

Interreg
CENTRAL EUROPE



STREFOWA

European Union
European Regional
Development Fund

TAKING
COOPERATION
FORWARD



Teacher Training Course
PLACE | DATE



Teacher Training Programme
Crime Scene: Organic Waste Bin



Organisation | Name of presenter



- Food waste Film - Docu Film „Just eat it“
- Food waste Facts & Figures
 - General introduction
 - Impacts of food waste
 - Global food situation - Overweight and Malnutrition
 - Food Waste along the food value chain
 - Reasons
 - Solutions
- Teaching about food waste
 - General introduction
 - STREFOWA materials
 - Food waste excursions and hands-on experiences



Food Waste - let us start!

Docu-film “Just Eat It - A Food Waste Story”

by Grant Baldwin (Canada, 2014, 75 ')

Story of 2 people that decided for 6 months to eat only food waste from the food supply chain.

Projection of the docu-film (in English - subtitles possible!) with subsequent debate and analysis of the topics covered in the film.



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Food Waste Looks



Why is it a problem?

Food production is one of the main causes of consumer related environmental impact in the EU

Foods account for
of private
**20-30% of the total
environmental impact
consumption** (Tukker et
al., 2006)

Globally, around 30% of edible food is thrown
away along the entire value chain.
1,3 billion tones per year!
(Gustavsson et al., 2011)



**88 million tonnes of
food waste occur
along the value
chain in the EU**

**173 kg per person
and year
(+/- 27 kg)**
(Stenmark et al., 2016)



Food Waste impacts

Ecological

- Production requires **energy, raw materials and soil**
- **Soil erosion**
- Over-fertilization of waters → **eutrophication**
- Water consumption → **Water shortage**
- **Loss of biodiversity**
- **Environmental impacts of disposal** → CH₄, CO₂ emissions

Economical

- **Direct costs** due to lost production
- **Social costs:** health costs and welfare losses
- **Environmental costs** because of green house gas emissions and water consumption
- **4% of the global gross national product**

Social

- **Dwindling livelihoods**
- **Health**
- **Conflicts**
- **Countermovements:** e.g.: Dumpstern, Containern
- **Strong contrasts:** 800 millions are starving → abundance in industrialized countries



“The world is thirsty, because it is hungry”

FAO. 2019

The term **virtual** refers to the fact that the vast majority of this water is not physically contained in the product, but it is related to the direct and indirect consumption necessary for production throughout its life cycle.

The **water footprint** of an individual, a community or a company is defined as the total volume of water used to produce the goods and services consumed by that individual, community or company.



Products of animal origin (milk and dairy products, meat and eggs) have a higher water demand than plant based products.

