Zero Waste Live!

ZERO WASTE EUROPE

17 March 2020 - 02.00 p.m. CET

DECENTRALISED MANAGEMENT OF ORGANIC WASTE

Ramon Plana

Consultant

Biological Treatments for Organic Waste

Empowering the citizenship in the management of their organic wastes - *the last 10 years of decentralised composting in Spain*

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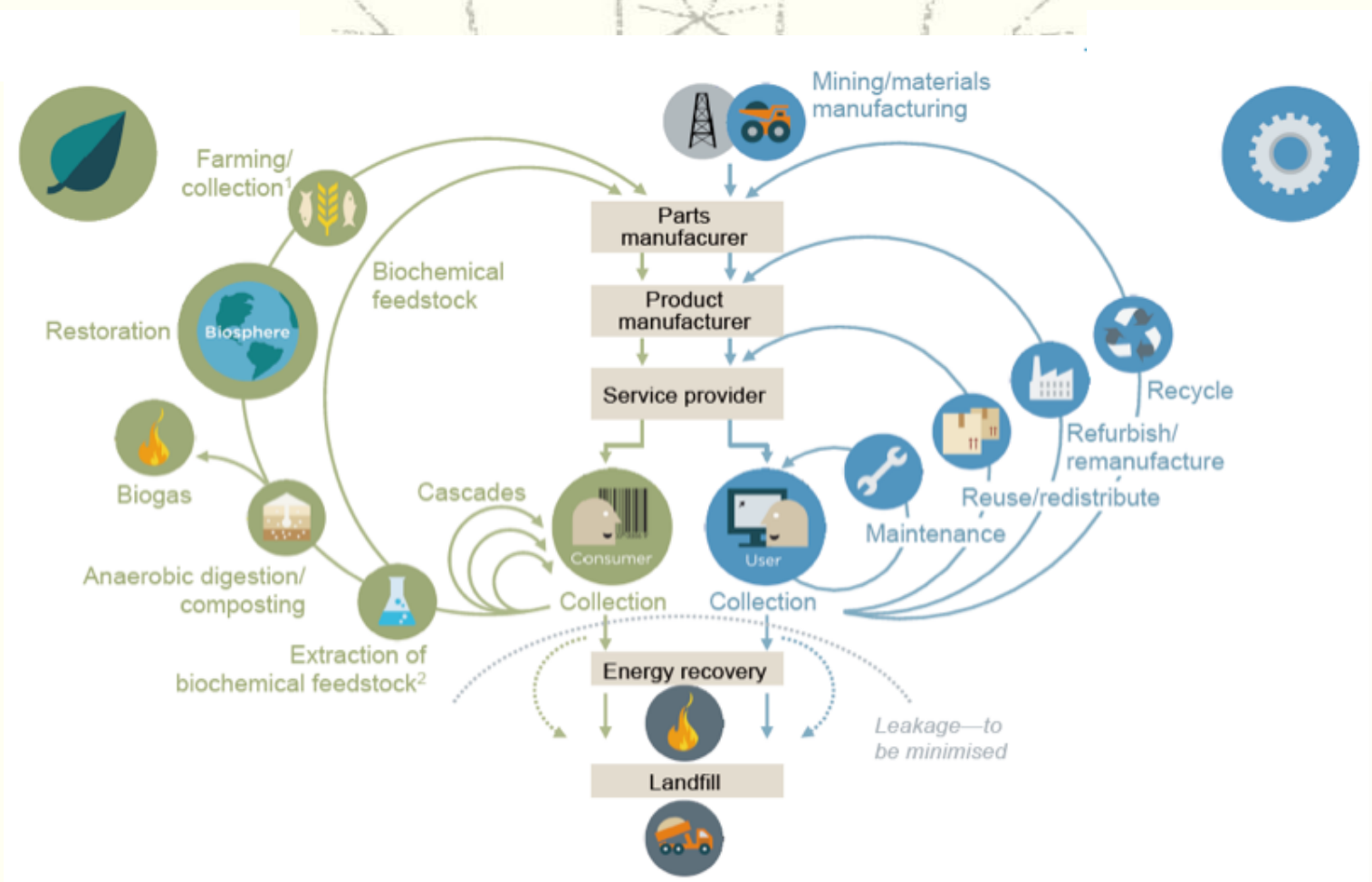
March 17th, 2020

Circular economy



Source: Ellen MacArthur Foundation

It’s not longer optional

EU Circular Economy Package (approved in April 2018):

Main objectives

- 65% of recycling by 2035*
- Reduction of municipal waste landfill down to 10% by 2035*

Requirements for bio-waste

- **Obligation to implement the separate collection or recycling at source (home and community composting) of bio-waste by 31 December 2023**
- Bio-waste that has **not been separately collected/separated at source** and treated through composting or anaerobic digestion, will **not be counted as recycled** as from January 2027

Basis of Bio-waste Management

Without collection or bio-waste transportation

- Simple and economical technology
- Required “very clean” bio-waste
- Employment ↑
- Effective. It allows to reach successful results
- INVOLVE CITIZENS AND THE TERRITORY.

