

Decentralised Composting in Small Towns

The Community Composting experience



Speaker: Joan Colón

Entity: UVIC

Date: 23/25-10-2023

Location: Italy



The DECOST project



Decentralised Composting in Small Towns

The DECOST project

Acronym:	DECOST
Full title:	Decentralised Composting in Small Towns
Thematic objective:	B.4 Environmental protection, climate change adaptation and mitigation
Priority:	B.4.2 Waste management
Countries:	Spain , Italy, Palestine, Jordan, Israel, Greece



What will be improved?

Besides diverting a significant amount of organic waste from being disposed of in landfills, the DECOST project will foster food security and accessibility thanks to the support of urban agriculture initiatives. Citizens, especially children, and households, will be encouraged to adopt sustainable behaviours through IT tools and big data analysis.

Who will benefit?

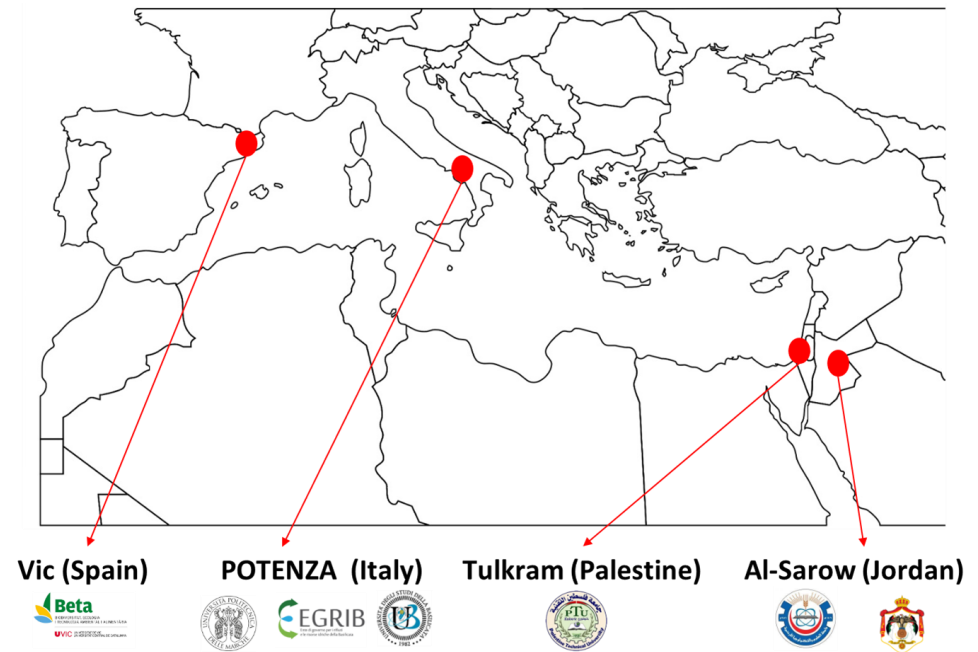
- Managers and technical staff of 5 municipalities (Al-Sarow, Jordan; Shefa-Amr, Israel; Tulkarem, Palestine; Venosa, Italy; Vic, Spain)
- People living in the target areas/neighbourhoods of the pilot municipalities, civil associations and NGOs, waste management agencies

Expected achievements

- 4 new Integrated Municipal Waste Management Plans designed
- 4 composting plants created
- 1,500 - 2,000 tons/year of total waste recycling capacity installed
- 1 smartphone application allowing citizens to monitor their environmental performance in terms of waste sorting and recycling
- 40 municipal staff trained
- 1 business plan to foster the long-term economic viability of the recycling system developed

The DECOST project

The DECOST project aims to develop a new waste management framework by building a closed system for recovering organic waste by integrating decentralized home and community composting systems with urban agriculture projects.



SPANISH PILOT – Pilot allocation



- Street Containers
- All waste fractions collected by a Waste Management Agency and recycled or disposed
- Fix rates for waste disposal



**HUGE PROBLEM WITH
WASTE TOURISM**

Strategic models development

Information provided by all partners with composting pilot:

- Situation in the Med Area regarding H&CC and UA models
- Home and community composting initiatives in each country
- H&CC model that Will/would be implemented through the DECOST project
- Existing situation with urban agricultura
- Options to close the loop of the organic matter through UA projects



Figure 3. Home composting initiatives in Spain. A) Plastic traditional composter¹⁴ and B) Home-made rotary composter¹⁵.

