Food distribution

An ethical agenda

FOOD ETHICS COUNCIL

The way our food is distributed cements in place production, consumption and trading practices that destroy the environment, harm animals and are deeply unjust.

This report examines the impact of food distribution networks on our environment, economy, culture and communities, and their contribution to climate change.

We offer a sustainable vision for the future of food distribution, and provide a roadmap for government, business and civil society to help get us there.

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That food reaches our plates is a logistical feat in a country where less than 2 % of people grow it and many ingredients come thousands of miles. Yet the ways food travels cannot be sustained. More important than the direct environmental, social and economic costs of transporting it is how the UK's food distribution infrastructure cements in place production, consumption and trading practices that destroy the environment, harm animals and are deeply unjust.

In this report we examine how decisions that directly affect food distribution, such as transport policy, business logistics and 'local food' campaigns, could contribute to a more ethical and sustainable food system. We describe work already underway in the UK to improve food distribution, pointing out gaps and tensions. We then offer a vision of the future of food distribution that throws a spotlight on the choices society and government face in reconciling competing aims. The report ends with recommendations for government, business and civil society.

We find that UK government and industry initiatives on sustainable food distribution have failed twice over. They have failed on their own top priority – cutting carbon emissions – by displacing responsibility onto other countries and onto consumers. And they have failed to recognise that public concern around food distribution is as much about diverse local high streets, production conditions, transparency and animal welfare as it is about climate change.

But we are optimistic about a sustainable future for food distribution. A government rethink to square economic policy with sustainable development, a focus on cutting transport demand, and forward-looking approaches to investment, procurement, planning and international trade, could combine with business innovation around provenance, choice editing, cost-sharing and retail formats – with a reduced focus on year-round availability and animal products – to deliver the goods.

Food distribution

Food is responsible for a quarter of the distance lorries travel in the UK, and shoppers drive around 12 billion miles a year to buy it. Government puts the social and environmental costs of food transport at £9 billion a year, with well over half this figure resulting from congestion.

The scale and visibility of food distribution have helped to make it a focus for public, government and business efforts to promote sustainable development. There are concerns that long supply chains:

- Contribute excessively to climate change, especially when food travels by air.
- Depend on dwindling oil reserves and are geopolitically vulnerable.
- Widen the gap in understanding between consumers and producers.
- Compromise animal welfare by transporting livestock long distances.
- Harm local economies and the communities they support.
- Go hand in hand with a deeper industrialisation of our food and food culture.

The market for 'locally sourced' food has boomed, with around two thirds of people in the UK saying that they buy local food. Government and business initiatives such as the Food Industry Sustainability Strategy have sought to mitigate some of the problems attributed to long supply chains.

Gaps and tensions

To date, efforts by government, business and civil society to improve food distribution have been insufficient to meet the sustainable development goals they have set themselves. Problems include that:

- Calls for local food can overstate the climate benefits of short supply chains compared with bigger greenhouse gas hotspots, such as how the food was produced.

- Despite excessive claims on behalf of local food, a policy backlash against the value of the 'food miles' concept has also been flawed. It ignores potential greenhouse gas savings from combining short supply chains and low-input production systems. It also loses sight of the wider environmental, social and cultural issues associated with food distribution beyond cutting carbon.

- Government and business initiatives promote carbon-efficient economic growth, ignoring evidence that this will not meet their own sustainability objectives because:

    - Rising consumption has already outstripped efficiency gains meaning that absolute emissions from food transport rose 3% in 2005-6.

    - Much of the growth has happened overseas, as the UK 'off-shores' its emissions – instead of cutting our footprint we are treading elsewhere.

    - 'Shopping miles' have recently risen 9% in a single year as emissions are displaced out of the supply-chain onto customers.

- Government and industry offload responsibility for sustainable development onto citizens in the name of personal choice by stocking unsustainable products, investing heavily in labelling environmental performance and ducking debate about the costs of high mobility.

- Local food initiatives and campaigning can be parochial, downplaying the development benefits of international trade and alienating ethnic communities in the UK.

- Promoting a 'level playing field' in international trade is not sufficient to meet our duties of care to people in poorer countries, to repay the UK's ecological debt or to achieve major progress towards development goals.

- The main government and business initiatives designed to promote sustainable food distribution are ill-equipped to respond to geopolitical and cultural change. Moreover, they have barely engaged with civil society and have been stymied by conflicts and overlapping responsibilities between different government departments and agencies.

Vision

We believe that it is possible to address these gaps and reconcile potentially competing environmental, social and economic aspects of sustainable development. To stimulate debate about the ethical and political choices faced by society over food distribution, we present a scenario set in 2022 where this is achieved. Drawing on a series of workshops we held with stakeholders, we describe what we eat, where our food comes from and where we live, and suggest that:

- The biggest reduction in greenhouse gas emissions from food and farming comes from changes to our diets and to production systems rather than from cutting food miles. We eat less meat and dairy, and more fruit and vegetables, which benefits public health.

- Food is still traded internationally but there is a shift away from highly perishable produce and bulk commodities towards products that acquire added value and durability through primary processing near the point of production, as happens today with some fair trade chocolate. Both importers and local food initiatives are expected to demonstrate that their work contributes to sustainable development globally.

- Short-distance distribution networks flourish, as efficient shared infrastructure gives towns and cities access to the social and cultural

benefits of a thriving local food economy. The weekly car trip to the supermarket is replaced by thriving community convenience shops, diverse town-centre shopping and direct delivery for 'drudge' items. Urban food production is commonplace.

Recommendations in brief

We propose next steps for government, business and civil society that would help to make such a vision a reality. These recommendations extend beyond the food sector. Clearly, cross-cutting policies on climate change, transport and planning should not be determined only by their implications for food distribution; yet unless they succeed for food they are failed policies. Our recommendations include the following:

For government:

- Government should use absolute, not relative, measures to report on greenhouse gas emissions and should commit to an 80% cut by 2050. The UK should take responsibility for the carbon it takes to make all that we consume, even if it is emitted overseas.

- Government should future-proof investment in domestic and international transport infrastructure against high oil prices, fossil fuel scarcity and stringent restrictions on emissions.

- Reducing the need for transport and managing demand should be core objectives for the Department for Transport (DfT).

- DfT should expand its programmes for 'freight best practice' to ensure that the greatest possible number of small-scale operators can benefit. It should also support the infrastructure that encourages a move away from road (and air) to rail and shipping.

- The Department of Communities and Local Government should exploit opportunities (for example in Policy Planning Statements 1 and 6) to preserve high-quality agricultural land, encourage innovative urban food production, stimulate investment in local food processing and

distribution infrastructure, value diverse local shopping and avoid creating environments that encourage obesity.

- Government should either explain clearly how it expects economic growth to produce sustainable development – given that growth continually outstrips efficiency gains – or adopt a different macro-economic strategy.

- Government should build on the Public Sector Food Procurement Initiative and the Sustainable Procurement National Action Plan, by using the public purse to transform markets for sustainable food and distribution.

- The UK should drop its trade-driven approach to international development in favour of a sustainable development-driven approach to trade.

For business:

- The credibility of action to reduce greenhouse gas emissions or promote fair terms of trade depends on businesses having clear overall strategies on sustainable development that show their activities are not simply opportunistic or, worse, 'greenwash'.

- Businesses should expect growing pressure from civil society to demonstrate that their distribution models address the social and cultural concerns expressed in the 'food miles' debate. Larger businesses might, for example, share servicing and overheads with smaller local operators.

- Businesses should seek to innovate around food products and retail formats that provide provenance, connecting producers with consumers, and by becoming trusted 'choice editors'.

- Food retailers should challenge the assumption that all products should be continuously available, which requires energy-intensive production systems, top-up airfreight and twice-daily deliveries in low-stockholding supply chains.

- Businesses should continue to explore the provision of public information about the greenhouse gas content of products, but do this to drive sustainable innovation in their supply chains rather than as a way to shift responsibility to shoppers.

For civil society:

- Campaigning groups should not use the distance that food has travelled as a direct proxy for greenhouse gas emissions but should defend 'food miles' as an engaging concept which captures a wide range of concerns about the contemporary food system.

- The local food movement should embrace a broad understanding of community and solidarity by welcoming global trade where it is important to minority ethnic communities in this country or benefits producers in poorer countries. Supporters of local food in this country should press for government and business action to support the development of resilient local markets all over the world, making local food global, rather than parochial.

1. Introduction

1.1 What is the problem?

People want local food.[1] John Turner is a farmer who provides it.[2] Every six weeks he supplies 40 boxes of beef to people around Stamford, in Lincolnshire. Nine in 10 customers live within two miles of his farm but it is a 120 mile roundtrip to the abattoir, and the same again to pick up the meat. The trip costs £100 per animal, and processing and storage costs £350 more.

John also sells to a supermarket. Those animals go twice as far to slaughter but, travelling in a truck with 60 others, the cost is £12.50. The energy saving is just as big.

Like Kenyan beans, Spanish tomatoes and New Zealand lamb – now part of the mythology of food miles – John's story exposes the predicaments of present-day food distribution and the struggles we face in putting them right.

His local customers can walk to his farm, yet their carbon footprint could be lower if they bought his meat from the supermarket. Many of them know this but care about more than greenhouse gases. They may value provenance and traceability, or the quality of the meat and artisanship of its butchery. They may feel that buying locally contributes to the vitality and distinctiveness of their community. They could be concerned about the animal welfare implications of transporting live animals, and be glad the ones they eat went only half the distance. Or they may know their meat costs the same whichever way they buy it, and they'd burn 35 times more on fuel to see John make a few pence more on the pound.

We know that current food distribution practices are unsustainable. They have to change, with knock on effects for what we eat and where it comes from. But the confused debates over this issue in policy, within business and in society at large show that for all our collective concern, we have not fully pinned down what the problem is, we are not sure what a solution would look like, and we think it is somebody else's job to get us there.

1.2 An ethical approach

In this report (Box 1) we use ethics to find a way forward. Ethics is about working out how to do the right thing, all considered. Three aspects of ethics are useful here:

- Principles – Ethical principles put names to things people care about, so we can think them through clearly and work out which are most important. This can help distinguish between different aspects of sustainable development, for example, and give voice to wider issues such as the humane treatment of animals.

- Logic – Ethics belongs to the field of philosophy, which, as the famous philosopher Bertrand Russell put it, is just "an unusually obstinate attempt to think clearly".[3] We will point out gaps and contradictions in current efforts to improve food distribution.

- Process – Ethics is about how you make decisions, not just about what you decide. As we can never know for sure how a decision will turn out, we need to make sure the processes of deciding are themselves fair, accountable and able to deal with surprises.

We use these three headings to give definition to concerns that have been expressed over food distribution in policy, business and public debate, and to see how well they are being answered. After that, we explain what we think a better distribution system should look like. We end with recommendations on how to get there.

First, though, we need to say what we mean by food distribution and what people are already doing to try and improve it.

Box 1: About this report

This report is the culmination of a two-year project at the Food Ethics Council, funded by the Esmée Fairbairn Foundation, to examine the role of food distribution in achieving an ethical, sustainable food system.

The project began with a particular focus on ensuring that 'road pricing', a policy then central to the UK Government's transport strategy, would contribute to a more sustainable food system.

As road pricing fell down the political agenda, in response to widespread public opposition to the idea, we broadened the scope of the project to encompass food distribution more widely, while retaining a strong interest in the effects of transport policy.

Guided by a steering group, the project has incorporated extensive desk-based research, expert workshops, future scenario planning, dialogue with numerous stakeholders and deliberation among the members of the Food Ethics Council. It draws upon and is informed by our parallel projects on air-freighted food and seasonality.

As well as this report, the outputs from the project include four workshops (one on the implications of road pricing for the food system, three looking at the future of food), a discussion paper, a scenario toolkit for thinking about uncertainty and opportunity in the food sector, and a short introduction to the UK food distribution system.

2. Food distribution

2.1 Beyond logistics

Food distribution is about more than moving products from A to B. Transport shapes what we eat, how it is made, who benefits and even where we live, not just how quickly and efficiently food gets to us.

Supermarkets and fast food as we know them depend on a sophisticated 'chill chain' of refrigerated trucks and distribution centres. Our lifestyles, diets and health are influenced by the rise of the ready meal, the pre-packed sandwich and the exotic fruits that the chill chain makes possible. Distant economies depend on this too. When we move house, we consider how well-served a place is by shops or, at least, how easy it is to park or get a bus to the supermarket.

As Carolyn Steel has argued,[4] this influence runs deep. Before rail and motor transport freed urban food systems from the fields immediately around them, few cities reached a population of over 100,000. Four in five people in the UK now live in cities of a size that would be impossible without industrial food logistics. Mounting social, economic, security and environmental pressures on food distribution may force us to rethink how our cities work.

Sophisticated logistics systems underpin aspects of daily life in the UK that we take for granted, from commuters' lattés to families' weekly shops. But it cuts both ways: if you are profoundly worried about food distribution, as many policy makers, businesses and shoppers clearly are, then you need to start rethinking our whole way of life.

Debates about food distribution are never only about distance, and they are rarely just about the environment. At the heart of controversies over how food is transported and traded – about 'food miles', 'food mountains' and 'food deserts', for example – are concerns about distributional justice that have implications for the whole food system. This report is about more than trucks and warehouses. Yet we still focus on how food is transported, whether by food businesses, third party logistics providers (3PLs) or shoppers. We concentrate on the distribution of food that is consumed in the UK, but are alert to its global implications and influences.

Where food distribution patterns cause or lock us into problems, the solutions may lie outside the food sector. We make recommendations that apply more widely to transport, planning and trade policy.