LOCAL SMEs & SOCIAL ENTERPRISES

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Bio-waste collection and minimisation of transport

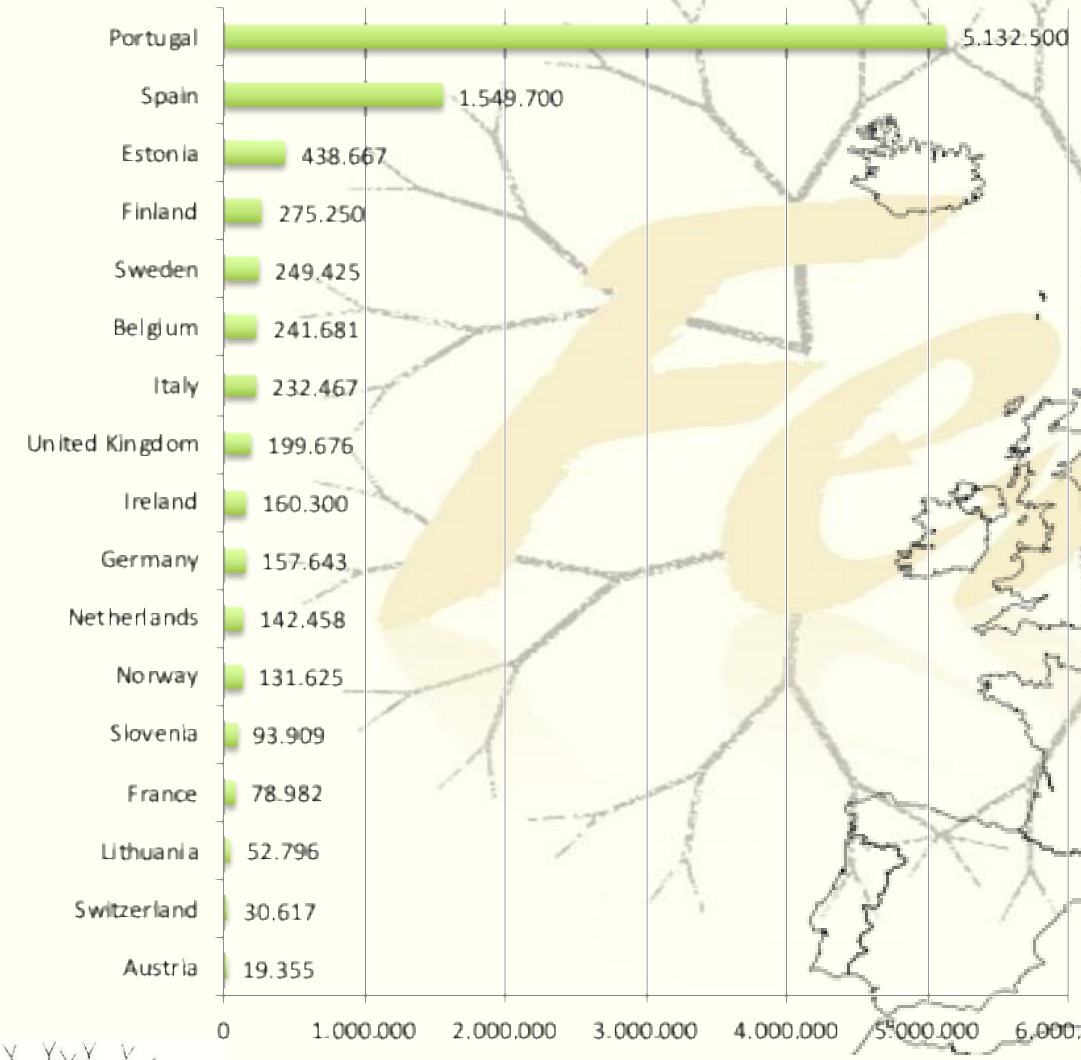
- Simple and economical technology
- Required “very clean” bio-waste
- Employment ↑
- Effective. It allows to reach successful results
- INVOLVE CITIZENS AND THE TERRITORY.

LOCAL SMEs & SOCIAL ENTERPRISES

Collection and Transportation of Bio-waste

- Transportation ↑
- Size of facilities↑
- Sophisticated and expensive
- Automation. Employment↓
- “Mixed results”
- “Works” with high improper materials
- DISTANT TO THE PEOPLE

Bio-waste composting facilities in EU



Source: ECN, Eurostat, ADEME and own data

Why decentralized & composting?

Natural process

Biological process

Scalable

Complementary

Flexible

- No collection neither transportation.
- Compatible with reduction and prevention measures.
- High quality of the biowaste and the produced compost.
- Important environmental education.
- Improve local economy and green jobs.
- Final product is a local resource.

Decentralized local composting

Both community and household composting are viable options for resolving the management of bio-waste in many specific areas or entire territories as an exclusive management model for this fraction.

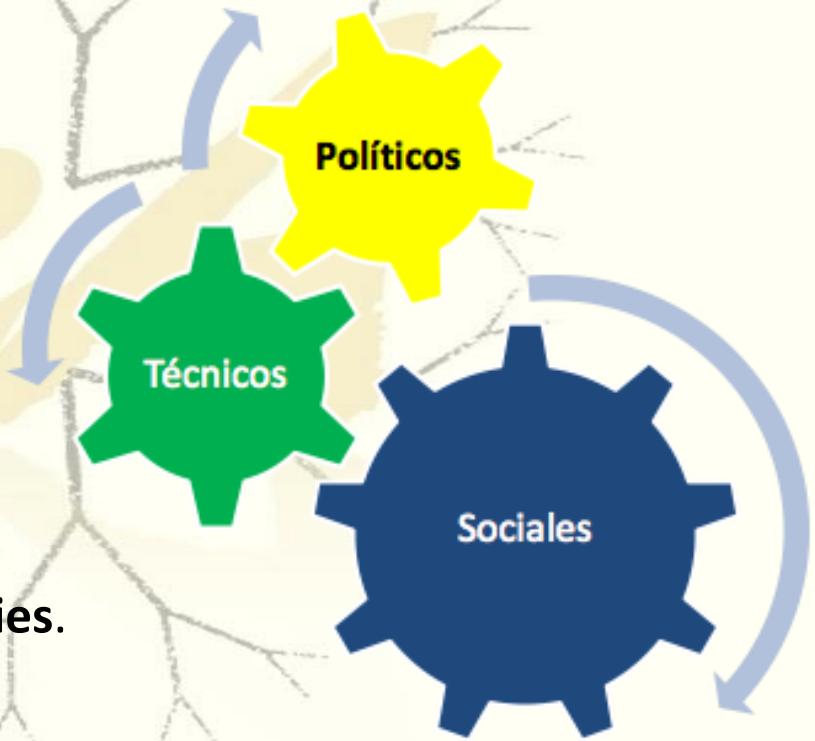
Community and household composting has <u>other applications</u>:

- As a **complementary system** to models based on collection and transportation.
- As a system **associated with the management of large generators** of biowaste.
- As a system focused on **training, education, awareness**, etc.

Which is the best for my territory?

IT DEPENDS OF:

- Need of **LOCAL employment.**
- Willingness **to create services**.
- **Social and territorial policy.**
- **Geographical** distribution.
- **Bio-waste quality.**
- Existence of **equipment and local facilities**.
- …..



What influences?

The efficiency of any differentiated management model encompasses different elements that **must always constitute a long-term strategy**.

- ☑ Development of a regulatory framework - ordinances.
- ☑ Act on environmental education and awareness of citizens to promote participation <-> communication <-> information.
- ☑ Development of technical instruments for the service as well as monitoring and continuous improvement indicators.
- ☑ Create incentives and environmental taxation measures linked to participation (bonuses, rates, ...), with the objective of reaching generation payment (PYT).

Decentralized bio-waste composting in EU

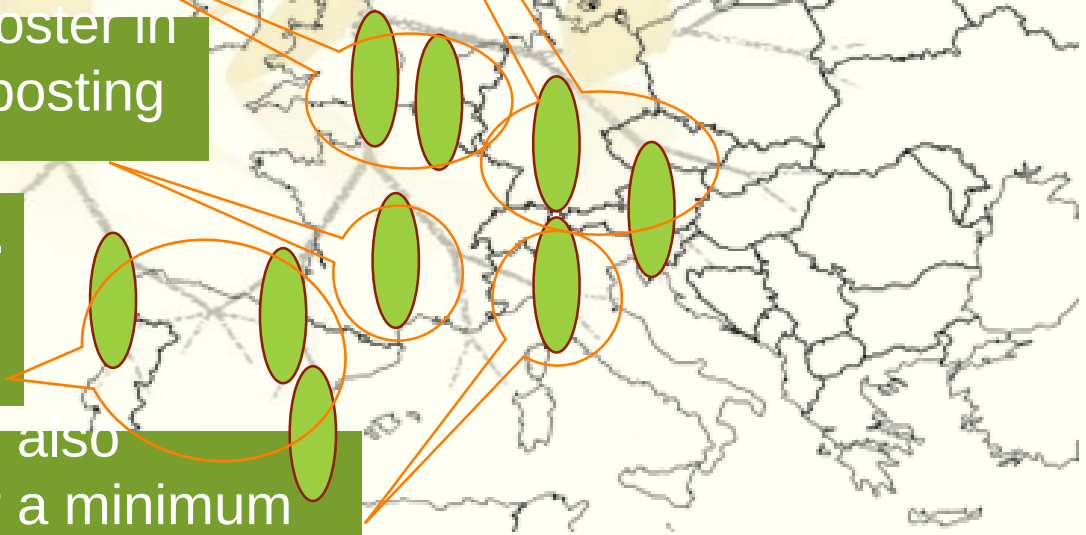
Household composting prevails. It is considered an alternative to management and is rewarded

Household composting prevails. Fish and meat are not allowed.

Requirement for a master composter in charge of each community composting site

Community composting prevails. It is consider an alternative to management.

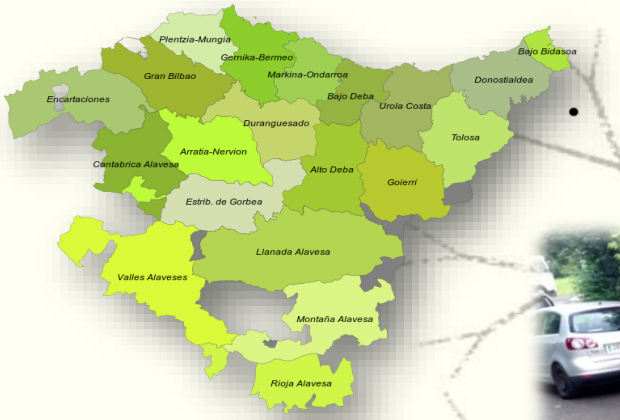
Community composting is also included. Requirement for a minimum process time.



Source: ECN, Eurostat, ADEME and own data

Scenario

Community composting programs are a reality



Basque Country

> 400 community composting sites

13 different kinds of community composting systems

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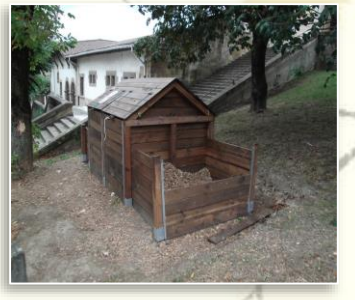
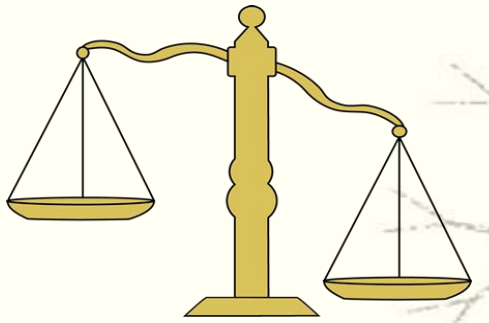
Which is supposed to be the best model?