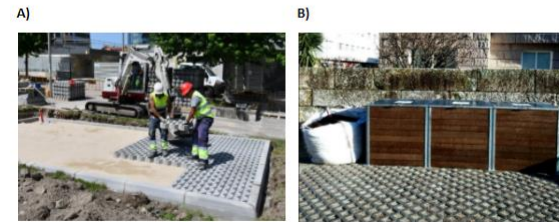


Figure 4. Community composting in Spain. A) Terrain preparation and B) Composting site with three composters and a grunning container¹⁶.



Figure 5. Example of community composters: a) rotating chamber system; b) and c) two chamber systems

UVIC

GALSOC



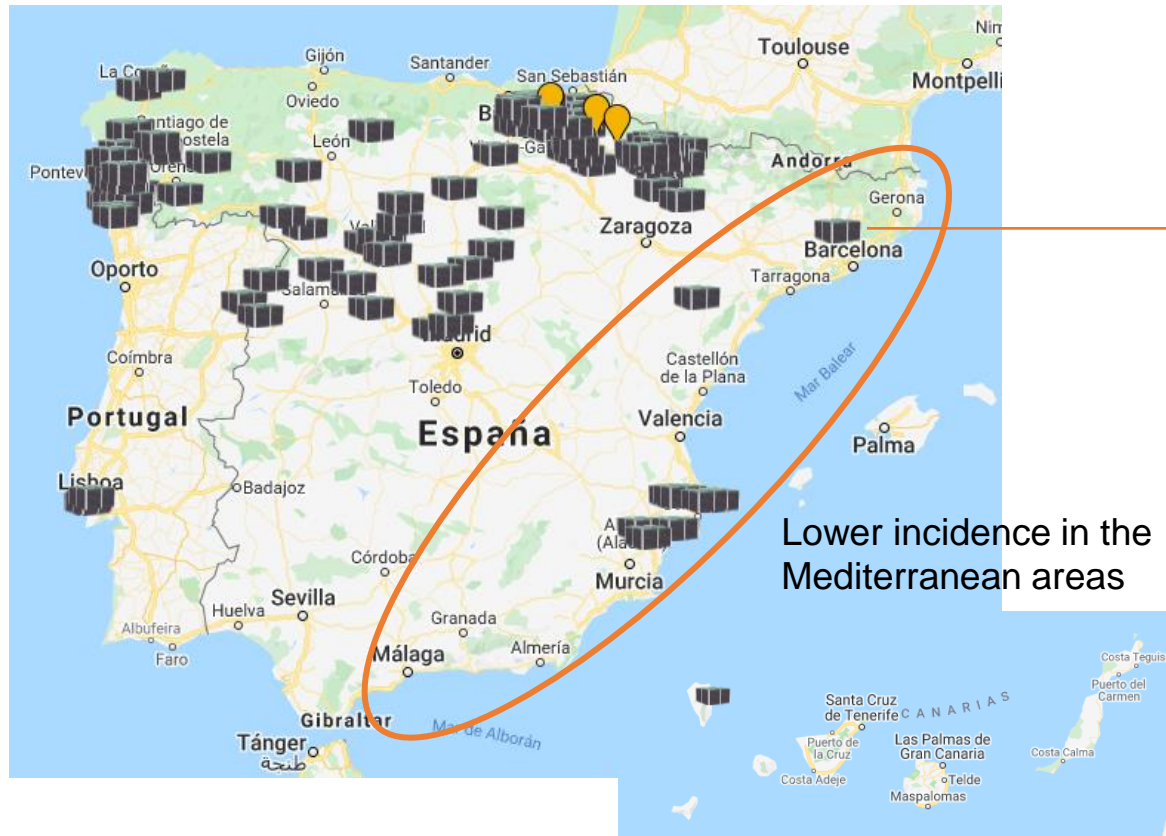
Figure 6. Arab Schools promoting community composting initiatives.

UNIBAS

Strategic models development

THE CASE OF SPAIN – H&CC Model

Some of the **COMMUNITY COMPOSTING** Projects in Spain



vermican



This type of composters installed throughout Les Masies de Roda, Barcelona (Spain)

Strategic models development

THE CASE OF SPAIN – Urban Agriculture Model



WHAT TO DO WITH
YOUR OWN
COMPOST?



