



Copenhagen - Plastic waste



Hamburg - WEEE - Strategic Metals



Lisbon - Food & Bio-waste



Genoa - Wood & Wood waste



FORCE

Cities Cooperating
For Circular Economy

www.ce-force.eu



Circular Economy

A paradigm to boost innovative market opportunities.

In a circular economy, products are designed for disassembly and reuse, repair or remanufacture.

Any waste becomes resources and it is recycled for new applications.

European Project - FORCE "Cities Cooperating for Circular Economy"

Waste Department

Carla Tamagnini

26th of September 2017, Lisbon City Hall



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 689157



LISBOA

CÂMARA MUNICIPAL



FORCE: Cities Cooperating for Circular Economy

Call: H2020-WASTE-2015-two-stage

Instrument: Innovation action

Grant # 689157

Start date: 01/09/2016

End date: 31/08/2020

Duration: 48 months

Maximum EU grant contribution: € 9,724,969.13

Executive
Agency
for SMEs

European Partners and City Clusters



European Partners and City Clusters



City of
Copenhagen



City of
Hamburg



City of Lisbon



City of Genoa

Partners

Københavns Kommune - DENMARK
Freie und Hansestadt Hamburg - GERMANY
Câmara Municipal de Lisboa - PORTUGAL
Comune di Genova - ITALY

Aage Vestergaard Larsen A/S - DENMARK
Teknologisk Institut (DTI) - DENMARK
Letbæk Plast A/S - DENMARK
Dansk Rotations Plastic ApS - DENMARK
Stadtreinigung Hamburg AöR - GERMANY
HafenCity University Hamburg - GERMANY
Hochschule für Angewandte Wissenschaften Hamburg -
(Hamburg University of Applied Sciences) - GERMANY
Consist ITU Environmental Software GmbH - GERMANY
AURUBIS AG - GERMANY

Valorsul, S.A. (Valorização e Tratamento de Resíduos Sólidos
das Regiões de Lisboa e do Oeste, S.A) - PORTUGAL
DARIACORDAR (ASSOCIAÇÃO PARA A RECUPERAÇÃO DO
DESPERDÍCIO) - PORTUGAL
QUERCUS - ANCN (Associação Nacional de Conservação da
Natureza) - PORTUGAL
AHRESP (Associação da Hotelaria, restauração e similares de
Portugal) - PORTUGAL

Amiu Genova SpA - ITALY
Ecolegno Genova srl - ITALY
T.I.C.A.S.S. (TECNOLOGIE INNOVATIVE PER IL CONTROLLO
AMBIENTALE E LO SVILUPPO SOSTENIBILE SCRL) - ITALY
Active Cells srl - ITALY

AddaptCreative - PORTUGAL

Focus:

WP5

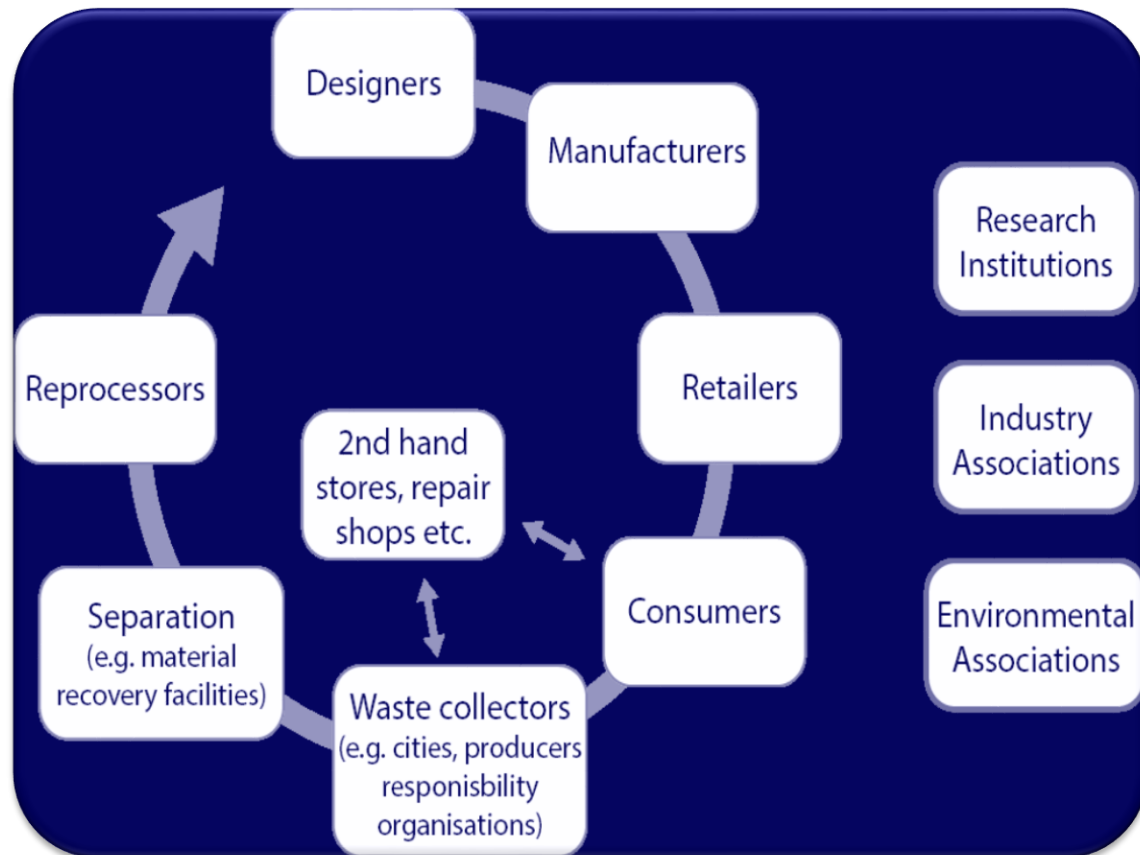
- Food waste reduction
- Reuse
- Biowaste collection
- New market opportunities
- Use of organic fertilizers

WP3, WP4, WP6:

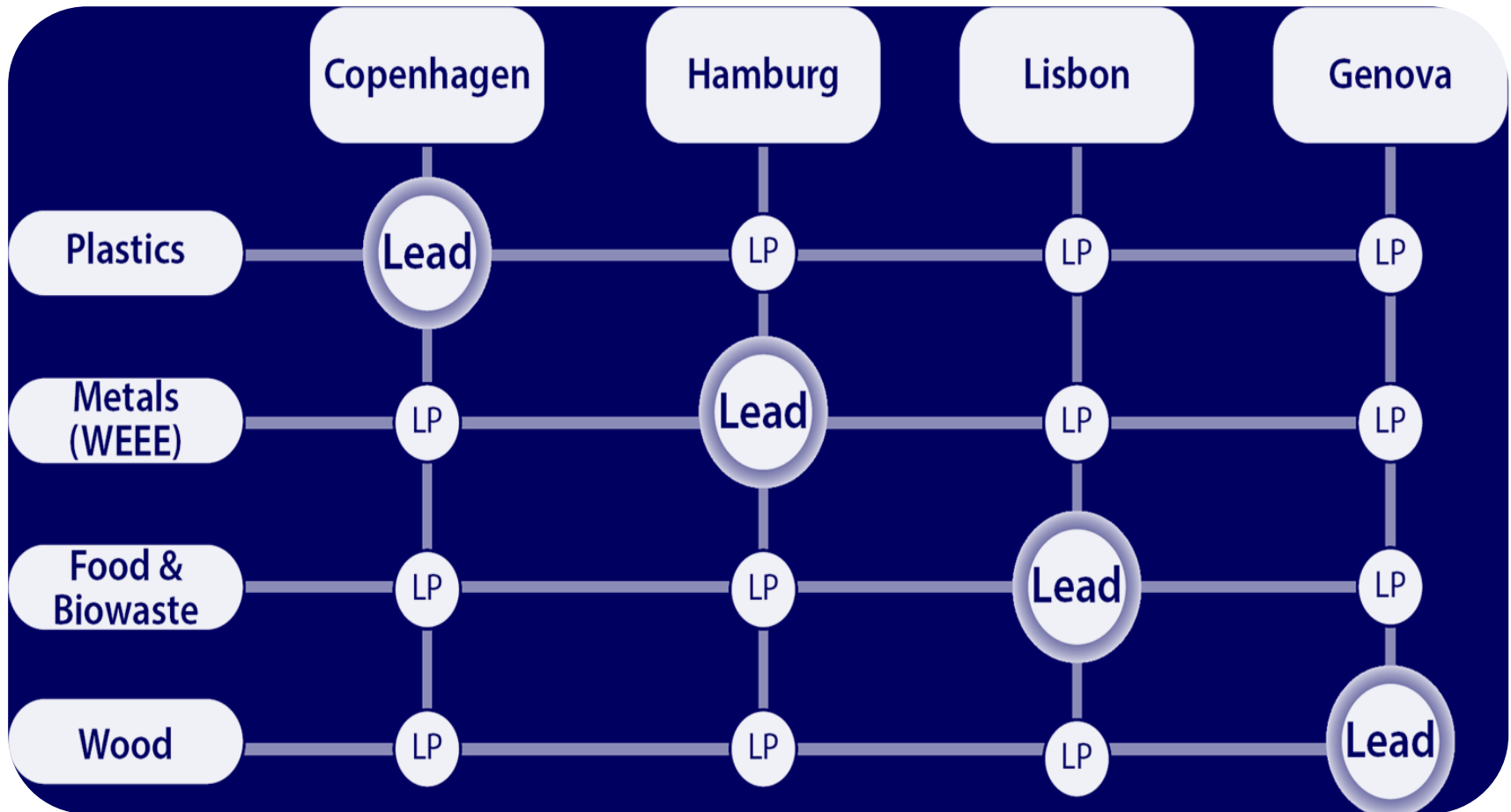
- Repair and Redesign

WP3-WP6:

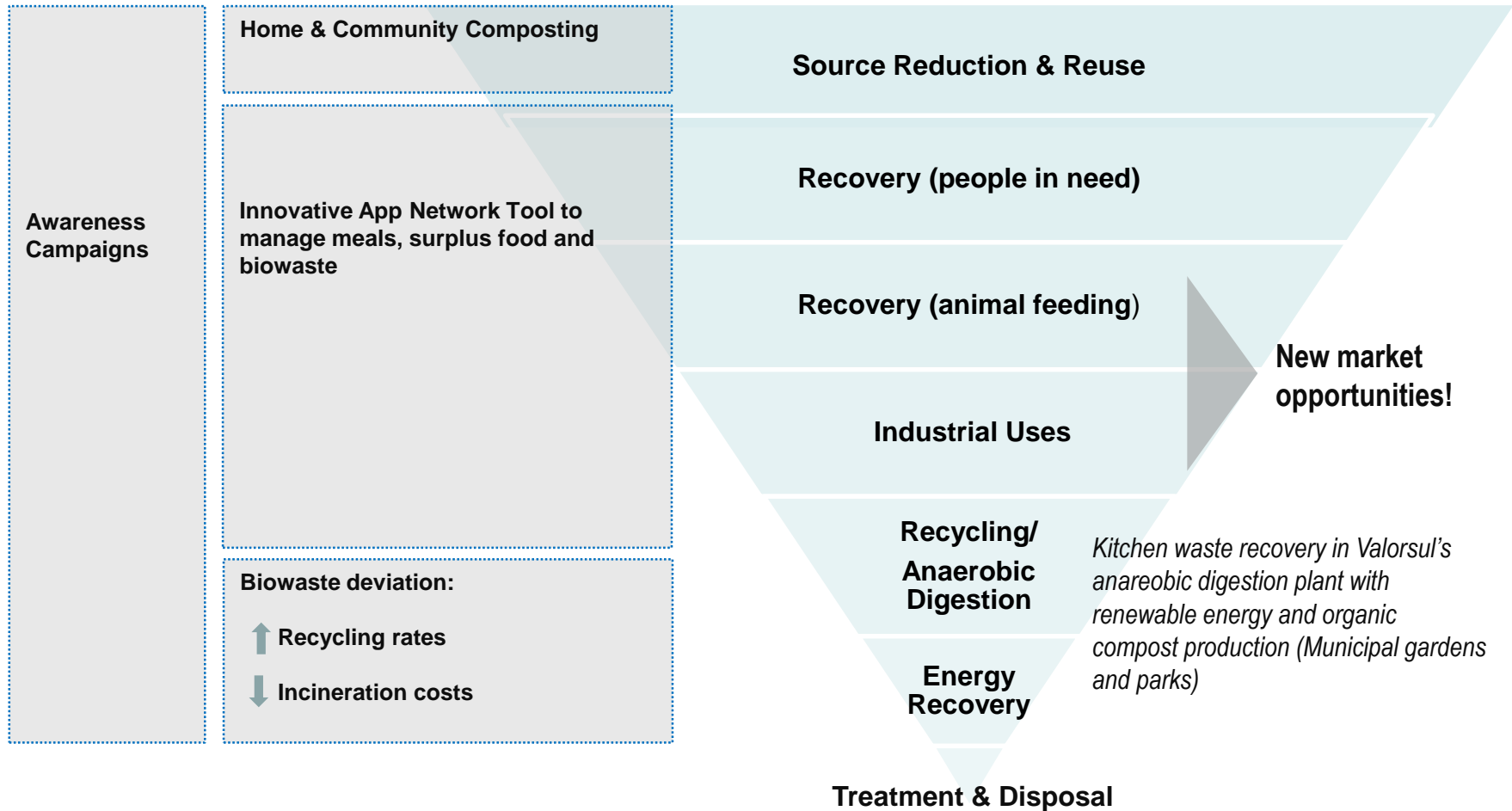
- Green Jobs' generation
- Green Public Procurement