Beef
15 415 liter per kilo

Cheese
3178 liter per kilo

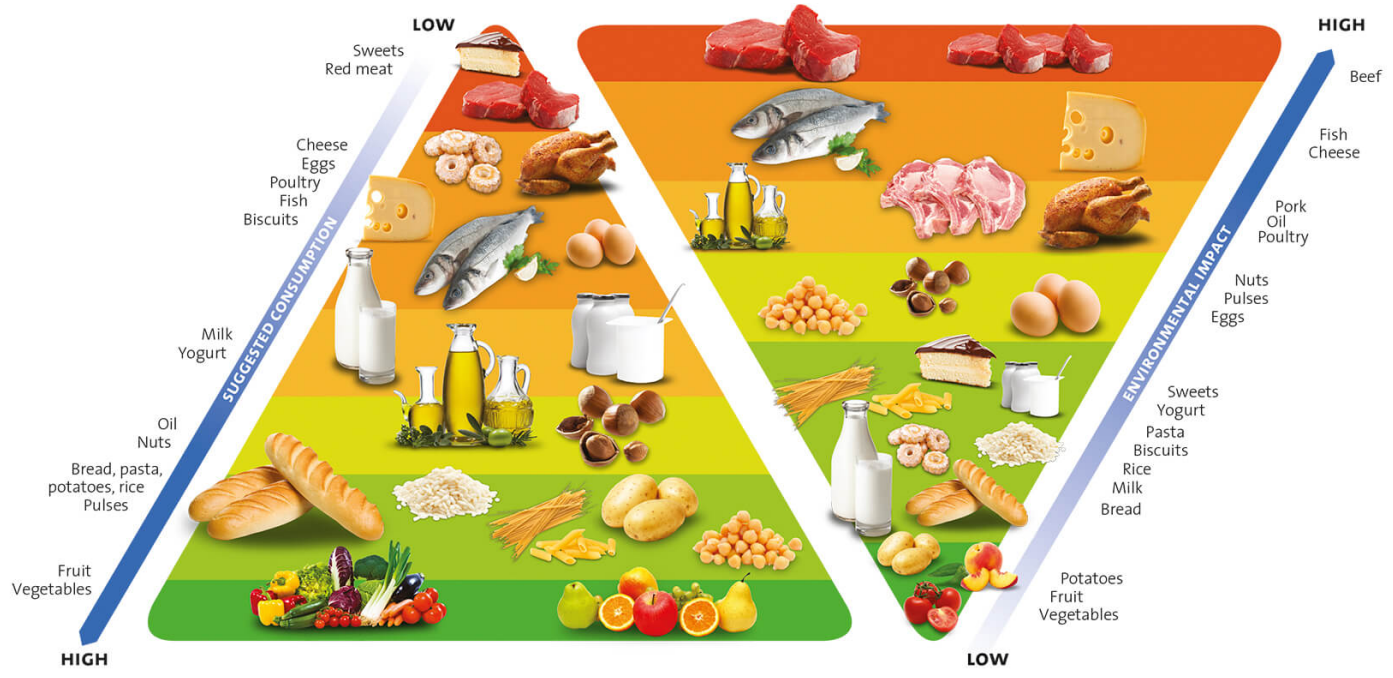
Tomato
214 liter per kilo



Double pyramid of food

Environmental impact

ENVIRONMENTAL PYRAMID



FOOD PYRAMID

Nutritional value

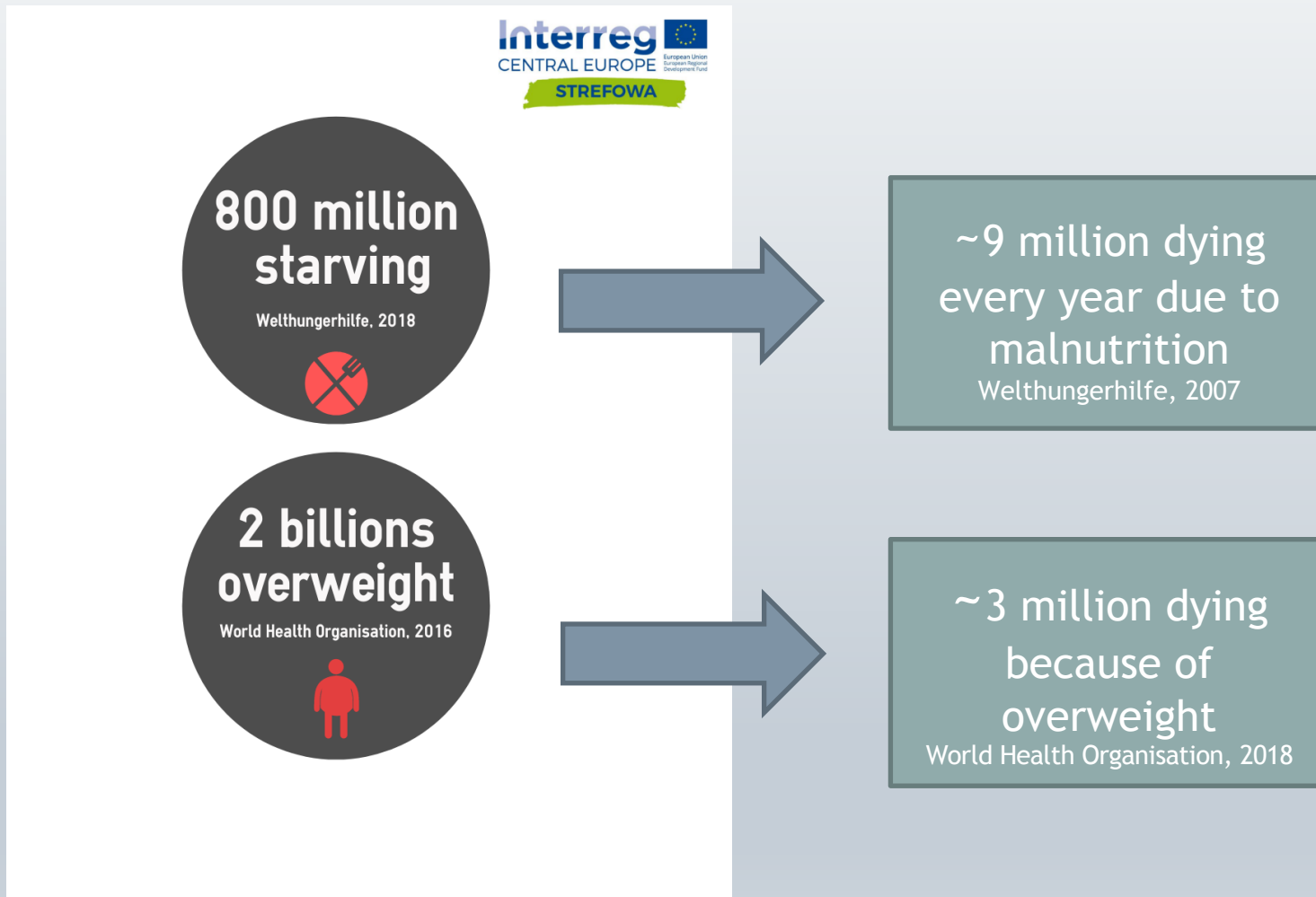
Source: BCFN Foundation



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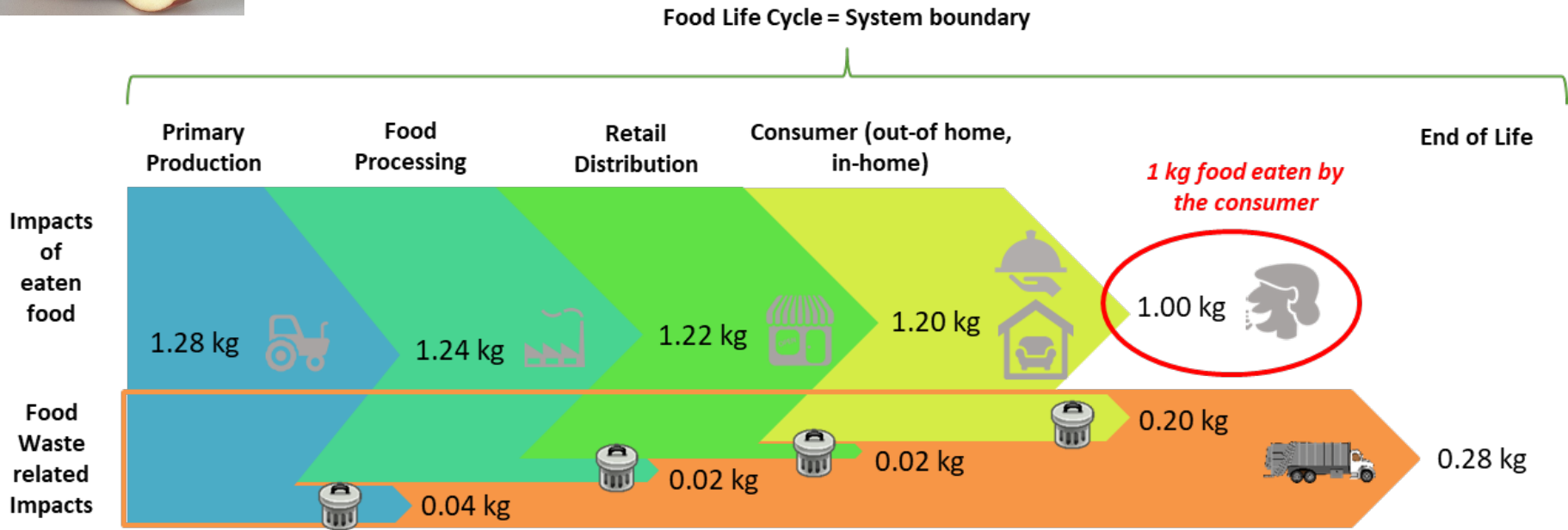
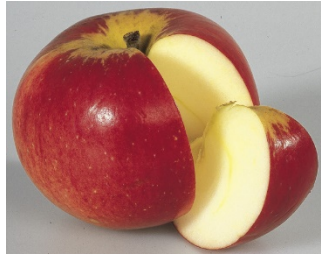
WORLDWIDE - STRONG OPPOSITES



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Producing one kilogram of apples



Scherhauer et al., in praep.

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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 human consumption.



Avoidable and unavoidable food waste

Avoidable

- Leftovers
- Partly used or opened packages
- Food in original packaging
- Overproduction



Unavoidable

- Bones
- Stalks
- Skins
- Stones
- Coffee grounds



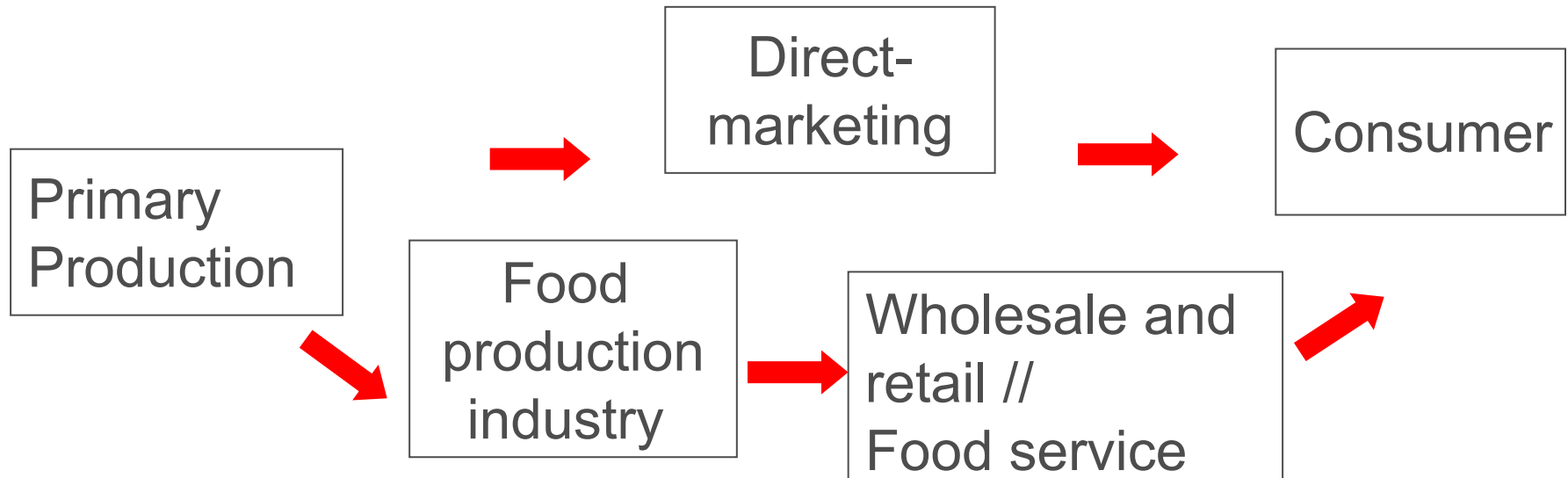
Foods, that are still **fully edible at the time of their disposal**, or which would have been edible within timely use, but for various reasons...

... are not marketable (production, industry, trade)
... are not eaten (food service, household).

And therefore they are **disposed** of.



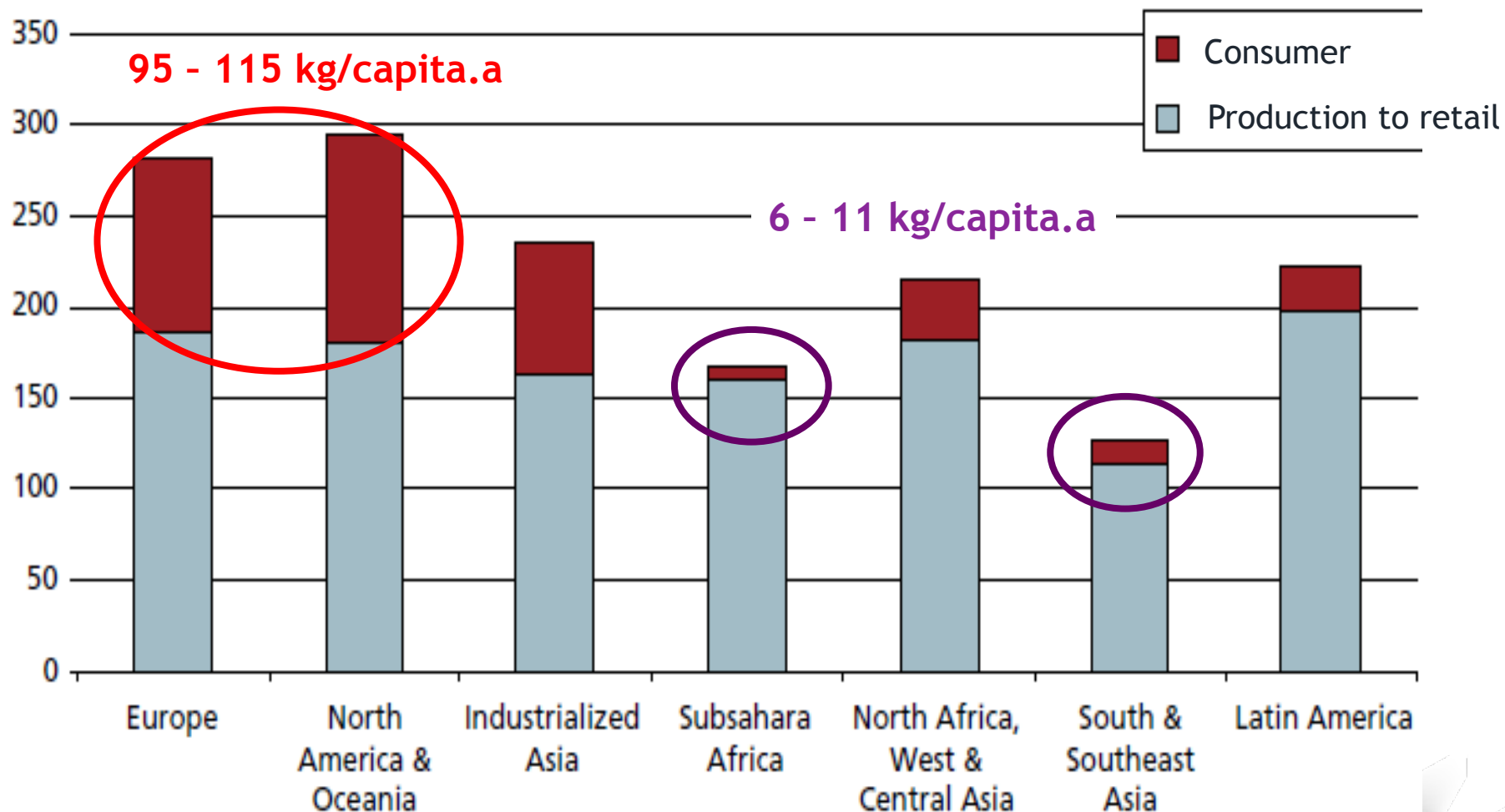
Food waste along the food value chain



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Food waste concerns industrialized, emerging and developing countries (e.g.: FAO Study, 2011)