Strategic models development

THE CASE OF ITALY

HOME AND COMMUNITY COMPOSTING MODEL

DECENTRALISED SOLUTION

Municipality of Potenza –



CityNet

COMPOST
kmzero



eCOPANS

Electromechanical system



HOME COMPOSTING

CENTRALISED SOLUTION

Municipality of Atella – Cafaro



CityNet

COMPOST
kmzero



eCOPANS

Electromechanical or static system
(specific technology to be defined)
with collection service of organic
waste

Strategic models development

THE CASE OF ITALY

Urban garden in the municipality of Potenza.

- Specific projects with students
- Social inclusion

URBAN AGRICULTURE MODEL



LEGAMBIENTE



Pilot implementation

Steps to implement the pilot:

1. Signature of agreements
2. Information about the pilot site
3. Starting the implementation
4. Citizens using the new waste Management systems



SPANISH PILOT – Distribution and ground preparation

Ajuntament de L'Esquirol

TU TRIES

ORGÀNICA RESTES DE MENJAR I JARDINERIA (poda gran no). **AMB BOSSA COMPOSTABLE!**

DC: Carn i ossos, Peix i marisc, Restes de cunils, Fruïtes i verdura, Pa i derivats, Cel·lulosa bruta de menjar

DV: Infusions, Sare i llums, Restes vegetals, Herro de cafè, Encandents (tosta), Excrements d'animals domèstics sense sorres ni fets absorbents

MULTIPRODUCTE PAPER I CARTÓ, Llençables de PLÀSTIC, ALUMINI, ACER, POREXAN I TETRA BRIK

DL: Envases de plàstic, Envases metàl·lics (baurins), Envases de brik, Taps de plàstic i capes, Bosses, Paper

DJ: Cartó, Porexpan, Paper aluminat, Film transparent, Vasiella i coberts d'un sol ús, Calces de fusta petites

REBUIG RESIDUS NO RECICLABLES. Com millor reciclem, més buda ha d'estar aquesta fracció

DT*: Pots d'escombrar, Cendra (tapada), Fregalls, Tovalloles humides, Compreses i bolquers, Càpsules de carà (liquidador motor oil)

Ceràmica o fang, No reciclables (fets de diferents materials), Sorres i fets absorbents d'animals domèstics, Elements d'higiene i cura

VIDRE Ampolles i pots de VIDRE, sense taps.

DT*: Ampolles de vidre, Pots de vidre

ENCARA QUE SIGUI DE VIDRE, SI NO ÉS UN ENVAS, NO LI PODEM POSAR: vidre pla, bombolles, fluorescents, miralls, taps d'ampolla

*** QUINZENAL:** s'alternaran REBUIG i VIDRE, una setmana cada un (consulteu el calendari anual)

Telèfon gratuït d'atenció a l'usuari: **900 102 989**

rro.cat



**4 different containers
(multiproduct approach)**

CONTAINERS WILL BE REMOVED
AND THE NEW MODEL WILL BE:

**DOOR-TO-DOOR +
COMMUNITY
COMPOSTING**

SPANISH PILOT – Distribution and ground preparation



**GROUND WAS PREPARED BEFORE
INSTALLING THE COMPOSTERS**
**14 sites with 62 composters in total were
implemented**

Vicenç neighborhood in Les Masies de Roda

Masies de Roda
Propuesta de Ubicación
de Zonas de Compostaje
(Distancia de 100m)

Barri de Vincenç

Leyenda

Viviendas asignada CC

● V1

● V2

● V3

★ Zonas de Compostaje

Distancia 100m

■ V1

■ V2

■ V3

■ V4

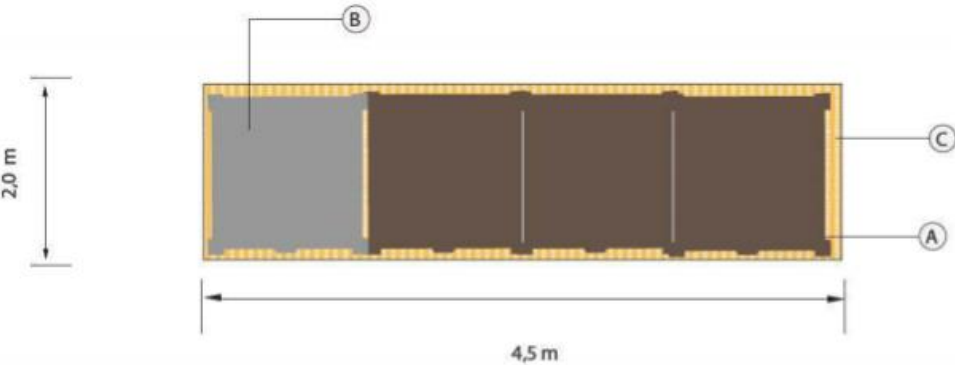
SCR: ETRS 89 UTM zone 30N

Fuente:
Base cartográfica: <http://centralnube.wgts.ring.es/>
Base de datos: Ayuntamiento de Masies de Roda

