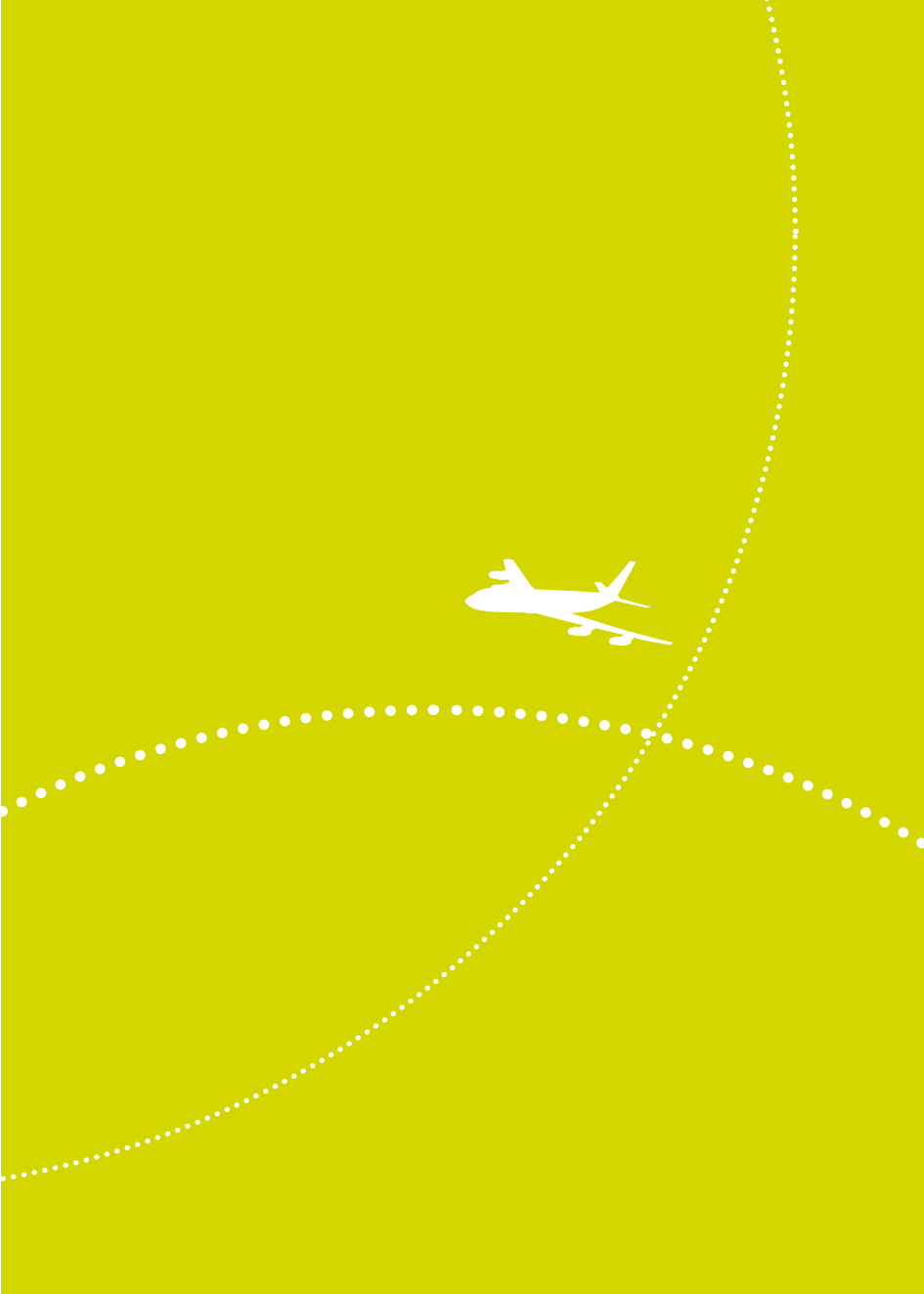
Big ideas in development

Fair miles

recharting the food miles map



Big ideas in development

Fair miles

recharting the food miles map

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Big ideas in development series

As a policy research organisation, the International Institute for Environment and Development has evolved key concepts, theories and ways of working in sustainable development since 1973. The big idea we explore here is **fair miles.** A fresh take on the food miles debate, this approach highlights the ethical dimension of the trade in fresh produce between developed and developing countries.

Forthcoming in this series:

- **Community-based adaptation**
- **Learning groups**
- **New business models**

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The next time you sit down to dinner, really look at what's on your plate. Where was that chicken raised? Those lentils grown? Which farm produced the green beans, potatoes, broccoli?

Introd

World on a plate

The next time you sit down to dinner, really look at what's on your plate. Where was that chicken raised? Those lentils grown? Which farm produced the green beans, potatoes, broccoli?

As supermarket foragers, people in the industrialised world make fast choices based on a range of criteria, from nutrition to simple craving. But more and more are digging a bit further to discover where, and how, their plateload was produced.

The answers they unearth have big implications for our environment. The farm-to-fork 'food chain' is a source of the greenhouse gas emissions that are driving climate change – the overarching environmental issue of our time.

But we're not just looking at a plateful of emissions here. Food is a social, political and economic issue too. Today's 'balanced' diet involves a lot more than protein and carbohydrates. It's about choosing from a diversity of sources – local to long-distance. By eating some imported fruit and vegetables, you could be making a choice that supports the livelihoods of poor farmers half a world away.

In this booklet we look at an overview of the globalised food business and its social and environmental implications; the pathways food takes from plot to plate; and the links between climate change, food choices and poverty in the developing world context. Its goal is to introduce you to the complex world of sustainable development and environmental accounting, and highlight how your selections in supermarket aisles affect people living in poverty – both as small farmers, and as members of climate-vulnerable communities.

