NUNO VINAGRE

Departamento de Higiene Urbana Câmara Municipal de Lisboa | Portogallo

Circular Venice
Policy, Practice and Innovation compared

Index

1 Lisbon | Portugal

RESIDENT POPULATION

545 796 INHABITANTS

FLOATING POPULATION >
2x RESIDENT POPULATION

LISBON AREA: 100 km^2

≈ 100 000 **COMPANIES**

24 **PARISHES**

LISBON ●

Waste Management

WORKERS: 1294

WASTE COLLECTION VEHICLES: 230
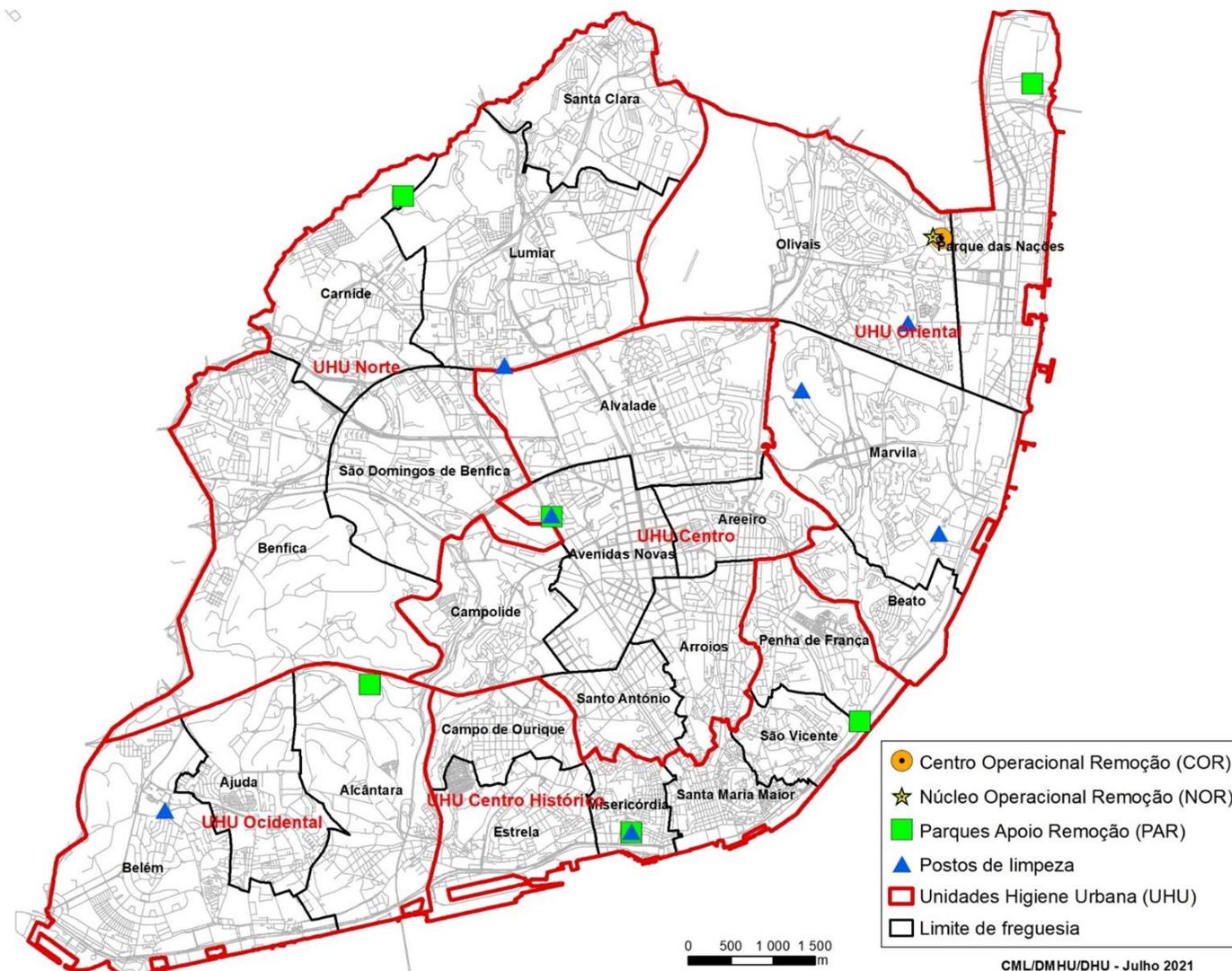
WASTE COLLECTION ROUTES: 151

900 **TONNES/DAY**

11 300 **KM/DAY**

CONTAINERS: 191 829

Legend:
- Centro Operacional Remoção (COR)
- Núcleo Operacional Remoção (NOR)
- Parques Apoio Remoção (PAR)
- Postos de limpeza
- Unidades Higiene Urbana (UHU)
- Limite de freguesia

