

Interreg
CENTRAL EUROPE



STREFOWA

European Union
European Regional
Development Fund

TAKING
COOPERATION
FORWARD



 Food waste prevention from food preparation

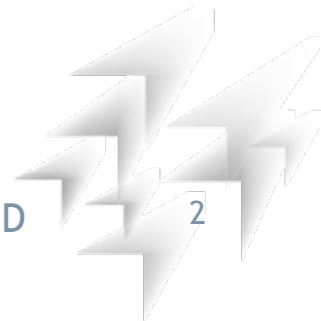


THE STREFOWA PROJECT

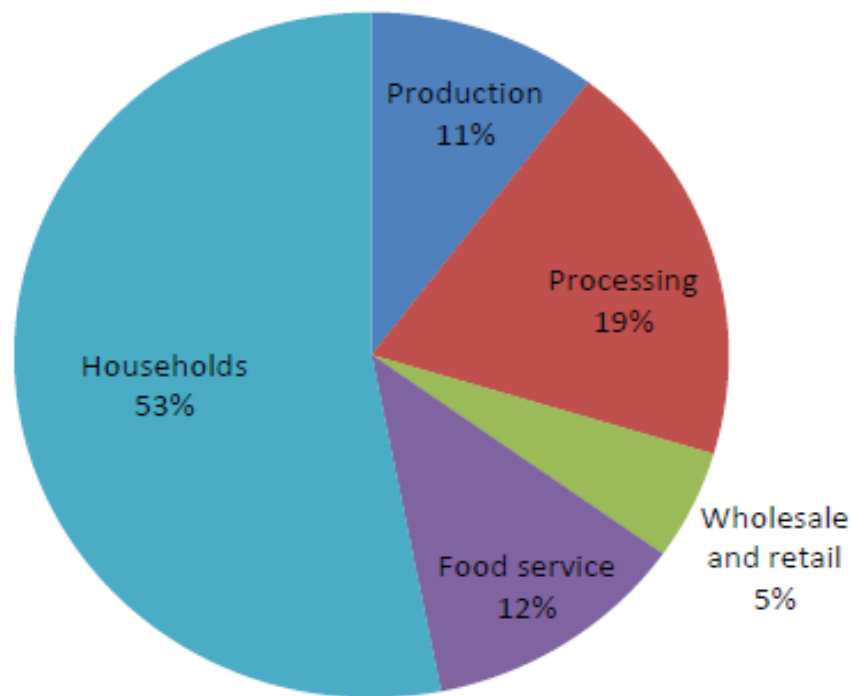


The main objective of the project is to improve food waste management in some urban areas of Central Europe by promoting food waste prevention and appropriate treatment, thereby reducing greenhouse gas emissions.

<http://www.interreg-central.eu/Content.Node/STREFOWA.html>



FOOD WASTE ALONG THE SUPPLY CHAIN



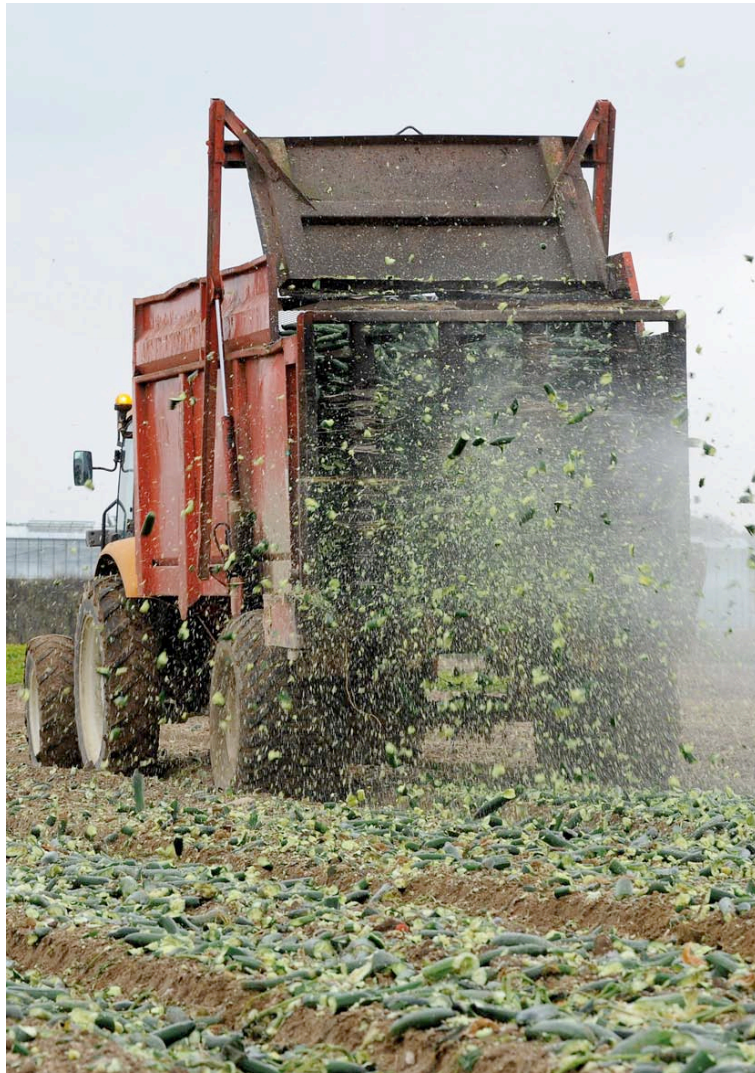
Source: FUSIONS, 2016

Estimates indicate that at European level the amount of food wasted each year is 88 million tonnes, which makes financial loss of almost 143 billion euros.