We focus on African nations and the UK for reasons we explain below. Lessons learned from the trade between them, and comparisons of environmental and social costs across other countries, could provide a model for change all over the world.

The ultimate hope is that you, the consumer, will ask the right questions and make the right choices.

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Cheap

Moveable feast: a look at 'food mileage'

To get to grips with food choices, we need to pin down where food originates. This can be a complex task. Food has become a global business – a moveable feast crisscrossing villages, cities, countries, oceans. Not surprisingly, the distances it travels have grown substantially. In the US alone from 1997 to 2004, the average distance covered by food consumed in households increased by about 22 per cent, from 6760 to 8240 kilometres.

Yet US greenhouse gas emissions associated with food transport increased by only 5 per cent over that period.

The reason? Much of the food consumed by the industrialised world is shipped, and that uses much less energy than road or air transport. A 2005 study for the UK Department for Environment, Food and Rural Affairs (DEFRA), *The Validity of Food Miles as an Indicator of Sustainable Development*, showed that while sea freight accounted for 65 per cent of UK food transport measured in tonne-kilometres (weight x distance), it was responsible for only 12 per cent of the carbon dioxide emissions associated with that transport.

In fact, transportation accounts for just 10 per cent of emissions associated with the UK's food chain, which include those from food production, processing and distribution (see page 16).

Rising concern over the long-term impacts of climate change has led scientists to probe the emissions records of industry, deforestation and other areas. Over the last decade, there has been a real push to quantify emissions associated with food production and consumption. »

In discussing the environmental impact of food choices, this pocketbook mentions studies of both carbon dioxide and greenhouse gas emissions. Greenhouse gas emissions include carbon dioxide emissions, as well as emissions of methane, nitrous oxide and industrial gases such as hydrofluorocarbons. Note that a direct comparison of study results is not always appropriate because different studies document different types of emissions.

Emissions and 'food miles'

One simple way to measure the environmental impact of produce is to calculate the distance it travels from farm to table. This approach, called 'food miles', has become increasingly popular, especially in the UK, US and Western Europe, since it was first proposed by the SAFE Alliance (now Sustain) – a coalition of sustainable agriculture organisations – in the early 1990s.

The 'local is good' mantra has led to a proliferation of farmers' markets and urban vegetable plots in many regions of the UK and US – as well as a trend for people to scrutinise every mouthful for its local credentials.

But is this approach really 'miles better'? The actual environmental – and societal – impacts of food are

more far-reaching. Many researchers and policymakers are beginning to conclude that the food miles approach, even when it accounts for the way food is transported, doesn't provide a robust enough basis for judging whether the contents of your food basket are environmentally friendly.

In short, it's a lot more complex than that. There are many other aspects of the agricultural process and food supply chain that also contribute to the greenhouse gas emissions generated by the foods you eat.

Take tomatoes. A tomato grown in Essex in the UK is not necessarily more environmentally friendly than the same type of tomato grown in Spain and trucked to the UK – if that Essex tomato needed energy-intense greenhouse cultivation to survive. There are, too, other environmental impacts, such as fertiliser use and soil degradation. 'Food miles' are not always a good yardstick.

'Fair miles' and food ethics

And there is a dimension here that's often hidden. The fresh fruits and vegetables you buy sustain you – but they also help to sustain the people who grew them. And if the farmer in question lives in the developing world, that transaction at the supermarket till can be a crucial one.

For a small farmer in Africa, profits from exports can pay for housing and food, as well as medical care and education, for the entire family.

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Produce transported from Africa to the UK supports a multitude of Africa's small-scale farmers, farm workers and packers. An estimated 1 to 1.5 million livelihoods in sub-Saharan Africa depend directly and indirectly on UK-based supply chains.

Once we know this, it opens a window on another way of looking at food choices. By thinking in terms of 'fair miles' instead of food miles, we shine a light on the complexities of 21st-century food choices.

A number of organisations have now absorbed this concept, including the UK's Fresh Produce Consortium – the sector's trade association – and the UK Department for International Development (DFID) and DEFRA. And they are working, within broader agendas, to capture the true impact of food production and consumption. Most of the UK's large supermarket chains also now acknowledge the importance of a nuanced approach to food provenance.

The kind of analysis roughly outlined in the comparison of Essex-grown tomatoes with Spanish ones, above, is key in this context. We will explore this later, and show how it could be extended to cover fruit and vegetables imported from developing countries.

Why the UK and Africa?

This booklet focuses on the UK and Africa for several reasons. Fruit and vegetable export is a key international trade for a number of African countries, including some of the world's poorest and most food-insecure nations.

Farming and exports form a powerful link between Africa and the UK. The UK is the world's largest destination for food transported by air. Within Europe, it's the biggest importer of fresh produce by air from sub-Saharan Africa by both weight and value. It is also one of the few countries for which the environmental and social costs of food production have been researched.

Chap

Link by link: the food chain and emissions

We have to eat to live, so it's inevitable that food is a major focus of daily life – from rushed weekday breakfasts to café sandwiches, family gatherings and nights out with friends.

This is, of course, only one 'food scenario' being played out on our planet. The Food and Agriculture Organization of the UN (FAO) recently noted that there are more than a billion people going hungry.

One way or another, food is often on our minds. Yet in the industrialised world, many are still unaware of how food choices affect society and the environment.

The previous chapter looked at the limitations of food transport alone as an ethical and environmental yardstick. To begin to fully understand the social and environmental effects of our food choices, we need to take a look at the entire food supply chain – from farm to manufacturer, to wholesaler or distributor, to retailer, to individual – and the energy use, emissions, and livelihood opportunities associated with each step of that convoluted journey. Researchers have to consider many variables. Even a single variable – food miles – can be calculated in several different ways.

