

# Case Study – Restructuring in times of crisis



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## About Us...



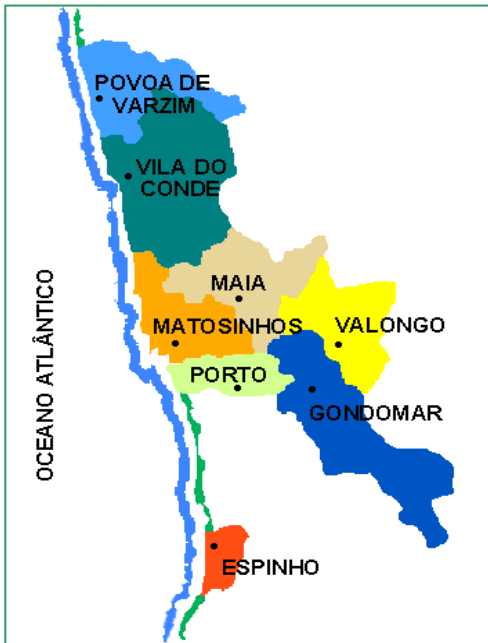
Lipor - Intermunicipal Waste Management of Greater Porto is a Municipalities Association, specialized in Integrated Solutions for Waste Management since 1982.

The Organization has over 200 employees and integrates the Board of several European and National Associations for the issue of Waste and Sustainable Development.

Economic growth drives a desired Internationalization strategy supported by a network of national and international partners.

- 8 Municipalities
- Covered Area - 648 km<sup>2</sup>
- Population - 1 million inhabitants

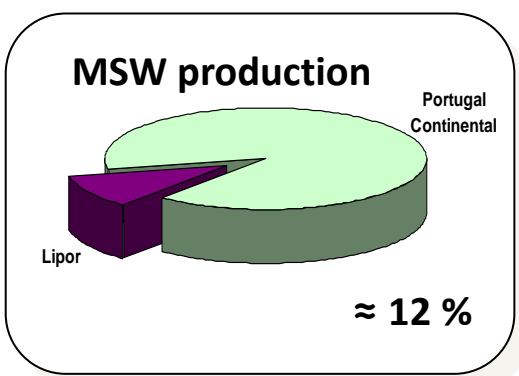
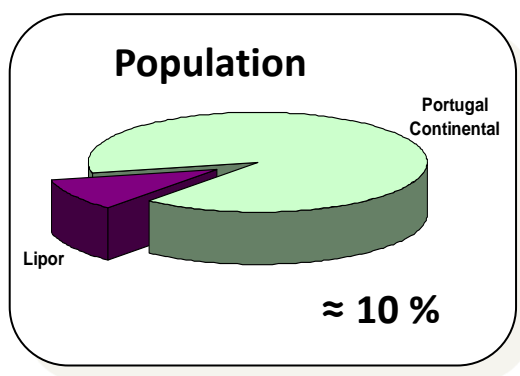
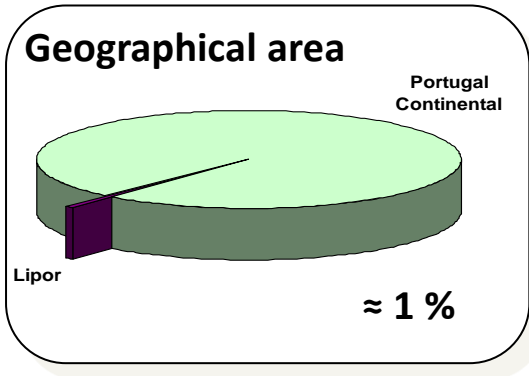
- MSW Production (2010) - 509.527 ton
- “Per capita” - 1,4 kg/inhab/day



- Carbon Footprint:  
 2010 - 372.551 ton CO<sub>2</sub>eq  
 Capitation - 401 kg CO<sub>2</sub>eq/hab.



# National Contribution...



## Lipor Vision...

To be, more and more, an Organization of reference, through the valuation of resources, of the social responsibility and by the eco-efficiency performance.



## LIPOR Challenges

- Increase material quantities to send to Recycling;
- Valorisation of the Organic Waste fraction in MSW;
- Decrease the material deposition in landfills (fulfil the “Landfill Directive”);
- Implement TOTAL Certification at LIPOR (Quality, Environment, Health and Safety and Social Responsibility);
- Increase energy efficiency;
- Diminishing CO<sub>2</sub> eq. emissions.

# Multimaterial Sorting Plant



Management of the materials:

- Paper and Cardboard,
- Plastic and metallic packages,
- Glass.

Waste Processing Capacity:  $\approx 50.000$  tons /year.



# Organic Valorisation Plant



Management of the materials:

- Organic Waste,
- Green Waste.

Waste Processing Capacity: 60.000 tons/ year.



# Energy Recovery Plant



Management of the materials:

- Mixed Waste.

**Waste Processing Capacity: 1000 Ton/day**

✧ Two treatment lines, each one with treatment capacity of 500 Ton/day.



**Energy Production of 25 MWh:**

✧ Enough to supply energy to a population of about 150 000 inhabitants.



**Sending of all scrap for recycling**

✧ Also possibility of slag recovery.

## Landfill



Management of the materials:

- Materials resulting of energetic valorisation (ashes and slags),
- Mixed Waste (when energetic valorisation plant is in maintenance).

