



Bu proje Avrupa Birliđi ve Türkiye Cumhuriyeti tarafından finanse edilmektedir
This project is co-funded by the European Union and the Republic of Turkey

Civil Society Dialogue Turkey Composts! Final Conference



TURKEY COMPOSTS!

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lipor



BIO-WASTE STRATEGY OUR EXPERIENCE

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AGENDA

- LIPOR Introduction
 - General data
 - Existing situation
 - The importance of planning for MSW
- LIPOR Pratical example
 - The bio-waste strategy
 - Main projects
 - Support initiatives
- Remarks & Conclusions



LIPOR in the world ..



ABOUT LIPOR...



Lipor - Intermunicipal Waste Management of Greater Porto is a Municipalities Association, specialized in **Integrated Solutions for Waste Management since 1982.**



The 90s were a **turning point for LIPOR** (new technologies, new concept of market, new type of customers, more information access, more specific and complex needs, ...);



LIPOR has **changed and adapted** its path according to this **new reality**, bearing in mind the importance of its actions to the population and to the associated Municipalities;



The present context demands **higher efficiency and effectiveness** from all Organizations, specially public organizations.

ABOUT LIPOR... MISSION AND VISION



Mission: To design, adopt and implement sustainable waste management solutions, taking into account the needs of our partners and the communities we serve.



Vision: Wherever we are, we want to be a reference brand in the area of the environment.

About Lipor ...



Municipalities.....	8
Covered Area	648 km²
Population	962 302 inhabitants
MSW Production	476 836 ton
Per Capita	1,36 kg/inhab/day
Carbon Footprint	≈ 331 000 tonCO₂eq

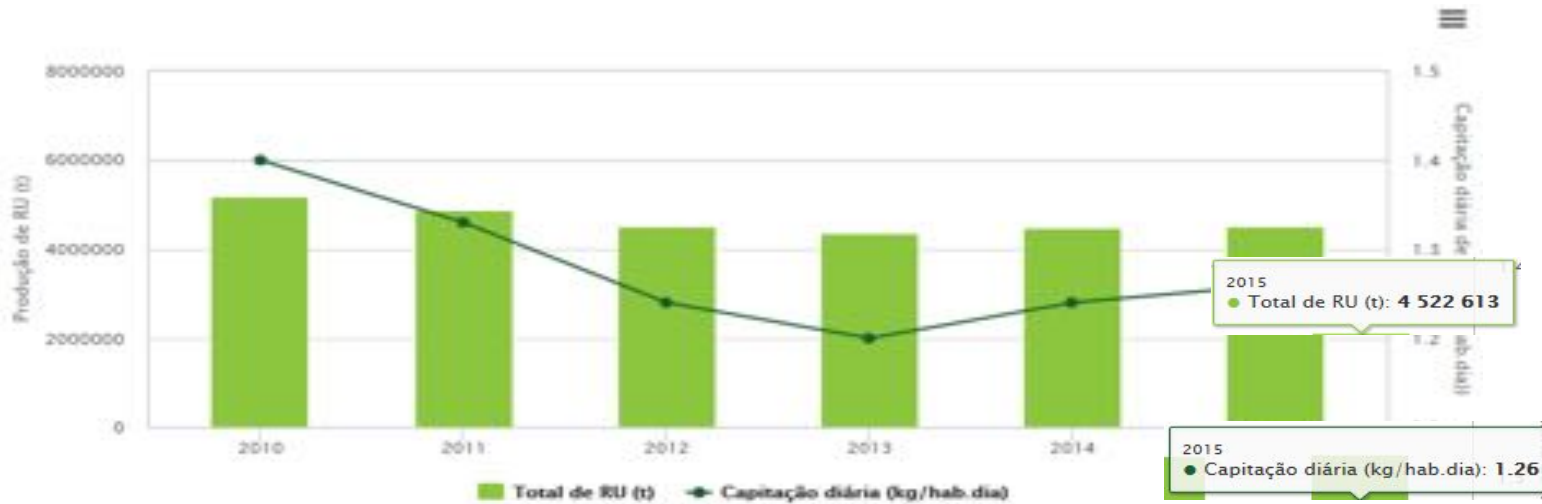


Certifications

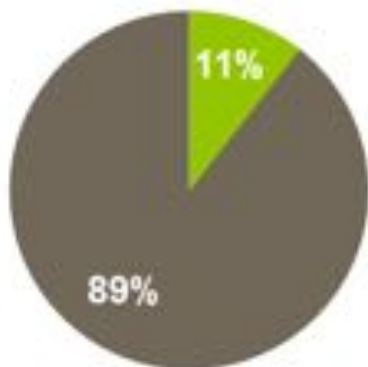
NP EN ISO 9001, NP EN ISO 14001, OHSAS 18001, SA 8000,
NP 4457



