CONCITO

REPORT
June 10, 2011

# The Hidden Food Waste
# Mapping and Recommendations

## 1. Introduction

Food waste is a waste of resources and contributes unnecessarily to the emission of greenhouse gases. Since January 2011, Denmark's green think tank, CONCITO, has therefore worked on identifying possibilities of reducing "the hidden food waste" in the food sector. The project has been completed with the financial support from Promilleafgiftsfonden and the Ministry of Agriculture, Fisheries and Food and in close cooperation with the latter.

This report sums up the existing knowledge about "the hidden food waste" from field to shop to industrial kitchens; partly based on two analyses by the Faculty of Agricultural Sciences at Aarhus University (DJF) and the Institute of Food and Resource Economics at Copenhagen University (FØI) for the Ministry of Agriculture, Fisheries and Food in relation to this project, and partly on the basis of a comprehensive and a very constructive dialogue with key players in the food industry.

The report ends up in a list of recommendations containing 18 suggestions on how the players in the food sector and the authorities can contribute to minimizing the actual food waste as well as making use of the inevitable food waste in an optimal manner.

## 2. Background

### 2.1. Purpose

The purpose of the project is to bring together all the central players in the value chain of the food sector in Denmark in a joint effort to limit food waste and ensure the most efficient utilization of the inevitable food waste.

### 2.2. Method

The purpose of the project has been carried out through the following steps:

1. Mapping of the potential for reducing food waste in the individual links in the value chain.
2. Identification of possible efforts to reduce food waste in the individual links in the value chain.
3. Holding a conference where key players help quality assure the project's mapping of "the hidden food waste" as well as possible efforts, and
4. A follow-up, where the recommendations are summed up and communicated, i.e. this report and the communication of it.

The individual players still bear the full responsibility for their efforts, however, it is the intention that the present project partly will make it possible to highlight a number of barriers that unintentionally exist in the legislation or through other players' behaviour, and partly will be motivational and inspirational to all players.

Steps 1 – 2 of the project have consisted of the following activities:

• Literature studies and calculations of the existing knowledge in the field carried out by DJF and FØI for the Ministry of Agriculture, Fisheries and Food.
• Interviews and company visits carried out by CONCITO.
• The holding of three workshops focusing on food waste in the horticultural industry, the food industry (dairy and slaughterhouses) and the retail industry, carried out by CONCITO.

The outcome of steps 1 – 2 was discussed on a conference on May 12, 2011, where 110 participants, including the minister of Agriculture, Fisheries and Food and key players from the food sector, actively took part in the discussions. All presentations, memorandums, articles and pictures from the conference are available on:
http://www.fvm.dk/indholdsside.aspx?ID=45593

This report sums up the potential of reducing "the hidden food waste" in Denmark as well as suggesting possible actions, which, in CONCITO's opinion, will be realistic to take.

The report has been composed by project manager, Michael Minter and managing director, Thomas Færgeman, CONCITO, June 2011.

**2.3. Definition of "the hidden food waste'**

Food waste is often defined as the part of the kitchen waste that is being disposed of even though still highly edible. In this project, we look at food waste in a broader perspective, also including "the hidden food waste", i.e. the plants and animals which could have been consumed if treated or used optimally through the entire chain from primary producer to retailer.

This also includes e.g. the loss in the field when less than the maximum potential yield is harvested as a consequence of size demands on fruits and vegetables, or if the producer for different reasons is forced to use his raw materials in a non-intentional and/or a non-optimal manner. Similarly, fish or dead animals thrown away due to illnesses or being discarded at the slaughterhouses can be considered as part of "the hidden food waste".

In this report, the concept "the hidden food waste" also covers the food waste hidden from the consumer, i.e. the food waste in the value chain from primary production to the food being served in restaurants and industrial kitchens or ending up in the consumer's shopping basket.

## 3. Mapping of "the hidden food waste"

Mogensen et al. (2011) estimate the total waste of edible foods from primary production to retailers and industrial kitchens to be 303.000 tons per year. In addition to this, there is an estimated 541.000 tons per year of non-edible food waste in the primary sector, i.a. due to dead and discarded animals as well as grain waste in the field. The waste of edible foods in the food sector thus exceeds the food waste from the households, estimated to be 237.000 tons per year, which makes it highly relevant to look at the possibilities of reducing the food waste in the food sector.

Furthermore, the estimate doesn't include the discarding of fish which according to the Ministry of Agriculture, Fisheries and Food is estimated to be between 50.000 and 60.000 tons per year in the oceans around Denmark and which should be added to the 303.000 tons.

