

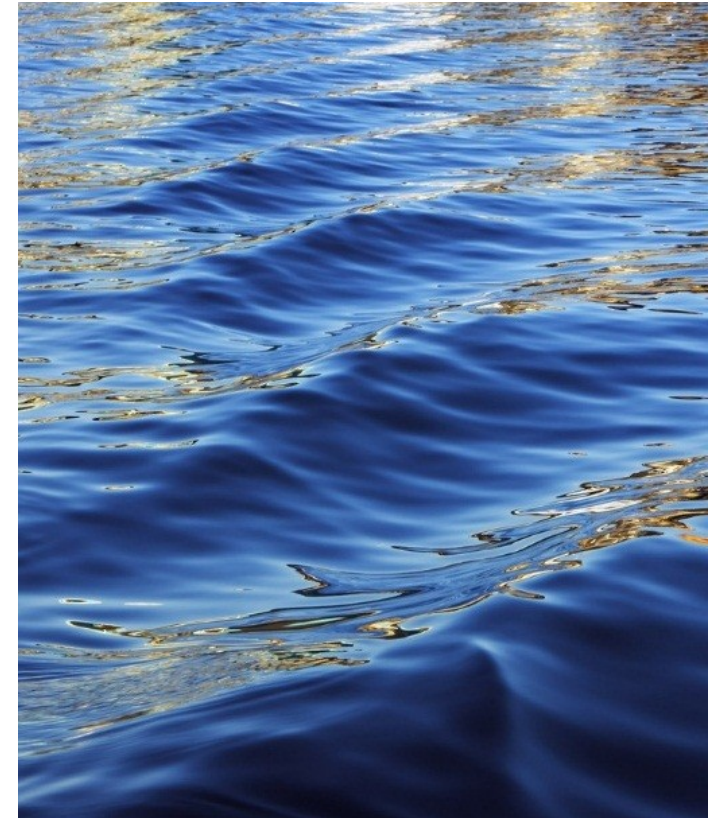


# Food waste prevention under the lens of source reduction, redistribution for human consumption and animal feeding

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7TH INTERNATIONAL CONFERENCE ON  
SUSTAINABLE SOLID WASTE  
MANAGEMENT



# Food waste

- ⇒ At a global scale, about 1/3 of the food produced for human consumption is lost or wasted, leading to an estimated total global loss of about 720 billion euros.

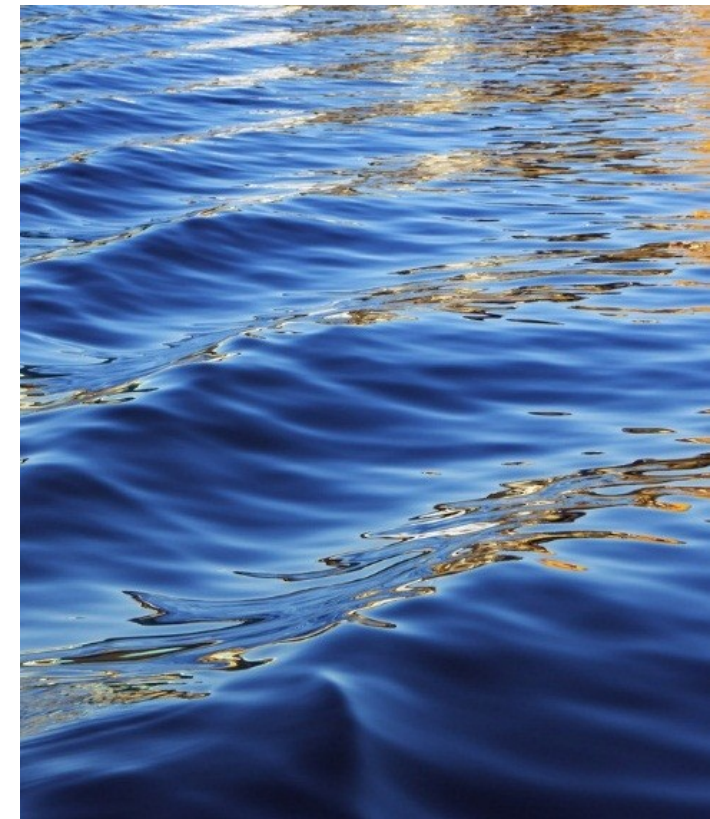


- ⇒ Global carbon footprint of food waste estimated at 3.6 Gt of CO<sub>2</sub> eq.
- ⇒ In the European Union (EU), an estimated 88 million tonnes of food and food residues are wasted every year. The cultivation, processing, transport and disposal of this wasted food costs to the citizens of the EU member-states 140 billion euros.
- ⇒ In Greece the amount of food waste is grossly estimated at 2 million tonnes, of which 400,000 t can be attributed to businesses.