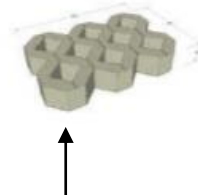
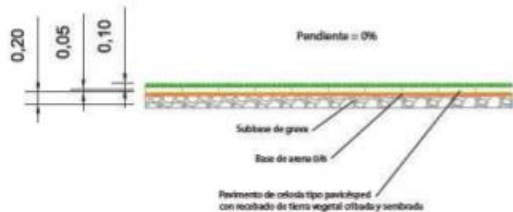
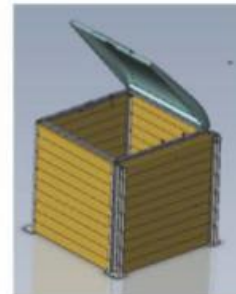


Vermican Soluciones de Compostaje S.L.
Polígono Industrial Corcovilla, Calle C, nave 7
31161 Corcovilla (Navarra)
T: 948 27 63 10
www.vermican.com

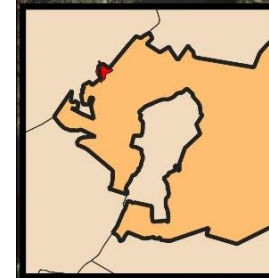
0 50 100 m



A	COMPOSTADOR DE 1000 L
B	CAJÓN DE ESTRUCTURANTE
C	CELOSÍA DE HORMIGÓN



**INSTRUCTIONS FOR THE IMPLEMENTATION and
ALLOCATION MAPS** to ensure minimal distances
to get to the composters



SPANISH PILOT – Composters installation



**INSULATION OF THE BASE IN SOME CASES
TO AVOID SPREADING OF LEACHATE
OUTSIDE THE COMPOSTER**



SPANISH PILOT – Composters installation

BIG BAGS FOR THE SHREDDED PRUNING



**LAST COMPOSTER
WITH A COLLECTION
TROLLEY**



Composters for maturation

**One composter for
fresh organic matter
with SMART LOCK**

Shredded pruning



SPANISH PILOT – Post-processing area

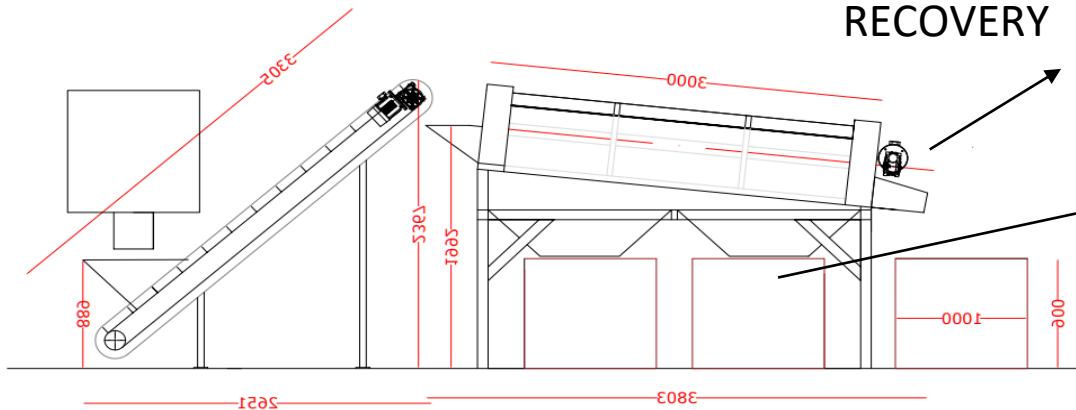
MACHINERY HOUSING
CONSTRUCTION



AT INDUSTRIAL SCALE...