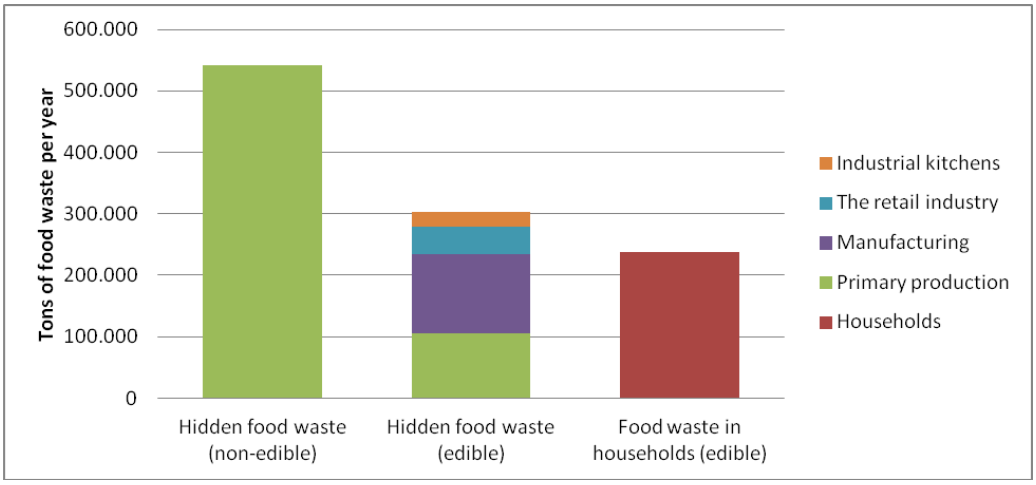


*Figure 3.1. 'The hidden food waste' compared to household food waste.*
*Source: CONCITO based on Mogensen (2011).*

**The food sector is responsible for the main part of the food waste**

The dimensions and the challenges of waste due to mortality, waste of grains in the field and discarding of fish in primary production are relatively known. In this project, we have therefore focused on the potential for reducing the food waste from edible foods from the primary production (fruits and vegetables), the food industry, the retail industry and the industrial kitchens, i.e. the middle column in figure 3.1. According to DJF's estimate, this part of the food waste makes up 28 % of the total food waste of 1.1m tons and 56 % of the edible food waste of 540.000 tons.

Denmark is thus more or less in line with the European average in the estimate from FAO (2011). It shows that the food loss and food waste in Europe is 280 kilos per person/year of which 185 kilos are wasted in the chain from field to retailer and 95 kilos are wasted in the households. In Danish terms, this is equivalent to a total food loss and food waste of 1.4m tons of which 66 % is wasted from field to retailer.

**Significant economic effects**

Jensen (2011b) illustrates the food waste from the food sector with the diagram below where an estimate of a contribution from the wholesale/transport link is also included (figure 3.2). However, as there are no immediate Danish data on the dimensions and CONCITO's interviews didn't find a significant loss due to transport and since large parts of the waste occur in connection with import and export – and thus also due to players outside the Danish food sector – we have chosen to exclude the wholesale/transport link from this project.

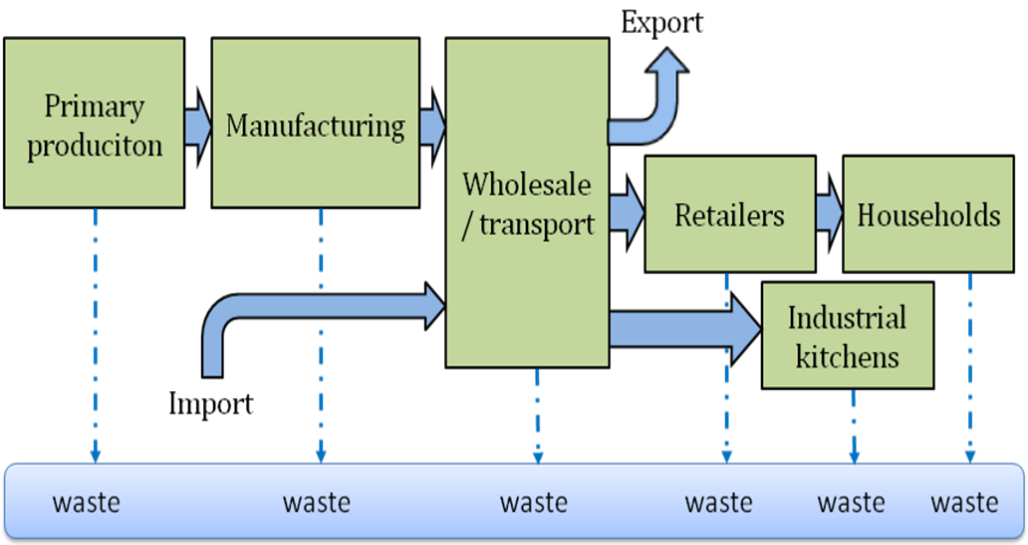


*Figure 3.2. Food waste in the different steps of the food chain.*
*Source: Jensen (2011b).*

Based on data from Mogensen et al. (2011), as well as their own calculations, Jensen (2011) estimates the total macro-economic costs of the total food waste from field to table to be DKK8.4b per year. The distribution of these costs is illustrated in figure 3.3. If you look solely at the macro-economic costs of the waste of edible foods from primary production (fruits and vegetables), the food industry, the retail industry and the industrial kitchens (middle column in figure 3.1), they are estimated to amount to DKK 2.2b per year.