2.2 Distribution and its discontents

Distribution is one of the most visible elements of our food system. We see the trucks of supermarkets and fast food giants on our roads every day, and get frustrated by the shopping traffic around major stores. We notice food distribution in part because of its sheer scale: food is responsible for a quarter of Heavy Goods Vehicle (HGV) miles in the country and we drive 12 billion miles a year to shop for it – like driving to the sun and back 65 times.[5]

This visibility has helped to make food distribution a lightning rod for wider concerns about the food system, transport and sustainable development. Campaigning groups including Sustain, the Soil Association, Friends of the Earth, the New Economics Foundation and the Campaign for Better Transport (formerly Transport 2000) have variously highlighted:

- The contribution that food transport makes to climate change, with a particular focus on air freight.[6]

- The dependence of food transport and the food system at large on dwindling oil reserves.[7]

- Concern about security of supply (in the UK and globally), in a system with

long supply chains, at a time of rising food and fuel prices and shifting global power balances.[8]

- Tensions between the demands for food and fuel, given the policy drivers for significant rises in biofuel production.[9]

Critics have argued that lengthy, centralised supply chains:

- Widen the gap in knowledge and understanding between consumers and the producers, animals, plants and natural environments that provide their food.[10]

- Compromise animal welfare by transporting livestock over long distances.[11]

- Make high streets homogenous, harming local economies and the communities that they support.[12]

- Skew the diversity of foods available, introducing customers to new 'exotic' products but radically restricting the varieties of fresh fruit and vegetables, and breeds of animals, to those that best suit industrialised supply chains.[13]

- Undermine a culture which values food as at the heart of local identity.[14]

These concerns have often been bundled together in public debate as 'food miles', a term coined by City University's Professor Tim Lang. The concerns expressed by campaigners have found some public sympathy. The Food Standards Agency (FSA) found 21% of people were concerned about food miles,[15] while the IGD (formerly known as the Institute for Grocery Distribution) found 65% claiming to buy local food.[16]

Public concerns are reflected in buying patterns as well as attitudes: farmers' markets have grown in number from 1 to 550 in the course of a decade and are now estimated to be worth £220 million per year;[17] organic box schemes have seen 53% year-on-year growth;[18] there is evidence of burgeoning demand for allotments and home-grown vegetables;[19] even Tesco has reported 40% growth in 'locally sourced' foods.[20] These concerns and activities are not restricted by social class as is sometimes assumed.[21] While at times showing the hallmarks

of a lifestyle trend that could drop out of fashion, there is some evidence that these new behaviours may be embedded robustly enough to weather the storm of the economic downturn.[22] Indeed, as with businesses, some of these 'green' behaviours – including also driving less[23] – may in fact be heightened by current economic problems, in particular the rising cost of food and fuel.[24]

Since food transport represents a significant proportion of all travel, it also provides an important window onto a broader range of transport problems. Government estimates that the social and environmental costs associated with food transport amount to £9bn, with well over half of this relating to congestion.[25]

2.3 A truckload of solutions

2.3.1 Industry

The food and logistics sectors are acutely aware of public concerns about food distribution. As well as challenges, these concerns bring opportunities. They create new markets for products with 'local' branding and other forms of provenance, and they have given a boost to cost-cutting and efficiency drives.

Industry think tanks, notably the IGD[26] and the Chartered Institute for Logistics and Transport (CILT-UK)[27], have produced reports and held conferences on 'sustainable distribution'. The IGD's Efficient Consumer Response programme is leading a Sustainable Distribution initiative, bringing together "37 of the UK's leading food and consumer goods companies" in a collaboration that will "result in the industry saving 48 million miles of travel by the end of 2008 alone – equivalent to removing 800 lorries from Britain's roads – and conserving 23 million litres of diesel fuel per year".[28]The initiative includes sharing best practice and 'speed dating for trucks',[29] whereby different operators get together to exchange information on delivery schedules so they can use spare capacity in other companies' trucks to eliminate duplicate journeys.

The past few years have seen rapid innovation in retail, foodservice and 3PL distribution systems, including: 'modal shift', transferring goods from road to less polluting means of transport such as rail or water; [30] cleverly-shaped

trailers;[31] vehicles running on electricity and biofuel-from-waste;[32] improved telematics;[33] driver training;[34]and eco-warehousing.[35] Though many operators still have no fuel management programme,[36] several businesses have set their work on logistics within much wider ranging sustainability strategies, with varying degrees of ambition.[37]

As well as improving the efficiency of food distribution systems, retailers and foodservice companies are also changing their shape, with large and small businesses heavily promoting UK, regional and local sourcing.[38] Meanwhile, labels have started to appear that tell consumers if products have been air freighted[39] and how much CO2 was emitted in making them,[40] amid lively debate about the future of carbon-labelling. Much of this activity has accelerated as rising fuel and energy prices sharpen the business case for curbing energy use.

Manufacturers are responding too, with the UK Food and Drink Federation adopting a 'Five-fold Environmental Ambition' to achieve absolute carbon reductions and "fewer and friendlier food transport miles", as well as tackling packaging, waste and water use.[41]

Industry initiatives such as these are thought more advanced in the UK than in many other countries. This is especially true of labelling. According to Sabine Nafziger, Director of Food & Consumer Affairs at European trade association the Confederation of Food and Drink Industries, "in the UK you will find the forefront [of work on labelling], the debate has been going on for much longer than a lot of the other 27 European countries [sic]".[42] While that is encouraging, it is not all good news: cross industry environmental initiatives and 'green' labelling are made easier by the fact that the UK food sector is more heavily concentrated and industrialised than in many other European countries – factors that are the focus of public concern in their own right.

2.3.2 Policy

Through the Food Industry Sustainability Strategy (FISS), the UK government 'challenged' the food industry to "reduce the social and environmental costs of domestic food transport by (say) 20% by 2012".[43] The mainly industry-led FISS Food Transport Champions' Group believe that this is possible, focusing on six areas for action:[44]

- Vehicles with greater capacity.
- Out of hours deliveries.
- Engine specifications.
- Vehicle telematics or Computerised Vehicle Routing and Scheduling (electronic systems which can calculate routes, sometimes incorporating live data about traffic conditions, vehicle position, etc.).
- Transport collaboration.
- Logistics systems redesign.

The government has also recently announced a £67m boost to its Sustainable Distribution Fund, aimed at encouraging a shift of freight onto rail and water and to encourage fuel efficiency.[45]

Alongside these initiatives, a welter of other government policy and research (at global, EU, UK, devolved administration, regional and local levels), has a bearing on food distribution. Some is explicitly designed to tackle concerns with food transport, while other initiatives have a broader target. An exhaustive list is beyond the scope of this report, but relevant policy areas include:

- Food (e.g. Cabinet Office Food Matters report[46]);
- Transport (e.g. Sustainable Distribution Strategy,[47] Towards a Sustainable Transport System programme[48]);
- Taxation (e.g. fuel duty);
- Climate change and energy (e.g. EU Emissions Trading Scheme,[49] Climate Change Bill[50]);
- Planning (e.g. national planning policy statements and guidance,[51] regional and local plans);
- International trade;

- International development;
- Animal welfare;[52]
- Regeneration and infrastructure investment;
- Public procurement (e.g. Public Sector Food Procurement Initiative[53]).

Government advisory bodies including the Sustainable Development Commission and the Commission for Integrated Transport have also devoted time to this area.[54]

2.3.3 Civil society

While energy costs and security concerns have recently given policy and industry work on food distribution a harder edge, campaign groups and scientists had already played a crucial part in making distribution an issue and defining its parameters.

As suggested in Section 2.2, above, non governmental organisations (NGOs) have campaigned extensively on food transport. They have been active not simply as critics, but also in driving and facilitating a range of practical responses. In particular, a burgeoning local food movement has initiated and supported farmers' markets and farm shops, box schemes, online direct-selling and more sustainable public procurement, through the creation of infrastructure, institutions and standards.[55] Such is the local food movement's popularity that a specific National Lottery funding programme has been created to develop it further.[56]

Academic research into mitigating the environmental effects of food distribution is being spearheaded by the Green Logistics project, which aims to find "ways of reducing… externalities and achieving a more sustainable balance between economic, environmental and social objectives". [57] At the same time, the Food Climate Research Network[58] links food/climate change research across academia, industry, public policy and civil society, while numerous other research groups have examined different dimensions of food distribution.[59]

3. Mind the gaps

The consuming public want convenient, healthy, tasty and affordable food. Many people say they want it provided sustainably, fairly and humanely. Irrespective of the amount shoppers are willing to pay for such qualities, there is strong moral consensus that they matter. They are now firmly established as public policy objectives, in expectations of corporate behaviour and in civil society food initiatives (Box 2).

Will the effort devoted to improving food distribution (Section 2.3) add up to meet these disparate headline objectives? No, not even close. While we welcome the impressive innovation, investment and enthusiasm of businesses, policy makers and NGOs – and we are individually involved in such initiatives – assessing sustainable food distribution and transport initiatives against the three headings we set out in the introduction (Section 1.2) finds them wanting:

- Principles: they are arbitrary, privileging certain objectives over others without explanation.

- Logic: they are too limited in scope or scale to meet the objectives that they do prioritise, or fail to address contradictions within the strategies that they adopt.

- Process: they are insufficiently accountable and ill-equipped to cope with uncertainty.

In this section we examine those gaps in greater detail and discuss how they might be addressed, drawing ideas from other areas of policy.

Box 2. Key objectives from UK government, business and civil society

The UK government, the devolved administrations, businesses and civil society organisations have, in a variety of strategic documents, set out their key priorities for food. We include a selection in Appendix 1. There are some strongly shared themes and it is from these common principles that we start. But there are equally divergent – and potentially contradictory - approaches. Environmental protection/ sustainability and health or healthy products feature in most cases, and in many – but not all – there is some mention of the importance of producers or workers in the food system. Different organisations place different weights on these themes, and explain them with more or less detail. The Strategy Unit's Food Matters report, for example, merely calls for "a more environmentally sustainable food chain", while Defra's Strategy for Sustainable Farming and Food is more explicit, talking of the need to reduce energy use, use more renewable energy and to "respect and operate within the biological limits of natural resources (especially soil, water and biodiversity)".

There are more significant differences too. A scattering of other issues, including fair prices, food security, animal welfare, provenance, consumer information and choice, and supporting connections between consumers and producers, appear as key objectives in some documents, but not others. Our responsibilities to producers and consumers in poorer countries seem notable by their absence, while concerns about power in, and control of, the food system appear only in the more radical documents, such as those of the Welsh Assembly Government or the Soil Association.

There is not a common approach, even between UK government strategies. Concerns about scale, for example, are entirely absent from the headline objectives set out in Food Matters, while Defra's Public Sector Food Procurement Initiative seeks to "increase tenders from small and local producers". Finally, latent tensions between objectives are often glossed over: the Scottish Executive, for example, does not make clear how the priority of economic growth for the sector is to be squared with its environmental goals.

3.1 Principles

In setting objectives and priorities, it is helpful to get back to first principles: why should we care about sustainable development, labour standards or animal welfare, for example? This helps us to see whether we are applying those principles consistently, and to think through whether one principle should trump others in a specific instance.

While there is no definitive list of ethical principles, it is possible to pin down a handful of headings that covers most factors people consider in deciding what is right and wrong. The principles that we find most useful in understanding people's values and aspirations around food distribution are respect for:

- Wellbeing – that we should do good and avoid doing harm. This is associated with a utilitarian tradition of ethics, which advocates 'the greatest good for the greatest number'. In effect, it suggests deciding what is right by a kind of cost-benefit analysis, though it is often difficult to define what counts, how to add all that up, how likely different outcomes are and whose interests should figure.

- Autonomy – that we should support the freedom of action and identity of others. Whereas utilitarians focus attention on the net effect of our actions, respect for autonomy is more concerned with relationships, such as our duties and rights. Thinking about autonomy in this broad sense can help us better understand what people value about choice – a key theme within the food sector – and see that having a large number of options can sometimes be disempowering.

- Justice – that we should support fair opportunities and outcomes. A concern for distributional justice often goes hand in hand with a broader ethic of care; fair trade, for example, challenges the way commodity markets allocate rewards along the supply chain, yet its success also depends on consumers showing solidarity with producers. In this report we discuss care and solidarity under the heading of justice.[60]

Each of the policy objectives discussed in Box 2 is underpinned by one or more of these three principles. Wellbeing, autonomy and justice provide a

useful set of headings under which to consider how consistent initiatives on sustainable food distribution and transport are with broader policy, business and civil society commitments.[61]

3.1.1 Wellbeing

Government and industry initiatives to promote sustainable food distribution and transport clearly set out to 'do good and avoid doing harm'. However, compared with other policy and business efforts to promote sustainable development, they are hamstrung by seeing wellbeing in very narrow terms, reducing environmental wellbeing to cutting carbon and human wellbeing to economic growth. As a result, they miss the significance of debates over 'food miles' and 'local food', which are also about the social and cultural aspects of human wellbeing. This means they don't even get it right on carbon, either, because they assume people's consumption habits are a given.

The sector's single-minded focus on emissions is welcome so far as it reflects the seriousness of climate change and the contribution made by food transport. It has seen major investment in research on product life-cycles, and big strides in our understanding of where emissions are produced along the food chain and how to reduce them. However, carbon reduction has become carbon reductionism. Other objectives have been belittled.

The backlash against 'food miles' is a case in point. While the concept remains in widespread use, it is routinely dismissed within the industry and has been the focus of successive 'myth busting' media reports.[62] The critique is well-founded, in that study after study has shown that the distance food travels is a poor proxy for its environmental impact, including overall carbon emissions and energy use:

- Flying and shipping a product over the same distance emits significantly different levels of greenhouse gases.

- Agricultural inputs and production, processing or even cooking at home may account for a much larger share of a product's emissions than its transport.

- The greater efficiency of large-scale distribution networks means that having fewer, larger, high-tech lorries travelling a long distance could do less harm to the environment than having a fleet of half-full panel vans go a fraction of that way.

Yet, for all these facts, the backlash against 'food miles' is overzealous:

- The concept of 'food miles' (Box 4) – and the 'buy local' response (Section 2.2) – has always been about more than environmental damage.

- In any case, the same research shows that, for many kinds of fresh produce, eating locally produced food in season can significantly reduce emissions (Box 3).

Box 3: 'Food miles' and climate change.

A number of studies have looked at the greenhouse gas emissions arising from the transport of food, either by itself or as part of a full lifecycle assessment (LCA).

The impacts of food transport are "significant and growing".[63] And the evidence shows that – all things being equal – more transport means more greenhouse gases (GHGs). But, argue the critics, it is rare in practice that all things are equal, and as a consequence miles travelled cannot be a proxy for a product's contribution to climate change.

Within the transport system itself, other factors likely to be at least as important as distance include the mode of transport – ships as a rule of thumb being less carbon-intense than rail, which is in turn preferable to trucks, and trucks to planes – and the efficiency of the vehicles and systems.

Once one looks at the whole lifecycle of a product, transport for many food items is a relatively small component of total GHG emissions.[64] Depending on the product, the GHG 'hotspot' can be at any point in the lifecycle; the Food Climate Research Network gives the following examples of products with peak emissions arising at different points from farm to fork and beyond:[65]

1.	Agriculture	Meat and dairy; glasshouse vegetables
2.	Manufacture	Bread baking (unless driving to store)
3.	Storage	Ice cream; frozen peas
4.	Transport	Anything air freighted, e.g. berries from the USA
5.	Cooking	Baked potato; pasta; tea, coffee
6.	Packaging	Bottle of beer
7.	Waste	Fruit and vegetables

A number of counter intuitive case studies are widely quoted, where products transported further – even by air – can be less carbon intense than their 'local' counterparts. Some of the best known include:

- Tomatoes trucked to the UK from Spain in the winter are less carbon-intensive than ones grown in heated British greenhouses.[66]

- Lamb shipped from New Zealand may be lower in carbon than that produced in the UK, although questions have been raised about the data suggesting that the gap may be less significant than the original paper suggested.[67]

- Kenyan roses air-freighted to the UK are considerably less carbon-intensive than those raised in hothouses and then trucked from the Netherlands.[68]

GHG emissions from food transport are important in absolute terms, but less so than other aspects of the food system. Food transport is responsible for 2.5-3.5% of UK GHG emissions, which is a slightly higher proportion than food manufacturing (2.2%) or food-related energy use in the home, such as cooking and chilling (2.1%), but less than, for example, total emissions associated with meat and dairy, responsible for around 8%.[69]

Even if our sole focus is carbon, these results merely tell us that we need to get the contribution transport makes to overall emissions in proportion compared with other emissions from within the food sector and beyond it. They don't mean that transport is irrelevant. This is particularly true if we consider not just what food travels and how, but also when – the issue of seasonality – and how it is produced. The 'New Zealand lamb' paper also considered apples, again finding those from the far side of the world to account for lower emissions than UK-grown fruit, but failing to take into account seasonal variation. A recent paper looked again at this comparison, but considered time as well as distance. It found that UK apples are likely to be lower carbon in autumn and winter, with New Zealand apples only showing a clear advantage in summer, when UK apples will have been in refrigerated storage for some time.[70]

This raises questions about how we consume – questions that are rarely addressed by industry and government initiatives on food distribution. Spanish tomatoes may be less carbon-hungry than British ones in winter but does that mean that supermarkets should stock Spanish tomatoes in December, or that they shouldn't stock tomatoes at all?