# Platforms Support



Green Waste Sorting (cemeteries)



Green Platform



Multimaterial Platform (recyclable)



Electrical and Electronic Equipments Waste Platform

# Infrastructure and collection services

## Ecocentros



## Door-to-Door



## Ecopontos



## ECOFONE Commerce & Services



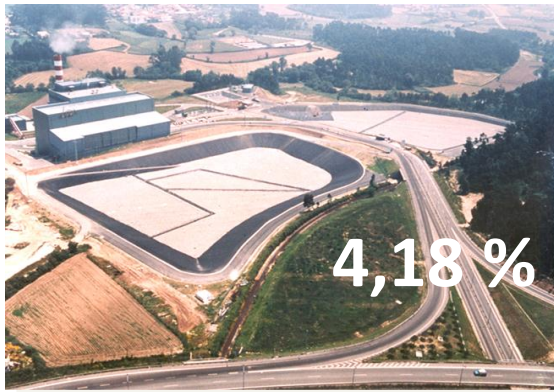
# Waste Stream (2011)



**Recycling**



**Composting**



**Landfill**



**Waste-to-Energy**

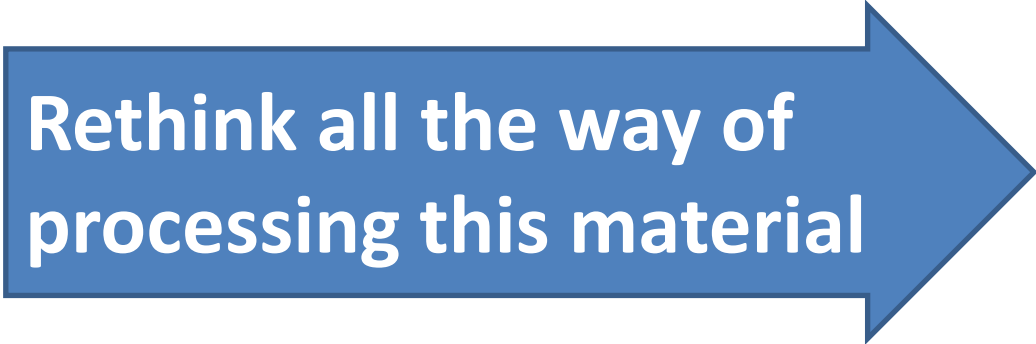
# Case Study

## Restructuring in times of crisis



# Motivation for restructuring

- Progressive reduction of received paper;
- Need to optimize the production process;
- Received material with high quality;
- Need to increase the production capacity, for packages;



**Rethink all the way of  
processing this material**

# Paper processing restructuring



# Opportunities with paper processing restructuring

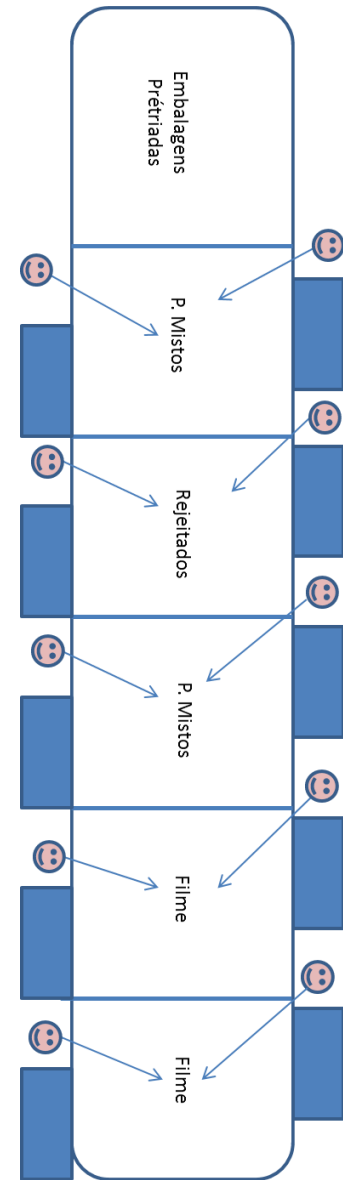
- Availability of line equipped with dosing system, trommel, boxes;
- Possibility to convert this line to process: Plastic and metal packages and also plastics, coming from drop-of sites and trade and commerce collection circuits;
- Deal with financial difficulties to support deep changes (optical or mechanical systems)



“Multiuse Line”

# Adjustments implemented

- Optimization of sorting procedures;
- Ideal occupation tax tests;
- Basic mechanical adjustments;
- Creation of visual standards;
- Promotion of communication channels.



# Adjustments implemented





# Increasing Productivity

## Pre-Sorted Packages

- Current 1,2 t/h with 12 Staff elem.
- Multiuse 1,0 t/h with 8 Staff elem.
- **Production capacity increase ⇒ 45%**

## Pre-Sorting

- Current 2,2 t/h with 16 Staff elem.
- Multiuse 1,8 t/h with 10 Staff elem.
- **Production capacity increase ⇒ 45%**

## Plastics

- Current 0,83 t/h with 8 Staff elem.
- Multiuse 1,45 t/h with 8 Staff elem.
- **Production capacity increase ⇒ 64%**



# Challenges for the future

- Convert the Multiuse Line into the new Pre Sorting line;
- Investment of about 25.000€ (sorting line and division walls);
- Turnover of about 60.000€/year (reduce costs/increase sorting);

It's in the crisis where we can show the very best in us. Without a crisis, any wind becomes a tender touch”.

by Albert Einstein

# For Knowing More about...

## Waste Prevention:



[www.eunaofacolixo.com](http://www.eunaofacolixo.com)

## Agenda21 Processes:



[www.agenda21grandeporto.com](http://www.agenda21grandeporto.com)

## Compost Products:

30 lipor



YEARS OF LIFE WITH THE ENVIRONMENT IN THE HEART

## Institutional Site:



[www.lipor.pt](http://www.lipor.pt)



[www.nutrimais.pt](http://www.nutrimais.pt)

## Home Composting and Biological Agriculture:



[www.hortadaformiga.com](http://www.hortadaformiga.com)

## Volunteer Group (Social Responsibility):



[www.semente.com.pt](http://www.semente.com.pt)