

# Trade and Environment Briefings: Product Carbon Footprint Standards



International Centre for Trade  
and Sustainable Development

## Introduction

Climate change poses an enormous challenge for farmers in developing countries. In addition to adapting to changing climatic conditions, food exporters are increasingly being asked by retailers to measure and reduce the greenhouse gas (GHG) emissions of their products. As a result, new market requirements have emerged, mainly in the form of standards on ‘product carbon footprinting’ (PCFs). While PCF standards can be applied across many different sectors, they have gained significant traction in the agri-food sector.

These standards can create new potential opportunities for exporters in the transition to a green economy. Through measuring the GHG profile of their production practices, emission reduction and cost saving opportunities can be identified and implemented. Additionally, because developing countries are often characterised by favourable climatic conditions and low-energy intensive production techniques, PCFs and labelling schemes can allow exporters to differentiate their products among climate-conscious consumers in export markets. However, PCF standards can prove to be particularly burdensome for small- and medium-sized enterprises (SMEs) who often face relatively high technical and financial compliance challenges.

## Background

PCF standards guide the user on how to calculate and communicate GHG emissions from goods and services over entire supply chains. All of the inputs to each stage of the life cycle, from raw material extraction through the stages of production, processing, transport, distribution, consumer use and disposal, are identified and quantified. In today’s globalised world, where supply chains reach across many different countries, carbon accounting is becoming increasingly complex. The calculation of a product carbon footprint is not limited to any physical location, but includes all GHG emissions associated with the product, irrespective of where in the world they occur.

The growing trend of PCF standards is driven largely by retailers and several governments in developed and emerging economies. These standards can be classified into three main (though not mutually exclusive) groups based on their stakeholder involvement and pathways of development:

**International schemes:** developed through international consultation with the involvement of stakeholders from public and private organisations, business, NGOs, academia, etc;

**Public schemes:** developed with the support of national governments which may also involve some international consultation and/or road testing; and

**Private schemes:** developed and applied by individual businesses or other stakeholders (e.g. supermarket chains).

To date, the vast majority of these schemes have been developed and implemented on a voluntary basis mainly driven by developed country stakeholders. However, in recent years emerging economies have started to develop their own standards and international stakeholders are developing common international methodologies.

The communication of PCF results is an important element in a number of PCF standards. Those which

aim to communicate results to external stakeholders or consumers will often do so through the use of a carbon label placed directly on the product. Other methods of communication include an indication on the supermarket shelf, purchase receipt or the company's website.

PCF standards also differ in what type of information they communicate to external audiences. PCF results can be communicated as precise figures (e.g. gCO<sub>2</sub>e/ pack of strawberries) or through a 'front runner approach' where only those products more climate-friendly than comparative products are awarded a label. Other standards steer clear of precise figures and product comparisons, using labels that simply state the companies' commitment to measuring and reducing the PCF of that product.

**Select examples:**

Scope	Details	Requirement	Label/Image	Communication
International	GHG Protocol Product Life Cycle Accounting and Reporting Standard (WRI/ WBCSD)	Voluntary		Precise figure
	ISO 14067	Voluntary		Precise figure
Public	United Kingdom PAS 2050, Carbon Reduction Label	Voluntary		Precise figure and commitment to reduce PCF
	France Grenelle 2 environmental labelling requirements (currently in trial phase)	Mandatory		Precise figure
	Thailand National guidelines for PCFs Carbon Footprint Label and Carbon Reduction Label	Voluntary		Precise figure and commitment to reduce PCF
Private	Casino (France) Casino Carbon Index	Voluntary		Precise figure

## Opportunities

There are several environmental and economic reasons for companies to engage in PCF activities, including to:

- Meet increasing consumer demand for environmental information,
- Identify GHG emissions hotspots in their supply chain leading to emissions reductions and cost savings,
- Prepare for the possible effects of future regulation,
- Strengthen the corporate social responsibility profile of company, and
- Differentiate products with new green selling points.