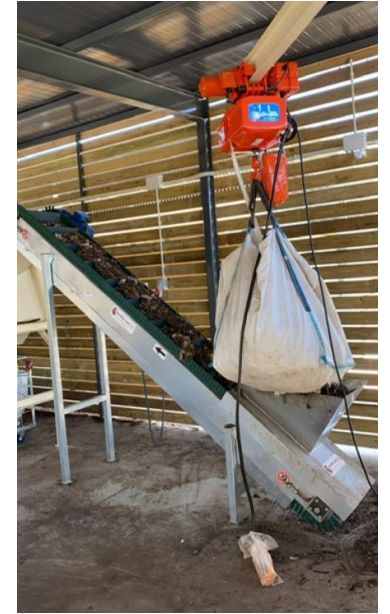


PRUNING
RECOVERY



FINAL COMPOST

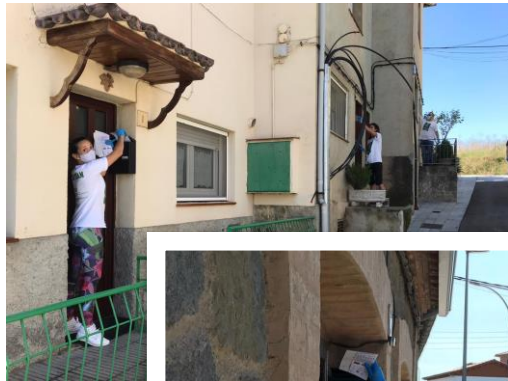
SPANISH PILOT – Post-processing area



SPANISH PILOT – Mailing of brochures, informative campaigns and material delivery



BROCHURES MAILING:
Letter from the municipality
and informative brochure
about the new MSWM
system.



**INFORMATIVE SESSION
WITH CITIZENS:**
Awareness of citizens to set
the importance of sorting
properly materials for their
recycling and valorization.



SPANISH PILOT – Mailing of brochures, informative campaigns and material delivery



DELIVERY OF MATERIAL FOR CITIZENS:

Compostable bags, organic matter bins, personal cards, informative brochures, etc.



AWARENESS ACTIVITIES FOR ALL AGES CITIZENS:

Composters exhibition, recycling activities, garden pocket kits preparation, etc.



Outreach activities and awareness material

Compostatge Comunitari

Vic, ciutat a la mesura humana

Compostables
Restes compostables
Vegetals - Fruïtes
Menjar

No Reciclables

Reciclables
Cartó - Paper
Plàstic - Metall
Vidre

Què és el compostatge?

Gairebé un 40% de les teves deixalles són restes orgàniques, és a dir, restes de menjar i jardineria. Mitjançant el compostatge aquests residus es transformen en compost, un adob natural que pots utilitzar a l'hort o al jardí.

Materials compostables

Les restes compostables són les restes orgàniques que generes a la cuina, al jardí o a l'hort.

Instruccions d'ús

El compostatge comunitari és un procés molt senzill que no suposa cap esforç per les persones que hi participen. Només cal seguir els següents passos:

1. Separa la matèria orgànica a casa. Has de fer servir cubells airejats i bosses compostables per a fer-ho més fàcil.
2. Obre la tapa del compostador utilitzant la targeta magnètica i diposita-hi la matèria orgànica, amb cura de no aportar materials no compostables.
3. Nosaltres ens encarregarem de tancar els residus orgànics amb estructures. Només cal que deixis el compostador sempre tancat!



Noticeboards

Stickers



Brochure

Per por

Et convidem a participar en les jornades de repartiment de material, no hi faltis! Si no hi podeu assistir, us informaran al 900 102 989

17.09.2020
Sessió informativa. Cal que us registreu a: www.lesmasiesderoda.cat

25.09.2020
Repartiment de material
De 16 a 20h
Sala Polivalent de l'Ajuntament

26.09.2020
Repartiment de material
De 10 a 14h
Sala Polivalent de l'Ajuntament

Què és?

El porta a porta (PaP) és un sistema de recollida de residus en què es passa casa per casa a recollir la fracció de deixalles que toqui, segons un calendari establert. Recollirem el multiproducte els dimarts i divendres, i el rebuig els dimecres. Ja no hi haurà contenidors al carrer, excepte els de vidre i els compostadors comunitaris.

Per què ho fem?

Perquè és la manera d'assegurar una bona tria. Tots els sistemes de recollida PaP poden arribar al 75% de recollida selectiva. Com més bé fem la tria, menys quilos portem a l'abocador i menys pujarà la taxa de deixalles.

