



# ECOWASTE 4 FOOD

Interreg Europe

**Food waste innovations**  
Cost-effective, eco-friendly and inclusive  
solutions for reducing food waste



European Union | European Regional Development Fund



## LIST OF CONTENT

- 4 Drying extends fruit' shelf life.  
**Wielkopolska / Poland**  
  
Sterilisation machines help to save food.  
**Wielkopolska / Poland**
- 5 A.S.O.P. Dimitra.  
**Western Macedonia / Greece**  
  
Fondalim.  
**PACA / France**
- 6 Tax deductions for food donations  
The Last Minute Market model.  
**Ferrara / Italy**  
  
OLIO.  
**Devon / England**
- 7 Boroume.  
**Western Macedonia-Greece / Greece**  
  
ResQ Club.  
**South Ostrobothnia / Finland**
- 8 ActiveEco Lab.  
**Ferrara / Italy**  
  
Pont Alimentari.  
**Catalonia / Spain**
- 9 Better meals, less food waste throw.  
**PACA / France**  
  
Weigh and Think.  
**Catalonia / Spain**
- 10 «Your Business is Food»; don't throw it away!  
**Devon / England**  
  
Innovation through food circular economy curriculum.  
**South Ostrobothnia / Finland**

This brochure introduces some eco-innovative good practices to reduce food waste at various levels of the food system.

They have been identified and discussed with experts and stakeholders during the 1<sup>st</sup> stage of ECOWASTE4FOOD project.

Stakeholders developing and running these good practices are involved in the ECOWASTE4FOOD regional stakeholders groups.

ECOWASTE4FOOD project partners have committed to promote and support those good practices in their city or regional action plans (2<sup>nd</sup> stage) as they have a potential to be replicated and/or be scaled up.

*This publication has been supported by the ERDF.*

*Disclaimer: the content of this publication only reflects the author's views and the programme authorities are not liable for any use that may be made of the information contained therein.*

## Why fight against food waste?

Up to 30% of food we produce in Europe is not consumed. On one hand money is invested for producing food, requiring water, energy, land, labor, technology and knowledge. On the other hand, money is spent by local & regional authorities for collecting, treating and recycling food waste. Whether public policies can facilitate or influence behavioural change, actions are needed at different stages of the food system to tackle food waste. Definitely, a zero waste agenda contributes to improves environmental resource efficiency and food security, as well as enhancing a food circular economy that supports regional prosperity.



The fight against food waste will only be effective if it is implemented locally and regionally. At these levels practice-driven solutions are taking place and actions are carried out with tangible outcomes. Halving food waste by 2025 requires a bold political agenda and supposes a genuine coordination of action plans to reduce food waste among public and private stakeholders. City and regional authorities are nimble leaders in designing and implementing clear strategies to prevent and reduce food waste at any stage of the food system, from the production & processing industry to consumers and citizens.

### Why act at local & regional levels?

### Why support eco-innovations?

Eco-innovations are innovations that help to improve resource efficiency and to lower the environmental impact of human activities. A mix of technological and organizational changes are at work. Some eco-innovations may not look new, but their new social and economic uses make them innovative:

- limitation of waste production at source in the food processing industry;
- conception and design of products that help reducing the food waste by the end users;
- use of products today considered as unusable or unserviceable products;
- services provided that could help reducing food waste.





## Drying extends fruit' shelf life

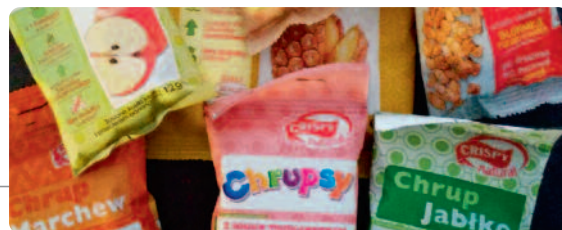
Wielkopolska - Poland

**Innovative technologies enable the creation of innovative healthy fruit and vegetable food products. Extending shelf life through drying methods contributes to reduce food losses in the agri-food sector.**

Innovative but simple technologies enable the extension of fresh food's shelf life. Drying of fruit, vegetables, cheese and other food raw materials is achieved in a very short time and at low temperatures. Such technological processing contributes to maintain very high levels of nutrients in the finished products. After rehydration products regain natural texture, taste and aroma, characteristic of the raw material.

This process produces a product of varied form, crispness and texture, providing very high nutritional values, natural flavours, aromas and textures appropriate for fresh raw materials. Technology in food processing helps to improve the efficiency of raw material use in reducing losses and increasing valorised by-products. Drying machines do allow the creation of new food products from fresh fruit and vegetables that might not find any markets due to various reasons (overproduction, non-compliance with conformity and quality standards...).

