Civil Society Dialogue Turkey Composts! Final Conference

Don't Toss, Compost

TURKEY COMPOSTS!

Bio-waste strategy
Our experience

Susana Lopes | susana.lopes@lipor.pt

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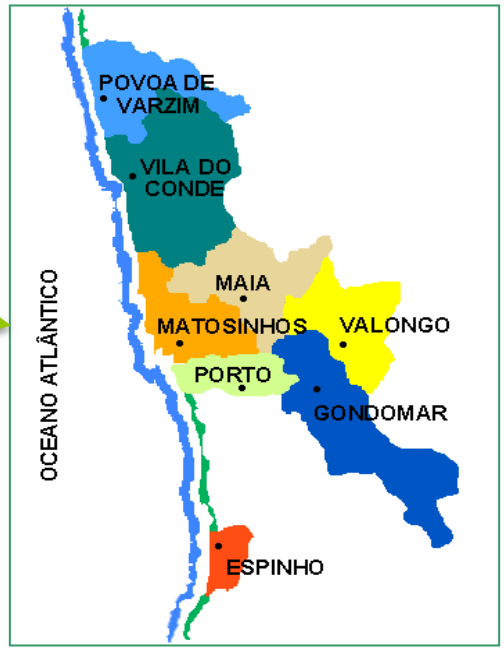
AGENDA

