

A large, stylized graphic on the left side of the slide. It features a thick, bright green curved line that starts from the left edge, curves upwards and to the right, and then curves downwards and to the right, ending in a pointed tip. Below this green line, there are overlapping curved shapes in a lighter green and a blue color, creating a layered, abstract effect.

Carbon Footprinting in agricultural supply chains

106 May 2022

Our mission

To accelerate the move to
a decarbonised future.

Our mission is to accelerate the move to a decarbonised future.



5

continents

300+

experts and consultants

20

years of experience in
sustainability consultancy



We bring our customers on a journey towards **climate leadership**



Organisational Footprinting

Start to understand your carbon footprint, measure your Scope 1 and 2 emissions and build awareness of your organisation's impacts.



Value Chain Footprinting

Assess the wider emissions in your upstream and downstream activities, calculate your Scope 3 emissions and increase your understanding of the broader impacts of your business.



Science-based Targets Setting

Set ambitious and climate-science aligned target to reduce your carbon emissions, and to demonstrate your organisation's commitment to sustainability.




Strategic Sustainability Advisory

Develop a long-term plan on how you will achieve your targets. Assess the feasibility of your strategy: model existing initiatives, identify new ones, define the most relevant KPIs.



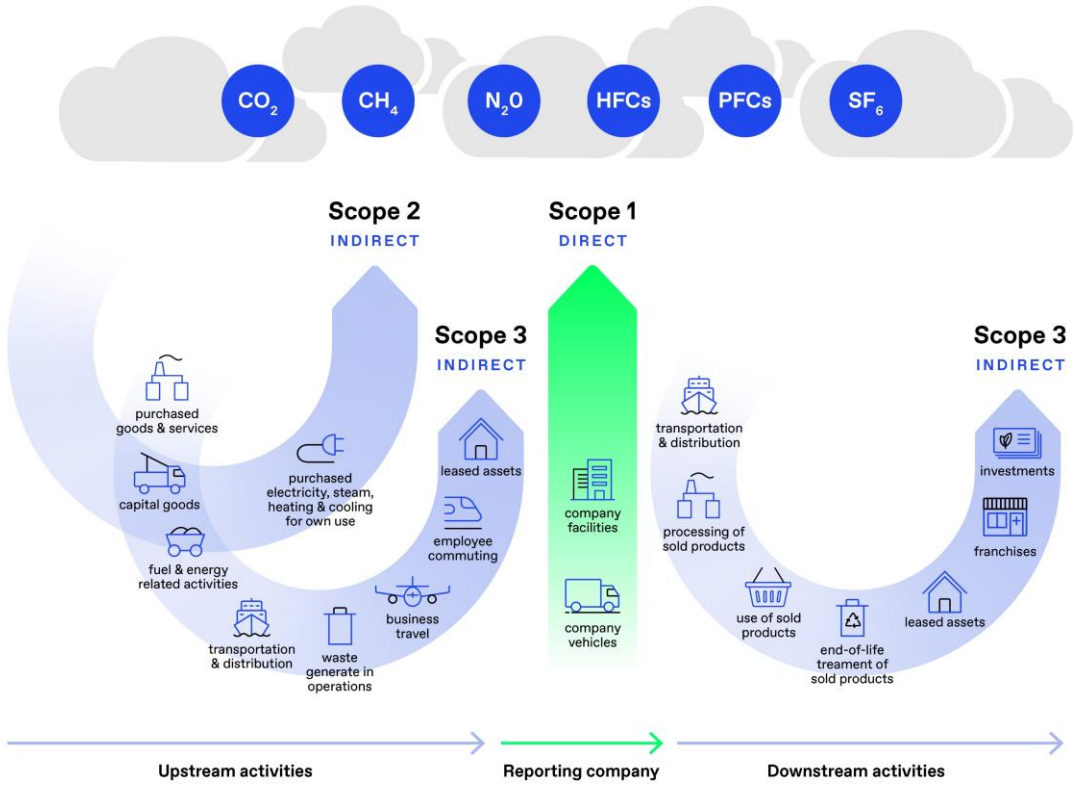
Certification and Disclosure

Communicate your efforts to the public with a robust third-party validation. Build a strong message around the adoption of international standards and frameworks.



