



TRAINING PROGRAMM RETAIL WORKBOOK

Content

Lesson 1 - GET IN TOUCH WITH YOUR PROBLEM	1
Lesson 2 - KNOW YOUR “HOT-SPOTS”	4
Lesson 3 - PICK THE SOLUTION THAT SUITS YOU THE BEST	7



LESSON 1

GET IN TOUCH WITH YOUR PROBLEM

Along the entire food supply chain - in each step and each sector - food is wasted. Food waste is therefore not a problem of one single sector; it is rather the cumulative effect of interlinked conditions. As the sectors often work hand in hand and interact in many ways there is a high potential to tackle the problem of food waste. Solutions encompassing several sectors or even across the entire food supply chain should be considered. Food, which might not be able to be used in one sector, could be an interesting resource for another one. This cross-sectoral cooperation is a core aspect for food waste reduction and prevention.

Food and food waste

Definition of food: any substance (processed, semi-processed, or raw) intended for human consumption (including all substances that have been used during the manufacture, preparation or treatment of food). However some food waste is unavoidable.

Food waste (including food loss) refers to food as well as associated inedible parts removed from the food supply chain. That means they are not used for normal human consumption.

Inedible parts (Bones, skins...)	Non-avoidable
Preparation residues (skins, ...)	Non-avoidable
Consumption residues	Avoidable
Partly consumed food (not whole as purchased)	Avoidable
Whole unused food (as purchased, whole, unopened)	Avoidable





Amounts of food waste

Estimates about food waste range from 20-30% food loss of the total production. The retailer sector is responsible for approx. 5% of total food waste amount in Europe (**Error! Reference source not found.**). However, the responsibility of the retail sector is bigger than their food waste rate shows since it can indirectly affect increase or decrease of food waste amounts in other sectors as well.

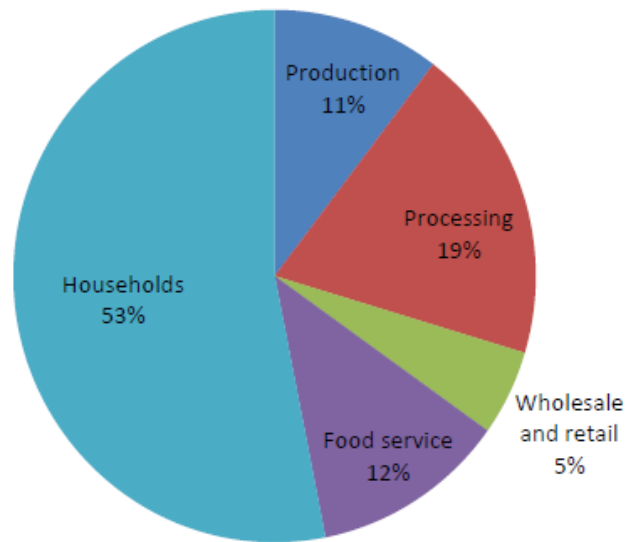


Figure 1: Splits of EU-28 food waste in 2012 by sector; includes food and inedible parts associated with food (FAO, 2011)

Impact of food waste

Food waste accounts for 3.3 gigatons of CO₂ emissions (cf. FAO, 2011). Huge quantities of water in production and processing are wasted on unconsumed food and its production uses large areas of agricultural land. As a consequence, this causes negative impacts on biodiversity, soil, ground water and much more. From an economic point of view, both the direct and indirect costs of discarded food must be considered, e.g. caused by superfluous transport, infrastructure etc.

Measures for reduction and prevention

Based on the 2008/98/EC directive:” The waste policy must strive for reduce the use of the resources and give preference applying the waste hierarchy” (Figure 2).



Figure 2: Waste hierarchy

Every nation has individual legal acts which directly or indirectly interfere with the food waste issue, such as hygiene guidelines or packaging standards. Additionally, public and private food waste prevention and management activities aim for reducing food waste via practical implementations or educational programmes, covering different areas, target groups or food types.

Benefits of taking action against food waste as retailer

- Cost saving
- Regional value creation
- Consumer education / awareness rising
- Food sovereignty
- Higher cost-efficiency in whole production
- Ecological benefit
- Climate protection
- Renewable energy production



LESSON 2

KNOW YOUR “HOT-SPOTS”

Where?