The most significant part of the food waste from meat and dairy products lies in the food sector while food waste from breads, fruits and vegetables is mainly found in the retail link.

• The largest waste of grains, flours and breads occurs in the retail industry (DKK 150m), followed by the industrial kitchens (DKK 110m).
• The largest waste of fruits and vegetables is found in the retail industry (DKK 428m), followed by the primary production (DKK 311m).
• The largest waste of milk, eggs and dairy products takes place in the food industry (DKK 202m), followed by the industrial kitchens (DKK 108m).
• The largest waste of meats is found in the food industry (DKK 411m), followed by the industrial kitchens (DKK 90m) and the retail industry (DKK 73m).

To this must be added the value of food waste from other food categories that are not estimated separately in the present project (fish, confectionary, spices and other ingredients), that are estimated by Jensen (2011) to amount to DKK 1b per year, half of which is likely to be from households. It is emphasized that the estimate is subject to uncertainty, both with regards to the amounts in question and regarding the estimated macro-economic calculation prices. Other estimates e.g. end up with significantly larger amounts of food waste. As an example, The Danish Agriculture and Food Council estimated in the memorandum ”Estimating the food waste from households” from 2009, the annual amount of waste to 125 kilos per person of which half is characterized as food waste equivalent to 20 % of the household food expenses – or around DKK 16b (incl. taxes).

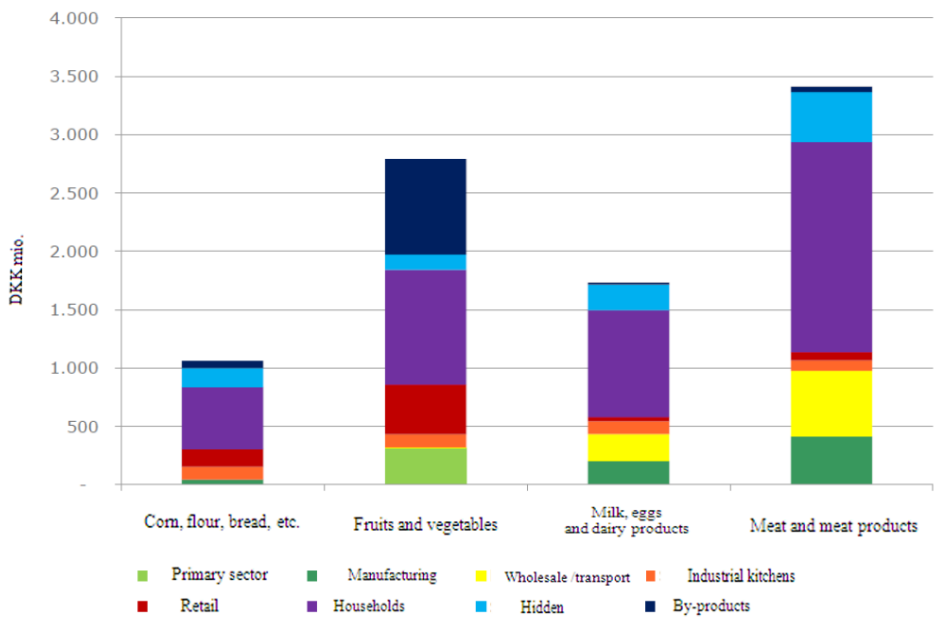


*Figure 3.3. Macro-economic costs of food waste (”market prices”, ex. VAT). The ”hidden” food waste is, in this figure, the non-edible raw materials etc. from the primary sector. Source: Jensen (2011b)*

**Great significance to the climate**

According to the World Resources Institute (WRI), agriculture and deforestation is responsible for 31.7 % of the global emission of greenhouse gases. Furthermore, it is estimated that in the chain from field to table, food waste makes up between 30 and 50 % of the global food production. The emission of greenhouse gases from food waste is thus at worst equivalent to the impact from the entire transport sector (figure 3.4). However, even with the less negative estimate, we are talking about a significant climate effect, vital to minimize in order to fulfil the international climate targets.