CML/DMHU/DHU - Julho 2021

YSF
VENICE
WORLD SUSTAINABILITY
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LISBOA
CÂMARA MUNICIPAL

② **Biowaste Management**

Selective Collection of Food Waste in the domestic sector

Underground Drop Off Points Food Waste in the domestic sector

Selective Collection of Green Waste in the domestic sector

Domestic and Community Composting

Biowaste Management
Food Waste Collection

ENTITIES

Start
April 2005

Target Area
3 000 Entities

Collection Numbers
22 198 Ton – 2022
15 Collection Routes

DOOR-to-DOOR DOMESTIC

Start
December 2019

Target Area
3 150 Buildings
41 550 Dwellings

Equipment
Buckets, containers, container shelters with access control, communication and awareness campaigns

UNDERGROUND DROP OFF POINTS

Start
November 2019

Target Area
130 Buildings; 511 Dwellings

Equipment
5 underground containers, 3 with 1m3 modules for food biowaste, with access control, through the implementation of a sensing system with RFID reading

Biowaste Management
Green Waste Collection & Composting

GREEN WASTE COLLECTION

Start

June 2023

Target Area

6 502 Buildings

7 500 Dwellings

Equipment

Bags, containers, removal vehicles, communication and awareness campaigns

DOMESTIC COMPOSTING

Start

May 2018

Equipment

Training Offer and Composter

Quantity

June 2023:

3 329 composters delivered

COMMUNITY COMPOSTING

Start

December 2018

Equipment

Community composters installed in the city

Quantity

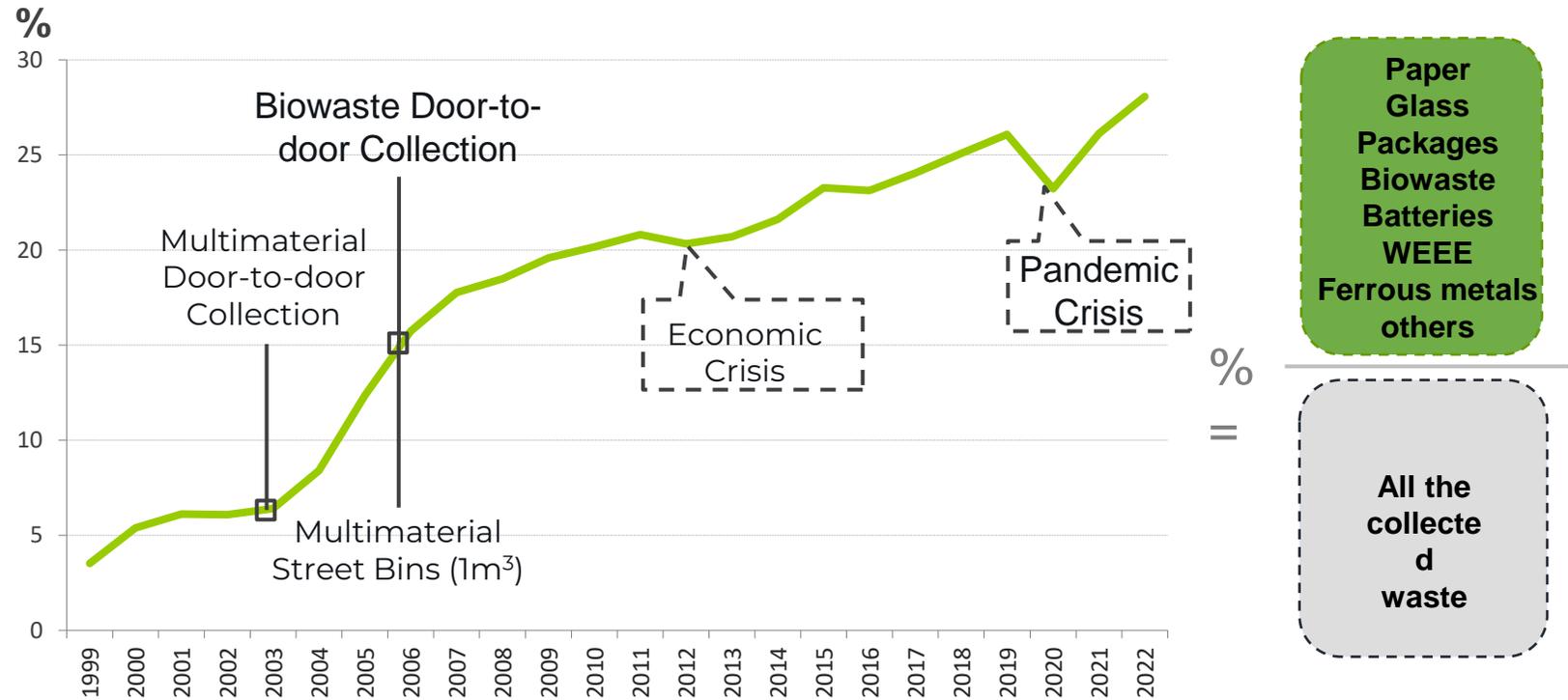June 2023:

23 Community composters installed

EVOLUTION OF SELECTIVE WASTE COLLECTION
Evolution of the Selective Collection Rate in Lisbon
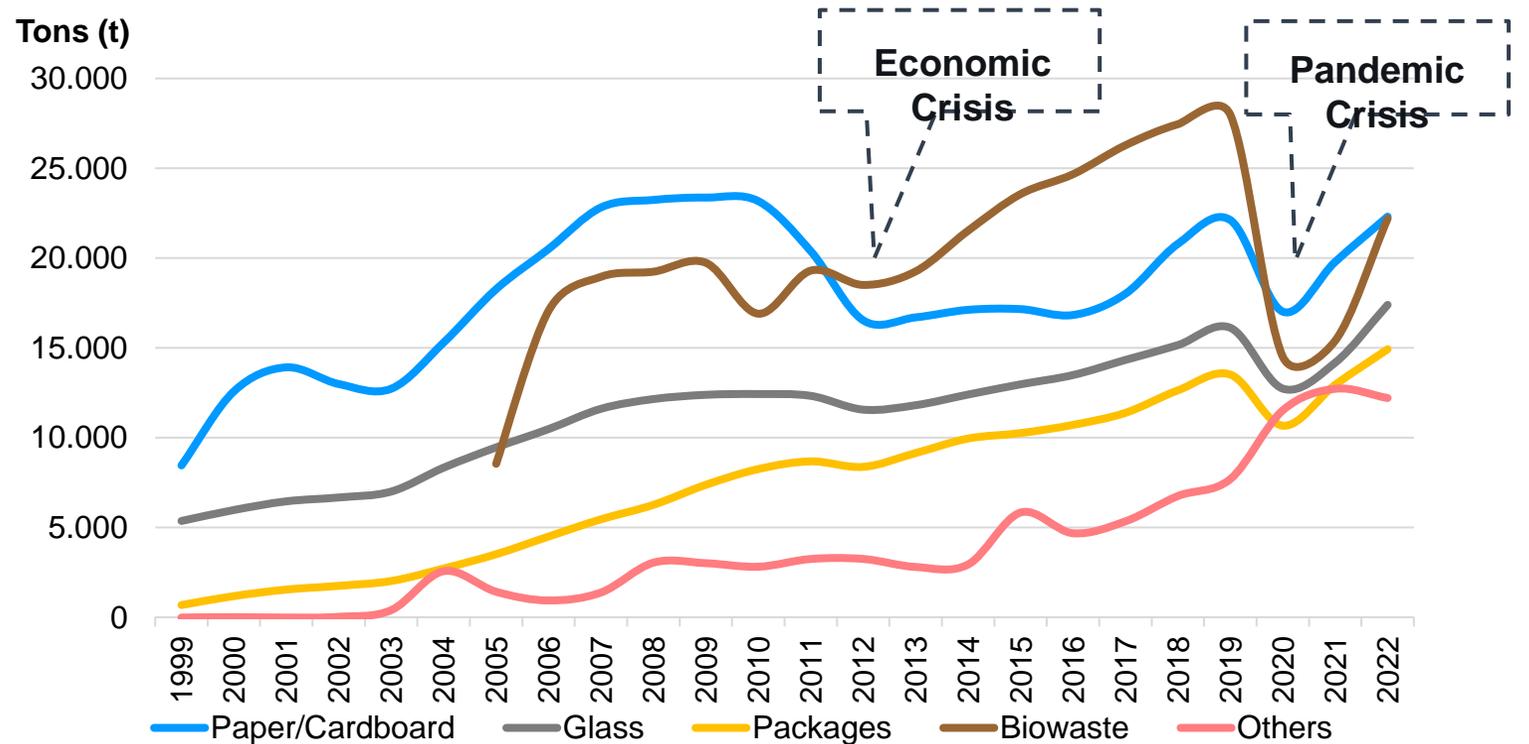