The company has designed the Mirvac technology which is the fastest micro-wave vacuum dryer on the market. The company Paula has developed various drying technologies to minimize food losses at processing stages and extra ones: infusion, spray drying using nozzles, instant flours and instant rice production and membrane filtration.



INNOVATION  
IN THE FOOD  
INDUSTRY



### IN BRIEF

- *FPH Paula Sp. z o.o. Sp.k established in 1991 in Kalisz*
  - *250 employees*
  - *MIRVAC microwave-vacuum dryer*
  - *Cooperation with the Marshal Office of Wielkopolska Region in the field of developing technologies that limit food wastage.*
  - *Continuous improvement of the assurance and control system*
    - *compliance with the highest quality standards*
    - *environmental monitoring*
    - *regular testing of products in eterna laboratories*
- [www.paula.com.pl](http://www.paula.com.pl)



## Sterilisation machines help to save food

Wielkopolska - Poland

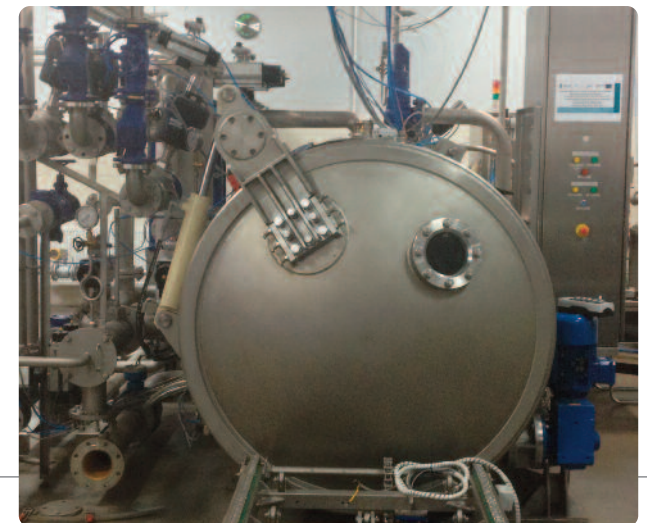
**Food manufacturing machines do help to improve food preservation. Sterilisation and pasteurisation are very well known technologies, but innovation arises through new uses to avoid food losses and wastage.**

For decades Spomasz SME has provided complete solutions for the food, brewery and spirit processing industries. This SME specialized 120 years ago in manufacturing machines and equipment such as: spraying and multifunctional sterilisers, vertical, and horizontal autoclaves, evaporators for jam production, marmalade or fruit paste, etc.

Spomasz supplies single units such as tilting boiling kettles with or without a mixer evaporator for marmalade or fruit paste production and tomato processing evaporators for jam production, horizontal autoclaves, vertical autoclaves, spraying sterilisers, and crystallizers for fruit and vegetable storing tanks.

The SME also provides lines for ketchup production, tomato processing into paste or concentrate and for yogurt fruit components production.

Those large sterilisation machines do contribute to extend shelf life of fresh fruit and vegetables that might not find any market due to overproduction or non-compliant supply (i.e. trade embargo, climatic hazards, aesthetic criteria etc).



INNOVATION  
IN THE FOOD  
INDUSTRY



### IN BRIEF

- *SPOMASZ PLESZEW S.A. established in 1886 in Pleszew*
  - *Cooperation with the Marshal Office of Wielkopolska Region and with Poznan universities in the field of developing technologies that limit food wastage.*
- [www.spomasz-plezew.pl](http://www.spomasz-plezew.pl)

# A.S.O.P. Dimitra

Western Macedonia - Greece

The «Dimitra» rural cooperative of Velventos deploys modern methods of cultivation, harvesting, packing and distribution of the fresh fruit. In order to save ripe fruit from waste, new products like jams and juice have been put on the market with second quality fruit.



The facilities of the Rural Cooperative «Dimitra» are located in Velventos, in West Macedonia. The estates of the producers are located in the foothills of Pieria, beside the lake Polyfytos, an ideal location with the perfect microclimate for the production of the fruit and especially for the production of peaches and nectarines. The strict control in the production process, the standardisation, the packaging, the preservation and the transport, guarantee the supply of safe products that have a top quality, to their consumers.

Due to high quantities of ripe fruit, A.S.O.P. «Dimitra» made a partnership with juice factories that are located in Central Macedonia and in Peloponnesus. During the production season (April-September), the ripe fruit are collected in tanks. At the end of season or when the tanks are filled up, the whole quantity of the fruit is sent to the juice factories. The juice factories buy the whole fruit (the flesh and the core) from the A.S.O.P. «DIMITRA». Indicatively, the amount of the cores is 2,5-3 thousand kg/season.