FOOD WASTE ALONG THE SUPPLY CHAIN

STREFOWA



Joel Sartore/National Geographic Stock



THE IMPACTS OF FOOD WASTE

ENVIRONMENTAL IMPACTS

- Emission of gas
- Greenhouse effect
- Soil degradation
Waste of water resources
- Energy consumption

ECONOMIC IMPACTS

- Cost/value of food wasted
- Value of negative externalities produced
- Opportunity cost of agricultural land

ETHICAL-SOCIAL IMPACTS

- Waste of food vs difficulty in accessing food
- Overfeeding vs undernutrition
- Waste of nutrients vs nutritional deficiencies

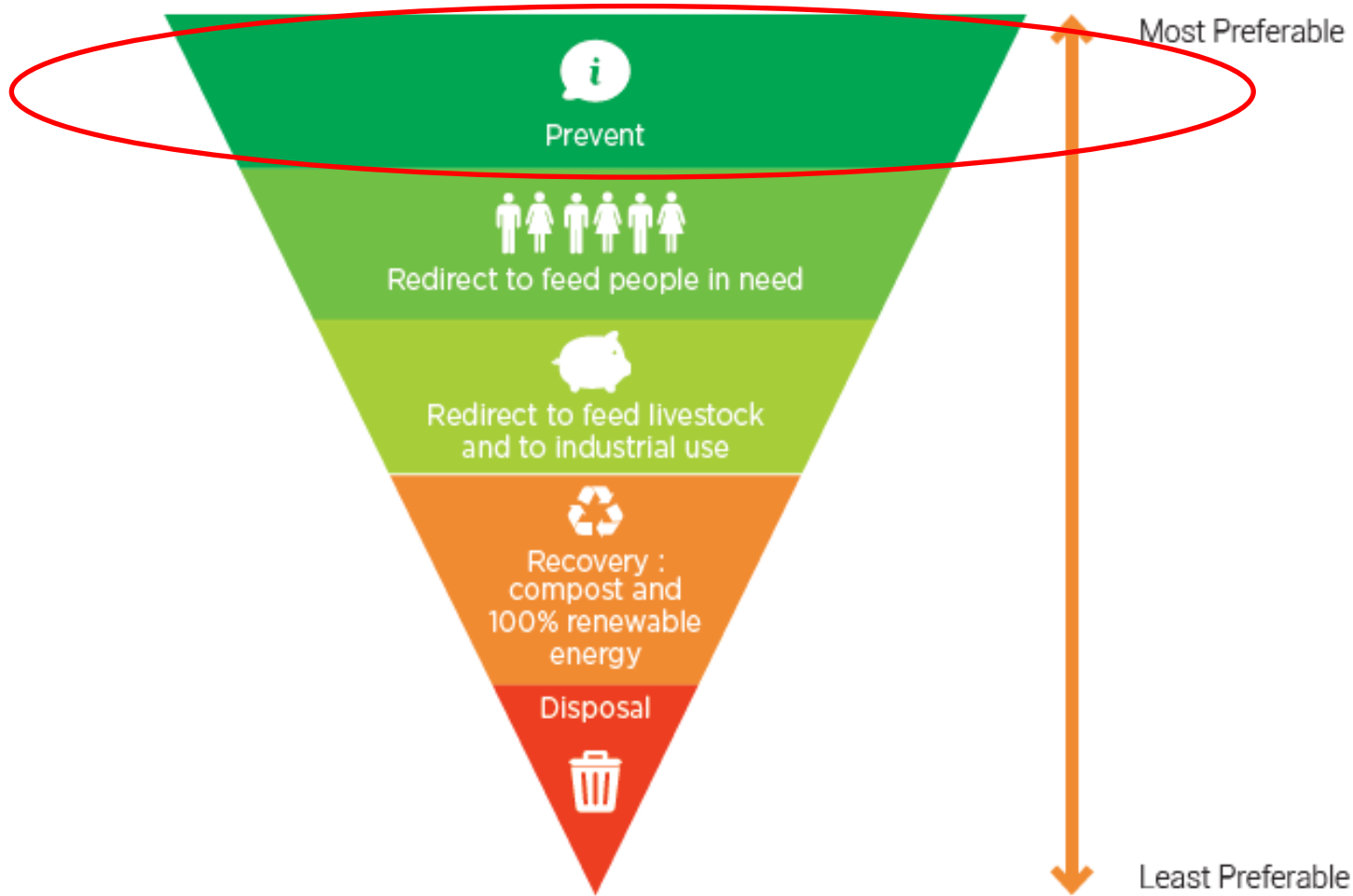
Source: Food waste: causes, impacts and proposals, Barilla Center for Food & Nutrition



FOOD WASTE ALONG THE SUPPLY CHAIN



FOOD WASTE HIERARCHY



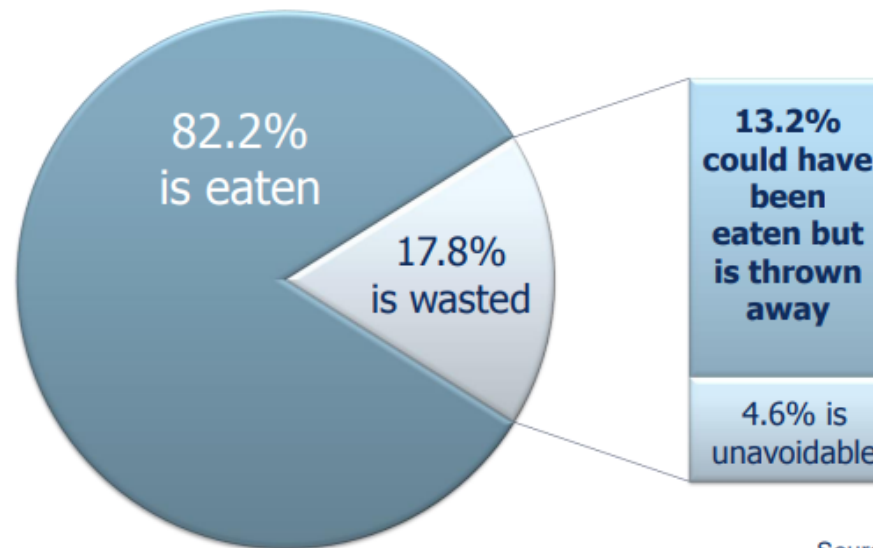
WASTE IN CATERING

- Do you already have any solutions to reduce food waste? If so, which one?