Quan ho farem?

El divendres 2 i dissabte 3 d'octubre es retiraran els contenidors del carrer (excepte els de vidre). La setmana de 5 començarà el nou sistema, per tant ja podreu començar a treure la fracció que toqui cada dia davant la porta de casa la nit abans del dia de recollida que teniu indicat al calendari.

Què és el porta a porta i el compostatge comunitari a casa nostra

Arriba el porta a porta i el compostatge comunitari a casa nostra

INCIDÈNCIES ALS COMPOSTADORS:
900 102 989
619 97 00 64

Recollida gratuïta de voluminosos
El 2n dimarts de mes, trucada prèvia a l'Ajuntament al 93 854 00 27.

Deixalleria de Manlleu
C/Eduard Rifa, 74-76-Manlleu- T. 93 850 75 23

Podar i jardineria
Per a grans quantitats, 1r i 3r dilluns de cada mes ho podeu deixar al costat dels compostadors

Porta a porta
Multi-producte: Paper, cartó i envasos reciclables.
Rebuig: Tot allò que no es pot reciclar.
Bolquers, compreses i tèxtil sanitari. Es poden treure tots els dies que hi hagi recollida, en una bossa a part marcada amb un adhesiu.

Contenidors/Compostadors
Orgànica: Restes de menjar, tot allò que es pot podrir.
Vidre: Ampolles i pots sense taps.

Arriba el porta a porta i el compostatge comunitari a casa nostra

Per què compostatge comunitari?
El compostatge comunitari és el procés amb el que podem transformar in-situ els residus orgànics en compost, adob orgànic pel sòl. El transport de la matèria orgànica genera tones d'emissions de CO2 cada any que es poden evitar amb el compostatge comunitari. És per això que és un procés altament respectuós amb el medi ambient, que genera un compost ric en nutrients i es pot aplicar al sòl a prop del compostador.

És molt important que la comunitat que participi en el procés de compostatge ho faci adequadament per a que el compost sigui de gran qualitat i amb el mínim de material inapropiat.

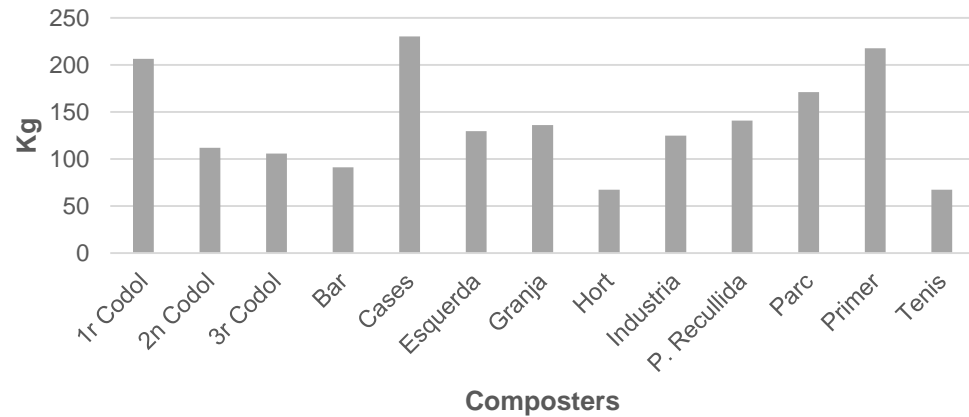
Aquest projecte de compostatge comunitari, anomenat DECOST, està finançat pel programa ENI CBC MED.