# Policy framework

Food waste management relates to several policy areas:

- sustainable resource management,
- climate change,
- energy,
- biodiversity,
- habitat protection,
- Agriculture, and
- soil protection



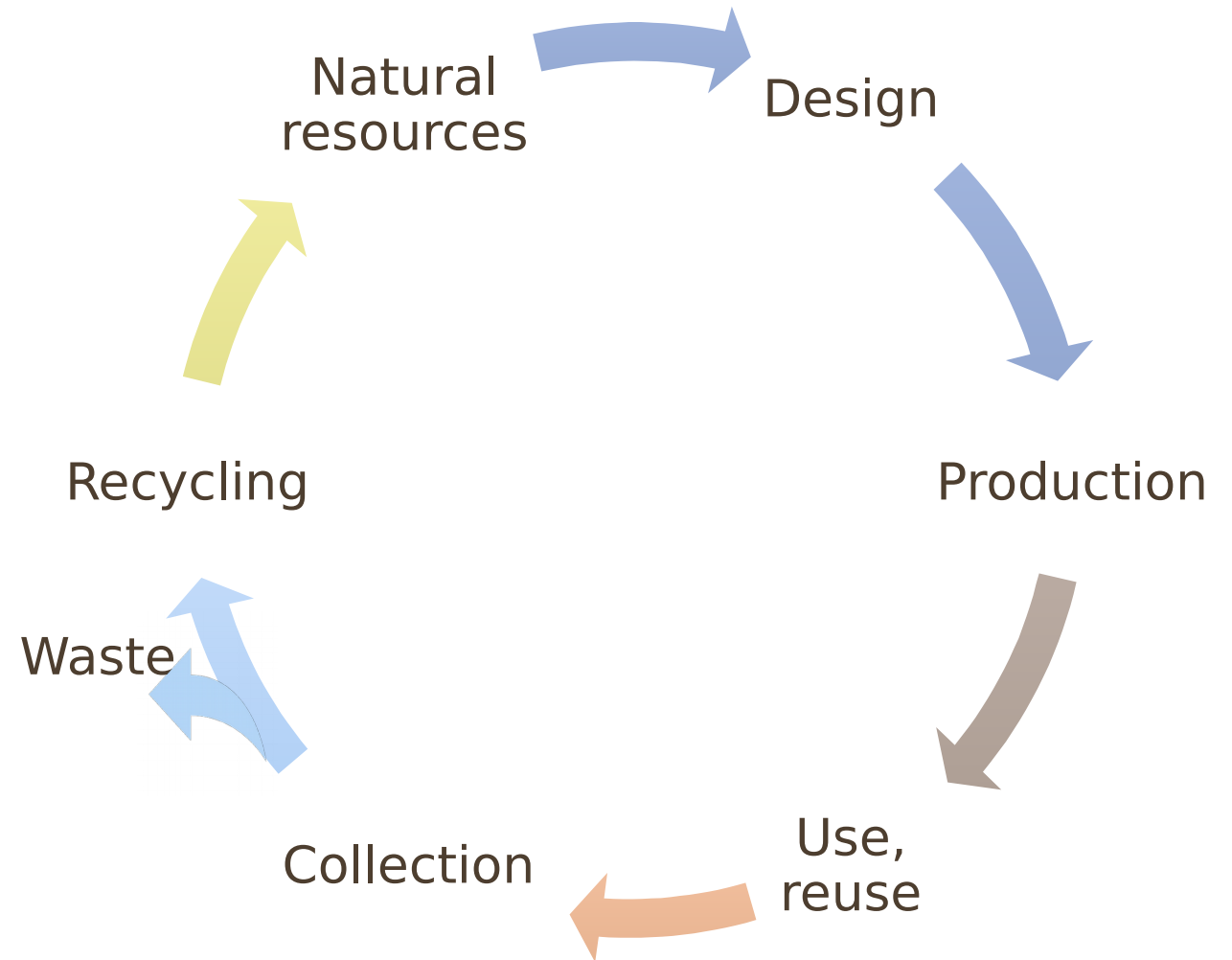
# Circular economy: sustainability in action

- Directive (EU) 2018/851, amending Directive 2008/98/EC on waste, demands that the Member States take measures to promote prevention and reduction of food waste.
- Member States should achieve SDG 12.3, i.e. a Union-wide food waste reduction target of 30% by 2025 and 50% by 2030 and should monitor the generation of food waste.

