

The Validity of Food Miles as an Indicator of Sustainable Development



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Background – Food Miles

- Food miles = distance from farm to plate
- Concerns over increasing food miles
- Environmental, social & economic impact
- Study commissioned by Defra (2004 - 2006) by
- Potential use of food miles as sustainability indicator
 - <http://statistics.defra.gov.uk/esg/reports/foodmiles>



Study Objectives

- To compile a food miles dataset covering the supply chain
 - 1992, 1997 and 2002
- To assess main trends leading to increases in food miles - UK and overseas
- To identify + quantify economic, environmental & social impacts of food miles
- To develop set of key indicators which relate to main impacts on sustainability
- Aim - easily available statistics, updated annually, linked to wider FISS

Why the Increase in Food Miles?

- Globalisation of food industry - wider sourcing, imports & exports
- Concentration of the food supply base - fewer, larger suppliers (yr)
- Major changes in delivery patterns
 - Food through supermarket regional distribution centres, more use larger HGVs
- Centralisation and concentration of sales in supermarkets
 - Switch from frequent food shopping (on foot), to weekly shopping by car
- Processing and packaging

Key Findings – Significance of Food Miles

Environmental, social & economic burdens from food transport are significant

- Food transport accounted for estimated 30 billion vehicle km in 2002
- Food transport 25% of all HGV vehicle kilometres in the UK
- Food transport produced 19 million tonnes of carbon dioxide in 2002 (2%)
- Significant emissions of air pollutants
- Important because there has been a trend toward more food miles

And significant in economic terms

- Direct environmental, social and economic costs of food transport
 - Costs of congestion
 - Accidents
 - Infrastructure
 - Emissions (CO₂, Air Pollutants)
 - Noise



Estimated at £9 billion / year !

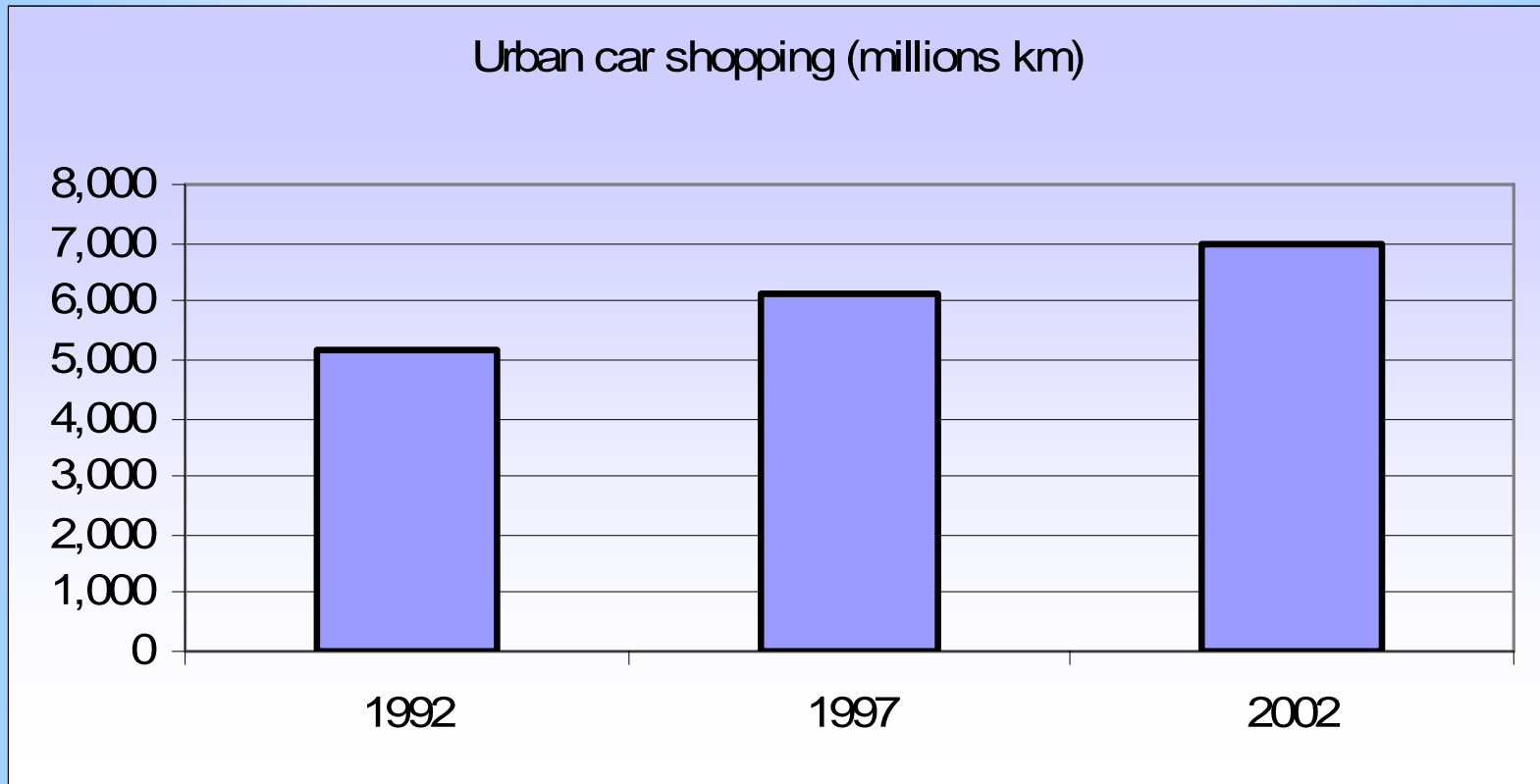
HGV dominates infrastructure, noise and pollution, car high congestion and accidents

