



clean air farming

Reducing Ammonia and Methane
Emissions from Agriculture



Stopping food waste to protect the climate and the environment

MEASURES AND POLITICAL PARAMETERS



Wasting food is expensive and harmful to the environment and climate. If food waste were a country, it would be the third largest emitter of greenhouse gases.

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From the field to the plate: Food waste occurs at all levels

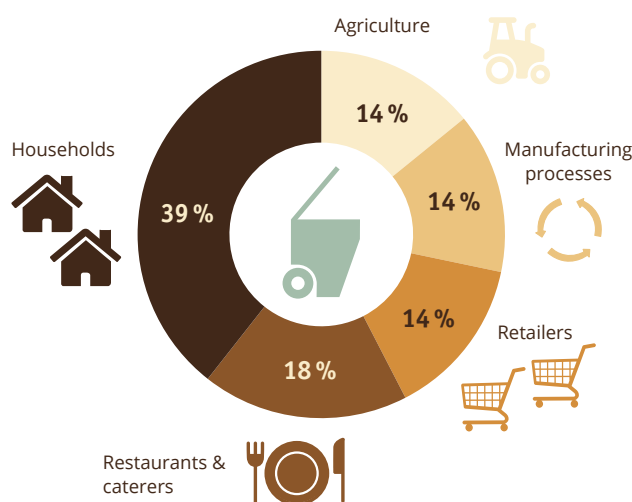
About one third of the food produced worldwide is not consumed, but ends up in the garbage. In Germany, this figure is as high as 18 million tonnes per year. More than half of this could easily be avoided if effective measures were taken to reduce waste along the entire value chain. The food that ends up in the garbage is expensive and harmful to the environment and the climate. In Germany, for example, this results in unnecessary greenhouse gas emissions of 48 million tonnes of CO₂ equivalents per year. 43.000 km² of agricultural land and 216 million m³ of water are used for nothing.^(1,2) From an environmental point of view, throwing away food of animal origin is particularly serious. 230,000 cattle are thrown away in Germany every year.⁽³⁾ This corresponds to 13,110,000 kg of climate-damaging methane which is emitted unnecessarily every year.⁽⁴⁾ With its Global Warming Potential of 28, the global warming impact of methane over 100 years is 28 times greater than that of CO₂.

Food waste occurs along the entire value chain, from the field to the plate. Most of the losses occur in private households. Many people dispose of edible food because it is past its best-before date or because it has not been purchased or cooked properly. At the consumer level,

surplus food is also wasted in the out-of-home sector (e.g. catering and restaurants). This is most often food leftovers that can no longer be served, but overproduction and an expired best-before date (BBD) also generate waste at this level. If food ends up in the bin in households and in out-of-home catering, this is officially called food waste.

By contrast, in the upstream chain, in production, processing and retail, officially refers to food losses. Causes of losses in the retail sector that could be avoided are often of a purely aesthetic nature. For example, bruised or discoloured fruit is sorted out although it still safe to eat. Vegetables that do not meet the norm, because they are too big or too small, do not even make it onto the shelves, as this is stipulated by official quality standards and voluntary trade

Who is involved in food waste?



(Source: UBA and Noleppa & Carlsburg, 2015)

standards. This also leads to losses at the level of agricultural production.

The underlying data base for the extent of food waste and losses in Germany is best at the consumer level. At the upstream levels, especially in agricultural production, there is little reliable data and few insights into the causes.

Food waste in Germany and Europe is a systemic problem. For example, overproduction on arable land is consciously accepted by stakeholders in the food system. The main drivers for this are the intense competition among retailers and mass production, which has also led to a significant reduction in food prices. The appreciation of food at the consumer level has thus also declined.

Policy Framework: Reduction targets have been set, but they have not been implemented

Within the framework of the United Nations' Sustainable Development Goals (SDG), Germany has committed itself to reducing food waste in retail and in private households by 50 % by 2030 (SDG 12.3). However, the German government does not yet seem to be making any serious efforts to achieve this goal. Instead, the responsible Federal Ministry of Food and Agriculture (BMEL) is relying on voluntary target agreements with companies and is thus delaying the necessary decisions. The publication of the National Strategy to Reduce Food Waste in early 2019 was an important step in the political and public perception of the issue. The strategy identifies both the causes and possible parameters.

However, there is a lack of political implementation. On this course, the declared goal of halving food waste by 2030 will not be achieved.

