directly covered, shade trees are important for organic production because leaf litter fertilizes the production, and the trees retain moisture and provide a habitat for the natural enemies of coffee pests.

Shade-grown coffee is grown under a canopy of shade trees that provide habitat for migratory birds and other species, enrich and conserve soil, and decrease the need for chemical inputs.

Fair trade coffee provides an alternative trade model. Certified fair trade coffee is exchanged at a guaranteed minimum price, which can be almost twice that for conventional coffee. Rules stipulate healthy working conditions and a living wage for farmers, as well as financing of community-level development activities by farmer organizations.

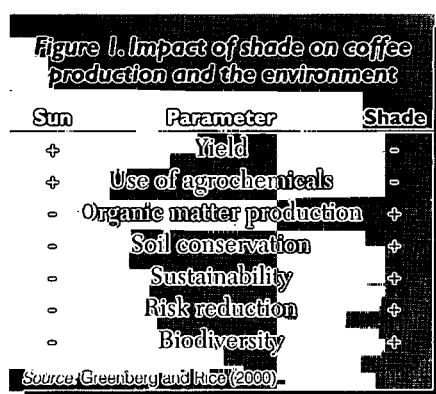
Organizations that promote the different types of sustainable coffee have been trying to unify and consolidate the requirements and establish a common set of environmental and social standards. Certified sustainable coffee focuses on a range of production characteristics, whereas specialty coffee is primarily selected according to coffee bean quality.

important changes are the application of soil conservation measures.

There are few case studies that provide detailed information on the production cost and income derived from sustainable coffee. A substantial yield decrease is normally observed in the first few years after transitioning from high use of chemical inputs. Production from shade-grown coffee can be as low as one-third of that from 'technified' plantations. However, a study from Guatemala reveals that the traditional low-input systems used by many poor smallholders experienced yield increases of 38-67 percent over five years due to the introduction of shade regulation and organic practices (Damiani, 2002). While organic coffee farmers in Chiapas, Mexico have 50 percent higher costs compared to low-input conventional production, their cost of producing organic coffee is still 9 percent lower than a high-input system (Damiani, 2001). The additional cost of certification, however, can be a more important factor than production cost differences.

The price premium paid to producers of certified sustainable coffee can be a substantial source of additional income. Organic and shade-grown coffee are traded at premiums over the price paid for conventionally grown coffee. However, if agrochemicals were used previously, organic farms must undergo a transition period of three years to obtain price premiums. The fair trade label offers a guaranteed floor price when world market prices are low. Depending on the specific location and market conditions, premium coffee prices, together with the value of other by-products, can generate higher farm incomes, even when yields are lower. The long-term security of direct marketing links, which are encouraged through the organizations certifying sustainable coffee, can be important for a potentially large share of the rural population. For example, in Colombia nearly 23 percent of the agricultural labor force is involved in coffee production and processing. Coffee sold under the fair trade label alone benefits 550,000 farmers in 22 countries.

In order to obtain a price premium for sustainable coffee, farmers or producer organizations must invest in certification and establish appropriate monitoring and



documentation. Producer organizations also need to make investments in village-level management and processing in order to achieve the high quality required for access to the specialty and gourmet market.

Non-market benefits of sustainable coffee

The scale of environmental benefits of sustainable coffee depends on the specific location, the history of the coffee growing area, and the specific requirements set out in certification standards. Thirteen of the world's 25 biodiversity hotspots are found in coffee-growing areas. Shade-grown coffee systems mimic the rainforest, providing nearly all the same environmental benefits as primary rainforests — biodiversity support, habitat for medicinal plants, carbon storage, and watershed protection. In El Salvador, while only 1 percent of the total land area is primary forest, 9 percent is allocated to shade coffee. In Peru shade-grown coffee systems provide habitat for about 170 bird species as compared to less than half that in sun coffee systems (Greenberg and Rice, 2000).

Diverse traditional coffee farms support a high density of natural predators and parasitoids, which reduces the number of insect pests. Compared to 'technified' systems, sustainable coffee farms reduce excessive use of agrochemical inputs, which benefits the environment and can reduce health risks. The selective introduction of nitrogen-fixing and deep-rooted shade trees improves soil nutrient availability for coffee plants, and also helps to retain moisture, reduce flooding, prevent erosion, and create a more humid local climate. Carbon sequestration is also higher with a shade canopy.