Box 4: Food miles: more than distance, more than carbon

Self-styled mythbusters have routinely pointed out the lack of a clear correlation between the distance travelled by a food product and the carbon emissions of that product. Yet 'food miles' have always been about more than environmental impacts, as the following quotes illustrate:

"The term 'food miles' has quietly entered the food language. Two colleagues and I came up with it 14 years ago… We wanted people to think about where their food came from, to reinject a cultural dimension into arcane environmental debates about biodiversity in farms… The Defra food miles report was a big step forward, however. The government is realising that food isn't just about nutrition, or the environment, or questions of sustainable farming, or food industry practice, or ethics, or trade justice, or affordability. It is all these things."[71]

Professor Tim Lang, City University, who coined the term 'food miles':

"'Food miles' has been used to compare and contrast the distance that food travels to reach the supermarket shelf and in alternative, more localised systems such as farmers' markets. However, food miles is, and always has been, about more than distance. As a concept, it is intended to raise awareness of the changes taking place in the food system and highlight the consequences, which the consumer and policy-maker may not be aware of due to the lack of information. The aim has also been to highlight the fact that a truly sustainable food product is one in which the total environmental impact across the whole supply chain is minimised."[72]

Andy Jones, a leading researcher in the 'food miles' debate

"Excess food miles are a big, big problem. Research by groups such as Friends of the Earth identifies them as one of the most serious issues relating to the way food is sold today. High food mileage is one more miserable manifestation of the dumbing down of our food culture … The routine over-transportation of food is not just an environmental issue. Aside from being a senseless waste of energy, it's a symptom of the nefarious belief that we should all be able to eat whatever we want, whenever we want, and to hell with seasonality and regionality. It implies a complete lack of respect for food and means consumers get less choice and poorer quality: Produce that has to go on long journeys needs to be harvested before it's ripe, then overchilled and overpackaged."[73]

Hugh Fearnley-Whittingstall, Chef and food writer

Instead of engaging with the critiques of consumption and industrialisation that are central to the 'food miles' debate, policy and business initiatives on sustainable food distribution – notably the Defra / industry FISS Transport Champions' Group programme – focus on reducing carbon and congestion costs. They sidestep the opportunity to question the food sector's current working assumptions, for example that consistency is more important than distinctiveness and that consumers won't stop wanting tomatoes in winter.

This blindness to social and cultural issues has a similar effect when it comes to human wellbeing. The same initiatives that reduce the environment to carbon treat economic growth as a proxy for welfare. Indeed, growth trumps carbon-cutting in the business and government policies which shape food distribution.

The way government approaches congestion in transport policy is a case in point. From the point of view of sustainable food systems, congestion is important. For example, tackling congestion should help to:

- Ensure that fresh, desirable and potentially healthier produce gets to the point of sale quickly.

- Provide access to food at affordable prices, insofar as congestion adds to retail prices.

- Reduce air and noise pollution from food transport, which relates to slow-moving or stationary traffic.

Yet the government's chief concern with congestion appears to be its effect on the country's economic growth and competitiveness. This is exemplified by the remit of the Eddington Transport Study, which sought to "examine the long-term links between transport and the UK's economic productivity, growth and stability, within the context of the Government's broader commitment to sustainable development".[74]

Government's method for modelling the costs of congestion is heavily focused on 'productivity'. One government study estimated the cost of food transport-related congestion to be £5 billion, compared with around the third of a billion pound cost of carbon emissions.[75] At the core of this congestion figure is a sum of the minutes and seconds lost by people

sitting in queues, multiplied by cash figures for the value of their time. While this might make sense if our concern is 'lost' GDP growth, it does not necessarily reflect people's real concerns with transport or with food. The reliability of journeys is more important to more people than a couple of minutes saved on a trip.[76]

In stark contrast to these tightly constrained views of what matters to wellbeing, on aspects of food other than its transportation, business and government take a much broader view of what this principle means both for people and for the planet:

- The overarching UK framework for sustainable development, Securing the Future, talks of "Ensuring a strong, healthy and just society. Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all."[77] In contrast to its predecessor, the Strategy does not claim that the "maintenance of high and stable levels of economic growth"[78] is a prerequisite of sustainability. The government has recently developed a series of 'wellbeing indicators' as part of the sustainable development framework,[79] while the Welsh Assembly Government has considered using the Index of Sustainable Economic Welfare (ISEW) as an indicator of "genuine economic progress, taking account of environmental factors, resources and wellbeing", to complement Gross Value Added (GVA), a headline indicator of the "level of economic activity".[80]

- Defra's Sustainable Consumption and Production programme quietly questions consumption patterns through its research into 'headline behaviours' such as 'adopting a lower impact diet'.[81]

- The difference that HGVs and car travel to shops makes to people's quality of life is prominent in a largely separate debate on the vitality of towns and cities. Civil society campaigns against the domination of cities by car travel and the role of 'out-of-town' supermarkets in the decline of independent high-street trading, have promoted some limited changes to the UK's land use planning system.[82]

- Finally, outside of the policy arena, 'wellness' and provenance are important mainstream food sector trends. The industry has shown

an acute recognition of the cultural and psychological dimensions of eating, by selling food with added value attributes on those counts.[83]

Businesses have a limited capacity to act on people's aspirations for provenance and wellness except as demands in the marketplace. The ethical imperative they face is to be honest and consistent in the claims they make on both these counts and on environmental impacts, and to support regulation that helps align business and public interests. In so doing, it may well prove that some of today's business models are less than robust, and new models will emerge.

Government faces a tougher challenge. It needs to make sure that policies affecting food distribution are equipped to support the full range of public and environmental benefits to which it says it is committed. The point is not that we don't need to reduce carbon emissions. Rather, if we also need to improve people's quality of life in other ways, then we may need to go about cutting carbon differently.

3.1.2 Autonomy

Efforts to support more sustainable food distribution also fall short against the principle of 'autonomy' – the idea that we should support the freedom of action and identity of others. Again, government and industry shows a rich and sophisticated grasp of what this principle means in some areas of policy and business, yet have not brought this to bear on their work to promote sustainable food distribution. They all too readily equate freedom with choice and, in so doing, offload responsibility onto individuals and downplay the fact that having to make choices can often be a bind.25

At the heart of many government and business approaches to tackling food transport problems are the presumptions that more choice is good, that an ever-expanding range of choices is simply a product of responding to aggregate human demands, and that the responsibility for making the 'right' choices lies with individuals, primarily in their role as consumers. As we discussed in Section 3.1.1, above, challenging the paradigm of 'all foods, all year round' is dismissed as unrealistic and undesirable in the face of consumer demand and the risk of a political backlash. This approach simultaneously serves the interests of a retail model built around

constant availability and offloads the responsibility for choosing 'ethical' products onto shoppers. Experiments with carbon-labelling26 and air freight stickers27 similarly rely on the notion of leaving consumers to make 'an informed choice'.

Although there are signs of change, this situation has been echoed in transport policy beyond the food sector, with more travel options – and more travel in total – seen as both inevitable and desirable.28 While there has been talk of 'managing demand' (Box 5), there has been little open discussion about prioritising different types of journey in the face of limited capacity on our networks. Terms such as 'discretionary travel' are sometimes used in transport policy to indicate that some journeys may be more essential than others – that some travellers have discretion over whether to make a trip or not. Indeed the haulage industry use this term to suggest that many personal journeys are optional, while most freight journeys are essential. Yet policy makers seem reluctant to acknowledge that there may be a role for intervening pro-actively to favour certain types of journey, or to lead a public debate on whether we would rather use limited road and rail capacity for transporting people or freight (and, if freight, whether certain types of goods should be privileged). It is left to the market alone to determine who or what travels.

Box 5: Demand management

In recent transport strategies the UK government has consistently stated that "we cannot simply 'build our way out' of congestion" acknowledging that if you create more roads they tend to fill up with more traffic while adding to social and environmental burdens.[88] In order to cut congestion, which has tended to be a greater concern than carbon, the government has talked of the need for 'demand management', a euphemism for limiting the number of vehicles on the road, primarily through price, although other options such as high-occupancy lanes also fall under this heading.

While the price of fuel – and taxes including fuel duty and vehicle excise duty (road tax) – play a limiting role, the term 'demand management' has tended to cover additional fiscal policies, such as the imposition of road tolls or workplace or supermarket parking levies.

The government's most ambitious demand management scheme was to be a national road pricing policy. At its most sophisticated, this would have billed every vehicle on the road with charges based not only on the distance travelled, but also on the time and place of travel. More congested locations would attract higher fees. The aim was to incorporate the marginal social and environmental costs of motoring into the taxes paid. Between 2004 and early 2008 this formed a central plank of UK transport policy, after which it has dropped from view in the face of massive public opposition, crystallised in a petition against the idea which attracted 1.8 million signatures.[89]

Plans for a national road pricing scheme incorporated earlier proposals for a Lorry Road User Charging (LRUC) scheme.[90] This was designed not to cut congestion, but to level the playing field for UK hauliers competing with continental firms operating in the UK, who add to the costs of the road network while paying little towards it, and who benefit from cheaper fuel duty rates across the Channel.

The national scheme has been largely kicked into touch; all that remains of the plans are a series of technology trials and a handful of local 'pilot' congestion charging regimes, in addition to the existing London and Durham schemes. The LRUC proposals currently show no sign of being revived.

While the national scheme was a live possibility, we considered how road pricing might affect sustainable food distribution. Among our findings were:

- The policy represented a politically brave attempt to move transport away from a 'predict-and provide' obsession with road building. Evidence from other congestion

charging schemes – albeit on a much smaller scale – suggests that opposition to the scheme may have dropped once it was introduced and people could see the benefits.[91] Too little thought was given to communicating the benefits or to introductory incentive schemes.[92]

- The effects on the food system – and on other essential aspects of 'everyday life' – were little considered by government; it was effectively treated as a policy problem and solution entirely internal to transport, which appeared to be treated as an end in itself. In particular, the social and cultural effects were ignored, in a process dominated by statistical modelling.

- The costs and benefits for sustainable food of such a scheme would have depended heavily on the details. The extent to which cutting carbon was considered as a primary aim, alongside tackling congestion, would be significant, as would the use of the revenues generated. Would they be 'recycled' to road users through cuts in other taxes and duties or invested in public transport or infrastructure to reduce the need for travel which could include local abattoirs or food hubs?[94]

- The importance of carbon has been understated in transport cost-benefit calculations, even after the publication of the Stern Review's social cost estimates.35

- Although charging levels had not been set, based on the available evidence, the effects of charging may have had the greatest effect in the food sector on individuals' methods of shopping, rather than on industry logistics.

- The most significant effects would take place over longer periods of time, as individuals or businesses relocated to take advantage of lower charges, since transport demand is fairly price inelastic. That notwithstanding, there have been observable changes in motoring behaviour over the past year, during which time the average driver has been paying £385 more in fuel costs compared with 2007.[95]

- Major food businesses were resistant to the idea that additional costs would provide greater incentives for efficiency gains within logistics than already existed. Few entertained the possibility that cost pressures might tip the balance into a radical restructuring of food distribution.

Placing all decisions upon the shoulders of consumers in the marketplace may not be effective in achieving collective goals (such as cutting carbon emissions) or fair (given the asymmetries of power and knowledge between consumers, industry and government). It is not clear that this is the best way to serve autonomy either; seemingly endless choice can be a burden as well as a blessing, and well-considered policies that restrict our choices can enhance our autonomy in other ways. This is well illustrated in a number of contexts relevant to food distribution:

- Planning. Current patterns of car use – such as the weekly out of town supermarket shop – partly reflect urban environments which 'lock us in' to car dependence. Where town centre high streets have declined it is difficult for individuals to do anything other than continue driving to the shops. Our planning system represents a clear acknowledgement that the agency and identity of individuals and communities is not always well-served by a laissez-faire approach, and the built environment demonstrates how decisions made now can create dependencies that last for decades. The turn away from the out of town superstore, and the increasing focus within planning policy on protecting high streets and encouraging modes of transport other than the car, illustrate changing attitudes. Yet the planning system still lacks a clear overall vision on food production or on distribution infrastructure, such as local food hubs.[96]

- Obesity policy. With the evidence on obesity levels growing ever more damning, the need for intervention is increasingly stark.[97] The Government's willingness to intervene is apparently limited in a number of areas, such as the advertising of high-calorie products to children, fearful of accusations that the UK is a 'nanny state'. However, the notion of 'obesogenic environments' (built environments which discourage everyday physical activity, such as walking and cycling to the shops), which has emerged from the health debate, again illustrates how interventions may be required to challenge lock-in and to give people the preconditions for an active, healthy lifestyle.

- Food access. In 2000, the Joseph Rowntree Foundation suggested that four million people in the UK were struggling to access an adequate, healthy diet.[98] This lack of capacity, flying in the face of the right to food, has prompted concern over 'food deserts', socially deprived

neighbourhoods with low average home incomes and poor access to healthy food.[99] The importance of food deserts has been called into question, not least since the problem of access is significantly a problem of limited income, not simply the absence of shops or limited mobility.[100] Solving this problem of distributional justice, will require more than a greater choice of shops or transport.

- Reconnection. 'Reconnection', a theme central to the Government's Strategy for Sustainable Farming and Food, is also fundamentally about building autonomy, both for producers and consumers.[101] The Strategy advocates restoring 'broken connections' between farmers and their markets and between consumers and the origins of their food. For producers, the aim is to ensure profitability (in an age of waning subsidies); for consumers, the task is to restore trust lost through food scares, by traceability and an interest in provenance.

- Sustainable consumption and production. The concept of choice editing – the idea that policymakers and businesses, especially retailers, can 'edit out' the least sustainable products from appearing on shelves – is now well embedded in the debate around sustainable consumption and production.[102] This recognises the fact that, for example, retailers already make decisions about what to stock, and what not to; the question is simply one of ensuring that sustainability is one of the criteria for making that selection. In relieving individuals of the burden of choosing our way to sustainability, retailers and policymakers can free people to act like consumers in the marketplace, focusing on quality, convenience and price, rather than having to haul their concerns as citizens round the supermarket aisles.

The government – and the public - are right to be concerned about the effects that heavy-handed regulations or fiscal regimes can have on individual freedoms. That is not the same, however, as assuming that less intervention equals more choice, and that more choice brings more freedom. How our food travels and where it comes from is already tightly circumscribed, especially for people living on low incomes – but it may be more empowering to limit our choices in other ways than to pretend we face no limits at all. Government already directs infrastructure development and 'sets the rules of engagement' for the marketplace; the question is whether they should intervene differently, not whether they should do so at all.

