

Use the images and text and the information below to discuss with pupils.



[Download the PowerPoint Slideshow: Food Footprints \( 4.35 MB \)](#)

As you go through the images, it is a good idea to elicit answers from the pupils before showing them the text. So for example, ask them why they think the footprint of food is so big? Ask them why they think the agriculture sector accounts for so big a slice of the pie? This will give them time to collect their own thoughts and make considered responses, and motivate them to find out what the answers are.

It is a commonly held belief that transport must be the main factor behind the large impact of food. In actual fact it is the way that food is grown and produced that has the largest impact. Most food is grown intensively with fertilisers. Fertilisers are made from gas, and so their manufacture alone has a significant impact. The biggest impact is after the fertilizer has been applied – not all of the nitrogen is taken up by plants, and is then released into the atmosphere in the form of nitrous oxide – this is a greenhouse gas about 300 times more powerful than CO<sub>2</sub>. Because livestock need to eat too, a lot of intensive agriculture such as soya beans, and heavily fertilized grazing land is used to produce the food for animals, making it a very inefficient use of land and energy resources for a relatively small amount of meat and dairy. Methane is also produced by ruminant animals like cows and sheep, methane is a greenhouse gas 23 times stronger than CO

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. This is why there have been recent calls for eating less meat in the battle against climate change. Switching to a vegetarian diet is not necessarily much better however, if it results in a high intake of dairy and highly processed products.

Manufacturing and processing food has a bigger footprint than transport. A lot of packaging is made from plastic which is made from oil. Even recycled packaging takes a lot of energy to make. Even though food made in factories is often made in large efficient ovens, it often has to

be refrigerated or frozen for long periods of time in warehouses, lorries, supermarkets and at home. This uses a lot of energy.

Although transport accounts for a smaller portion of emissions than other sectors, it is an area in which there is room for improvement. Current trading systems are complex, and we often import as much as we export of certain products, milk for example. Labour costs are cheaper in some countries than others so there are many examples like that of prawns being farmed in Scotland, shipped to Thailand to be peeled and processed, and then back to Scotland to be sold as 'local'. Compared to other forms of transport however, ship freight is relatively efficient, which is good news being as most Fair Trade produce comes by ship. Anything that comes by air however, is very carbon intensive. This puts some perspective on the local food movement. Locally produced food does not necessarily have a lower impact than food imported from far away, it usually depends on how it is grown and processed - you may have heard about tomatoes being grown in heated greenhouses in the UK having a larger impact than those grown without added heat in Spain for example, even though they have to travel further to reach our shopping baskets. However when it comes to fruit and vegetables, buying local does usually make the most environmental sense – as long as it is in season.

In the UK we waste about a third of the food that we buy. This means about a third of all the energy used to grow, process, transport and store the food is wasted too. If food ends up in a landfill site instead of a compost bin, it rots without oxygen and produces methane.