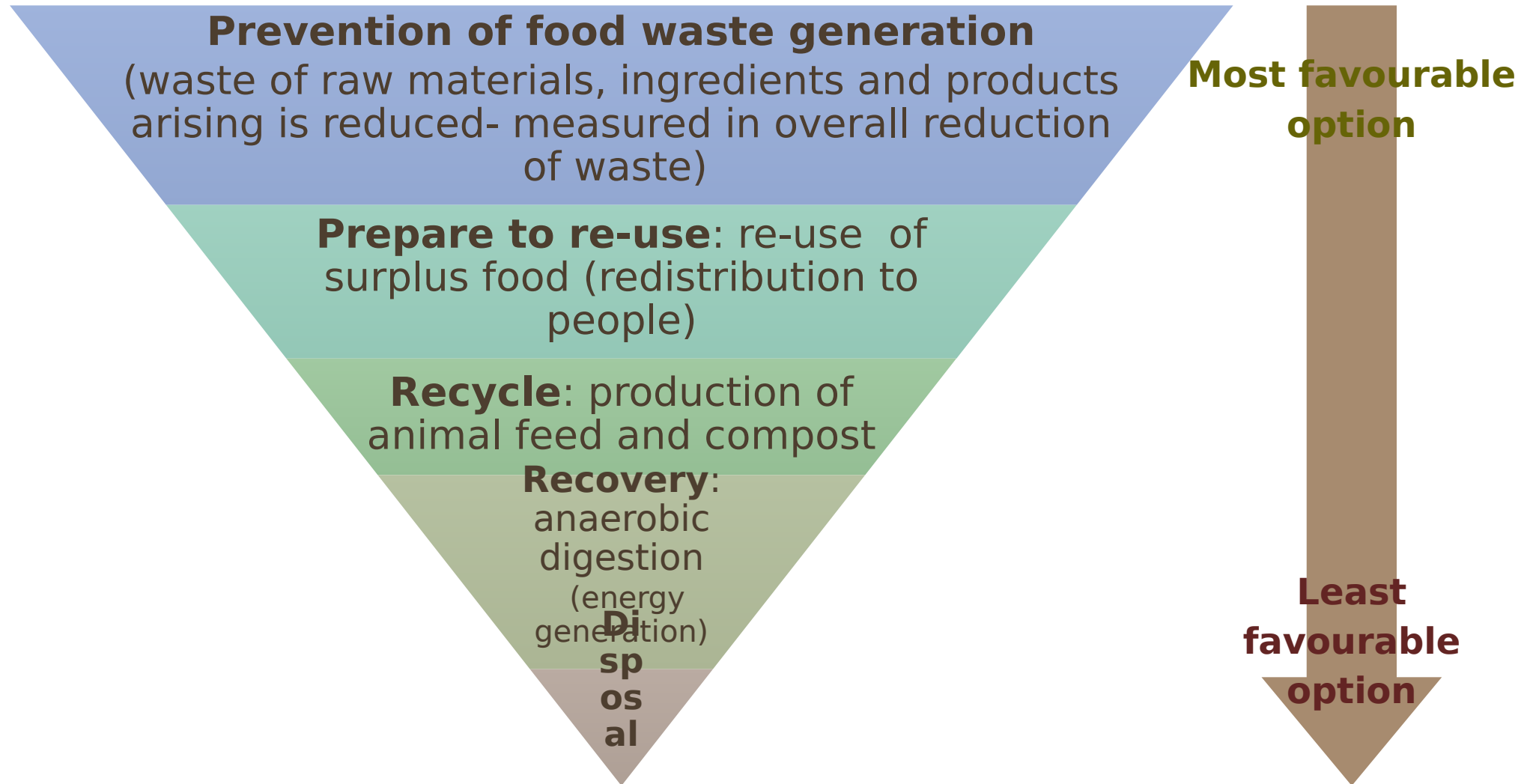


# Circular economy

Product resilience, resource efficiency, industrial co-existence, new business models, eco-design, innovation in recycling markets, the development of secondary materials markets and change in consumers' habits can serve the principles of the cyclic economy, with an economy and a society with zero waste and rational use of natural resources.