The two approaches for measurement

We work with clients to measure their full value chain emissions



Source: [GHG Protocol](#)

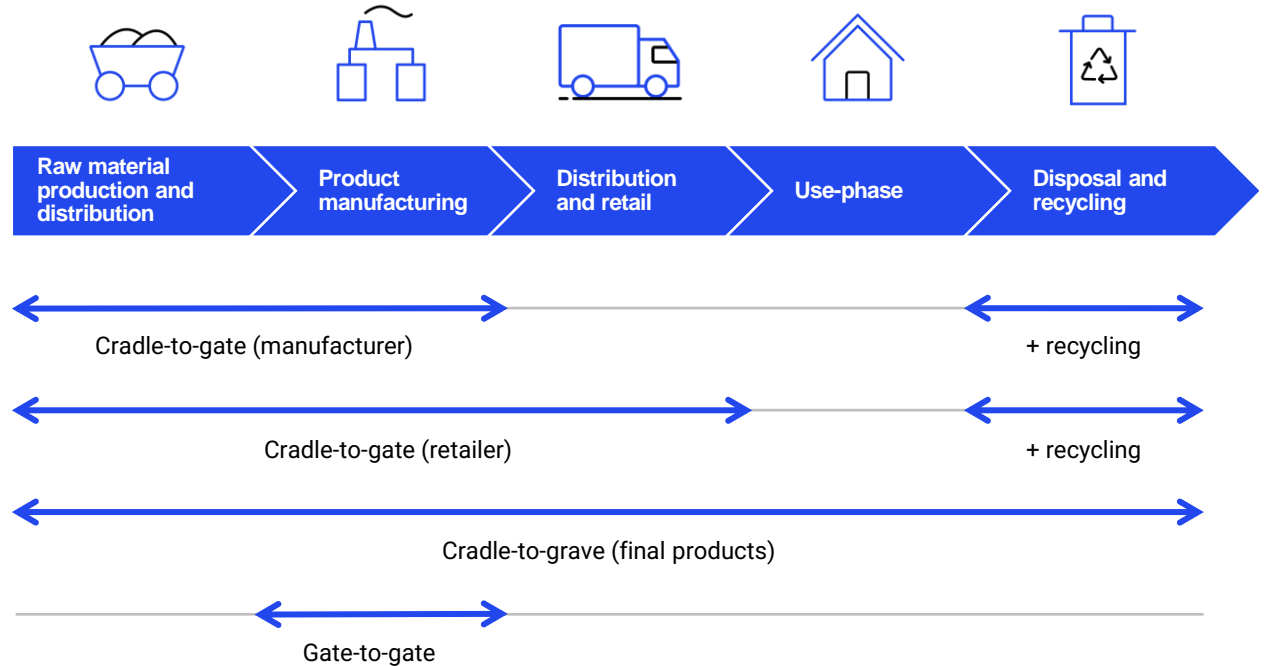
And following a product approach

Product footprinting is assessing the total carbon impact of a particular product over its lifecycle.

The sum of a products carbon footprint over its lifecycle from cradle-to-grave is measured in carbon dioxide equivalents (CO₂e)

Finished products are footprinted cradle-to-grave regardless of whether the purchaser (end-user) is a company or a consumer, e.g. *lightbulb/computer*.

All B2C sales are inherently footprinted cradle to grave.





In practice examples

CASE STUDY

Bord Bia



We supported Bord Bia to develop carbon footprinting models for the Irish livestock industries, and support their integration with the existing Quality Assurance scheme.