- 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 km^2

Population …….…… 962 302 inhabitants

MSW Production …… 476 836 ton

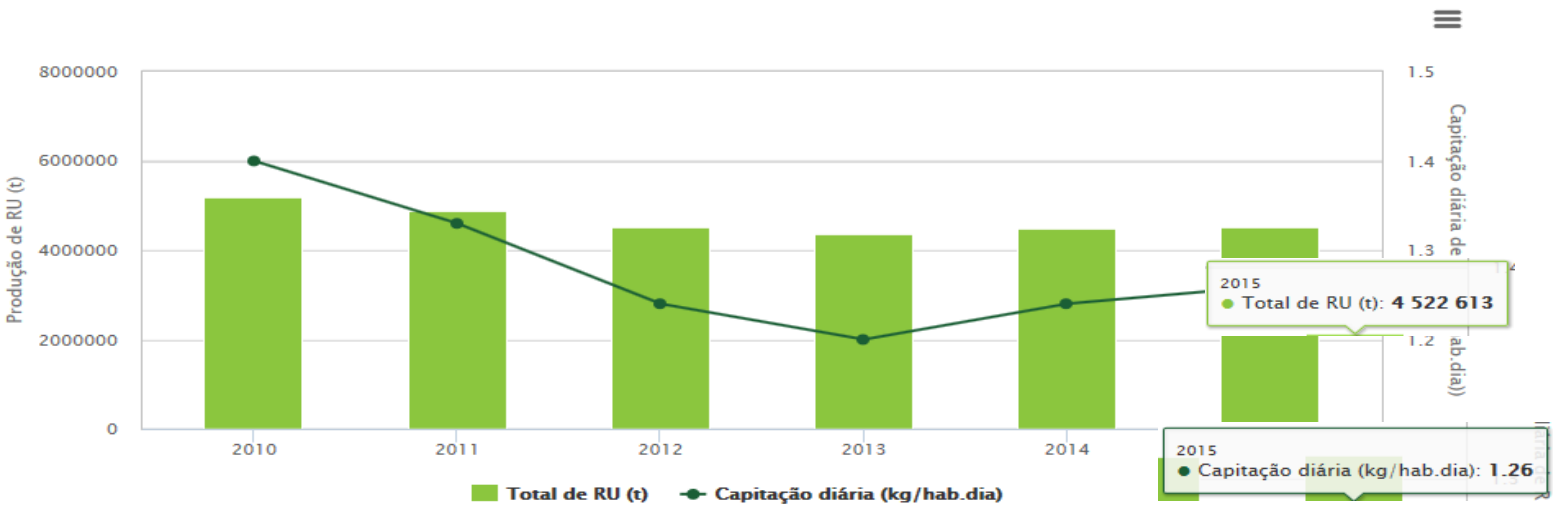
Per Capita …… 1,36 kg/inhab/day

Carbon Footprint …….. ≈ 331 000 tonCO_2eq

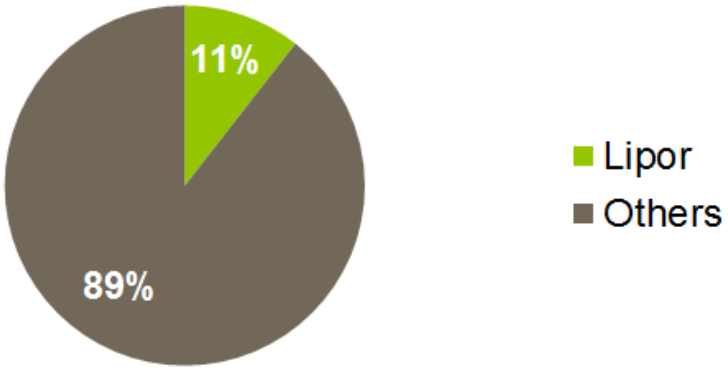
Certifications

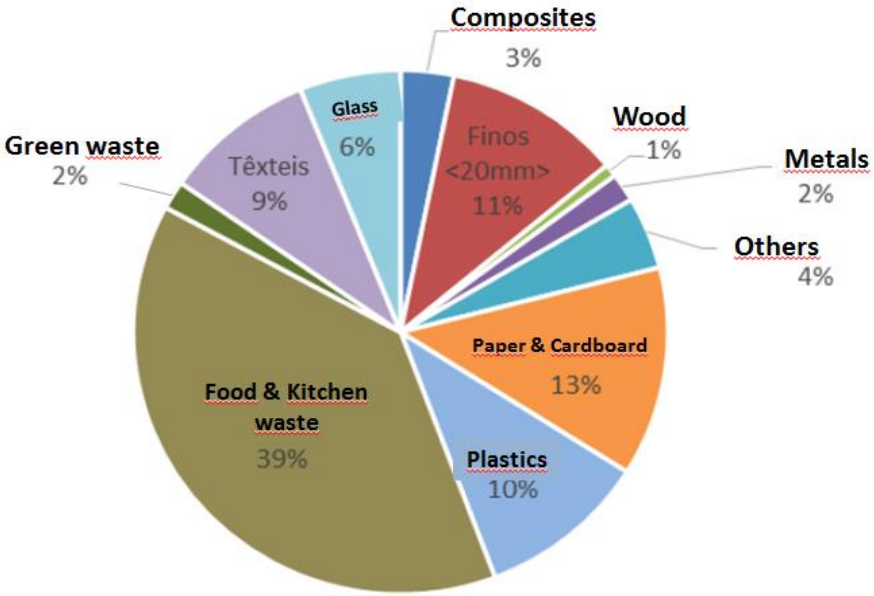
NP EN ISO 9001, NP EN ISO 14001, OHSAS 18001, SA 8000, NP 4457