# The food waste hierarchy (or Food use hierarchy?)



# Food waste prevention

- Awareness campaigns like the British “**Love food hate waste**”, the French “**Qui jette un œuf, jette un bœuf**” and the German “**Zu gut für die Tonne**”, to name just a few, aim to draw consumers’ attention to the issue of food wastage and to increase their regard for food. They instruct consumers on the proper handling of food by providing tips on shopping, shelf life, storage, preparation, and recovery of leftovers.
- Awareness campaigns should be directed to different target groups, in close cooperation with retailers and the hospitality sector, using various approaches.
- WRAP UK estimated that avoidable food waste in British households was reduced by 18 percent within five years primarily due to public awareness campaigns.



# Food waste prevention in Europe - Good Practices





# Examples of Good Practices in Food Waste Prevention (Europe)

Organisation	Description
<p>Love Food Hate Waste (UK)</p>	<p>According to a report published by WRAP in 2008, one third of the food we buy is wasted. In order to help consumer reduce this amount, WRAP has launched the “More Food, Less Waste” website, featuring practical advice and tips to help people make the most of the food they are buying, and waste less of it. <b>Love Food Hate Waste, an awareness campaign</b>, sponsored by WRAP in the UK, aims at raising awareness on the need to reduce food waste, via the dissemination of information on reducing consumer and household food waste to achieve environmental and economic benefits. The focus of the campaign is on easy practical everyday activities which can lead to waste reduction. Since the campaign launched in 2008, WRAP estimates that 137,000 tons of food waste have been prevented.</p>

# Food Waste Prevention- Good Practices in Europe

Organisation	Description
Food and Drink Federation's Five - fold Environmental Ambition (UK)	<p>The Food and Drink Federation's Five—fold Environmental Ambition started with member commitments to play a role in tackling climate change by reducing CO<sub>2</sub> emissions by 20% by 2010 against a 1990 baseline, sending zero food and packaging waste to landfill from 2015, making significant reductions in levels of packaging reaching households in line with WRAP's Courtauld Commitment, embedding environmental standards into food transport practices and reducing overall transportation and reducing waste use. The association has already made progress on the waste portion of the Ambition, to send zero food and packaging waste to landfill from 2015. Members established baselines from their 2006 waste volumes and have since this initial reporting prevented more than half a million tonnes of food waste from being created. The project has also included a joint initiative with WRAP to carry out waste prevention reviews at thirteen-member company sites across the UK.</p>

# Food Waste Prevention- Good Practices in Europe


Organisation	Description
<p>Zu gut für die Tonne (Too good for the bin) (Germany)</p>	<p>The large-scale initiative “Zu gut für die Tonne” (“Too good for the bin”) has been implemented by Germany’s Federal Ministry of Food and Agriculture and aims to raise awareness on the topic by providing information on the topic in various ways and through numerous activities.</p> <p>The website provides well-prepared all relevant information on correct storage, purchase planning and leftover recipes. An App has been created to help consumers cope with their surplus food through more than 340 recipes and it includes additional tips on meal planning in advance as well as a storage guide.</p> <p>Furthermore they support to raise awareness on the topic in schools by providing educational material for teachers and students between 9-15 years.</p> <p>Together with the German food bank and slow food movement action days take place. Known chefs boil away unsaleable fruits and vegetables from supermarkets and agricultural operations.</p>

# Food Waste Prevention- Good Practices in Europe

Organisation	Description
Approve Food and Drink (UK)	Approve Food and Drink Company, a UK - based food redistribution programme, specialise in selling dry food products that are near or past their "best before" date at a discounted rate through their website. While sales and revenue figures are not available, the company has received a large amount of mass media publicity, indicating an impact of consumer awareness. Company represents an innovative private-sector approach to avoiding food waste via resale.
The Greek Food Bank (Greece)	The basic goal is the management of foods with no commercial value, yet suitable for consumption, that without the Food Bank would be just a waste. The Food Bank collects food that it provides for free to canteens and institutions throughout Attica.