Although in certain cases coffee yields may be lower in shade coffee systems, an

integrated system provides farmers with other forest products. These include fruit, firewood, construction material, and plants for medicinal use. In the Apurimac Valley of Peru, the leaves, stems, or bark from 30 distinct plants are used for a variety of medicinal purposes (Greenberg and Rice, 2000).

Sustainable coffee also has a number of positive social and other effects. The increase and long-term security of income is believed to reduce migration to urban centers, stabilize cultural traditions of indigenous people, and offer an alternative to illegal crops. Marketing partners for certified sustainable coffee demand from coffee producers a certain degree of accountability, mainly through producer organizations. Village-level organization immediately improves the bargaining position of the individual farmers, even for that part of the coffee harvest which is not sold to premium markets. Long-term benefits include better access to credit, inputs, and public services. Coffee producer organizations can thus become the anchor for other rural development activities.

Some marketing partners explicitly account for social standards in their certification guidelines. The fair trade label requires producer organizations to spend part of the price premium on communal social development activities such as educational programs, health care, housing, and water supplies. The Conservation Principles for Coffee Production, issued by four large NGOs and the Smithsonian Migratory Bird Center (2001) include guidelines on minimum labor standards related to wages, benefits, working conditions, and the right to organize

Aiding the transition to more sustainable coffee production

Given the proven environmental and social benefits of either conserving existing sustainable coffee or promoting the transition to those systems, there are many reasons for policymakers to consider public support. Helping the transition to more sustainable coffee offers opportunities for a market-based solution to reduce rural poverty and conserve biodiversity in many developing countries. With the current coffee market in crisis, it is important to consider some of the lessons learned from previous activities.

Contrary to many of the commodity-specific and general rural development activities of the past, promotion of sustainable coffee for differentiated markets should first pay attention to securing access to high-value markets with high-quality coffee. This is critical if producers are to reap the rewards from the environmental and social services that their production method is providing because it is the key to successful long-term contracts with coffee buyers. The IFC can provide help to establish market links. Beyond niche markets, coffee of lower quality that is in demand due to its blending characteristics can be made more sustainable through the adoption of sustainable sourcing criteria throughout the conventional supply chain.

Producer groups often need to increase their technical and institutional capacity to meet the quality demands of high-value markets. Another major challenge is capacity development for small-scale producers to be able to cope with the requirements of certification, monitoring, and documentation. Certification costs are a significant investment, especially for those countries that must rely on certification from foreign bodies before being able to enter export markets. Development projects can help small-scale producers by offering technical assistance, cost-sharing, or linking numerous groups to facilitate sharing fixed costs.

Expanding the market for sustainable coffee requires increased consumer awareness and a commitment from importers and retailers in the high-value markets of the USA, Europe, and Japan to invest in differentiated product lines and develop direct partnerships with producers. Specialized development agencies or NGOs with a long history of helping coffee producers have been instrumental in forging long-term partnerships between importers/retailers in upscale markets and coffee producers, and

raising consumer awareness. However, large-scale public investment to help producers grow sustainable coffee without simultaneous expansion of consumer demand carries the risk of flooding niche markets, followed by an erosion of the price premium. Beyond niche markets, large-scale importers, roasters, and retailers still face challenges to adopt sustainability standards because of the need for a constant supply of large quantities of quality coffee from many different sources.

Domestic agricultural policies are frequently geared toward supporting 'technified' coffee, e.g., through input and credit schemes, subsidies and tax breaks for agrochemicals, research priorities, and extension organizations. The World Bank can help reverse some of the biases through policy dialogue, and well as by promoting the local and global benefits of sustainable coffee for rural development and environmental protection by client country policymakers.

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Further Information

General

- International Coffee Association — www.ico.org
- Specialty Coffee Association of America — www.scaa.com
- Sustainable Coffee Importer Association — www.sustainableharvest.com
- Market development and quality improvement initiatives of European coffee importer group — www.ede-coffee.de/prostud.htm
- World Bank/GEF México El Triunfo project — http://wbln0018.worldbank.org/me_eltrunfo/me_eltrunfoar.nsf/HomePage/1?OpenDocument

Certification standards

- Fair Trade Labeling Initiatives of FLO-International — <http://www.fairtrade.net/coffee.html>
- International Federation of Organic Agriculture Movements — <http://www.ifoam.org>
- Organic Crop Improvement Association (large certifying body accredited by USDA) — <http://www.ocia.org>
- Rainforest Alliance (ECO-O.K. label for shade-grown coffee) — <http://www.rainforest-alliance.org/marketplace/eco-ok/index.html>

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