Study Recommendations

- Recommend indicator is needed, but food miles alone is too simplistic
 - **Urban food kilometres** – captures car use
 - **HGV food kilometres** – captures lorry transport
 - **CO₂ emissions** – captures many emissions missing in current inventories
 - **Air food kilometres**
 - Air transport highest CO₂ emission per tonne – 1% tonne km but 11% of CO₂ emissions
 - Growing extremely quickly

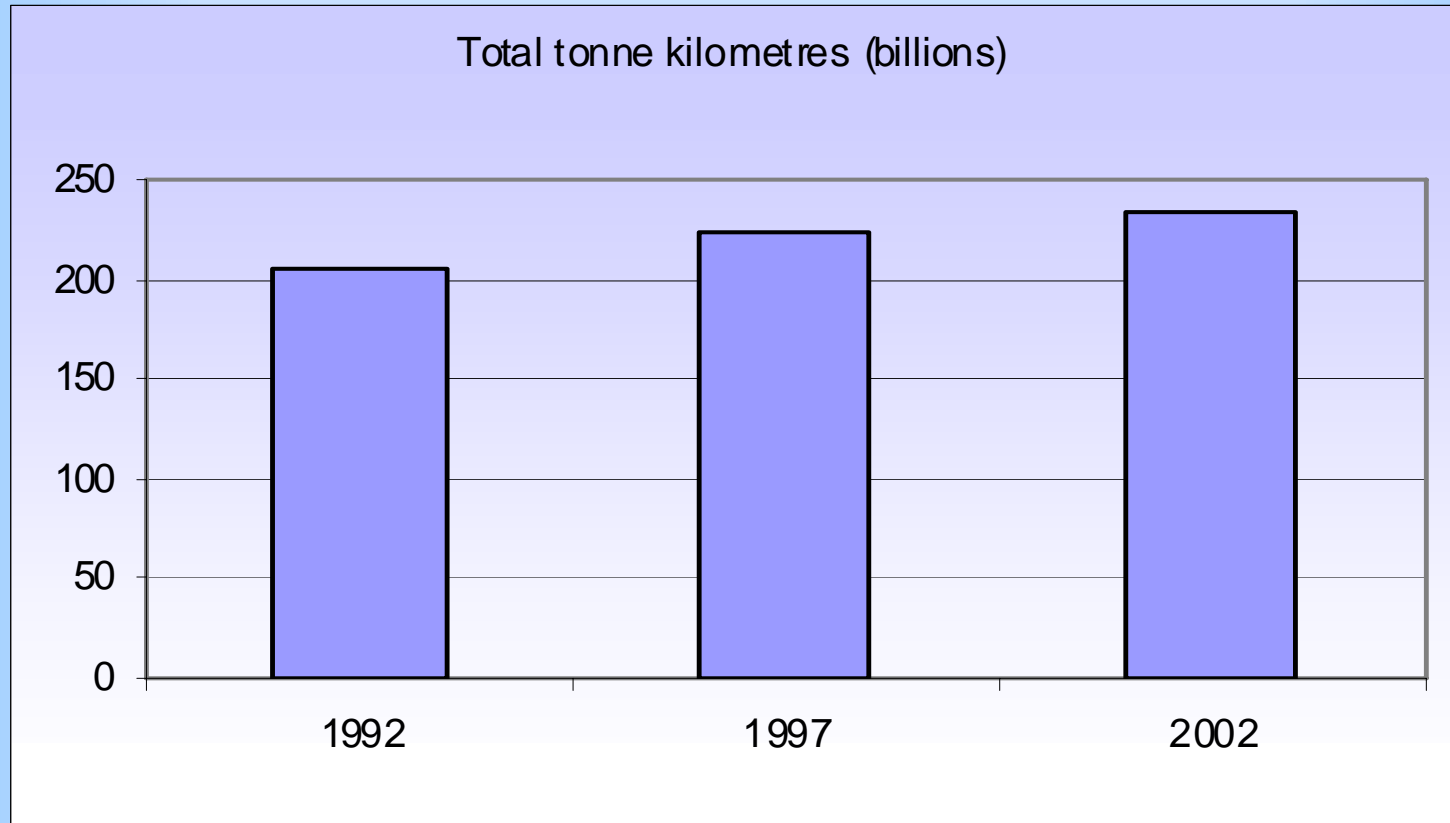
Government accepted recommendations, working to collate indicators