WASTE IN CATERING

A UK study by the Waste and Resources Action Programme (WRAP) found that almost 18% of the food purchased in the food/catering sector is thrown away. Of this amount, only 1/4 is actually inedible food (e.g. meat bones, egg shells, pineapple peel, tea bags).



Source: WRAP



WASTE IN CATERING

- Wastes caused by deterioration



Where Does Food Waste Come From?

- Waste generated during meal preparation



Source: WRAP

- Waste from the dining room



WASTE IN CATERING

Remember that the waste of food avoided is a direct economic saving. Reducing food waste therefore contributes to making an activity more economically sustainable!



CAUSES OF FOOD WASTE

- Poor or incorrect planning of purchases;
- Inadequate storage of food and lack of attention to the indications on labels;
- Inadequate packaging and use of non-compliant storage materials that affect the healthy maintenance of food and reduce the duration of consumption;
- Limited knowledge of methods to consume more efficiently and reduce waste;
- Lack of awareness of the extent of the waste that each produces and its economic and environmental impact;
- The tendency of consumers to select food products with the longest residual life at the time of purchase. This contributes to the increase in unsold goods and, consequently, to the waste of food that would have been perfectly edible.



The causes of the waste that is generated in the catering sector are more or less the same as in the domestic sector. To these should also be added:

- The excessive size of the portions of food served, which are partly left on the plate;
- The difficult planning of food purchases, which is further complicated in the case of the buffet service;
- The scarce spread of practices that allow customers to take home the "leftovers" of their meal.

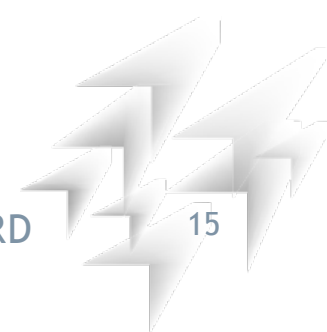


“BEST BEFORE” VS “USE BY”: LET'S TEST OURSELVES!



What it means «best before»?

- The food can be consumed after this date, but it may no longer be at its best quality
- The food will be safe to eat up to this date, but should not be eaten past this date
- It depends on the type of food
- None of these
- Don't know



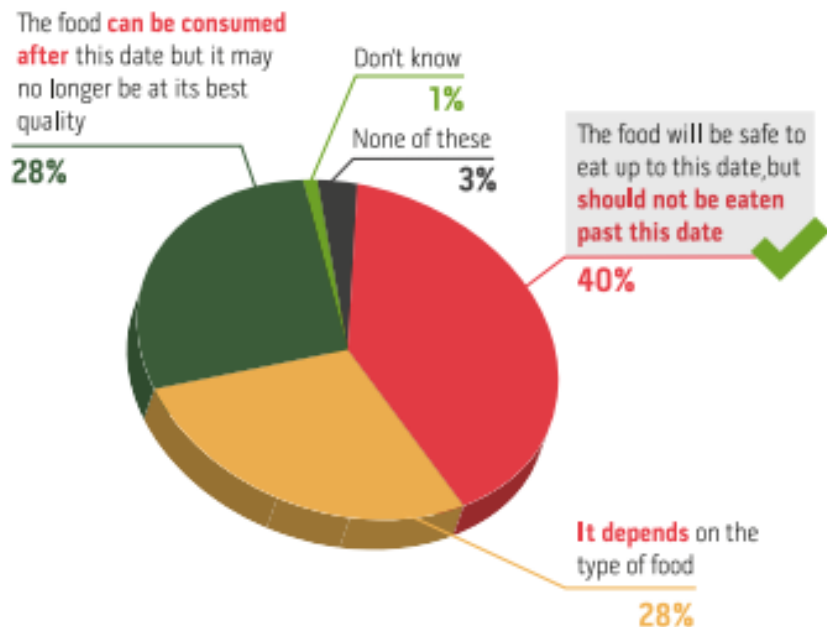
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- None of these
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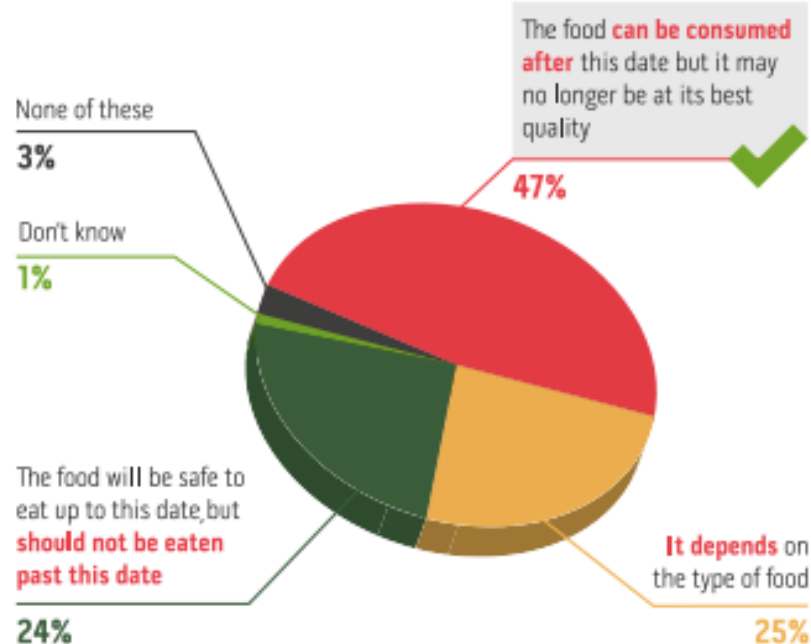


«BEST BEFORE» VS «USE BY»

Europeans think that “use by” means:



Europeans think that “best before” means:



Health and Food Safety

Source: European Commission



«BEST BEFORE» VS «USE BY»

“USE BY”

informs you about

FOOD SAFETY



“BEST BEFORE”

informs you about

FOOD QUALITY



USE BY: 4 Oct 2016



Mind the date!

