



COOK & CHEF
- I N S T I T U T E -

Global Food Waste and its Environmental Impact

Global food waste is a far-reaching problem with tremendous financial, ethical and environmental costs. The causes range from bumpy roads to overly-selective customers, but regardless of cause, we can all pitch in to combat this global issue.



What is Food Waste?

The history of food waste is closely linked to globalisation. In an ever more networked world, supply chains get longer, and everything is available everywhere — Indian mangoes in Germany and American apples in Indonesia — the whole year round. On that often-long journey from farm to table, food is lost or wasted at every stage, and fresh foods such as fruits, vegetables, dairy and meat are particularly vulnerable.

“Food waste” and “food loss” are commonly used terms but don’t quite mean the same thing.

- “**Food loss**” typically refers to food lost in earlier stages of production such as harvest, storage and transportation.
- “**Food waste**” refers to items that are fit for human consumption but thrown away, often at supermarkets or by consumers.

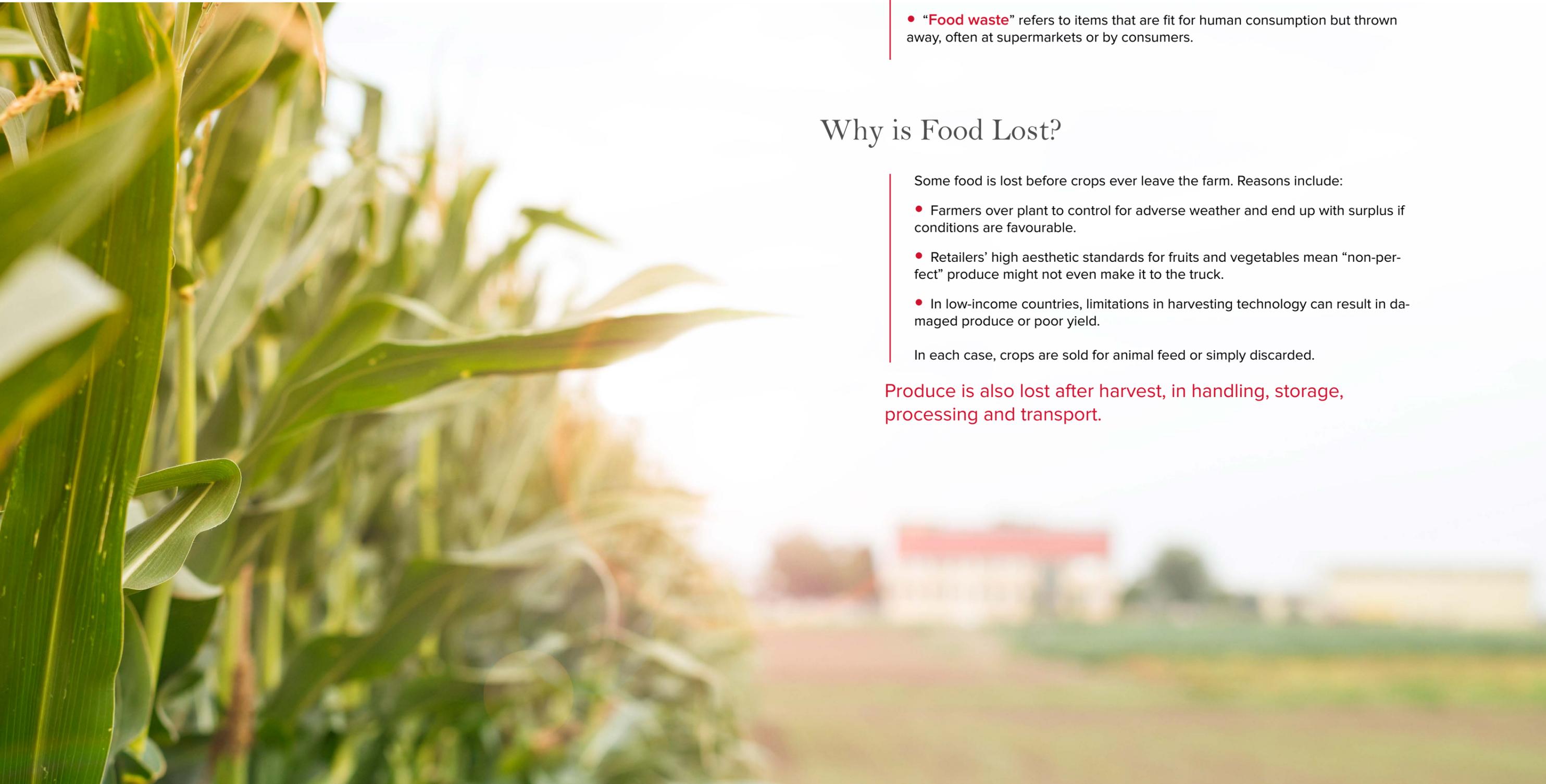
Why is Food Lost?