And there are other complications. »

ter 2

Calculating complexity

The vast majority of UK farms derive inputs from outside the UK, and consequently are responsible for the depletion of distant carbon stocks, and greenhouse gas emissions that occur outside their locality as well as outside the UK. For many foods, this poses serious questions about their 'local' credibility.

Predictably, all this makes emissions calculations anything but easy to determine, although lifecycle analysis offers progress towards a more holistic approach (see 'Crunching the numbers', page 16). The food industry is, after all, based on perishable products that can be subjected to a vast range of processes.

Food can be grown, processed, packaged and stored in many different ways. It can be bought from a vast array of outlets: supermarkets, greengrocers, outdoor markets, restaurants and cafés. It can be delivered to your door. It can be classified in all sorts of ways (think free range eggs, organic apples, graded flour). It can be intended for processing or as an ingredient for convenience food.

As complex as all this may seem, one thing about the food system is clear: the transport of food is a relatively small part of the emissions equation.

Let's take a look at lifecycle analysis now, to see the story behind that finding. »

02

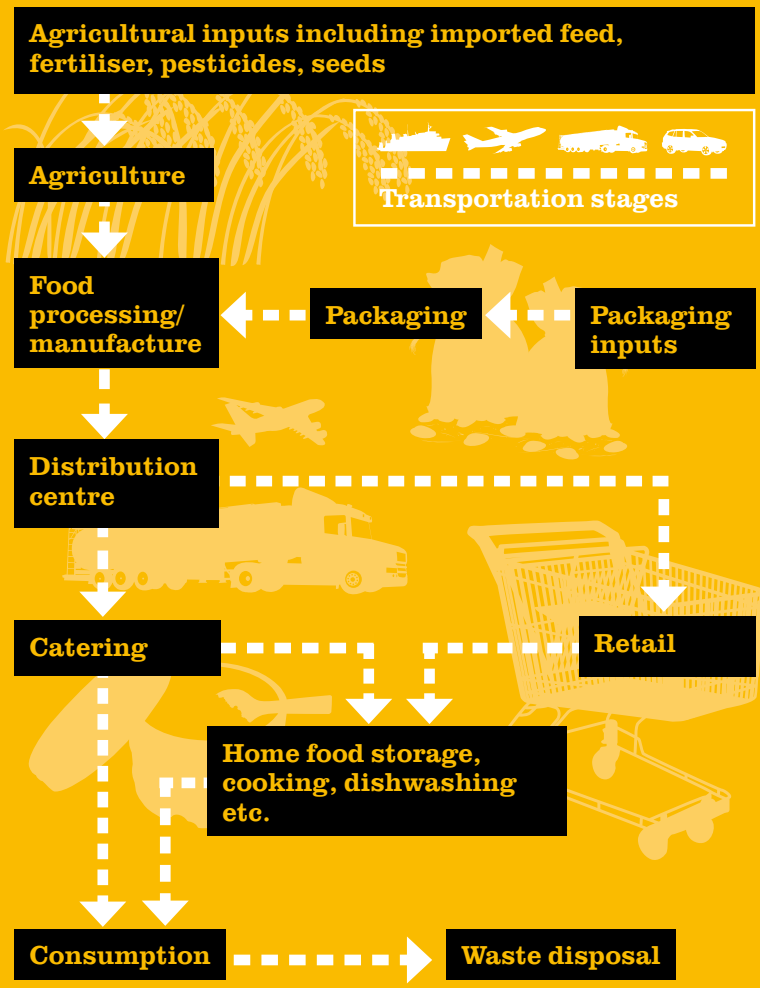
Crunching the numbers:
lifecycle analysis

Cracking the food and emissions puzzle demands a holistic approach. Lifecycle analysis begins to offer that. This relatively new research method provides a more comprehensive look at emissions, as well as energy use. The technique accounts for energy input and output involved in the production, processing, packaging and transport of food. It also factors in resource depletion, air and water pollution and waste generation.

Tara Garnett of the Food Climate Research Network (FCRN) – a UK initiative studying greenhouse gas emissions from the food system – led a recent lifecycle analysis of these emissions in the UK. It suggests that transport accounts for about 10 per cent of the food system's emissions.

In the US, a 2008 study by researchers Christopher L. Weber and H. Scott Matthews at Carnegie Mellon University in Pittsburgh, Pennsylvania, found that the final transport of food from producer to market (the 'food miles') accounts for only 4 per cent of the total emissions from food. But overall, this estimate increased to 11 per cent of total food-related emissions when the researchers accounted for transport of agrochemicals and animal feed.

Lifecycle stages in the food supply chain



Source: Garnett, T. 2008. *Cooking Up a Storm: Food, greenhouse gas emissions and our changing climate.* Food Climate Research Network, Centre for Environmental Strategy, University of Surrey, UK. See www.fcrn.org.uk/frcnPubs/publications/PDFs/CuaS_web.pdf.

Down on the farm?

If the transportation of food isn't responsible for the majority of greenhouse gas production from the food system, what is? Agriculture is a top contributor. Aside from accounting for roughly 8 per cent of the UK's total greenhouse gas emissions, it is responsible, according to DEFRA, for 36 per cent of greenhouse gas emissions associated with food consumption in the UK. DEFRA's figure for food transport's contribution to such emissions is 9 per cent. Altogether that amounts to roughly half the UK's total food system emissions.

