COOP Eesti food rescue audit

Results of the food rescue audit, 15-10-2021

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Introduction

- Coop Eesti is the oldest and largest retail group in Estonia.
- Under this name, 19 independent regional consumer cooperatives deliver a total of nearly 330 stores, 6,000 employees and 75,000 customer owners.
- Goal of the audit is to gain insight in the food resource use efficiency.
 - Quantification of the side streams.
 - Identifying opportunities for food loss prevention, reduction and/or valorisation.

Methodology

- Determining the scope for the food rescue audit.
- Identifying all processes for the company for the scoped products.
- Defining the side streams and their destinations for the different processes.
- Quantifying all side streams based on company data.
- Finding possibilities for food rescuing.
- Reporting and disseminating the results.

Scope

- 3 retail stores were selected.
 - 1 big supermarket.
 - 1 small supermarket.
 - 1 small grocery store.
- 2 warehouses were selected.
 - 1 cold warehouse.
 - 1 regular warehouse.
- All food products were included.

Results: Food flow diagram stores

Results: Food flow diagram warehouses

Results: Quantification (1) – Big supermarket

- Causes of loss: Mostly exceeded their expiration date.
 - 1) lack of sales planning and forecasting.
 - 2) order too large quantities of goods.
 - 3) short shelf life at moment of arrival.

Results: Quantification (2) – Small supermarket

- Cause of loss: Mostly exceeded their expiration date.
 - 1) lack of sales planning and forecasting.
 - 2) order too large quantities of goods.
 - 3) short shelf life at moment of arrival.
 - 4) unable to predict variability of consumers' purchasing preferences and behavioural habits in combination with seasonality.

Results: Quantification (3) – Small grocery store

- Cause of loss: Mostly exceeded their expiration date.

- 1) lack of sales planning and forecasting.
- 2) order too large quantities of goods.
- 3) short shelf life at moment of arrival.
- 4) unable to predict variability of consumers' purchasing preferences and behavioural habits in combination with seasonality.

Results: Quantification (4) – Cold warehouse

- Cause of loss: Mostly exceeded their expiration date:
 - 1) lack of sales planning and forecasting.
 - 2) order too large quantities of goods.
 - 3) short shelf life at moment of arrival.

Results: Quantification (5) – Regular warehouse

- Cause of loss: Mostly exceeded their expiration date:
 - 1) lack of sales planning and forecasting.
 - 2) order too large quantities of goods.

Results: Comparison Estonia vs the Netherlands

Estonia

Average for the food audit sample
(5 COOP stores/warehouses, not for all COOP's)

Total side stream divided into product groups
(100% total)

The Netherlands

Average 5 retail chains

Measures: Already implemented measures

- Already implemented by the stores.
 - Manual sales planning and forecasting.
 - Discounting food products that are approaching the expiration date.
 - Reduced price purchasing by employees of broken and 'best before' overdue goods, and substandard fruit and vegetables.
- Planned measures.
 - Donation of food products to the Food Bank.
 - New forecasting software.

Possibilities for prevention: Platforms

1. Kromkommer: Platform marketing ugly fruits & vegetables. Goals is to change the social norm on how to deal with 'ugly' fruits and vegetables (Figure 1).
2. Foundation 'United Against Food Waste': Collaboration between the private sector, government and other organisations to reach one goal: Halve food loss and waste by 2030 (Figure 2).
3. To Good To Go: A platform where shops can sell boxes of (left-over) food at the end of the day for a cheap price. Consumers use an app to purchase a 'surprise' box from a local shop (Figure 3).
4. No food wasted app: A platform where customers can find products that reach the end of the labelling date in their local shops (Figure 4).

Figure 1: Kromkommer. Source: <https://www.kromkommer.com/english/>

Figure 2: Foundation United Against Food waste. Source: <https://samentegenvoedselverspilling.nl/>

Figure 3: To Good To Go. Source: <https://toogoodtogo.org/en>

Figure 4: No food wasted. Source: <http://www.nofoodwasted.com/>

Possibilities for prevention: Promotion

5. Buitenbeentjes: Supermarkets sell and promote consuming fresh 'ugly' fruits and vegetables. They have a special shelf with 'ugly' fresh products or present it next to the 'normal' products (Figure 5).
<https://www.ah.nl/over-ah/duurzaamheid/minder-verspillen/buitenbeentjes>
6. 'Waste shelf': A special shelf at supermarket where you can find all discounted products for that day (Figure 6).
<https://www.jumbo.com/inspiratie/duurzaamheid/verspilling>
7. Campaigns: Supermarkets inform customers on food waste in supermarkets and at home (Figure 7). Includes information on purchasing, leftovers and not cooking too much
<https://verspilmijniet.nl/>
8. FoodBattle: Participants in the FoodBattle compete to waste as little food as possible during the action period. Waste companies, retailers and WUR worked together to combat food waste
<https://www.wur.nl/nl/project/FoodBattle-Dont-throw-food-away-1.htm>, <https://foodbattle.nl/>

