



# Product Carbon Foot-printing

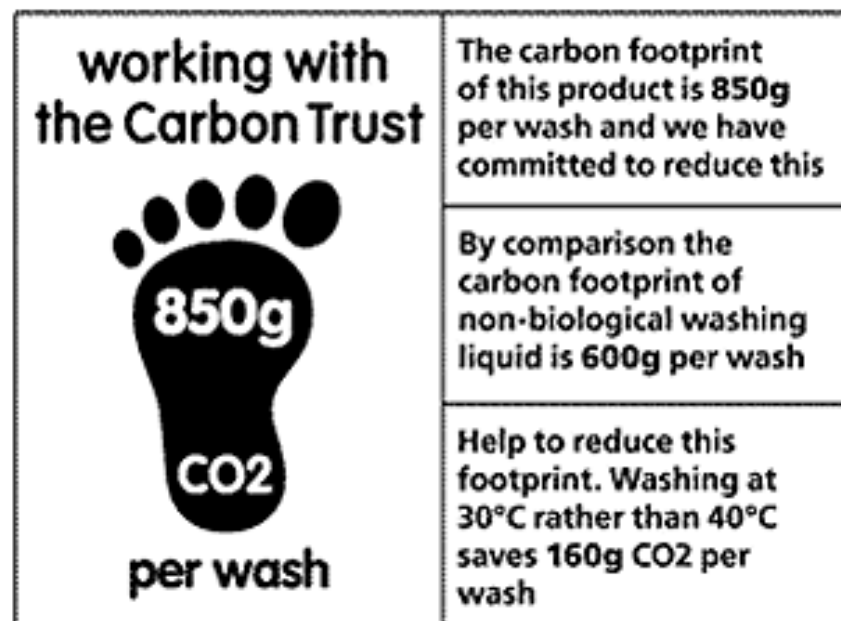
**Climate change, trade and standardisation –  
in a development perspective**

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# What is a product carbon footprint (PCF)?

- Information about the total amount of GHGs emitted during the life cycle of a good or service
- Grams CO<sub>2</sub>-eq. per unit of product
- Display of this information on packaging and websites – with other CC information
- Different from measurement of emissions “at source”
- Different from corporate and project level assessments



Source: Risø DTU, Technical University of Denmark

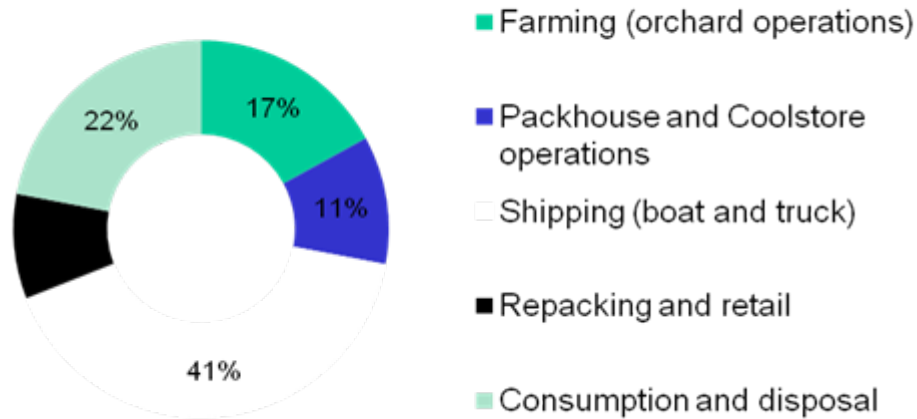
# Life-cycle analysis

- Dominant method for calculating the sum of GHG emissions from activities along the entire life cycle of a product
- From “Cradle-to-grave” or “Farm-to-fork” or “Field-to-Wheel”



# The carbon footprint of a New Zealand kiwi fruit (eaten in Paris, France)

## Share of total GHG emissions



Data source: [www.zespri.com](http://www.zespri.com)

**Total footprint: 1.74 kg CO<sub>2</sub> Eq. per 1 kg of fruit**

*No generally accepted methodology: the quality of calculations differs greatly and there is ample scope for manipulation*

# Consumer perceptions

- **Do not think that manufacturers and retailers are genuinely committed to climate-change mitigation.**
- **Want more information about the climate impact of products, but do not trust businesses to report such information accurately.**
- **Would probably prefer carbon labelled products (and businesses) over comparable ones.**
- **But climate concerns are unlikely to dominate buying decisions, relative to price and quality factors.**