Food can be **eaten UP UNTIL THE END of this date** but not after, even if it looks and smells fine

BEST BEFORE: 4 Oct 2016



Judge for yourself!

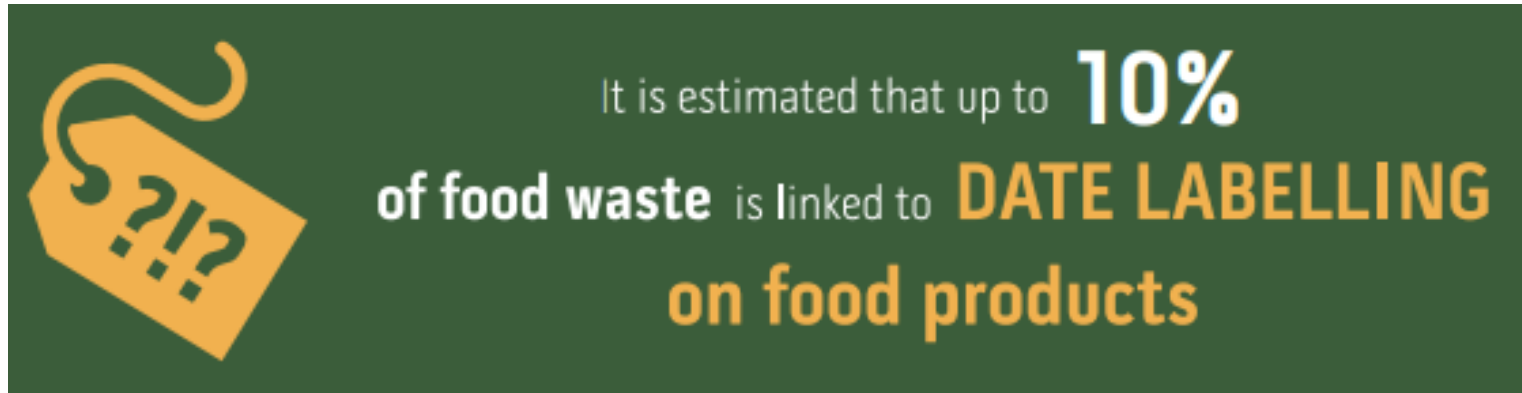
Food can be **eaten AFTER this date** but it may no longer be at its best quality



Source: European Commission



«BEST BEFORE» VS «USE BY»



Source: European Commission

Unlike the 'best before' date (which refers to food safety), the 'best before' date mainly relates to the quality of the product. In fact, exceeding the expiry date does not imply that the product is dangerous for health, but only the risk of having lost some of its taste and flavour.



CURIOSITY

The United States Environmental Protection Agency (EPA) has introduced the **Food Recovery Challenge** which challenges participants to **reduce** their food waste, thus **saving money**, **helping local communities** and **contributing to environmental protection**.

Participating companies must conduct an assessment of the food waste generated and set a three-year target for reducing the amount of food waste going to landfill.

<https://www.epa.gov/sustainable-management-food/food-recovery-challenge-frc>



WHAT QUESTIONS TO ASK

- Is the quantity of stocks excessive?
- Are deliveries frequent enough?
- Can the stock control system be improved?
- Is the food produced in excess and/or damaged (e.g. burned)?
- Are the portion sizes suitable for different types of customers?
- Can the hall staff provide information to customers about the dishes served?



PREVENT WASTE

Wastes caused by deterioration

Purchase:

- Use good control and forecasting of stocks

Regular orders:

- Adjust according to forecast and menu

Refrigerators and freezers:

- Check temperatures regularly

Stock rotation:

- First in First out

Prepared items:

- Keep a list and use date stickers



Fonte: WRAP





Wastes caused by deterioration



Stock rotation and control is essential to ensure that the most recent deliveries are not used before the existing stocks. A related problem is the management of partially used ingredients: labelling and reminder systems can be used to encourage their use rather than opening a new package.

Make sure that the products with the nearest use-by date are the easiest for your staff to reach!



STOCK CONTROL & PURCHASING LIST TEMPLATE

Use this list to stock check and calculate your order. Amend the list of products so that they are appropriate to your organisation. Always try and use the same measurement as your supplier. For example if they sell potatoes in 5kg bags, you should measure stock by 5kg bags to avoid confusion.

Product	Use By Date	Unit	In Stock	Standard Stock	Purchase Date	Order
Vegetables						
Potatoes		Bag (5kg)	½ Bag	1		1
Carrots		Bag (2.5kg)	0	1		1
Cos Lettuce						
Tomatoes						



- Plan carefully according to booking forecasts;
- Use perishable products in more than one menu item;
- Off-menu "Dishes of the day" prepared with surplus ingredients;
- Use food prepared for staff meals;
- Recipes "recovery" to use foods that are going wrong.

It is necessary to offer a sufficiently wide range of menu items to satisfy consumers, while at the same time minimising the waste associated with less common choices.



The more unpredictable the number and preferences of consumers, the more difficult it is to reduce waste.

