

# Air freight and Africa: trading off environment and development??

Bill Vorley

Food Ethics Council workshop on Air-  
Freighted Food, 4 April 2008





**48-72 hours  
from field to  
shopping basket**



# A hardening of attitudes, battle of 'killer facts'

'We have never agreed with those who say we should punish African farmers because they don't like the emissions... If you take green beans, studies have shown there are fewer emissions from growing green beans in Africa than producing them in the European Union. The way to reduce carbon emissions is to get a post-Kyoto global deal, not penalise Africans who then can't get their goods to market... Putting aside the question of whether air-freight is a good thing or a bad thing, if economic drivers led retailers to stock fewer air-freighted products how would they fulfil their (ethical) responsibilities to producers and consumers?'

Gareth Thomas

'The concept of food miles is **unhelpful and stupid**,

Adrian Williams, Cranfield University

"The Government needs to ask the question, "Why is Africa feeding the already overfed and why is Britain not feeding itself?" We are using Africa as a **neo-colonial** food system.'

Tim Lang, City University

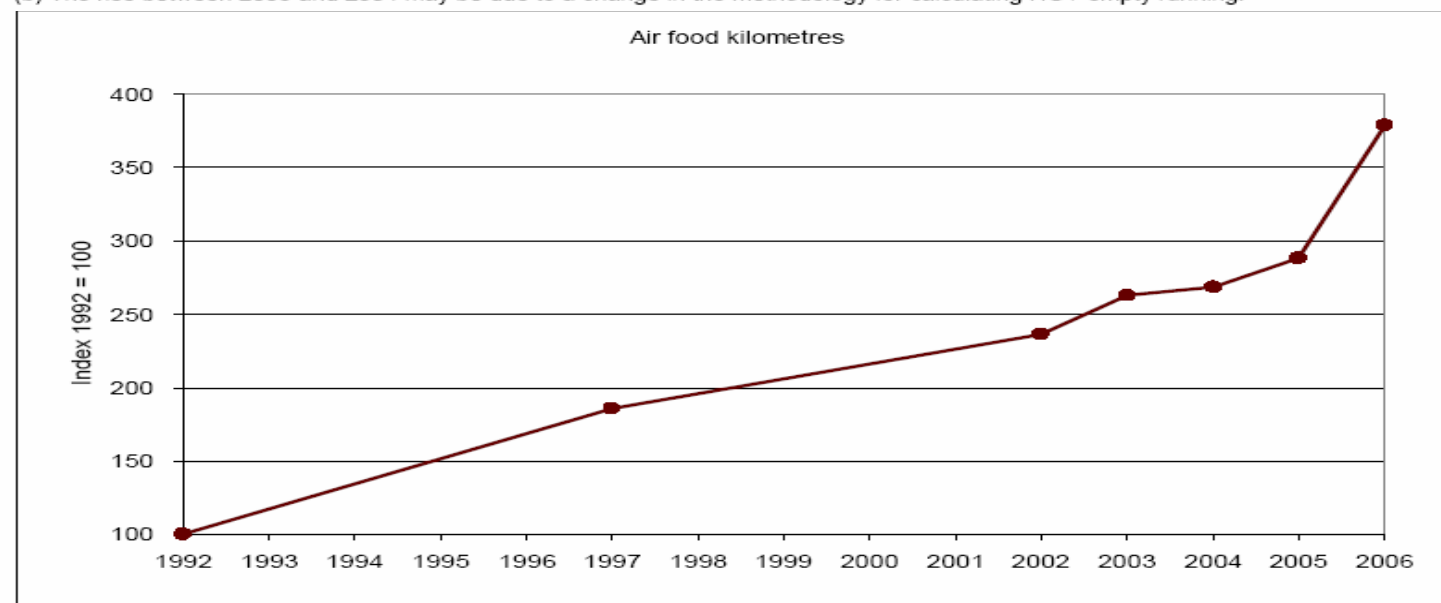
The Observer, March 23 2008  
Evening Standard, 11 March 2008