Waste Flows and European Partners



Food & Waste Management Hierarchy



STRONG SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS

7 Specific Goals



Goal 1:

Food Waste Prevention – App
Online Network Tool +
Reporting Tool of Indicators



Goal 2:

Implementing Home and
Community Composting



Goal 3:

Implementing D-t-D kitchen waste
collection in residential areas and
in more hotels, restaurants and
similar activities



Goal 4:

Create two “Repair
Cafés”



Goal 5:

Create one Reuse Centre
for furniture and other
woods



Goal 6:

Exhibition of 10 Urban
Art Pieces made of plastic
waste



Goal 7:

“Deliverables” and
“Milestones” Reports -
Grant Agreement

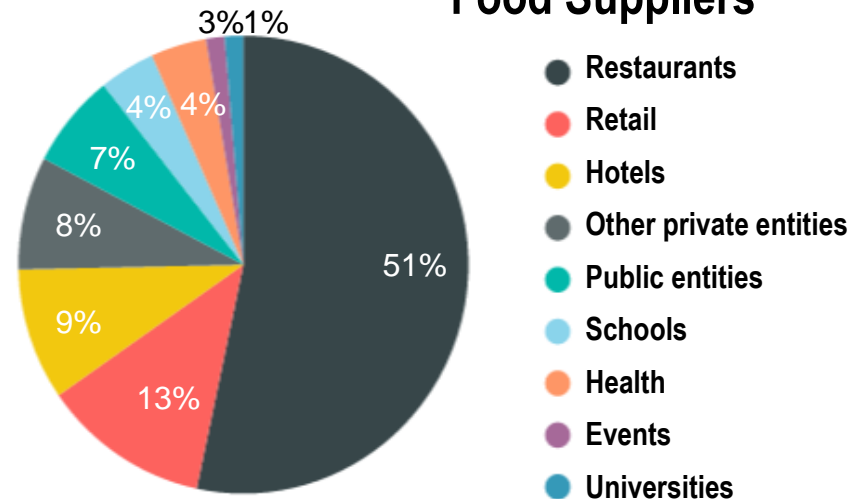
WP1-WP9

Specific Goal 1

Working With an Existing Network

- IN **18** MUNICIPALITIES OF PORTUGAL (2016)
- IN OPERATION SINCE **2012**

Food Suppliers



IN LISBON:

- **+ 1.000.000** EQUIVALENT MEALS RECOVERED
- VALUED OVER **+ €2.7 MILLION**
- **+ 500 TONNES** OF WASTE AVOIDED
- **+ 2.200 TONNES** OF CO₂ AVOIDED

dariacordar[®]
associação contra o desperdício



Specific Goal 1

Working With an Existing Network



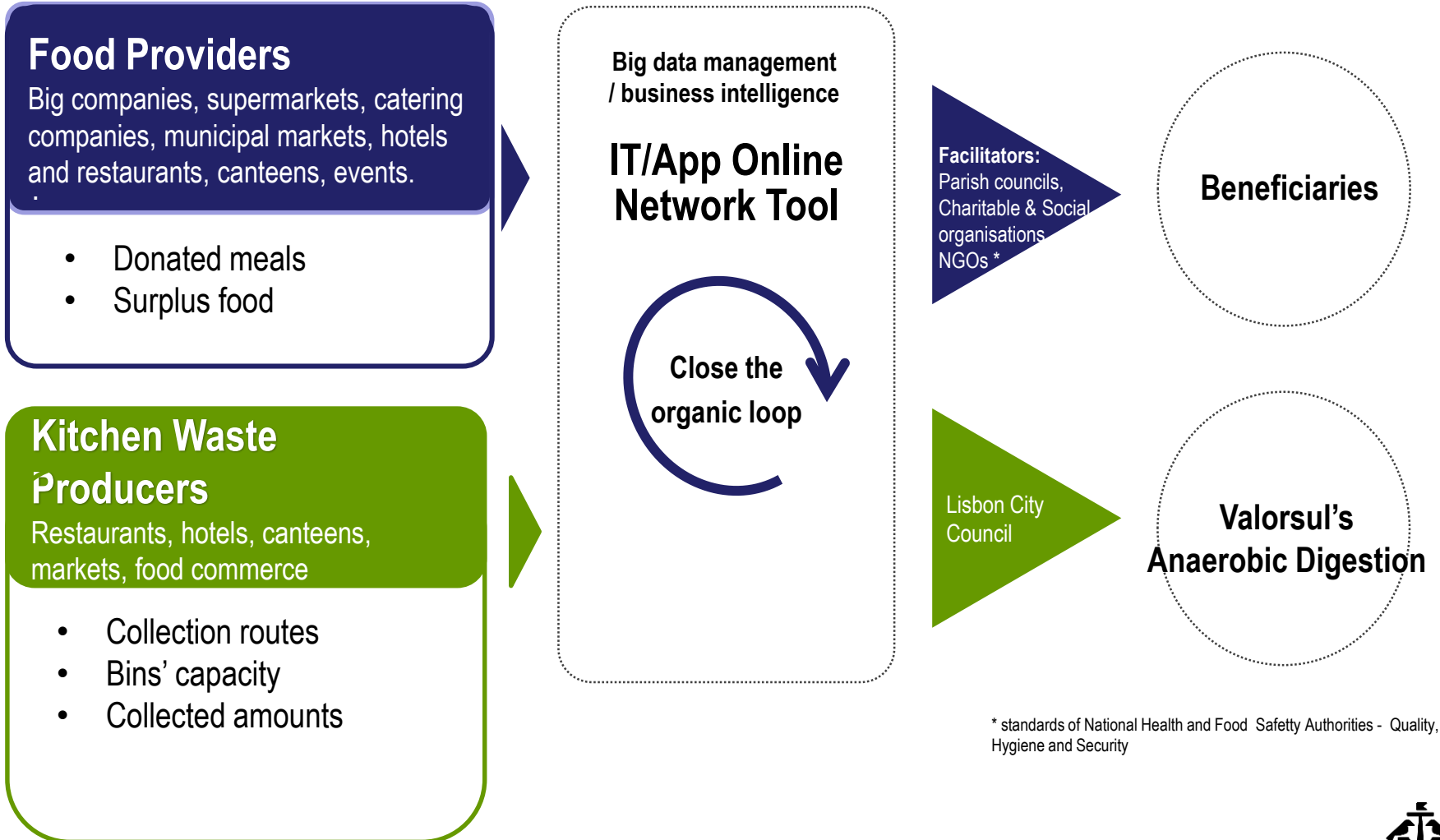
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associação contra o desperdício



