



CirBioWaste

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CirBioWaste

*Fostering innovative and sustainable bio-waste
management and circular bio-economy in the
Mediterranean area*

Online Training

Models for a Proficient Bio-Waste Management

January 16th

Antoni Sánchez

UAB
Universitat Autònoma
de Barcelona



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A short presentation about me:



Professor in Department of Chemical,
Biological and Environmental
Engineering.

GICOM researcher.



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A short presentation about GICOM:



A consolidated research group focused on composting, anaerobic digestion and solid-state fermentation. The aim is to convert organic waste into compost, biomethane and added-value bioproducts such as biopesticides, biosurfactants and biostimulants.



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The Interreg Euro-MED Programme

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The Interreg Euro-MED Programme at a glance

14 Countries / 69 regions
Budget: 294M€ (235M€ of Interreg Funds)



4 interconnected and complementary missions to reach climate-neutral and resilient society



Interreg Euro-MED's missions: a comprehensive approach

Strengthening an
innovative
sustainable economy



Protecting, restoring
and valorising the
natural environment
and heritage



Promoting
green living areas



Enhancing
sustainable tourism



Mission



Strengthening an innovative sustainable economy

- support **transnational cooperation of 4 helix stakeholders**
- favour increased **innovation activities, services and organisational patterns** towards **circularity**



- encourage the uptake of **sustainable production and consumption practices**
- improve co-implementation and **coordination** with **Regional Smart Specialization Strategies (RIS3)**



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The Context

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Are we losing the potential of the largest municipal waste fraction in the EU?



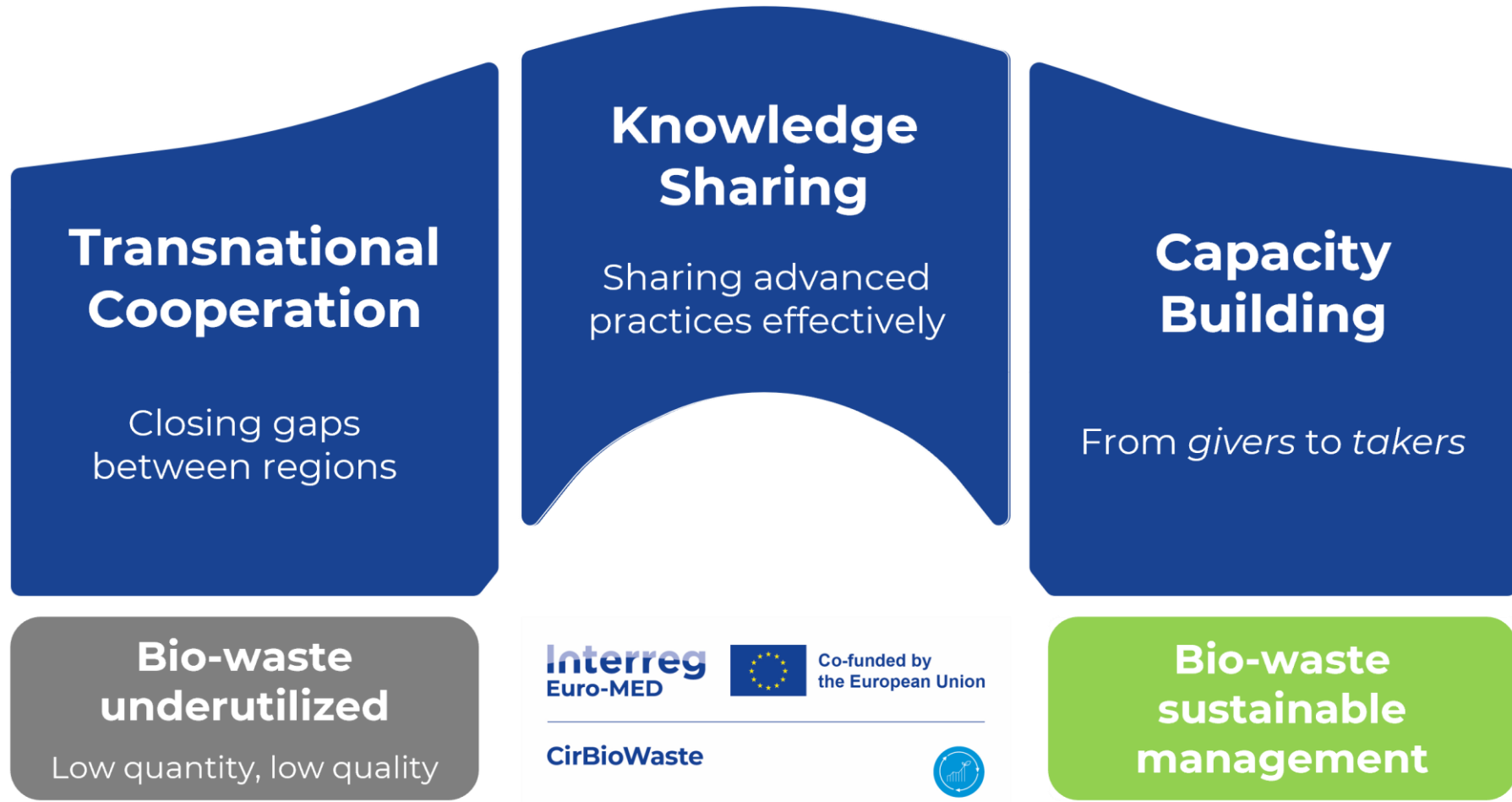
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Support the development of sustainable Bio-waste management