Through this activity, the members of the cooperative have increased their income, they make profit out of every part of their products, without throwing anything away. Thus, from waste point of view, the A.S.O.P. «DIMITRA» produces almost zero food waste from fruit processing, and their production has no impact on the environment.



## IN BRIEF

- Velventos coop
- Rural cooperative (A.S.O.P.)
- + 4,000 tonnes of peaches & 2,000 tones of nectarines per year
- + 170 producers
- Majority of young smallholders

<http://dimitracoop.gr/en/>



# Fondalim

PACA - France



The European food aid model is at a crossroads. The drying up of agrifood surpluses managed by the European Union has led food banks to reshape food donation model and to anticipate future challenges including that of bio-waste management.

Fondalim is an endowment fund that gathers together 500 associations and food banks, 200 agrifood companies and 280 agri co-operatives in Provence Alpes Côte d'Azur region.

The refocusing of European food aid led food banks to update their business model. They have created a regional network in which they encourage industrialists and agro-food cooperatives to donate through an online platform. These companies provide food either because of an excess supply of fresh fruit and vegetables (mainly cauliflowers, potatoes, tomatoes, cucumbers, apples) or because they engage in corporate social responsibility.

Fondalim does not purchase anything but receives offers for food donation. Through an easy to use online platform, agrifood companies describe the items and quantities to be donated. Digitisation of food donation at regional level is a facility that makes the difference in terms of time when management of food donation requires a smart logistic system to deliver fresh food with very little delay to food banks. How does it work in practice? For instance, if a local baker ends the day with 15 kilos of bread surplus at 8pm, he can inform the Fondalim network at 6pm through the app, so a local charity can click on the offer and pick up the bread at 8pm.

In addition to providing services and advising food banks and food industries Fondalim is developing a similar scheme for developing the management of bio-waste at local and regional levels. Decentralised collection and treatment of bio-waste -i.e. used cooking oils- can generate new circular economy-based business models that involve local NGOs and charities.



## IN BRIEF

- Endowment fund since 2015
- Fondalim has been set up by 5 departmental Food Banks, by COOP de France Alpes Méditerranée, and by the Regional Federation of agrifood industries.
- 400 tonnes of donated food
- 60% tax exemption for companies donating food
- On-line platform set up with the support from the energy agency and French government

[www.fondalim-paca.fr](http://www.fondalim-paca.fr)



# Tax deductions for food donations

## The Last Minute Market Model

Ferrara - Italy



Last Minute Market (LMM) links retailers who have food surpluses with people in need. LMM is a triple win innovation that makes the local food retailing more resource-efficient, the waste treatment less costly and brings food to people in need.



### IN BRIEF

- Developed by Faculty of Agriculture of University of Bologna since 1998 and works in more 40 cities in Italy
- Since 2004 in Ferrara around 90 tonnes / year collected and redistributed, saving valued at €183,000
- +€10,000 savings by municipal treatment for food waste
- +€15,000 discount on waste tax for retailers who donate
- [www.lastminutemarket.org](http://www.lastminutemarket.org)

Last Minute Market (LMM) addresses two issues: first, the massive food waste at retailer level and, on the other side, the increasing food shortage connected with economic crisis and modern day poverty. This second issue is often left in the hands of charity organisations, but with LMM many city actors (municipality, SMEs, associations etc) are involved in this relevant fight. The retailers participating in LMM are granted a discount on waste tax, proportional to the quantity of food donated. This scheme helps by redistributing the food resource to people in need. The associations who handle and distribute the food are chosen directly by the donors. LMM currently involves 5 associations/social cooperatives in Ferrara. It's a long-term experience and it has been growing successfully since 2003. Retailers currently involved have been with the project for several years. The project was embraced by the municipality ten years ago and now the municipality is the unique coordinator of the LMM in Ferrara. Its role is played at two different levels. As a first step the municipality facilitates the signing of a collaboration protocol among retailers and associations willing to recover the food waste and to distribute it to people in need. At the second level, the municipality calculates and applies a discounted waste tax to retailers, based on the self-certification on the quantity of food donated to the chosen beneficiary.



# OLIO

Devon - England

A project whereby no food surplus is wasted anymore at home! With the OLIO app everyone can pick up unwanted food from people local to them, and donate surplus food they don't want that otherwise would be thrown away.