Sorting Center - Valorsul

EVOLUTION OF SELECTIVE WASTE COLLECTION

Recyclable Waste Collection Evolution

Biowaste Digestion and Composting Plant Valorsul

③ **Collect, Recover, Reuse**

 Ripas

 Replay

Collect, Recover, Reuse

RIPAS

Start
May 2021

Objective
Furniture recovery and wood reuse workshops

REPLAY

Start
2021

Objective
Forwarding end-of-life toys for recycling

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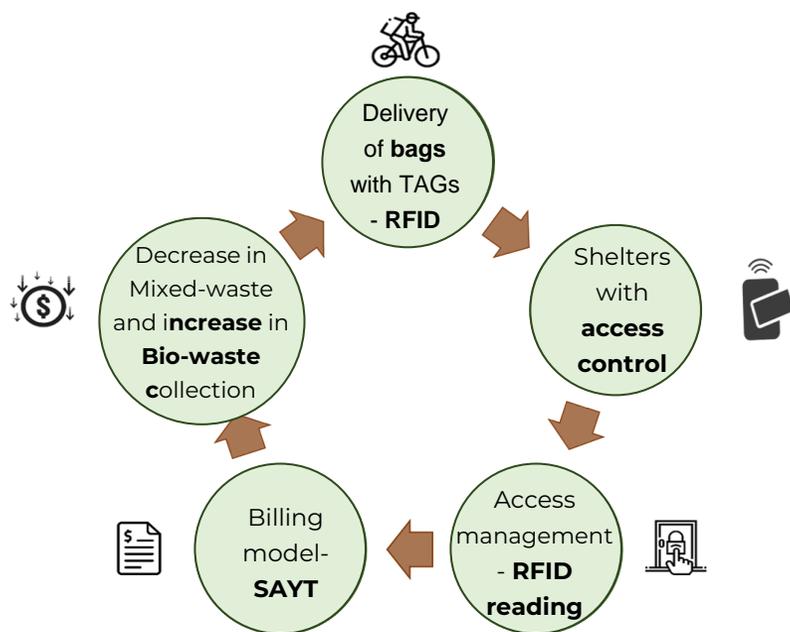LISBOA
CÂMARA MUNICIPAL

④ **Technology in Waste Management**

SAYT

Reverse Vending Machines

SAYT

Proximity collection system on public roads, using shelters with access control and delivery of bags with RFID tags, in order to unequivocally identify the waste producer. The bags also allow the shelters to be opened.

- Delivery of **bags** with TAGs **- RFID**
- Shelters with **access control**
- Access management **- RFID reading**
- Billing model- **SAYT**
- Decrease in Mixed-waste and i**ncrease** in **Bio-waste c**ollection

DESCRIPTION

Project based on the proposal to implement a **tariff model** that simulates the attribution of a **bonus** to the citizen for their contribution by diverting their waste from the unsorted category, to a **selective collection of organic matter.**

Technology in Waste Management
SAYT

1 inhabitant: production on average ⟷ 1 15 kg/day of **Waste in Lisbon**

10 639 inhabitants ⟷ 12 225 kg/day of **Waste**

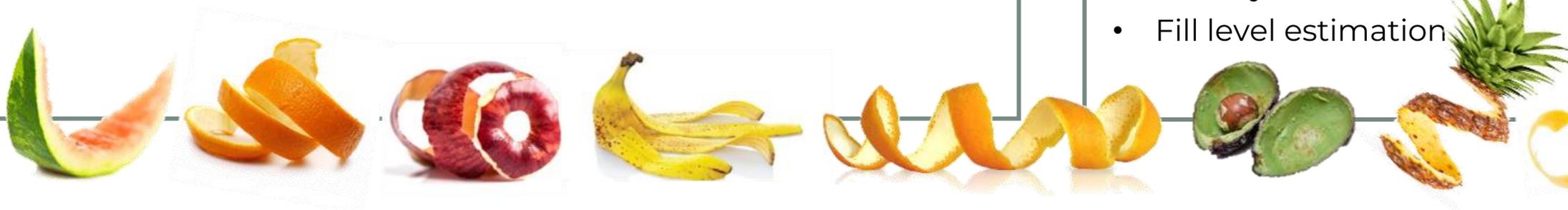2 126 kg/day of **Food Waste** (Considering a capture rate of 43%)

Unambiguous identification of each user with date and time of access

Assessment of the quality of separated food waste

Container status alerts
- Battery status
- Fill level estimation

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Reverse Vending Machines

Implementation of a circular system with cups designed for multiple uses, with the use of Reverse Vending Machines.

OBJECTIVE

To put an **end** to the use of **disposable cups** in public spaces resulting from the sale of drinks in food and drink establishments and replace them with **reusable** ones that, through a tare system, will promote the use of cups made from more durable, washable and recyclable materials, contributing to the decarbonization of the city.

OPERATION

1. Acquisition of a reusable cup at the establishment;

2. Deposit payment;

3. Return of reusable cups through Reverse Vending Machines or loss of deposit.

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5 **Water for Reuse**

Reuse of Treated Water

Water for Reuse

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REUSE
OF TREATED WATER

Use

Mechanical Street washing

Containers washing

Start

December 2008

Objective

To protect the scarcity of the essential good that is drinking water

Data

2023: 8 706 m³ of water consumed

Thank you!

Department of Waste Management
Lisbon | Portugal

Department's Director Nuno Vinagre