In cases where the number of consumers is relatively predictable, such as in the case of hotels, menu options could be pre-selected/ordered as early as possible.

Food that can be prepared in minutes rather than hours allows operators greater responsiveness and flexibility.



SUGGESTIONS

- Focus on the most popular menu items among your customers;
- Use common recipes but with small variations;
- Keep recipes simple, focus on quality of ingredients and cooking;
- Developing dishes using some ingredients from other recipes;
- Reduce the size of the packages you buy;
- Buy ingredients with the longest shelf life.



SUGGESTIONS

A series of short videos to inspire chefs and share ideas:
www.wrap.org.uk/chef-masterclass



PREVENT WASTE

Waste generated during meal preparation

- Modify food preparation techniques;
- Use the correct equipment (e.g. knives);
- Encourage staff to make suggestions for unused products;



Waste from the dining room

- Children and people on a diet/with little appetite: offer the possibility of choosing portions of different sizes or small portions with the possibility of having more afterwards;
- Checking portion sizes: use standard ladles, cups and weights;
- Adapt menus: the ingredients of a dish that are often discarded could be made optional or reduced in quantity;
- Clarify what is included in the scope (e.g. side dishes) and provide options for it;
- Consider take-away packaging as a service to the customer.



MEASURES TO REDUCE FOOD WASTE AT BUFFET OFFERS

Accurate portion control is rather difficult when food is served on self-service buffets - possible measures:

- 1) Cook new food spontaneously if needed
- 2) Never use edible decoration!
- 3) Have front cooking stations for your guests - they will love the fresh food and you will not overproduce food!
- 4) Always have staff at your buffets for supervision and support of guests
- 5) Use exact and easily legible designations of your food products
- 6) Use smaller containers to refill at the end of the buffettime
- 7) Use leftovers in the kitchen to create specials for your guests



HOW CAN GUESTS HELP YOU TO MINIMIZE FOOD WASTE AT BUFFETS

Inform your guests about your efforts to reduce food waste!

- 1) Let them cut their own pieces (especially at breakfast buffets eg. hard cheese or bread)
- 2) Let them pay on a basis of weight or plate size
- 3) Don't provide trays!
- 4) Always provide them with doggybags (then! switch the doggybag slide behind this slide!)



"83% of the public would ask for a doggy box but don't think they can or are too embarrassed"

(Sustainable Restaurant Association)



It is important to communicate this possibility to the customer!



INVOLVE STAFF

Good communication with staff on targets for reducing food waste and increasing recycling is very important, as this will make it possible to pass on this information to consumers and promote waste prevention.

Making staff aware of all key sectors of waste generation and waste reduction opportunities will encourage them to help address them.

The room staff should also act as an intermediary between the customers and the kitchen staff, reporting any feedback.

It is important to assign roles and responsibilities.



STAFF TRAINING

It is therefore important to identify which roles within the staff need training, as well as to identify the main messages and the best way to communicate them.

Staff training can also include promoting the use of doggy bags to the customer, raising awareness of the redistribution of excess food and the correct portioning so that food is not inadvertently wasted.



QUANTIFYING FOOD WASTE

The best way to find out how much food is being wasted in your business is to conduct an assessment of the food waste produced in order to:

- Identify the amount of food waste produced;
- Identify the "place" where it occurs;
- Measuring and monitoring food waste;
- Use the results to quantify the savings.

Tool.reducefoowaste.eu

Try to find start ups in your region that will help you measuring food waste and suggest measures for your business:

For example: KITRO, Winnow Solutions, Venturis HoReCa, Moneytor (United against Waste)