In contrast, other EU countries are taking the issue more seriously. Concrete legislation in France, Italy and the Czech Republic, for example, has made it possible to create a framework that ensures legal certainty and consumer protection, and which obliges retailers to donate surplus food from their stores to non-profit organisations. Some Member States have created financial incentives for food distribution, thereby sending clear signals to retailers. The mobilisation of the population can also be a powerful leverage factor. In Denmark, the Stop Wasting Food initiative has helped to reduce 25% of food losses within five years. Germany also needs more targeted and ambitious activities and measures to tackle the causes of food waste at all levels of the value chain.

Political parameters and demands from our perspective

1. CREATE A SECURE DATA SET AND MAKE FOOD LOSSES MEASURABLE AT ALL LEVELS.

There is currently no reliable set of data available to present food losses along the entire value chain - from the field to the plate - as accurately and comprehensively as possible. While food wastage in private households can be recorded in a representative manner, there are no reliable sets of data at the level of production, processing, retail and out-of-home catering. One reason for this is that politicians focus solely on preventing food losses on the consumer side. On the other hand, the above-mentioned stakeholders themselves seem to have only a limited in-

Causes for food waste

AGRICULTURAL PRODUCTION	MANUFACTURING PROCESSES	TRADE & RETAIL	OUT-OF-HOME CATERING	PRIVATE HOUSEHOLDS
<ul style="list-style-type: none"> • weather-related losses • official & voluntary quality requirements • mechanical damage during storage and transport • contract mechanisms • overproduction • dynamic market conditions 	<ul style="list-style-type: none"> • process losses & technical failures • damage & spoilage • quality controls • overproduction • returns from retail 	<ul style="list-style-type: none"> • exceeded BBD • goods management • quality requirements and defects • consumer demand • legal framework & conditions for food donations 	<ul style="list-style-type: none"> • wrong planning & surpluses • exceeded shelf life/ BBD • plate leftovers • too large portioning 	<ul style="list-style-type: none"> • incorrect storage • bought and/or cooked too much • packaging too large • lack of knowledge about processing & handling of food • BBD exceeded

terest in more data transparency. In the retail sector, for example, data on markdowns and returns exists, but it has not so far been made available in the process. The lack of transparency must be counteracted politically with a binding obligation to document at all levels. The European Commission set an important milestone for this in 2019. Within the framework of the delegated act establishing a common methodology and minimum quality requirements for the uniform measurement of the volume of food waste, the EU Member States will be obliged to record food waste and losses in a uniform manner and, from 2022, also to report them on a regular basis. The BMEL is now under pressure to obtain the necessary figures from stakeholders. So far, however, there has been no mention of an obligation to document. Instead, voluntary industry agreements are being developed in the framework of sector-specific dialogue forums. Companies and stakeholders are free to choose whether or not to participate in the format. Mandatory participation and agreement would be required in order to create a politically effective lever for measuring food waste.

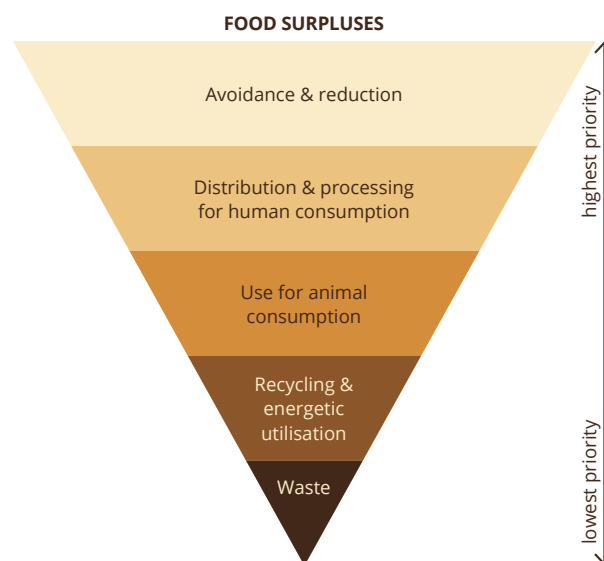
2. BINDING REDUCTION TARGETS ARE NEEDED AT ALL LEVELS.

Goods in abundance are part of the economic concept for many companies and lead to the destruction of valuable food. Given the urgency of reducing food waste at all levels, it is not enough to rely on voluntary agreements and the goodwill of companies. Binding targets are needed for individual companies to ensure that food waste is reduced by 30% by 2025 and by 50% by 2030. Compliance with the interim targets must be ensured by means of sanctions. In addition, a ban on throwing away food in supermarkets must ensure that the food trade no longer disposes of surplus food but offers it at a reduced price or donates it.