Figure 5: Buitenbeentjes. Source photo: <https://sportvoedingscoach.eu/supermarkten-wordt-wakker-en-verkoop-buitenbeentjes/>

Figure 6: Waste shelf. Source photo: Jumbo Zelhem. <https://www.contactmidden.nl/nieuws/-algemeen/303834/jumbo-hollak-plaatst-verspillsmeubel->

Figure 7: Campaigns. Source picture: <https://retailoutlook.nl/artikel/3543-lidl-introduceert-verspil-mij-niet>

Possibilities for prevention: Management

9. Dry misting: Supermarket Albert Heijn introduced dry misting to keep vegetables fresh. This is a refined atomization of water so that vegetables stay fresh (Figure 8).
<https://www.change.inc/agri-food/7-kansen-voor-minder-voedselverspilling-in-de-supermarkt-19115>
10. Shelf management: Only fill the shelves with new products (with another data labelling date) after the shelf is (almost) empty. People pick the products with the longest date.
11. Inventory management: Only order products that are needed and order smaller quantities per time
<https://www.change.inc/agri-food/7-kansen-voor-minder-voedselverspilling-in-de-supermarkt-19115>
12. Science to support management: (Supply Chain) modelling to support decision making in retail. For example: Tromp et al. (2016). 'A systematic approach to preventing chilled-food waste at the retail outlet'.
<https://www.sciencedirect.com/science/article/pii/S0925527316302791>

Figure 8: Dry misting. Source: <https://nieuws.ah.nl/albert-heijn-minder-plastic-om-groente-en-fruit-na-succesvolle-test/>

Possibilities for prevention: Donation

13. Foodbank: Products can include all type of food that reach the end of their data labelling or cannot be sold otherwise (Figure 9).

Source: <https://voedselbankennederland.nl/wp-content/uploads/2016/12/april2015-informatieblad-76-charitatieve-instelling-april-2015.pdf>

Figure 9: Foodbanks. Source photo: <https://voedselbankcapelle.nl/voedselpakket/-voedselpakket-17-november-2017/>

In collaboration with the Dutch Safety Authority (NVWA) and the Dutch Ministry of Health guidelines were developed for charities/foodbanks.

- a. Bread: Day-fresh bread can be frozen and consumed within 2-3 weeks after preparation. Otherwise distribute bread before the end of the date labelling.
- b. Meat: Can be frozen by the shop at the last day of their date labelling. The products are delivered to the customers frozen as well and with extra conditions, like extra information and date labelling. At this way meat can be donated for 2 extra months.
- c. Fruit and vegetables: Visual assessment, no mold.
- d. Dry products: Most products can be distributed for a certain period after the end of the date labelling.
- e. Dairy: Can be donated to foodbanks at the end of the date labelling, but should be distributed to consumers on the same day only.

Possibilities for valorisation: large scale processing

14. 'The waste factory': A Dutch catering organisation started to process ugly and lower quality vegetables into soups and sauces. Their products are sold in Dutch supermarkets and shops (Figure 10).

Figure 10: The waste factory. Source: <https://deverspillingsfabriek.nl/nl/home>

15. Own facilities: Food market city and large retailer shops have their own facilities to cook with their leftover products → make banana bread, soups and sauces (Figure 11).

Figure 11: Own facilities. Source picture: <https://nieuws.jumbo.com/persbericht/jumbo-introduceert-nieuw-winkelconcept--foodmarkt-city-by-jumbo/239/>

16. Instock: Restaurant prepares meals and new products from leftover food from producers and distribution centres (Figure 12).

Figure 12: Instock. Source: <https://www.instock.nl/en/>

17. Chicken feed: Leftover bread from the supermarket is collected by the bakery again and valorised into flour to make new bread or chicken feed (Figure 13).

Figure 13: Chicken feed: Source: <https://corporate.lidl.nl/pers/-persberichten/2020/lidl-zet-reuzenstap-tegen-voedselverspilling>

Possibilities for valorisation: small scale processing

18. Local startup: 'De tweede jeugd' collects day-old bread and makes grilled cheese sandwich, garlic bread, crostini, crackers and croutons (Figure 14).

Figure 14: Start-up. Source: <http://www.detweedejeugd.nl/>

19. Beer: Leftover bread or leftover potato is processed into beer in collaboration with a local brewery. 'Toost' beer and 'pieper' beer (Figure 15).

Figure 15: Beer. Source picture: <https://www.change.inc/agri-food/toost-is-circulair-en-duurzaam-bier-gemaakt-van-onverkoch-brood-21351>

Thank you

Data was collected in
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