Trends - Higher Car Shopping



Urban food kilometres – increase 27% on 1992 – ownership & patterns

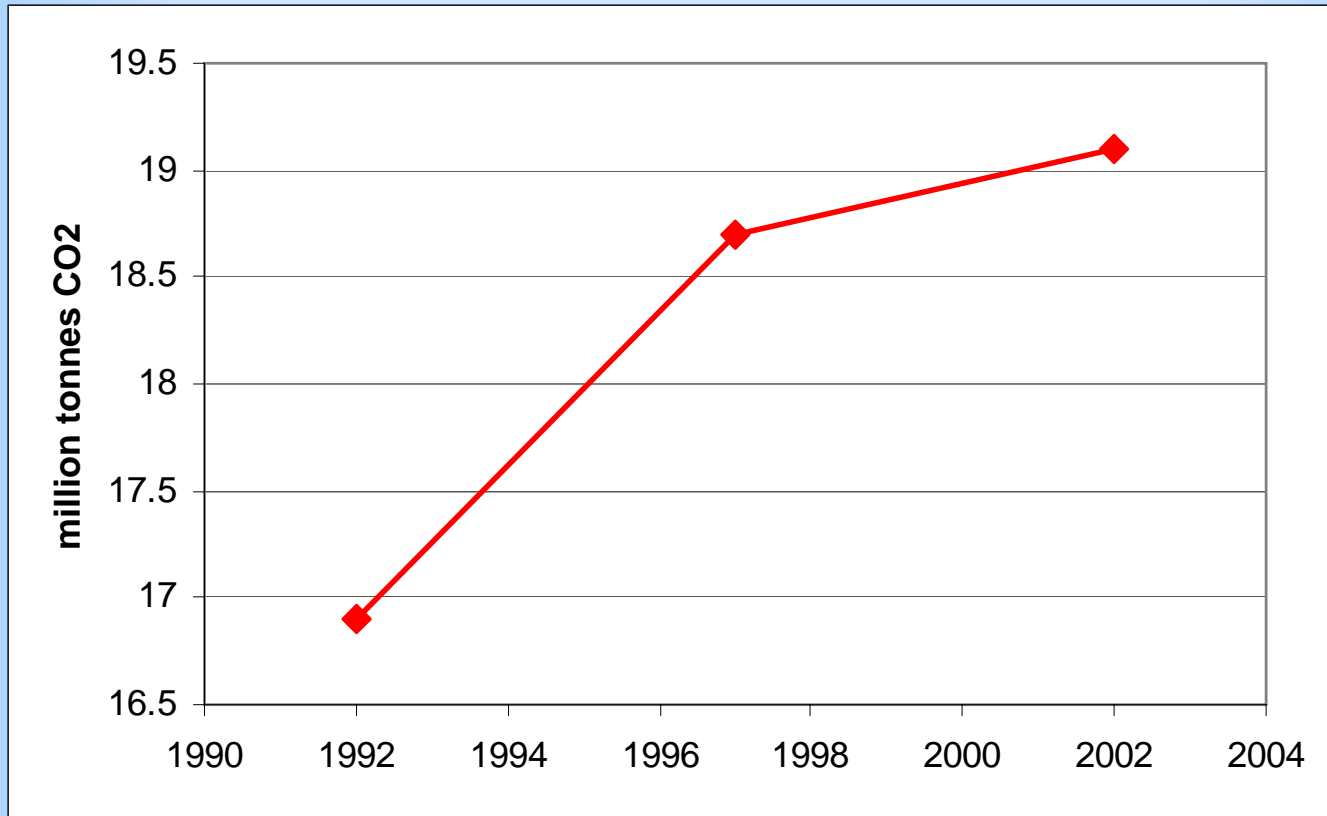
Trends - Higher HGV Tonne kilometres



Up 36% since 1992, over 100% since 1974

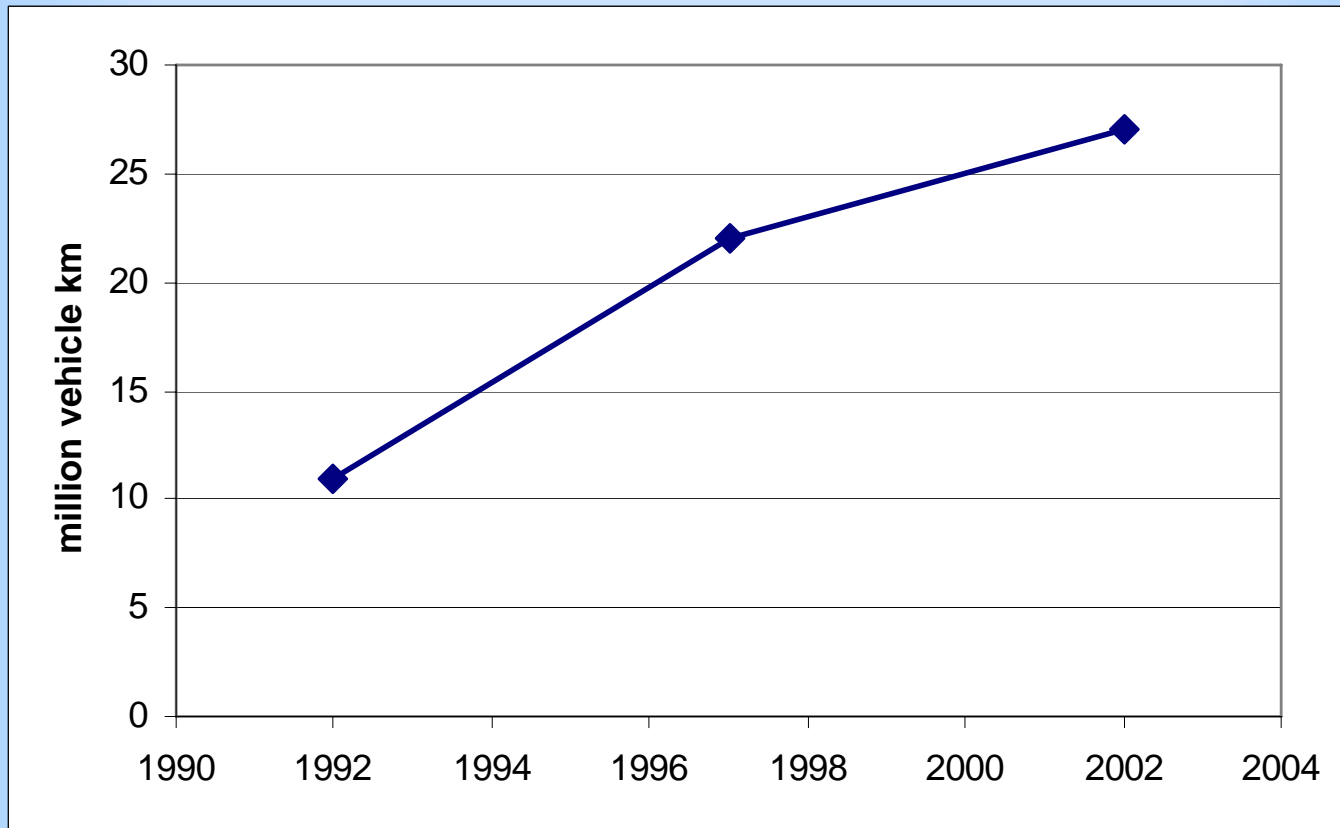
Change in lorry Vkm lower - Efficiency— larger vehicles /higher load factors

Increased CO₂ emissions - Food Transport



Increased by 12% in ten years –opposite of target

Increased Aviation Transport for Food



Fastest growing mode - > doubled over ten years (140%)

Which means?

- Valid indicator - that should be measured
- In like for like systems, with identical food supply chains, reducing food transport will improve sustainability
- But....
- Transport mode is important. Aviation disproportionately high impact
- Trade-offs between distance, vehicle size and efficiency
- And variation in food chainsneed to consider the wider environmental social and economic issues and trade-offs with food miles

.....(complexities)

- Depends on the sustainability of food production
 - Energy balance Spanish tomatoes < UK out of season
 - Imported organic (1000 km) < conventional UK
- Depends on wider social, environmental and economic issues
 - Consumer choice and nutrition
 - Trends affecting UK producers – UK rural economy
 - International trade and developing countries - - -

Potential policies

- Sourcing food more locally where appropriate
 - Consumer awareness/labelling, public procurement, support local food initiatives
- Reducing car food shopping
 - Home delivery, Support for local and in-town shops, Provision of cycle/pedestrian access
- Reducing transport impacts
 - Cleaner vehicles, Improved logistics, Rail freight
- Internalising the social costs of transport
- Improving the wider sustainability of the food chain
 - From energy efficiency to ethical trading

Conclusions

- Food transport has increased over the past 20 years
- Has direct negative impacts on sustainability through transport burdens
- These impacts are significant, and are poorly captured by existing indicators
- Single indicator is too simplistic – need to capture a range of impacts
- Food transport has a complex relationship to food chain sustainability
- Can be valid trade-offs between food chains and food transport
- Need to ensure balanced policy, consider ESE across whole food chain