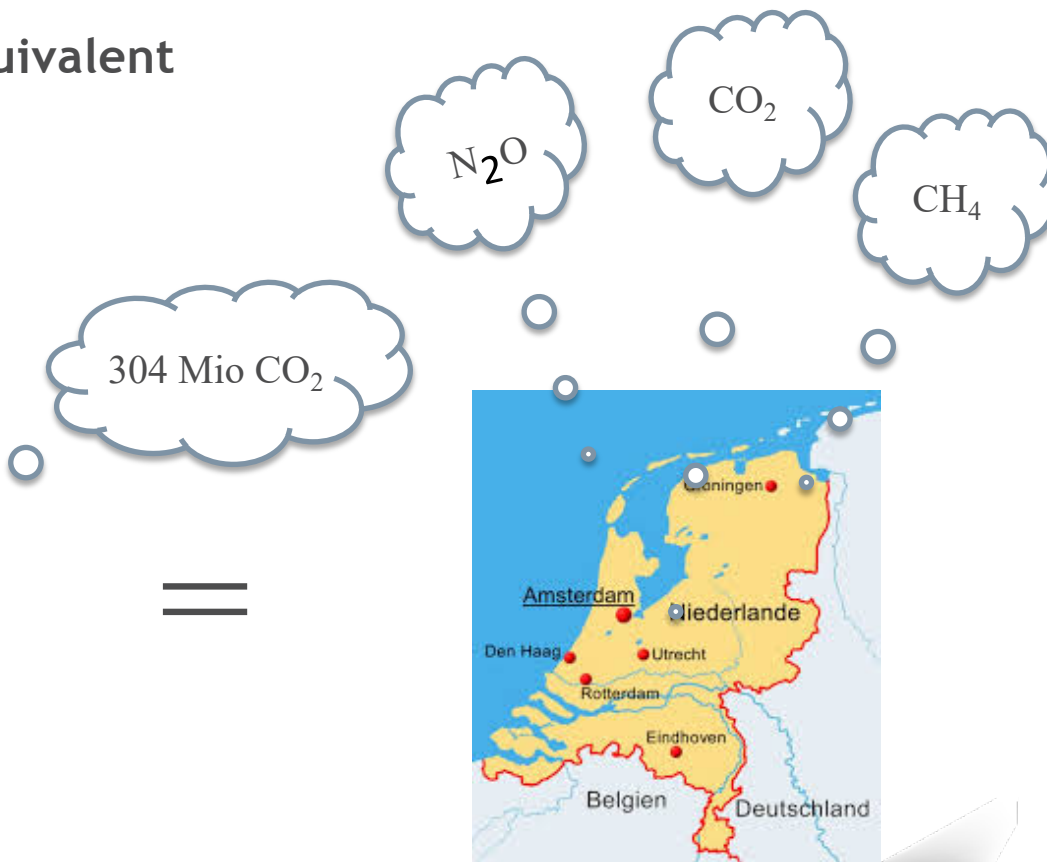
Social environment

- Change of social structures
- **Food price in relation to other areas of life**
- Relevance of **security and perfection**
- **Increasing alienation** through
 - Round-the-clock availability
 - Loss of ritual costumes
 - Loss of food identity
 - Loss of knowledge about food handling
- Decreased **appreciation**
- **Opposite trends** of demand for "much and cheap" and "sustainability"



Food waste in the EU

- EU-28 produce about 88 million tons of food waste per year worth about 143 billion euros.
- 304 million tonnes of CO₂-equivalent (from production to disposal)



<http://eu-refresh.org> <https://www.eu-fusions.org>



EU Food waste quantities

EU Estimates on food waste:

(Data from Stenmarck et al., 2016)



„Reduce food losses along production and supply chains, including post-harvest losses“

„By 2030, halve per capita global food waste at the retail and consumer levels“

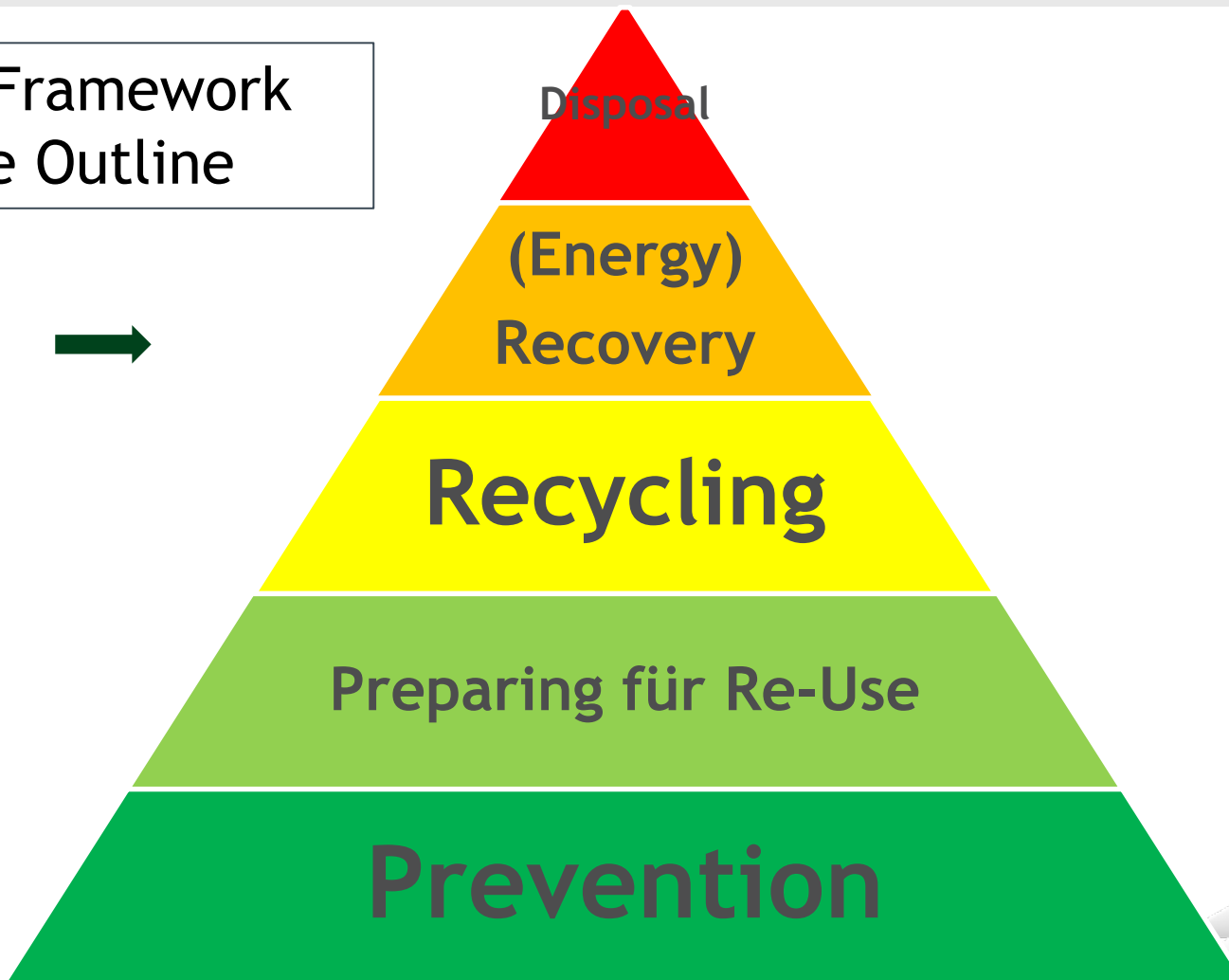
→ a reduction of approx. 31 million tonnes

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EU-Waste Framework Directive Outline

Waste hierarchy →



Primary Production



Products cannot be sold/ will not be harvested due to...

- Marketing standards (too big, small, curved)
- Strict contracts concerning purchase quantities
- Deficient edibility (woody, bitter, mealy)
- Existing market surplus (obtainable prices are lower than costs for harvest)
- Overproduction (harvest was better than expected)

Missing...

