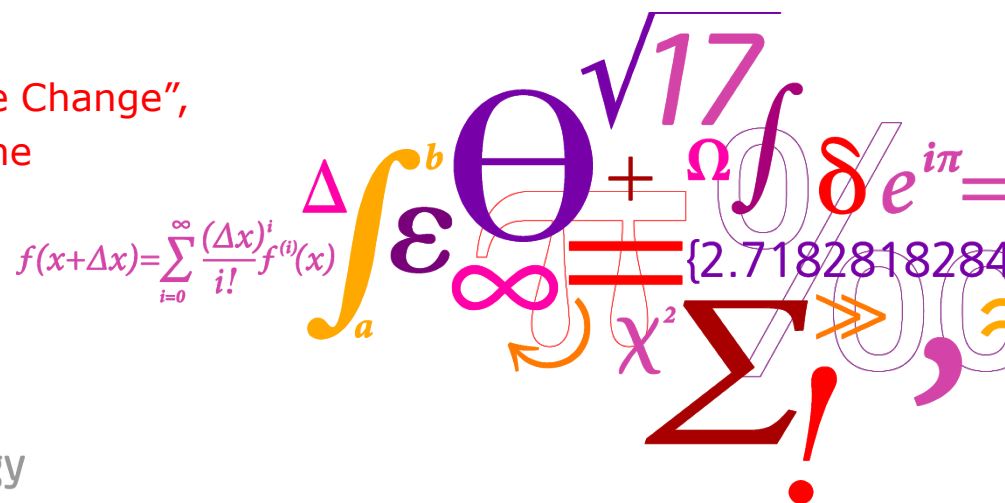


# Product carbon footprinting - PCF

**A review of voluntary standards and schemes that estimate and label the GHG emissions “embedded” in consumer goods and services**


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# What is a product carbon footprint?

- **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**

|  |   |
|--|---|
| <p><b>working with<br/>the Carbon Trust</b></p>  | <p>The carbon footprint of this product is 850g per wash and we have committed to reduce this</p>         |
|  | <p>By comparison the carbon footprint of non-biological washing liquid is 600g per wash</p>               |
|  | <p>Help to reduce this footprint. Washing at 30°C rather than 40°C saves 160g CO<sub>2</sub> per wash</p> |

# 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”

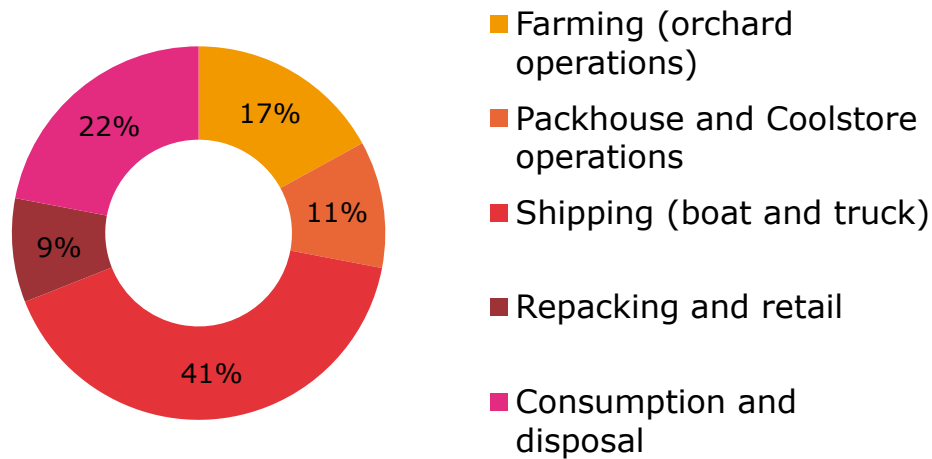


Source: [www.zespri.com](http://www.zespri.com)

- **PCF activities engages all value chain actors – in terms of data provision and GHG reduction efforts**

# The carbon footprint of a New Zealand kiwi fruit eaten in the 16<sup>ième</sup> arrondissement)

## 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 Coke is half the size of 330 ml delivered in a glass bottle ([Coca cola PCFs](#))

## (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 CC mitigation (CSR)**
  - 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)
- **12 schemes worldwide, have “footprinted” > 3000 products**
- **First schemes appeared in 2007**

## PCF schemes – spread and coverage

- **Small number of products footprinted to date**
  - Between 1 and 70 products
  - Carbon Labelling Company: 2800 products since October 2008
  - Scheme users footprint selected products ('pilot' or 'show case')
- **Mostly food and drinks, but varied product coverage**
  - Bananas, orange juice, carpets, bank accounts, cell phones ....
- **Country coverage:** Canada, France, Germany, Switzerland, United Kingdom, United States (Japan, South Korea, Sweden, Thailand)

## PCF schemes – standards and scope

- **Use of publicised standards**
  - 7 out of 12 schemes rely on published methodologies, but the quality and completeness of this documentation vary greatly
  - 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
  - No discrimination against products transported over long distances
- → **Meaningful comparison of PCFs across schemes is not possible**

## PCF Schemes – kind of certification

- **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 - display of carbon information

Actual value



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 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?