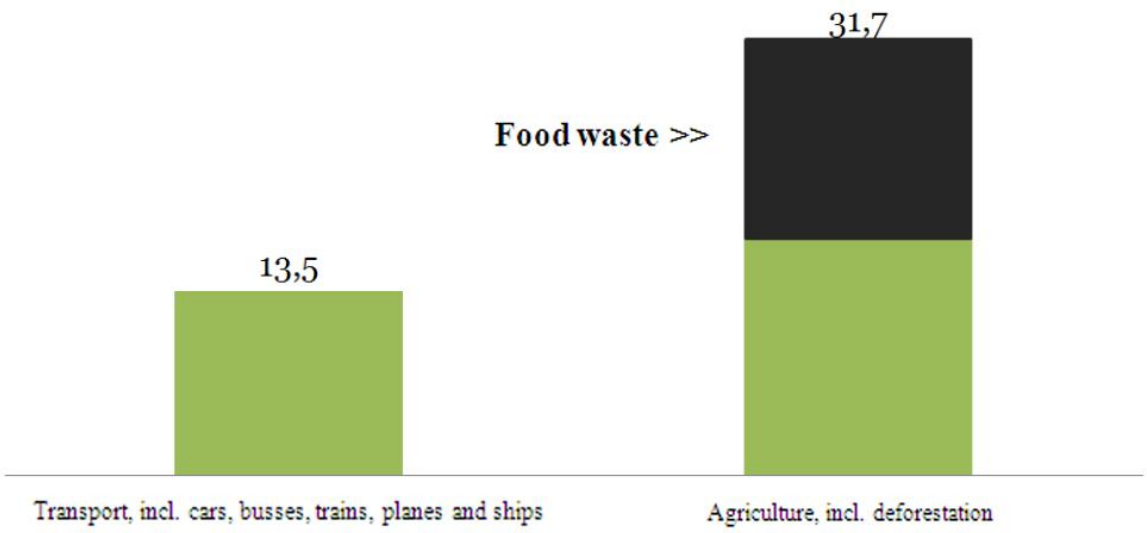


*Figure 3.4. The world's greenhouse gas emissions in percentages*
*Sources: CONCITO based on World Resources Institute (2009).*

Mogensen et al. (2011) estimate the total climate footprint of a Dane's diet to an annual 1.684 kilos of CO2e. The climate footprint from production and consumption of different foods, incl. the contribution from the waste of edible foods, are illustrated in figure 3.5. This estimate is just under half of CONCITO's (2010) and is due to the fact that Mogensen et al. doesn't include land use change effects in other countries, e.g. deforestation to produce feed for Danish pig production. However, Mogensen et al.'s calculations do give a hint as to where, from a climate perspective, an effort would be worthwhile with regards to a national minimization of food waste in the food sector, namely in relation to meats, breads, rice, pasta as well as fruits and vegetables.