standards of National Health and Food Safety Authorities - Quality, Hygiene and Security

Specific Goal 1

Operacional Model DARIACODAR/ZERO WASTE MOVEMENT (Food Recovery and Redistribution)



* standards of National Health and Food Safety Authorities - Quality, Hygiene and Security

Online Reporting Tool - Indicators

Lisboa

Refeições equivalentes por Grupo



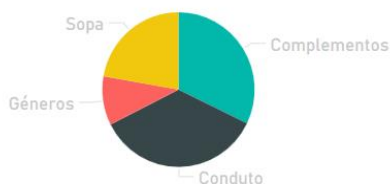
€ 3.428.933

Valor Económico Gerado

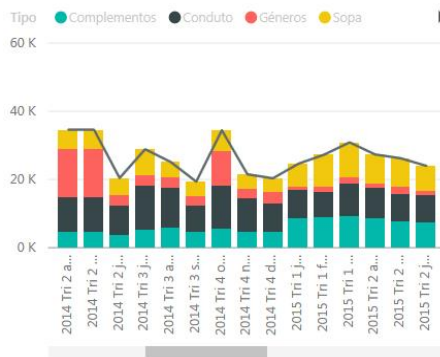
2.854

CO₂ evitado (ton)

Refeições equivalentes por tipo



Refeições equivalentes mensais por tipo



773

Nº de Beneficiários

321

Nº de Famílias

92

Nº de Colaboradores

679

Resíduos orgânicos evitados (ton)

1.358.919

Refeições equivalentes

Recetor

Junta de Freguesia de Campolide

254.441

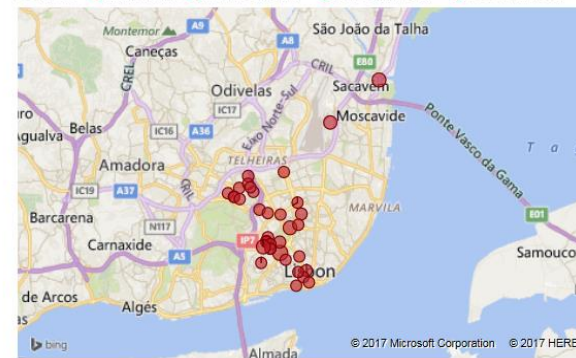
Refeições equivalentes

Associação Vida Abundante - Projeto Mais Vida

228.486

Refeições equivalentes

DOADOR ● A Valenciana ● Altis Avenida H... ● Altis Belém Hot... ● Altis Grand Hotel ▶



- Nº of food suppliers, beneficiaries, facilitators
- Nº of users of the App Online NETWORK Tool
- Nº of meals delivered
- Tonnes of: recovered food, food waste avoided, biowaste deviated...
- Recycling rate (%)
- Economic and social value of the meals (€), CO₂ foot print, etc.

Specific Goal 1 & Partners

Food Waste Prevention

To set up a broad network

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QUERCUS

App development and validation +
App User Guide +
Online Reporting Tool

ADDAPT
CREATIVE

DARiACORDAR

LISBON CITY

Replication Guide -
Food Recovery and
Redistribution
(Operational Model
Zero Waste
Movement + App
Use)

Attract new food suppliers +
promote App use + food
waste prevention campaigns

LISBON CITY

VALORSUL

DARiACORDAR

ADDAPT CREATIVE

QUERCUS

AHRESP

Specific Goals 2 and 3 & Partners

Implementing + Awareness Campaigns

Home and Community Composting

(4.000 households – Single dwellings and gated condominiums with gardens and municipal parks)

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May 2018

D-t-D Kitchen waste collection

(6.700 households in condominiums with space to store more bins and in new hotels, restaurants, etc.)

