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Policy Brief

## Carbon Footprint Labeling: Challenges for Agricultural Exporters In Developing Countries

Sílvia H. G. de Miranda, Sara Wong, Rodrigo Echeverría,  
and Daniela B. Bartholomeu

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*Carbon footprint (CF) labeling poses challenges to the competitiveness and welfare of agricultural exporters in developing countries. Improved coordination among developed and developing countries concerning collection and sharing of technical data, economic assessments of CF labeling schemes, and standardization of labeling methods will help developing countries avoid some of the potential negative impacts of CF labeling and encourage them to participate in CF labeling initiatives.*

## **Carbon Footprint Labeling: Challenges for Agricultural Exporters in Developing Countries**

**Sílvia H. G. de Miranda, Sara Wong, Rodrigo Echeverría and Daniela B. Bartholomeu**

To address the issue of global warming, the international community has recently undertaken several initiatives to help reduce greenhouse gas (GHG) emissions, including carbon footprint (CF) labeling programs. CF labeling seeks to quantify the emissions of GHGs that are caused directly or indirectly by the production and/or use of a product. The main objective of CF labeling is to provide consumers with information on the carbon “content” of products so they can choose products with lower carbon emissions. CF labeling also provides information that can help companies develop strategies to reduce their carbon emissions throughout the production process and supply chain.

While CF labeling offers benefits to both consumers and companies, it is an issue of concern for developing countries. First, thus far, CF labeling has been discussed primarily in developed countries, suggesting that the interests and views of developing countries may not be adequately considered. Moreover, the participation of developing countries in CF labeling initiatives has generally been low, resulting at least in part from a scarcity of human capital, technical capacity and financial resources in developing countries. Second, there are concerns regarding the impact of CF labeling on the export competitiveness and welfare of developing countries. Estimation of these impacts is hindered by a lack of technical data required to measure CF values and insufficient market and consumer information. More generally, there has been little economic analysis of the impact of CF labeling on consumer purchase decisions or the costs of compliance. Third, because the technical expertise, technologies, and infrastructure required to implement and certify CF labeling may not be available in some developing countries, the costs of such labeling may be much higher than in developed countries. Finally, although the number of initiatives on CF labeling is growing, efforts to coordinate and harmonize them have been poor, and there is no standardized process for calculating the CF of agricultural and food products.



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Despite this lack of information, coordination, and harmonization, some countries and companies are moving forward with CF labeling programs. For example, large retail companies such as Walmart and Casino have started to require CF labels on the products they sell. At the national level, France had proposed to implement a mandatory CF labeling scheme in 2011, but there is no news that that this has occurred.

Other international technical and sanitary requirements (e.g., traceability requirements) have caused confusion and trade disputes in the recent past. CF labeling appears likely to become the next technical challenge for food producers in developing countries. Thus, it is important to consider and assess the possible distortionary and other negative impacts of CF labeling on the trade performance and welfare of food producers and exporters in developing countries.

To help address these issues and the gaps in information concerning CF labeling, researchers in Brazil, Chile, and Ecuador recently conducted a study (de Miranda, Wong, Echeverría and Bartholomeu 2011) to examine the economics of CF labeling and its implications for trade, with an emphasis on Latin American agricultural exports. The study reviewed the recent literature and national and international initiatives concerning CF labeling, examined the challenges of standardizing and harmonizing CF labeling efforts, evaluated the methodologies being used to measure CF, and analyzed the theoretical framework for assessing the economics of CF labeling, especially its potential impacts on trade and welfare.

The review of the literature found that exporters in low-income countries, particularly smaller farms, will likely face trade difficulties in a climate-constrained world where carbon emissions are quantified and certification is required to participate in carbon-labeled trade, but that the disadvantages they face could be addressed by innovative efforts to provide data and certification of CF labeling at a low cost (Brenton, Jones and Jensen 2009). Another study (Hogan and Thorpe 2009) finds that in the case of trade between a large importer country and a small exporter country, CF labeling causes a reduction in consumption levels in the large importer country, resulting in a reduction in prices and hence production in the small exporter country. Depending on the scenario, imports can drop to zero. This is a feasible scenario for bilateral agricultural trade between Latin American countries and the European Union, implying potentially significant losses for net exporters in Latin American countries.

Although most CF labeling initiatives have been developed and proposed by developed countries and their multinational corporations, some efforts have emerged in developing countries. For example, in 2009 a group of Latin American governments, producers, and exporters of bananas, together with research institutes in Europe and Australia, launched a project to reduce the CF and pesticide use in banana production (FAO 2009). In Brazil, researchers have quantified the emissions from different steps in the production chain particularly for cattle and sugarcane and examined GHG emissions from various production systems (e.g., forest conversion to pasture; burning versus non-burning in sugarcane harvesting). Brazil's orange juice industry has been studying ways to measure the sector's CF. Although there are some initiatives to measure emissions from Brazil's sugarcane sector, a CF label has not yet been established.



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Despite these limited efforts in developing countries, the study finds that CF labeling has mainly been undertaken by developed countries, and that it has not been uniformly designed or implemented across countries. The study recommends that future international efforts concerning CF labeling give priority to increasing coordination among developed and developing countries, focusing in particular on: collecting, organizing, and sharing technical data, with an emphasis on low-cost approaches to ensure that small players can afford to participate in CF labeling programs; standardizing, harmonizing, and ensuring consistency of methods to measure the CF so that the CF labels of different products are comparable; examining the competitiveness concerns of developing countries, such as the impacts of CF labels on their producers' compliance costs and the reactions of consumers in importing countries to CF labeling of food products; and encouraging the more active participation of developing countries in designing labeling schemes. It is also important to promote studies on the measurement of CF values and on the market impacts of CF labeling and consumer willingness-to-pay for CF labeling in different countries and for different scenarios.

In the future, it is important to properly assess the impacts of new CF labeling initiatives before they are implemented. This information will help food exporter countries and companies develop more effective trade and environmental strategies and avoid some of the potential negative economic impacts of CF labeling.

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