

# Does Eco-Certification Have Environmental Benefits?

## Organic certification in Costa Rica improves coffee growers' environmental performance

ALLEN BLACKMAN AND MARÍA A. NARANJO. AUGUST 2010

Eco-certification of coffee, timber and other high-value agricultural commodities is increasingly widespread. Advocates claim it can improve commodity producers' environmental performance—even in countries where regulation is weak—by leveraging “green” market pressures. However, the hard evidence needed to evaluate this hypothesis is virtually non-existent. To help fill this gap, we use detailed farm-level data to analyze environmental impacts of organic coffee certification in central Costa Rica. We find that organic certification does indeed improve coffee growers' environmental performance. It significantly reduces chemical input use and increases the adoption of environmentally friendly management practices.

Initiatives that certify agricultural commodities produced in an environmentally friendly manner are increasingly popular. For example, global production of organic, Rainforest Alliance, and other types of eco-certified coffees has grown by 10-20% per year recently, a rate far higher than that for other types of specialty coffee. Certification schemes like these have the potential to address pressing environmental problems associated with agricultural commodities in developing countries by leveraging “green” market pressures. Yet certification programs also face important challenges. They must use standards stringent enough and monitoring and enforcement strict enough to ensure poorly performing producers are excluded. In addition, they must offer price premiums high enough to offset the costs of certification.



*Café, Turrilba y demás...*  
By Pamela Salas

Although a growing literature examines commodity certification, we still know little about whether it actually affects producers' environmental performance. Few studies evaluate the environmental impacts of certification, and many of those rely on problematic methods that bias their results.

**Proper evaluation of certification impacts**

Measuring the impact of certification on coffee growers’ environmental performance requires comparing actual observed performance with the counterfactual—what performance would have been absent certification. A key challenge in doing so is that the counterfactual, by definition, is not observed and, therefore, must be estimated. However, most evaluations use problematic counterfactuals: either certified growers’ precertification performance or noncertified growers’ performance. In the first case, results are biased whenever performance changes during the study period because of factors unrelated to certification including changes in commodity prices, input prices, weather conditions, processing, and marketing, all of which are common. In the second case, results are biased whenever growers already meeting certification standards comprise the lion’s share of certified growers. Following the established “best practice” our analysis avoids these problems by constructing a counterfactual from the environmental performance of a group of “matched” noncertified growers who are very similar to certified growers. In other words, we measure the impact of certification as the difference between the environmental performance of certified growers and very similar noncertified growers.

**Key Point**

- To identify certification impacts, an evaluation must construct a reasonable counterfactual outcome, that is, an estimate of what environmental outcomes for certified entities would have been had they not been certified

**Facts and results**

We examine organic coffee certification in Turrialba, Costa Rica, an agricultural region in the country’s central valley located about 40 miles east of San José. Coffee production in this region, as in all of Costa Rica, relies heavily on chemical fertilizers and pesticides. The leading organic certifying organization is a Costa Rican organization called Eco-Logica, which is accredited by the U.S. Department of Agriculture, among other organizations. Certified growers in this region belong to the Association of Organic Producers of Turrialba (*Asociacion de Productores Organicos de Turrialba*, APOT). Anecdotal evidence suggests that APOT strictly enforces Eco-Logica organic standards.

To measure environmental performance and match certified and noncertified growers, we use rich data from a recent farm-level census of coffee growers along with geographic information system on farm’s geophysical characteristics. We evaluate three “negative” practices that must be discontinued for certification and four “positive” practices that must be adopted for certification.

Positive	Negative
<ul style="list-style-type: none"> <li>• soil conservation measures such as deviation canals, water collection holes, water ladders, and vegetative barriers</li> <li>• shade trees</li> <li>• windbreaks</li> <li>• organic fertilizer</li> </ul>	<ul style="list-style-type: none"> <li>• nematicides (pesticides)</li> <li>• chemical fertilizers</li> <li>• herbicides</li> </ul>

Our findings suggest that certification significantly reduces use of all three chemical inputs for which we have data—pesticides, chemical fertilizers, and herbicides—and increases adoption of at least one of the four environmentally friendly management practices for which we have data—organic fertilizer.

## POLICY BRIEF

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### Policy implications and recommendations

What are the policy implications of our findings? They suggest that commodity certification schemes that require adherence to well-defined stringent standards; that are enforced at the individual farm-level by independent third-party monitors; and that are implemented in areas where producers do not already adhere to these standards, can have significant environmental impacts.

That said, it is worth noting that certification schemes meeting these criteria may have an important disadvantage—they are likely to entail significant costs for producers. Absent high price premiums or other benefits from certification, these costs will discourage certification. Indeed the relatively small number of organic certified producers in our sample (one percent) may reflect this phenomenon.

#### ABOUT THIS BRIEF

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