What happens then?

It is quite normal than in new territories, where local technicians and authorities do not have experience or specific knowledge in this scale of biowaste treatment, they just try **to replicate other experiences without know the real requirements and needs to make the model successful according to the reality and circumstances in their localities**.

And based on what is regulated this model?



Existing legislation considers, on a more frequent basis, the following parameters or requirements as basic:

- ✓ Maximum capacity of the facility.
- ✓ Type of waste accepted.
- ✓ Parameters requested for sanitation.
- ✓ Allowed usage-users of compost.

To fulfil these requirements do not assure the success of the community composting model

Our vision

Faster implementation

Creation of new jobs

Integration of people in risk of social exclusion

Bio-waste becomes local resource

Developing of a real circular economy

Educational benefits

Environmental awareness

Our vision

What can administrations do to drive models with a guarantee of success?

Determine which are the real keys that make the model works correctly, especially at a practical level, and thus create a regulation that collects them under a technical criterion based on the knowledge of the biological process at this scale.

But do not forget the people…

- Service contracts reserved for social inclusion companies.
- Need to include social and environmental conditions in the specifications.
- Batch contract services (SMEs).

The key factors in local composting

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The key factors in community composting

SOCIAL

Participation
Confidence
Transparency

DESIGN

Location
Dimensioning
Common elements
Further elements

COMPOST QUALITY

Parameters
Frequency of analysis

TRACEABILITY

Batchs
Parameters
Measurement of bio-waste treated

TECHNICAL

Type of composters
Bulking material
Operational model

TRAINING

Professional master composters
Volunteers

MONITORING

Monitoring visits
Maintenance visits

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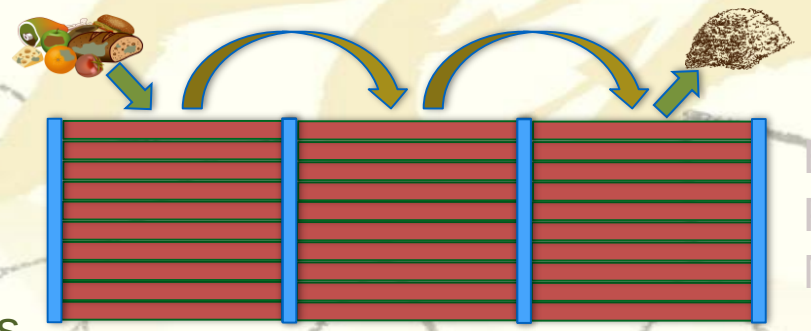

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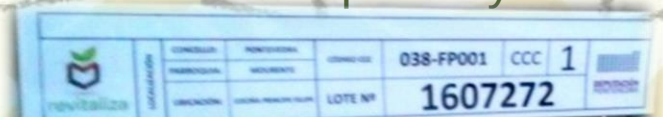