3.1.3 Justice

When it comes to justice, local food initiatives, often with their roots in civil society, have found themselves in the firing line. Champions of 'fair miles' have argued that the localism associated with cutting food miles can be parochial – promoting global injustice.103 The 'fair miles' debate counterposes the mixed environmental benefits of local sourcing with the gains for developing country producers from access to markets in the global North.

The local food movement – and indeed government's Public Sector Food Procurement Initiative, which aims to "increase tenders from small and local producers" – have done much to promote the idea that consumers should support local businesses. Perhaps because of the practicalities of how local food organisations develop markets, much is made of the economic benefits of local purchasing. We are told, for example, that:

"£10 spent on a local organic box scheme in Cornwall generates £25 for the local economy (a radius of 24 km from the farm), compared with £14 if spent in a supermarket".[104]

While this may well be true, it does not explain why 'the local economy' should be prioritised ahead of the economy elsewhere.[105] Why should solidarity with or care for others stop 'locally'? Is it not manifestly unfair if it does so, especially if those others elsewhere in the world are in significantly greater poverty than those closer to home?

The food miles vs fair miles debate has become particularly heated over air freighted produce[106]. Aviation is the most GHG-intensive form of transport – it tends to dominate all other life cycle impacts for air freighted food. Current figures suggest that less than 1% of all food is imported by air but it is responsible for 11% of total food transport CO_2 (including car trips) and there are indications that the true level of air freighted goods reaching the UK is under-reported. For critics of air freight, the sector's growth trends in emissions and energy use cause greatest concern. Air freighted food is growing rapidly: according to Defra's revised statistics, food air miles rose 11% in 2005-6. Industry projections predict freight traffic will increase by 6.1% per year over the next 20 years. This seems to go against the grain of current scientific advice on the emission levels required to limit global average temperature change to less than 2°C.

Yet, while being GHG- and energy-intensive, air freight has opened up opportunities to access lucrative export markets for some producers in developing countries, especially in Sub-Saharan Africa. Over 100,000 rural Africans are employed in the FFV export sector in Sub-Saharan Africa, roughly split 50/50 between small-scale farmers and employees on larger farms. It is estimated that a further 100,000-120,000 people are employed in support services for these producers and employees. And, arguably, there are further 'spillover' benefits, in terms of technology, food safety, improved access to inputs, credit and extension services, though the extent of these is contested.

The UK Government's position sits at the 'strongest' end of the 'fair miles' approach. DfID has strongly backed the horticultural export trade as a development tool, and this sits in the context of the UK's wider trade policy which supports the creation of a 'level playing field' through global trade liberalisation.[107]

In appraising this stance, it is worth considering the origins of the UK's relations (of trade and of care) with developing countries, for the basis of solidarity is in part historical. Our present global food production and distribution system is in no small part the product of European empires, and is fraught with unjust power dynamics. This colonial, extractive heritage, combined with the demands of international and intergenerational justice, suggests not simply that 'our' food system is unfairly taking up a disproportionate amount of 'ecological space'[108] today, but that we owe an historical ecological debt to others in developing countries.

Even if we put global issues to one side, the principle of justice can raise some awkward questions for 'localism'. In multicultural, multi-ethnic societies, an insistence on 'local food' can imply a resistance to the foods of local communities with cultural roots from elsewhere in the world. A resistance to 'foreign' imports can, far from preserving community, in fact be alienating and discriminatory.

An ethic of justice demands that we extend care and solidarity beyond the local; buying local food from local shops alone does not make good on our obligations of care. Indeed, justice would seem to require that some foods are not local. Yet we should not jettison the importance of the local either: food produced in a low-impact manner, locally to where it is consumed, can be environmentally benign and vibrant local high streets can contribute to

wellbeing through the provision of goods and services, the creation of a sense of identity and as a place for social interaction. The need for policies and markets which support vibrant communities is equally true in other countries too.

Equally, industry appeals to justice in the fair miles debate should not be opportunistic and should be even-handed. It is insufficient to argue vociferously for air-freighted fruit on the grounds that it is Fairtrade, if one does not also seek to extend fair terms of trade to other products or to UK producers.

Our responsibilities to those in developing countries extend beyond creating a 'level playing field'. Reforming trade rules is clearly part of the picture, to end practices such as the subsidised 'dumping' of excess Northern production on global markets. But with a large ecological debt to repay, the UK must both cut its ecological footprint and assist poorer countries to develop, not simply to trade, through an attention to distributional justice, skills and knowledge transfer, and the viability of local markets. This is a key message from the recent International Assessment of Agricultural Knowledge, Science and Technology for Development, to which the UK is a signatory.[109] As Kevin Morgan puts it, such goals are best served by policies "in which localization is championed at home and abroad – that is to say globally local not parochially local". [110]

3.2 Logic

The second set of problems is about slips in logic. Even on their own terms, initiatives to promote sustainable food distribution fall short or fail to address contradictions within the strategies that they adopt. The scope of some of the most influential initiatives is limited in such a way that emissions are displaced to other countries, to consumers or to expanding areas of business.

3.2.1 Off-shoring

The Defra / industry FISS Transport Champions' Group programme,

which is supposed to be cutting the social and environmental costs of food transport, focuses only on transport within the UK.[111] Yet, when it comes to carbon emissions – a significant part of our food's environmental impact – the distance our food travels before it reaches the UK is crucial.

Defra's landmark report on The Validity of Food Miles as an Indicator of Sustainable Development estimated overseas transport and transport to the UK to be responsible for 36% of total food transport CO_2 in 2002. [113] Updated figures now put it at 47%.[112] This 'off-shoring' conceals an overall growth in emissions: carbon dioxide emissions from food transport as a whole rose by 3% in the year 2005-06, continuing a trend which has seen a 23% rise in the period 1992-2006.[114] We are not cutting our carbon footprint, just treading elsewhere.

One rationale for leaving overseas emissions from food transport out of the picture is that, under the international Kyoto framework, government reports on greenhouse gas emissions from production alone. Yet the UK's sustainable development strategy, Securing the Future, embraces the concept of 'One Planet Living', which rejects off-shoring environmental impacts and implies consumption-based accounting for emissions. [115] The UK's production-based accounting allows it to claim very modest cuts in greenhouse gas emissions.[116] A number of recent studies have shown that on a consumption basis, total UK emissions have in fact been rising – offshore.[117]

3.2.2 Downstream displacement

The Defra / industry FISS Transport Champions' Group programme also ignores the journeys made by shoppers and the transport of waste from the food chain. The Validity of Food Miles as an Indicator of Sustainable Development estimated car transport from the store to home as responsible for 13% of total food transport CO2 and, alongside other forms of road transport, showed it to contribute to a range of other social problems including congestion, air and noise pollution, and accidents.[118] The trend is upwards; the most recent figures show that car 'food miles' have risen by 9% year on year.[119] The supply chain is displacing emissions off its balance sheet onto shoppers.

'Shopping miles' amount to an important blindspot for efforts to promote

more sustainable food distribution. Government has been quiet on car travel to superstores, ducking, for example, the opportunity to force retailers to charge for parking. Civil society groups seem reluctant to emphasise in their campaigns that it may make more difference to the environment whether one drives to the farmers' market, than whether one buys from there or from the supermarket. With only a rare acknowledgement that 'shopping miles' exist,[120] the retailers themselves have kept quiet about any responsibility they may have for their customers' journeys.

3.2.3 Efficiency

The focus of government and industry efforts to make food distribution more sustainable is 'eco-efficiency'. Getting more from less is an appealing way to 'save the planet', dovetailing with the narratives of profitability, leanness and global competitiveness. So the drive is to cut emissions per tonne-kilometre and fuel use per passenger mile, with less focus on overall consumption.

The UK government's sustainable development strategy makes clear that sustainability means "living within environmental limits".[121] In this context it is the absolute environmental impact that matters. Greater efficiency may yield absolute improvements, and would do if we continued to consume the same amount of the same types of food, produced, processed, packaged, transported, cooked and disposed of in the same way.

However, efficiency gains do not necessarily lead to absolute improvements in environmental impact. In practice, growth in the UK's population, disposable income and per capita consumption mean that efficiency gains are consistently trumped by a rise in throughput. Areas where efficiency gains are outstripping total growth are exceptionally rare. As Defra explains:

"Trends in energy use for transport have been flat in the UK (as improvements in efficiency of vehicles have been offset by increases in volume of food transported)."[122]

Yet economic growth is central to current ways of thinking about the economy and to the political offer of all three of the main UK parties. It is presented as inherently desirable and/or inevitable. However, it poses a

direct, practical challenge to ecological sustainability and, since a country's turnover is not a good proxy for the health or reported wellbeing of its people, the public interest in pursuing economic growth as such is unclear (Section 3.1.1).[123]

A major challenge for policymakers – and for individual businesses – is to explain how they square this circle. As Jonathon Porritt has recently written:

"These naked emperors would still have us believe that we can 'decouple' the worst effects of permanently rising per capita income from the kind of environmental damage that it is causing. A mix of smart technology, resource efficiency and 'responsible/ethical consumption' will somehow reduce emissions of CO_2 by 80% by 2050, overcome resource shortages, prevent further damage to biodiversity, eliminate the build-up of toxic chemicals, and deliver all nine billion of us (by 2050) into a global green nirvana where we can all go on getting richer even as the environment gets greener...

"An even half-way honest analysis of current economic and environmental trends would demonstrate incontrovertibly that such an economy is not compatible with sustainability. With tens of billions of dollars spent every year exhorting people to consume more, no amount of decoupling can decarbonise the global economy fast enough."[124]

Over and above being an insufficient response to the challenge of sustainable development, increasing efficiency with one hand can take a hidden toll with the other by squeezing margins and stretching working hours.[125] The UK's lean, low-stock, Just-In-Time model has cut costs associated with warehousing excess stock, yet has also put more trucks on the road than are necessary to ensure products are in store when they are needed and has eroded the supply-chain's resilience to shocks. Despite assurances from the industry, memories of the fuel protests six years ago still cause concern. The House of Lords Science and Technology Committee reported evidence given to them by the British Retail Consortium's Kevin Hawkins, stating: "vulnerability affects the food distribution and retail sector. Mr Hawkins noted that "the level of stock ... generally is much lower than it used to be." As a result, during the fuel protests of 2002 "the food supply chain came within a few days of collapse".[126]

3.3 Process

Thinking logically from first principles can help clarify decisions but rarely determines what we should do. Since deciding what is right depends in part on second guessing the outcomes of our decisions – who will win and lose – decision-making needs to be alert to unintended consequences and resilient to change. Then there is the question of how different objectives are weighed up – how do you make trade-offs and who is involved – so the openness of decision-making to deliberating fairly over values is crucial. Furthermore, it is a matter of debate who should make decisions on behalf of others, and their licence to operate depends on how well they can be held to account. In short, making ethical decisions isn't just about what factors you consider, but also how you go about it.

3.3.1 Uncertainty

The UK government's commitment to 'evidence based policy' is sometimes mistaken for meaning that decisions must be deferred until the truth is out. The trouble is that evidence is about the past while uncertainty is about the future so, like the rest of us, policy makers in practice need to decide in spite of uncertainty all the time.[127]

The precautionary principle and the notion that people are innocent until proven guilty are both rules for how to handle serious uncertainty in particular circumstances. Deliberative 'futures' processes, such as scenario workshops, can help decision-makers break out of assumptions about the context and consequences of their actions by pooling diverse, challenging views of what could happen and thinking through the implications.

The Food Ethics Council's own scenario process, held in 2007, highlighted possible future trends that have received relatively limited attention in policy and business initiatives on food distribution, despite their potentially significant implications. These possibilities include:

- The prospect that scarcity of natural resources will become an overriding driver of change in the food sector. Steep rises in energy and food prices over the past year have built awareness of resource scarcity, but the possibility that very tight constraints on fuel, water and other factors of production could force a radical reconfiguration

of the food system is rarely considered. Similarly, the challenge posed by resource scarcity to the presumption of continual economic growth (Section 3.2.3) is regularly ignored.

- People in the UK valuing the cultural and social dimensions of food much more strongly – a society where most people are 'foodies', and 'fuellies' (who see eating as a necessary hassle) are few and far between.[1248] Foodie citizens may be more alert to the climate change, animal welfare, health and labour rights implications of what they eat, and more willing to pay for them, making it easier to meet a host of government objectives. Attitudes towards food and the opportunities to act on them are not innate personal characteristics – government, businesses and civil society can all influence whether the UK becomes a 'foodie nation'.

- The hugely significant changes in global trade and geopolitics that could arise as China, India and other fast-growing economies become increasingly influential in the international arena. The part this has played in recent food price rises is often overstated,[129] but how profoundly it could alter Europe's future place in the world and our influence (good and bad) on domestic and international food security, is scarcely considered. The rapid pace at which ways of shopping change and the need for planning policy to think ahead about such changes in order to ensure they support sustainable development. Trends include online buying, direct delivery and less driving.

- Technologies that could overturn assumptions about what is and is not sustainable. An example might be in vitro 'meat', already being cultured experimentally in laboratories. The ethical implications of this technology are yet to be explored in depth, but it would be relevant to consider how far in vitro meat production could challenge assumptions about inefficiency of converting plants into animal protein.

Through the Foresight programme, government is expanding the space for thinking more radically about the future in key policy areas. Recent work has included developing a provocative set of future transport scenarios and challenging the part played by 'obesogenic' environments in public ill-health. New projects are getting underway on land use, food and farming, and climate change.

3.3.2 Openness

An openness to diverse input and scrutiny is crucial to making decisions that are well-supported by stakeholders, well-informed and fair. The more open decision-making is to marginal groups representing disadvantaged communities or those, such as animals and the biosphere, with no voice at all, the better it can do on each of these counts.

Within Defra, the FISS transport champions' group was dominated by industry and had no NGO involvement.[130] This limited internal challenge allowed it to operate with narrow and questionable assumptions:

- It focused on UK transport only, which is at odds with its interest in climate change.
- It made no comment on the challenge growth poses to reducing the sector's overall environmental footprint, focusing merely on efficiency gains.
- It did not consider the implications of steep fuel price rises, which have long been debated by NGOs concerned about 'peak oil'.
- It made little comment on the wider 'food miles' or 'fair miles' debates.

Its evidence base came largely from modelling the cost-effectiveness of a range of technological interventions, assuming a relatively low carbon price. As such, it missed social and cultural dimensions of food distribution and ignored the possibility of major structural changes.

Government's position in the debate over 'fair miles' has been decided in the Department for International Development (DFID). While its position that any trade with developing countries is good for development has support from some within the international development community, it is starkly at odds with others. It runs counter to the advice of the United Nations Conference on Trade and Development that, to reduce poverty, policies "must be rooted in a development-driven approach to trade rather than a trade-driven approach to development".[131] While DFID has explored these tensions in meetings with stakeholders, it has not resolved them.