- storage opportunities
 - limited storage life of some varieties
 - limited storage capacities
- infrastructure





Photo: Schneider, 2011

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Pumpkins: Harvest losses in Austria

Field test: 0.8 ha, full census



Results

- ~ 700 kg gleaned
(harvested after harvest)
- 15 % not useable
- 41 % unripe
- 26 % unripe with damages
- 18 % completely fine and saleable
- > 73 % edible!

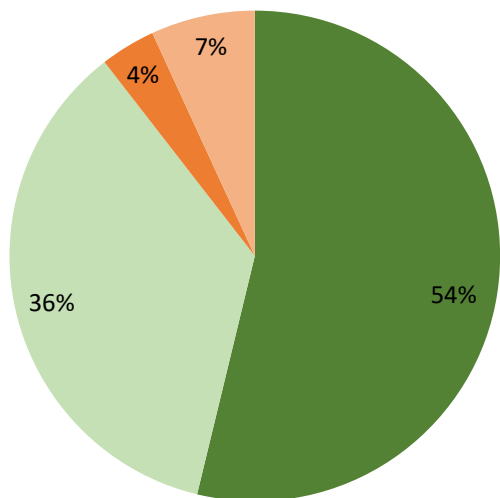


Gleaning potential: ~ 600 kg/ha



Harvest losses onions

Share of edible onions F1



- > 40 mm marketable
- < 40 mm without damages
- < 40 mm with damages
- > 40 mm but damages





- **Cooperation with industry** (e.g. contract farming)
- **Cooperation with the food service sector**
especially for not marketable products
- **Innovative Business Models** (e.g. Unverschwendet in Austria – preserving of surplus fruits and vegetables from farmers)
- Change of market norms, trading standards

Goal

The quality of food has to be more important than the appearance



Industry



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Losses due to....

- Damages in transit

Losses due to production processes

- Strict contracts concerning purchase quantities
- Deficient edibility (woody, bitter, mealy)
- Existing market surplus (obtainable prices are lower than costs for harvest)
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Impressions



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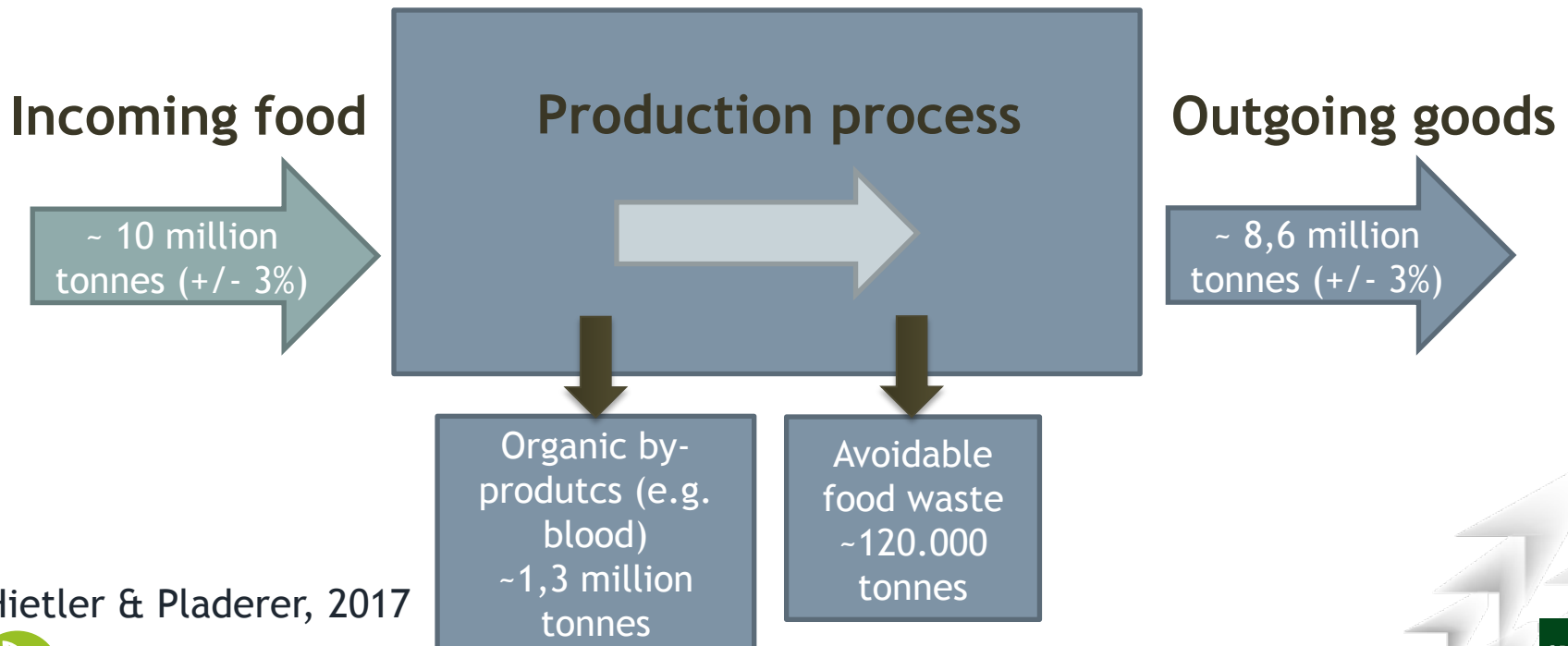
Photo: ABF BOKU



Food waste in the food production sector

- Reliable data about amounts missing in almost all european countries!
- First analysis in Austria (Hietler, Pladerer, 2017) show high prevention potential (120.000 tonnes per year in Austrtria)!

Food waste in Austrian production sector



Hietler & Pladerer, 2017



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Food waste prevention in the production sector

- Preparing for reuse
- Food redistribution
- Use in company canteens
- Discounted sale for employees
- Support of innovative start-ups

Hietler & Pladerer, 2017



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Retail and Wholesale



Damage

- Caused by improper handling (staff and customer)
- Caused by transport

Assortment changes

- Seasonal items

Expiration dates

Mistakes

- Wrong orders
- Wrong labels

High expectations of consumers

- Constant availability
- Perfect appearance



Impressions: Bread and pastry



Impressions: Fruits and vegetables in the organic waste bin

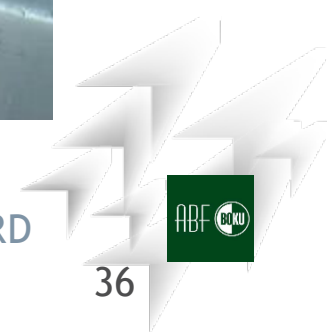
Photo: ABF-BOKU



Impressions: Salad



Impressions: Fruits in the residual waste



Food waste prevention in the retail sector

- Adapt assortment to demand
- Communication
 - Even food that will expire soon is still perfectly fine
 - Smaller selection of bread before closing time to avoid food waste
- Influencing the expectations of consumers in positive way - offer pre-ordering of food!
- Training of employees → Food handling!
- efficient ordering systems with predictability
- Better communication with suppliers
- Price reductions nearing the expiration dates
- Cooperation with social institutions



Photo: ABF-BOKU



Food Service



Storage

- Missing overview on food stock

Leftovers kitchen

- Peel and cutting techniques
- Prepared side dishes (salads, sides) are prepared but not used
- Big menu leads to too much food produced in advance

Leftover buffet

- Hygienic regulations (Leftovers have to be disposed)
- Guests expectations
- Edible decoration

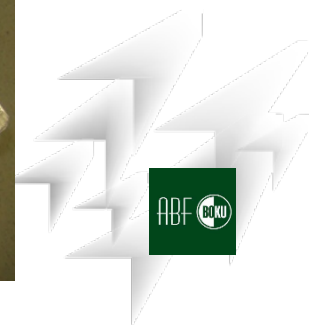
Plate Waste

- Too big standard portions // side dishes
- Bad taste
- Lack of communication between guests and service staff





Impressions



Example: Food Waste Generation in the Austrian Food Service Sector

Der Lebensmittelabfall lag in den
Testbetrieben bei **3 % bis 46 %** des
ausgegebenen Essens - ohne
Zubereitungsreste

= Der Anteil der vermeidbaren Lebensmittelabfälle in Relation zu
ausgegebenen Speisen

Mittlere Verlustquoten

Beherbergung: 21%,

Catering: 38%

Gastronomie: 14%

Großküchen (inkl. Gesundheitswesen): 22%



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Food waste prevention in the food service sector

- **Use a data protocol or a software to keep track of food stock**
- **Communication between guests/service/kitchen**
 - Information about different portion sizes and ingredients
 - Service offers to wrap up leftovers
 - Second helping at a discount/ for free → smaller portion sizes at first (side dishes!)
- **Kitchen**
 - Improve peel and cutting techniques
 - Use cook&chill and sous vide - methods
 - Avoid edible garnish
 - Be creative with leftovers (e.g. breadcrumbs)
- **Use surplus food as food for staff**
- **Cooperation with social institutions/ apps**



