

Briefing

Food waste

We need to waste less to tackle hunger and climate change

Food waste: why is it a problem?

In total, a staggering 1.3 billion tonnes of food grown across the globe is lost or wasted each year¹ – about a third of all food produced for human consumption. This includes the equivalent of close to 12 billion animals raised for food.

Food requires resources in the form of labour, land, water and energy to be produced. Thus wasted food increases not only global hunger, but also the impact we have on our environment and the cost of food production. With a growing global population and increasing concerns about the impact of food production on the climate, we need concerted action by governments, the food and farming industry, and the public to ensure we're making the best use of scarce resources and ensuring a food secure future.

How food is lost and wasted

Food is lost or wasted throughout the supply chain, from production to consumption. Food that gets spilled or spoilt before it reaches its final product or retail stage – for example, due to problems in harvesting, storage, packing or transport – is called **food loss**. The Food and Agriculture Organization (FAO) estimate that 415 million tonnes of food is lost before harvest², while in developing countries 40 per cent of losses occur at post-harvest and processing levels.

Support for farmers to develop or share knowledge and skills around cultivation methods, seed varieties and rearing techniques could reduce pre-farm gate losses. Improving food storage facilities and investing in the transportation systems needed to move food from producers to consumers could also help to reduce the amount of food loss across the globe.

Food that is fit for human consumption, but is not consumed because it is left to spoil or is discarded by retailers or consumers beyond its final product or retail stage is called **food waste**. Food waste occurs at many levels of the supply chain – in supermarkets, restaurants and canteens or in the home. It occurs due to a range of factors including supermarket cosmetic standards, last-minute order cancellations and over-ordering, or consumer buying and cooking practices. The

For more than 40 years we've seen that the wellbeing of people and planet go hand in hand – and it's been the inspiration for our campaigns. Together with thousands of people like you we've secured safer food and water, defended wildlife and natural habitats, championed the move to clean energy and acted to keep our climate stable. Be a Friend of the Earth – see things differently.

World Resources Institute describes food waste as ‘the result of negligence or a conscious decision to throw food away’³.

For example:

- The Soil Association estimates that 20 to 40 per cent of UK fruit and vegetables is rejected even before they reach the shops – mostly because they do not match supermarkets’ strict cosmetic standards. When food waste charity Feedback visited one Kenyan bean exporter in 2015 they found that an average of 50 per cent of each batch was rejected due to these standards⁴. Alongside this, the same study found that requirements for uniform length in French beans resulted in ‘topping and tailing’ practices that lead to 30-40 per cent of the average bean being discarded.
- Prior to 2013, about 2.3 million tonnes of fish was discarded in the North Atlantic and the North Sea each year⁵. Despite reformulation of the European Common Fisheries Policy to end wasteful fishing practices, between 20 per cent and 65 per cent of each European catch is still discarded⁶. We must wait until 2019, when the ‘discard ban’ is rolled out to all types of fish, to see if the changes will lead to a tangible reduction in fish waste.
- Consumers are responsible for around 280 million tonnes of food each year around the globe, including 7 million tonnes each year in the UK alone – about 47 per cent of total UK food waste⁷.

The consequences of food waste

Feeding the world: Currently, almost a billion people go hungry each year, and many more suffer from under-nutrition, unable to access enough food to meet their needs. With the global population predicted to rise to almost ten billion by 2050, businesses and governments around the world are exploring ways to increase food production to tackle hunger and ensure that we can feed higher numbers of people in the future.

Yet we grow enough food to feed ten billion people already. Alongside food losses and waste, 36 per cent of the calories produced by the world’s crops are used for animal feed – only 12 per cent of which ultimately contribute to the human diet (as meat and other animal products)⁸. Around 4 per cent of human-edible calories are also diverted towards biofuel production.

A third of the world’s entire food supply could be saved by reducing waste – enough to feed 3 billion people. This would still leave enough surplus for countries to provide their populations with 130 per cent of their nutritional requirements⁹. Other measures might also help to feed a growing population, such as reducing meat consumption to ensure that more human-edible crops and the land used to grow them are used to enable people to feed themselves rather than to feed livestock, ending the practice of growing foods to produce biofuels, and improving economic and physical access to food markets. If coupled with these, cutting food waste could ensure that global hunger becomes a thing of the past, even with continued population growth. For more details, see our 2010 briefing, *Solving the Global Food Crisis*¹⁰.

Protecting the environment: Producing, processing and transporting food requires huge amounts of fresh water, land and other resources. The FAO estimates that every year, up to 1.4 billion hectares of land and over 250 km³ of water are used to produce food which will ultimately be wasted¹¹. This water could meet the domestic needs of 9 billion people¹².