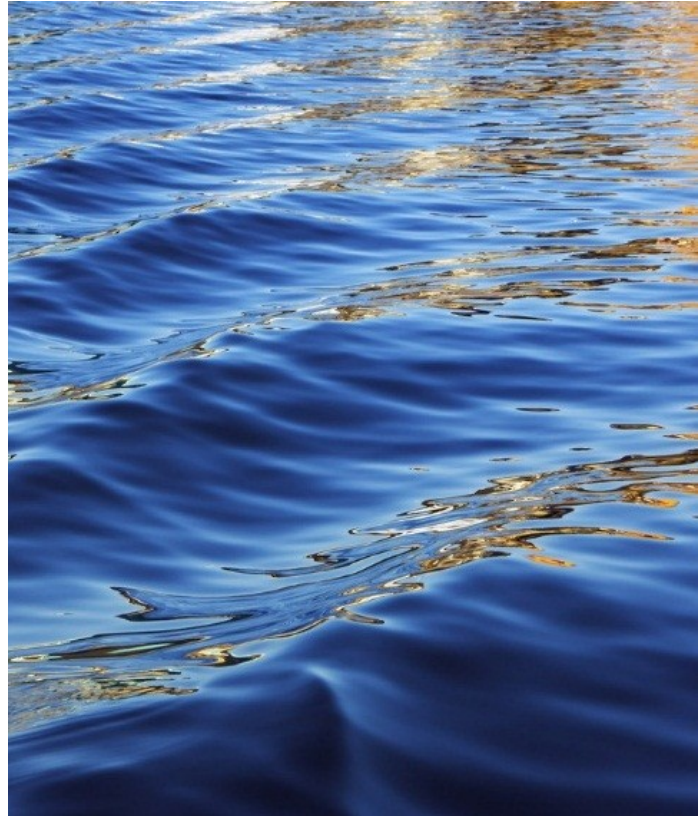
# Food Waste Prevention- Good Practices in Europe

Organisation	Description
Borume (Greece)	<p>Boroume, which means “we can” in Greek, is a non-profit organisation that fights food waste by organising the distribution of surplus food for charity throughout Greece. It was founded in January 2012 although the initial idea was conceived in 2011. Boroume is a communication hub between food donors and recipient organisations (welfare institutions, soup-kitchens, municipal social services) that creates “bridges” between those who have food to give and those who need food. Since 2011, Boroume has created thousands of such “bridges”, often of permanent nature, and on average offers more than 2.500 portions of food per day through its network. Through its innovative model of utilising food that otherwise would end in the garbage, Boroume aims at creating a social movement against food waste.</p>



# Prevention/ Circular Economy projects

Avoidable and Unavoidable Food Wastes: A Holistic Managing Approach for Urban Environments - A2UFood (UIA02-115)



# Avoidable and Unavoidable Food Wastes: A Holistic Managing Approach for Urban Environments - A2UFood

A2UFood proposes a holistic management scheme in which all aspects of reduction, reuse, and recycling of food waste are included. Specifically, a series of complementary project actions aim in the reduction of avoidable food waste, the utilisation of unavoidable food waste as raw materials, and the proper management of unavoidable food waste. In the core of A2UFood is the entire food water production change (hotels, restaurants, and households).

# Basic facts of the A2UFood project

## Partners:

- ✓ Municipality of Heraklion
  - ✓ United Association Of Waste Management of Crete (ESDAK)
  - ✓ Harokopio University of Athens
  - ✓ University of Crete
  - ✓ Agricultural University of Athens
  - ✓ Technological Education Institute of Crete
  - ✓ ENVIROPLAN AE
  - ✓ University of Stuttgart
- 
- 👉 Duration: 1/3/2018 έως 28/2/2021
  - ▢ Total budget: 3.912.948,75€ (80% financing by Urban Innovative Actions)
  - ▢ Targeted area: Municipality of Heraklion, Crete, Greece



# Avoidable and Unavoidable Food Wastes: A Holistic Managing Approach for Urban Environments - A2UFood

A range of innovative tools will be designed and put into action:

- software to support families in reducing avoidable food waste
- software and hardware for reducing avoidable food waste in the hospitality sector
- a second opportunity food restaurant
- a bioplastic production system for the production of compostable bags
- a range of state of the art Autonomous Composting Units (ACUs) where treatment will take place on-site.



