

# New offensive against food waste





**Food waste has proven difficult to stamp out. The fact is that just as much food is being thrown out in the Netherlands now as six years ago. Time for a bigger offensive then. ‘Industry, consumers and the government need to come up with a joint strategy.’**

TEXT ASTRID SMIT PHOTO HH/MARCEL VAN DEN BERGH

In 130 Emté supermarkets in the Netherlands you can buy fresh soups sold under the label *Barstenvol* (bursting full). The soups are made from the tops and tails of tomatoes discarded by hamburger chains, or from courgettes that got damaged when pallets tipped over. ‘This week we’ve made broccoli, courgette and mushroom soup,’ says director Corien Poederbach of *De Verspillingsfabriek* (food waste factory) in Veghel. ‘Today it’s goulash soup.’ There is no shortage of surplus vegetables. ‘Since we opened our doors six months ago, a constant stream of companies and farmers have come knocking. We have a team of 15 people working here but we could easily grow to 50. Currently we make 10,000 litres of soup and sauces a week, but there is potential for 10,000 litres a day,’ says Poederbach.

*De Verspillingsfabriek* is a response to the vast quantities of food that get thrown out in the Netherlands: in 2014, between 1.91 and 2.64 million tons. That amounts to 114 to 157 kilograms per person per year. A large proportion of this wastage occurs on farms and at trading organizations, food processing companies, in-company caterers, hospitals and supermarkets. But consumers are responsible for some of it too, throwing away an average of 50 kilos of the food they buy per year.

#### NO CHANGE

Cutting down on food waste has been on the Dutch government’s agenda for years

now. The ministry of Economic Affairs (EZ) set a target of 20 percent less food waste in 2015 compared with 2009. Everyone thought that was a feasible goal but it has probably not been achieved. According to the *Food Waste Monitor 2009-2014*, published by Wageningen Food & Biobased Research this summer, the amount of unused food stayed the same over this period.

‘The figures for 2015 are not out yet, but we can safely assume that there wasn’t a 20 percent drop in that year either,’ says Toine Timmermans, programme manager for sustainable food chains at Wageningen Food & Biobased Research. A big disappointment, although the ministry of Economic Affairs does see a glimmer of hope. ‘At least food waste did not go up,’ says food quality policymaker Tekla ten Napel. ‘Even though agricultural production and food imports and exports did increase and supermarkets and catering companies did buy more.’

Why the target was not reached is anyone’s guess. Timmermans does have a hunch though. ‘There are numerous initiatives by companies and consumers under way, but they are all small-scale.’ So Wageningen is looking for all kinds of possibilities for tackling the food waste issue on a larger scale.

Timmermans: ‘We want to build up an ecosystem of businesses and researchers who think up solutions and put them into practice together, with the government >

## SUPERMARKET WASTE USED BY CHEMICAL INDUSTRY

Leftover bread from the supermarket sometimes gets a second life as breakfast cake, cookies or breadcrumbs. But leftover food can have other uses too, as a resource for the chemical industry.

Wageningen PhD candidate Mark Roghair of the Environmental Technology chair group is studying one example of this. He wants to know whether valuable fatty acids such as caproic acid can be extracted from supermarket waste. This fatty acid can be used in the refining industry, where it helps make paint easier to mix and spread, and it can also be used to make lubricants, fuels or bioplastics. 'At present, supermarket waste is often used to make biogas, but caproic acid is more lucrative,' says Roghair. 'And using this caproic acid might reduce the felling of tropical forests, since at the moment our main source of these fatty acids is palm oil.'

The PhD candidate is researching to what extent a mixture of bacteria and ethanol can transform supermarket waste (fruit, vegetables and meat) into the fatty acid in a bioreactor. Roghair: 'We want to make sure the desirable bacteria can do their work as well as possible, and that undesirable bacteria are kept at bay.' Follow-up research is planned to find a profitable way of obtaining the purest possible caproic acid from the bioreactor.



PHOTO SHUTTERSTOCK

**'In three weeks, consumers learn to waste 30 percent less'**

facilitating.' *De Verspillingsfabriek*, a concept thought up by Timmermans and entrepreneur Bob Hutten, is one example of this. 'This is literally a factory which processes leftover vegetables. Money is earned here with products which meet all the standards. The suppliers are paid for the ingredients, the leftover vegetables. A system has to have financial incentives for all parties involved if it is to be sustainable.'

## PREVENTING WASTE

But the *De Verspillingsfabriek* cannot turn all the discarded food into soups and sauces. What to do with the leftovers at bakeries, fruit farms and supermarkets? To address this question, Wageningen teamed up in May with six partners, such as HAS applied sciences university, to form The Source Shakers. Timmermans: 'Our promise is: let us have a look around your company and we think we can prevent 25 percent of the waste and make use of another 20 percent of your leftovers in new products for the market.' The Source Shakers are now working with six companies, offering solutions in the bread, meat, supermarket and greengrocers sectors. A Brabant leek farmer, for example, asked what he could do with the large amounts of waste generated on his farm: not all his leeks reach the market. The Source Shakers proposed a technical solution, which the leek farmer is currently trialling.