Pilot storytelling

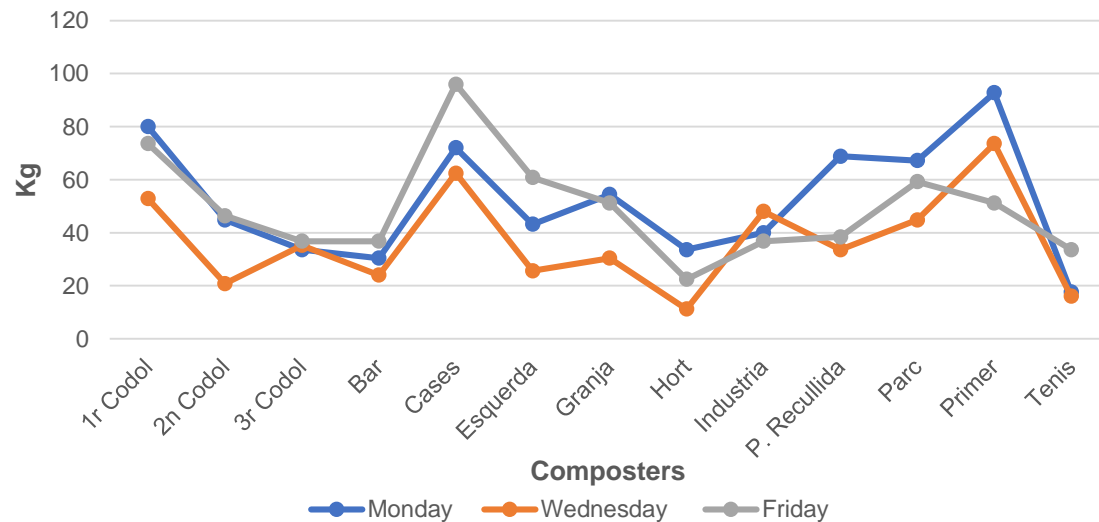


Operational information-LMR

Monthly contribution of organic matter 2021



Contribution by day of the week



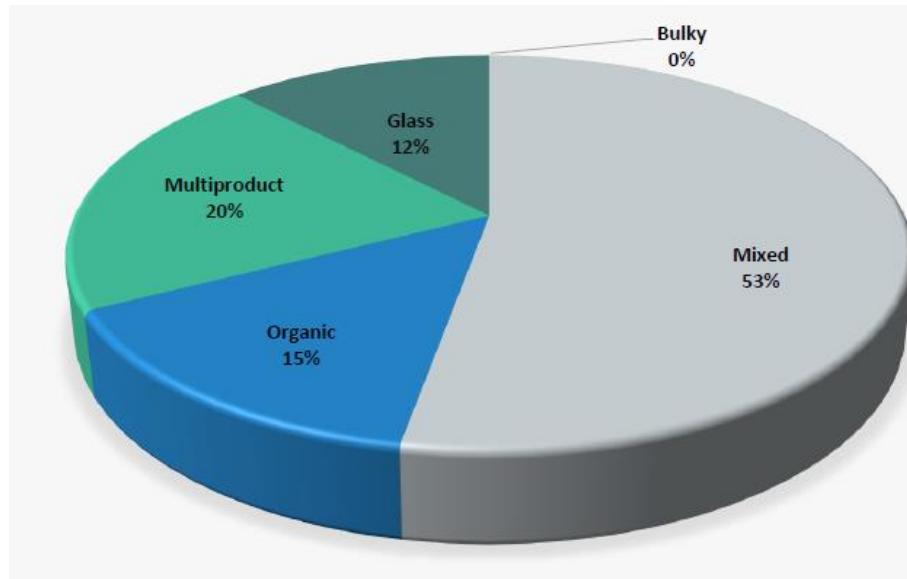
- Control of T and moisture
- Control of plagues (rats and flies)
- Control of undesirable materials



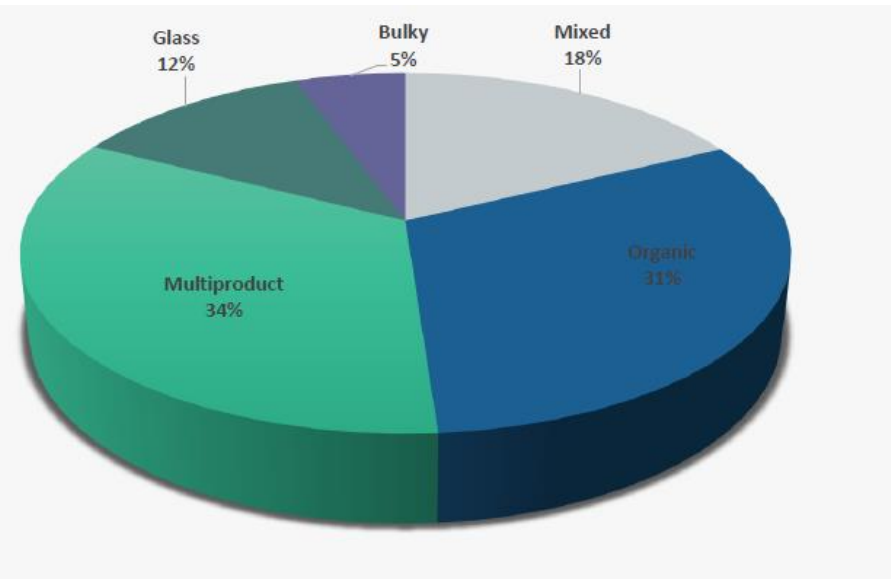
Incidents presented by the inadequate pruning arrangement