Instead of throwing food away, why not save it by sharing it with neighbours and others locally? The OLIO free mobile phone app matches unwanted edible food from neighbours and local shops with individuals. So surplus food can be shared for free and does not go into the bin. Users simply snap a picture of their items and add them to OLIO app. Neighbours then receive customised alerts and can request anything that takes their fancy. Pick-up takes place - often the same day - at the home, in store, at an OLIO drop box, or another agreed location. Items typically found on the app include food nearing its use-by date from shops, cafes and markets; spare vegetables from the allotment; cakes from a home baker; or groceries from household fridges when people go away, move home or start a diet. All the food on OLIO is either available for free, or for a «pay as you feel» donation to charity.

OLIO can provide food that some charities wouldn't bother with - lots of listings on the site are for a couple of potatoes or half a sandwich. OLIO is empowering individual citizens to make a difference and solve the problem of food waste - over half of all food wasted in the UK is from the home which means that consumers are half the problem; however thanks to OLIO it also means that they can be half the solution! OLIO is backed by one of the world's largest venture capital firms, and a number of investors passionate about solving the problem of food waste in the home & local community.

RAISING CITIZEN AWARENESS



DONATING FOOD SURPLUSES



### IN BRIEF

- Since 2015
- + 500,000 users
- + 400,000 Items of food have been shared
- +170,000 meals saved from going to waste
- Operates in 37 countries
- [www.olioex.com](http://www.olioex.com)





# Boroume

Western Macedonia-Greece - Greece

Through the «Saving & Offering Food» program Boroume saves food on a daily basis from many sources and offers it to charities that help people who are facing food insecurity.

RAISING  
CITIZEN  
AWARENESS



RECOVERING  
FOOD  
SURPLUSES



## IN BRIEF

- Set up in 2011  
+18,000,000 portions of food have been saved and donated (value of 27,000,000 euros)
  - Over 500 volunteers, over 600 charities, over 400 food companies
- [www.boroume.gr](http://www.boroume.gr)

Boroume is a non-profit organisation whose mission is to reduce food waste and to fight malnutrition in Greece. In the Greek language Boroume means «Yes we can». Its approach is to develop a social movement to reduce food waste and at the same time increase nutritional support to people in need based on volunteer support.

An innovative food saving model has been created which can handle all kinds of food donations, at anytime, anywhere in Greece, increasing food donations to charities while drastically reducing food waste of any kind:

- "Stop Food Waste" - increasing awareness about food waste
- «Boroume at School» - educational programme
- «Boroume Gleaning» - reducing food waste in the field
- «Boroume at the Farmers' Markets» - reducing food waste at the farmers' markets
- «Boroume in the Neighbourhood» - informing potential food donors in a neighbourhood about their food saving mechanism

Through the «We Are Family» programme Boroume provides nutritional support in an immediate transparent and dignified way to families in great need.

In 2016, Boroume began participating alongside 7 stakeholders from 4 different countries in the EU project «SavingFood», funded by the EU programme on research and innovation «Horizon2020». This project aims to create an online platform that will facilitate the redistribution of surplus food for the benefit of the vulnerable groups in our society, with the development of an online networked community of donors, charitable organisations and volunteers.



# ResQ Club

South Ostrobothnia - Finland

Every day over 10% of prepared food in restaurants is thrown away. ResQ club mobile app was founded to offer a triple win solution: providing savings for the restaurants and discounts for the customers while reducing food waste.

SELLING  
FOOD  
SURPLUSES



## IN BRIEF

- By July 2018, over 700,000 meals and 80,000 tonnes of food saved with around 1,900 venues announcing their portions and 300,000 registered users purchasing them.
  - On average, 65% of the surplus portions announced in the app are sold.
  - Established in Finland, but currently operating also in Sweden, Germany, The Netherlands.
- +22 restaurants using the service in 3 towns of South Ostrobothnia.
- [www.resq-club.com](http://www.resq-club.com)

ResQ club mobile app is a marketplace for restaurants to sell their surplus portions at a discount and individual consumers to buy surplus portions near them. Portions are announced by the restaurants and depending on the settings a consumer has chosen, the application notifies users nearby. Consumers purchase the portions directly in the app and pick up the orders in person from the restaurant within the time frame the restaurant has specified.

For the restaurant, using the service doesn't require any special setup or additional equipment. Selling portions through the app is possible for the restaurants within the normal health and hygiene legislations.