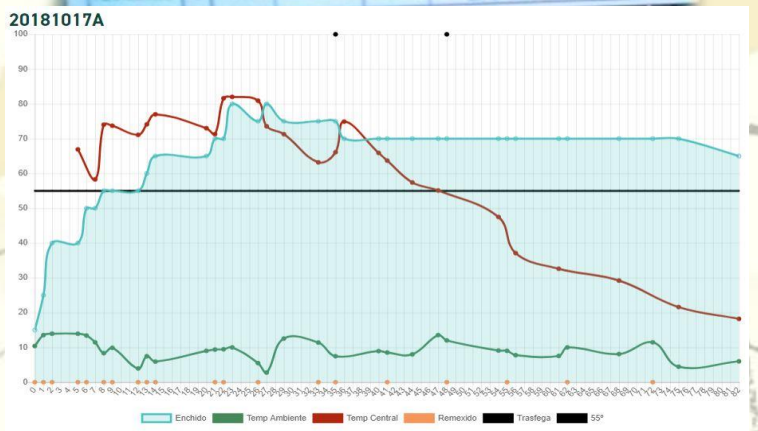

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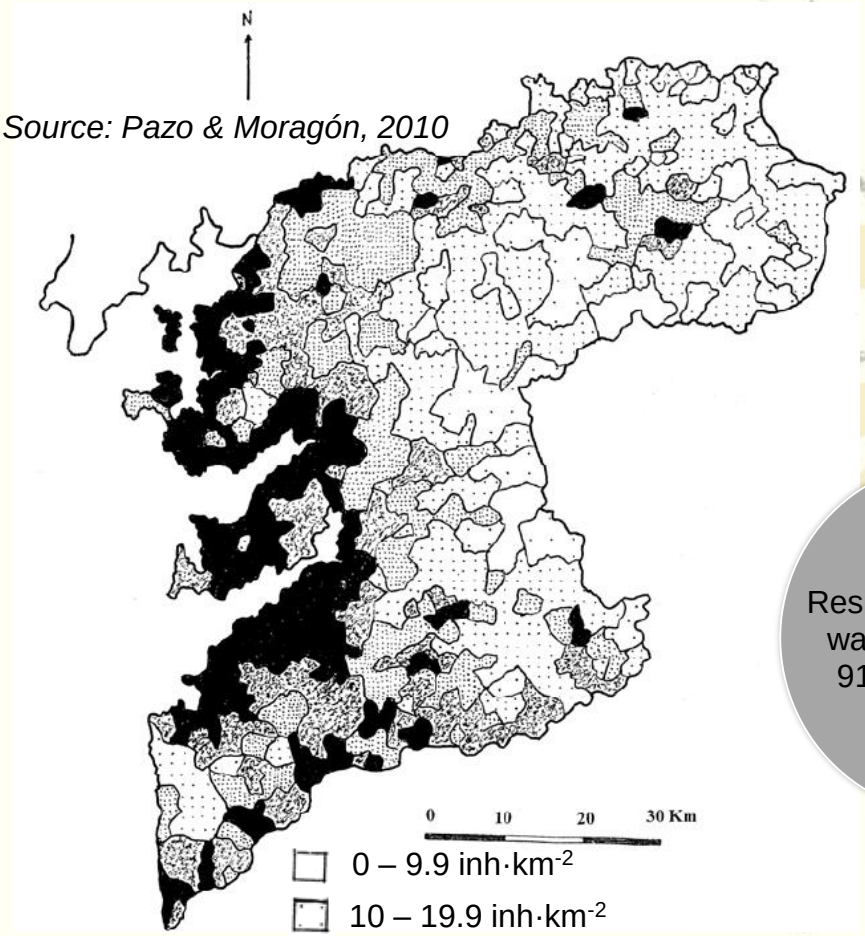
Examples in local composting

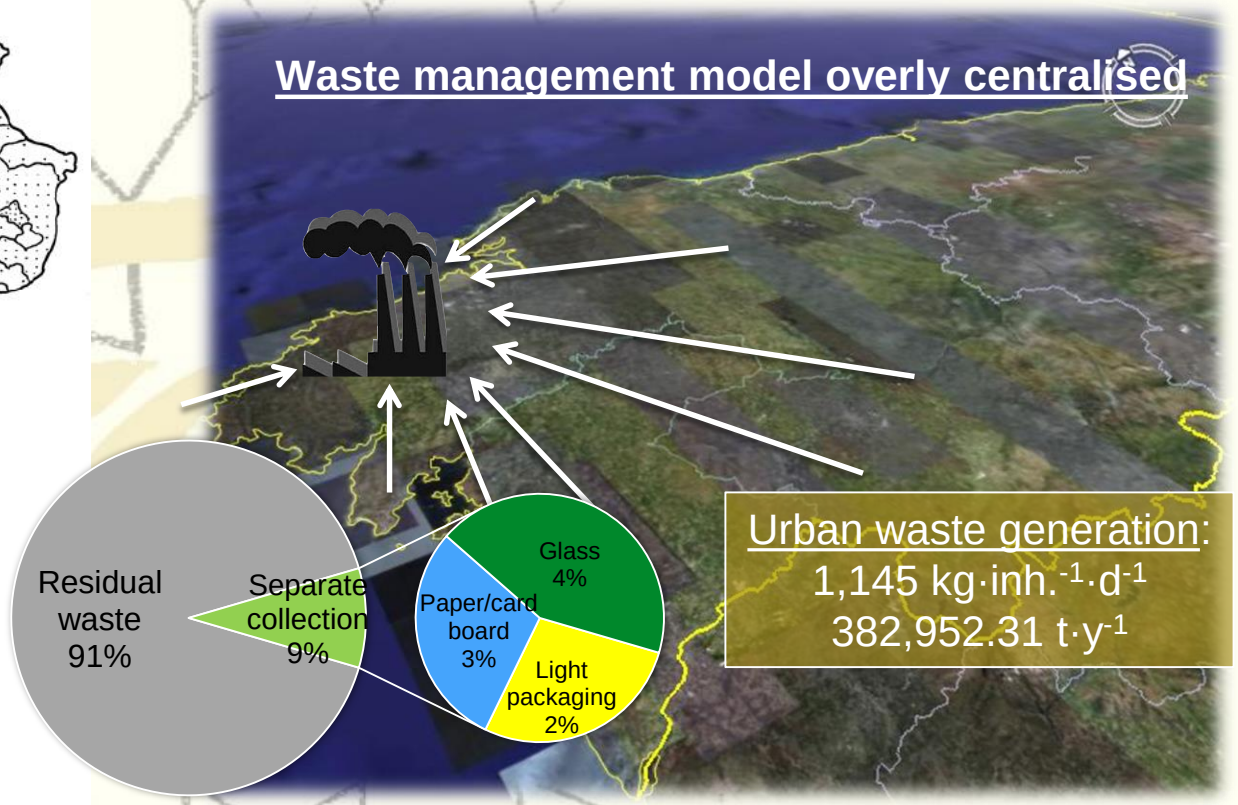
Revitaliza Plan (Pontevedra, Spain)