According to the study of the European Commission, the causes of food waste generation at the food trade are divided by wholesale and retail. Although there are some slight differences between these 2 (sub)sectors, the problems typically occur in storage, packaging, merchandise management and inventory management.

What?

During the food processing, most of food products are packed in order to be protected from external effects during the transportation and to preserve freshness and usability until the customers buy them. In this way packaging helps to avoid food waste. However the lack of the packaging means that the following food groups account for more than half of the food waste in the retail sector:

- bread and bakery
- vegetables and fruits
- refrigerated meat and dairy products

These foods are more impacted by the physical, chemical, microbiological contamination and the varying temperatures along the distribution, storage and sale chain. These factors may shorten the shelf life of those products. However, alternative option is to sell fruits and vegetables from boxes with assistance of service person which could reduce the food waste quite much, as the service person knows better how to handle produce. Also, in this way less food needs to be put on the shelves (exposed to the light and warmth).

How?

There are 5 main logistic steps within the sector from ‘food waste generation’ point of view which are presented below:

1. First step where food waste could appear is the **reception of the incoming product**. The foods have to meet a number of requirements, based on the product’s specifications:
 - temperature
 - appearance
 - intact packaging
 - devoid of impurities
 - fragrance



- adequate “best before” and “use-by” expired date
- chemical-free
- suitable wrapping
- law adequate marking

The food must be complying with these conditions at the receiving phase, otherwise it will be refused. However, this is important step in logistics within the sector where retailers can affect decrease of food waste within the primary production and food processing sector.

2. The second place - where the food could be wasted - is the **merchandise stage**. The employee can measure/collect the products for the demands of the retails at the stock/warehouse. At this point, the employee can decide if the products are good for distribution or not.
3. The next step is the **distribution to the retails**. The retailers may differ, because some of them apply the quality receive - avoid the food waste at this phase. Those retailers, who have central logistic warehouse, check the food only at the warehouse level. Almost all of unit control the goods based on the HACCP - which means the control of the cooling chain.
4. The next step where food wastage is possible is the **storing phase and the shelf placement**. Here is applied the rule from the previous point, which concerns to the maintenance of cooling system, the right handling of products and storage. Besides of the compliance of the rules in both places (storage and shop), there is direct contact with the customers in the shop, where small mistake could bring big problem (such as bad advertisement).
5. At the end, when food has been declared as a food waste, it is important to implement the **selective waste collection** for animal feeding, composting or biogas heating.

Why?

The reasons why food waste occurs at the retail sector might differ from shop to shop. However some of most common reasons are listed below and could be separated into four different groups.

Logistic problems

- lack or improper action planning and timing
- improper storage such as interrupting the cooling chain
- improper handling of goods
- insufficient supply of goods in relation to the expected demands
- inefficient inventory system and inventory management
- not tracking stock durability dates
- not optimal or close to closing hours replenishing of fruits and vegetable so as pastry
- lack of precision and attention of the workers

Product's properties

- high standards imposed on suppliers / appropriateness of the product quality
- inadequate pricing



- bad packaging, improper labelling
- too big food packages or wrong sale actions
- visible impurities, deterioration
- withdrawals, locks by the manufacturers or offices

Social aspects

- lack of awareness of the sustainable use of unsold food/ donations
- unpredictability of customer's behaviour

Consumers' attitudes and behaviour

- demand on wide range of high quality products all day long, whole year long



LESSON 3

PICK THE SOLUTION THAT SUITS YOU THE BEST

There are many factors influencing food waste generation within the retail sector, such as plan and organisation of purchase, storage, etc.

In order to find the most suitable solution, cooperation among all sectors of food chain is necessary (Figure 3). To do so, all legal regulations and liability issues have to be taken in account.



Figure 3: Cooperation within the food chain

The stakeholders who play the role in the cooperation: suppliers, producers, local or state government, food banks, IT developers, waste management companies, etc.

What can you do to reduce food waste?

The responsibility of the retail sector is bigger than their 5% food waste rate shows. The first aim is the prevention in one hand with right stock management, storage, cooling chain, handling, etc. Those prevention measures are listed in further text. On the other hand, prevention is the continuous information of the customers - awareness, concepts knowing. It should be noticed that in case of already implemented measures a regular evaluation and adaptation is still needed. These prevention measures are listed below.