For all these difficulties, there are signs of progress, however:

- Deliberation and wider stakeholder engagement are increasingly used to improve decision-making at Defra.[132]

- The social sciences, including qualitative evidence, are gaining currency in decision-making about food, for example in Defra's Sustainable Consumption and Production programme and at the Food Standards Agency, which has recently established a new social science committee.[133]

- Behavioural economics is increasingly popular politically, challenging previous working assumptions that people were only out to maximise utility, though still implying a highly instrumental relationship between government and the people it is meant to represent.[134]

- The DfT has recently issued an update on its progress "Towards a Sustainable Transport System",[135] which suggests a change in its thinking on many of these issues at the strategic level. The Campaign for Better Transport notes that the department is:

    - Looking at non-transport solutions (such as land use planning) to transport problems.

    - Emphasising the importance of reducing the need for transport and on tackling public health.

    - Introducing changes to the way it appraises transport schemes, including "including guidance on the health benefits of cycling and walking schemes, guidance on reliability and also new long term forecasting on future oil prices".

    - Undertaking social science research with a citizens' panel, as well as wider stakeholder engagement.[136]

    - Despite these welcome moves, and frequent stakeholder engagement exercises, government is a long way from opening up decision-making to more systematic input and challenge, especially from disadvantaged communities.

3.3.3 Accountability

Opening decision-making to wider participation doesn't mean diluting it. Openness demands that accountability is strengthened, clarifying government's responsibilities for changing the rules of the game at home and internationally, and giving expression to what society expects of citizens and businesses. While businesses are often seen as the intended beneficiaries of deregulation, the food sector has voiced strong demands for government intervention, so long as that brings clearer and more stable expectations on issues such as sustainable development and public health.[137]

The accountability of policies affecting food distribution is undermined by confusion over which departments are responsible for which targets, by discrepancies between the target holders and those with the means to meet them and by the weakness of whatever methods exist to resolve tensions between the objectives of different departments. The architecture of government needs to be made fit for its public interest purpose.

Both Defra and the DfT have important roles to play. The departments, alongside the Department for Business, Enterprise and Regulatory Reform (BERR), share responsibility for the Public Service Agreement on cutting greenhouse emissions. In the past this appears to have been viewed with greater urgency in Defra than the DfT, although the delivery mechanisms for transport policy lay in the hands of the latter. Neither Defra nor the DfT have any powers over fiscal policy, an essential part of the toolkit, and HM Treasury, which does, has proved reluctant to wield them.

Working together towards shared goals is only part of the challenge. Sometimes the stated aims of different departments are in direct conflict, with the tensions fudged. Government's commitments to increase aviation yet decrease emissions appear at odds with each other, however ingeniously ministers seek to explain their consonance.[138] An ethical approach does not necessarily eliminate such tensions but it does make them explicit and demands honesty about the political choices and trade-offs being made.

A further challenge is to ensure that the means for achieving public policy objectives do not get mistaken for goals in themselves. Mobility, 'free' trade,

efficiency and economic growth are frequently described by politicians and officials as if they were self-evident goods. This insulates the 'rules of the game' – such as the policies of international trade bodies – from challenge by treating them as if they were desirable ends in themselves.

A recent report by the UK Cabinet Office, called Food Matters, is one of the most ambitious efforts yet to promote a more joined-up approach to policies around food, including food distribution. It announced numerous initiatives to resolve conflicts between different departments and agencies, plus a new Food Strategy Task Force responsible for "overseeing delivery and working towards more 'joining up' of food policy across Government".[139] Yet even that report ducked some of the most challenging tensions, notably between the UK's commitments to sustainable development and its unnuanced support for trade liberalisation in the international arena.[140]

4. Vision

We have pointed out problems with food distribution and with current efforts to address them. We need to get our house in order to address the challenges we face, but that may not be sufficient. We also need a bigger vision of how all these diverse efforts to improve food distribution might hang together. What should a better food distribution system look like?

The food sector is not short of 'visions', intended to motivate and organise collective action. But many are either 'motherhood and apple pie' – simply projecting first principles into the future without addressing any tensions that might arise between them – or they are so committed to a particular idea, such as localism, that they seem to close off questions that should be a matter of choice.

We think a vision should be practical and it should challenge. It should paint a coherent and plausible picture of how to square the awkward circles that inevitably arise if you try to put a mix of principles into practice. The point is not to suggest there is only one way forward but to throw a spotlight on the ethical and political choices society and government face in reconciling competing aims.

In this section we offer a vision that addresses three of the key dilemmas that arise in food distribution, namely:

- What we eat: can the UK eat a healthy and sustainable diet?

- Where our food comes from: can we care for the people who produce our food nearby and far away?

- Where we live: can we feed cities sustainably?

Our vision is set in 2022: distant enough to allow decision-makers to think boldly, but soon enough to demand decisions now. It is informed by a series of workshops we held in 2007, involving people from many parts of the food sector, government and civil society, to explore different scenarios for the future of food distribution.[141]

4.1 What we eat

The same studies that show food miles are no simple proxy for GHG emissions suggest that eating local fruit and vegetables in season, produced with few external inputs, can markedly cut our carbon footprint. Yet, as enthusiasts for seasonal eating will be acutely aware, the UK faces a 'hungry gap' around April, fresh fruit is sparse for the colder months and winter vegetables have an image problem. Does eating a lower carbon diet mean falling short of 'five-a-day'? Can we eat sustainably and be healthy?

We see a future where in-season fruit and vegetables are a bigger feature of diets in the UK. Instead of seeing greater seasonality coming about as a carbon-driven agenda that poses challenges for health and nutrition, it happens as businesses look for ways to add value in a marketplace where health and wellbeing are a key concern, yet purse strings are tight and primary resources are constrained.

Since promoting seasonal consumption can sell anything from clothes to computer games – and fruit and vegetables have the additional bonus of production seasons, when they cost less – shops celebrate seasonal production and boost sales by passing on savings to consumers. Promoting distinctive varieties and new ways of preparing fresh food become a key focus for innovation. By celebrating the seasons, retailers can offer shoppers quality at a good price. This means people buy more fruit and vegetables, and actually eat them instead of just binning unwanted Buy-One-Get-One-Free purchases.

If seasonal sales are to cut carbon, producers must keep high-emitting inputs – from greenhouse heating to synthetic fertilizers – to a minimum. Supply chains need to be short and efficient, which requires different buying strategies and new shared infrastructure. Extending the current trend for more diverse supply chains, larger retailers take a lead from 'fast fashion' clothing companies, strengthening long-term relationships with a wide range of suppliers. 'Speed dating for trucks' (Section 2.3.1) gets increasingly intimate as suppliers and shops share vehicles and distribution hubs on a local scale.

The growth in efficient, high-quality local supply chains does not spell the end of long distance food transport, even for fruit and vegetables. Increasingly, though, it is products such as citrus and bananas, less reliant on a high-energy chill-chain, that stack up the food miles. High-value products are still imported, particularly from poorer countries, but the market shifts towards adding value through processing for storage at ambient temperature – sun-dried fruit, for example.

As well as eating more fruit and vegetables, we also eat much less meat and dairy. It is the rising cost of resource-intensive animal products, as well as health concerns, that drive this shift. With emissions from meat and dairy consumption currently at 8% of the UK total in 2008, compared with 3.5% from fruit and vegetables, this does more to cut greenhouse gas emissions than the shift towards greener greens.[142]

Because production is the emissions hotspot for most meat and dairy products, how far they travel is less of an issue on that count. However, production, processing and supply chains look radically different. Because demand has dropped dramatically, extensive producers, who face fewer competing land uses, in the main win out over intensive units facing spiralling feed costs. The main exception may be highly intensive urban production units that are integrated into systems for recycling food waste, under close scrutiny from the city folk who live alongside them.

Slaughter and meat processing happen on a smaller scale and close to places where animals live, cutting the need for live animal transport. The extensive farming methods and dispersed processing reintroduce a greater seasonality of supply and create a market that places a growing emphasis on regional distinctiveness. It is this and concerns with trust, quality assurance, regional

identity and animal welfare, rather than sheer carbon counting, that mean a growing share of meat and dairy products are eaten near the places that they come from.

The ratio of home-cooked to processed products that people eat may not change dramatically, but the growing concern for quality and interest in seasonality change people's relationships with both. Home cooking becomes popular for preserving the quality and distinctiveness of foods, keeping a cap on costs and enhancing individuals' sense of autonomy. Processed foods and eating out continue to be valued for their convenience or pleasure, but have been radically transformed by reformulation to ensure foods match people's expectations of their healthiness, by regional and local differentiation and by social innovation to find low-environmental-impact systems for sharing cooking within neighbourhoods.

4.2 Where our food comes from

Our vision is for a food system in which local distribution networks are more important than they are now. Aside from the win-wins this can offer for people's wellbeing and for the environment, it chimes with the ethic of community that is already so prominent in public debates about food miles and consumer trends towards local buying. Yet 'local' can easily be parochial and unfair: supporting local farmers but exploiting local migrant workers; discriminating against ethnic minorities; marginalising poorer consumers; and, of course, closing markets that offer a lifeline to marginal producers in developing countries. Can we be even-handedly caring to the others we are joined with through the food system, whoever and wherever they are?

The sharpest difference between where food comes from now and in our vision for the future is less to do with the sheer distance it travels than with how consumers relate to producers. Foods with 'provenance' – meaning that they carry with them stories about the places and communities where they were produced – become the norm in the UK. Consumers are increasingly akin to the 'co-producers' described by the Slow Food movement, playing a key role in shaping food products not simply through their purchasing decisions, but through their relationships with producers. [143]

The trend towards provenance could have gone wrong – putting spin before substance, prioritising elitist niceties over development needs, or simply being a throwback to outdated supply chains – but it hasn't. With provenance a basic expectation of the food we buy, not a premium-price extra, consumers find it easier to act on their feelings and duties of care to the land and the people who produce their food. After all, it was Adam Smith, the thinker who made a virtue of 'self-interest', who also said:

"How selfish soever man be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it."[144]

Instead of an information-overload, with our food covered in geography essays, consumers learn about where their food comes from and producers learn about their markets through social interaction that builds up trust-based trading relationships. This already happens on a small scale through direct sale at farmers' markets and via Alternative Trade Organisations (which offer fair trade by direct supply 'world shops' rather than by labelling products on sale in conventional retail outlets).[145]How it will happen in future is an open question, with the challenge of reshaping short and long supply chains to provide provenance acting as a major driver for innovation in food retail. One idea, being developed in the Netherlands, is to devise new retail chain formats co-owned and co-managed by producers.[146]

As the Curry Commission envisaged, 'reconnection' will drive innovation in the UK. For example, fruit and vegetable growers will develop low-input production not only for more diverse varieties of products they already grow, but also new crops to meet demand from local ethnic communities. This is already happening in 2008 but, by 2022, the diversity of crops and varieties being grown, and the diversity of people who are farmers, is unprecedented.

In places in other countries that export to the UK, the market's focus on provenance and fair returns drives producers to search for place-specific competitive advantage – adding value from their distinctive climates, soil conditions and production methods – rather than servicing the UK's disproportionate land grab for bulk commodity production. The volume of international trade in food is lower but its value may be higher, at least from developing countries. There is pressure on businesses that import to the UK to

explain how they make sure that trade is good for sustainable development.[147] As well as fair terms of trade and supporting community development, this may involve helping to develop thriving local food markets in producer communities.[148]

In Hungry City, Carolyn Steel borrows fellow architect Christopher Alexander's distinction between two kinds of system: 'trees' and 'lattices'.[149] In a tree, the connection between every spindly root and branch tip is channelled through a single trunk, whereas in a lattice they link through a complex network of interconnections. Most supply chains in 2008 are like trees. To become fair, they will need to become more like lattices.

4.3 Where we live

Cities depend on sucking in resources, food chief among them, from the countryside.[150] How exactly they do so – the supply chains, logistics and forms of retail and consumption that go with them – has a profound influence on the shape and size of the places we live. Our urban form is no more resilient than the distribution systems that feed it. For all the efficiency and sophistication of food supply chains in 2008, they are far from sustainable, so can cities as we know them survive?

In 2008, our cities drain food and other resources not only from their own hinterland, but from a land area many times the size of the UK spread across the globe. At the heart of the food distribution systems that support this are staggering economies of scale. Bulk buying and transport means centralised distribution systems can sometimes trump short supply chains on cost and energy use.

While it is the large scale of today's food supply chains that underpins their efficiency, that is also their Achilles heel. The UK cannot continue to consume global resources at the rate we do, in the food sector as in others, and our purchasing power will decline in any case compared with faster growing economies. The hard bargains bulk buyers can strike drive the unsustainable use of soil, water and other resources, and the exploitation of workers.[151] The transport efficiency gains from supermarket logistics are to some degree

undone by the energy-intensive car journeys consumers make to shop at them. And, even as centralised distribution systems support urban life they make cities less worth living in, homogenising high streets, eroding the identity and sense of community of different places and prompting concerns over 'clone towns'.[152]

In our vision for 2022, the size of cities in the UK may have remained similar, but the ways they look, feel and feed themselves are radically different. Behind the scenes, the biggest changes have been the rapid development of sophisticated shared infrastructure for distributing food and other goods efficiently through lattice-like supply chains, and a change in attitudes towards personal mobility: instead of seeing mobility as a public good in itself, planners have realised people want to live and work in ways that mean they don't need to travel as much.

One of the ways people notice this most is when they shop. The weekly supermarket car-trip is history. A wide range of produce can be bought from thriving neighbourhood convenience shops, with many people making smaller and more frequent purchases and cutting their use of refrigeration. Improved in-town logistics means small-scale retailers can offer affordable prices for good quality produce and, for many people, their corner shop is now literally on their street corner.[153]

The focus on provenance gives a boost to markets and to innovative forms of retail that bring consumers and producers together. These flourish at the heart of cities, towns and villages. Shopping for food is less solitary, more fun and a richer cultural experience. Agglomerations of retail outlets and restaurants offer shoppers convenience without sameness. Delivery schemes mean people can pool purchases from different shops to be dropped off at home later the same day.

Some shopping is always a drudge. Some of our food and more of our other groceries – the less perishable, less distinctive, bulkier and more industrially produced goods – reach us by other means, such as by direct delivery, with automatic computerised re-ordering a ready possibility. Here economies of scale in production and logistics deliver significant environmental and economic savings at little social cost. As overall consumption levels fall in response to resource scarcity, the volume of drudge shopping falls, but it remains a fact of life.

While some of the supermarkets, fast food chains and logistics companies of 2008 have failed, many have adapted. The most successful retailers have evolved their business models and ownership structures to give producers and consumers a greater stake in the outlets in their area. The most successful third party logistics businesses have developed transport hubs and short-distance delivery services that offer sustainable and efficient supply and waste handling for small operators.

Urban food production, especially fruit and vegetables, has become commonplace. Popular interest in provenance has boosted kitchen gardening on balconies, in backyards and on allotments. Yet a bigger boost has come from planners encouraging sustainable growing by community projects and businesses in public space, recognising that horticulture can offer a greater amenity value than ornamental gardens or concrete paving.[154]

Food production has also enjoyed a resurgence in peri-urban areas. Ready access to high-value markets and to valuable waste nutrients make these zones key areas of innovation, including in pork and poultry production and aquaculture. Small-scale processing, including milling and slaughter, increases in these areas.