Globally 9.7 million hectares of land are deforested annually to grow food – 74 per cent of total annual deforestation. Friends of the Earth's research has shown that forests are being destroyed in South America to produce feed for factory farmed livestock in countries including the UK¹³.

Climate change: Across the globe, the 1.3 billion tonnes of food we waste each year is responsible for greenhouse gas (GHG) emissions of over 3 gigatonnes – around 7 per cent of total global emissions¹⁴. If it were a country, it would be the third highest emitter of GHGs in the world. When food is discarded in landfill it also produces methane as it rots – further increasing the impact of wasted food on the climate. WRAP has estimated that in the UK, between 4.0 and 4.6 tonnes of CO₂e are emitted for each tonne of avoidable food waste¹⁵.

Economic impacts: Not only does food waste itself have a massive economic impact – estimated at over US\$400 billion (£227 billion) for consumer food waste alone – but the costs to local government of collecting and treating food waste are significant. In the UK alone this cost is estimated to be over £300 million. If concerted action is not taken to tackle consumer food waste, by 2030 the global cost of food waste could soar to more than US\$600 billion a year, assuming a growing global population and expanding middle classes adopt diets and habits similar to those in industrialised countries¹⁶.

Food waste in the UK:

Britain is one of the most wasteful countries in the European Union when it comes to food, with 15 million tonnes per year feeding no one (see Chart 1). Of this waste, over half occurs before food makes it into our homes – due to loss and wastage by producers, processors, distributors and retailers.

In addition, consumers in the UK are wasting around 7 million tonnes of food each year, with a value of over £400 per household¹⁷. This includes 570,000 tonnes of fresh meat, with a value of £1,300 million, nearly half of which is still fit for consumption. That's the equivalent of about 50 million chickens, 1.5 million pigs and 100,000 beef cattle¹⁸.

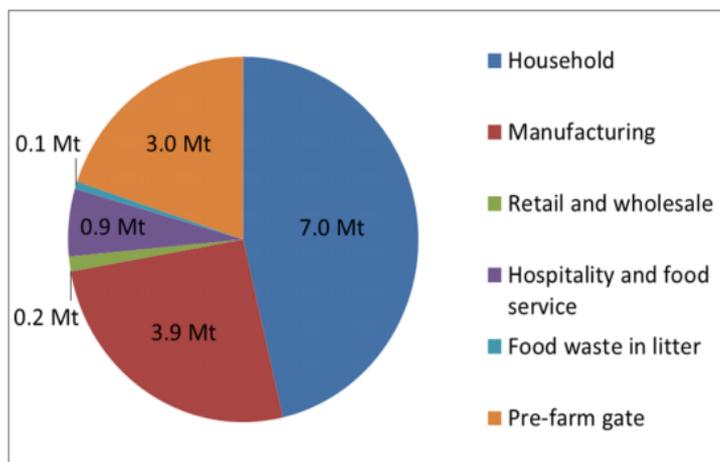


Chart 1: Food waste in the UK. Figures from WRAP, 2013¹

Over recent years there have been moves to cut the amount of food going to landfill in the UK – by improving food recycling schemes for consumers and encouraging the public to cut waste by buying less food and storing it more effectively. This has led to a 21 per cent reduction in avoidable household food waste since 2007, but fails to tackle the environmental impacts and food security implications of producing and wasting this food in the first place.

Further up the supply chain, suppliers and retailers continue to direct unwanted foods to anaerobic digestion facilities which generate energy from breaking down food waste. Yet these facilities are inefficient – they recover only a fraction of the energy contained in the waste products they receive. This approach spread following the BSE and foot-and-mouth outbreaks of the 1990s and 2000s, as the feeding of waste products to animals was severely curtailed – yet despite our improved understanding of the types of food waste that might be safely and appropriately diverted to livestock, this issue has not been revisited.

At a retail level, we have seen an increase in the redistribution of foods fit for human consumption further up the hierarchy. Charities including FareShare and the Trussel Trust have worked hard to direct foods that would otherwise be wasted to individuals and community groups, with Morrison’s recently announcing an intention to donate all of their edible waste, including fresh fruit and vegetables to charity¹⁹. However, FareShare estimate that they still receive only 2 per cent of available edible waste foods. Increasing this proportion could go some way toward ameliorating the impact of food waste in the UK.

Food poverty: Although food redistribution schemes are playing an increasingly important role in helping to feed people who cannot afford to buy food (see below), we should not continue appropriating huge amounts of resources and generating huge amounts of waste in order to compensate for an economic system under which some people cannot afford to eat. Food poverty needs addressing in its own right through strategies that address its root causes, reverse demand for emergency food assistance, provide a publicly-funded safety net for the most vulnerable and ensure that low-income households can afford and access good food– see Beyond the Food Bank for positive examples of city level initiatives²⁰.