# What can PCF be used for?

- **Help prioritise GHG reduction efforts along the entire supply chain**
  - E.g. Zespri Kiwifruit is focusing reduction efforts at the orchard, packhouse, coolstore and transport stages
- **Compare footprints of “similar” products delivered by different supply chains, to inform consumer choice (and sourcing)**
  - Broccoli imported to Sweden from Ecuador have a lower PCF than those imported from Spain, due to higher carbon efficiency of production and transportation
- **Compare the footprint of “similar” products with different attributes**
  - The footprint of a 330 ml can of Coka-Cola is half the size of 330 ml delivered in a glass bottle



# What can PCF be used for? (Continued)

- **Basis for designating products as “carbon neutral” through off-setting what emissions cannot be reduced**
  - e.g. the “Stop Climate Change” scheme in Germany
- **Help consumers reduce their “personal” carbon footprint**
  - “% of daily allowance”
- **Help demonstrate corporate commitment to climate-change mitigation (often as part of Corporate Social Responsibility programme)**
  - to customers (product differentiation, green marketing)
  - to (institutional) investors
  - to lawmakers (threatening to introduce harsh regulatory measures)

# Emerging PCF schemes and standards

- **Private organisations performing the calculation and display of carbon footprint information for products**
- **Scheme operators**
  - **Consultants and environmental NGOs (8 schemes)**
  - **Retailers and branded manufacturers (user operated, proprietary)**
- **Less than 20 schemes worldwide have “footprinted” over 3000 products**
- **First schemes appeared in 2007**

# PCF schemes – spread and coverage

- **Small number of products footprinted to date**
  - Typically, between 1 and 70 products per scheme
  - Carbon Labelling Company: 2800 products since October 2008
  - Usually, scheme users apply footprint to selected products ('pilot' or 'showcase')
- **Mostly food and drinks, but varied product coverage**
  - Bananas, orange juice, carpets, bank accounts, cell phones ....
  - Country coverage (as of 4Q 2009): Canada, France, Germany, Japan, Korea, Sweden, Switzerland, Thailand, United Kingdom, United States



# PCF schemes – standards and scope

- **Use of publicised standards**
  - 7 out of 12 schemes examined in study for the OECD rely on published methodologies, but the quality and completeness of this documentation vary greatly
  - The most “complete” standard is the PAS 2050 (used by 2 schemes)
- **Scope of product GHG assessments**
  - Most involve “full” life cycle analysis, but precise boundary of the GHG calculation is often not clearly specified
  - Most do not discriminate against products transported over long distances. However, some ignore short-distance transport.
- **Meaningful comparison of PCFs across schemes is not possible**

# PCF Schemes – kind of certification

- **Some apply additional climate-change criteria**
  - **Commitment to reducing PCF over specified period (5 schemes)**
  - **Incentives or pressures to reduce PCF (2 schemes)**
  - **Commitment to reducing corporate-level emissions (3 schemes)**
  - **Carbon neutrality through the purchase of carbon credits (2 schemes)**

# PCF Schemes – conformity assessment

- All operators certify products to their “own” standard (disincentive to tightening the standard)
- Few schemes live up to consumers’ preference for 3<sup>rd</sup> party verification of PCFs (and other climate claims)
  - Independent, 3<sup>rd</sup> party verification of the PCFs (4 schemes)
  - Verification by scheme operator (6 schemes)
  - Self-verification by scheme user (3 proprietary schemes)
- A general lack of clarity and transparency in this area

# PCF Schemes: displays of carbon information

## Actual values displayed



<p>working with the Carbon Trust</p>  <p>850g CO2 per wash</p>	<p>The carbon footprint of this product is <b>850g</b> per wash and we have committed to reduce this</p> <p>By comparison the carbon footprint of non-biological washing liquid is <b>600g</b> per wash</p> <p>Help to reduce this footprint. Washing at 30°C rather than 40°C saves <b>160g</b> CO2 per wash</p>
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## Carbon-free claim



# Concluding observations

- **Rising number of schemes and labelled products, but still at a very small scale. No clear trend.**
- **Little involvement of national governments and international organisations**
- **Great diversity in PCF approaches, but this is normal when standards emerge in a new area**
- **PCF does not appear to create market access barriers for producers in developing or distant countries**
- **But data on developing countries is poor**
- **And cost and capacity issues may disadvantage developing countries if and when PCF is adopted on a wider scale**

# Issues for research and policy

- **Research**

- How might PCF, if scaled up, contribute to CC mitigation in non-energy intensive sectors? What would be the trade and market access issues? Would it support or contradict other (regulatory) measures?
- What are the costs of conformity and certification?
- How is verification carried out in practice? What systems are “best”?
- How can the rigour and cost-effectiveness of LCAs be improved upon?

- **Policy**

- Support international standards development?
- Introduce mandatory carbon labelling?
- Improve capacity to carry out complex GHG assessments for products?

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