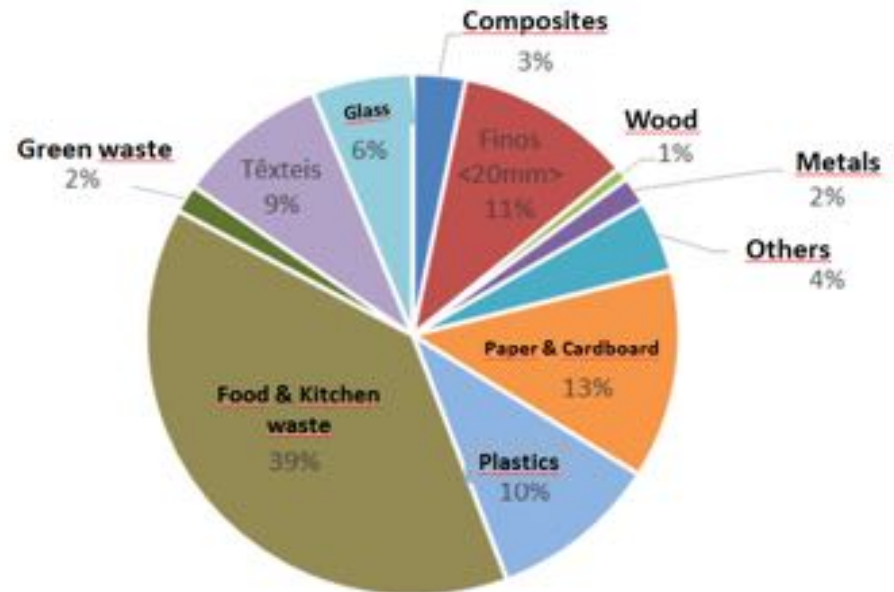
Portugal MSW production and characterization



MSW production



■ Lipor
■ Others



LIPOR

MAIN OPERATING UNITS



Recycling



Bio-waste recovery



Waste to Energy

LIPOR UNITS OVERVIEW



- ❶ Sorting Plant
- ❷ Drop-Off Sites
- ❸ Composting Plant

- ❹ Horta da Formiga (*Organic farm*)
- ❺ Adventure park (old Ermesinde landfill)
- ❻ Support Sorting Platforms



LIPOR UNITS OVERVIEW



❶ Waste to Energy Plant

❷ Sanitary landfill



STRATEGIC CONTEXT

■ Main Goals

- Prevention
- MSW reduction
- Waste as a Resource
- Reduction of bio-waste going to landfill
- Development of markets for raw materials
(ex. composts)