Farming emits greenhouse gases from tillage of land, livestock, and use of electricity, fossil fuel and fertilisers. The figures above do not include those caused by deforestation or overseas land use to produce food for humans or livestock; but if they did, the total for agriculture would be much higher, according to the FCRN's Tara Garnett.

A study published last year suggests that because so much energy is needed to heat greenhouses in winter, 'buying local' is not always better. A DEFRA report published in 2008, *Comparative Life Cycle Assessment of Food Commodities Procured for UK Consumption Through a Diversity of Supply Chains*, compared factors including energy use, pesticide use and land requirement of seven foods – including potatoes, beef, lamb

and strawberries, both local UK and imported. British-grown strawberries and tomatoes were found to have a heavier environmental impact than their Spanish equivalents because of the greenhouse energy requirement.

Farm animals account for roughly 20 per cent of global greenhouse gas emissions. That figure includes the clearing of land to feed and graze the animals. Clearing land of trees, and cultivation, are the main drivers of farming emissions. Deforestation eliminates carbon sinks, accelerating the process of climate change. Cultivation, including the use of synthetic fertilisers, releases greenhouse gases such as nitrous oxide. Nitrogen fertiliser is especially demanding of fossil fuels, as producing a tonne of it takes 1.5 tonnes of oil.

Meanwhile, it's increasingly recognised that meat and dairy are the largest sources of food-related emissions. The UK's consumption of meat and dairy products (including imports) accounts for about 8 per cent of national greenhouse gas emissions related to consumption. A 2005 study by researchers at the University of Chicago concluded that, for a person who gets 35 per cent of his or her daily calories from animal sources, the emissions burden compared to that of a strict vegan equates to the difference between driving a sports utility vehicle and a four-door car.

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Hauling produce is another link that reappears throughout the food chain. Food transport by road produced 10 million tonnes of the UK's carbon dioxide emissions. That's roughly 2 per cent of total annual UK CO_2 emissions, and 9 per cent of total greenhouse gas emissions from the UK road sector. From 1992 to 2002, CO_2 emissions from all food transport have increased by 12 per cent, according to DEFRA.

Emissions from transport also fluctuate seasonally. In the UK, there is great demand for a broad range of fresh fruits and vegetables year-round. As most produce is only seasonably available, out-of-season produce has got to be grown somewhere – and that will be greenhouses, or warmer countries overseas.

Quality, price and standards are other factors that affect where food is sourced – locally, nationally or internationally. One farm or set of farms can supply a whole variety of foods, or demand for a certain food may be so high that a range of farms and countries may need to supply it. The majority of UK food comes from farms in the UK or Europe, but the last decade has seen a rise in imports from countries outside Europe. From 1996 to 2004, the quantity of fresh produce flown to the UK increased by 6 per cent a year (see 'Food in flight', opposite).

Then there's transportation associated with processing. Many fruits, vegetables, grains and other raw materials are transported to facilities where they are transformed into food products such as canned fruits, cakes and breads.

Food in flight: costs and benefits of airfreighting

Air freight's contribution to overall UK greenhouse gas emissions is small change compared with road transportation, but airfreighted produce has a much greater environmental impact per tonne. The FCRN's Tara Garnett, for instance, says in her study *Cooking Up a Storm* that air freight is, per unit of food, 'far and away the most [greenhouse gas]-intensive mode' of transport.

At the same time, as we have seen, airfreighted imports support a large number of farmers and workers in regions outside the UK. Roughly £105 million worth of vegetables and £89 million in fruit were exported to the UK from sub-Saharan Africa in 2005, supporting 1 to 1.5 million livelihoods. And there is another dimension to this issue, as we'll see in Chapter 3: ecological space (see 'Room to move', page 33).

Through the mill

Food processing is the single largest industry in UK manufacturing. As such, it accounts for about 17 per cent of the sector's total energy use.

As researchers started looking more closely at the food supply chain, they realised that environmental costs associated with food are spread over a number of energy-demanding processes. According to estimates from the US Environmental Protection Agency, much of the monetary value of processed food is added through processing itself, which demands a lot of fuel, which in turn produces a lot of emissions.

Steam systems, furnaces, ovens and freezers are crucial for maintaining safety in food that's being kept for any length of time – but they use the most energy in the course of processing. They account for 40 per cent of the cost associated with food manufacturing, and drive up the energy costs and emissions associated with processing. Other motor-driven systems, such as fans, pumps, mixers and grinders, collectively represent 12 per cent. »

To market

After manufacturing and storage, most food in the UK – about 75 per cent – makes its way to supermarkets, some via wholesalers. The rest goes to caterers or non-supermarket retailers such as independent shops, or is exported.

Many of the major UK retailers have committed to reducing their greenhouse gas emissions. For example, Tesco has promised to reduce its global transport emissions by 50 per cent per case of goods delivered by 2012. To do this, the company is building new distribution hubs to reduce the length of food transport, and will ship some goods using methods that produce fewer emissions, such as rail or canal.

Tesco has also promised to reduce the volume of food it ships in via air to 1 per cent of total volume, with bias toward imports from developing countries.

Other UK supermarkets such as Marks & Spencer, and fast food chains such as McDonald's, have followed suit in promising to reduce transport emissions.