The countryside benefits from such changes. The focus on provenance means food production is valued more highly and agricultural labour is better paid. Rural economies still depend on many other activities besides agriculture, but a boost for farming sees greater investment in rural services.

5. Conclusions and recommendations

Food distribution is of central importance if we want to achieve a more sustainable food system. The way our food gets around shapes almost every aspect of the way we live.

Yet we find that UK government and industry initiatives on sustainable food distribution have failed twice over. They have failed on their own top priority – cutting carbon emissions – by displacing responsibility onto other countries and onto consumers. And they have failed to recognise that public concern around food distribution is as much about diverse local high streets, production conditions, transparency and animal welfare as it is about climate change.

Our vision, set out in Section 4, shows that achieving a more rounded approach to sustainable food means tackling some thorny dilemmas and achieving radical changes in infrastructure, public policy and corporate and individual behaviour. In this section we set out the main challenges for government, business and civil society in driving these changes forward.

5.1 For UK government

Our ethical assessment identified some major challenges for government's approach to food distribution. In many cases they are linked to an managerialist approach to policy assessment, where hard numbers in a

cost-benefit analysis (based sometimes on questionable assumptions) carry the day. Less quantifiable factors, such as the distinctiveness of places, or the value of relationships between producers and consumers, lose out in such a depoliticised approach to decision-making. Redressing this balance will require government to continue to open up policy formation to wider audiences and to embrace qualitative social science methodologies as providing relevant evidence alongside natural science and statistical analysis. The tentative recognition in the recent Cabinet Office report that food is not, as Kevin Morgan puts it, "just another industry", is welcome.[155]

Ideological commitments to economic growth, trade and mobility as self-evident goods need a re-evaluation; under what conditions do they contribute to wellbeing, autonomy and justice? And how can they be genuinely reconciled with the ecological challenges of climate change, peak oil, and fair shares in 'ecological space'? On climate change in particular, the coherence of the government's approach needs a rethink: the UK should take responsibility for the embedded carbon in domestic consumption, even if it is emitted overseas, and should assess policy options using realistic carbon prices that will encourage behaviour change, even if that means putting carbon ahead of congestion.

Despite the political difficulties experienced over the national road pricing scheme plan, moves to tackle car-based shopping miles are necessary. In the short term, car parking charges may present a straightforward disincentive, although it will be important to take advantage of the evidence from local congestion charging schemes to understand the effects of more complex pricing policies on food and shopping.

Food alone should not determine the right approach to these areas of policy, but unless they succeed for food, they are failed policies.

5.1.1 Climate change

- The government should report GHGs annually on a consumption basis, including emissions 'embedded' in products, shipping and aviation. It should seek to make consumption-based accounting the basis for the post-Kyoto climate regime. In the interim, ministers should refrain from claiming that the UK is only responsible for 2% of global emissions.

- Government should use absolute, not relative, measures to report environmental issues such as climate change, and progress should be measured against the need to achieve 80% carbon cuts by 2050.

- Government should also seek to future-proof infrastructure investment. Government and international investment in trade-related infrastructure, including dedicated air freight facilities, should be tested for its resilience to high oil prices and stringent policies to reduce GHG emissions.

5.1.2 Transport policy

- The DfT should make reducing the need for travel and demand management the key pillars of its strategy, and eschew further expansion of airports or the road network, while exploring the need for further rail and port development to accommodate modal shift.

- Government should help to tackle shopping miles by levying car parking charges on supermarkets, and should monitor the effects of local congestion charging schemes on food buying patterns.

- The DfT should continue its welcome programmes of 'freight best practice', but should in particular seek to facilitate the spread of logistics technology and knowledge to small scale operators.

5.1.3 Planning policy

The Department of Communities and Local Government (DCLG) should seize the opportunity of the forthcoming Foresight work on land use to adapt national planning policy, building on Planning Policy Statement 1 (PPS1) which places sustainable development at the heart of planning, and the proposed revisions to PPS6 on out-of-town superstores to pay closer attention to food and its distribution. In particular:

- It should seek to preserve the highest quality agricultural land for food production.

- It should encourage urban food production.

- It should encourage the provision of food infrastructure including urban

and peri-urban abattoirs and food hubs that support more efficient short-distance supply chains.

- It should embed the avoidance of obesogenic environments as a core planning principle.
- It should ensure that infrastructure to support home delivery of drudge shopping (such as lockable 'cool boxes') is built into housing.
- It should strongly emphasise the value of diverse local shopping.

5.1.3 Economic and trade policy

- Government should either explain clearly how it expects economic growth to produce sustainable development – given that growth continually outstrips efficiency gains – or adopt a different macro-economic strategy.
- The UK should drop its trade-driven approach to international development in favour of a sustainable development-driven approach to trade.
- Government should build on the Public Sector Food Procurement Initiative, by using the public purse to transform markets for sustainable food and distribution.

5.2 For business

The food and logistics industries should broaden their understanding of 'sustainable distribution', to cover more than carbon. In particular, businesses should explain how their distribution models contribute to addressing the social and cultural concerns that are expressed through the notion of food miles, by supporting local distinctiveness and diversity. Larger businesses may do so by sharing servicing and overheads with small, local operators. Retailers and foodservice businesses should further explain how they are helping their customers to understand where their food comes from.

- The credibility of any action to reduce carbon emissions from food distribution depends on businesses having an overarching environmental strategy that puts distribution in perspective and takes responsibility for achieving scientifically-credible reductions along the full supply chain. Further recommendations for such environmental strategies are set out in Appendix 2.

- Food businesses can expect increasing pressure from across civil society to explain how, in their sourcing from developing countries, they are 'partners for development'. The considerations they should address are set out in Appendix 2. Businesses should be equally able to set out how their terms of trade with domestic suppliers are fair and supportive.

- Businesses should seek to innovate around locally and regionally distinctive foods and varieties, through retail formats which connect producers and consumers, and by becoming trusted choice editors.

- Food retailers should consider how to move away from assuming continuous product availability, which acts as a driver for out-of-season sourcing, 'top-up' air freight and twice daily deliveries in current, minimal stockholding supply chains.

- Businesses should continue to increase consumer knowledge of, and care for, the origins of their food, providing food with provenance. 'Storytelling' about producers through marketing and labelling is one route to doing this, though only if the stories and the messages customers take from them are true.

- Businesses should continue to explore the provision of public information about the carbon content of products, but this should not be seen primarily as about informing consumers, or act as a substitute for real choice editing.

5.3 For civil society

- Campaigning groups should not use the distance that food has travelled as a direct proxy for carbon emissions but should defend 'food miles' as an engaging concept which captures a wide range of concerns about the contemporary food system.

- The local food movement should embrace a broad understanding of community and solidarity by welcoming global sourcing where it is important to minority ethnic communities in this country or benefits producers in developing countries, and by supporting the development of resilient local markets all over the world, making local food global, rather than parochial.

Appendices

Appendix 1

Key objectives from UK government, business and civil society

Government

1. Strategy Unit (2008) Food matters: towards a strategy for the 21st century. Cabinet Office

Strategic policy objectives for food:

- fair prices, choice, access to food and food security through open and competitive markets
- continuous improvement in the safety of food
- the changes needed to deliver a further transition to healthier diets
- a more environmentally sustainable food chain

2. Department for Environment, Food and Rural Affairs (2002) The strategy for sustainable farming and food: facing the future. Defra

Key principles:

- Produce safe, healthy products in response to market demands, and ensure that all consumers have access to nutritious food, and to accurate information about food products.

- Support the viability and diversity of rural and urban economies and communities.
- Enable viable livelihoods to be made from sustainable land management, both through the market and through payments for public benefits.
- Respect and operate within the biological limits of natural resources (especially soil, water and biodiversity).
- Achieve consistently high standards of environmental performance by reducing energy consumption, by minimising resource inputs, and use renewable energy wherever possible.
- Ensure a safe and hygienic working environment and high social welfare and training for all employees involved in the food chain.
- Achieve consistently high standards of animal health and welfare.
- Sustain the resource available for growing food and supplying other public benefits over time, except where alternative land uses are essential to meet other needs of society.

3. Department for Environment, Food and Rural Affairs (2003) 'Public Sector Food Procurement Initiative', Defra website, http://www.defra.gov.uk/farm/policy/sustain/procurement/index.htm

... a world-class sustainable farming and food sector that contributes to a better environment and healthier and prosperous communities. The six priority objectives:

- promote food safety, including high standards of hygiene
- increase the consumption of healthy and nutritious food
- improve the sustainability and efficiency of production, processing and distribution
- increase tenders from small and local producers and their ability to do business
- increase cooperation among buyers, producers and along supply chains

- improve the sustainability and efficiency of public food procurement and catering services

Other important objectives cover consumer behaviour, organic food, animal welfare, fair treatment of suppliers, working conditions for catering staff and catering for ethnic minority, cultural and religious groups.

4. HMG (2005) Securing the future: delivering UK sustainable development strategy TSO

Goals:

Living Within Environmental Limits - Respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations.

Ensuring a Strong, Healthy and Just Society - Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all.

5. Welsh Assembly Government (2007) Quality of food strategy Welsh Assembly Government

This strategy is underpinned by three ethical principles:

1. Well Being

- Food should be safe and nutritious, contributing to public health and reducing the burden of diet-related ill-health;
- Food production and consumption should contribute to social and community cohesion and to the health and well being of the environment and farm animals.

2. Justice

- Food should be accessible and affordable to all;
- Food should be traded fairly, respecting the needs and rights of all

people involved in the process of getting food from farm to fork.

3. Accountability

- The whole food chain should be transparent to public scrutiny and answerable to all people who depend on it;
- Food should be accurately and honestly labelled, in line with national and international food safety regulations, enabling citizens to make choices.

6. Scottish Executive (2008) Choosing the right ingredients Scottish Executive

Our vision for food in Scotland is that it should make the nation healthier, wealthier and smarter with production making communities stronger and consumption respecting the local and global environment.

- A healthier Scotland will result from changing individual behaviour and attitudes about diet and food choices; from improving the nutritional quality, safety and freshness of food on offer in institutions and the catering sector; to supporting Scottish food manufacturers and retailers to take the initiative in driving forward consumer demand for more affordable, healthier food options.
- Communities across Scotland will enjoy better access to affordable, safe, healthy and fresh seasonal food.
- A wealthier and fairer Scotland will result from the sustainable economic growth of the food industry through greater co-operation and collaboration from primary production to final market, ensuring the long-term viability of primary producers, and increasing export markets for Scottish produce.
- A safer and stronger Scotland will result from a thriving food industry where local communities will flourish and become better places to live through improved access to amenities and services.
- A greener Scotland will result from reducing the environmental impact of food and drink production, processing, manufacturing

and consumption by encouraging responsible behaviour throughout the supply chain through reduced emissions, unnecessary use of raw materials, waste, packaging, energy and water use.

- A smarter Scotland will result from a highly-skilled and innovative food industry with consumers that are better informed about where their food comes from, how it was grown and the wider health, environmental, social and economic benefits of the choices they make.

Business

7. Food and Drink Federation (2007) 'Sustainability and Competitiveness' FDF website http://www.fdf.org.uk/priorities_sus_comp.aspx

Sustainability is about 'achieving a better quality of life for everyone, now and for future generations to come'. The environment is a central facet of this... Working collectively, our Five-fold Environmental Ambition (in summary) is to:

- Significantly reduce CO2 emissions.
- To seek to send zero food and packaging waste to landfill.
- Reduce the level of packaging reaching households.
- Achieve significant reductions in water use.
- Achieve fewer and friendlier food transport miles.

Civil society

8. Soil Association (2006) 'What is local food?' Soil Association website, http://www.soilassociation.org/web/sa/psweb.nsf/A4/what_is_local_food.html

It might be easier to think of a localised food system having the following characteristics:

- Proximity - food that comes from as close as possible and minimises energy use in its production. Fresh, seasonal food is rich in taste and nutritional value

- Provenance – the origin of the product or the ingredients are clearly and fully traceable
- Local control – ownership and control of all aspects of the system are retained by and benefit the people in the area. This means money re-circulates within the community, helping secure jobs and businesses
- Respect – food from a localised self-sustaining food and farming system respects people, animals and the environment. This means food that:
    - Is ethically or collaboratively traded between producers, processors, retailers, and consumers, strengthening the local economy
    - Does not exploit employees in the food sector in terms of pay and conditions
    - Is socially inclusive and accessible to all, both in terms of geographic access and affordability
    - Does not contain harmful biological or chemical contaminants that negatively affect soil, plant, animal or human health
    - Encourages learning about where food comes from, how it is produced and how to cook and enjoy it
    - Strengthens links between the people that produce food and the people who eat it. Mutually supportive connections help to create a vibrant community, with a strong sense of identity and culture
    - Has high animal welfare standards in production, transport and slaughter
    - Is environmentally beneficial – careful management of water, soil and biodiversity
    - Comes from low-input farming and growing systems, such as organic and biodynamic
    - Reduced packaging and shorter food miles, meaning less pollution and waste

Appendix 2

Environmental strategies

The credibility of any action to reduce carbon emissions from food distribution depends on businesses having an overarching environmental strategy that explicitly:

- Accounts for upstream and downstream emissions along their whole supply chains, including overseas emissions and customer shopping miles, as well as domestic factory (or port) to store GHGs.
- Explains how they will reduce total supply chain emissions proportionately in line with current scientific advice on the GHG cuts required to prevent dangerous climate change. How will they be good corporate citizens in a very low carbon economy, with emissions cut 80% by 2050?
- Focuses efforts to cut emissions on real GHG hotspots, which may or may not include transport and warehousing. Where further evidence is needed to support such action, how will they gather that evidence and by what deadlines?
- Avoids 'carbon hypocrisy', where high 'food miles' produce is replaced with more GHG-intensive substitutes.
- Recognises that public pressure on food transport will increasingly focus not merely on 'how far and how efficient', but on what is being carried (with meat and dairy coming in for particular scrutiny), when it is being carried (seasonality) and how it was produced (low-input agriculture).

Businesses should relieve their customers of 'choosing our way to sustainability' by taking steps to tackle the environmental and social costs associated not just with business operations, but also with the most GHG-intensive products they offer and promote. For retailers, food service businesses and manufacturers, this could mean actively seeking to reduce the proportion of meat and dairy in their range relative to other products.

Partnership for development

Food businesses can expect increasing pressure from across civil society to explain how, in their sourcing from developing countries, they are 'partners for development', with particular reference to:

- Measurable indicators of poverty reduction in communities that supply their products.
- Bearing the costs of external accreditation for high labour standards in their own and suppliers' operations.
- Ensuring that any other social, environmental or animal welfare standards also have clear mechanisms in place to prevent the audit burden becoming part of the cost-price squeeze on suppliers or a barrier to entry.
- Analysis of value chains to demonstrate what proportion of the consumer purchase price of major products is taken by producers, and how that value is apportioned between owners and workers.
- Building supportive, long-term relationships with suppliers, recognising that this also benefits the retailer by increasing the resilience of their supply chains to economic and environmental risks.
- Respecting the duties retailers acquire in long-term sourcing from vulnerable communities to ensure a 'soft landing' in the event the relationship ends.
- How the retailers actively seek to avoid suppliers becoming 'locked in' to unsustainable supply chains. For example, will transport – and especially air freight – be particularly exposed to high 'post peak' oil costs?
- How any aid that they provide complies with best practice and forms part of their broader corporate approach to being a partner for development.
- How their development commitments complement their environmental strategy, including their approach to GHG allocations and 'ecological debt'.