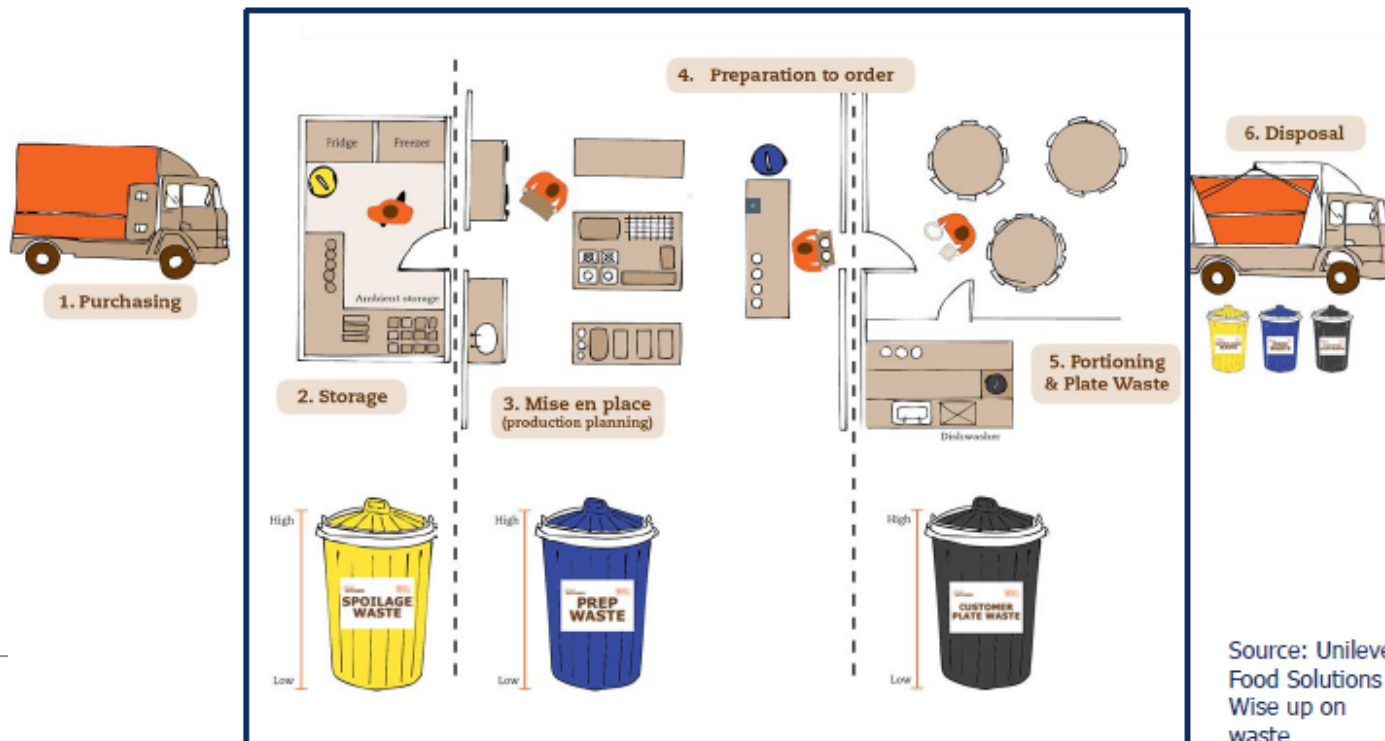


QUANTIFYING FOOD WASTE

For a certain period of time, place the food waste in separate containers:

- Wastes caused by deterioration;
- Waste generated during meal preparation;
- Waste from the hall.

Weigh or count the number of filled containers at the end of each monitoring period.



MONITOR THE CONTENT OF DISHES RETURNING FROM THE ROOM

Dish	Ingredient 1	Ingredient 2	Ingredient 3	Ingredient 4
Carpaccio	Carpaccio	Rocket	Pine nuts	Parmesan cheese
Count the number of units that are left on the plate.			/	
Soup	Soup	Bread		
Count the number of units that are left on the plate.		///		
Steak	Steak	Sauce	Vegetables	Chips
Count the number of units that are left on the plate.		///	/	

Source: WRAP



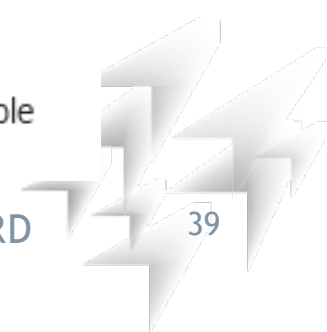
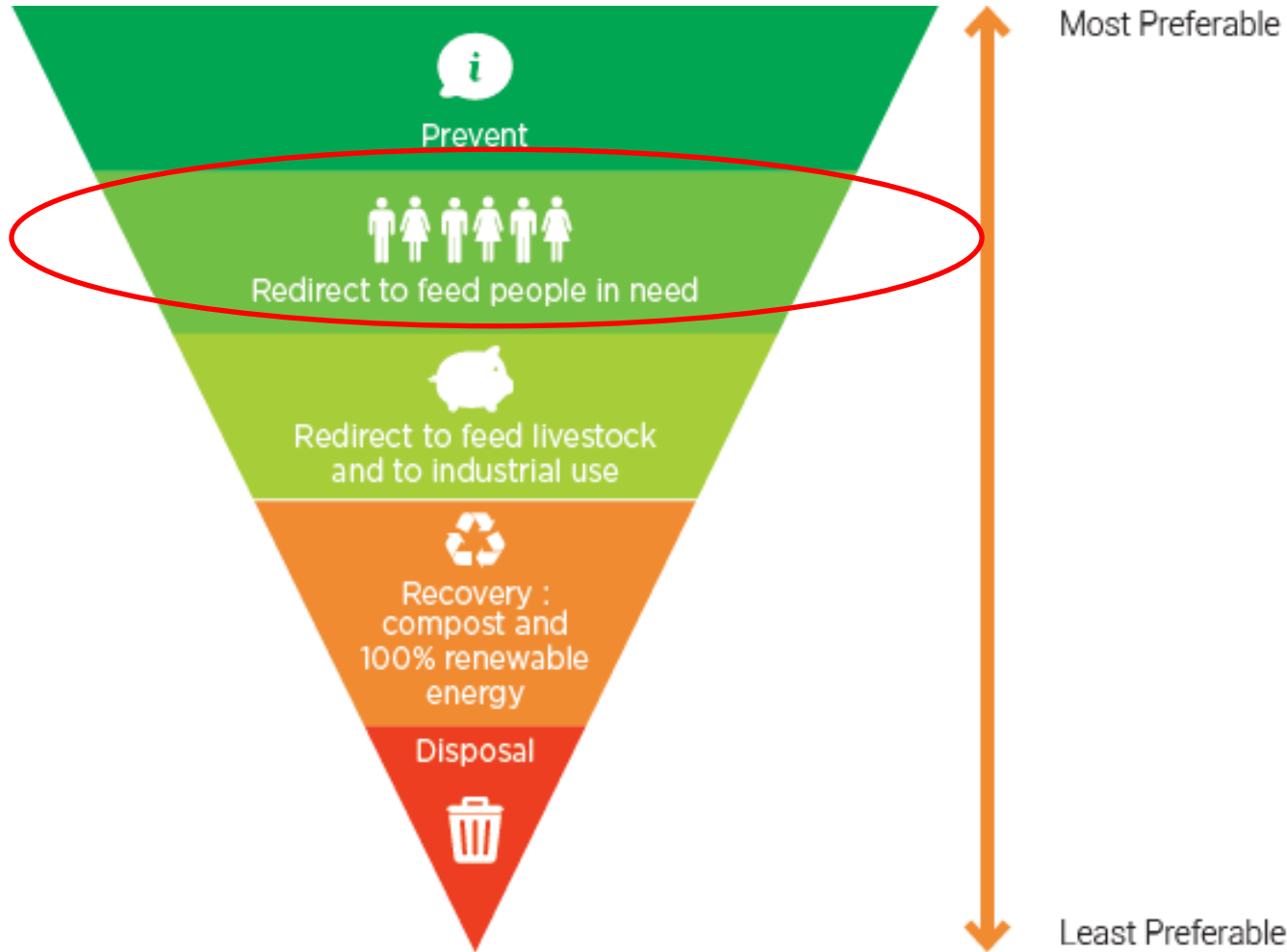
SUMMARISING

Some possible recommendations are:

- Try to buy only what you plan to consume;
- Always check the expiry dates;
- Put in sight products that are close to expiration;
- Check that the refrigerator is set correctly;
- Store food correctly;
- Reuse what is left over from meals;
- Do not serve excessive portions;
- Remember that wasting food means wasting money.