Portugal
MSW production and characterization



MSW production





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

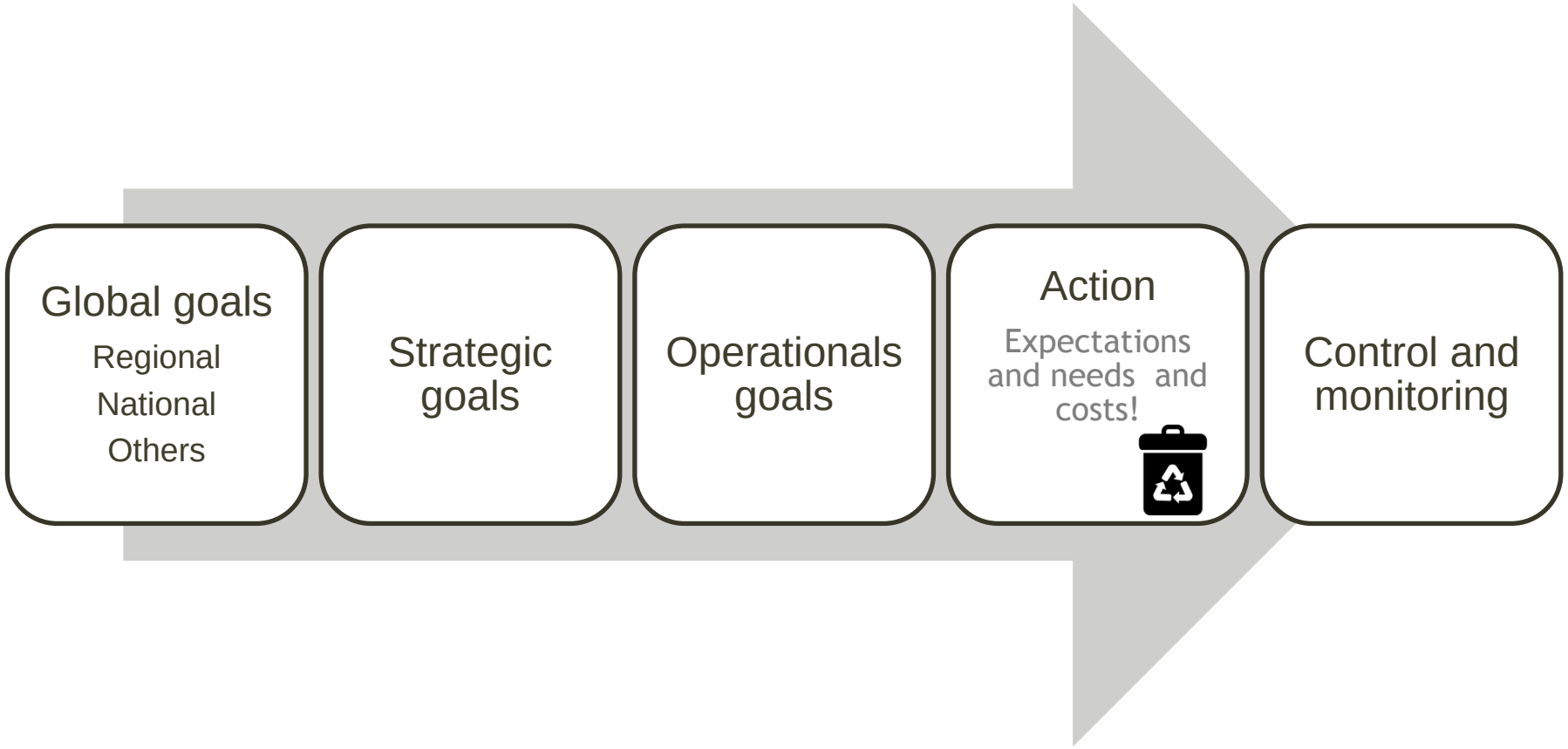
- Main Goals
  - Prevention
  - MSW reduction
  - Waste as a Resource
  - Reduction of bio-waste going to landfill
  - Development of markets for raw materials (ex. composts)
  - Recycling society
  - Circular economy

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

devolvemos à terra o seu valor

LIPOR
BIO-WASTE STRATEGY

- **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

Treatment
Composting Plant

Separate collection

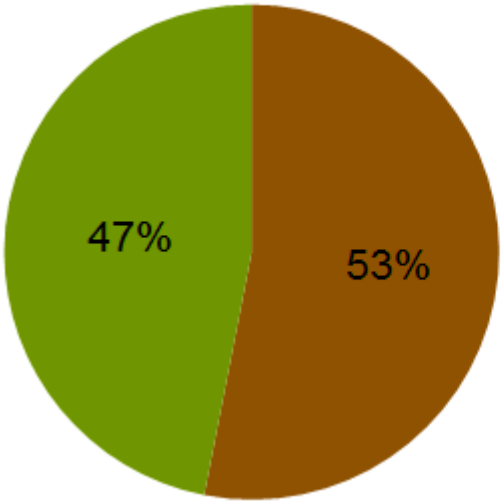
Bio-waste
Food and kitchen waste
Green waste

Bio-waste strategy
Operational units : key elements

- Technology selection
- Installation capacity
- Compliance with legal requirements
- Meet the expectations and concerns of the community
- Economic and financial sustainability