Food waste: solutions

The food waste hierarchy offers an important and practical framework for tackling food waste for governments and food businesses. There are also a number of innovative approaches being taken at various stages of the supply chain to tackle food waste.

Application of the food waste hierarchy: The food waste hierarchy (see Fig. 1) prioritises cutting waste at source – by guarding against losses, improving trading practices and ending overstocking and overbuying. The hierarchy also advises that edible waste should be redistributed for human and animal consumption or recycling (in that order) only after taking all possible steps to end waste.

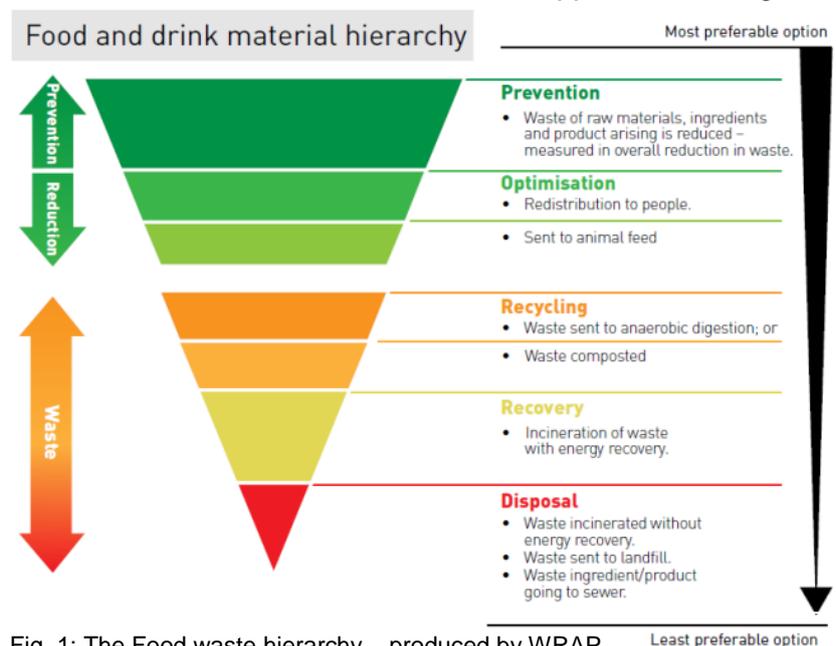


Fig. 1: The Food waste hierarchy – produced by WRAP

Relaxing cosmetic standards: Since 2009 vegetables that in the past would have been wasted have become the fastest growing sector of the fresh produce market. 300,000 tonnes of produce was saved from being wasted on UK farms between 2012-13²¹ simply by supermarkets agreeing to stock 'ugly'-looking fruit and vegetables. Both Asda and Morrison's have already trialed 'wonky veg' ranges, with considerable success. If all retailers and food outlets committed to relax cosmetic standards, not only would more whole items of food be available to consumers, but the unnecessary wastage caused by trimming products for packaging could be ended.

Other retailer action: Retailers could commit to a number of additional actions to cut the amount of food wasted and improve our ability to use unavoidable waste effectively. Some supermarkets have already developed better stock control management systems and more accurate sales forecasting models to end waste generated by over-ordering and last minute cancellation, but we need all retailers to follow suit and also work with producers to tackle losses caused by poor storage or transportation infrastructure. Additionally:

- In autumn 2015, Morrison's committed to ensuring that all edible surplus food at store level will be donated to charity. If all retailers committed to ensuring that all edible waste was diverted to human consumption in the first instance, this could dramatically decrease the amount of global resources used to produce food that isn't eaten.
- The current lack of data and transparency about levels of surplus, 'waste' and rejected food from all parts of the food supply system is a huge barrier to tackling waste efficiently. If all retailers followed Tesco's lead in measuring and sharing data on waste levels and usage this would help create a sector-wide waste reduction strategy, targeting specific foodstuffs and sections of the supply chain.

Use of authorised food waste as animal feed: Up until the 90s, pig farmers were able to collect food waste from schools and restaurants to feed to their animals. Now, under European law, feeding much food waste to pigs is banned. Use of food wastes is permitted only where it can be demonstrated that there is no risk of contamination with meat, fish, or other animal products²². The EU ban followed the food-and-mouth crisis in the UK in 2001, when concerns that the outbreak had come from a farm where pigs had been fed unprocessed restaurant waste led to a nationwide ban on feeding animals food waste.