Key stats:

- Conducted more than **38,000** sustainability audits
- Over **50,000** farm assessments

The Carbon Trust provided technical expertise and assurance to:

- Develop accurate footprinting models
- Build the world's first national scheme to footprint wide range of livestock systems
- Identify key hotspots of **farm emissions**
- Provide feedback to farmers an **benchmarking of performance**
- Clearly links positive sustainability outcomes with financial benefits



CASE STUDY

Carlsberg



The Carbon Trust have worked with Carlsberg since 2016 to set science-based targets, measure the carbon footprint of its full value chain (beer-in-hand footprint) and develop a roadmap to meet targets

Key stats:

- SBTi aligned target to cut beer-in-hand footprint by **15% by 2022 compared to 2015**
- 2019 Value Chain emissions totalled 6.8 million tonnes CO₂e, **down 7%** from 2015
- In 2020, presented market-specific developments with all local management teams to identify local actions

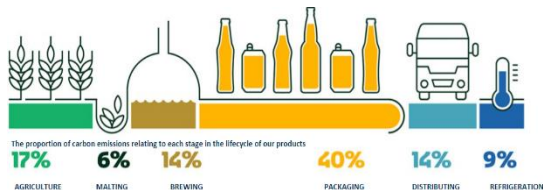
In 2020 we worked with Carlsberg to recalculate their value chain footprint, including refining of their 2015 baseline emissions and modifications to reflect changes to the organisation and improved data quality. Actions to achieve their targets include:

- Applying recommendations from the Task Force on Climate-related Financial Disclosures, improving their understanding and reporting of the risks to production posed by extreme weather and shifting rainfall patterns.
- Working with suppliers, such that 60% of Carlsberg's total spend was covered by primary data from suppliers.

This led to reduced relative emissions at their breweries by 12% to 4.3 kg CO₂ per hl in 2020 compared to 2019, totalling a **39% reduction since 2015**.

“We have worked closely with Carlsberg on their supply chain emission calculation model since 2016, and the work we did this year sets new standards for Scope 3 emissions accounting and measurement. The model we have developed together uses very granular data for each value chain step. This enables Carlsberg to track, measure and reduce its Scope 3 emissions on a market, regional and global level with great precision, which puts the company at the forefront of Scope 3 accounting.”

Myles McCarthy
Director Implementation, The Carbon Trust



CASE STUDY

Pepsico

Value Chain Sustainability



Positive outcomes:

- Emission reduction efforts refocused to targeted hotspots
- New annual reporting on Scope 3 emissions
- High quality submissions to the CDP
- Evaluation of opportunities to set value chain science-based targets

Working with PepsiCo we have developed a powerful tool to leverage their existing data to provide insight into the value chain GHG emissions associated with all global operations. For most businesses, the greatest emissions and cost reduction opportunities are found by measuring full value chain emissions, however, it can be challenging to implement these changes.

- We developed a tool for calculating, querying and charting emissions from all the company's activities across the value chain while drastically reducing the costs associated with collecting/generating new data.
- Our approach generated higher degrees of data quality than typical scope 3 assessments by integrating previous footprinting work and specific LCA emission factors.
- This tool has led to a subsequent project looking to model PepsiCo's value chain GHG emissions from 2014 to 2050, taking into account a number of scenarios.

CASE STUDY

Sipsmith

Value Chain Modelling



The Carbon Trust worked with Sipsmith, the first copper-pot distillery to open within Greater London in nearly two centuries, to set an ambitious climate strategy.

- Product footprinting – Developed a flexible footprinting tool to measure the impact of wide variety of gin products, bottling formats, markets against on and off trade sales channels
- Value chain full modelling of all emissions product and non-product to help inform a reduction strategy
- Set ambitious science-based targets aligned to 1.5 degrees
- Roadmap – identifying key reduction actions to decarbonise emissions

Key stat:

Produces a range of hand-crafted gins such as London Dry Gin, Lemon Drizzle, Zesty Orange

“Our vision is to be the Best Gin in the World, that is the Best Gin for the World.”