LIPOR
Composting Plant

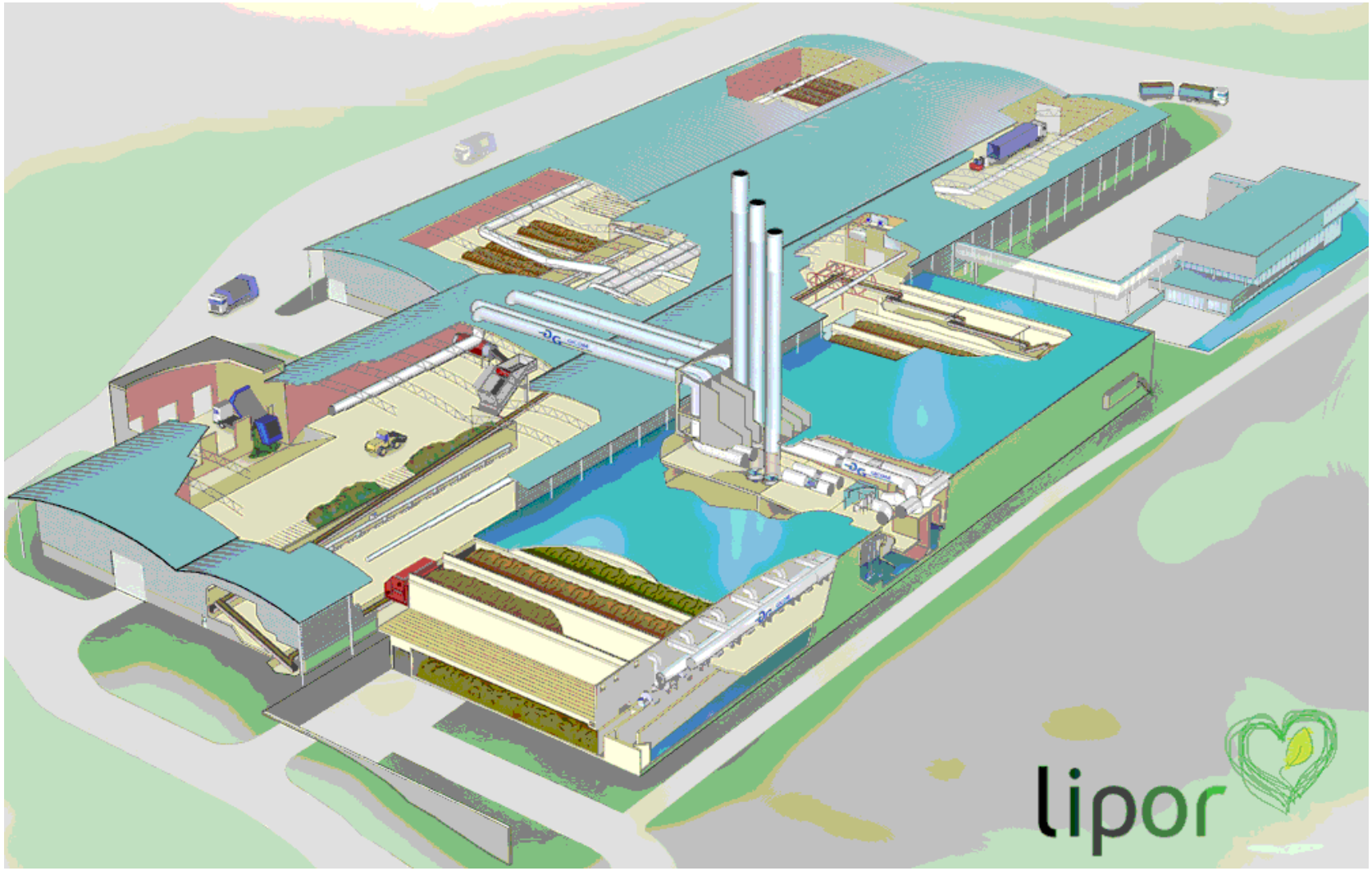
Composting Plant



≈ 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

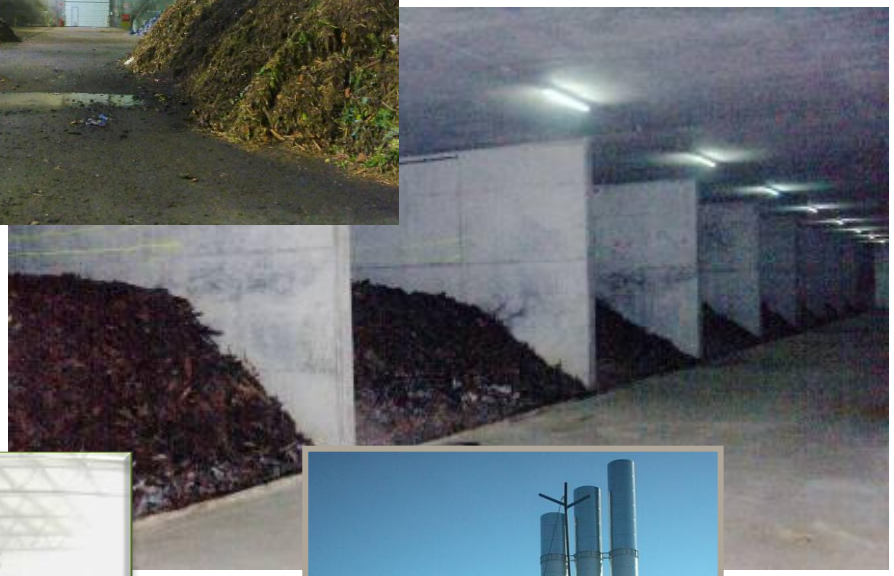


LIPOR
Composting Plant

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 establishements: more than **2.000**