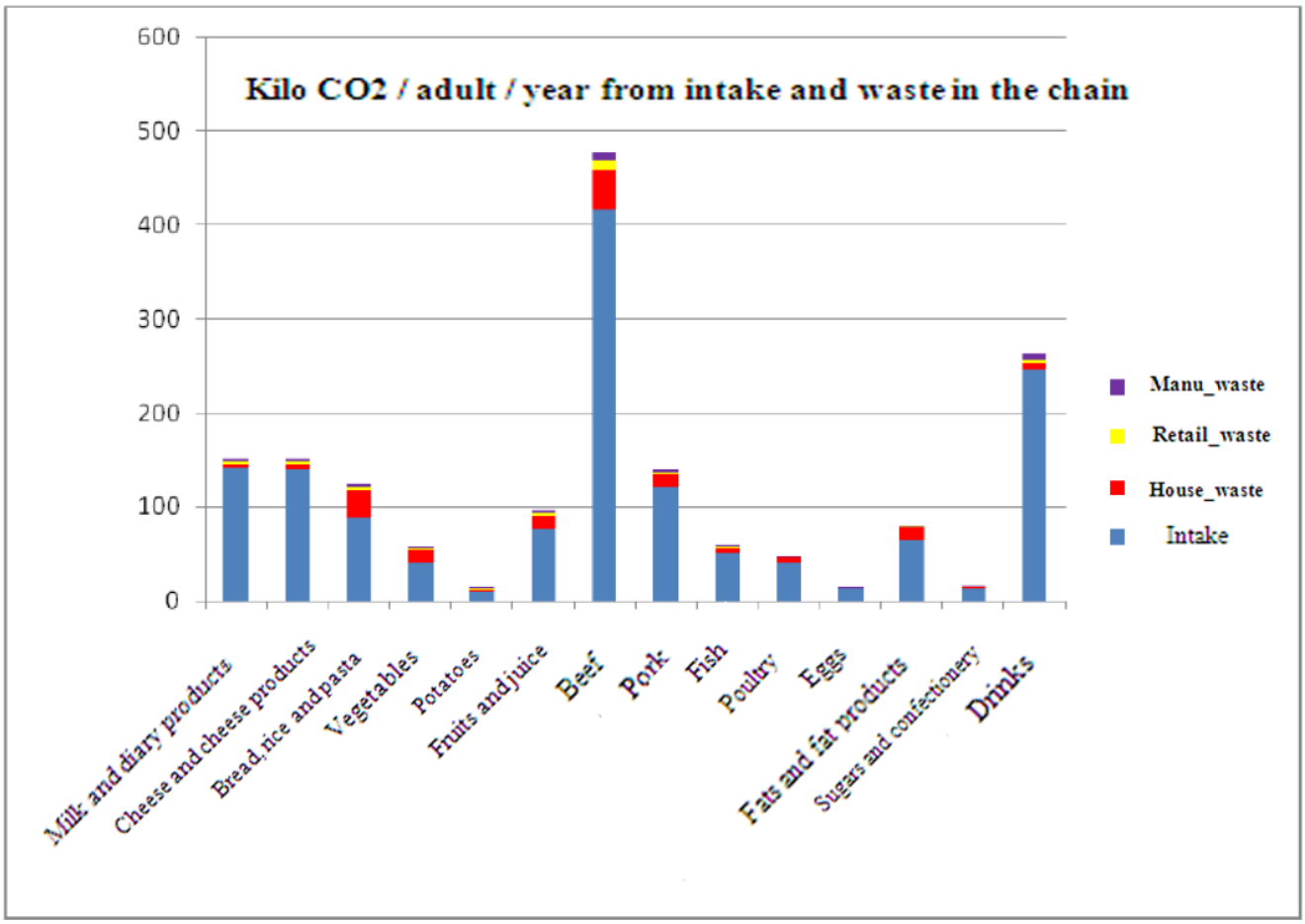


*Figure 3.5. The Danes' climate footprint from food production and food consumption. Source: Mogensen et al. (2011).*

Based on the above as well as on CONCITO's and the Ministry of Agriculture, Fisheries and Food's workshops and conference with players from the food sector, the following chapter presents a list of recommendations to where the food sector advantageously can reduce its food waste.

## 4. Recommendations for reducing food waste

### 4.1. The primary production

CONCITO's interviews and workshops with primary producers and their organizations show that in general, producers of grains and meats are very efficient when it comes to selling and using their products; ignoring the problems with animals dying of diseases in production and transport. The most important exception to this are producers of fruits and vegetables - in particular producers of open field crops - who find it hard to plan their production in detail due to wind and weather conditions. In addition, the following relations contribute to the fact that around a third of the produced fruits and vegetables are discarded *before* they reach the retail link:

The significance of the quality requirements on the degree of discarding is responsible for a substantial waste of good foods. The big challenge when it comes to apples, pears and root vegetables are the requirements on size and shape: apples sell better when they have a diameter of 70-80 mm. At 60-70 mm, the price per kilo typically falls by DKK 0.5, and at a diameter of 50-60 mm the price per kilo has dropped by DKK1. At a normal price of DKK 5 per kilo, we are thus talking a price reduction of 10-20%. There are examples where up to 90 % of a fruit harvest is discarded due to size requirements. 10-20% of all squash are discarded due to marks on the skin of the vegetable. It has e.g. been mentioned that in general iceberg salads are unsellable if they weigh less than 350 grams and should a couple of iceberg salads in a field actually weigh 350 grams, there is a large risk that for financial reasons, the gardener ploughs in the entire production as it would be too expensive to harvest the crop.

Another big challenge with regards to wasting fresh fruits and vegetables is loyalty or lack thereof when it comes to signed contracts: Typically contracts are entered into either for a fixed price and a fixed amount or for a fixed amount and a variable price. However, these contracts are often broken by the retailers throughout a season. This can happen e.g. when a retailer all of a sudden imports a large quantity of crops from southern Europe, putting severe pressure on Danish suppliers with regards to price. Conversely, it is severely frowned upon if a supplier cannot live up to his supply obligations which can lead to a "constant overproduction" which in turn leads to food waste for the producers. On the other hand, players in the retail industry points out examples of producers of fruits and vegetables counting on selling their overproduction.

Finally, there is a constant overproduction to meet market demands. When it comes to open field crops, the overproduction results in a substantial food waste since the main costs of production lie in the harvesting and therefore in situations with low prices or low sales, it is more profitable to plough in the open field crops than harvest them. On the other hand, greenhouse crops are harvested and sold almost no matter how low the price is, since they cannot just be ploughed in and the harvesting costs therefore have to be paid regardless.

**Solution suggestions**

1. Use of equal and perhaps longer contracts, not breachable only by one of the parties involved and not without compensation.
2. The horticultural sector works more with marketing unsaleable sizes, e.g. snack carrots, large cabbages for industrial kitchens, fruits for juices, stews, jams, etc.
3. The retail industry sells fruits and vegetables per kilo instead of per piece.