LISBON CITY

VALORSUL

AHRESP

QUERCUS



June 2018 (HORECA entities)
February 2019 (Residential areas)

Specific Goal 4 & Partners

To Create 2 “Repair Cafés” in central areas of Lisbon (WP4)

- Citizens can repair their own EEE with the help of professionals and experienced volunteers
- The collected EEE will also be repaired by students or unemployed people (4 green jobs) – Workshops and training courses
- The repaired EEE will be donated to Schools, Charitable and Social organisations

Partners:

Lisbon Social Network (Employment and Vocational Training Center) and Electrician professional courses



Specific Goal 5 & Partners

To create a Reuse Centre for furniture and other woods (WP6)

- Citizens
- Agreements with wood ateliers and art schools to promote reuse and redesign

Partners:

Wood ateliers like "reMix Poject", Monstros - Reciclagem de Mobiliário, Fermenta Association, Art schools, etc.



Specific Goal 6 & Partners

“Call for Artists” - Reuse Plastic Waste (WP3)

- “Call for Artists” to encourage artistic creation of 10 urban art pieces built with plastic bottles / plastic waste
- Exhibition of the urban art pieces in different places of the city
- Advertising to raise reuse behaviours

Partners:

Lisbon’s Urban Art Gallery

+

Mistaker Maker – Association of Creative Intervention



Specific Goal 7

“Deliverables” & “Milestones” Reports (Grant Agreement) (WP1-WP9)

In WP5:

DELIVERABLES FOR WP5: FOOD AND BIOWASTE

No	Deliverable title	Lead Ben.	Due Date (months)	Dissemination level	Type	Status
D5.1	Baseline evaluation of current food waste prevention and bio-waste recycling	LIS	12	R	CO	30-08-17
D5.2	Functional model of App/IT Online Network tool	LIS	18	OTHER	CO	Active
D5.3	Evaluation report on the pilot tool	Addapt	24	R	CO	Active
D5.4	Communication materials for campaign on food waste	LIS	30	OTHER	PU	Active
D5.5	App/IT tool for A (Food) and B (bio-waste), including User Manual Guide	LIS	42	OTHER	CO	Active
D5.6	Evaluation of new emerging technologies for treating bio-waste in Copenhagen	CPH	42	R	PU	Active
D5.7	Evaluation of new roll-out of bins for collecting bio-waste in Hamburg	SRH	42	R	PU	Active
D5.8	Feasibility study of replication of App/IT Online Network Tool in Genoa	CDG	42	R	PU	Active

MILESTONES FOR WP5: FOOD AND BIOWASTE

No	Milestone title	Lead Ben.	Due Date (months)	Means of verification	Status
M23	WP5 Approach and methodology described	LIS	12	Memo: Approach and methodology	31-08-17
M6	WP5 Stakeholder analysis performed	LIS	12	List of Stakeholders	31-08-17
M24	WP5 Networks with local stakeholders (donors, redistributors and beneficiaries) is set up	LIS	24	Minutes from meetings	Active
AM1	Local Partnerships: Memo with brief status on the activities	CPH	13	Memo	
AM2	Local Partnerships: Memo with brief status on the activities	SRH	13	Memo	
AM4	Local Partnerships: Memo with brief status on the activities	CDG	13	Memo	
AM5	Local partnerships: Short description of the developed and foreseen activities	SRH	25	Memo with activities until M42	
AM7	Local partnerships: Short description of the developed and foreseen activities	CDG	25	Memo with activities until M42	
AM8	Local partnerships: Short description of the developed and foreseen activities	CPH	25	Memo with activities until M42	

Note: M: Milestone according to the Grant Agreement. AM: Additional milestone.

+ other Reports asked by the leaders of WP1, 2, 3, 4, 6, 7, 8 and 9

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Thank You!

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