ResQ club company is encouraging the interaction between consumers and the company with a Facebook group for ResQ club users, where the regional managers of the company contribute to the discussion and answer the feedback given by the consumers. Consumers also share their experiences and pictures of the portions to rouse discussion on the suitable size, price and information provided regarding the surplus portions announced. ResQ club has proven to be a very efficient way of reducing food waste and attract new customers. Based on ResQ club's own data, ResQ users who get to know the restaurant first time through ResQ, have an 80% likelihood to return to the restaurant.



## ActiveEco Lab

Ferrara - Italy

«ActiveEco Lab, practicing sustainability» is a municipal initiative dedicated to citizenship and environmental education, promoted and organised by Centro Idea. ActiveEco Lab is a «learning by doing» activity that offers free practical courses to Ferrara dwellers in order to re-use food left overs and reduce food waste at home.

RAISING  
CITIZEN  
AWARENESS



DONATING  
FOOD  
SURPLUSES



### IN BRIEF

- *Designed and coordinated by Centro Idea of the municipality of Ferrara, in collaboration with civic associations: Unione Cuochi Estensi (Chef Union of Ferrara), Biblicucina and Officina Dinamica.*
- *Cost of the ActiveEcoLab ranges between €500-€1,000 depending on lengths and teachers*

<http://servizi.comune.fe.it/6857/activecolab>

In 2015 and 2016, 3 laboratories were dedicated to the issue of food waste in 4 hours kitchen classes for 20 participants each. The first laboratory («Karmafood»), in collaboration with the cultural association Officina Dinamica, dealt with the reuse of leftovers. The second («Creative ideas against food waste»), handled by the Unione Cuochi Estensi had the goal of teaching about the use of ingredients that people commonly consider waste, such as peelings and leaves. The third («Cooks factory»), held again by Unione Cuochi Estensi, was dedicated to an ecological Christmas lunch menu.

In Europe, a massive part of food waste is produced at home, so a practical action dedicated towards citizens is a good way to address the problem, with long term results and a general cultural change in the participants. The kitchen classes are a very powerful tool to modify behaviours and spread a different culture on food matters.

70% of participants are convinced or fully convinced that what they learned will make their lifestyle of life more sustainable, 80% of respondents are convinced or fully convinced that they will use what they learned in daily life. On average it's estimated that an Italian family throws away €300 of food per year. Learning how to reduce food waste in the kitchen generates a significant saving of money for households and helps to reduce the cost of municipal of organic waste treatment.



## Pont Alimentari

Catalonia - Spain

WEIGHTING  
QUANTITIES



DONATING  
FOOD  
SURPLUSES



PUBLIC  
CATERING

RAISING  
CITIZEN  
AWARENESS



Pont Alimentari offers free advice to develop a personalised diagnosis to catering companies and retail stores. The NGO looks at what food is thrown away, in what state, when, and why and offers possible solutions leading to the adaption of good practices.

Pont Alimentari aims to have a positive impact on food waste reduction through an environmental education campaign based on the values of solidarity and the efficient use of natural resources.

Pont Alimentari offers a diagnosis of food that is thrown away in the retail food distribution, catering and restaurant sectors. The NGO proposes awareness raising activities for the reduction of food waste and suggestions for improvement; and the creation of an interaction network (bridge) between donor companies and the receiving entities that support vulnerable groups in Barcelona. In parallel, awareness-raising actions are carried out, aimed both at the customers/ personnel of companies and at the general public with the goal of fostering a change of behaviour and attitude towards food waste. In the hospital sector, where a significant amount of food waste is generated, the initiative has been launched in the Germans Trias i Pujol Hospital, the first hospital in Catalonia to channel its food surplus to social entities.

Imaginative solutions have been set up to reduce the food waste and losses generated by the social entities themselves as part of their operations. For instance, Pont Alimentari suggested cooking dry pulses from donations before redistributing them to beneficiaries, given that some cannot cook due to energy poverty. In this way, it avoided a food waste situation.



### IN BRIEF

- *Carried out by the Waste Prevention Foundation (Rezero) and the Resource Bank Foundation*
  - *Multi-actors agreements are signed with partner companies and social entities in order to ensure the correct functioning of donations and food safety*
  - *Agreement protocol validated by the Catalan Food Safety Agency and the Waste Agency of Catalonia*
  - *40 partner establishments*
  - *27 receiving entities*
  - *+ 1,500 individual beneficiaries*
- [www.pontalimentari.org](http://www.pontalimentari.org)





# Better meals, less food waste throw

PACA - France

The public hospital in Avignon has broken stereotypes about catering. Tasty recipes with hand made, slow cooking, cold meals, and smart portioning have contributed to cut food waste, to save money, and to make patients satisfied.

