

#EUCircularTalks

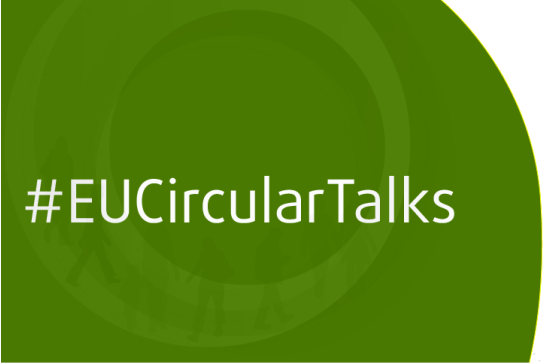
The role of cities to boost the circularity
of food systems



HOOP & Scalibur Projects on Urban Biowaste Valorisation



EU Circular Talks
02 July 2021



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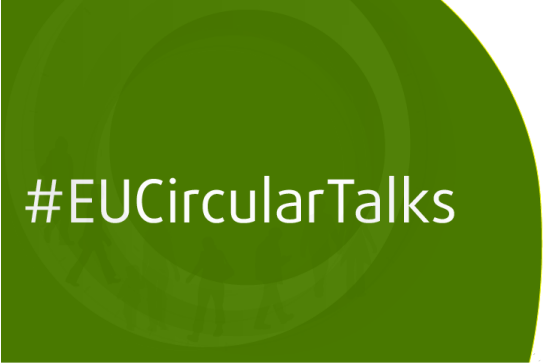
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The SCALIBUR Project

A two pronged attack:





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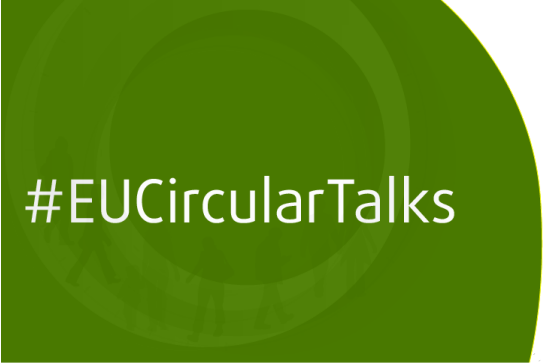


The SCALIBUR Project



- 'Scalable Technologies for Bio-Urban Waste Recovery'
- €10 million grant from the European Union's Horizon 2020 Programme
- 21 partners from 8 countries

SMEs	Large companies	Non-profits



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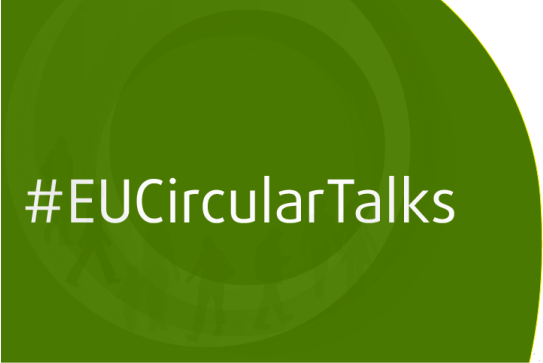
Improving biowaste collection



Best practices for **sorting and pre-treatment** will be identified, including a monitoring system to detect contaminants, developed by IRIS.



The biowaste fractions will be **characterised** to find the optimal compositions for conversion into high value products.



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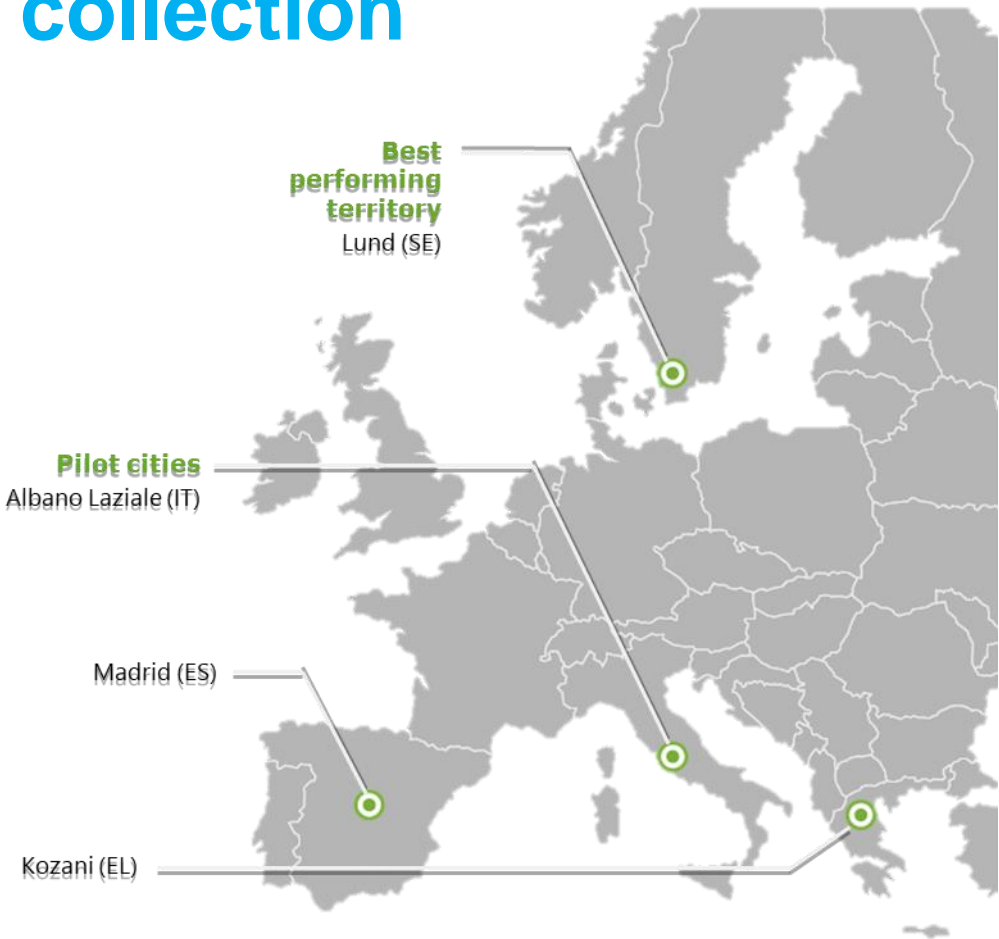