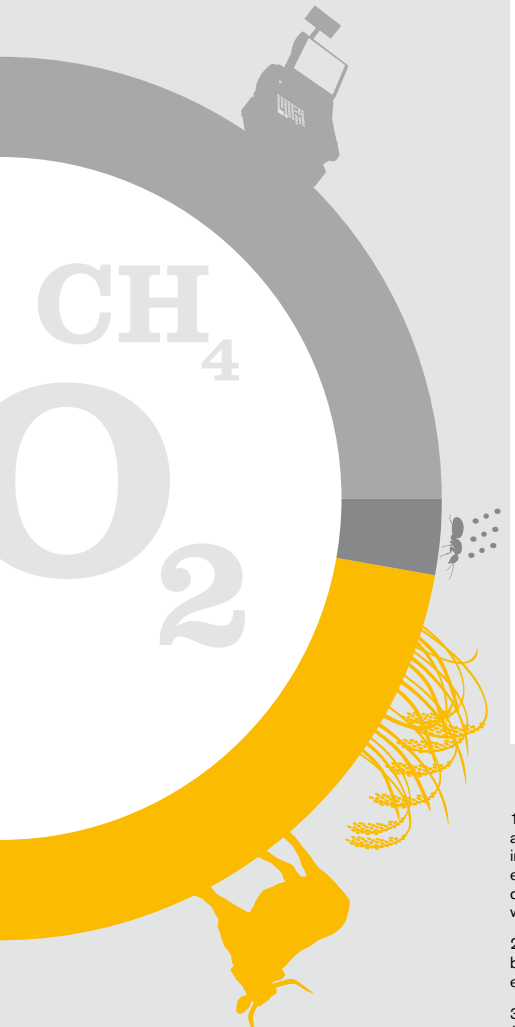
All told, food production and consumption contributes 18 per cent of total UK greenhouse gas emissions. That includes emissions from food production, processing, transportation and consumption. (See 'Turning on the gas', overleaf.) »

Turning on the gas

Greenhouse gas (GHG) emissions from the UK food chain, 2006[1]

- Total GHG emissions from the food chain were estimated to be around 160 million tonnes of CO_2 equivalent in 2006. Emissions from UK consumption activity were 724 million tonnes.
- In 2006 UK farming and fishing accounted for a third of emissions from the food chain. Most of these emissions are due to enteric fermentation in ruminating animals and from the oxidisation of nitrogen in fertilisers.
- Around 25% of GHG emissions in the UK food chain are attributed to net trade.[2]
- The external cost of greenhouse gas emissions from the UK food chain is estimated at £7 billion.[3]

Source: DEFRA. 2009. *Food Statistics Pocketbook 2009*. DEFRA, London.



% GHG emissions [million tonnes CO_2 equivalent]

25% [39] Net trade

3% [4] Prefarm (fertiliser, pesticides and machinery production)

33% [53] Farming and fishing

13% [21] Households (shopping, storage and preparation)

3% [5] Catering (hotels and restaurants)

6% [10] Retail

9% [15] Commercial transportation (UK and overseas)

8% [13] Manufacturing

1 GHG emissions from food packaging, food waste and land use change are not included. Manufacturing includes emissions from electricity use and excludes emissions from road freight transport. Household does not include emissions from heating water for washing up or dishwashers.

2 Net trade covers emissions related to the production but not transportation of food imports, net of emissions related to the production of food exports.

3 *A Brief Guide to the New Carbon Values and Their Use in Economic Appraisal.* 2009. DECC.

Chap

The human factor: farmers in Africa

In the last chapter we looked closely at the UK food chain in its entirety. We're getting an idea of the environmental cost of food – notably through lifecycle analysis, which meshes together 51 different environmental criteria including emissions and waste.

However sophisticated, even that analysis fails to factor in the impact of food choices on societies. In Africa, some small-scale farmers have built their livelihoods on airfreighted exports of vegetables to the UK. This is an established trade, and understandably, they want to see the concept of food miles incorporate ideas of fairness.

Balance of emissions

But there is another issue to do with relative levels of greenhouse gas emissions. This is how broad a context we use when we weigh up emissions levels.

If we look at production of vegetables and fruit alone, the emissions difference isn't dramatic. In that context, farmers in Africa are responsible for roughly the same level of emissions as UK farmers. A 2006 lifecycle assessment showed, for instance, that the energy associated with green bean production (excluding transportation) in Kenya and in the UK is very similar.

That might seem surprising, but a farming scenario of many smallholders with less than a hectare each doesn't necessarily add up to »

chapter 3

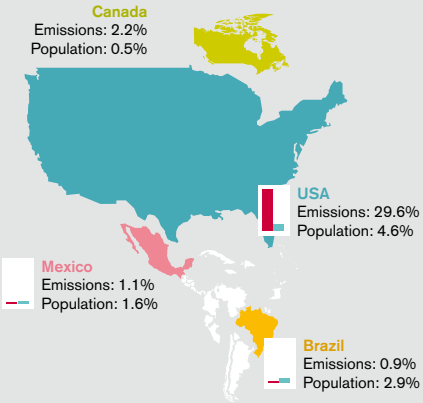
low emissions from production, partly because of inefficiencies. Overall, however, African farmers have a lighter ecological footprint than their Northern counterparts. Many of the continent's smallholders use animal and manual labour to plough and hoe their fields, not machinery. They also tend to use fewer chemical fertilisers and pesticides per hectare than most farmers in the UK and Europe.