WEIGHTING QUANTITIES



INNOVATION & LEARNING



## IN BRIEF

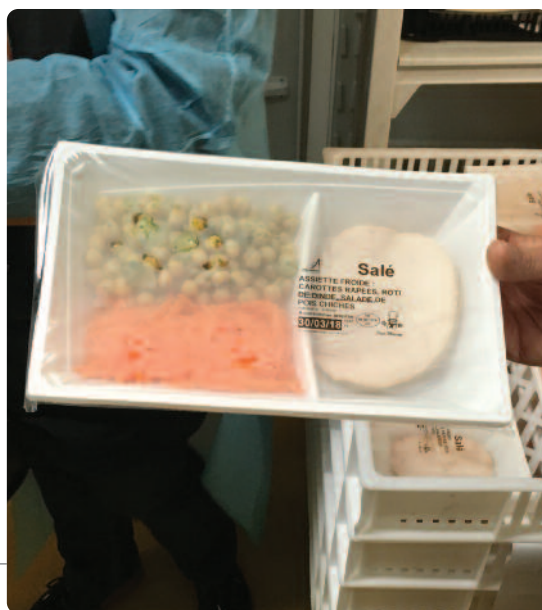
- 3,500 meals per day
  - 90% of food recipes prepared at the hospital
  - 1 tonne of food wasted avoided for 24 meals during 5 days / 52 weeks
- [dal@ch-avignon.fr](mailto:dal@ch-avignon.fr)

In three years the public hospital of Avignon has reduced food portion leftovers from 90,000 to 9,000 individual trays. Such effort has been achieved through a mix of technological and social innovations.

Firstly, food wastage was evaluated at 100 tonnes per year before the project started. Overfilled plates, unsuitable food types, tasteless dishes, were all different reasons to throw food into the bin. At the onco-hematology service, food waste has been halved thanks to cold dishes while wasted bread has been reduced to 4% instead of 30% when stored at ambient temperature. At the end of the year, 1 tonne of food has been avoided in this service. What recipes have enabled such results?

The hospital bought a software package for ordering patients' meals and managing the preparation of food portions. A smart low temperature oven has facilitated slow cooking, -e.g meat portions baked during the night which provide extra taste without any condiments. Home made meals, traditional Provence food recipes, and new format of individual trays have also significantly contributed to reduce food waste, without forgetting the training of staffs.

With health education and waste reduction, food catering at the hospital is at the heart of a circular economy approach. Better eating contributes to saving money, making patients satisfied and to saving the planet.



# Weigh and Think

Catalonia - Spain

All started with a slice of bread: there was more left over bread than there were students in a school lunchroom. This story marked the inception of Weigh and Think (Pesa i pensa in Catalan): an educational project to raise awareness about the production of waste and food waste at school.

RAISING CITIZEN AWARENESS



WEIGHTING QUANTITIES



## IN BRIEF

- +4,000 pupils
  - +30 Catalonia schools
  - Campos Estela is the company operating the school catering contracts
  - The project was finalist in the EWWR awards in 2015
- [www.pesaipensa.org](http://www.pesaipensa.org)

The methodology of the project enables children to be co-responsible for decisions such as whether to have a whole second helping or eat more bread or fruit. The teaching staff that set Weigh and Think into motion consider that the children's first-hand experience, when they can make their own decisions, is an efficient and everlasting learning tool that will help them be critical food consumers. Weigh and Think has been created to enable children and youths to internalise a good habit that will accompany them throughout their whole lives, which they will also pass on to their families. The pilot test got underway in 2014. From the second month onwards and in a sustained way, food wastage in school dining rooms was reduced by 35% and waste generation dropped by 50%.

The Weigh and Think method consists of five steps:

- separate into four bins (containers, inedible organic waste, edible organic waste, water);
- weigh every day in a systematic and precise manner;
- record data by means of an app: meals served, waste generated etc;
- think: analyse data related to the generated waste;
- propose: set targets to be achieved with the children.

The Campos Estela has estimated that wastage could be reduced by 75 tonnes of food every day, given that this project could contribute to a 5% reduction of the total amount of food wasted in Catalonia.





# «Your Business is Food»; don't throw it away

Devon - England

Cutting costs and saving money by throwing away less food is a challenge for every catering company. «Your Business is food»; don't throw it away is a free campaign designed to help businesses to review and cost the food they are throwing away in order to take actions and make savings.