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The Project:

<https://cirbiowaste.interreg-euro-med.eu/>

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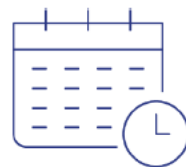
General information about CIRBIOWASTE

- *“Fostering innovative and sustainable bio-waste management and circular bio-economy in the Mediterranean area”*;
- **Mission of the Interreg Euro-MED:** Strengthening an innovative, sustainable economy
- **Main project goal:** To support the improvement of environmental resilience and foster the transition to an efficient and circular bioeconomy in the MED area;



Total budget

€ 1.381.630,50



Project duration

27 months



Interreg Funds

€ 1.105.304,40









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Project Partners

LOGO	PARTNER	NAME	COUNTRY
 Universitat Autònoma de Barcelona	UAB	Autonomous University of Barcelona Lead Partner	Spain
	FUNDACIÓ ENT	ENT FOUNDATION	Spain
	CIC	Italian Compost and Biogas Consortium	Italy
	ZERO	ZERO – Association for the Sustainability of the Earth System	Portugal
	Ecorec	Ecological Recycling Society	Greece
	REAP	Regional Energy Agency of Pazardjik	Bulgaria



+ **18 associated regions**, counties, municipalities, waste public companies, research centers, universities, etc., complementing the partners in each of the countries



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Associated Partners



ASSOCIATED ORGANISATIONS	RESPONSIBLE PROJECT PARTNER	COUNTRY
Lleida Agri-Food Science & Technology Park; Cerdanyola del Vallès City Council; University of Ljubljana (Biotechnical faculty);	UAB	Spain
Waste Agency of Catalonia; "Association of Catalan Municipalities for Door-to-Door Selective Collection"; ENTPallars Sobirà County Council;	FUNDACIO ENT	Spain
European Compost Network; ACR+ Association of Cities and Regions for sustainable Resource management; National Association of Environmental Protection and Defence Companies; Gestione Ambientale Integrata dell'Astigiano SpA; Association of Municipalities of Central Alentejo;	CIC	Italy
Zero Waste Europe; Polytechnic Institute of Beja;	ZERO	Portugal
Municipality of Skiathos; Green Fund; Ministry of environment and energy; Municipality of Marathon;	Ecorec	Greece
Municipality of Bratsigovo; Municipality of Strelcha.	REAP	



Main objective



The main goal of the CirBioWaste project is to support the **improvement of environmental resilience and foster the transition to an efficient and circular bioeconomy** in the MED area.

CirBioWaste aims at tackling the challenges, identified across partner experience and different EU projects, on the fulfilment of the obligation of member states to separately collect and recycle the municipal biowaste and meet the EU-related targets. The project will reach this goal by supporting the public administrations in the EU MED area in the implementation of existing **innovative bio-waste management solutions** adapted to their local context.



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CirBioWaste's methodology



1) Diagnosis and analysis

- ❖ *Local and regional authorities and waste operators*

2) Co-design and transfer strategies

- ❖ *Givers and takers*

3) Build capacity and provide tools

- ❖ *Engaging and training all stakeholders*

4) Capitalise and advocate

- ❖ *Policy makers, networks, academy*



Project work plan



- **WP 1:** Support the implementation of strategies and action plans to improve bio-waste management;
- **WP 2:** Sharing knowledge and raising awareness by providing supporting tools and capacity building;
- **WP 3:** Dissemination and capitalization of project outputs to achieve the widest impact in the EU MED area.



Project Results



WHAT WE ACHIEVE

Fostering innovative and sustainable bio-waste management and circular bio-economy in the Mediterranean area

- ✓ **Result 1:** Solutions taken up or up-scaled by organisations;
- ✓ **Result 2:** Joint strategies and action plans taken up by organisations;
- ✓ **Result 3:** Organisations with increased institutional capacity due to their participation in cooperation activities across borders.