The Province of Pontevedra



Source: Pazo & Moragón, 2010

Waste management model overly centralised



Urban waste generation:
1,145 kg·inh.$^{-1}$·d^{-1}
382,952.31 t·y^{-1}

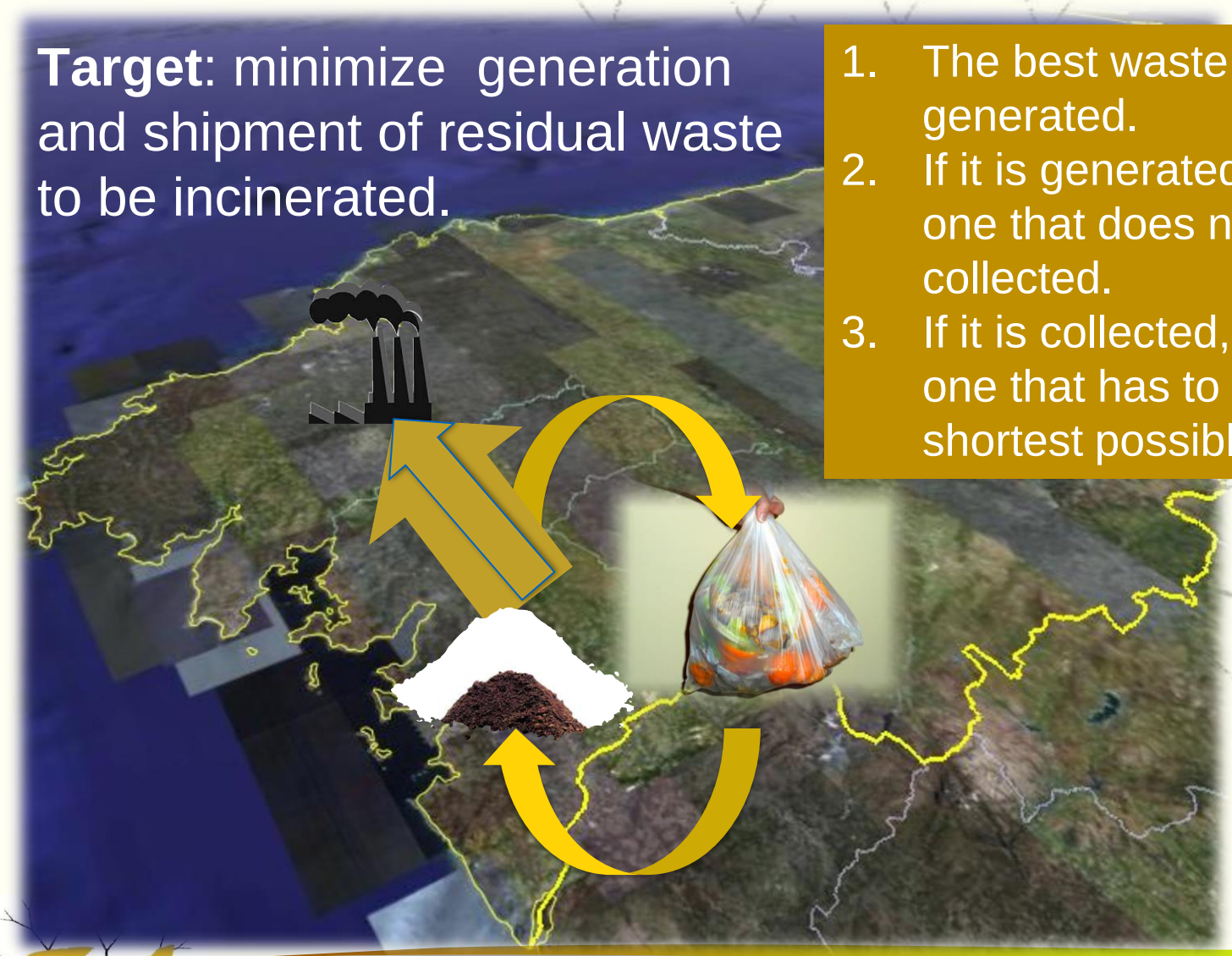
900.000 inhabitants
62 councils - 668 “parish” (local entities)
6.621 population entities (10% of Spain)

- *4.316 are disseminated (< 15 inhabitants)*
- *2.305 are non disseminated*

Target and principles

Target: minimize generation and shipment of residual waste to be incinerated.

1. The best waste is the one that is not generated.
2. If it is generated, the best one is the one that does not need to be collected.
3. If it is collected, the best one is the one that has to be transported the shortest possible distance.



revitaliza

Developing of Revitaliza Plan

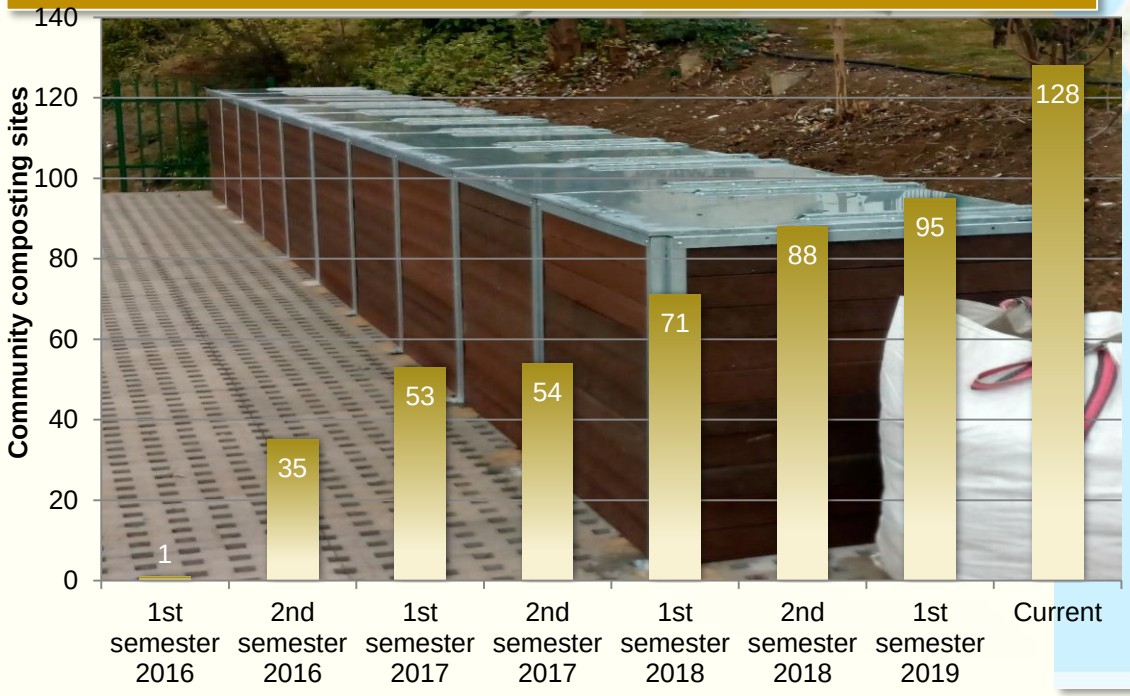
Pontevedra (Galicia) – *Revitaliza Plan*