## The food transport indicators

Indicators of the External Impact of Food Transport for UK Consumers								change 2005 to 2006
	1992	1997	2002	2003	2004	2005	2006	
<b>Indicator 1<sup>(a)</sup></b>								
UK Urban food kilometres (millions)	10,677	12,058	11,470	11,903	12,130	13,162	14,039	+7%
Index 1992 = 100	100	113	107	111	114	123	131	
<b>Indicator 2<sup>(b)</sup></b>								
HGV food kilometres (millions)	7,862	8,412	8,121	8,066	9,104	9,209	8,965	-3%
Index 1992 = 100	100	107	103	103	116	117	114	
<b>Indicator 3</b>								
Air food kilometres (millions)	10	18	23	25	26	28	36	+31%
Index 1992 = 100	100	186	236	263	269	288	379	
<b>Indicator 4</b>								
Carbon dioxide emissions (kilotonnes)	15,044	16,494	16,747	16,369	17,839	17,948	18,862	+5%
Index 1992 = 100	100	110	111	109	119	119	125	

(a) The car data for 2002, 2003 and 2004 may be under-recorded due to the method of data collection in those years.

(b) The rise between 2003 and 2004 may be due to a change in the methodology for calculating HGV empty running.

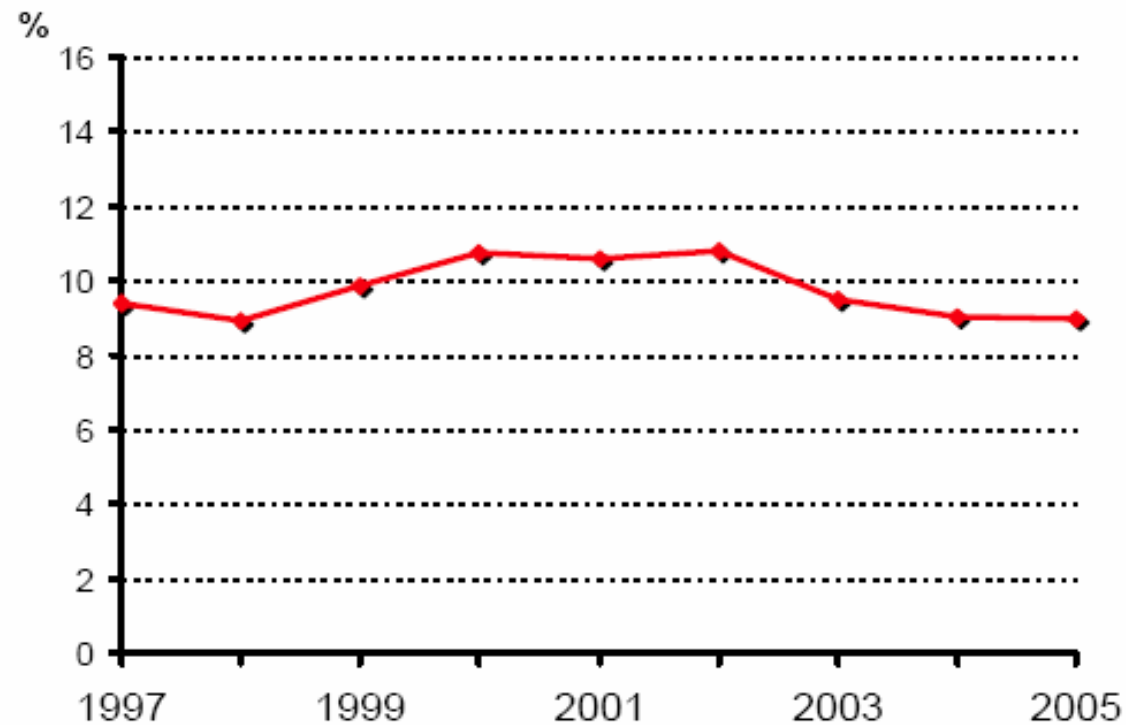


**Source: Food Transport Indicators to 2006: Experimental Statistics**

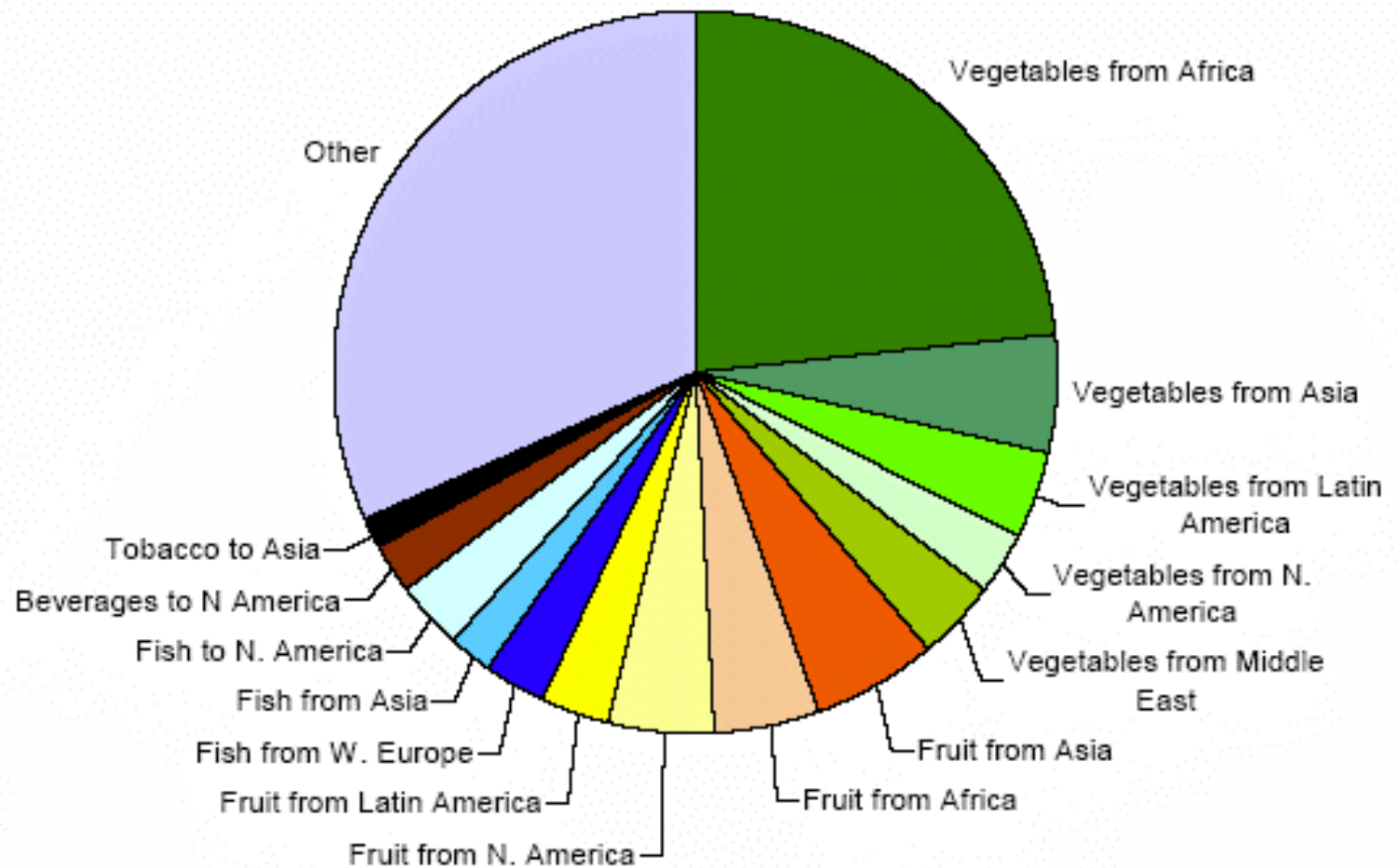
[http://statistics.defra.gov.uk/esg/index/list.asp?i\\_id=180](http://statistics.defra.gov.uk/esg/index/list.asp?i_id=180)

# Air freight's share of fruit and vegetables imported to the UK from African countries

Source: DEFRA



# UK air imports by food type and source/destination



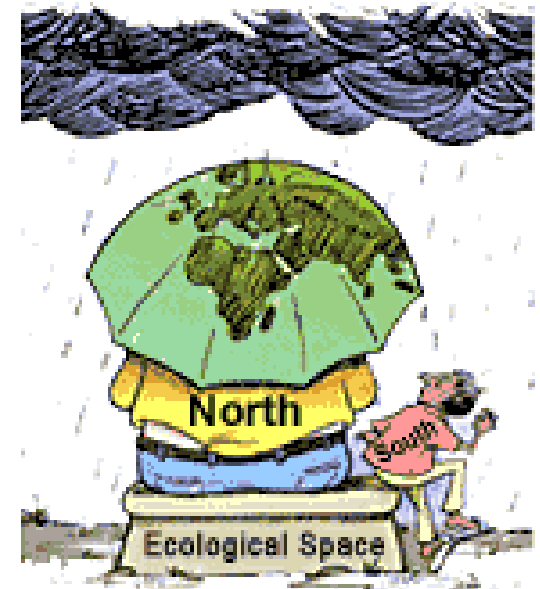
# Comparison of selected impacts of production of green beans in Kenya and the UK for sale in the UK