- Recycling society
- Circular economy

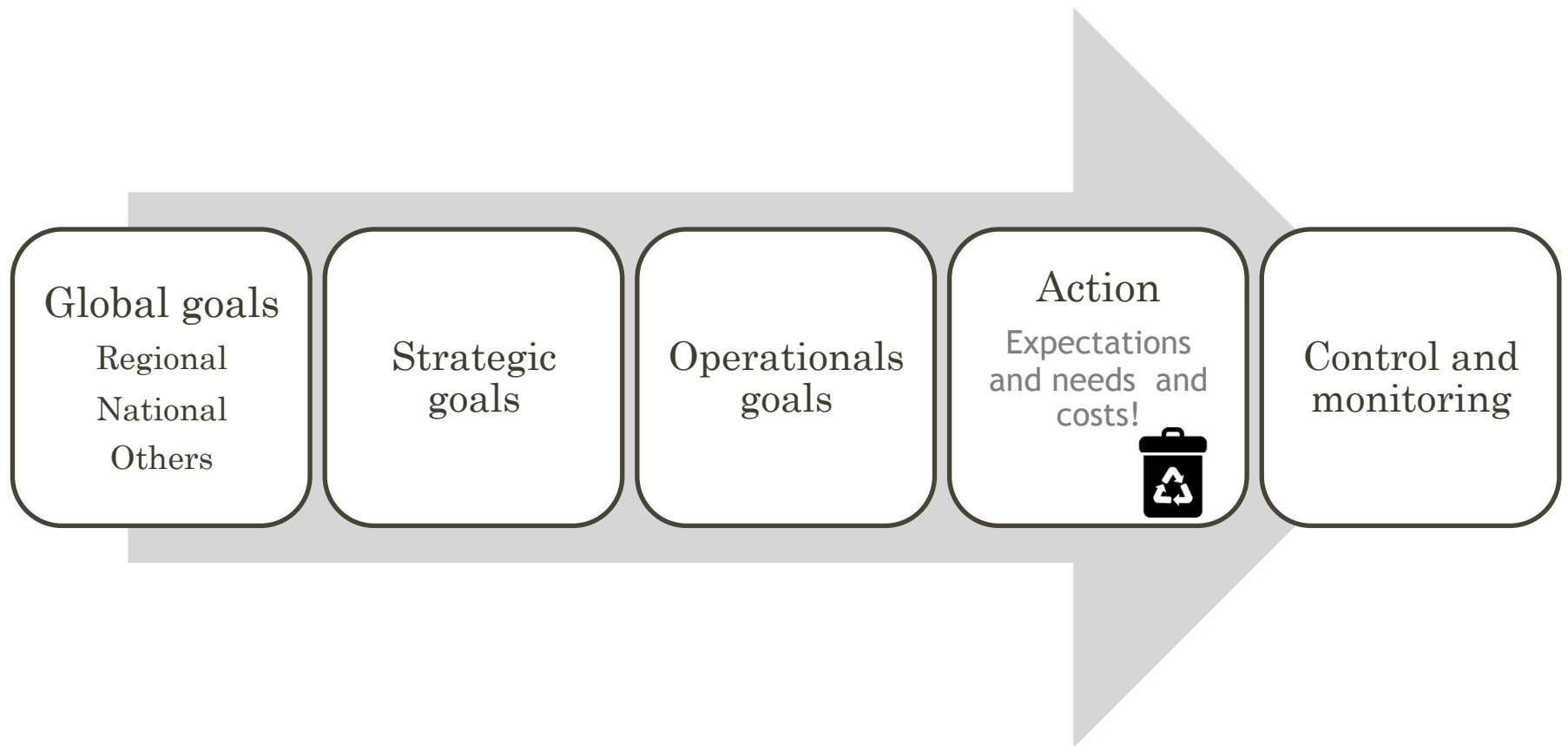
European and national legislation

PERSU2020 – PT MSW strategic plan

LIPOR PAPERSU – action plan

Waste management

The importance of planning



Waste management

The importance of planning

The **design** of new **collection schemes** affects the collection schemes already implemented

The introduction of **new collection flows** should lead to a reduction in the frequency of collection of other materials

The introduction of **bio-waste selective collection** enhances the quality and quantity in recyclable flows