Pigs in Europe are now fed animal feed produced from cereal crops and soy, responsible for deforestation in South America and displacement of food crops and land that could feed people. UK pig farmers therefore face expensive grain prices – which have already put some farmers out of business – despite the availability of food wastes which could cheaply and sustainably feed their animals. A Cambridge University study in 2015 found that feeding our food waste to pigs could also save 1.8 million hectares of global agricultural land currently used to produce pig feed²³, while at least 20 times more carbon dioxide emissions could be saved by feeding food waste to pigs rather than sending it for anaerobic digestion²⁴.

In Japan, South Korea and Taiwan, by contrast, it is mandatory to feed some food waste to pigs²⁵. New food waste sterilisation technologies are in development to address the microbiological safety of animal feed and detect pig and poultry material in feed to prevent intraspecies recycling (cannibalism)²⁶. There is also renewed interest in revisiting this issue in Europe^{27,28}. If safety can be guaranteed, there seems to be no further reason to ban the feeding of catering waste to omnivorous livestock such as chickens and pigs.

Local authority food waste collections: Increasing numbers of local authorities have now begun to offer food waste collections, ensuring that waste products not suitable for human consumption are diverted to anaerobic digestion, used to produce compost and support healthy soils, or employed as animal feed – 61 per cent offered food waste collections in 2014/15²⁹. However, with recent cuts to local authority budgets, it is important that these services are not lost.

Legislation: Courtauld 2025 offers a ten year plan for collaborative action among producers, suppliers and retailers to tackle food waste as part of a broader industry framework to address sustainable food consumption and production³⁰. However, as with previous iterations of Cortauld, this commitment will be only voluntary, and its impact therefore limited. A statutory requirement to follow the commitment, alongside strengthened powers for the Groceries Code Adjudicator to ensure fair dealing right across the supply chain, could help end avoidable food waste in many sectors.

We need legislation that places a duty on manufacturers and retailers to take steps to decrease waste and increase redistribution. This should include provisions similar to those recently passed through the French Food Waste Bill³¹, banning food waste in the retail sector, and giving retailers confidence in this system by incorporating similar provisions to those under the ‘Good Samaritan Act³²’ in the US. If the Food Waste (Reduction) Bill currently moving through Parliament comes into force, this could fulfil this role.

At an EU level, the Circular Economy Package offered an excellent opportunity for all member states to commit to a tangible, 30 per cent reduction in national food waste levels. However, in its most recent iteration the package did not include a specific target. Re-introducing this would provide a clear target for member states.

Recommendations:

- EU and UK policy must embed the food waste hierarchy in all policy relating to food disposal. Manufacturers, distributors and retailers must follow the hierarchy in efforts to cut waste and dispose of surplus food, with a focus on ensuring that all high quality waste is directed toward human consumption. To support this the UK Government must:
 - ensure that the Food Waste (Reduction) Bill is brought into law. This will ensure that all manufacturers, distributors and large supermarkets reduce their food waste by at least 30 per cent by 2025, including through redistribution to charitable organisations
 - use fiscal measures to support food redistribution rather than anaerobic digestion (for example through changes to current subsidy regimes and the introduction of tax provisions relating to wasted food)
 - take the lead in revisiting the EU ban on feeding pigs food waste, including assessing the latest scientific developments addressing food safety issues
 - call for the EU Circular Economy Package to include legislative changes – as opposed to only clarification of guidance – to promote safe food waste to feed conversion.

- The UK Government must require all manufacturers, distributors and large supermarkets to transparently report data on levels of food waste. This will support WRAP and other organisations in developing strategies to cut waste at source, assess levels of high quality surplus food and improve mechanisms to support redistribution.
- The EU Circular Economy Package must reinstate a Europe-wide target for a 30 per cent reduction in food waste.
- Alongside this, all large food retailers must commit to the principles of Courtauld 2025 and take immediate, voluntary action to embed practices to cut food waste and improve implementation of the waste hierarchy in disposal. This should include:
 - The relaxation of cosmetic standards to ensure that all edible foodstuffs are available to consumers and to cut farm-gate wastage
 - Adopting a proactive approach to educating customers on the implications of food wastage and shifting expectations away from cosmetic 'perfection' in fruit and vegetables
 - Pledging support to a strengthened Groceries Code Adjudicator to ensure that unfair dealing does not contribute to food waste at any stage in the supply chain, not just in relation to direct suppliers.
 - Investment in continuing improvements to stock control systems to prevent food waste arising in the first instance
 - Collaboration with food redistribution charities and food banks to ensure that all edible food waste, including fresh fruit and veg, is diverted for human consumption.

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