## Circular Economy projects

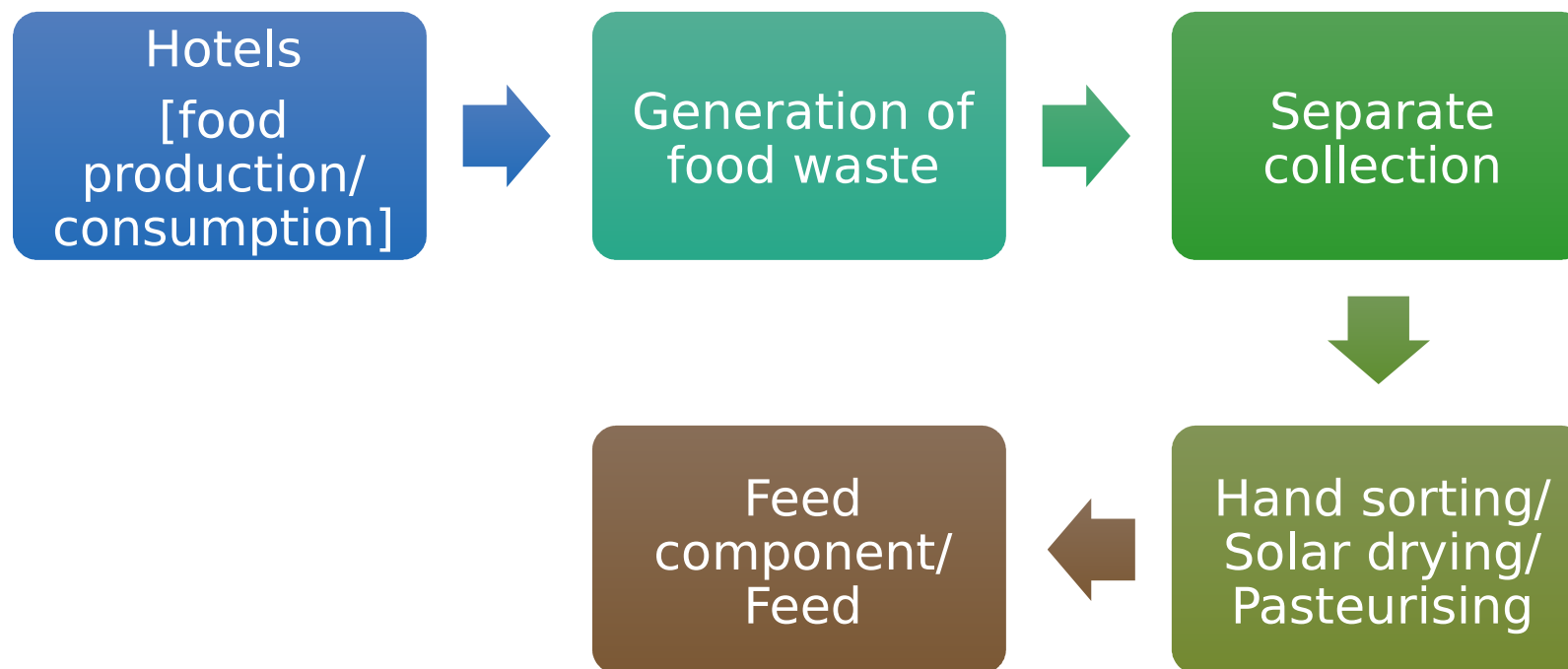
Food for Feed: An Innovative Process for Transforming Hotels' Food Wastes into Animal Feed – F4F (LIFE15 ENV/GR/000257)



# Food for Feed: An Innovative Process for Transforming Hotels' Food Wastes into Animal Feed – F4F

The evaluation of an innovative process (through a pilot application), using simple technology and low emissions process that allows the safe transformation of source separated food wastes, mainly from hotels (and generally from the hospitality industry and restaurants), into animal feed, utilising an altered solar drying process.