Notes

1. **IGD** (2006) 'Demand for local food on the up' *IGD website,* http://www.igd.com/CIR.asp?menuid=34&cirid=1901

2. **Turner, J**. (2006) 'Going local: 'Alternative' business plans still need to add up' *Bulletin of the Food Ethics Council*, Volume 1, Issue 4, Winter 2006

3. Quoted in **Mepham, B.** (2005) *Bioethics: an introduction for the biosciences* Oxford University Press

4. **Steel, C.** (2008) *Hungry City* Chatto & Windus

5. Based on **Department for Environment, Food and Rural Affairs (Defra)/Office of National Statistics (ONS)** (2007) *Food Transport Indicators to 2006 (revised): Experimental Statistics* Defra and **Defra/ONS** (2007) *Methodology underlying Food Transport Indicators* Defra

6. For example: **Garnett, T.** for the Transport 2000 Trust (2003) *Wise Moves* Transport 2000 (now the Campaign for Better Transport); **Armistead, E.** (2007) *Aviation and Climate Change* Greenpeace presentation to Soil Association meeting on air freight and the organic standard. See also **MacMillan, T., Alston, L., Segal, R. & Steedman, P.** (2008) *Flying food: responsible retail in the face of uncertainty* Food Ethics Council

7. **Sustain/Elm Farm Research Centre** (2001) *Eating Oil* Sustain

8. **Soil Association** (2007) *One Planet Agriculture: the case for action* Soil Association

9. **Royal Society for the Protection of Birds** (2008) *Act now to stop biofuel madness* RSPB website. Online at http://www.rspb.org.uk/news/details.asp?id=tcm:9-191597

10. **BBC News** (2007) 'Public 'unaware' of food origins' *BBC News website*, http://news.bbc.co.uk/1/hi/uk/6731659.stm

11. **Stevenson, P. with Formosinho, J.** (2008) *Long Distance Animal Transport in Europe: a cruel and unnecessary trade* CIWF

12. **Conisbee, M., Kjell, P., Oram, J., Bridges, J., Simms, A. & Taylor, J.** (2004) *Clone Town Britain: The loss of local identity on the nation's high streets* New Economics Foundation

13. **National Farmers' Retail and Markets Association (FARMA)** (date unknown) '21 Reasons to support local foods' *FARMA* website, http://www.farma.org.uk/21reasons.htm

14. See **Matthew Fort's** ongoing 'Around Britain with a fork' columns in the *Guardian Weekend* magazine

15. **Food Standards Agency** (2007) *Consumer Attitudes to Food Standards* FSA/COI

16. **IGD** (2006) 'Retail and Foodservice Opportunities for Local Food' *IGD website*, http://www.igd.com/CIR.asp?menuid=34&cirid=1901

17. **National Farmers' Retail and Markets Association (FARMA)** (2006) *Sector Briefing: Farmers' markets in the UK* FARMA

18. **Soil Association** (2008) *Organic Market Report 2007* Soil Association

19. **Pavord, A.** (2008) 'Gardens: Growth industry' *The Independent* 9 August 2008; **Peterkin, T.** (2008) 'Cost of food drives one in three to grow own fruit and veg' *Daily Telegraph* 23 June 2008

20. **Hawkes, S.** (2008) 'Tesco cashes in on taste for local food and drink' *The Times* 26 August 2008

21. **Kneafsey, M., Holloway, L., Dowler, E., Cox, R., Tuomainen, H., Ricketts-Hein, J. & Venn, L.** (2007) *Reconnecting Consumers, Food and Producers: exploring 'alternative' networks. Findings summary sheet* Cultures of Consumption programme, Economic and Social Research Council (ESRC)/Arts and Humanities Research Council (AHRC)

22. **Denney-Finch, J.** (2008) 'Is the Tide Turning on Ethical Shopping?' *IGD website*, http://www.igd.com/CIR.asp?menuid=34&cirid=2796

23. AA survey reported on **BBC News** (2008) 'Driving less to save fuel' *BBC News website* 26 June 2008, http://news.bbc.co.uk/1/hi/england/7476471.stm

24. Numerous 'beat the credit crunch' media stories have looked at growing your own food. For example: **Gammell, K.** (2008) 'Beat the credit crunch with the experts' *Daily Telegraph* 30 April 2008

25. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

26. **IGD** (2007) 'Sustainable Distribution Introduction' *IGD* website, http://supplychainanalysis.igd.com/index.asp?id=18&isid=8

27. **The Chartered Institute of Logistics and Transport (UK)** (2006) 'Sustainable Distribution Forum' *CILT website,* http://www.ciltuk.org.uk/pages/envforum

28. **IGD** (2008) 'UK Food and Consumer Goods Industry On the Road to a Greener Future' *IGD website,* http://www.igd.com/CIR.asp?menuid=9&cirid=2785

29. **Barnes, I.** (2006) *Boots Case Study: The Need for Green Logistics* Presentation to the launch of the Green Logistics Project, 13 September 2006

30. For example: **ASDA** (2008) 'Transport and distribution' *ASDA website,* http://www.about-asda.co.uk/sustainability/transport-distribution.asp; **Ward, D.** (2007) 'Wine on the water as Tescos turns to barges to cut emissions' *The Guardian*, 19 October 2007

31. **Marks and Spencer (M&S)** (2007) 'M&S Cuts Carbon With Teardrop Trailers' *M&S website* http://www.marksandspencer.com/gp/node/n/63764031?ie=UTF8&mnSBrand=core

32. For example: **Talking Retail** (2007) 'Green award for Sainsbury's electric vehicles' *Talking Retail website,* http://www.talkingretail.com/news/7624/Green-award-for-Sainsburys-

ele.ehtml; **Tindall, C.** (2007) 'McDonalds to run trucks on chip fat' *RoadTransport.com website*, http://www.roadtransport.com/Articles/2007/07/04/127757/mcdonalds-to-run-trucks-on-chip-fat.html

33. **Walker, B.** (2004) 'Tech the high road' *Green Futures website* http://www.forumforthefuture.org.uk/greenfutures/articles/601868

34. **Freight Best Practice & Department for Transport** (2006) *Companies and Drivers Benefit from SAFED for HGVs: A Selection of Case Studies* HMSO

35. **Carter, H.** (2008) 'North-east to pioneer building of eco-friendly warehouses' *The Guardian* 14 January 2008

36. "[A] recent survey conducted by Freight Best Practice demonstrated that 56% of companies consulted do not set targets for fuel consumption." **Faber Maunsell** (2007) *Reducing the External Costs of the Domestic Transportation of Food by the Food Industry* Department for Environment, Food and Rural Affairs (Defra)

37. For example, M&S's Plan A, online at http://plana.marksandspencer.com

38. For example: **Tesco** (2007) 'Regional Sourcing – Great food, locally produced' *Tesco website,* http://www.tesco.com/regionalsourcing; **ASDA** (2007) 'ASDA's local hubs save 7 million road miles' *ASDA website,* http://www.asda-press.co.uk/pressrelease/107; **McDonald's** (2007) 'McDonald's raises prices paid to 6,000 British farmers' *McDonald's website,* http://www.mcdonalds.co.uk/pages/global/prraise.html; **3663** (2008) 'Local Products from Local People' *3663 website,* http://www.3663.co.uk/sustainability/localproducts.html

39. **New Consumer** (2007) 'M&S air freight labels appear today' *New Consumer website*, http://www.newconsumer.com/news/item/ms_label_air_freighted_food/

40. **BBC News** (2007) 'Labels reveal goods' carbon cost' *BBC News website,* http://news.bbc.co.uk/1/hi/sci/tech/6456047.stm

41. **Food and Drink Federation (FDF)** (2007) 'Our Five-Fold Ambition' *FDF website,* http://www.fdf.org.uk/fivefoldambition.aspx

42. **Nafziger, S.** (2008) Presentation to Westminster Food & Nutrition Forum keynote seminar: 'Food labelling policy – Evaluating the Commission proposals and assessing future action', 4 March 2008.

43. **Department for Environment, Food and Rural Affairs (Defra)** (2006) *The Food Industry Sustainability Strategy* Defra

44. **Food Industry Sustainability Strategy Champions' Group on Food Transport** (2007) *Report of the Food Industry Sustainability Strategy Champions' Group on Food Transport* Defra

45. **COI** (2008) 'Fitzpatrick announces £67 million to cut freight emissions, congestion and hauliers' costs' *COI website,* http://nds.coi.gov.uk/environment/fullDetail.asp?ReleaseID=378678&NewsAreaID=2&NavigatedFromDepartment=False

46. **Strategy Unit** (2008) *Food matters: towards a strategy for the 21st century*. Cabinet Office

47. **Department for Transport (DfT)** (1999) *Sustainable Distribution: a strategy* DfT

48. **Department for Transport (DfT)** (2007) *Towards a Sustainable Transport System* TSO

49. **European Commission** (2005) 'Emission Trading Scheme (EU ETS)' *European Commission website*, http://ec.europa.eu/environment/climat/emission/index_en.htm

50. **Department for Environment, Food and Rural Affairs (Defra)** (2008) 'The Climate Change Bill' *Defra website,* http://www.defra.gov.uk/environment/climatechange/uk/legislation/

51. **Communities and Local Government (DCLG)** (2008) 'Planning Policy Statements (PPS) and Guidance Notes (PPG)', *DCLG website*, http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements

52. See **Department for Environment, Food and Rural Affairs (Defra)** (2006) 'Animal welfare: Transport – Legislation' *Defra website,* http://www.defra.gov.uk/animalh/welfare/farmed/transport/legislation.htm

53. **Department for Environment, Food and Rural Affairs (Defra)** (2003) 'Public Sector Food Procurement Initiative', *Defra website*, http://www.defra.gov.uk/farm/policy/sustain/procurement/index.htm

54. For example: **Sustainable Development Commission** (2008) *Green, healthy and fair: A review of the government's role in supporting sustainable supermarket food* Sustainable Development Commission; **Commission for Integrated Transport** (2006) *Sustainable Transport Choices and the Retail Sector: Advice to Government from the Commission for*

Integrated Transport Commission for Integrated Transport

55. For example, Food Links UK.

56. See the Local Food website at http://www.localfoodgrants.org

57. See the Green Logistics website at http://www.greenlogistics.org/PageView.aspx?id=97

58. See the Food Climate Research Network website at http://www.fcrn.org.uk/

59. For example, see **Milà i Canals, L., Cowell, S.J., Sim, S. & Basson, L.** (2007): Comparing Domestic versus Imported Apples: A Focus on Energy Use. *Env Sci Pollut Res* 14 (5) 338–344; **Edwards-Jones, G., Milà i Canals, L., Hounsome, N., Truninger, M., Koerber, G., Hounsome, B., Cross, P., York, E.H., Hospido, A., Plassmann, K., Harris, I.M., Edwards, R.T., Day, G.A.S., Tomos, A.D., Cowell, S.J. and Jones, D.L.** (2008) Testing the assertion that 'local food is best': the challenges of an evidence-based approach. *Trends in Food Science* & Technology 19: 265-274.

60. As in previous reports we have drawn the principles of wellbeing, autonomy and fairness/justice, from **Mepham, B**. (1996) 'Ethical analysis of food biotechnologies: an evaluative framework', in Mepham, B. (ed.) (1996) *Food Ethics* Routledge. In this case we also reflect more closely the concerns for solidarity (**Schroeder, D. and Palmer, C.** (2003) 'Technology assessment and the 'ethical matrix'', *Poiesis Praxis 1*, 295-307) and care (**Morgan, K.** (2008) *Local and Green v Global and Fair: The New Geopolitics of Care. Brass Working Paper Series No. 50.* The Centre For Business Relationships, Accountability, Sustainability and Society) that feature prominently in debates on food distribution.

61. **Mepham, B.** (1996) 'Ethical analysis of food biotechnologies: an evaluative framework', in Mepham, B. (ed.) (1996) *Food Ethics* Routledge

62. For example: **British Retail Consortium** (2006) 'Retail Myths: Food Miles - "'Too much food is transported over longdistances from abroad, which makes a big contribution to carbon emissions globally and is allabout aaking big profits through sourcing cheaply"' *BRC website*, http://www.brc.org.uk/details04.asp?id=1107&kCat=&kData=263&sCat=Retail+Myths; **McKie, R.** (2008) 'How the myth of food miles hurts the planet' *The Observer* 23 March 2008

63. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

64. One US study found that "Transportation as a whole represents only 11% of life-cycle GHG emissions, and final delivery from producer to retail contributes only 4%." Summary of **Weber, C.L. & Matthews, S.H.** (2008) 'Food-Miles and the Relative Climate Impacts of Food Choices in the United States' *Environmental Science and Technology* 42 (10): 3508-3513 on Food Climate Research Network website http://www.fcrn.org.uk/researchLib/transport.htm

65. **Garnett, T.** (2007) *Food and Climate Change: The World on a Plate* FCRN

66. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

67. **Saunders, C.M. & Barber, A.** (2007) 'Comparative Energy and Greenhouse Gas Emissions of New Zealand's and the UK's Dairy Industry'. *AERU Research Report* No. 297, July 2007; **Garnett, T.** (2007) 'New Zealand Food Miles study – summary' *Food Climate Research Network website,* http://www.fcrn.org.uk/researchLib/report_details/nzLCA.htm

68. **Williams, A.** (2007) *Comparative Study of Cut Roses for the British Market Produced in Kenya and the Netherlands: Précis Report for World Flowers* Cranfield University

69. **Garnett, T.** (2007) *Food and Climate Change: The World on a Plate* FCRN

70. **Milà i Canals, L., Cowell, S.J., Sim, S. & Basson, L.** (2007) Comparing Domestic versus Imported Apples: A Focus on Energy Use. *Env Sci Pollut Res* 14 (5) 338–344

71. **Lang, T.** (2005) 'Origin Unknown' *The Guardian,* 3 August 2005

72. **Jones, A.** (2005) *Food Miles* The Organic Research Centre, Elm Farm

73. Quoted on Farmers' Weekly website http://www.fwi.co.uk/gr/foodmiles/endorsements.html

74. **Eddington, R.** (2006) *The Eddington Transport Study. The case for action: Sir Rod Eddington'sadvice to Government* HMT/Department for Transport

75. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

76. **Goodwin, P.** (2004) *The economic costs of road traffic congestion.* Discussion paper. The

Rail Freight Group

77. **HMG** (2005) *Securing the Future: The UK Government Sustainable Development Strategy* TSO

78. **HMG** (1999) *A better quality of life – a strategy for sustainable development for the United Kingdom* TSO

79. **Department for Environment, Food and Rural Affairs (Defra) / National Statistics** (2008) *Sustainable development indicators in your pocket 2008* Defra