Sam Galsworthy
Founder, Sipsmith

CASE STUDY

Westfalia Fruit Group

Product Carbon Footprinting and Certification



The Carbon Trust supported Westfalia Fruit Group, the world's leading avocado supplier to measure and certify the carbon footprint of avocados, avocado oil and guacamole sold in the South African and UK markets. The footprint exercise enabled the Group to pro-actively manage its footprint throughout its farm-to-fork value chain. The research found that:

- Within the total value chain, emissions at orchard level and packaging of the products drove the footprint.
- At orchard level, emissions were spread between land-use change, chemical inputs (e.g., fertilizers) and energy and fuel consumption on-site
- For packaging, the footprint was mainly driven by the materials used
- This project highlighted key hotspots and opportunities within the value chain including purchase of renewables, packaging re-use, fertilizer usage management and air travel avoidance.



We have worked hard to define best practices within the Group and accurately establish our environmental baseline. This has included working with the Carbon Trust to determine the carbon footprint of key products within specific geographies, enabling us to pro-actively manage our footprint throughout our farm-to-fork supply chain."

Jonathan Sutton

Group Safety and Environment Executive, Westfalia Fruit Group

Monaghan

Carbon Footprinting and Product Certification

Key stats:

- Monaghan is one of the largest mushroom producers in the world with 3,000 staff
- They operate farms, packhouses, substrate sites and offices across Ireland, the UK, the Netherlands, Germany, Belgium and Canada

Monaghan are a vertically integrated mushroom agribusiness involved in all aspects of the supply chain from substrate production to growing, harvesting, packing and distribution. The Carbon Trust developed a carbon footprint tool that calculates the amount of carbon per kg of sold products. This required a detailed knowledge of mushrooms.

- The carbon footprint included the emissions generated at the Substrate, Growing and Packing stages, all input materials and the transport emissions (upstream and downstream).
- The 'cradle-to-retailer gate' methodology enabled the Carbon Trust to identify GHG hotspots and to develop recommendations to help the company prioritise reduction actions.
- The modelling tool enables Monaghan to systematically gather data and analyse the product efficiency across all their manufacturing sites.

“We’re working closely with the Carbon Trust to develop a carbon footprint tool that calculates the amount of carbon per kg of mushrooms sold. This will help us identify new ways to reduce carbon in all aspects of our business. We’re the first mushroom producer in the world to work with the Carbon Trust on a project like this.”

Noel Hegarty
Chief Commercial Officer, Monaghan





Takeaways and finding the right approach

Selecting the right approach and level of granularity for your organisation

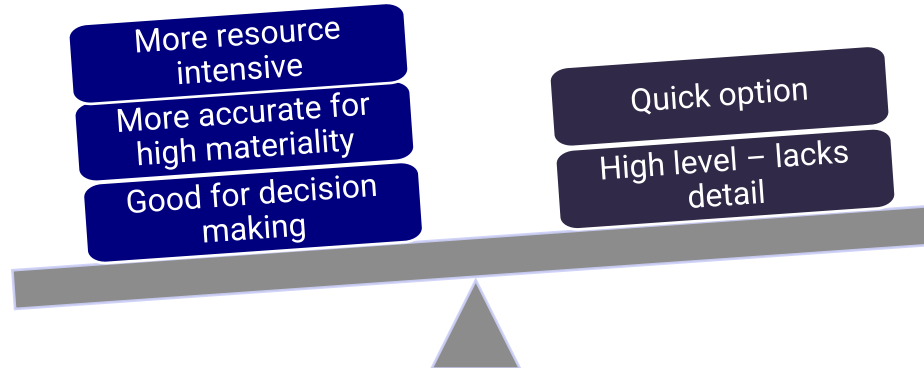
Life Cycle Assessment (LCA)

- Uses quantity data, and multiplies by emissions factors in kg CO₂e/kg.
- Factors are much more specific, with a lower level of uncertainty; often taken from prior product footprinting work.

Environmentally Extended Input/Output data (EIO)

- Uses spend data, and multiplies by emissions factors in kg CO₂e/£.
- Factors are an average for a sector of the economy – so result has high uncertainty and low specificity.

The materiality and business objective will determine the calculation methodology





Q&A

**Thanks for
listening**



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