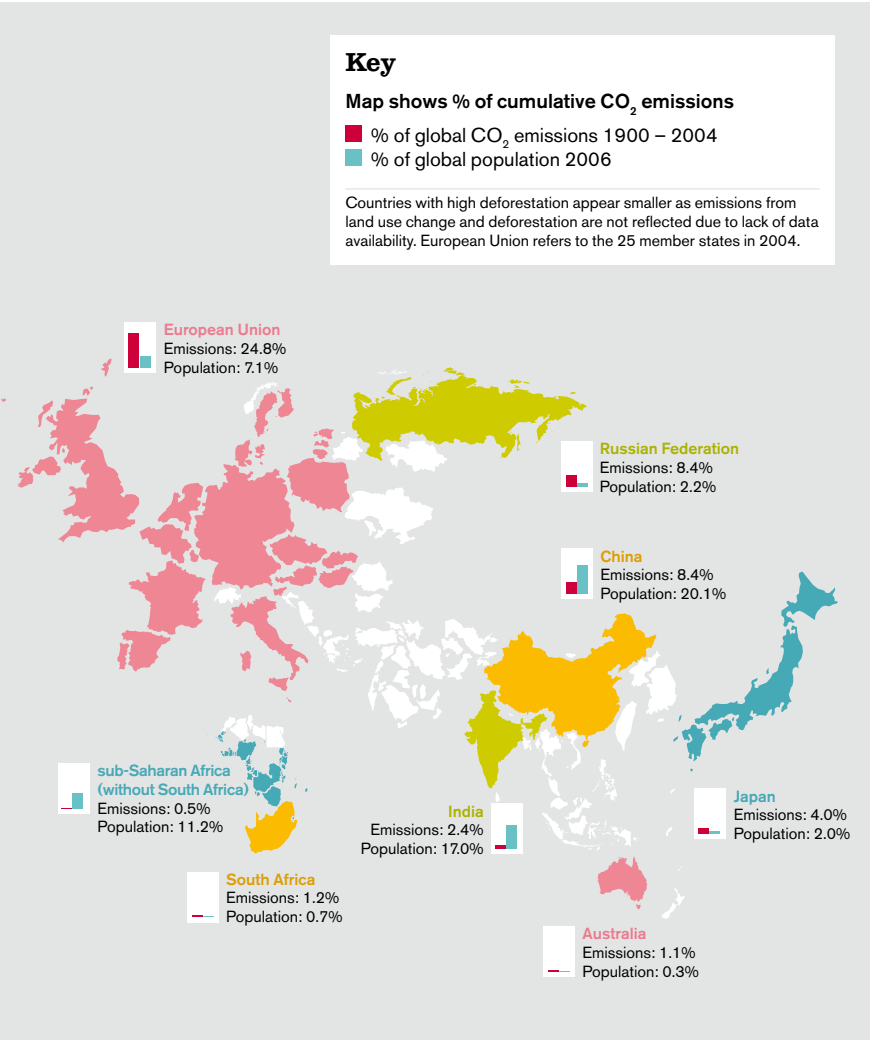
So much for production. But what about that bigger emissions picture? Here we come up against a factor that balances it all out very differently, and explains why Kenyan farmers see a great injustice when told that they cannot export the produce they spend their lives growing.

On average, Africans are responsible for very low levels of greenhouse gases when compared to people in industrialised countries (see map, right, and 'Room to move', page 33). Yet they are far more likely to suffer devastating climate impacts, ranging from increasingly erratic rainfall to floods, droughts, storms and subtler but equally damaging effects.
Part of the problem is geographic vulnerability – living in areas prone to floods, storms or droughts.
Part is a relative lack of resources and infrastructure, which leaves people in Africa often far less able to adapt to severe climate impacts. »

World of emissions, world of inequalities

Country size reflects its historic CO_2 emissions, 1900 – 2004





Sources: CAIT (WRI), CDIAC (data), SHOW®/Mapping Worlds © and Oxfam GB

Room to move: ecological space and African farming

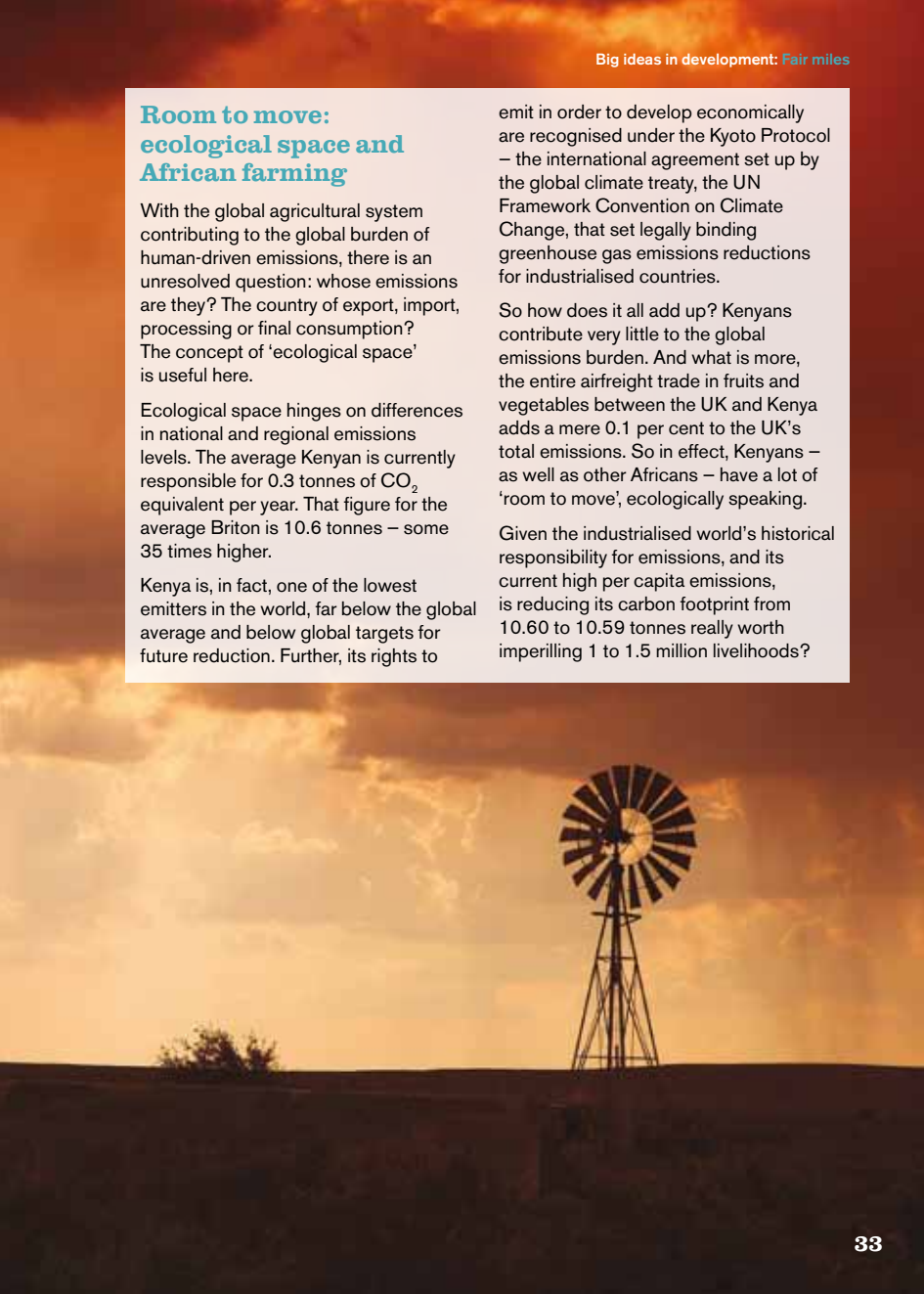
With the global agricultural system contributing to the global burden of human-driven emissions, there is an unresolved question: whose emissions are they? The country of export, import, processing or final consumption? The concept of 'ecological space' is useful here.