FOOD WASTE HIERARCHY



On 20 March 2017, the European Commission promulgated the Mandate of sub-group established under the EU Platform on Food Losses and Food Waste to support EU activities to facilitate food donation with the aim of:

- The preparation of EU food donation guidelines for donors and receivers of food surplus;
- Identification of practices, guidelines and rules existing in Member States in relation to food donation for sharing with Platform members;
- The further definition of a Pilot Project for the period of 2018-2020, to support food redistribution in the EU which aims to further research practices in the Member States and support dissemination of the future EU guidelines at national level.



A list of numerous initiatives to fight food waste in Europe can be found in the STREFOWA Project Tool at the link:

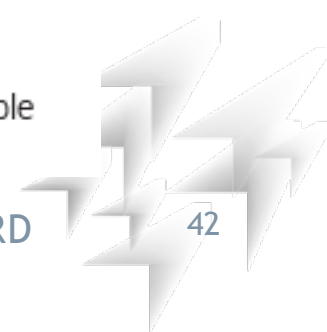
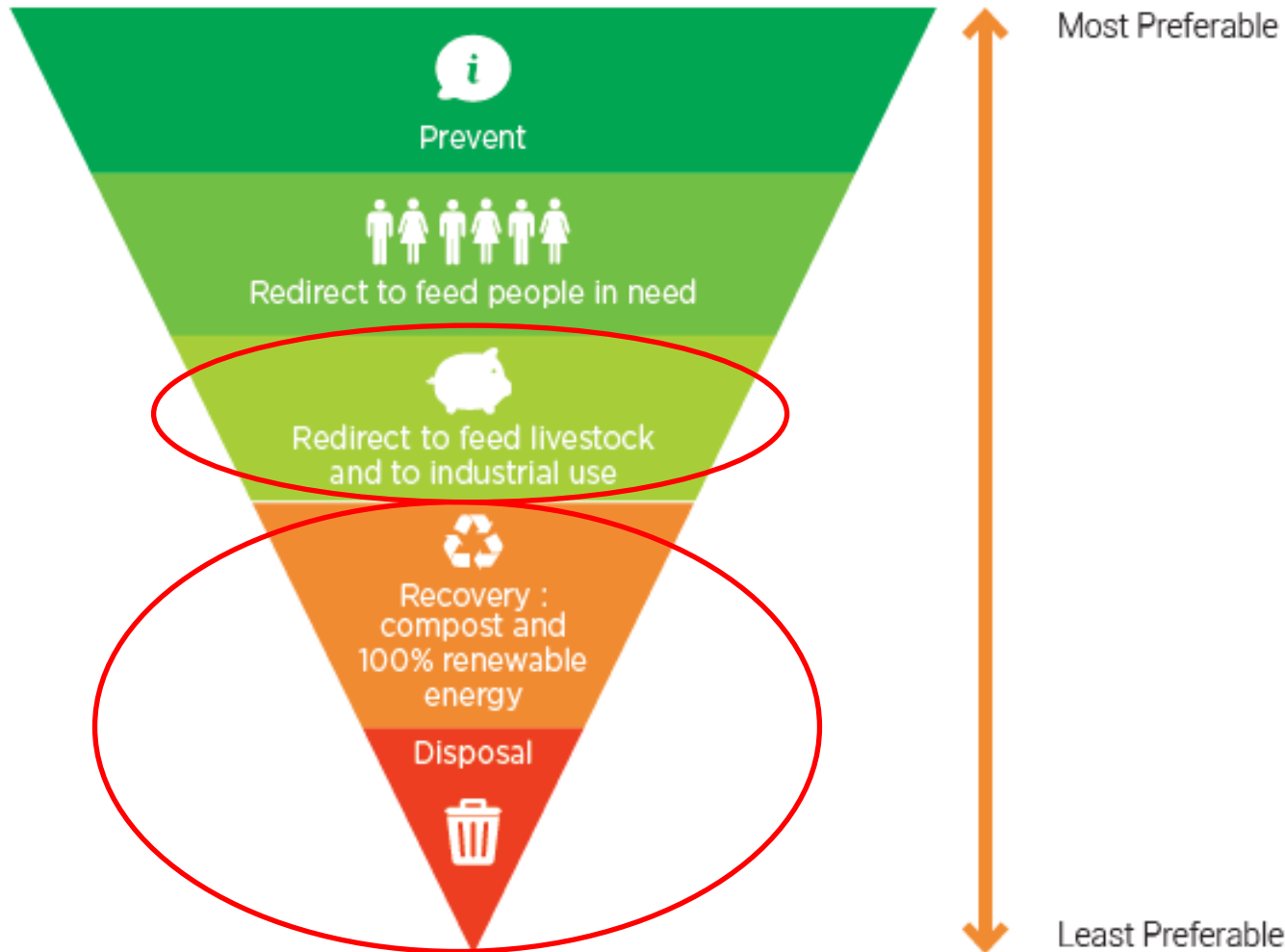
- <https://tool.reducefoodwaste.eu/>