Do not forget!
Integrated approach to waste management and waste collection

LIPOR

Bio-waste strategy

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○ **Goals:**

Prevention and Minimization of Bio-waste

- Home composting
- Community composting
- Combat food waste initiative

Promote the Selective Collection of Bio-waste

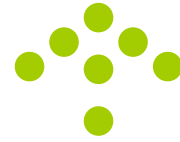
Big producers
Citizens

Produce a High Quality Compost



BIO-WASTE STRATEGY

THE KEY ELEMENTS



Market for
compost



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Treatment
Composting
Plant



Separate
collection

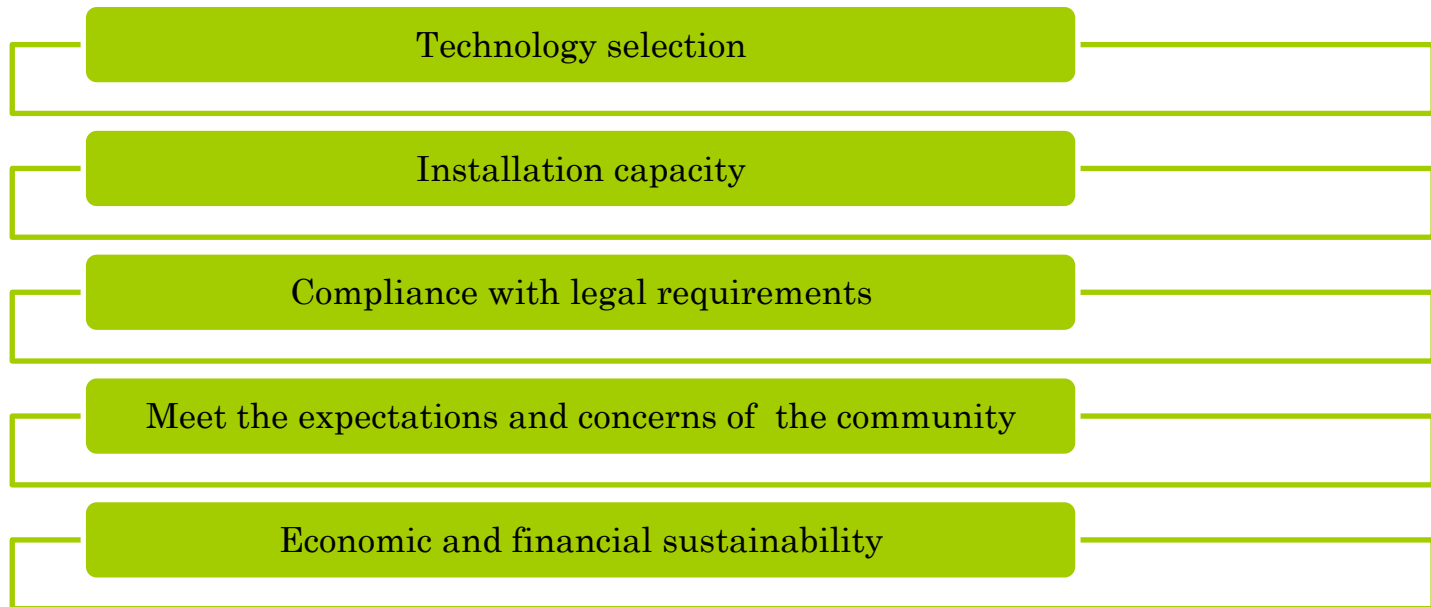


Bio-waste
Food and kitchen waste
Green waste



Bio-waste strategy

Operational units : key elements

