

Reduction of food waste Dutch position paper

Food waste in the Netherlands and its monitoring

The Netherlands aims to ensure that food intended for human consumption is actually used for this purpose. Food or parts of food that do not end up being consumed by humans can be regarded as food waste. The Netherlands will therefore take steps to ensure:

- Prevention of loss of food destined for human consumption.
- Optimal valorisation of residual flows from the food supply chain as described in the processes laid down in the "Moerman Ladder" – that is, putting as much as possible of such residual flows to productive use for example as animal food, in bio-material processing or for other industrial purposes,

In order to keep a check on the extent to which the Netherlands is achieving this ambition, Wageningen University and Research Centre (WUR) has developed a Food Waste Monitor based on analysis of the flows of raw materials and food through the entire food supply chain from producer to consumer. The monitor examines the flows leaving the food supply chain, which are referred to as "secondary resources" here, and the final use to which these secondary resources are put, as illustrated in Fig. 1.

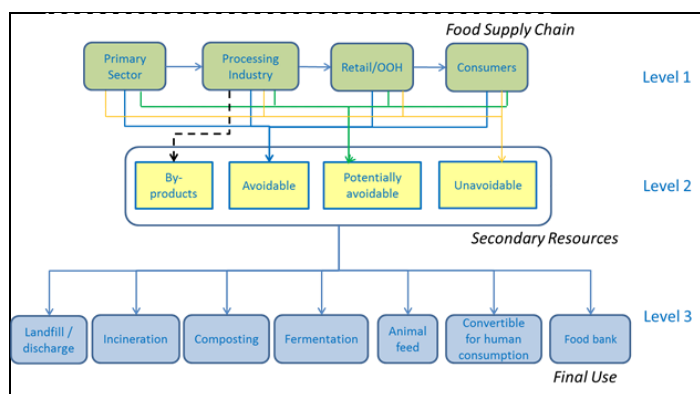


Fig. 1 Secondary resources leaving the food supply chain, and the final use to which they are put. (Source: Monitor Voedselverspilling WUR 2013)

A framework for the description of the mass balance of food flows has been created on this basis. This framework makes it possible to monitor food waste prevention, optimum utilisation of the above-mentioned secondary resources and waste management in the food supply chain. The monitor distinguishes between avoidable, potentially avoidable and unavoidable secondary resources and by-products. It was decided on the basis of this mass balance, in consultation with representatives of the Dutch food industry, that the flows of avoidable and potentially avoidable secondary resources (highlighted yellow in Table. 2) can be regarded as food waste. The Dutch government decided in 2009 that this food waste should be reduced by 20% by 2015.

Secondary resources (kton) 2009	Avoidable	Potentially avoidable	Unavoidable	By-product	Total
Food Bank	12	0	0	0	12
Convertible for human consumption					
Animal feed	277	135	470	2741	3623
Fermentation	3-27	110-125	88-112	182	383-407
Composting	47-210	0-612	100-874	0	592-922
Incineration	780-984	0	481-685	0	1465
Landfill/discharge	16-102	0	10-96	0	112
Total	1136-1612	245-872	1149-2237	2923	6187-6541

Table. 2 Amounts of the different types of secondary resources leaving the Dutch food supply chain in 2009 (Source: Monitor Voedselverspilling WUR 2013)

Two comments may be made in this connection:

1. The determination of the part of the mass balance recorded by the food waste monitor that was to be regarded as food waste – in particular the decision that part of the the secondary resources destined for use as animal food – led to a great deal of discussion.
2. Public sources of data on food flows and waste were used in the creation of the food waste monitor. Estimates of the allocation to the various flows are made on this basis. The resulting figures are therefore subject to appreciable margins of error. WUR encourages companies in the Dutch food sector to share information on their food flows with it, in order to reduce the margins of error in the model and permit more accurate estimates of the scope for improvement in this field.

Food waste in Europe: looking for the right framework for ensuring that food remains food

FUSIONS

The search for a common language on food waste is also going on at the European level. The FUSIONS (Food Use for Social Innovation by optimising waste prevention Strategies) research project investigates the problems involved and advises the European Commission on these issues, from the perspective of waste disposal. FUSIONS published a definitional framework in July 2014. A manual on how to fill in and use the framework is in preparation. The approach used by FUSIONS is based on Dutch methodology (mapping of waste and determination of flows in the food supply chain), but it does not distinguish between avoidable or potentially avoidable, or between edible and inedible. FUSIONS has also made a proposal about which flows should be regarded as food waste.