1.1.1. Measure it!

The importance of measuring food waste occurring can't be stressed enough. Enhanced demand forecasting is the first point to get to know the situation and where the weak spots are. This step is also important in order to make efficient plan for proper supply and timing due to real demands.

1.1.2. Upgrade the IT-systems

IT-systems are a smart and comprehensive solution for keeping track of expiration dates, which can mean a special or standardized date labelling. The role of the IT could appear at developing a new system for the donation, waste management, etc.



1.1.3. Reduce Handling

Less touching and movement of produce has been shown as a low-cost prevention solution reducing produce damages. This ensures that more products get to stores in sellable condition. Applying this approach to in-store merchandising (e.g. displaying offer produce in original a boxes versus creating a pyramid arrangement of produce; display or posting “don't touch/handle with care” messages sign for customers) also helps reduce food waste in retail.

Food waste can be prevented by staff at fruit department who supervises this department. Correct mediation and handling of the goods, sort out the goods etc. could decrease food waste (e.g. in the past, an ice lettuce which had a brown leaf, the foil was removed, the leaf torn off and then the head rewrapped, now - due to the self-service - the entire head is disposed).

1.1.4. Applying the “first in-first out principle” (FIFO)

If FIFO principle would be implemented when stocking the shelves, the amount of generated food waste could be decreased. FIFO is intended to promote the selling of oldest products first, preventing them from going to waste.



1.1.5. Transportation

1.1.6. Choosing the best possibilities of -at the input side - the routing, - at the output side - the donation transportation, the reverse logistic can give profit potential.

1.1.7. Cold chain management

Organize and optimize storing perishable products well. Use refrigerated shelves for fruits and vegetables, with correctly adapted cooling temperature. Get air moisturizes for the vegetable section; they will look better, sell better, and hold longer.

1.1.8. Raise the awareness

- Educating consumers to choose not only the longest expiration-date products, wonky looking vegetables, open packages etc.
- Clarifying the “best before” and “use-by” expired date for the customers and raise awareness about real food safety issues as well as fears resulting from missing consumer’s knowledge.
- Encouraging for the awareness shopping (e.g. “If you use it today, choose the closer expired date product!”)
- Conscious reduction of the different actions (e.g. Buy one and get one free)
- Education of the storage conditions (e.g. safety delivering, storage of the products, benefits of the freezing the food)
- Suggestion for food use (e.g. new menu and recipes how to use and easily prepare products with close expiration date)
- Continuously educate and organise training for the employees

1.1.9. Good planning

- **Dynamic pricing:** apply smart price reduction system for the product in order to sell it on time and plan the proper sale actions. Sell on discount goods which are approaching to USE BY date and after BEST BEFORE date (depending on the country’s law). Conscious planning in order to prevent food wastage is indispensable at the retail sector and it is characterized by periodicity and seasonality (different holidays, summertime, etc.).

1.1.10. Online supermarket

This type of food selling can help reduce the number of steps and amount of time which is necessary for the products to move through the supply chain, by delivering products straight to the consumer from the distribution centre of the retail. When the consumer places an order, the order can be processed and delivered directly. This practice eliminates quality loss due to handling of food both from employees and consumers in the stores, and can avoid date picking of long-lasting products.

What to do with food you can´t use yourself?



1.1.11. Food donation for human

The retail needs to find the form of cooperation with NGOs which are providing that the food surplus of the retail, from stores and distribution centres, reach the hungry people and the needs of society. This system needs close co-operation with the authorities that the food - under controlled conditions - reaches needy people. Depending on the countries of Europe, the human donation is getting more and more preferable choice for the retailers, where the amount of the donated food is rising with better legislative surroundings. Due to the strict regulation - which is same as the food safety regulation - the long lasting food donation is not possible after the expiration of “best before” date. Good examples could be found in some EU countries and many countries worldwide where the food products with expired “best before” date are not excluded from the food supply chain. Still, there are some international examples of the liability issues.

In terms of food donation two factors are mainly important for the retail sector. First to adhere food safety regulations and secondly possible negative financial impacts of food donation e.g. in some EU member states the existing tax system makes donation more difficult.

Food should always reach the charities/foodbanks in a short time; therefore a well-organized logistic system is needed. In general, the charity organisation establishes the connection between the manufacturers, retailers and the charities/foodbanks with exact place, demand, etc. (Figure 4).