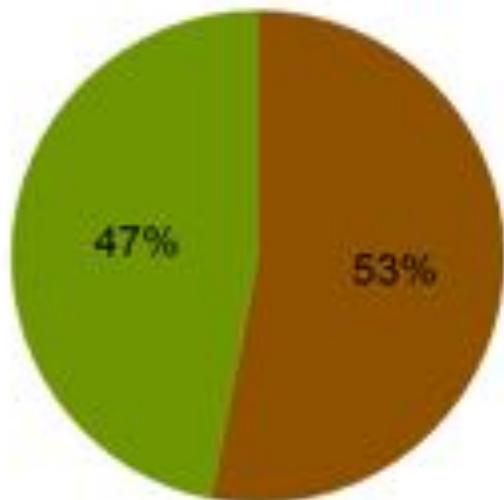


LIPOR COMPOSTING PLANT



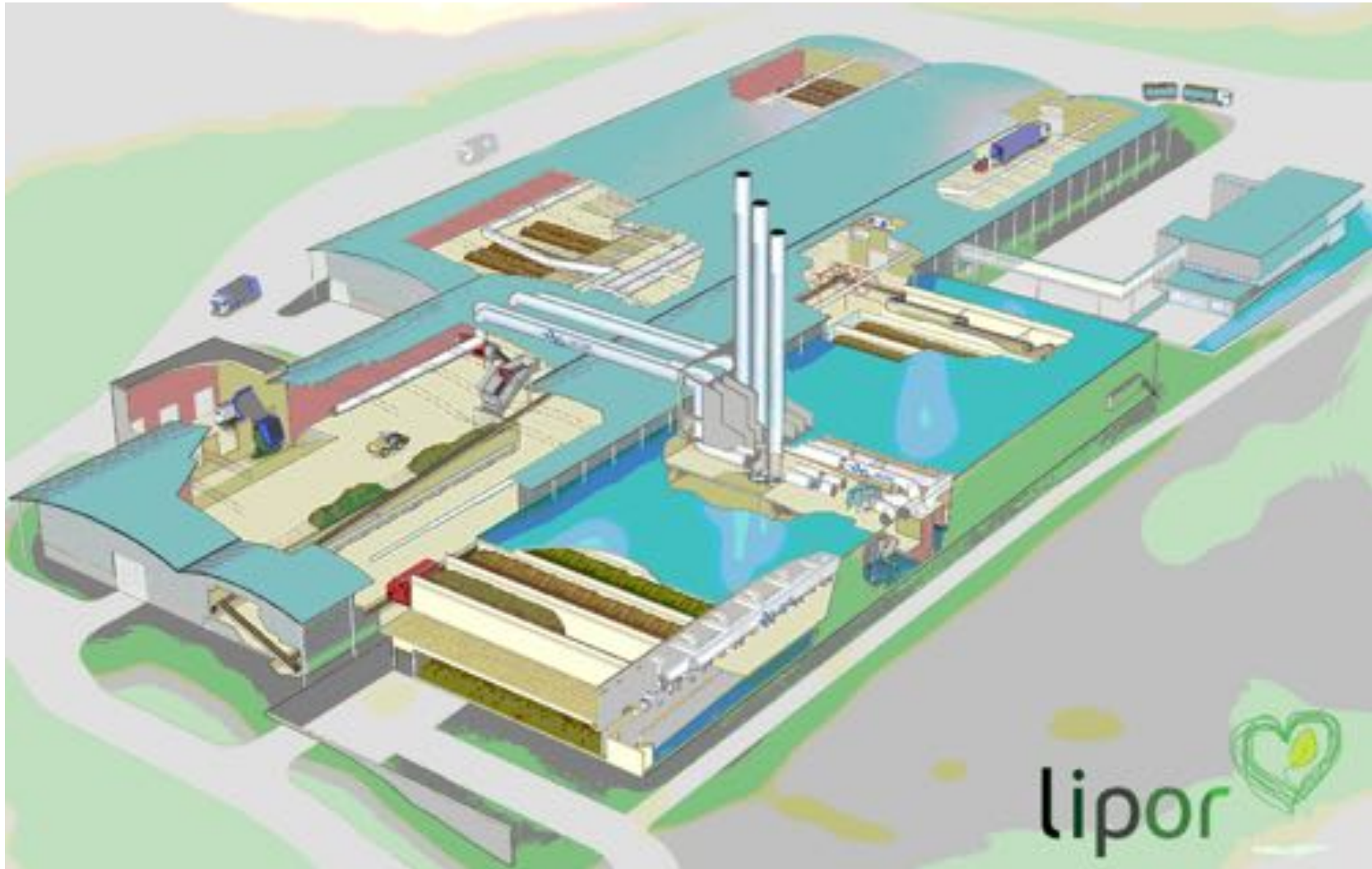
Composting Plant

≈ 10% of total MSW (≈ 47.000 ton)
≈ 10.800 ton of Compost (2015)



■ Organic waste ≈ 25.000 ton
■ Green waste ≈ 22.000 ton

LIPOR COMPOSTING PLANT



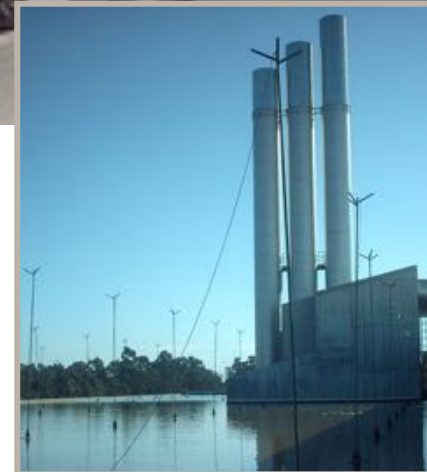
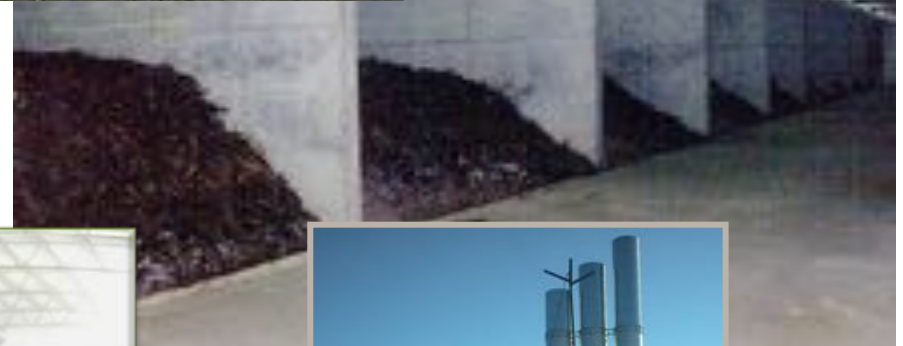
LIPOR COMPOSTING PLANT

Main features:

- 60,000 tons of bio-waste (annual capacity)
- Production of 15,000 tons of Compost / year
- 18 tunnels (1st and 2nd stages of composting)
- Duration of the composting process: 28 days (in-vessel system)
- Maturation: 3 to 6 weeks (close building)
- Automatic Load System
- Treatment of gaseous effluents by biofiltration
- Reuse of waste water