Circular economy package

The European Commission wants to stimulate the recycling of wastes and growth of the market for reuse of secondary raw materials, in the framework of the "circular economy". It has been suggested in this connection that a definition of food waste should be included in the EU Wastes Directive, together with a target for the reduction of food waste. The FUSIONS definitional framework was used as a basis for this proposal. However, the view taken by FUSIONS (and hence also by the European Commission) on which parts of the mass balance of the food supply chain should be regarded as food waste differs from that taken in the Netherlands. For example, the European definition combines edible and inedible components of the food flow, while the Netherlands only considers the edible parts. Furthermore, the EU does not consider residual flows that have been valorised by reuse as animal food or biobased products as food waste, while the Netherlands does to a certain extent. These examples make it clear that the discussion about the definition of food waste is not over yet. This gives rise to uncertainty in the industrial sector, and makes it more difficult to set targets and monitor progress. The main complaint made by industry is that the inclusion of food waste in the overall legal category of waste means that valuable secondary resources, which find useful application outside the food supply chain intended for human consumption, may be designated as waste, which creates significant legal, economic and administrative barriers to their valorisation. This acts against the idea behind the Circular Economy Package, which aims to stimulate optimal utilisation of raw materials and residual flows.

The common aim is to maximise the utilisation of raw materials

Apart from the question of which flows in the food supply chain can be regarded as food waste, companies in the food processing industry generally do their best to make optimum use of their (raw) materials. An increasing number of companies, including Albert Heijn, FrieslandCampina and LambWeston Meijer, mention this objective explicitly in their CSR mission statement in the form of a 'no waste' policy that aims in particular not to incinerate any food waste or dispose of it in landfill. Other sectors, such as the animal feed industry but also the chemical and pharmaceutical industry, have developed effective procedures for putting secondary resources from the food supply chain to good use, for example as animal feed, biobased products or pharmaceutical products.

It may be noted that there is still unused potential in this field in the Netherlands; in other words, Dutch companies could do more to make more effective use of their secondary resources. A good mass balance is needed to obtain a clear picture of the situation, and to pinpoint barriers to the most effective utilisation of secondary resources.

In brief, the Dutch government and industry have a common aim when it comes to the processing of raw materials in the food industry: optimal prevention of waste, and making as much use as possible of the unavoidable secondary resources in the food supply chain.

In the opinion of the Dutch partners to the discussion of the reduction of food waste, it is not productive to focus too strongly on a definition of food waste. This diverts attention from the primary aim, which is to make the best possible use of the raw materials, and risks leading us into an impasse. We therefore propose that the following points should be included in the new circular economy package with reference to food intended for human consumption:

- 1) A consensus should be reached that the principal objective must be to prevent as far as possible the creation of 'secondary resources' from the food supply chain, and making as much use as possible of the unavoidable secondary resources in the food supply chain.
- 2) A framework could be created to ensure that all EU Member States can map the mass balance of all flows in the food supply chain in a uniform manner. The FUSIONS 'Food Waste Quantification' document could provide a basis for this, in which is explained how the various elements of this mass balance can be filled in uniformly throughout Europe.
- 3) This framework can be included in the EU Waste Directive, with the proviso that inclusion in this directive does not automatically mean that the secondary resources referred to in this paper are equated with waste as defined in the directive. This could be achieved for example by:
 - Including a definition of 'secondary resources' instead of a definition of 'food waste'. Care must then be taken to avoid duplicating the definition of others flows in the food supply chain (there is already a definition of bio-waste).
 - Formulation of a separate Article 5a in the EU Waste Directive, referring to secondary resources in the food supply chain.Alternatively, the framework for the mass balance of food flows could be incorporated into another EU document such as the General Food Law Regulation (EC) No. 178/2002. This would avoid confusion about whether certain food flows should be regarded as waste or not.
- 4) The mass balance can be used as a basis for the joint formulation of European targets for better valorisation of secondary resources from the food supply chain and reduction of the amount of unused organic material (which has for example to be incinerated or sent to landfill. If a definition of 'food waste' would prove useful in this connection, it will have to be provided, but too much stress on what is food waste and what is not can divert attention from the primary aim and inhibit progress.
- 5) It may be helpful to introduce additional by-product criteria and end-of-waste criteria to ensure that the secondary resources can be processed without risk to humans, animals or the environment. It should also be examined in this connection whether it is necessary, possible and justified to modify the various legal categories in this field (such as animal feed, animal by-products, novel foods and hygiene) to ensure optimal, safe valorisation of secondary resources.

NB: The term 'optimal valorisation' of secondary resources from the food supply chain currently means selection of the best possible option from the "Moerman ladder", a list of possible ways of dealing with these secondary resources with maximum conservation of energy and material, in descending order of efficiency from prevention of food waste to disposal in landfill sites. The economically most favourable way of dealing with these secondary resources is not always the one that is best for the environment. There are various reasons for this, some related to the market and others to government policy (including financial stimuli).