Measures in the food service sector



Geist, 2013



Schneider, 2013



Richter, 2013



Consumer



Reasons for disposal

Missing overview on food stock at home

- Forgetting about food

Shopping behaviours

- Shopping when hungry
- Shopping without list
- Special offers

Food handling

- Knowledge about „best before“ and „use by“ dates
- Storage

Missing knowledge

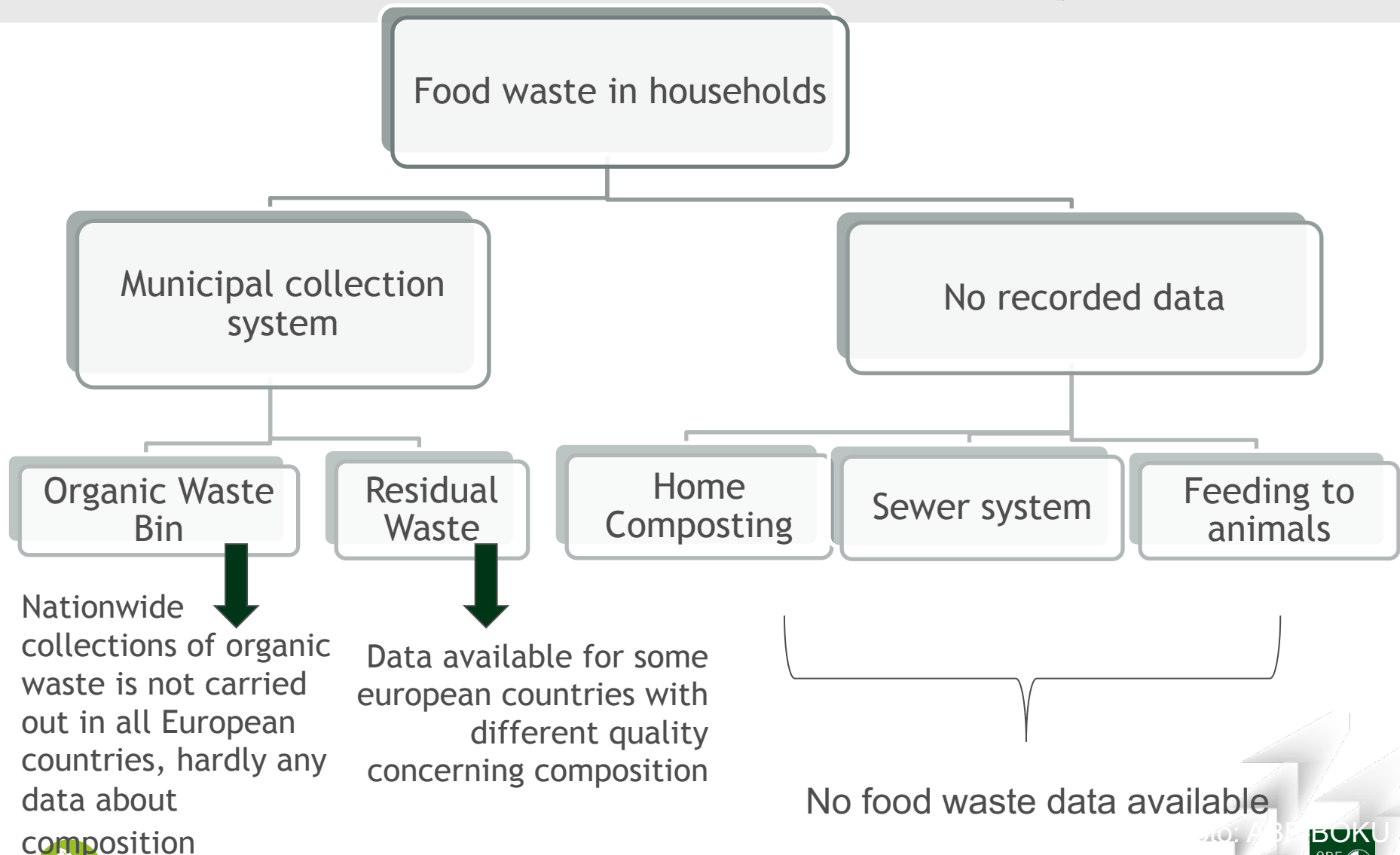
- Freezing, jam making, pickling
- Cooking with leftovers

Lifestyle and attitudes toward food

- Not enough time to cook regularly
- Food is not important enough
- Taste



Food Waste Collection in Europe



Avoidable and unavoidable food waste in households

Preparation residues



Unavoidable or hard to avoid

Leftovers



Avoidable

Original and/or opened food (packages)



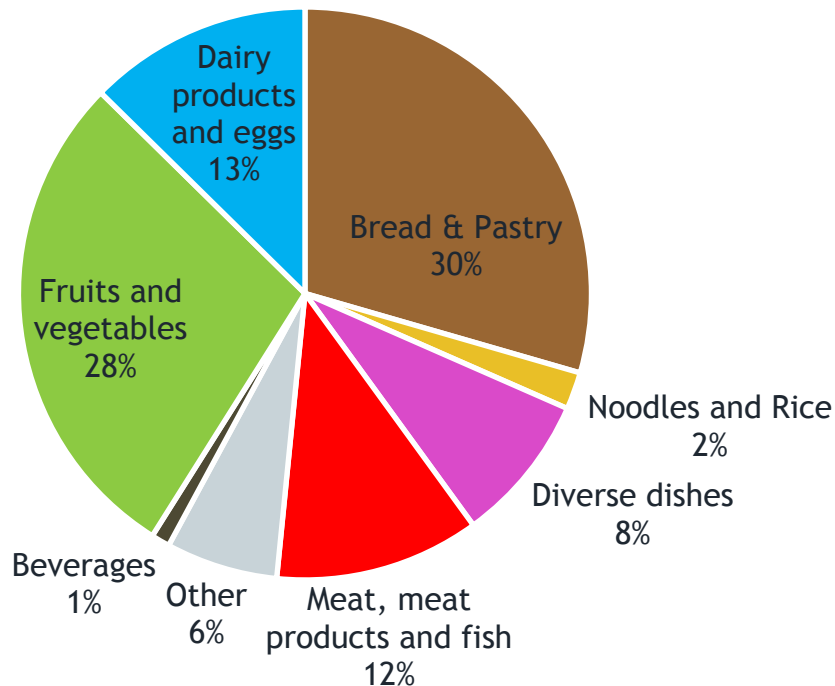
Avoidable



Food waste composition



Food waste composition in Austria



- Bread & Pastry
- Diverse dishes
- Other
- Fruits and vegetables
- Noodles and Rice
- Meat, meat products and fish
- Beverages
- Dairy products and eggs



Best before date

- The date until which food business operators guarantee that the products will **retain their specific characteristics** (e.g flavour, texture, appearance)
- „best before + day + month
- „best before end ...“ + month + year
- **No quality guarantee!**
- In some european countries (e.g. Austria) it is even possible to sell food after it passed the best before date!
- **Food that does not require expiration dates:** fruit and vegetables, salt, sugar, vinegar, fresh baked good, alcohol ≥ 10 Vol.-%



- **Date until which the food should be consumed**
- „Use By + day + month + year
- **For easily perishable food that might affect human health after consumption**
- **Food mustn't be sold after passing the Use-by date**
- **Examples: Meat and Fish**



- with increasing age less food waste is occurring
- people with higher educational level waste more food
- Increasing employment rates lead to more food waste
- **Families with children discard more food**
- In urban areas more packaged and unopened/original food is discarded



Challenge → Turn knowledge into action

- many buying, cooking and eating activities are a habit
- habits lead to unconscious actions
- need to be made aware of to allow for change at all
- habits are very resistant to change
- options for action must be integrated into everyday life



Overview on food stock

Planning: Shopping list, meal plan

Shopping: several times a week, do not shop hungrily, do not buy more than you need (special offer!)

Storage: „First in - First out“, inform yourself about the right storage place and temperature

Is it still good? Do not trust the best before date - look, smell and taste → then decide!

Cooking: portion sizes, leftover cooking

Plate waste: take more than once, but smaller portions!

Preserving: freezing, jam-cooking, etc.





How to store food in the fridge?

- Glass Container - Jam jars or other glass containers
- Plastic container - have to be suitable for freezing
- Freezer bags - use them more than once!



Vacuum

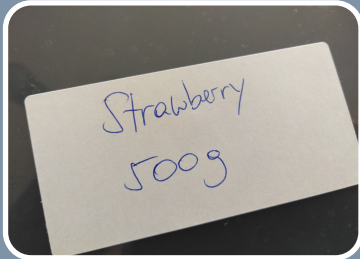
- Best way to prevent freezer burn
- Doubles shelf life in the freezer
- If you don't have a vacuum device at home - try to get out as much air as possible from your containers/freezer bags



Blanching

- Important for freezing of vegetables
- Boil water in a pot, add salt and the vegetables (cleaned and cut in pieces) and simmer for 2-3 minutes.
- Rinse under cold water and freeze immediately.





Labeling

- Date
- Amount (500g strawberries) or pieces (3 chicken breasts)
- Keep track - check what is inside your freezer regularly or keep a list!



Portioning

- Try to think of dishes you want to cook in advance
- Fill the containers with different amounts and label them



Freeze loosely - Pre-freezing

- For food that should be stored in one bag but shouldn't stick together
- Place food on a cutting board or plastic wrap and freeze
- Then put together in one bag



What you need to do:

- **Peel** and remove the core if necessary!
All varieties that you want to use without skin after thawing (e.g. pear, peach, aparagus, carrots) should be peeled!

- **Blanching**

- Reduced activity of those enzymes responsible for the decomposition of the structure, the aromas and the vitamins in vegetables
- Helps to keep colour after defrosting

- **Pre-Freeze**

Freeze grapes and use them instead of candy!



Attention!

Especially fruits won't have the familiar texture when defrosted - use them for cooked dishes (fruit cakes, compotes)

- Do not freeze raw potatoes!