Figure 4: The stakeholders at managing the surplus food

1.1.12. Cooperate with small businesses

Food surplus can be used in another way than the origin (for examples: cooking, canning, preserving from the base food) in order to make new products (e.g. cooking a dish/day, making smoothies, juices, jams etc.) on site, within the store or at small retails.

1.1.13. Support employees

Unsold products (e.g. vegetables, fruit, bakery products, etc. which are not ultra-fresh) at the retail could be offered for the employees to eat in place and/or take it home. In that way costs of the food waste management are avoided.



1.1.14. Donation for animal feeding

Foods that is no longer available for sale can be used for animal feeding. The food left-over part for animal feeding is widespread in the retail sector. It could be a win-win situation for both participants, if the regulations are observed - the animal organisations get safety food, the retailers send their food on safe (avoid the unknown acceptor). Without this help from retail sector, many organisations would be treed.

1.1.15. Selective collection

The aim of all actors of the retail sector is avoiding the disposal of food waste. The waste directive supports this aim and therefore the retailers are motivated (e.g. the fee of the disposal which is rising year by year). Well separated food waste (not mixed with packaging waste such as plastics, wood) is required to start from the store itself in order to have well established selective collection system. In this purpose it is really important that shop workers don't discard food waste into the communal waste bin but to separate in the stores itself. It is necessary to implement daily measuring of the different waste fractions and update the database regularly about the amounts and type of food waste. Recording the output (animal farm, biogas facility, compost, landfill or any other) for these amounts and types of food waste also should be put down.



1.1.16. Waste utilization

Although they are found at the bottom on the EPA hierarchy, recycling solutions are offering the greatest potential on national level for the reduction of food waste. At the food waste status, the retailers can give their waste for waste utilization (e.g. unsold bread can be transferred to the distillery. unsold fruits and vegetables are used for production of biogas). The amount of this waste can rise with better waste collection system. The most common waste utilization options are:

- > Anaerobic Digestion
- > Composting

How can you use the food someone else can't use any more?



1.1.17. Be open for products which are imperfect

- Loosen up the aesthetic criteria for wonky fruits or too small products. The products with small misshape or size/colour varieties can be classified as grade II and can be marketed at discounted price, resulting in less wasted food at the product stage and awareness rising among consumers that the imperfect products also are good for consumption (e.g. put two salads in a bag instead of 1, if the salad is too small).
- Create a separate brand for wonky ugly fruits and vegetables.
- Immediate sale (as promotional products) of the „fault“ products can be done.
- Accept fruits and vegetables with broken packaging if it is possible

1.1.18. Help suppliers in special situations

Cooperation with other food product factories, restaurants, canteens, etc. could decrease food waste in case of overproduction, in case of production for another retail partner who cancelled the deal, etc. To do so innovative marketing strategies e.g. “we help our suppliers” could be started, special offers could be done or the already existing retail system could be used.

Since retailers work together with producers, the cooperation is durable if both sides are good therefore regular awareness campaign among suppliers and retailers is necessary.

Combine the solutions

The main aim is to market more products with less lost. In favour of reducing the wastage and costs, all of the actors need to find the best solution; therefore almost all of the actors are interconnected (Figure 5). The preferred option is the food surplus saving from the food waste stage and using it in the best way.

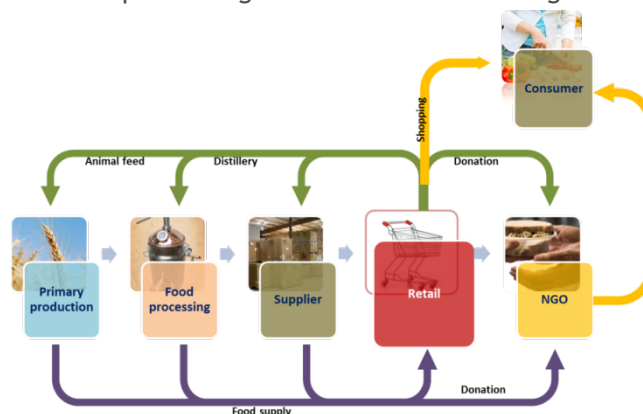


Figure 5: The possible way of the food product/food surplus via actors of the food supply chain in retail point of view