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Fair Miles? The concept of "food miles" through a sustainable development lens

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The concept of "food miles" presents an argument to buy goods which have travelled the shortest distance from farm to table, and to discriminate against long-haul transportation, especially air-freighted goods. The long-distance transport of food is associated with additional emissions due to increased transportation coupled with greater packaging, as well as a disconnection between the public and local farming. Furthermore, "food miles" encapsulates (and is at the vanguard of) the climate change debate in the UK. In light of growing international concern over the speed and scale of climate change, the concept of "food miles" has captured public attention and apparently is changing some consumers' behaviour, although only around one-third of shoppers know of the concept.

The implications of the "food miles" debate are considerable. Much high-value produce from Africa, especially flowers and horticulture, are air-freighted, and are being singled out as the epitome of unsustainable consumption. But from a development and poverty reduction angle, the inclusion of sub-Saharan Africa in these high-value markets has been a success story. Food miles as a concept is blind to these social and economic benefits associated with trade in food, especially from developing countries.

UK consuming African fresh produce

Nowhere are UK consumers more persistently engaged with rural Africa than through food consumption choices. A wide range of fresh fruit and vegetables (FFV) are imported to the UK from sub-Saharan African countries (SSA – excluding South Africa). UK consumers spend over £1 million at retail every day on FFV from this region. Furthermore, the UK is consuming more produce today from Africa than ever before, and it is growing.

Yet this trade is dependent on the UK consumer, and also on air-freight, bringing climate change impacts of this trade squarely into the development equation. In total, 40% of air-freighted FFV imports to the UK are from SSA. Indeed, poor African countries rely on the UK market to support their domestic industry.

How much 'ecological space' do African nations have?

'Ecological space' is the individualised (per capita) right to natural resources for utilisation such as energy, food, land and water. The concept of equitable ecological space translates well into "per capita carbon dioxide emissions" and the "per capita right to emit carbon dioxide". Currently, carbon dioxide emissions per person are very unequal and the gap is widening: global, 3.6 tonnes; the UK, 9.2 tonnes; Africa, 1 tonne. Furthermore, African figures are skewed towards oil-rich countries, and only two countries exceed the global average. Hence, SSA countries have considerable reserves of "ecological space" compared with industrialised countries.

There is also inequality of impact and adaptive capacities of climate change. Many African countries are feeling the force of climate change impacts, the root cause of which was produced in developed countries. Poorer countries have fewer disposable financial resources to commit to adapting to these impacts.

The Kyoto Protocol recognises the need for equity and economic development for developing countries in the transition to a low-carbon future. Current calculations of a sustainable carbon future estimate equitable ecological space per capita as 1.8 tonnes. This represents the estimated absorptive capacity of natural carbon sinks, both land and sea. Yet this per capita space is falling owing to projected warmer climate accelerating the decay of carbon in soils coupled with projected population increases.

The strong relationship between the level of industrial economic development of a country and its carbon emissions remains a worry.

KEY MESSAGES:

- **Nowhere are UK consumers more persistently engaged with rural Africa than through food consumption choices**
- **Over one million livelihoods in Africa are supported by UK consumption of imported fresh fruit and vegetables**
- **African nations have considerable "carbon credit". Unallocated aviation emissions could accrue to African countries in a bid to stimulate trade**
- **Not buying fresh produce air-freighted from Africa will reduce UK total emissions by less than 0.1%**
- **Economic development for the poorest in a low carbon future necessarily means expanding emissions for some**

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Without intervention from developed countries in transferring low carbon technology to African countries, their future ecological space will grow quickly.

What trade-offs between global environmental goods and local poverty?

Kenya is a good example of how local economic development follows export horticulture development. Kenya was the first SSA country to develop systems in which high-value horticulture is exported to the UK. A full 70% of green beans (of exportable quality) produced in Kenya come to the UK. This business is perceived as a success, and a number of other countries have followed - 87% of UK green beans imports are from five African countries.

What is clear is that decisions – of consumers, of policy makers, and of the food chain businesses – should be based on good information. If environmental harm is to be weighed against developmental gains, it is essential that (1) the degree of harm is quantified and put into the context of other food choices, (2) the degree of harm is put into context of Africa's current use of 'ecological space', and (3) the degree of development gain is quantified, to demonstrate whether this trade really benefits those living in poverty.