RAISING CITIZEN AWARENESS



WEIGHTING QUANTITIES



### IN BRIEF

- Developed by WRAP under the Courtauld Commitment 2025
  - Used by the sector incl. the British Hospitality Association (now UKHospitality), Chartered Institute of Environmental Health, Sustainable Restaurant Association, Considerate Hoteliers
  - Reduction of perishable food purchasing costs up to 25%
  - Food waste reduced up to 72%
  - Gross profit up by 3-5% following 33% reduction in food waste
- <https://partners.wrap.org.uk/ybifbusiness>



In the catering sector food waste can occur at different stages: purchasing, storage, preparation, overproduction, serving dishes, through to left overs on customers' plates. What's thrown away is not just food, but also staff time and disposal costs. Reviewing the amount of food that is throw away can help to find out where savings can be made, straight to the bottom line. The campaign tools gives some clear ideas on how to throw away less food and start saving money. A starter guide gives a summary of why and how to take action on food thrown away. There is an animation to show how to use the tools.

The length of the review depends on how long it's needed to get a clear picture of where food is being thrown away -through 3-day, 7-day or more tracking sheets-

A calculator tool is used to see at what stage food is being thrown away on site. The Calculator includes handy graphs to show the savings that can be made to help focus on the actions for your business.

Some corrective actions have been very efficient to cut food waste:

- improved portion control;
- optimising the use of ingredients;
- improved management of food prepared after the main evening peak service;
- asking customers if they want side dishes.



# Innovation through food circular economy curriculum

South Ostrobothnia - Finland

Seinäjoki University of Applied Sciences has developed a stable model of circular economy studies in the school of Food and Agriculture.

INNOVATION & LEARNING



### IN BRIEF

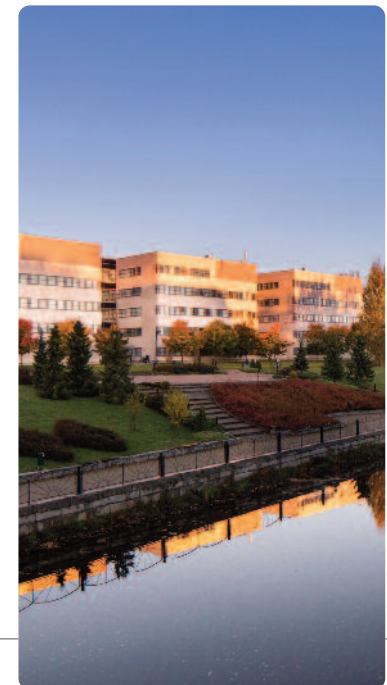
- Since 2017
  - Food circular economy projects 80% supported by Sitra fund for innovation
- [www.seamk.fi/en](http://www.seamk.fi/en)

Seinäjoki University of Applied Sciences (SeAMK) prepares professionals of the future and produces high-level applied research to promote welfare and innovations. The School of food and agriculture is one of the four faculties that offers Bachelor Degree Programmes (Agriculture and Rural Enterprises, Food and Hospitality, Food Processing and Biotechnology) and Masters Degree programme (Food Chain Development).

