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## Food Miles versus Lifecycle analysis: GHG – way to go!!!

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### Introduction

The debate over food miles versus lifecycle analysis and carbon footprint, has been one of interest to many over at least the last decade, driven by different weightings placed on ecological, economic, and perceptions of food quality and local food agendas. Different measures provide different determinations of the relative impacts on the environment of particular courses of action by businesses, supply chains and individuals.

Food miles, have for a long time been used to depict the distance travelled by a product, the perception being that the greater the mileage the greater the carbon emissions and impact on the environment. There is also a concept of ‘enhanced food miles’ which augments the concept of miles to consider different efficiencies and relative impacts of different transport modes and their emissions on the environment. Thirdly there is the concept of carbon footprint and full lifecycle analysis which are concerned more with the total emissions from parts or indeed the entirety of the supply chain including beyond the consumer.

At one level the shifts in conceptualisation of food miles over lifecycle analysis represent an advance in our ability to effectively measure carbon emissions as a means of eliminating or at least neutralising the impact of human activity on the environment, at another it represents alternative agendas and self-interests.

Saunders *et al.* (2006) for instance, use lifecycle analysis to compare the relative damage to the environment of equivalent products produced in New Zealand versus those produced in the UK. Their findings show that produce supplied

from New Zealand to the UK consumer has fewer externalities than those supplied from the UK. The research was driven by fears that the food mile agenda was a threat to New Zealand exports, where 50% of all exports were food.

Yet the food miles agenda was in the first instance, at least in part, driven by the need to reconnect the British consumer with the sources of food in the local food movement, and came to the forefront following the foot and mouth outbreak in 2001. The agenda served both to underpin drivers of rural regeneration through endogenous economic growth and shorter chains, as well as to protect food integrity through improved traceability.

This paper explores these issues with respect to the Brundtland definition of sustainable development and argues that matching the conflicting needs of the present could be more complex than usually declared.

## The problem stated

The concept of sustainability is often seen to be based on three key pillars, that of environmental, economic and social sustainability. Environmental relates to the ability to maintain rates of renewable resource harvest, minimise pollution creation, and non-renewable resource depletion. Economic sustainability is the ability to support a defined level of economic production. Social sustainability is the ability of a social system, such as a country, to function at a defined level of social wellbeing over time. The achievement of the sustainability agenda focuses thus, not simply on the environmental issue but the continued and future wellbeing of economies and people. As stated by the Brundtland report: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This has a particular focus on the World’s poor and the constraints placed on the delivery of past and future needs by both technology and society.

In the context of sustainable agriculture and supply chains, carbon emissions across regions can be seen to vary quite considerably, yet so too does food poverty and the extent to which a country relies upon food as a source of GDP. Some countries are heavily reliant on food as an export, for example the FAO/UNCTAD suggest the food exports of New Zealand are at 9.2% of GDP, across the globe only the Ivory Coast is higher at 12.9%, and this is hugely important as a means of balancing trade or developing the economy.

Agriculture can also be seen to be critical in the maintenance of the social and economic fabric of communities, and, particularly in developed countries, it plays a crucial role in the health, as the maintenance of land through agriculture presents urban populations with access to green spaces for the purpose of recreation.