Ecological space hinges on differences in national and regional emissions levels. The average Kenyan is currently responsible for 0.3 tonnes of CO_2 equivalent per year. That figure for the average Briton is 10.6 tonnes – some 35 times higher.

Kenya is, in fact, one of the lowest emitters in the world, far below the global average and below global targets for future reduction. Further, its rights to emit in order to develop economically are recognised under the Kyoto Protocol – the international agreement set up by the global climate treaty, the UN Framework Convention on Climate Change, that set legally binding greenhouse gas emissions reductions for industrialised countries.

So how does it all add up? Kenyans contribute very little to the global emissions burden. And what is more, the entire airfreight trade in fruits and vegetables between the UK and Kenya adds a mere 0.1 per cent to the UK's total emissions. So in effect, Kenyans – as well as other Africans – have a lot of 'room to move', ecologically speaking.

Given the industrialised world's historical responsibility for emissions, and its current high per capita emissions, is reducing its carbon footprint from 10.60 to 10.59 tonnes really worth imperilling 1 to 1.5 million livelihoods?



The high cost of climate change in Africa

In the last 50 years, climate-related disasters across the world have killed 800,000 people and cost US$1 trillion in economic losses, according to the Economics of Climate Adaptation (ECA) Working Group, an alliance of NGOs and corporations that in September 2009 published a report on the social impacts of climate change. The report warns that if something isn't done soon to curb greenhouse gas emissions, many countries will suffer even greater human and financial losses in the coming years.

The effects in poor countries across Africa – unpredictable flooding, droughts, high winds, along with the exacerbation of hunger and disease – are already evident. According to the ECA report, climate-related catastrophes have risen in parallel with average global temperatures over the last several years. For instance, a severe and persistent five-year drought, almost certainly exacerbated by climate change, is affecting countries such as Ethiopia, Kenya, Somalia and Uganda.

In Malawi, one of the poorest countries in Africa, strong winds and rains destroy houses, field crops and boats. 'We expect rains and they don't come, or we get heavy rains, which only destroy and don't help our crop production,' Peter Chapasi, a resident of Thyolo, in the south of the country, told the UK-based NGO Oxfam.

Similar stories are increasingly common across the continent. In Rwanda, farmer Chriselliea Nzabonimpa has had to wait on the rain to nourish her fields of beans, maize and cassava. Nzabonimpa, a mother of five, told Oxfam that she is worried about what the irregular rainfall will mean to her family and others'. For such subsistence smallholders, climatic uncertainties can make farming a fight against massive odds. It's a similar story for Africa's export farmers – and the stakes are high.

A truly balanced diet?

Consumers around the globe are already connected with African growers. UK shoppers, for instance, spend over £1 million every day on fresh fruits and vegetables from sub-Saharan Africa, and consumption is growing.

Admittedly, it is not easy to put a true value on the social benefit of purchasing food imported from Africa. But we've seen the figures, both for African farmers dependent on this trade and for its negligible role in total UK emissions. Overleaf we look at the daily life of a Kenyan smallholder growing export crops, to get an idea of what that trade means to him and his family. »

A Kenyan export farmer:

James Gikunju Muuru

It's Saturday morning, and you're in the supermarket faced with mounds of produce. You've scribbled 'green beans, sweet potatoes, cabbage' on your list, and you're intent on picking out the greenest beans and least blemished cabbage. But as your hand hovers over the bins, take a moment to think of the fields where they grew – and the farmer who grew them.

James Gikunju Muuru tends 1.5 hectares of land in Mwea, Kenya – between Nairobi and Mount Kenya. Muuru grows everything on that hypothetical Saturday shopping list for export to Europe. On the small plot, which he inherited from his father, Muuru makes his living selling not domestic staple crops but exported ones, as the Africa Research Institute (ARI) chronicles in its report *Kenya's Flying Vegetables*.

The money he earns from exporting allows him to pay for a house, his children's education, and basic farming equipment. In his village of Karii Koini, he and his association of other small farmers have built a maternity clinic using profits from horticulture exports.