How long?

6-12 months

Pressed juice:

Juice can be frozen in containers or ice cube trays.



What you need to do:

- Meat and fish can be frozen without difficulty
- Prevent freezer burn by using a vacuum device or freezer bags
- Freeze it as soon / fresh as possible to obtain the best possible quality

–Labeling!

Thawing

- Thaw over night in the fridge
- Thawing in the fridge prevents nucleation!
- Do not use raw (e.g. beef tartare) after defrosting!

Minced meat /
fatty meats

Pork (lean) / fish

Poultry

Beef / veal

Up to 3
months

Up to 8
months

Up to 10
months

Up to 12
months



Do's

- Important for recipes with unequal number of egg white and yolks
 - Separate eggs and freeze
 - Label containers (number of egg yolk/white and date)
 - Thaw in the fridge overnight

How long?
8-12
months

Attention!

- Do not freeze boiled eggs or meals that contain boiled eggs!
- Do not use thawed eggs for dishes with raw eggs (like beef tatar or tiramisu) - use them for cooked/baked dishes!!



DAIRY PRODUCTS

Do's

- Butter is ideal for freezing
- Whipped cream can be frozen
- Hard cheese and milk can be frozen - but will change texture slightly when defrosted

Attention!

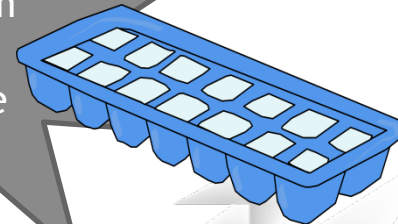
- Buttermilk, yoghurt, curd cheese, and kefir and soft cheese are NOT suitable for freezing
- Hard cheese may change its texture when defrosted

How long?
Up to 4
months!

Thawing

In the fridge overnight

Freeze
whipped cream
in ice cube
trays to refine
dishes!



BREAD AND PASTRY

Do's

- Can be frozen easily
- Freeze the whole loaf or slices (easier portioning)
- All kind of pastry can be frozen (also a lot of cake doughs!)

Attention

Try to remove as much air as possible so it won't dry out

Thawing

Defrost overnight at room temperature - remove freezer bags and change to paper or linen fabric

How long?
Up to 5
months!

Defrost
bread slices
in the toaster
and enjoy
them in a few
minutes!



Do's

Sauces, soups, stews, desserts, quiches or processed meat (e.g. burger) can be frozen without difficulty.

Attention!

Rice and pasta should NOT be frozen due to a strong shift of the texture while defrosting

Thawing

- Defrost overnight in the fridge
- In case of soups or stews heat up slowly



JAM - FOUR STEPS!



Wash, peel, cut fruits
Remove cores



Put fruits in a pot
together with
preserving sugar
(fruit:jamsugar ratio
depends on the sugar;
1:1, 1:2 or 1:3)

Add some specials

If you have time - leave
it until the next day

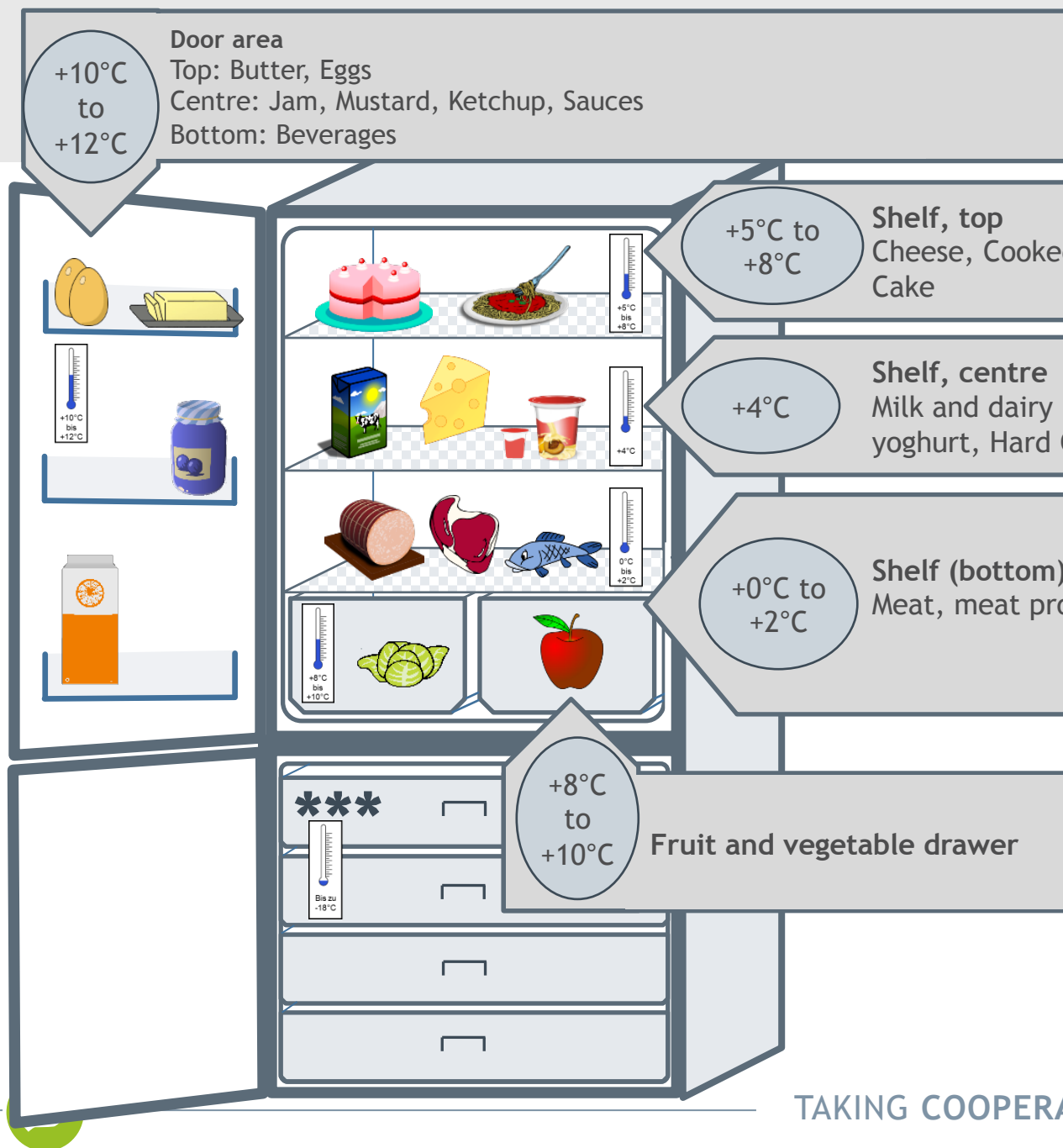


Bring it all to the boil
and wait until the
fruits are soft (3-8
minutes)

Fill previously
prepared, clean
glasses!

From starting to enjoying in less than 1 hour!





+10°C
to
+12°C

Door area
Top: Butter, Eggs
Centre: Jam, Mustard, Ketchup, Sauces
Bottom: Beverages

+5°C to
+8°C

Shelf, top
Cheese, Cooked dishes, Leftovers,
Cake

+4°C

Shelf, centre
Milk and dairy products, curd cheese,
yoghurt, Hard Cheese

+0°C to
+2°C

Shelf (bottom)
Meat, meat products (sausages), fish

+8°C
to
+10°C

Fruit and vegetable drawer

Food sharing

- **Give it away and do not throw it away!**
- **Platform:** Households can put unneeded food in online food baskets (e.g. myfoodsharing.at)
- **FairTeiler:** Special labeled refrigerators and shelves help to make food sharing even easier for everyone. There are already 33 locations throughout Austria.
- **Apps:** Besides other important food waste prevention tips (like leftover recipes, shopping list, etc) Apps will also also help to get surplus food from other parts of the food value chain or share your own surplus food.



Teaching about food waste

awareness

cooking

taste

appreciation

fun

future

learning for life

empowering children

senses

explaining

impacts





creativity



- **Waste separation is more likely to be approached in schools than waste prevention**
- **Knowledge about food waste prevention is no longer passed on to the children by the parents**
 - ❖ What is still edible?
 - ❖ How do I handle expiration dates?
 - ❖ What can I cook from leftovers?
- **The topic of food waste prevention is not anchored in general school curricula**



Objectives and contents

-  Make students aware about this problem
-  Show **specific options for action** in their area of influence
-  Develop **new skills**
-  Promote **critical thinking and personal initiative**

Possible subjects to deal with the topic:

- Biology
- Geography and economics
- Modern foreign languages
- Mathematics

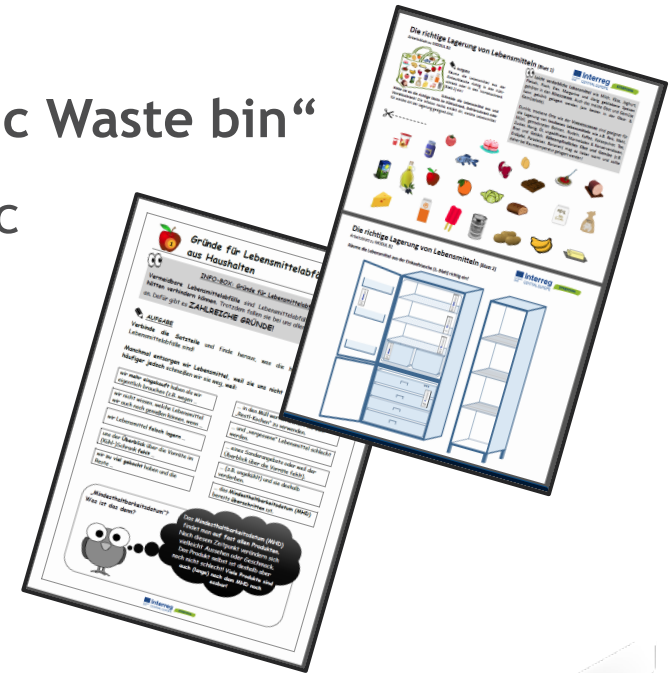


STREFOWA teaching materials

- **Worksheets (Basic knowledge and in-depth knowledge)**
Reasons, amounts, composition, avoidable and unavoidable food waste, interpretation of expiration dates, various options for action

Available in German and English version

- **Workshop-Concept „Crime Scene: Organic Waste bin“**
- **Short film as an introduction into the topic**
- **Accompanying documents for teachers**




How to find other teaching materials

Use the STREFOWA Tool tool.reducefoodwaste.eu


Initiatives 22 Results

Country Category Sector Year Municipality Clear Filters


Search



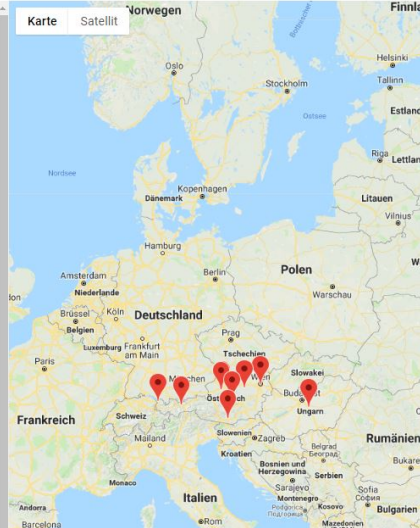
Use instead of waste
According to the motto "use instead of waste" pupils of the primary school Gschwandt and Traunkirch...




Leftovers cookbook - Cooking w...
As part of a project of the primary school in Kirchham, pupils - together with their teachers and g...




Save & Share
In 2015 the surplus food from the school canteen of the secondary school in Dornbin was donated to ...




Karte Satellit



Öko-pack Ltd.
In the last decade ECO-PACK NON-PROFIT LTD. has managed to establish close contact with several hun...



The Environmental Consulting ...
The Viennese "Volshochschulen" (adult education centre) prepared ten workshops called "Creative C...



Throwaway society - Food for t...
Within the project "Throwaway society - Food for the garbage" of the Secondary School for agricult...





Leftover-cooking classes

- Creative cook ideas for leftovers developed in class



Visit at compost or biogas plants

- Public tours will help children to understand what happens with their waste



Preserving food

- Jam-making, pickle - workshops

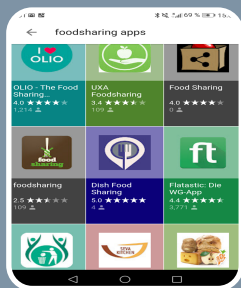


Farm visits



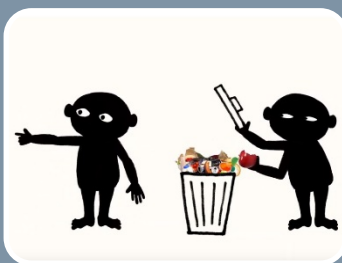
- Where does our food come from?
- Children are allowed to help producing certain foods (e.g. cheese or bread)
- Children can harvest fruits and vegetables

Apps



- Apps can help consumers to prevent food waste
- Let children find and evaluate food sharing, leftover-recipe and other apps to prevent food waste

Film



- Taste the waste
- Wasted- the story of food waste
- Just eat it - A food waste story
- STREFOWA - Clip: Don't feed the bin

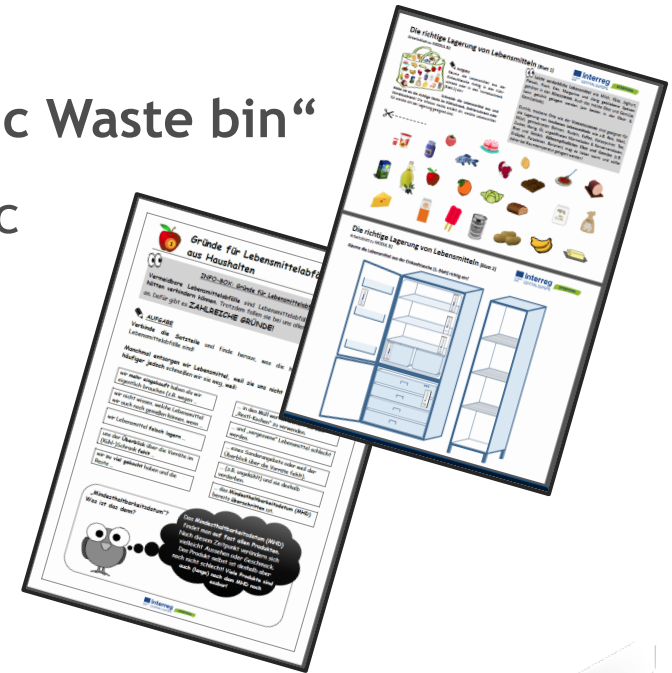


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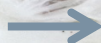
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Crime Scene Organic Waste bin



Number plates



What does not belong in the organic waste?



Barrier tape



Crime Scene: Organic Waste Bin

Progression of events and motive

Equipment for students: gloves and magnifying glasses

Taking of evidence:

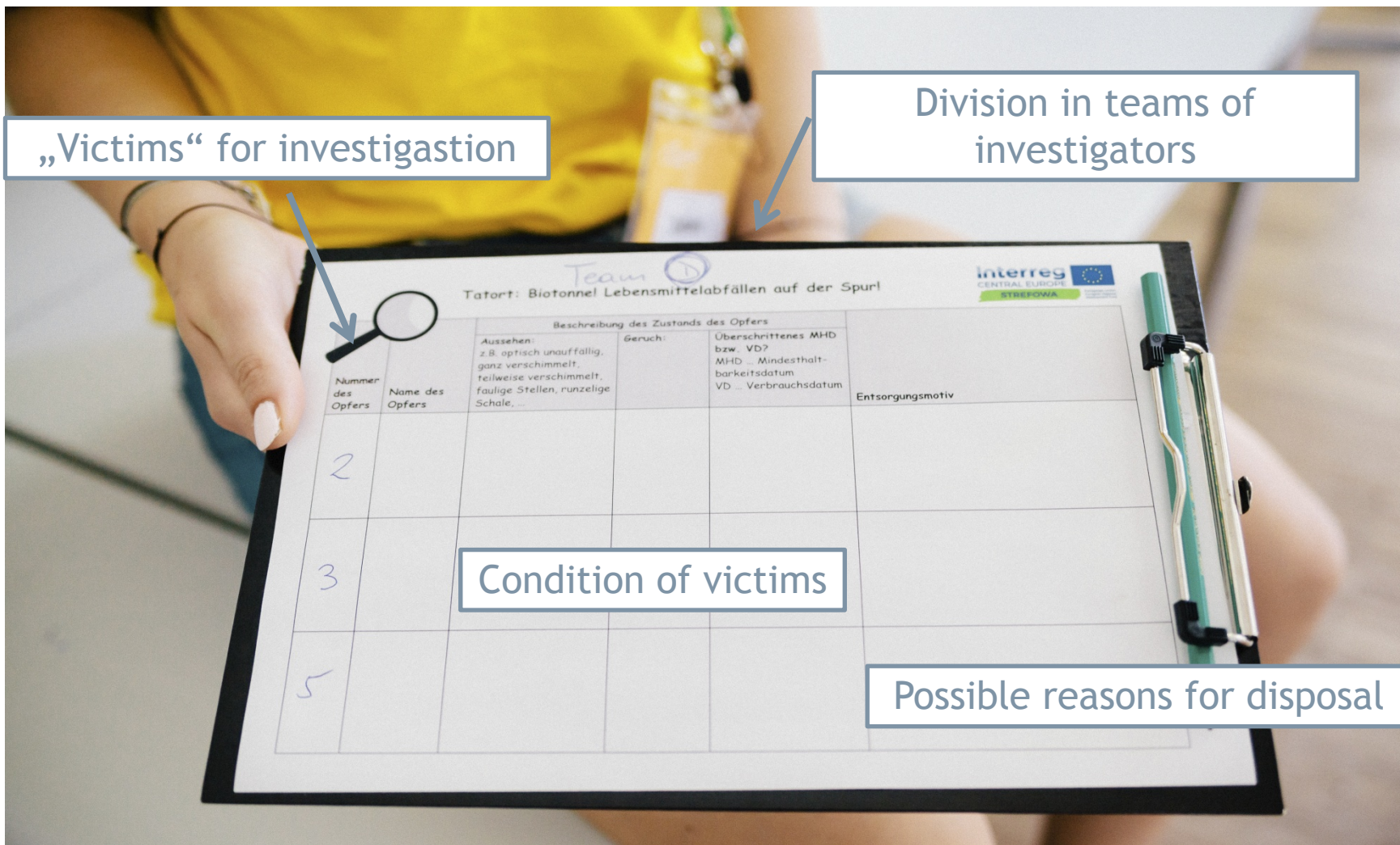
- Concert tickets
- Weather forecast
- Family plan for the week
- Poster with information on the right storage and a picture how the family stored their food



Please check the STREFOWA Tool: tool.reducefoodwaste.eu to find all materials in a download area soon !