Total amount recovery (2016)

16.442 ton

cap: ≈ **22,5 kg/estab.day**

Bio-waste selective collection communication campaign

Support materials

Awereness campaings

Container's information

Communication

Bio-waste selective collection communication campaign

Bio-waste selective collection
Green waste

Drop-off-sites

LIPOR has 19 drop-off-sites.

Specific circuits

Municipalities / Gardening companies

Cemeteries (Sorting Platform)

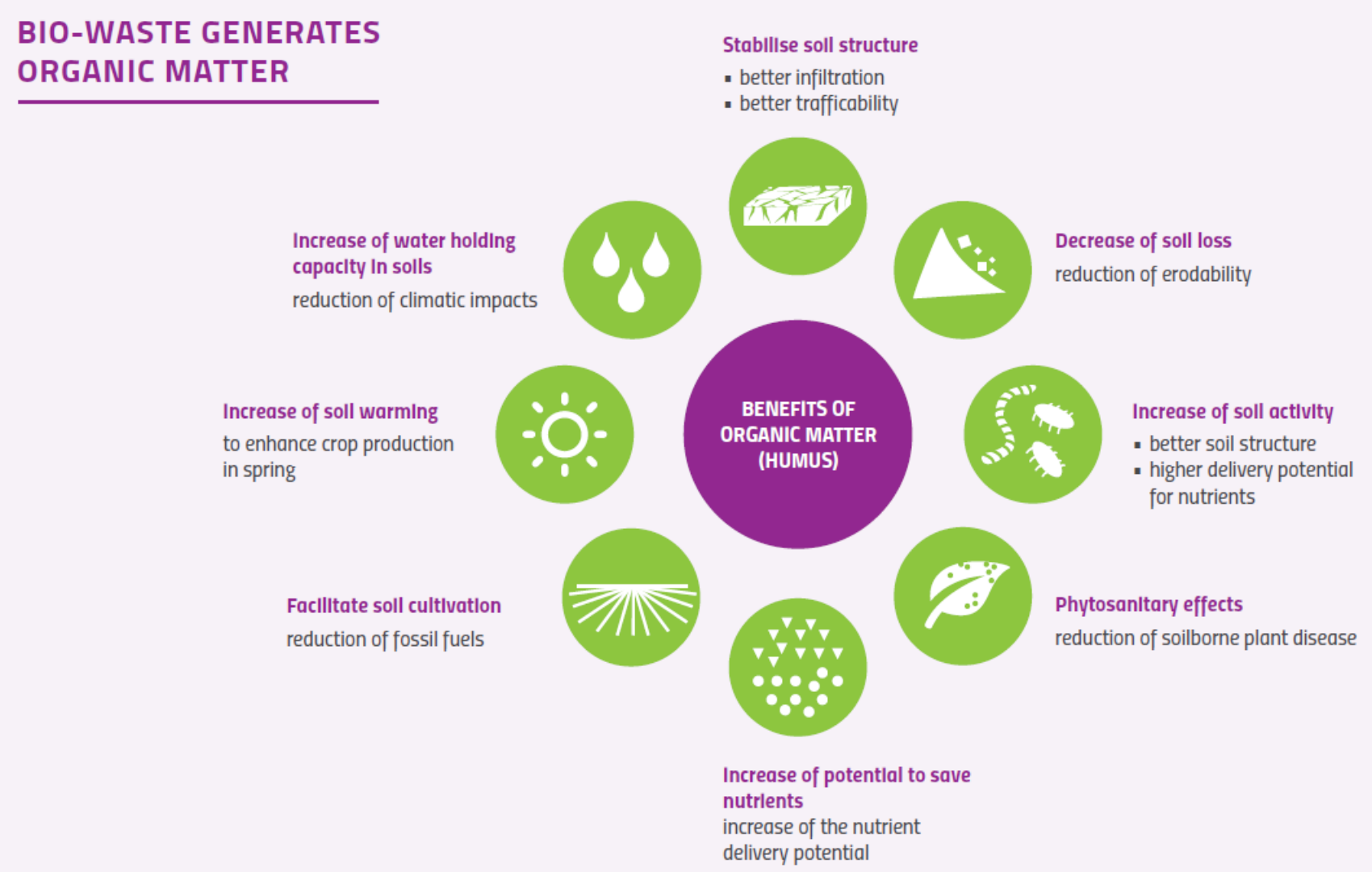
During 2016 more than 3.000 ton of green waste (flowers) were sorted and sent to composting.