128 community composting sites

46 municipalities

> 80 professional master composters

Total treatment capacity ≈ 4,000 t·y^{-1}



For more information: https://revitaliza.depo.gal

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Training – Master composters

6 technicians A2
12 technicians C1
Pool of 80 technicians

Intensive training of a new promotion of “master composters” every year.

They are technical and social agents

Accompaniment and advisers to the participant municipalities.

El rector Mato anuncia que el de "mestre composteiro" será un título universitario

La Diputación acogió ayer la entrega de diplomas a las 18 personas que superaron la primera promoción de Mestres Composteiros -Todos estarán becados y tendrán empleo

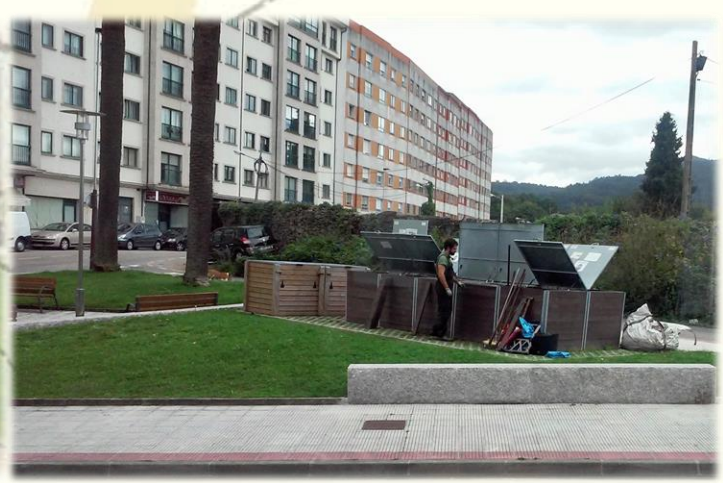
Carlos García | Pontevedra | 06.05.2016 | 05:18

El de "mestre composteiro" será un título que tendrá marchamo universitario. Así lo anunció ayer el rector de la Universidade de Vigo, Salustiano Mato, durante la entrega de diplomas a los 18 alumnos que conforman la primera promoción de la "Facultade da Compostaxe" puesta en marcha por la Diputación de Pontevedra con el objetivo de dotarse con profesionales con la formación

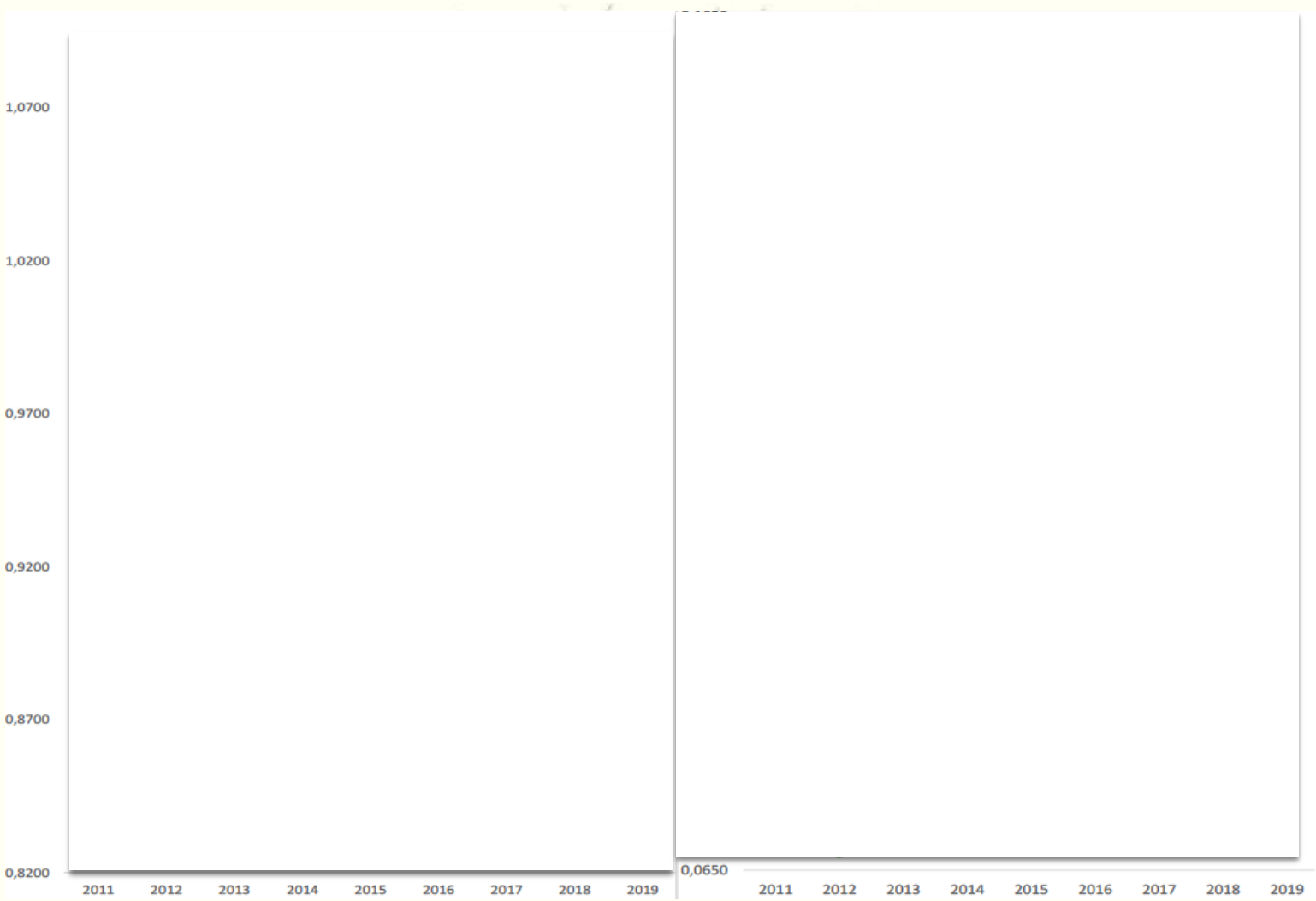
Community composting sites in the province