### 4.2. The food industry

CONCITO's research shows that the food industry is good at controlling the production and using the residuals for e.g. production of biogas. Through packaging and date marking of the foods, the food industry has an important role to play with regards to the dimensions of the food waste in the shops as well as in the households. The food industry could therefore contribute to a reduction of the food waste by working with the following challenges:

The amount of packaging has from the industry's side for many years sought minimized for environmental reasons. However, with regards to e.g. sliced meat, the environmental impact by throwing away ¼ of a pack because the last couple of slices have gone a bit pale and greasy, are far higher than if you package the sliced meat with an extra membrane, allowing you only to open half the package at the time – like e.g. pita bread.

"Use by" ('Mindst holdbar til datoen') is in Denmark assigned a special rule which doesn't allow products to be sold or given away after this date. In other EU countries, the shops are allowed to sell spaghetti a week past the use by date, as long as it is specified on the product. At the moment, the Ministry of Agriculture, Fisheries and Food is evaluating the challenges with regards to lifting this rule. Subsequently, a suggestion to abolish the Danish special rule will possibly be worked out and submitted to hearing.

The regulation on eggs means that in the EU eggs can only be sold until seven days before the expiration date.

The withdrawal of goods is a problem as in praxis it is equal to waste. Some goods are thrown away due to problems with food security but a lot are discarded due to technical errors on the packaging. 20 % is related to date marking errors and 5–10 % to other types of marking errors such as the wrong label, the wrong list of ingredients, etc. One chain of shops has experienced having to discard a large quantity of Ritter Sport with Italian text as well as a quantity of frozen ducks due to date marking errors.

**Solution suggestions**

4. Packaging prolonging the lifespan of a product and making it easier to empty – including weighing the resource waste of food waste vs. extra packaging.
5. Information about the meaning of "use by" (mindst holdbar til") on packaging through information campaigns; perhaps changing the label to "best before".
6. Stricter methods for descriptions of contents and date marking in order to avoid recalling products, perhaps also through increased focus on the consequences of enforcing labelling rules in cases not connected with health risks.
7. Working towards changing the EU's regulation on eggs.

### 4.3. The retail industry

CONCITO's dialogue with the food industry didn't point to any significant food waste reduction potentials in the food industry itself, however, a number of relevant efforts in the food industry were pointed out which could affect both the food waste in the retail link and with the consumer, including package sizes. In addition, the following challenges are pointed out:

In a lot of shops, customer demand and additional sales requirements mean that products are not allowed to be sold out and it is even required that the shelves are full just before closing time. This is not a problem when it comes to canned pineapple; however, it is rather unfortunate when it comes to fresh bread.

The sale of fruits and vegetables by weight has been argued as a possible way of promoting the sale of odd sized foods. In this relation, several players have pointed out the difficulty of this because the customer has to weigh a lot of products; however, this doesn't have to be the case. In Sweden as well as in a lot of European countries, it is normal in e.g. the supermarkets that vegetables are weighed by the checkout on scales that are an integer part of the register belt.

The discarding of products before their expiration date is a relevant problem as the consumers place a lot of value on freshness and the sales could stop if fresh products are not on the shelves. The customers' large focus on freshness means that products with a short lifespan is a bad signal to send and it often results in the discarding of fresh milk long before the expiration date. This also includes fresh bread and to a certain degree spreads and sliced meats.

The handling of fruits and vegetables in the shops is important: Several places, the products are not kept cool and if the fruit is delivered loosely in boxes, they will easily be bruised by the customer's handling.

Package sizes: The large supermarket chains define what the consumers want and how they can compete with each other rather than consumers deciding what the shops should have on their shelves. The advertising circular highly affects large parts of the sales and must differentiate from one chain to another, e.g. by using different package sizes, making a direct comparison difficult.

Some shops have tried to differentiate package sizes and offer singles-packages which turned out, however, to be almost unsaleable. This might be due to the higher price as the single-packages are more expensive per kilo because of the extra packaging and the costumers thus feel cheated buying the small package.

Composition of products: It has been mentioned that shops could do like Aarstiderne and make meal-size packages for e.g. 4 persons; measured rice, meats, greens, etc.

**Solution suggestions**

8. Abolition of the ban against selling food after the "use by" ("mindst holdbar til") date.
9. "Customer education" through information campaigns focusing on senses instead of the expiry date and recipe databases with an "empty the fridge" function.
10. "Retail education" through information and education focusing on accepting products being sold out or nearly sold out.
11. Increased use of discounts on products close to their expiration date, perhaps through an automatic lowering of the price.
12. Information and education of employees in the retail industry on correct handling of fruits and vegetables (keep the cold chain, shelf exposure, gentle handling of e.g. apples so they are not bruised).
13. Store sales of meal boxes with accurately measured ingredients.
14. Limiting sales campaigns focusing on quantity discounts and large packages.
15. Introduce various package sizes – also for small households.