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

Bio-waste strategy
The end result…

devolvemos à terra o seu valor

Compost
a valuable resource



Source: 2016/12/ECN_Factsheet

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

HORTA DA FORMIGA

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…

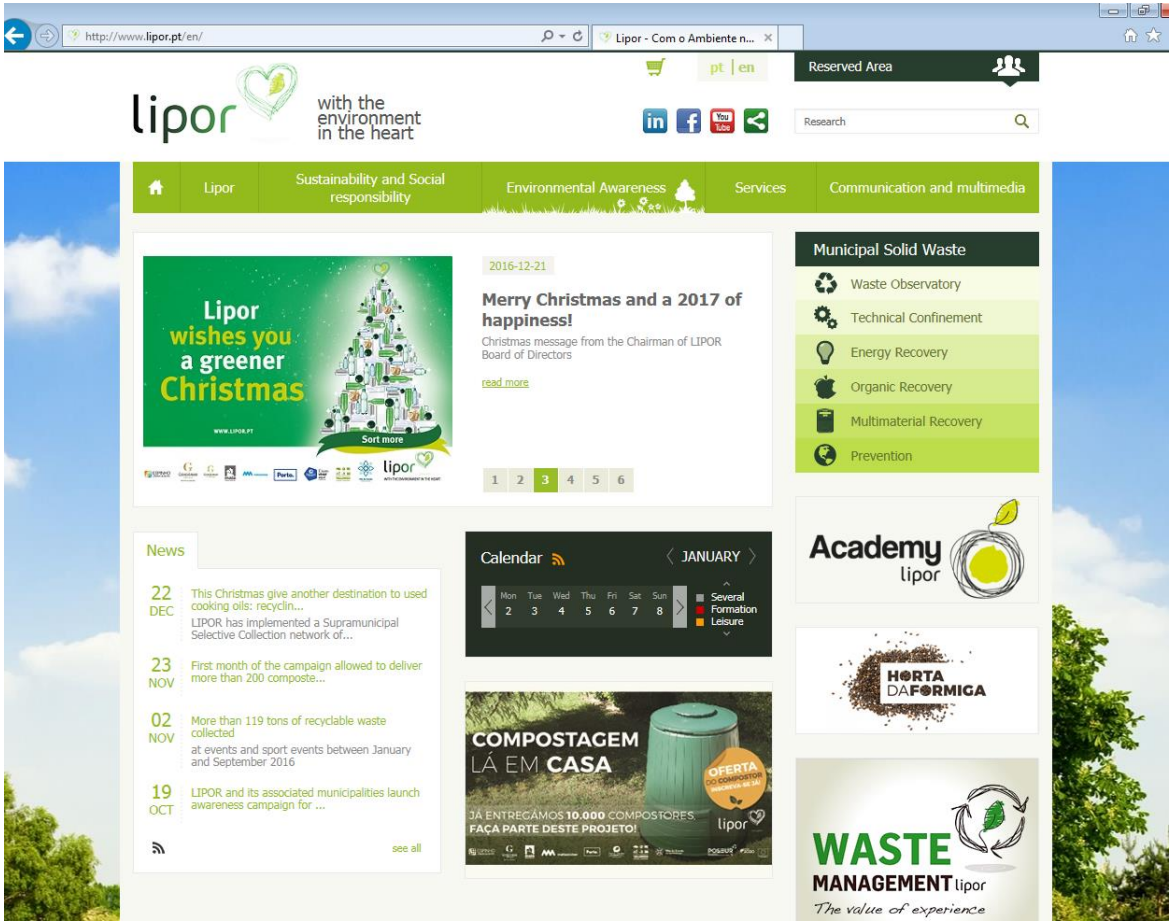
"Enable"

"Encourage"

"Engage"

"Exemplify"

To know more…



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menos carbono
Obrigado.