# Food for Feed: An Innovative Process for Transforming Hotels' Food Wastes into Animal Feed – F4F



# Basic facts of the F4F project

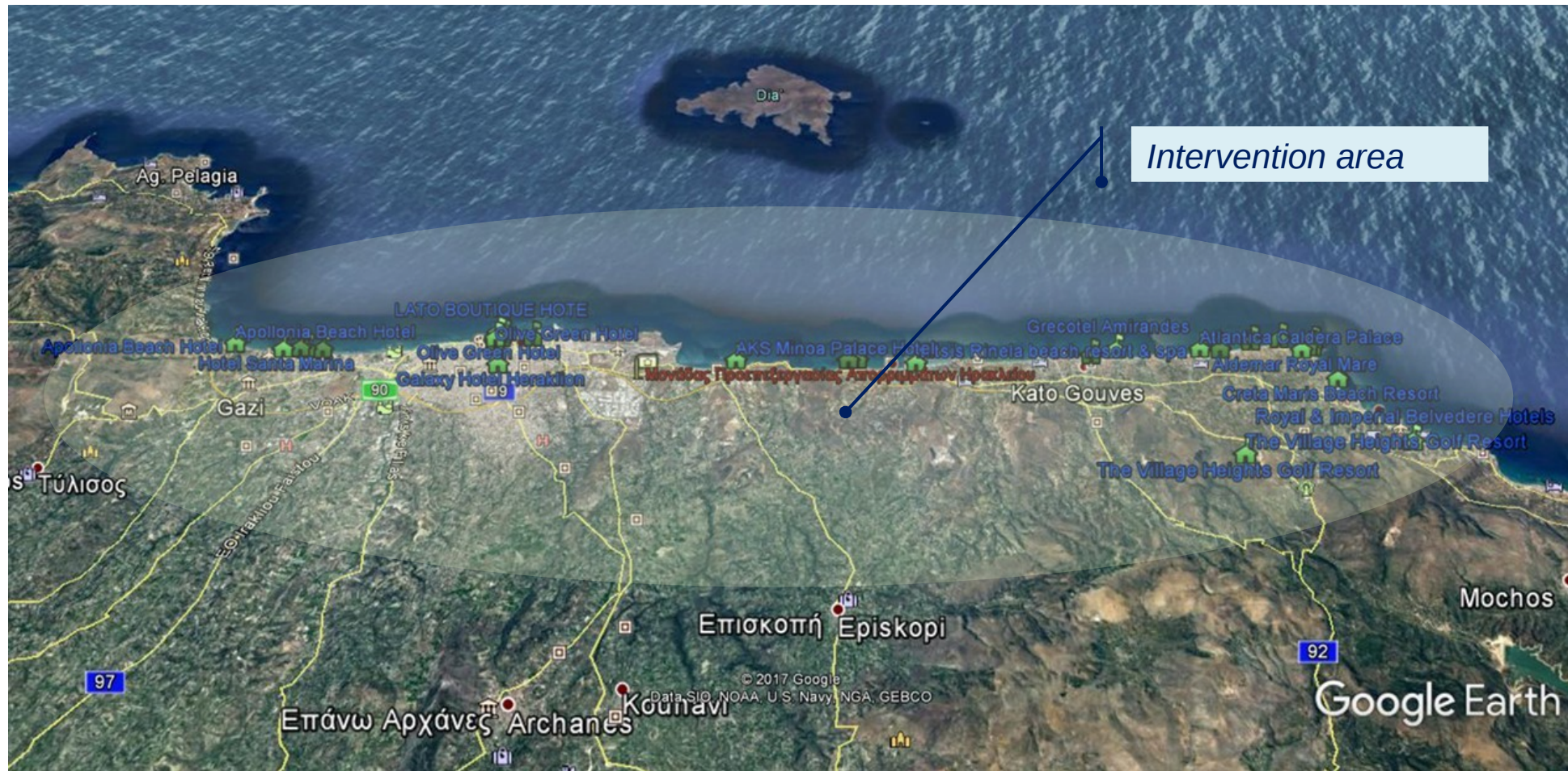
## **Coordinating Beneficiary:**

➔ United Association Of Waste Management of Crete (ESDAK)

## **Associate Beneficiaries:**

- ✓ Harokopio University of Athens
  - ✓ Agricultural University of Athens
  - ✓ Technological Education Institute of Crete
  - ✓ Freie Universität Berlin
- 
- ▢ Duration: 42 months (1/9/2016 - 28/2/2020)
  - ▢ Total budget: 2.580.619,00€ (60% financing by LIFE)
  - ▢ Targeted area: Heraklion-Hersonissos, Crete