LIPOR COMPOSTING PLANT



Bio-waste strategy

Selective Collection

- **Main Initiatives:**

- Implementation and Expansion of the **Project**
Operação Restauração 5 Estrelas

- Implementation and Expansion of Selective Collection
for **Big Producers**

- Farmers

- Fresh Markets and Distribution Centers

- Food industry

- Retail

- Selective Collection for **Green Waste**

- Selective Collection of Green Residues in Cemeteries

OPERAÇÃO RESTAURAÇÃO 5 ESTRELAS

SELECTIVE COLLECTION FOR RESTAURANTS AND CANTEENS



11 municipalities



Number of circuits: **20**



Number of establishments: more than **2.000**



Total amount recovery (2016)
16.442 ton



cap: \approx **22,5 kg/estab.day**

BIO-WASTE SELECTIVE COLLECTION COMMUNICATION CAMPAIGN

Support materials



Container's information



Awereness campaings



Communication



BIO-WASTE SELECTIVE COLLECTION

GREEN WASTE



Drop-off-sites

LIPOR has 19 drop-off-sites.

Specific circuits

Municipalities / Gardening companies



Cemeteries (Sorting Platform)

During 2016 more than 3.000 ton of green waste
... .. composting.



To improve the selective collection
and the composting, the deposition
of green waste is free of charge!

Bio-waste strategy

The end result...

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COMPOST

A VALUABLE RESOURCE

BIO-WASTE GENERATES ORGANIC MATTER



Nutrimais

An organic fertilizer 100% natural...

Quality information



- **High** proportion of stable organic matter (humic substances).
- **Free of pathogens and seeds**
- **Safe** for food production
- Suitable for **organic farming**



NUTRIMAIS

AN ORGANIC FERTILIZER 100% NATURAL...

- Suitable for different types of soils

- Cultures:

- Horticulture
- Olive plantation
- Wine production
- Orchard and Fruit farmer



BIO-WASTE STRATEGY PREVENTION PROJECTS



Horta à Porta

- **Biological Kitchen Gardens of Porto's Region** (start in 2004)
- **50 kitchen gardens**
- **1656 plots**
- **~ 11 ha**



Terra à Terra

- **Home composting promotion** (Start in 2007)
- **11.198 Composters delivered**
- **More than 91 community composting projects** (social housing; support to the homeless)



Bio-waste strategy PREVENTION PROJECTS



Before...



After



Bio-waste strategy Some Remarks...

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Bio-waste strategy










Critical factors



Bio-waste strategy

Critical factors

- **Main aspects to consider**

-  **Characterization of the areas (housing typology, streets)**
-  **Quantification (production of waste)**
-  **Seasonal variation (eg. green waste)**
-  **Frequency of collection**
-  **Typology of containers / collection vehicles**
-  **Communication of results**
-  **Develop experiences in **pilot areas** (rapid detection of constraints, more effective solutions)**
-  **Cost analysis**
-  **Existence of **market for compost****

Conclusions

- A **well-planned design** of the integrated deposition and collection system is a **decisive factor**.
- The success of any collection scheme implies careful planning and **involvement of relevant stakeholders**.
- The **Selective Collection of Bio-waste** allows obtaining a High Quality Compost.
- Population **awareness is essential**.



To achieve the best results...



“Enable”

“Encourage”

“Engage”

“Exemplify”



TO KNOW MORE...

The screenshot shows the Lipor website homepage. At the top, there is a navigation bar with the Lipor logo and the tagline "with the environment in the heart". Below the navigation bar, there are several main sections:

- Home**: A large banner for "Lipor wishes you a greener Christmas" featuring a Christmas tree made of recycling symbols.
- News**: A list of recent news items, including "This Christmas give another destination to used cooking oils recycle...", "LIPOR has implemented a Supramunicipal Selective Collection network of...", "First month of the campaign allowed to deliver more than 200 composts...", "More than 139 tons of recyclable waste collected at events and sport events between January and September 2016", and "LIPOR and its associated municipalities launch awareness campaign for...".
- Calendar**: A calendar for January, with a "Severid Formation Leisure" event highlighted.
- Municipal Solid Waste**: A list of services including Waste Observatory, Technical Confinement, Energy Recovery, Organic Recovery, Multimatierial Recovery, and Prevention.
- Academy lipor**: A logo for the Lipor Academy.
- Horta da Formiga**: A logo for the Horta da Formiga project.
- WASTE MANAGEMENT lipor**: A logo for Waste Management Lipor with the tagline "The value of experience".

www.lipor.pt



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