Some food is lost before crops ever leave the farm. Reasons include:

- Farmers over plant to control for adverse weather and end up with surplus if conditions are favourable.
- Retailers’ high aesthetic standards for fruits and vegetables mean “non-perfect” produce might not even make it to the truck.
- In low-income countries, limitations in harvesting technology can result in damaged produce or poor yield.

In each case, crops are sold for animal feed or simply discarded.

Produce is also lost after harvest, in handling, storage, processing and transport.



Why is Food Wasted?

It is exactly this abundance that contributes to food waste in industrialised countries. Consumer habits hold much of the blame, but **food waste occurs all along the latter half of the supply chain with distributors, retailers and restaurants as well.**

Reasons include:

- **All-you-can-eat buffets** and **buy-one-get-one deals** encourage people to buy **more than they can eat**, and disposable income means they can afford to waste the leftovers.
- Supermarkets **refuse to stock produce that is odd-looking but otherwise perfectly edible.**
- Their **rigorous standards are influenced by consumer behaviour**, and in some instances, government guidelines. For example, assigns grades to many fruits and vegetables based on qualities such as size, shape, texture and ripeness. Retailers are not required to use these grades, but they often do and only stock higher grade produce.
- **Customers that expect to find fully stocked shelves.** Shoppers want lots of options, and retailers don't want to run out of anything. Unfortunately, this shelf stuffing encourages waste, since products are more likely to reach their "sell-by" dates while still on the shelf. At that point, markets must dispose of the surplus, and much of it is simply thrown away.
- **Confusion over labelling.** Misinterpretation of labels such as "best by," "sell by" and "use by" causes consumers to purge their refrigerators of perfectly edible food. What people might not realize is date labels are not generally regulated by governments but rather set arbitrarily by manufacturers. In the EU, for example, "best before" is simply a manufacturer's best guess at how long a product is expected to retain optimum quality, while "use by" indicates the date until which the product should be consumed.



The Environmental Impact of Food Waste

When edible items are discarded, it's not just food that is wasted. Consider all the resources required to bring food from the farm to your table: water for irrigation, land for planting, fuel for powering harvest and transport vehicles.

Fresh water is one of Earth's most precious resources, and 70 per cent of it is used for agricultural purposes, including crop irrigation and drinking water for livestock.

Did you know the production of just one apple requires an average of 125 litres of water? That means throwing away a bruised apple is akin to pouring 125 litres of water down the drain.

The numbers with meat are even more staggering: 15,400 litres for just one kilogram of beef. According to the FAO's **Food Wastage Footprint** report, 250 km³ of water — three times the volume of Lake Geneva — is used each year to produce food that is ultimately lost or wasted.

Land is another of Earth's valuable and limited commodities. **Twenty-eight per cent of the world's agricultural area is used to produce food that is ultimately lost or wasted each year.** Not only does that result in unnecessary degradation of land, but clearing land for agricultural purposes is also a cause of deforestation, which eliminates wildlife habitats and wipes out greenhouse-gas-absorbing trees.

The FAO estimates the carbon footprint of food waste is 3.3 billion tonnes of CO₂ equivalent per year. Not only are oil, diesel and other polluting fuels used to power production machinery and transport vehicles, but greenhouse gases are also emitted by food waste itself.

Discarded waste rotting in landfills gives off methane, a potent greenhouse gas 25 times more efficient at trapping heat than carbon dioxide.



What Can We Do About It?

Help reduce loss in handling, storage, processing and transport

In low-income countries, the keys lie in better **training** for farmers and public and private investments in infrastructure. **Improved technologies** in refrigeration and reliable, renewable energy sources can have a significant impact.



Share the surplus

Supermarkets in industrialised nations can, and often do, **donate unsold goods**.

An even more efficient approach may be to reduce unused food to begin with through **increased transparency in the supply chain** and by establishing more efficient communications with farmers to reduce overproduction.

Turn waste into worth

There are already quite a few **initiatives transforming leftovers into new products**: turning coffee cherries into flour, producing award-winning ale from leftover bread, turning restaurant scraps into bioplastics and home food waste into biogas – essentially using food scraps to produce household energy.

Educate people on food safety

The food industry can work to streamline date labelling and increase consumer awareness about when food is still safe to eat. And public awareness and food waste education campaigns, and Private initiatives too, can have an impact.

Change consumer behaviour

Consumers can try to buy locally whenever possible (shorter supply chains equal fewer opportunities for loss), improve their meal planning, become informed about date labelling and only throw away food when it is truly inedible. Better yet, they can compost. Composting diverts waste from landfill and therefore reduces methane emissions.