In addition, the use of PCF standards in the agri-food sector can also bring about a number of development opportunities. Developing countries often have favourable climatic conditions and low energy intensive production techniques, allowing them to produce fresh agricultural products with low climate change impact. PCFs offer small-scale farmers the opportunities to showcase this, and differentiate their products among climate-conscious consumers in export markets.

## Challenges

While the use of PCF standards can create opportunities for exporters, both through the identification of cost saving emission reduction possibilities and an increased ability to communicate environmental performance to interested buyers, a number of challenges remain in the calculation and interpretation of PCFs.

These challenges relate to:

- The proliferation of different methodologies;
- Data choices and uncertainty;
- The under-representation of developing countries in the standard-setting processes; and
- The costs and technical challenges for SMEs.

One important methodological issue addressed by PCF standards is where to draw the system boundary. A full life-cycle assessment (LCA) of GHG emissions for a particular product could include the emissions associated with inputs to the product, inputs to those inputs and so on. The effects of indirect land-use change due to increased biofuel production have been particularly

challenging to address. Methodologies work to address these issues by limiting the calculations to major inputs and providing guidance on boundaries.

However, the lack of a single internationally agreed PCF methodology has meant that different stakeholders are developing and adopting different analytical methods for calculating PCFs based on the demands of the stakeholders involved. For this reason, different methodologies may not support comparisons of PCFs between different products or countries of origin. Currently, over 20 different standards have been developed by the private sector, government bodies and international organizations.

Data choice and quality are particularly important in order to ensure a credible assessment of GHG emissions from products. However, appropriate data is not always available, especially to small producers in developing countries. When faced with data gaps, the analyst will often have to make assumptions, increasing the overall uncertainty of the calculation. As such, data choices and uncertainty can make it difficult to compare the PCF of different products, even when the same methodology is followed.

The proliferation of different PCF methodologies also raises a number of additional issues for exporters. First, multiple standards and labels in the market place may confuse consumers and diminish their confidence. Second, one standard may emerge as the *de facto* standard, resulting in a market barrier for goods using other schemes.

These issues are particularly important for developing country exporters who are often under-represented in international standardization processes. PCF schemes developed without the proper consultation of developing country stakeholders may create biases. Emissions may be overstated if parameters based on developed country production processes are used, as production processes tend to differ substantially between developing and developed countries.

Additionally, PCF calculations can be expensive and time consuming particularly for SMEs that lack the technical and financial resources. Exporters from developing countries can have problems accessing good quality primary data on the production processes in their country. Such data can be costly and technically challenging to collect. When data gaps exist, assumptions need to be made, lowering the quality of the final assessment. As a result, certain standards can favour large producers who may benefit from economies of scale.

Finally, because developing countries are often distant from export markets, they are highly reliant on long distance transport for the export of their agricultural goods. In particular, air freight has been singled out as an emissions hotspot along the supply chain for some perishable produce. While long distance transport can contribute significantly to a product's PCF there are often limited mitigation options available.

### What's next?

PCF initiatives are becoming an increasingly important tool to assess and reduce GHG emissions related to consumer goods, including food and other agricultural products. Over the next few years, as carbon accounting becomes increasingly widespread, it will be important to keep a number of issues in mind:

- Developing country stakeholders need to be actively engaged in the **international standard-setting** process to ensure that these standards accurately

reflect their economic, social and environmental realities. Support should be provided, both financial and technical, to enable their participation.

- While various schemes around the world are beginning to use similar methodologies, there is no official recognition of equivalence. As is the case with other private voluntary standards, developing countries face the **risks and pitfalls of multiple certification requirements** in order to access export markets.
- PCF analyses involve complex calculation, verification and certification which may involve considerable costs and time. They may therefore present particular burdens for small producers in both developed and developing countries. As the use of voluntary PCF schemes is rising and mandatory environmental requirements may increase in the future, it is **important that SMEs receive adequate technical assistance and guidance to meet these new market requirements.**

## Resources

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