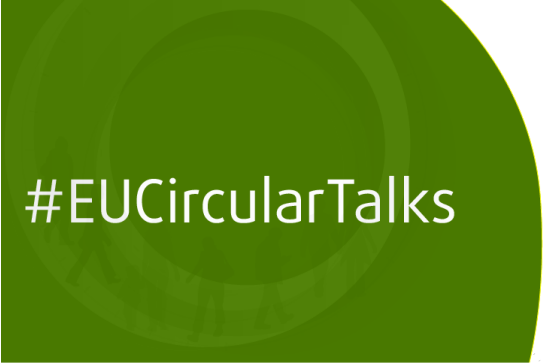
Improving biowaste collection



Improved methods of selective collection, transport, sorting and pre-treatment will be implemented in three pilot cities.

CSCP will **engage stakeholders along the value chain** to support the integration of innovative biowaste management practices.





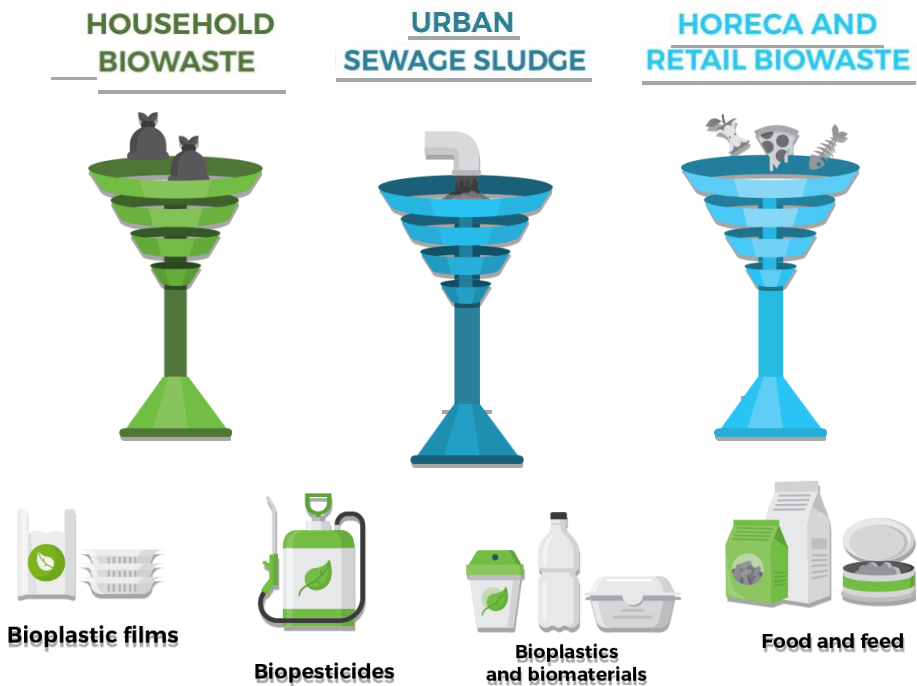
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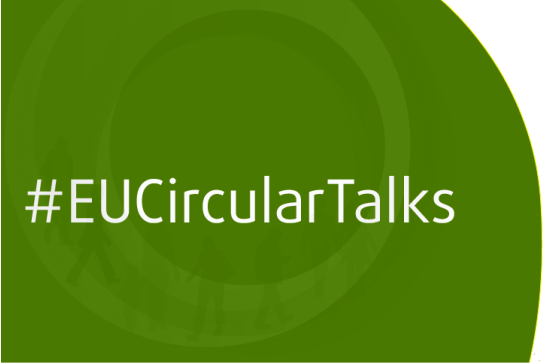
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Creating high value products

Partners will create new business opportunities by **demonstrating three innovative value chains** to transform biowaste into high-value industrial products.





