DIIS POLICY BRIEF
CLIMATE CHANGE

Counting Carbon in the Marketplace – and at the Border

Carbon labelling or 'footprinting' of products poses several challenges for developing countries including costs, the availability of relevant data, and the implicit bias of Northern standards against labour-intensive manufacturing. Donors can help alleviate these problems through supporting Southern research institutions in calculating footprints for locally-produced products, by helping to develop comprehensive and user-friendly open access databases, and by insisting that emerging standards in the area are non-discriminatory

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Concern over climate change and policy changes triggered by the Kyoto Agreement led to efforts to estimate the total amount of greenhouse gasses (GHG) produced by companies and by new investment projects. Recently, some of the techniques developed in this process have been applied to the measurement of so-called ***Product Carbon Footprints*** (PCFs) – calculations of the GHG emissions arising from the different stages of the life cycle (production, processing, transport, storage, sale, use and disposal) of specific goods and services.

This trend's main driver is a concern amongst some governments, NGOs, manufacturers and retailers that consumers should be informed of the climate-friendliness (or otherwise) of the products they buy, through labeling. This follows on from a general increase in the use of all kinds of labeling - environmental and otherwise – for product differentiation purposes. It also follows on from widespread recognition that some earlier forms of environmental labeling, such as stickers stating that goods had been air-freighted, did not convey any scientifically useful information.

Since 2007 ***one public standard, and two public and around 15 private schemes*** referring to standards for calculating and communicating PCFs have become operational. Two new international standards and several new schemes, including three public ones, are due to become operational by 2011 or earlier. The private schemes are owned by a mixture of voluntary bodies and private com-

RECOMMENDATIONS

- Southern research institutions should be supported by development assistance for performing PCFs on production processes carried out locally
- Access to consultancy assistance for performing PCFs for uniquely Southern products should be provided
- The extension and modularization of existing Reference Life Cycle databases and their provision on an open access basis should be supported
- The development of non-discriminatory PCF standards should be supported

panies, including some large retailers. Many provide assistance for reducing carbon footprints or procedures for certification or labeling. Nonetheless, to date few products on retailers' shelves carry PCFs.

TECHNICAL CHALLENGES'

The basic method used in carbon footprinting is called Life Cycle Analysis/Assessment (LCA). This involves firstly treating products as if they had a natural history, from raw material to scrap, which can be broken down into a sequence of stages. Secondly it involves calculating the GHG emissions arising, directly and indirectly, at each of these stages. Because it is impractical to perform these calculations anew for different variants of the same product, especially in relation to indirect GHG emissions, calculations depend heavily on the availability of databases.

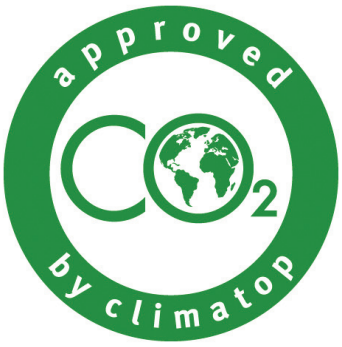
Currently, widespread use of LCA is hampered by a number of technical challenges. These only can be listed here - readers in search of more detail should consult the list of further reading. The main challenges are lack of scientific agreement on a single method for performing LCA; where to set the upstream boundaries of the life cycle; what cut-off point to apply to the range of indirect emissions considered; and the current lack of large, consistently-specified databases. A final more practical challenge is how to express a PCF in a way that consumers can easily grasp – although here a convergence is emerging amongst practitioners around product labels stating volume per unit of CO_2 equivalent emitted over the life cycle, in grams or kilograms.

CURRENT STANDARDS AND SCHEMES

Internationally, ISO has published standards in the areas of environmental labels and declarations (14025), LCA (14040 and 14044) and corporate and project GHG accounting (14064-1 to -3 and 14065). It is currently developing a standard for calculation of PCFs (ISO 14067). In line with the approach of ISO 14000 (and ISO 9000), all these avoid prescribing specific actions or methods. Rather they state a sequence of good managerial practices which those responsible for a given method or scheme should follow, the range of options which should be considered at each stage of the activity's development, and some general considerations which should be referred to when these choices are made.

The influence of the ***World Resources Institute (WRI) and World Business Council on Sustainable Development's (WBCSD) GHG Protocol is*** evident in ISO's most detailed standard in the area, ISO 14064. The GHG Protocol was launched in 1997 and widened in 2000 to include a corporate carbon footprint accounting and reporting protocol. This allows users to choose between narrower and wider life cycle stage definitions in calculating aggregate emissions, although there is a transparency requirement to state where boundaries have been set. WRI and WBCSD started developing a 'Product and Supply Chain GHG Accounting and Reporting Standard' in 2008 and a first draft is currently under discussion with stakeholders. Because of the sponsors' broad support base amongst large corporations, when published in 2010 this standard is likely to become the most influential one at the international level.