80. See the Welsh National Assembly section of 'Wellbeing: Government Departments and Other Organisations', *sustainable-development.gov.uk website*, http://www.sustainable-development.gov.uk/what/priority/wellbeing/ogds.htm#wales

81. For example, see **Department for Environment, Food and Rural Affairs (Defra)** (2008) *A Framework For Pro-Environmental Behaviours* Defra

82. For example, see the Government's current consultation on changes to Planning Policy Statement 6.

83. **Food Ethics Council** (2005) *Getting personal: shifting responsibilities for dietary health* Food Ethics Council

84. For further discussion of this issue in other contexts, see **Levett, R., Christie, I., Jacobs, M. & Therivel, R.** (2003) *A Better Choice of Choice: Quality of Life, Consumption and Economic Growth* Fabian Society; **Food Ethics Council** (2005) *Getting personal: shifting responsibilities for dietary health* Food Ethics Council

85. See the Carbon Trust's Carbon Reduction Label website, http://www.carbon-label.co.uk

86. **New Consumer** (2007) 'M&S air freight labels appear today' *New Consumer website*, http://www.newconsumer.com/news/item/ms_label_air_freighted_food/

87. For example, **Department for Transport (DfT)** (2004) *The Future of Transport: a network for 2030* DfT

88. **Department for Transport (DfT)** (2007) *Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World* TSO

89. See http://petitions.number10.gov.uk/traveltax/

90. **McKinnon, A.** (2004) *Lorry Road User Charging: A review of the UK government's proposals*, Logistics Research Centre, Herriot-Watt University

91. **Bird, J. & Morris, J.** (2006) *Steering Through Change: Winning the debate on road pricing* IPPR

92. Such as that proposed by the RAC Foundation: **King, E.** (2007) *Road Block For Road Pricing?* RAC Foundation

93. Food hubs are defined by campaigning group Sustain as "sustainable food logistics centres". See **Whitelegg, J. for Sustain** (2005) *London Sustainable Food Hub: Opportunities for a sustainable food logistics centre in London* Sustain: the alliance for better food and farming

94. **McKinnon, A**. (2007) *Environmental Challenges for Food Distribution* Presentation to the Cold Storage and Distribution Federation conference, Leeds March 2007

95. **USwitch** (2008) 'Petrol Prices Hit 20 Year High' *USwitch website*, www.uswitch.com/Press-room/Index.aspx?downloadfile=PETROL-PRICES-HIT-20-YEAR-HIGH

96. National planning policy discusses food only in the context of rural agriculture, where despite strong suggestions that it would be undesirable, the guidance stops short of ruling out development on the best agricultural land. **ODPM (now DCLG)** (2004) *Planning Policy Statement 7: Sustainable Development in Rural Areas* TSO. Policy on freight is set out in **ODPM (now DCLG)** (2001) *Planning Policy Guidance (PPG) 13: Transport* and is structured around a presumption of long distance networks, with warehouses kept near trunk roads and away from cities.

97. **Foresight** (2007) T*ackling Obesities: Future Choices* Department for Innovation, Universities and Skills

98. **Gordon, D. et al** (2000) *Poverty and social exclusion in Britain* Joseph Rowntree Foundation

99. **Peterkin, T** (2008) 'Supermarkets creating 'inner city food deserts'', *Daily Telegraph*, 18 April 2008

100. **White M, Bunting J, Williams E, Raybould S, Adamson A, Mathers J.** (2004) *Do 'food deserts' exist? A multi-level, geographical analysis of the relationship between retail*

food access, socio-economic position and dietary intake Food Standards Agency; **Dowler, E.** (2006) 'Social justice depends on dignity and decent incomes', *Bulletin of the Food Ethics Council*, Volume 1, Issue 4, Winter 2006

101. **Department for Environment, Food and Rural Affairs (Defra)** (2002) *The Strategy for Sustainable Farming and Food: Facing the Future* Defra

102. **Sustainable Consumption Roundtable** (2006) *I Will If You Will* National Consumer Council / Sustainable Development Commission

103. **MacGregor, J. & Vorley, B.** (2006) *"Fair miles"? The concept of "food miles" through a sustainable development lens* IIED

104. **Pretty, J.** (2001) *Some Benefits and Drawbacks of Local Food Systems* TVU/Sustain AgriFood Network

105. In any case, some of the money "extracted" from a local economy by a national supermarket chain, for example, will be returned via pension funds.

106. **MacMillan, T., Alston, L., Segal, R. & Steedman, P.** (2008) *Flying food: responsible retail in the face of uncertainty* Food Ethics Council

107. Current global rules are far from even-handed, despite decades of pledges from the global North. For a full discussion of the subject, see Tansey, G. & Rajotte, T. (2008) *The Future Control of Food: A guide to international negotiations and rules on intellectual property, biodiversity and food security* Earthscan

108. Ecological space is a way of expressing the total amount of available natural resources (including the capacity of the earth to stably absorb wastes). It is frequently assumed that justice demands an equal distribution of ecological space to each person on the planet, and also pays regard to the needs of future generations. See **MacGregor, J. & Chambwera, M.** (2007) *Room to move: 'ecological space' and emissions equity* IIED

109. **International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)** (2008) *Global summary for decision makers* IAASTD

110. **Morgan, K.** (2008) *Local and Green v Global and Fair: The New Geopolitics of Care. Brass Working Paper Series No. 50*. The Centre For Business Relationships, Accountability, Sustainability and Society

111. **Food Industry Sustainability Strategy Champions' Group on Food Transport** (2007) *Report of the Food Industry Sustainability Strategy Champions' Group on Food Transport* Defra

112. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

113. **Department for Environment, Food and Rural Affairs (Defra)/Office of National Statistics (ONS)** (2007) *Food Transport Indicators to 2006 (revised): Experimental Statistics* Defra

114. **Department for Environment, Food and Rural Affairs (Defra)/Office of National Statistics (ONS)** (2007) *Food Transport Indicators to 2006 (revised): Experimental Statistics* Defra

115. **HMG** (2005) *Securing the Future: The UK Government Sustainable Development Strategy* TSO

116. **Department for Environment, Food and Rural Affairs (Defra)** (2007) 'Greenhouse gas statistic show UK on track to double Kyoto target' *Defra website,* http://www.Defra.gov.uk/news/2007/070131b.htm

117. See **Harrabin, R.** (2008) 'UK in "delusion" over emissions' *BBC News website*, 31 July 2008 http://news.bbc.co.uk/1/hi/sci/tech/7536124.stm

118. **AEA Technology** (2005) *The Validity of Food Miles as an Indicator of Sustainable Development* Department for Environment, Food and Rural Affairs (Defra)

119. **Department for Environment, Food and Rural Affairs (Defra)/Office of National Statistics (ONS)** (2007) *Food Transport Indicators to 2006 (revised): Experimental Statistics* Defra

120. **Somerfield** (2007) 'Shopping Small is Beautiful' *Somerfield website*, http://www.somerfieldgroup.co.uk/index.asp?sid=201&press_ID=1167

121. **HMG** (2005) *Securing the Future: The UK Government Sustainable Development Strategy* TSO

122. **Department for Environment, Food and Rural Affairs (Defra)** (2008) *Ensuring the UK's Food Security in a Changing World* Defra

123. For example, see **Marks, N., Thompson, S., Eckersley, R., Jackson, T. & Kasser, T.** (2006) *Sustainable development and well-being: relationships, challenges and policy implications. A report by the centre for well-being, nef (the new economics foundation) for Defra* Defra

124. **Porritt, J**. (2008) 'An end to infinite growth and blind consumerism' *The Guardian* 16 July 2008

125. **MacMillan, T.** (2007) 'From the editor', *Food Ethics*, Volume 2, Issue 2, Summer 2007.

126. **House of Lords Science and Technology Committee** (2005) *Pandemic Influenza* TSO

127. **Rip, A.** (2001) 'In praise of speculation', in Organisation for Economic Co-operation and Development, *Proceedings, Social Sciences for Knowledge and Decision Making* OECD

128. **IGD** (2005) *Future Vision - New ways to add value for shoppers* IGD

129. **MacMillan, T.** (2008) 'From the editor', *Food Ethics*, Volume 3, Issue 2, Summer 2008

130. **Food Industry Sustainability Strategy Champions' Group on Food Transport** (2007)*Report of the Food Industry Sustainability Strategy Champions' Group on Food Transport* Defra

131. **United Nations Conference on Trade and Development** (2004) *The Least Developed Countries Report 2004: Linking international trade with poverty reduction* United Nations

132. See **Stilgoe, J., Irwin, A, & Jones, K.** (2006) *The Received Wisdom: Opening up expert advice* Demos

133. **Food Standards Agency** (2008) *New Social Science Research Committee established* FSA press release, 17 April 2008 http://www.food.gov.uk/news/pressreleases/2008/apr/ssrcestablished

134. For example: **Chakrabortty, A.** (2008) 'From Obama to Cameron, why do so many politicians want a piece of Richard Thaler?', *The Guardian* 12 July 2008; **Dawnhay, E. & Shah, H.** (2005) *Behavioural economics: seven principles for policy-makers* New Economics Foundation

135. **Department for Transport (DfT)** (2007) *Towards a Sustainable Transport System* TSO

136. **Department for Transport (DfT)** (2008) 'Towards a Sustainable Transport System – an update on progress' *DfT website,* http://www.dft.gov.uk/about/strategy/transportstrategy/tasts/tastsletter?page=1#a1000

137. For example: **Sustainable Development Commission** (2008) *Green, healthy and fair: A review of the government's role in supporting sustainable supermarket food* Sustainable Development Commission; **Sustainable Consumption Roundtable** (2006) *I Will If You Will* National Consumer Council / Sustainable Development Commission**; Aldred, J.** (2007) 'Global business leaders call for climate change pact' *The Guardian*, 30 November 2007

138. **BBC News** (2008) Heathrow 'could get third runway' *BBC News website* http://news.bbc.co.uk/1/hi/england/london/7504975.stm

139. **Strategy Unit** (2008) *Food matters: towards a strategy for the 21st century*. Cabinet Office

140. See **Food Ethics Council** (2006) *Sustainable Farming and Food: Emerging challenges*. Discussion Paper. Food Ethics Council; **Food Ethics Council** (2008) 'UK government to lead by example on food crises – response' *Food Ethics Council website,* http://www.foodethicscouncil.org/node/374

141. During three workshops we involved 41 people from 34 organisations, including food manufacturers, food retailers, food service companies, third-party logistics companies, food and transport trade associations, food and transport NGOs, government departments, regulatory agencies, thinktanks and academics. We began with a list of over 100 trends and drivers that could affect food distribution over the next 15 years. The vision is not a direct outcome of those workshops, but it has been informed and inspired them.

142. **Garnett, T.** (2007) *Food and Climate Change: The World on a Plate* FCRN

143. Petrini, C. quoted in **Shiva, V.** (2005) 'Celebrating food economies', Voice from the South column, *Resurgence*, Issue 229, March/April 2005

144. **Smith, A.** (1976) *The Glasgow Edition of the Works and Correspondence of Adam Smith. Volume 1: The Theory of Moral Sentiments* OUP

145. **Raynolds, L.T. & Long, M.A.** (2007) 'Fair/Alternative Trade: Historical and empirical dimensions', in Raynolds, L.T., Murray, D. & Wilkinson, J. (eds.) (2007) *Fair Trade: The challenges of transforming globalisation* Routledge

146. See **TransForum** (2008) 'Regional Food Chain' *TransForum website,* http://www.transforum.nl/content/view/93/43/lang,en

147. **MacMillan, T., Alston, L., Segal, R. & Steedman, P.** (2008) *Flying food: responsible retail in the face of uncertainty* Food Ethics Council

148. **Morgan, K.** (2008) *Local and Green v Global and Fair: The New Geopolitics of Care. Brass Working Paper Series No. 50.* The Centre For Business Relationships, Accountability, Sustainability and Society

149. Cited in **Steel, C.** (2008) *Hungry City* Chatto & Windus

150. **Steel, C.** (2008) *Hungry City* Chatto & Windus

151. **MacMillan, T.** (2007) 'From the editor', *Food Ethics* Spring 2007, Volume 2 Issue 1, Food Ethics Council

152. **Conisbee, M., Kjell, P., Oram, J., Bridges, J., Simms, A. & Taylor, J.** (2004) *Clone Town Britain: The loss of local identity on the nation's high streets* New Economics Foundation

153. Recent rises in fuel prices have already seen shopping patterns begin to change. M&S Chairman Sir Stuart Rose has already commented that people are choosing to shop locally rather than out of town. **Finch, J.** (2008) 'Consumer sales: Blue chip shares, plunged into hot water. This isn't just a slump, it's an M&S sump', *The* Guardian, July 3 2008.

154. **Viljoen, A.** (2005) *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities* Architectural Press

155. "Despite claims to the contrary, particularly from neo-liberals who believe it is just another industry, the agri-food sector has a unique status. Quite apart from its umbilical link with nature, the exceptionalism of the agri-food sector lies principally in the fact that we ingest its products. Food is therefore vital to human health and well being in a way that the products of other industries are not, and this remains the quintessential reason as to why we attach such profound significance to it." **Morgan, K.** (2008) *Local and Green v Global and Fair: The New Geopolitics of Care. Brass Working Paper Series No. 50.* The Centre For Business Relationships, Accountability, Sustainability and Society

Food Ethics Council

The Food Ethics Council is the independent advisory body on the ethics of food and farming. We:

- Help guide the way through difficult issues by analysing problems, challenging accepted opinion and creating a space for dialogue; and

- Build tools to put ethics at the heart of decisions about food in business, policy and civil society.

Our Council members include bioethicists and moral philosophers, farmers and food industry executives, scientists and sociologists, academics and authors.

Our work has covered topics including the personalisation of public health, the control of food research, the use of veterinary drugs and the growing challenge of water scarcity.

Find out more about our work, including the members of the Council, our exclusive Business Forum, and our must-read magazine, Food Ethics, on our website at www.foodethicscouncil.org.

Members of the Food Ethics Council:

Ms Helen Browning OBE (Chair): Organic farmer; Food and Farming Director, Soil Association

Prof Ruth Chadwick: Director, ESRC Centre for the Economic and Social Aspects of Genomics

Dr Charlie Clutterbuck: Director, Environmental Practice at Work

David Croft: Director of Director of Conformance and Sustainability, Cadbury

Prof Elizabeth Dowler: Department of Sociology, University of Warwick, researching food and social policy

Julia Hailes MBE: Freelance writer and consultant

Ms Jeanette Longfield: Coordinator of Sustain – the alliance for better food and farming

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Mr John Verrall: Pharmaceutical chemist

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Other relevent publications

Of our many publications, most of which are freely available via our website (www.foodethicscouncil.org), the following are the most relevant to this report.

Meeting reports:

- Flying food: workshop report (May 2008)
- 'Food miles' or 'food minutes': is sustainability all in the timing ? (July 2007)

Research reports:

- Flying food: Responsible retail in the face of uncertainty (May 2008)
- Road pricing: could it promote sustainable food systems? (December 2006)

Editions of Food Ethics magazine:

- Meat: facing the dilemmas (December 2007)
- Big retail: supermarkets want us to be green, fair and healthy. Can they? (June 2007)
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