

A Sector-Based Approach To Carbon Management for the Primary Agricultural Sector In New Zealand

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Popularisation of the Food Miles concept and subsequent development of the PAS 2050 - with associated implications for non-tariff trade barriers – has focused peoples' attention in New Zealand on the topic of carbon footprinting and labelling. More than half of New Zealand's exports by financial value are agricultural products and these products are exported to countries all over the world. Therefore the New Zealand primary production sector has taken a keen interest in this area. In particular, the government has initiated a strategy on greenhouse gas (GHG) footprinting for the land-based primary sectors (under the Sustainable Land Management and Climate Change Plan of Action). A key part of this strategy is development of sector-specific approaches to GHG footprinting and management. A sector-based approach has a number of advantages, including:

1. It is more cost-effective than undertaking individual life cycle carbon footprints for each enterprise (for example, different growers).
2. It enables calculation of a carbon footprint for the product at the individual enterprise level or at a brand owner level (where the product has been consolidated from many enterprises), depending on the way in which it is sold to consumers.
3. A common data collection and accounting system across different enterprises enables benchmarking on the basis of consistent measurement, a recognised technique for driving change in a sector.

This approach is being pioneered by Zespri in New Zealand for the kiwifruit sector. The initial kiwifruit carbon footprinting project was financed by MAF, Zespri and a government-funded research project, and undertaken by Landcare Research (a Crown Research Institute). A scoping life cycle study was undertaken to determine an illustrative carbon footprint for kiwifruit from production through to final consumption in Europe, identifying hotspots in the life cycle. This has shown that the orchard production and storage life cycle stages make a significant contribution to the overall carbon footprint alongside shipping, distribution in Europe, and transport for home consumption. Alongside the scoping study, an Organisational Plus approach has been developed for managing the carbon footprint of sector-specific products such as Zespri branded kiwifruit. For kiwifruit, the approach involves a carbon accounting and management system that is managed at the brand owner level (i.e. Zespri). Individual enterprises at the grower and storage life cycle stages of the supply chain complete organisational GHG emissions inventories, supplemented by measurement of specified sector-specific emissions sources that are relevant from a product GHG inventory perspective. Modelling of the generic downstream distribution, retail and consumer life cycle stages is undertaken by the brand owner. The individual enterprises benefit from understanding and managing their own organisational inventories. At the same time, the brand owner can build the product GHG inventory knowing that all the relevant enterprises have been measured consistently and that all emissions sources material to the product have been included. Furthermore, this system provides a mechanism for driving continuous improvement in the sector by identifying hotspots for individual enterprises, and benchmarking enterprises within each of the orchard production and storage life cycle stages.