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Case studies

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Case studies

SPAIN



Takers

- Municipality of Cerdanyola del Vallès (58.300 inhabitants)
 - Autonomous University of Barcelona (43.500 users)

Baseline scenario

- Bio-waste collection from the early 2000s with 100% of population coverage.
- Today, 39.2% of municipal solid waste is collected separately, with bio-waste (food and green waste) accounting for 37% of that stream (52 kg/capita/year of food waste) and with \approx 15% impurities.
- Collection through open road containers schemes (only door-to-door in Bellaterra neighbor) and treatment in an Ecoparc facility together with other municipalities, using large-scale anaerobic digestion followed by composting.

Challenges to address

- Improve bio-waste capture rate and quality with new individualized models including user identification systems (locked containers with identification).
- Improve collection schemes of commercial waste streams with door-to-door services and need of a specific scheme for singular generators (UAB).



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Case studies

ITALY



Takers

- Territory of Astigiano (114 municipalities; 205.000 inhabitants)

Baseline scenario

- 96% of population covered by bio-waste collection schemes
- Capture rate for bio-waste is high, with an average of 74 kg/capita/year of food waste, and different collection schemes are present (about 30% door to door and the rest is with mixed schemes or road containers)
- A large scale anaerobic digestion + composting facility is operational since many years and producing compost

Challenges to address

- Improve bio-waste capture rate and quality in municipalities with road container schemes through new sensitization campaigns targeting micro-communities in more interactive ways and through new elements to be included in the upcoming tender for the collection service



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Case studies

PORTUGAL



Takers

- Territory of Baixo Alentejo

Baseline scenario

- **Collection Methods:** Most bio-waste is still combined with general municipal waste (d2d).
- **Composting Efforts:** Home composting exists but lacks both broad adoption and a systematic way to track its impact.
- **Processing Infrastructure:** Management relies on centralised Mechanical-Biological Treatment (MBT-MRBT) plants rather than dedicated organic recycling.
- **Operational Outcomes:** low separate collection rates (15%) and almost no bio-waste collected
- **System Oversight:** Fragmented data and inconsistent monitoring make it difficult to plan

Challenges to address

- Expanding **separate bio-waste collection** across dispersed, low-density territories.
- Improving **citizen participation and source separation quality**, particularly in rural contexts.
- Optimizing logistics and treatment solutions to ensure **cost-efficiency, regulatory compliance**, and higher recovery rates.
- Enhancing monitoring systems to meet **EU targets** and future regulatory requirements.



Case studies

BULGARIA



Takers

- Municipality of Bratsigovo

Baseline scenario

- Only around 20–30% of municipal solid waste (MSW) is recycled;
- Low recycling rates of food waste;
- More than 50% of biowaste is still disposed of in landfills.

Challenges to address

- Urgent need to improve and further develop separate collection models;
- Need to increase the overall recycling rate (%) of municipal waste;
- Need to introduce more good practices for biowaste management and processing;
- Implementation of targeted communication and awareness-raising campaigns;
- Need to improve local policy strategies related to biowaste management, taking into account good practices from other countries.



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Case studies

GREECE



Takers

- Municipality of Skiathos

Baseline scenario

- Common issues relevant at the national level (2024 data): Very low separate food waste collection (estimated <2%) in Greece, more than 85% of biowaste still disposed of in landfills.
- Separate collection for green waste - **no separate collection for food waste**
- Lack of local infrastructure – Planned local composting facility operational in **2027**

Challenges to address

- Lack of infrastructure
- Lack of public awareness
- Lack of institutional capacity in municipalities
- Seasonal variability in touristic areas
- Parallel implementation of PAYT systems and separate biowaste collection
- Strengthening of local policy strategies and implementation



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Case studies

GREECE



Takers

- Municipality of Marathonas

Baseline scenario

- Common issues relevant at the national level (2024 data): Very low separate food waste collection (estimated <2%) in Greece, more than 85% of biowaste still disposed of in landfills.
- Separate street bins food waste collection, is **only implemented in a small pilot area** in Marathonas Municipality

Challenges to address

- Lack of infrastructure
- Lack of public awareness
- Lack of institutional capacity in municipalities
- Seasonal variability in touristic areas
- Parallel implementation of PAYT systems and separate biowaste collection
- Strengthening of local policy strategies and implementation



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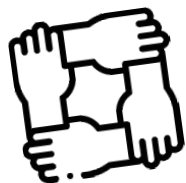


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Stay tuned to discover CirBioWaste's knowledge hub.



Help us reach further and spread our events.

We will release the first capacity-building events soon!



<https://cirbiowaste.interreg-euro-med.eu/>



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Thank you!

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<https://cirbiowaste.interreg-euro-med.eu>

**Follow our project
on:**