With regard to food service sector donations, two Pilot Actions have also been implemented as part of the STREFOWA Project:

- <http://www.reducefoodwaste.eu/pa-4-food-donation-in-warsaw.html>
- <http://www.reducefoodwaste.eu/pa-5-increase-donations-as-food-waste-prevention-in-the-czech-republic.html>



FOOD WASTE HIERARCHY



LAST STRATEGY

If it is not possible to further reduce the amount of organic waste produced, it is essential to have a proper separate waste collection:

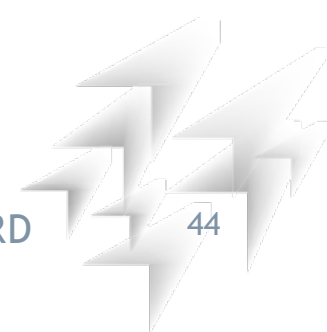
- Provide “wast collection point” in strategic locations;
- Colour-coded containers and/or labels;
- Staff training;
- Clear indications on what to do.



PILOT ACTION 15

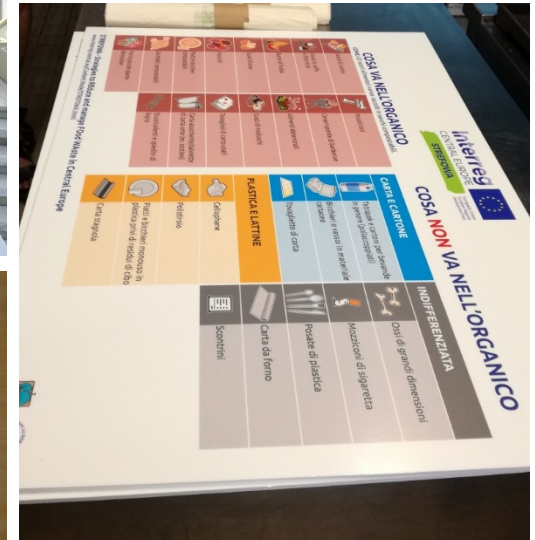
The STREFOWA project includes **16 Pilot Actions**, small experiments to research **new methods** to reduce and manage food waste, located in 5 partner countries of the project: Austria, Italy, Hungary, Poland, Czech Republic.

Pilot Action 15 concerns the management of organic waste, in particular how optimise the management and improve the quality of food waste produced by **hotels in Rimini (Italy)** by experimenting with different solutions.



IMPROVEMENT SOLUTIONS TESTED

- ✓ Organic waste bins
- ✓ New compostable bags
- ✓ Jam dispensers
- ✓ Promotional kit
- ✓ Informative poster about foodwaste management
- ✓ On-site support



ENVIRONMENTAL IMPACT - QUALITY SEPARATE WASTE COLLECTION



Product fractions	Impurity (Y - yes N - No)	BEN - 11.08.17		BAU Phase - 20.06.18		IMP Phase - 11.07.18		Δ [IMP Vs BEN] %	Δ [IMP Vs BAU] %
		Composition %	Weight Kg	Composition %	Weight Kg	Composition %	Weight Kg		
organic kitchen	N	86,96	192,58	95,49	76,40	96,92	135,69	9,96	1,43
bags in compostable material	N	nd	nd	0,17	0,14	2,39	3,34	2,39	2,22
compostable bioplastic objects	N	nd	nd	0,00	<0.02	0,00	<0.02	0,00	0,00
cardboard	Y	1,57	3,47	0,00	<0.02	0,00	<0.02	-1,57	0,00
cellulosic-prevalence composite packaging	Y	0,22	0,48	0,00	<0.02	0,00	<0.02	-0,22	0,00
other cellulosic packaging	Y	0,29	0,64	0,39	0,32	0,00	<0.02	-0,29	-0,39
graphic paper	Y	0,10	0,22	0,00	<0.02	0,00	<0.02	-0,10	0,00
other cellulosic materials	N	0,00	<0.02	0,00	<0.02	0,35	0,49	0,35	0,35
textiles	Y	0,44	0,98	0,00	<0.02	0,00	<0.02	-0,44	0,00
wooden packaging	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
other wood	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
herbaceous/organic/crushing waste	Y	3,91	8,66	0,00	<0.02	0,00	<0.02	-3,91	0,00
wood waste cellulosic/organic pruning	Y	0,11	0,24	0,00	<0.02	0,00	<0.02	-0,11	0,00
aluminium packaging	Y	0,12	0,26	0,37	0,3	0,04	0,05	-0,08	-0,33
steel packaging	Y	0,28	0,62	0,01	0,01	0,00	<0.02	-0,28	-0,01
steel non-packaging	Y	0,00	<0.02	0,03	0,03	0,00	<0.02	0,00	-0,03
aluminium non-packaging	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
other metals	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
packaging plastics	Y	3,13	6,93	3,51	2,81	0,31	0,43	-2,82	-3,20
tracers	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
non-packaging plastics	Y	0,22	0,48	0,00	<0.02	0,00	<0.02	-0,22	0,00
napkins	Y	0,35	0,78	0,00	<0.02	0,00	<0.02	-0,35	0,00
glass packaging	Y	1,47	3,25	0,03	0,02	0,00	<0.02	-1,47	-0,03
other glass	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
inert	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
hazardous urban waste	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
rest of sorting	Y	0,84	1,86	0,00	<0.02	0,00	<0.02	-0,84	0,00
undersize (<20 mm)	Y	0,00	<0.02	0,00	<0.02	0,00	<0.02	0,00	0,00
TOTAL		100,00	221,45	100,00	80,00	100,00	140,00		
IMPURITIES		13,04		4,34		0,34			

ENVIRONMENTAL IMPACT - QUALITY OF SEPARATE COLLECTION OF THE ORGANIC FRACTION



Organic collection - Impurity rate