First results



***Source**: Pérez Losada & Martínez Abraldes, 2019*

Leintz-Gatzaga (Gipuzkoa)

Community composting in Leintz-Gatzaga

Population	245
Bio-waste generated (t·year^{-1})	18
Bio-waste locally managed	94 %
Jobs created	0,4
Operational costs (€·t^{-1})	56,5
Management costs savings (€·year^{-1})	-3,200

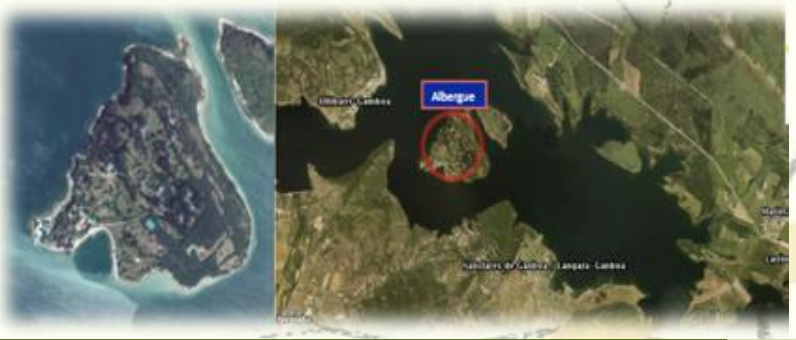
Itsasondo (Gipuzkoa)

Community composting in Itsasondo

Population	660
Bio-waste generated (t·year^{-1})	47
Bio-waste locally managed	78 %
Jobs created	0,8
Operational costs (€·t^{-1})	67,8
Management costs savings (€·year^{-1})	-12,460

Island of Zuhatza (Araba)

Community composting in the Island of Zuhatza



Overnight stays	21,000
Bio-waste generated (t·year^{-1})	32
Bio-waste locally managed	100 %
Jobs created	1
Operational costs (€·t^{-1})	71,1
Management costs savings (€·year^{-1})	-7,600

Local composting at the Public University of Navarre (Pamplona)

ARROSADIA LIVING LAB Project

Arrosadia Living Lab (UPNA) - Navarre

Environmental awareness

1.4 t of bio-waste composted since september 2019

Training

PILOT PROJECT OF CIRCULAR BIOECONOMY ON A LOCAL SCALE WITH A SOCIAL AND TRAINING DIMENSION (Josenea BIO - Navarre)

Social company

Environmental consultants, trainers and process experts

Research and training support

Public administrations

Circular bio-economy Project - Josenea

BIO-WASTE COLLECTION

LOCAL TREATMENT

JOSENEA'S COMPOSTING FACILITY

BROADCASTING

RESEARCH

TRAINING

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Project GardenHotels (Mallorca, Balearic Islands)

Composting in GardenHotels (Mallorca)

Organic Buffet

Food waste from the hotel

120 t·year^{-1}

To composting

Social integration company

Estel de Llevant

Organic products from local farming

Association for organic farming in Mallorca

Compost (organic certified)

Composting in GardenHotels (Mallorca)

To composting

Organic products from local farming

Sa Naturalesa és lenta però sàvia

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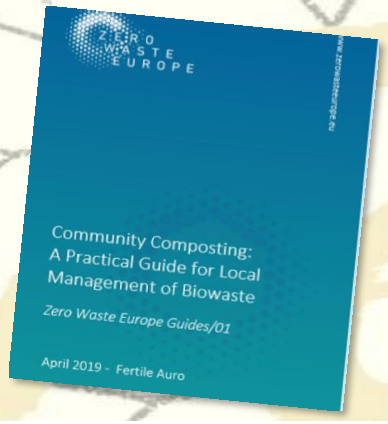
Our proposal

Community Composting Guide

Professional association for waste minimization, management and treatment.

www.fearesiduos.com



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"Here we also suffer from stress. However, our stress is different from that of Westerners. What stresses us is CLIMATE CHANGE because we no longer know when it will rain and our way of life depends on when and where growth the pastures for our cattle".

Dana Bedouin community in Feynan, Jordan