Are food imports from Africa driving climate change?

There is increasing evidence that the UK's carbon footprint is largely domestically generated. Indeed, to reach targets under Kyoto the UK needs to prioritise addressing domestic road transport and energy use first, then aviation. Estimates of doubling of air travel in the next twenty years coupled with high carbon emissions, and the exacerbating effect of "radiative forcing", make aviation cuts a necessary part of the solution.

Yet the main share of increased flights appears to passenger traffic; in the UK, passenger flights account for 90% of emissions from air transport, and international freight for 5%. But, air-freight is a significant contributor to total food transport emissions in the UK. Only 1.5% of imported FFV arrive in air transportation but that portion produces 50% of all emissions from fruit and vegetable transportation.

It is clear that for most products that can be grown outside greenhouses and without heating, air-freighted produce usually scores poorly in terms of emissions compared with locally-grown produce. Plus, air-freight is responsible for 200 times more emissions if flown rather than shipped from Kenya, or 12 times more energy.

There is no firm evidence that UK consumers not eating imported FFV, fewer planes would fly today or in future. Indeed, an annual expansion of 6% in air traffic in all sectors (FFV imports, passenger volumes, and dedicated freight).

Air-freight of FFV from SSA accounts for less than 0.1% of total carbon UK emissions. In the big picture, the environmental cost of international food transport is trivial compared with UK domestic food-miles. Plus, air-freight is the only possible mode of transport for some highly perishable produce where no other infrastructure exists.

FFV imports highlight one of the key reasons for not including aviation emissions under Kyoto Protocol - the difficulty of allocating carbon between trading nations. While a 50-50 split appears to be a simple equitable solution, in practice there are measurement difficulties associated with transport hubs, passengers/cargo split, mail service, triangular flight paths and problems assessing the necessity of some cargo (such as medicines and vaccines). Plus, for FFV the large majority of imports to the UK are carried opportunistically in the belly-hold of passenger aircraft, and the rest in dedicated freight.

Are there other environmental criteria which should be considered? Carbon emissions are not the only factor when weighing environmental costs and development gains associated with the FFV export trade. Food imports to the UK have other environmental implications for producer countries. It is estimated that annually, the UK "imports" 189 million m^3 of African water as a result of the import of green beans – enough to provide 10 million Kenyans with drinking water. Given that Kenya is categorised as a water-stressed country, and this is forecast to worsen, the implications for an expansion of the green bean trade need to be investigated. But this does not necessarily help improve water resources management in Kenya, where the chief cause of water-stress is poor water infrastructure, not agriculture diverting water from the population.

Are food imports from Africa driving African poverty reduction?

Air-freighted produce from SSA to the UK bestows considerable direct benefits on poor rural economies. Over one million people in rural Africa are supported by the FFV exports to the UK. An estimated 50-60,000 small-scale producers and 50-60,000 employees on larger farms grow produce that is consumed in the UK. When dependents and service providers are factored in, an estimated 1-1.5 million people's livelihoods depend in part on the supply chain linking production on African soil and consumption in the UK. An estimated £200 million is injected into rural economies in Africa through FFV trade with the UK alone. From a development perspective, air-freight of FFV from SSA is a relatively efficient "investment" by the UK in allocating its carbon emissions to support livelihoods when compared to the efficiency of the remaining 99.9% that is supporting 60 million UK residents.

Opportunities

Economic development for the poorest in a low carbon future will mean expanding emissions for some. For those countries with excess "ecological space", there exists a potential to use some of this space to reduce poverty, generate low-carbon economic growth and foster development. Export horticulture is one of the few genuine opportunities for developing countries that have direct and indirect benefits that reach into poor rural areas. Plus, there is projected future growth in export horticulture from existing and emerging producer countries in Africa, owing to tourism, economic development and more socially conscious procurement patterns in all industries.

The food miles concept needs reform, to include social and economic development aspects. Singular comparisons do not necessarily help us to generate good policy. All environmental and social aspects need to be analysed, and trade-offs assessed. Over one million livelihoods in Africa are supported by UK consumption of imported fresh fruit and vegetables, and not buying fresh produce air-freighted from Africa will reduce UK total emissions by less than 0.1%. It is time to look to the huge impacts of the food system at home, rather than pull up the drawbridge on Africa.

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