Operational information-LMR

BEFORE



AFTER



- ≈100 % of the organic matter collected and recycled in-situ
- Easy System of door to door collection implemented for the sorted materials
- Operational costs of the System economically competitive
- Incrementation of job offers
- Citizens are co-responsible of the waste management and have benefits from the compost produced

Challenges in Les Masies de Roda

Challenge nº1

Process optimization. Community composting is not fully adapted to be a technology that replaces centralized collection and composting. The DECOST project has taken a big step forward, but a greater technification of the process and professionalization of the sector is still required

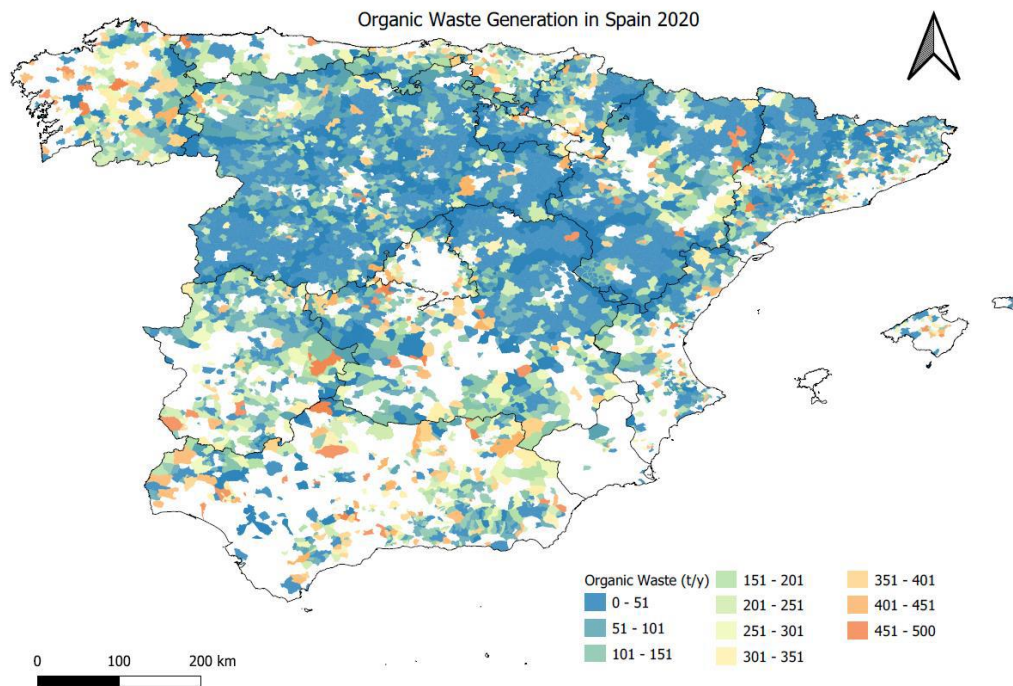
Challenge nº2

Financing and fees. The DECOST project has shown that the system is economically viable from an operational point of view. It remains to be defined what the financing model would be for the initial investment. System that can contribute to defining new systems of waste rates such as payment by generation, tax benefits, etc.

Opportunities

Replicability. As shown above, in Catalonia and in general in many Mediterranean regions there is the possibility of making the transition to decentralized waste management models. System that can facilitate the adoption of the "door to door".

Opportunities in Spain



According to the map categorized by organic waste generation, the Autonomous Communities that have a generation similar to that of LMR, that is, between 50 and 150 t/year are:

- Castella i Lleó - 94,256 t/year
- Castella la Manxa – 40,636 t/year
- **Catalunya – 32,575 t/year**
- València – 19,803 t/year
- Extremadura – 23,746 t/year

Potential → over 210,000 t/year of OFMSW in Spain to be managed through community composting

Decentralised Composting in Small Towns

The Community Composting experience



Speaker: Joan Colón

Entity: UVIC

Date: 23/25-10-2023

Location: Italy