3. INTRODUCE AND IMPLEMENT A VALUE AND USE HIERARCHY FOR FOOD.

EU waste legislation has already identified food waste as an important factor for a circular economy and resource conservation. Building on this, a food value and use hierarchy is needed for the handling of food, according to which the first priority is the avoidance of surpluses (see figure below „Food Value Hierarchy“). Such a hierarchy for food should be integrated into the existing Waste Act in Germany and measures should be introduced for its implementation. If there were a legally established hierarchy for the handling of food, throwing away food would no longer be more favourable than avoiding or recycling it, and the incentives for avoiding surpluses would therefore be higher.

Food Value Hierarchy



4. SIMPLIFY THE DISTRIBUTION OF SURPLUS AND RESCUED FOOD.

Initiatives and organisations that combat food waste and promote sustainable consumption should be politically encouraged and strengthened in their food rescue and distribution activities. Food rescuers and donor businesses need legal certainty in the redistribution of rescued food. The legal situation must encourage voluntary work, support the distribution of food and provide practical solutions. EU legislation in the field of food hygiene and safety applies to food rescue. The overriding objective here is to protect the consumer. This objective should also be maintained in the area of food rescue. Nevertheless, there are requirements in current law that even generate food waste, for example through strict labelling. Food rescuers are also classified as food companies and must therefore meet the same requirements as large companies in the food industry. Here we need to differentiate between the various stakeholders. Practical simplifications and guidelines are also needed which are applicable to all and which will enable food to be rescued in a way that is both comprehensive and in line with consumer protection requirements. A practical example are the simplified delivery notes for documenting the flow of goods, which the food banks in Germany have been using for years.

5. CHECK THE BEST-BEFORE DATE FOR CERTAIN PRODUCTS AND INTRODUCE COMPULSORY ADDITIONAL LABELLING.

In private households but also in retail outlets, edible food ends up in the bin because the best-before date has been exceeded. The best-before date (BBD) is intended as a gui-



de and is not a throw-away date. The products are usually still fully edible even after the expiration of the BBD. From a purely legal viewpoint, retailers may still sell food with an expired BBD. However, the manufacturer's guarantee then expires and the liability for the product is transferred to the retailer. The risk associated with this means that goods with an expired BBD are not sold. This must be differentiated from the use-by date. Food with an expired use-by date may not be resold or passed on. According to a study, dairy products in particular (over 30%), but also finished products and frozen foods as well as beverages are disposed of once the BBD has passed. In almost half of the cases, the product is not even opened to check its usability.⁽⁵⁾ In addition to providing information about the

BBD, there needs to be a check of the BBD for certain long-life products. The methodology for determining the BBD should also be uniformly defined and meet scientific standards in order to counteract an arbitrary determination by the manufacturer. In some countries, voluntary additional information about the BBD is printed on the packaging of products. Labels such as „often good for longer“ ⁽⁶⁾ could be made compulsory in order to generally raise awareness among consumers.

6. INVEST IN NUTRITION EDUCATION AND INCREASE THE APPRECIATION OF FOOD.

The basis for an end to the throwaway mentality is education about the catastrophic consequences of food waste and a higher appreciation of food in society. To this end, information campaigns must be expanded, and educational work intensified. Knowledge about the sustainable use of food should be incorporated into school curricula. Best-before dates and use-by dates are not properly understood by a large part of the population. For this reason, retailers and manufacturers must encourage consumers to use their own senses to check whether products are still edible by placing notices on refrigerated shelves and packaging. It also makes sense to provide training for employees in the food industry so that they can act as multipliers.

Reference list:

- (1) UBA, 2020: <https://www.umweltbundesamt.de/themen/wider-die-verschwendung>
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clean air farming

ABOUT CLEAN AIR FARMING

The Project Clean Air Farming (LIFE17 GIE/DE/610 Air & Agriculture) promotes knowledge and techniques that can reduce ammonia and methane emissions while encouraging the appreciation of quality food. Meat and dairy should be consumed with the same care they are produced, and not thrown away as food waste. There is enormous potential to reduce emissions from food production. The project started in summer 2018 and will run until the beginning of 2022.

Further information on the project can be found at:
www.clean-air-farming.eu

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