One source of inventive solutions is Carve, a research project at Wageningen Food & Biobased Research. This project works with companies such as FrieslandCampina, Albert Heijn or Iglo to find ways of preventing food waste, using resources as efficiently as possible, and identifying products to make with supplies of surplus food. The goal is to give this food as much added value as possible. Companies that consult The Source Shakers can benefit from the knowledge Carve gains from this research. 'The Source Shakers are really like brokers, offering solutions. We look for a match between the solutions and the business model.'

Tekla van Napel at the ministry of EZ firmly believes these projects will contribute to the battle against food waste. That is why the government is investing in them. She has high expectations of self-monitoring too. 'Companies which monitor their food waste themselves become aware of the issue and often immediately see ways of cutting down on waste.'

Wageningen and the Alliance on Sustainable Food – a joint venture in the agrifood chain – have developed a self-monitoring tool for the industry. A pilot conducted last year showed that the tool gave companies a lot of insight, enabling them to see the waste flows and their contents, and to come up with possibilities for improvement. The hospital, the caterer and the French fries factory in Zeeland that joined in the pilot all found ways of cutting down on food waste. Timmermans: 'This year we are working on a structure for establishing the self-monitoring on a broader footing. Next year we are going to continue the work with a large group of companies.'

The government aims to use the data gained from self-monitoring to improve the national Food Waste Monitor. The EU plans to make it compulsory from 2020 for all member states to report on their food waste. Ten Napel: 'Now we still base the figures on published data from waste disposal companies. But those figures are not precise enough because we have no data from companies.' Companies are reluctant to provide such data, as they could contain sensitive competitive information. With this in mind the ministry of EZ is looking for ways of publishing the data without damaging a company's competitive edge.

### COOKING TOO MUCH

Meanwhile consumers, who are responsible for the rest of the waste – about 40 percent of the total – are being encouraged to reduce the amount of food they discard because they buy too much, cook too much and often store food wrongly. Through the Nutrition centre, the government has invested in various

campaigns to raise awareness of this. Meanwhile the ministry of Economic Affairs is working on a deal with producers on the use-by dates on products. Some products such as sugar, salt and vinegar carry such dates even though they are not really necessary. This causes consumers to throw out products unnecessarily. At the beginning of October, Wageningen Food & Biobased Research started a project called *Houdbaarheid begrepen* (Understanding Shelf Life). In this project researchers study how supermarkets could bring their stock more in line with consumer demand. One way of doing this would be to analyse the digital shopping lists of big groups of consumers and adjust the stock accordingly. Research is also being done on how consumers respond to the shelf life of products, both in the supermarket and at home.

### SMALLER UNITS

'In theory consumers could quite quickly reduce food waste by 30 to 40 percent,' says Timmermans. 'We saw that in Foodbattles, in which for three weeks consumers keep an eye on what they do with their food, and receive tips.' But this kind of behaviour change won't happen by itself. Timmermans: The government and the industry will have to go on drawing attention to the problem for at least five to ten years, and not just through publicity campaigns. We'll have to offer consumers real solutions and instruments that help, such as smaller units of packaging, apps for better planning, and better labelling on products.'

Refresh, a European project with a budget of 9 million involving 12 member states and coordinated by Timmermans, is currently studying which national public-

private strategies work well. In 2006 the UK launched a big anti-food waste campaign which led to a lasting 21 percent reduction in waste by consumers and 13 percent in the industry. The programme cost the British government millions. 'There isn't the money for that in the Netherlands, nor do I think it's the right approach in this day and age,' says Timmermans. 'The Norwegian model, in which government and industry split the costs 50-50, might suit us better.' Norway got good results too, reducing food waste by 12 percent. The Dutch government has invested some money in obtaining insight into the situation and facilitating solutions, but gave the industry the leading role. 'I think we've all got to do this together. Industry, consumers and the government need to arrive at a joint strategy that formulates clear objectives, which are then monitored as well,' says Timmermans. 'I am hopeful. There are a lot of initiatives under way at the moment, both in Europe and the rest of the world. The United Nations' target is to be wasting 50 percent less food by 2030. The Netherlands has a leading role to play here. That puts extra pressure on us to set a good example.' ■

[www.wur.eu/foodwaste](http://www.wur.eu/foodwaste)

### CDI COURSE

Wageningen Centre for Development Innovation will run the English-language course Lost harvest and wasted food in September 2017. [www.wur.eu/cdi/shortcourses2017](http://www.wur.eu/cdi/shortcourses2017)

**'Let us have a look around and we'll prevent 25 percent of the waste'**