<b>Criteria</b>	<b>Kenya</b>	<b>UK</b>
<b>Food miles</b>	<b>4500 miles</b>	<b>&lt;100 miles</b>
<b>Energy – transport</b>	<b>58 MJ/kg</b>	<b>&lt;5 MJ/kg</b>
<b>Energy – production</b>	<b>1.7 MJ/kg</b>	<b>1.1 MJ/kg</b>
<b>Water</b>	<b>5.4m<sup>3</sup>/kg</b>	<b>N/a</b>

# Emissions and equity

Per capita carbon load:

- Kenya **0.2T**,
- UK **9.2T**
- 0.62 – 2.2T for stable CO<sub>2</sub>, falling to 0.32 by 2030
- Kyoto Protocol recognises the need for equity and economic development for developing countries in the transition to a low-carbon future.



# Allocation of emissions

If the carbon emissions from importing fresh fruit and vegetables (FFV) from Africa to the UK were allocated:

- entirely to the **UK's** emissions budget, they would add an extra **0.1%** per cent of total emissions for the UK. Per capita emissions would rise to 9.22 tonnes (512 per cent of natural carbon sink capacity)
- entirely to **Kenya's** emissions budget, they would account for an extra **4.8%** of total emissions for Kenya. Per capita emissions would rise to 0.42 tonnes (23 per cent of natural carbon sink capacity)

# Open questions

- **What to include?**
  - Systems boundary
- **Data accuracy**
  - energy consumption for airfreight for Kenya-UK: 58MJ/kg? 103MJ/kg? 205MJ/kg?
- **Emissions attribution**
  - emissions from aircraft currently not included in national inventories, EU Emissions Trading Scheme, or a binding part of the Kyoto Protocol
  - Exporter or importer? Producer or consumer?
  - Passengers or bellyhold freight?
- **Drivers of airfreight**
  - by UK consumers not eating imported FFV, would fewer planes fly today or into the future?

## Fair Miles? The concept of “food miles” through a sustainable development lens

James MacGregor and Bill Vorley

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 negative impacts on local rural communities, and 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 a round 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 are unequal and the gap 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 and growing 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 non-restrictive economic development for developing countries in the transition to a low-carbon future. Under current calculation of a sustainable carbon future, equitable ecological space per capita is 1.8 tonnes. This represents the estimated absorptive capacity of natural carbon sinks, both land and sea – currently absorbing half of anthropogenic emissions. Yet this per capita space is falling owing to projected warmer climate accelerating 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

# Development upsides

## Employment

- Over 100,000 rural Africans are employed in the FFV export sector in SSA, roughly split 50/50 between small-scale farmers and employees on larger farms
- Estimated 100-120,000 employed in support services for these producers and employees

## Spillover

- Technology, food safety, improved access to inputs, credit, extension services

# Development downsides

- **Labour standards** in export horticulture called into question
  - crowded facilities, no employment contracts, handling dangerous chemicals without proper protective equipment, sexual harassment, no maternity leave, overcrowded housing, low pay
  - purchasing practices encourage precarious employment
  - Kenyan Flower Council Code of Practice
  - GlobalGAP, FT
- **Costs to suppliers** – exclusionary impact of standards

# Costs to suppliers

- GlobalGAP
- Retailer-specific standards
- The Carbon Trust and the British Standards Institute -- new standard for measuring the carbon footprint of products



# Concluding remarks

- Food miles is a legitimate citizen interest (cf Cranfield “unhelpful and stupid”)
- Understand the GHG ‘hot spots’ of entire food system
- Development and ecol. space arguments are powerful counterweight when based on legitimate data
- 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 the 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.
- Best practice needs to be developed in..
  - Measuring and minimising the environment impact of export horticulture
  - Measuring and maximising the development impact of export horticulture
  - Reducing the carbon footprint of airfreight