### 4.4. Minimizing and utilisation of excess food

CONCITO's dialogue with industrial kitchens has pointed to a large food waste from industrial kitchens because the production happens far away from the people eating the food and the producers thus have limited knowledge of these people's needs. In addition, there is a substantial food waste from canteen buffets, etc. due to the requirement of full trays; also just before closing time. This waste could be reduced by bringing the production closer to the customers and by serving food in measured portions (ladling out) instead of via a buffet.

CONCITO's dialogue with industrial kitchens, the retail industry, the waste industry and the food banks has pointed out the following possibilities to better avoid the inevitable food waste:

Utilization as food donations: Many producers and suppliers are willing to give away foods for initiatives such as e.g. the food bank – if they are not held responsible for the food security. Several products are often still consumable after their use by date. Some producers are worried, however, that this kind of utilization could turn into the wild west, where goods are resold on the black market and thus ruining the producers brands/branded goods.

Shops who have worked with this kind of utilization argue that it is impossible to donate anything at the shops due to regulatory requirements on food security, etc. Instead, donations were given at a central warehouse where there is better control on handling.

Biogas is an alternative to incineration and there seems to be a business potential in collecting organic waste from large stores in the big cities. Politically, it is of interest since there is a lack of high value products for biogas, which is the premise for biogassing large amounts of manure.

NorgesGruppen who is responsible for a not insignificant part of Norway's retail businesses has a goal of biogassing 90 % of the 20.000 tons of annual food waste from their shops. The logistic transport challenges must be assumed a lot smaller in Denmark than in Norway.

In Denmark, there seems to be a standstill with regards to the utilization of food waste from households and retailers; this is based on a report about organic household waste from the Danish Ministry of the Environment from 2003, which concludes that there are fewer energy advantages by biogassing compared to incineration but that it is more expensive for the cities to collect several waste fractions from the households.

Another study from the Danish Ministry of the Environment from 2006 concludes, however, that it makes good sense for the grocery shops to separate their organic waste for biological treatment. The waste comes in large uniform fractions which relatively easy can be collected and recycled. The shops are able to handle the extra waste fraction – even in such cases, where the packaging has to be removed from the waste. If the waste is treated in a biogas facility, the energy production is larger than on an incineration plant – large enough to also cover the energy use of colleting the waste.

This, however, places a cooperative demand on the shops – also across ownerships. The veterinary rules place sharper demands on handling organic waste from the grocery shops. The current problem is the price, as biogas at the moment costs DKK 500 per ton while incineration in e.g. Copenhagen costs DKK 450 per ton and in some places, like Fyn, only costs DKK 250 per ton.

**Solution suggestions**

16. Increased focus on food waste in industrial kitchens, i.a. through better knowledge of consumers' needs combined with food servings in individual portions instead of via buffets.
17. Move responsibility for food security from wholesalers, retailers and industrial kitchens to initiatives like the Food Bank by passing on foods.
18. A new evaluation of the potential in the utilization of organic compounds from the retail industry for biogas; keeping in mind the Energy Strategy 2050 which includes a goal for biogassing 50 % of all manure and a potential change in the tax structure in the field.

The list of recommendations is summed up in table 4.1, together with a list of potential key players working towards decreasing food waste in the food sector.

| Action | Significant players |
|---|---|
| *Primary production* | |
| 1. Mutually binding agreements between producers and the retail industry on delivering and buying fruits and vegetables; preferably long term agreements. | • The Horticultural Industry<br>• The Retail Industry |
| 2. Increased marketing efforts on selling fruits and vegetables in different sizes. | • The Horticultural Industry<br>• The Retail Industry |
| 3. Selling fruits and vegetables pr. kilo instead of pr. piece. | • The Horticultural Industry<br>• The Retail Industry |
| *The food industry* | |
| 4. Development and use of packaging where it is possible to gradually open the package as the product is used. | • The Food Industry<br>• The Packaging Industry |
| 5. Information campaigns about the meaning of "use by" ("mindst holdbar til") on packaging, as well as analysis of whether the label "best before" is easier to understand. | • The Food Industry<br>• Consumer Organizations<br>• The Retail Industry<br>• The Authorities |
| 6. Stricter methods for descriptions of contents and date marking in order to avoid recalling products, perhaps also through increased focus on the consequences of enforcing labelling rules in cases not connected with health risks. | • The Food Industry<br>• The Authorities |
| 7. Working towards changing the EU's regulation on eggs not being allowed to be sold after seven days before the expiration date. | • The Authorities |
| *The Retail Industry* | |
| 8. Abolition of the ban against selling food after the "use by" ("mindst holdbar til") date. | • The Authorities |
| 9. "Customer education" through information campaigns focusing on senses instead of the expiry date and recipe data- | • The Retail Industry<br>• Consumer Organizations |