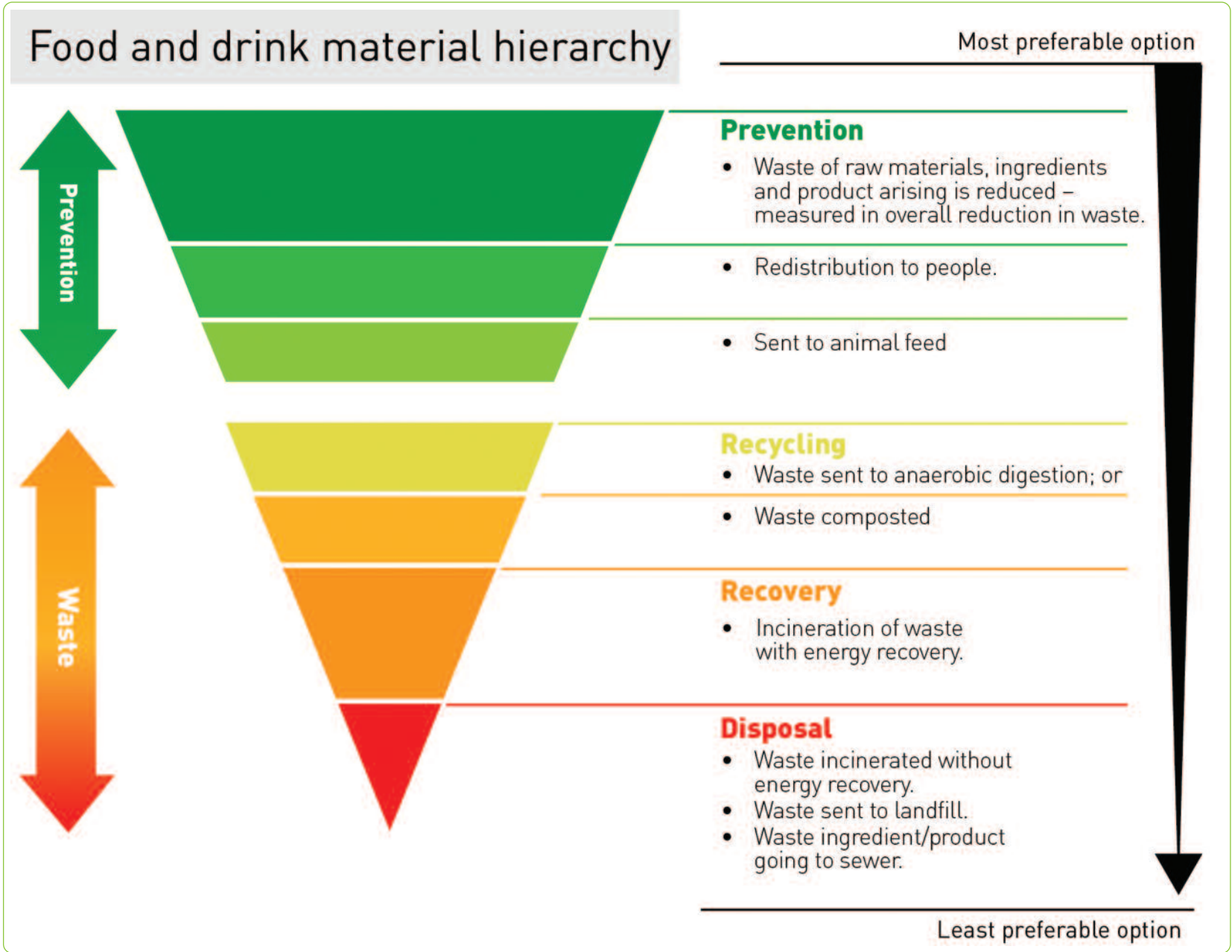
SeAMK considers that circular economy skills shall be a part of education of food professional and engineers of process and material technology. Designed courses are related to sustainable food systems, sustainable use of metals, fiber material (plastic, textile, chemical pulp fibre) as well as sustainability of chemical and process industry and use of by-products. Designed courses are related to sustainable food systems, sustainable use of metals, fibrous material (plastic, textile, chemical pulp fibre), sustainability of chemical and process industry, use of byproducts as well as info package and workshop with food chain companies. The project aims at developing, producing, testing and evaluating the new tools for the education in the food supply chain. The standard model is a triple helix learning approach that comprises the student, the teacher and an external expert on circular economy. Such a curriculum provides new knowledge and experience to future food professionals as follows:

- it combines food waste prevention with business knowledge;
- it has an effect on food waste prevention in different levels of the food chain;
- it increases the cooperation between students, enterprises, teachers and policy makers;
- it supports new innovations.

This model is suitable to be implemented in other universities.



# The Food Waste Hierarchy



Source Wrap

## About us

The ECOWASTE4FOOD project led by CIHEAM-IAMM brings together seven city and regional authorities from seven countries throughout Europe (Wielkopolska Region, City of Ferrara, Regional Development Fund / Region of West Macedonia, Regional Council of South Ostrobothnia, Regional Council of Sud de France / Provence-Alpes-Côte-d'Azur, Devon County Council, Waste Agency of Catalonia).

ECOWASTE4FOOD project supports city and Regional Authorities in designing their own action plans by providing them with available knowledge, good practices and eco-innovative solutions.

ECOWASTE4FOOD promotes best practice solutions and provides insights and policy recommendations at various policy, scientific and professional forums at EU level.

## Contacts

**CIHEAM-IAMM:** feret@iamm.fr

**Marshal Office of the Wielkopolska Region:** alicja.nowak@umwww.pl

**City of Ferrara:** m.pancaldi@comune.fe.it

**Regional Development Fund on behalf of the Region of West Macedonia:** i.marki@pdm.gov.gr

**Regional Council of South Ostrobothnia:** susanna.anttila@etela-pohjanmaa.fi

**Regional Council of Sud de France / Provence-Alpes-Côte d'Azur:** cdeblais@maregionsud.fr

**Devon County Council:** annette.dentith@devon.gov.uk

**Waste Agency of Catalonia:** ebagariar@gencat.cat

## Follow us

[www.interregeurope.eu/ecowaste4food](http://www.interregeurope.eu/ecowaste4food)

<https://www.facebook.com/ecowaste4food>

@ecowaste4food