# Food for Feed: The area of intervention



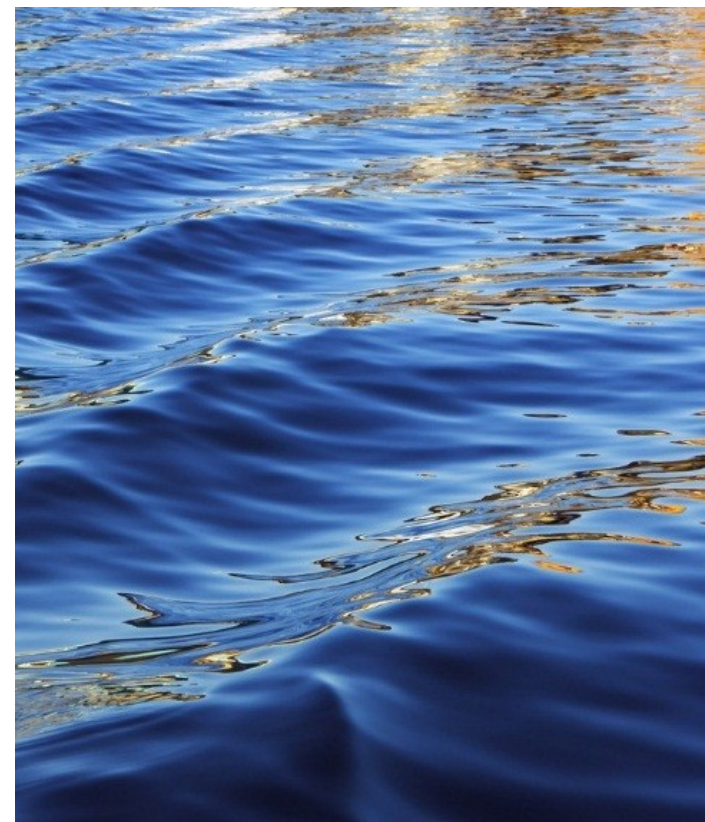
## *Participating hotels*

**Creta Maris Beach Resort (Hersonissos), Aquila Atlantis Hotel (Heraklion), Galaxy Hotel (Heraklion), και Olive Green Hotel (Heraklion)**



# Circular Economy projects

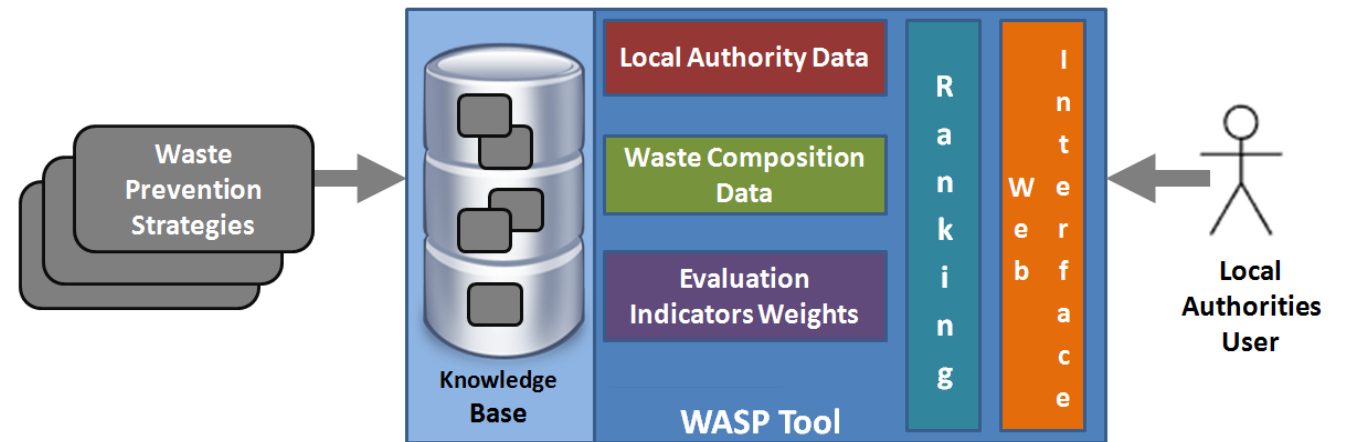
The WASP Tool project  
(LIFE10 ENV/GR/000622)



# The WASP Tool project

WAS.P = Waste Prevention  
Development and demonstration of a waste prevention support tool for Local Authorities.

## The architecture of the WASP Tool project



Assistance to Local Authorities to prepare/ improve a waste prevention strategy.



# The WASP Tool project

- Duration: 01.10.2011 – 30.09.2014
- Implementing countries: Greece & Cyprus
- The project was co-financed by LIFE+



# The WASP Tool project: Results

- ✓ Approximately 11,000 households participated directly in the pilot actions, taking composting, reusable bags and flasks.
- ✓ The entire population of Heraklion, and Chania in Crete (Greece), had access, respectively, to the collection bins and kiosks of the Exchange Library.
- ✓ It is estimated that 3,000,000 people received the message of waste prevention through the media.
- ✓ During the school year 2012-2013, at least 82 teachers attended the prevention network seminars and sent the message to their approximately 1,100 students.

# The WASP Tool project: Results

<b>Waste prevention actions</b>	<b>&amp; Reduction</b>
Food waste prevention	9.3 – 12.0%
Home composting	19.8 – 29.4%
Reusable carrier bags	64.4 – 65.0%
Exchange library	5.4%
Bins for collecting clothes	1.1%
Flasks	63.3%



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*Thank you for your  
attention!*



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HAROKOPIO UNIVERSITY