| | |
|---|---|
| bases with an “empty the fridge” function. | |
| 10. ”Retailer education” through information and education focusing on accepting products being sold out or nearly sold out. | • The Retail Industry<br>• Consumer Organizations |
| 11. Increased use of discounts on products close to their expiration date, perhaps through an automatic lowering of the price. | • The Retail Industry |
| 12. Information and education of employees in the retail industry with regards to correct handling of fruits and vegetables (keep the cold chain, shelf exposure, gentle handling of e.g. apples so they are not bruised). | • The Retail Industry |
| 13. Store sales of meal boxes with accurately measured ingredients. | • The Retail Industry |
| 14. Limiting sales campaigns focusing on quantity discounts and large packages. | • The Retail Industry |
| 15. Introduce various package sizes – also for small households. | • The Retail Industry<br>• The Food Industry |
| *Minimizing and using surplus food.* | |
| 16. Serving food in individually adjusted portions in canteens and industrial kitchens. | • The Authorities |
| 17. Determine the placement of responsibility for food security by redistributing food, keeping in mind the initiatives of the food bank who is taking over responsibility. | • The Authorities |
| 18. Make a new evaluation of the potential in the utilization of organic compounds from production and the retail industry for biogas; keeping in mind the Energy Strategy 2050 and a potential change in the tax structure in the field. | • The Authorities |

*Table 4.1. Summary of CONCITO’s recommendations*

## 5. Sources:


Literature
*Most sources are available at:*
*http://www.fvm.dk/skjult%20madspild.aspx?ID=44991*

CONCITO (2010): Forbrugerens klimapåvirkning.

FAO (2011): Global Food Losses and Food Waste – Extend, causes and prevention.

Fødevareministeriet (2011): Pressemeddelelse, 11.04.2009. Stop for udsmid af fisk i Østersøen.

Jensen J. D. (2011): Vurdering af det økonomiske omfang af madspild i Danmark. Fødevareøkonomisk Institut (FØI)

Jensen J. D. (2011b): Økonomiske tab som følge af madspild. Præsentation på konference den 12. maj 2011

Miljøstyrelsen (2003): Statusredegørelse om organisk dagrenovation (Orientering fra Miljøstyrelsen nr. 4, 2003)

Miljøstyrelsen (2006): Håndtering af organisk affald i dagligvarehandlen (Miljøprojekt nr. 1061)

Mogensen L. (2011): Hvad ved vi om madspild i fødevaresektoren? Præsentation på konference den 12. maj 2011

Mogensen L., Hermansen J. og Knudsen M. T. (2011): Madspild i fødevareproduktionen – fra primærproduktion til detailled. Det Jordbrugsvidenskabeligt Fakultet (DJF), Aarhus Universitet

World Resources Institute (WRI, 2009): World Greenhouse Gas Emissions in 2005


*Participants in interviews, workshops and conferences*

Arla, Jan B. Johannesen, Jens Baand Larsen, Maja Møller, Klaus Nybro, Thomas Kaiser
Bojesen, Jonas Preisler
Bregentved, Anders Dolmer
Daka Bio Industries, Kjær Andreasen
Dalgaard Supermarket, Uffe Danielsen
Danish Crown, Charlotte Thy and Birgit Henriksen
Danish Horticulture, Flemming Nør-Pedersen and Torben Lippert
The Faculty of Agricultural Sciences (DJF), Aarhus University, Lisbeth Mogensen
Dansk Supermarked, Morten Petersen
De Samvirkende Købmænd, Kirsten Jacobsen

The Danish Packing Industry, Lone Alstrup
FDB, Signe Didde Frese and Thomas Roland
Flensted, Johannes Nielsen
The Danish Consumer Council, Rasmus Kjeldahl
The Food Bank, Thomas Fremming
The Ministry of Agriculture, Fisheries and Food, Henrik Høegh, Lene Mølsted Jensen, Espen Tind-Nordberg and Karin Møller-Olsen
Danish Veterinary and Food Administration, Ninna Læssø Jacobsen
Institute of Food and Ressource Economics, Jørgen Dejgård Jensen
Gardener Kent Bredskov
Gardener Claus Hunsballe
GASA Odense, Mogens Christensen and Allan C. Bülow
Grønttorvet, Kristian Klaaborg
Irma, Hans Christian Ipland and Henrik Jensen
ISS Waste Management, Peter Hyldgaard
Københavns Madhus, Anne-Birgitte Agger and Anya Guldberg
Danish Agriculture & Food Council, Klaus Jørgensen, Søren Korsholm and Anette Engelund Friis
Lantmännen Schulstad, Jacob Weis
The Danish Ministry of the Environment, Claus Torp
Netto, Martin Hjort Andersen
Rema 1000, Anders Jensen
Stop Spild af Mad, Selina Juul
Tulip Food Company, Lisbeth Bisgaard Thomsen and Karen Østergaard
Årstiderne, Anette Hartvig Larsen and Frank Van Beek