Muuru and other small farmers are constantly working to cultivate crops in accordance with international standards. That's worth it: export horticulture is proving to be an important way to grow business in many developing countries, especially those in sub-Saharan Africa. Kenya was the first African country to develop systems that allow farmers to supply airfreighted fresh vegetables to consumers in Europe. Now other countries such as Tanzania, Rwanda and Ethiopia are starting to do the same.

Mixed beans: exports and the environment

Of course, there is an environmental cost attached to the trade with Kenya. A single kilogram of green beans imported by air from sub-Saharan Africa to the UK is equivalent, in emissions terms, to 177 kilograms of shipped beans. And the true environmental cost of airfreighting green beans has been calculated using lifecycle analysis (see page 16).

With airplane emissions factored into the calculation, researchers found energy use is 12 times as much for Kenyan as for UK beans. A counterweight to this is that the majority (60 per cent – and some sources suggest the figure is as high as 80 per cent) of fresh fruit and vegetable imports to the UK are carried in the bellyhold of passenger planes rather than dedicated planes. (Not all of these planes fly directly from Africa to the UK, which makes this particular analysis somewhat challenging.) As the passenger planes will fly anyway, the cargo they happen to transport is relatively insignificant as a driver of emissions.

In the pursuit of a low-carbon future, the UN Framework Convention on Climate Change and its Kyoto Protocol recognises the need for economic development and equity for developing countries. Some researchers maintain that, given the social benefits and the ecological space (see page 33) in Africa, exporting fresh fruits and vegetables from the continent is an efficient way to spend carbon emissions.

All this may look like a tough call for the consumer – caught between myriad choices and a handful of key but incomplete facts. It's up to you to decide. But read on. Our concluding chapter outlines a few simple steps showing how you, as a consumer, can make a difference.

Concl

Eat, think, change: towards ethical food choices

Globally, progress that lasts, reduces poverty and maintains environmental viability – sustainable development, in short – demands that we all, from consumers to policymakers, make informed choices. But in the meantime, you may well be visiting some kind of food outlet, whether a local salad bar, café or supermarket, nearly every day. That can add up to a lot of head-scratching over what 'ethical' food choices really are.

In the last few years, as we've seen, research has made it clear that the distance food travels is only a small part of the greater context of sustainability. But analyses have also revealed that each food product comes with a complicated set of environmental and social benefits and costs. By combining these factors, one can compare products and make informed choices. Unfortunately, this type of holistic analysis simply isn't available for most products.

On the environmental side, to help remedy the lack of comprehensive environmental labelling, the UK's Carbon Trust, DEFRA and BSI British Standards have been developing a Carbon Reduction Label, which displays carbon dioxide and other greenhouse gas emissions that come from a product's manufacture, distribution, use and disposal. The organisations have been working on standard methods to measure emissions for a variety of products.

And there are also simple steps that you as a consumer can take to significantly cut emissions, and in a way that minimises the cost to farmers and workers in developing countries. »

✪ **Buy from developing countries.** We've seen that local is not always better. When you buy African produce, that can mean the difference between surviving and thriving for a farmer and his family. You may consider it worth the environmental cost of airfreighting – and find, too, that buying UK hothouse crops such as tomatoes is not always the greenest option. Also buy, or continue to buy, Fairtrade products. Based on an international labeling standard, Fairtrade aims to alleviate poverty among producers, and promote sustainable development by helping producers make environmental protection a part of farm management and minimise energy use.

✪ **Drive less.** Cars contribute about 40 per cent of the total external costs of food transport. You may consider planning out your food shopping trips in advance, and consolidating them to increase sustainability and save time. Or join a shopping rota with friends and neighbours. You may not always find it feasible to walk, bike or take public transport instead of drive, but even a small effort over time can reduce traffic-related emissions.

✪ **Waste less.** Some 3.6 million tonnes of discarded food are collected by local authorities in the UK each year. Much of it goes straight into landfill sites, which are large emitters of methane. According to the UK government's WRAP (Waste & Resources Action Programme), fruit and vegetables make up 42 per cent of household food waste by weight, making them the largest single contributor.

✪ **Eat less meat and dairy.** Globally, livestock contribute to nearly 80 per cent of all greenhouse gases from agriculture. So trimming your meat and dairy portions is perhaps the most significant action you can take to reduce the impact of food production on people and planet. Global meat and milk production is expected to double by 2050. This is likely to reduce the land and resources available for producing other foodstuffs and push future food prices further beyond the limits of affordability for the world's poorest people. So consider planning several meatless and dairyless meals every week, and reducing the portions of meat you eat in one sitting.

Last bite: an ethically balanced diet

Limiting food choices to a 'local' radius, however that's interpreted, doesn't really get us very far if we are thinking globally. As we saw at the beginning of this booklet, the 21st-century diet is all about diversity beyond the need for a variety of nutrients and food types. Add ethics to the mix, and a diversity of sources becomes just as important for truly balanced eating. Carrots from Kent and green beans from Kenya can be a recipe for equity.

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In search of the new balanced diet

Today's food is well travelled. A pack of green beans in a Northern supermarket may have journeyed 6000 miles, or 60. But while food miles loom large in our carbon-aware times, transporting it counts for less than you might think. And there is a far bigger picture.

Food is more than a plateful of emissions. It's a social, political and economic issue that involves millions of small farmers in poor countries who export produce to the North. They have built lives and livelihoods around this trade. By buying what they grow, you've clocked up 'fair miles'.

This pocketbook delves into the realities of the produce trade between Africa and the UK, examining both sides of the equation in search of a diet that is ethically, as well as nutritionally, balanced.