Record observations



Reconstitution of the crime - Examples



FAMILIE MÜLLER

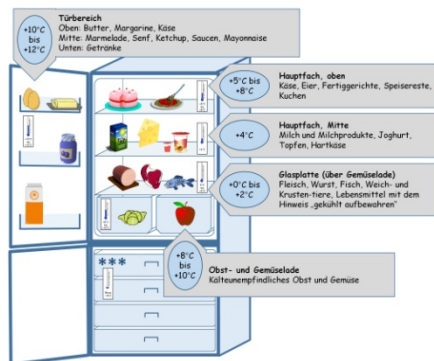
FAMILIENPLANER

Tag	Besondere Aktivität(en)	Kochplan
Montag	Ganztags-Schulausflug von Max und Tina	
Dienstag	Nachmittags: Erdbeeren pflücken im Erdbeerland (Max, Tina, Mama)	2 Lunchpakete (Jausenbrot, Apfelspalten)
Mittwoch	Abends: Gemeinsam kochen	Pizza
Donnerstag	Nachmittag: Schulfest mit Gewinnspiel	Pizzareste von Mittwoch ☺
Freitag	Grillabend im Garten	Einkaufen: Bratwürste, Gemüse zum Grillen, Kartoffel, Salat
Samstag	Großes Familien-Sonntagsfrühstück	Einkaufen: Gebäck, Käse, Wurstwaren, frisches Obst, Joghurt

Tatort: Biotunnel
Lebensmittelabfällen auf der Spurl



Lebensmittel müssen richtig gelagert werden!



- Trockene Lagerorte wie Vorratsschrank, Speisekammer oder Keller eignen sich für trockene Lebensmittel wie
- diverse Getreideprodukte (Mehl, Flocken, Grieß, Müsli etc.)
 - getrocknete Hülsenfrüchte (Bohnen, Linsen etc.)
 - Nudelnwaren
 - Kaffee, Kakaopulver, Tee
 - Zucker
 - Honig/Sirup, Öle
 - ungeöffnete Marmeladen und Konserven(-dosen)
 - Brot& Gebäck
 - Kälteempfindliches Obst und Gemüse (z.B. Erdäpfel, Paradieser, Melanzani, Zitrusfrüchte und Bananen) wird idealerweise in einem kühleren Raum oder an einer kühlen Stelle gelagert (maximal +18°C).

Donnerstag, 19.00 Uhr
SYMPHONIEHALLE
KLASSISCHES KONZERT
WERKE VON VIVALDI & MOZART
PARKETT
REIHE 10, PLATZ 11, LINKS € 20
Dein Gewinn!

Donnerstag, 19.00 Uhr
SYMPHONIEHALLE
KLASSISCHES KONZERT
WERKE VON VIVALDI & MOZART
PARKETT
REIHE 10, PLATZ 12, LINKS € 20
Dein Gewinn!



Reasons and solutions



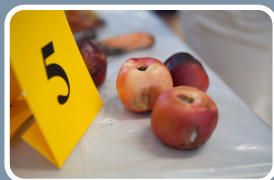
Wrong Storage

- Food has not been stored in the fridge
- Especially important when storing fruits



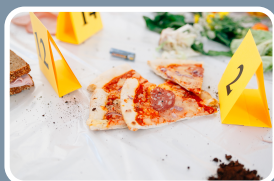
Too big purchases

- How is it possible to cope with big amounts of food?
- How can you prevent buying too much?



Taste

- What can you do when you do not like the taste of the food you bought?
- Share it, swap it and of course talk to your parents in case of school snacks.



Change of plans

- Nevertheless do not forget about the food you have at home!



Handling of expiration dates

- Look, smell and taste



About the Project - STREFOWA

Target groups

- Farmers
- Retailers, wholesalers
- Charitable organisations
- Foodbanks
- Students
- Teachers
- Consumers
- Scientists
- Social media experts
- Hoteliers
- ...

Food Waste Hackathons

Food waste prevention support-Tool

Identification of Best Practices

Status quo Analysis

Handbook, Guidelines, Training programmes

Transnational Multi-Stakeholder Meetings

Transnational Food Waste Network

Food Use Awards

Communication

- Website
- Social media (Facebook, Twitter)
- Meetings
- Workshops
- Conferences
- Food Use Awards
- Roadshows
- ...



Outputs

Pilot actions

Tasks

OPERATION FORWARD



Vielen Dank für Ihre Aufmerksamkeit!



Kontakt:

Gudrun Obersteiner

Institute of Waste Management,
University of Natural Resources and Life Sciences, Vienna



gudrun.obersteiner@boku.ac.at



+43 1 3189900-319 / 320



<http://www.reducefoodwaste.eu>



www.facebook.com/reducefoodwaste.eu



twitter.com/strefowa

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



TAKING COOPERATION FORWARD



- Aunkofer, F. (2015): Erhebung von Lebensmittelverlusten im ökologischen Gemüsebau, Master Thesis, Vienna
- BMLFUW (2015) : Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft; Leitfaden für die Weitergabe von Lebensmitteln an soziale Einrichtungen; Rechtliche Aspekte, 2015
- EESC (2014): Vergleichende Studie; Gesetzliche Bestimmungen und die Verfahren der EU Mitgliedstaaten bezüglich Lebensmittelspenden; von Bio by Deloitte im Auftrag des Europäischen Wirtschafts- und Sozialausschusses; Zusammenfassung, 2014
- FAO (2014): Food and Agriculture Organization of the United Nations; Food wastage footprint, Full –cost accounting, Final Report; 2014
- Frieling D., Stricks V., Wildenberg M., Schneider F. (2013): The beauty and the beast – How quality management criteria supermarkets create food waste, The 6th International Conference on Life Cycle Management, Göteborg, 2013
- Gustavsson J., Cederberg C., Sonesson U., van Otterdijk R., Meybeck A. (2011): Global Food Losses and Food Study conducted for the International Congress SAVE FOOD! at Interpack2011, Düsseldorf, Germany; 2011
- GZ (2016): Global 2000, Kurzbericht Food Waste und Landwirtschaft 2013/14
- Hrad M., Ottner R., Lebersorger S., Schneider F., Obersteiner G. (2016): Vermeidung von Lebensmittelabfall in Gastronomie, Beherbergung und Großküchen – Erweiterung weitere Betriebe; Endbericht im Rahmen des Forschungsprojektes „United Against Waste“ (UAW), Februar 2016



Lebersorger S., Schneider F. (2014): Aufkommen an Lebensmittelverderb im Österreichischen Lebensmittelhandel, Endbericht im Auftrag der ECR-Arbeitsgruppe Abfallwirtschaft 2014

Meyer W., Eilers G., Schnapper A. (2003): Müll als Nahrungsquelle für Vögel und Säugetiere – Ein Beitrag zur Ökologie der Industriegesellschaft. 1. Auflage, Die Neue Brehm-Bücherei Band 650, Westarp Wissenschaften, Hohenwarsleben

Schmied E., Mayerhofer J., Schwödt S., Obersteiner G. (2017): GLEANING ACTIVITIES AS CONTRIBUTION TO FOOD WASTE REDUCTION; Proceedings 16th international Waste Management and Landfill Symposium, S.Margherita di Pula, Italy

Schneider F., Lebersorger S. (2010): Unterlage „Lebensmittel im Abfall“ für das Abfallvermeidungsprogramm 2011; Teil 4 – Annex H; im Auftrag des BMLFUW, Abt. VI/6, 2010

Schneider F., Part F., Lebersorger S., Scherhauser S., Böhm K. (2012): Sekundärstudie Lebensmittelabfälle in Österreich, Endbericht im Auftrag des BMLFUW, 2012

Selzer M. (2010): Die Entsorgung von Lebensmitteln in Haushalten: Ursachen – Flüsse – Zusammenhänge; Diplomarbeit, 2010

WRAP (2013): Household Food and Drink Waste in the United Kingdom 2012, Executive Summary, 2013



Literatur und Hinweise

<http://www.lovefoodhatewaste.com/content/cost-food-waste-uk-every-year>, 03.11.2015

http://www.bmlfuw.gv.at/land/lebensmittel/kostbare_lebensmittel/viktualia.html, 02.11.2015

http://united-against-waste.at/wp-content/uploads/2015/05/Endbericht_BOKU_2016_02_19.pdf?2c0d8f, 07.03.2016

<http://www.feedingamerica.org/>, 01.11.2015

<http://www.eurofoodbank.eu/>, 20.11.2017

<http://www.tafel.de/die-tafeln/zahlen-fakten.html>, 01.11.2015

<http://www.somaundpartner.at/index.php>, 01.11.2015

<http://www.wienertafel.at/index.php?id=385>, 07.11.2016

<http://foodsharing.at/>, 02.11.2015

<https://www.bmlfuw.gv.at/service/video.html>, 07.11.2016

<https://www.wien.gv.at/umweltschutz/abfall/lebensmittel/> 07.11.2016