National standards and schemes exist or are under development in the UK, New Zealand, France, Japan and Finland, while the EU will consider issuing a PCF standard amongst other policy options in 2011. The first national standard issued for calculating PCFs was the UK's PAS 2050 (2008). This currently excludes production of capital goods from product life cycles. PAS 2050



is used by both current publicly-owned PCF labeling schemes, the UK Carbon Reduction Label (which has certified around 3,000 products since 2007 on behalf of companies including Coco Cola, PepsiCo and Tesco) and CarboNZero of New Zealand. Both these schemes involve labeling products with third-party verified declarations of the aggregate volume of CO_2 equivalent emitted in their life cycle. Participation in them, as in the public schemes planned in Japan and Finland, is voluntary. That being developed in Japan involves government supporting industry associations to develop sector-level rules for how to calculate PCFs, within a framework of national-level guidelines and, probably, a national system of third party certification.

France is the only country currently developing a national standard as part of a mandatory labeling programme covering all mass-marketed items. Proposed labeling embraces a range of 'environmental indications' including but not confined to PCFs. It is planned that producers will be able to use any ISO-compatible LCA method and that a large public data base will be referenced. Legislation is supposed to take effect in 2011.

In addition, the ***European Union's 2009 Renewable Energy Directive*** incorporates PCF requirements specifically for bio-fuels, as part of the conditions these must meet in order to qualify as renewable fuels under transport fuel blending targets. Certain EU member states including Sweden published such requirements before the EU's was unveiled. The state of California introduced a similar requirement in 2009.

Around half the operational ***Private schemes and standards*** are owned by NGOs or not-for-profit consultancies, while a third are proprietary to manufacturers, retailers or (in one case) bio-fuel importers. Some of the latter involve partnerships with for-profit consultants. Retailers with schemes include Casino and Leclerc of France. Most proprietary schemes are part of broader corporate social and environmental responsibility initiatives and require qualifying products to meet additional climate change criteria before being labelled, although these are rather diverse. While all private schemes state they use LCA to arrive at PCFs, and most reference them against an existing standard (though not necessarily dedicated PCF standards), information on the precise methods used is provided only unevenly. Only about half the private schemes involve using labels providing third party-verified PCF declarations stating the volume of CO_2 emitted by unit. And only the Bilan CO_2 scheme of Leclerc claims to have assessed more than a couple of hundred products.

THE LIKELY FUTURE OF PCF

Given the scientific challenges, PCF has proceeded fairly rapidly to date. Overall however, the total number of products worldwide subject to third party-verified PCFs is still rather small. This may relate to the ***cost of calculating PCFs*** (especially in the initial stages of this activity) or a hesitancy amongst private users about consumer reactions to PCFs, or both. Data on the costs of calculating PCFs was obtained by the authors from two schemes. These both estimate costs for 'typical' food products in a range between EUR 3,000- EUR 7,000 but point out that for some complex products the cost may rise to EUR 50,000. One scheme noted that costs are likely to fall sharply as more data becomes available and as LCA generic data models are built in more modular ways. Information on ***consumer reactions*** is unfortunately confined to surveys of shopping intentions. These show a preference for (third party-verified) carbon labeled products, all other things being equal, and that a significant minority of European consumers are prepared to pay a price premium for carbon labelled products

resembling the organic one in magnitude. No post-hoc information is available on what happens to sales of products subsequent to their labeling.

Our best guess is that progress will continue only slowly until comprehensive and modularized LCA databases become available, which radically reduce the cost of calculating PCFs. This prognosis applies also to the French government's scheme, which seems unlikely to take full force until well after 2011. However, international databases are already improving and becoming more accessible, as is illustrated by the publication in October 2009 of a new version of the European Reference Life Cycle Database, now containing more than 300 process data sets. The current recession does not favour a step change in the use of PCFs. While over the last 12 months the number of labelled products sold by Tesco and Casino has both increased, in neither case does the number covered yet exceed 200.

IMPLICATIONS FOR DEVELOPING COUNTRIES

As PCFs are already becoming market access requirements for bio-fuels imported to the EU, and may also become EU market access requirements for all mass-produced goods within 10-15 years, there is a danger that ***developing country exporters*** will lose out as a result. This is because

- they are ***less likely to have the resources*** (financial and human) necessary for calculating and verifying PCFs,
- publicly available datasets are less likely to include ***processes carried out mainly in developing countries***, and because
- some existing ***standards*** (including PAS 2050) ***do not currently include production of capital goods*** in their definition of product life cycles. This imparts a bias against labour-intensive production methods (and hence against typical developing country exports) as it results in an artificial shrinkage of the footprint of goods produced by capital-intensive methods.

To alleviate these problems:

- ***Development assistance*** could usefully be channelled toward research institutions in the South for performing PCFs on processes typically carried out there, as well as toward providing access to consultants who could perform PCFs for uniquely Southern products that are more complex.
- As stakeholders in wider research and standard-setting fora, ***development-minded governments in the North*** can also support the extension and modularization of existing Reference Life Cycle databases, underwrite their provision on an open access basis, and support the development of non-discriminatory PCF standards.

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SUGGESTED READINGS

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