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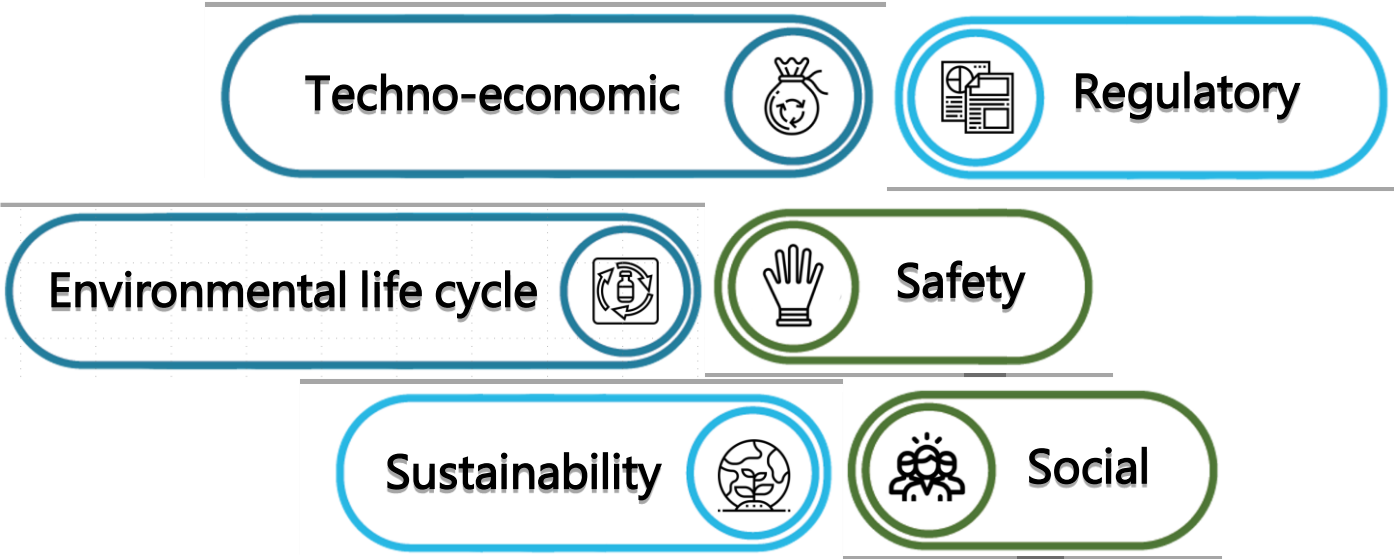
Impact

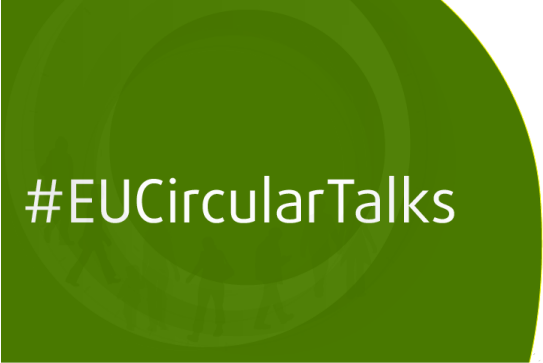
<p>Increase biowaste collection by 15-40% in pilot cities</p> <ul style="list-style-type: none">• extra 22 million tonnes collected and valorised per year• decrease in GHG emissions of 21,79 Mt CO2 eq/year	<p>Bring three innovative processes to obtain value-added products from biowaste to TRL 7</p>
<p>Improve citizen participation in separate collection and acceptance of biowaste-derived products</p>	<p>Pre-commercialisation of a range of bio-based products from biowaste. Contributing to a more sustainable and resilient protein supply chain</p>
	<p>New organisational and business models for cities across the EU to replicate</p>

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Impact

A number of assessments will evaluate the impact of the SCALIBUR processes.

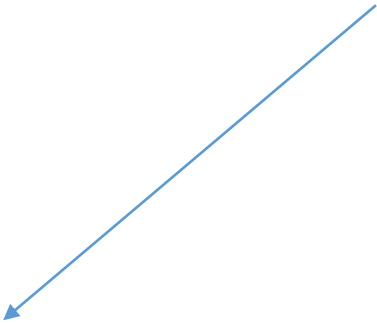
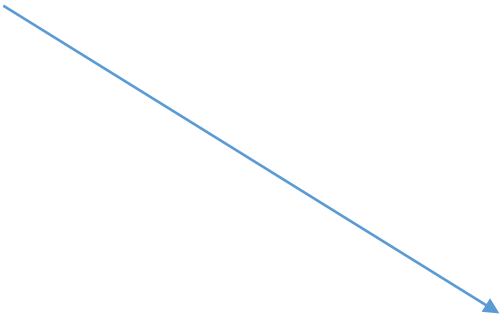




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HOOP is the natural continuation of these 3 projects



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Current Challenge



Europeans throw away
200 kg of biowaste per
year



75% of biowaste
is landfilled or
incinerated



Landfill biowaste
causes emissions and
pollution



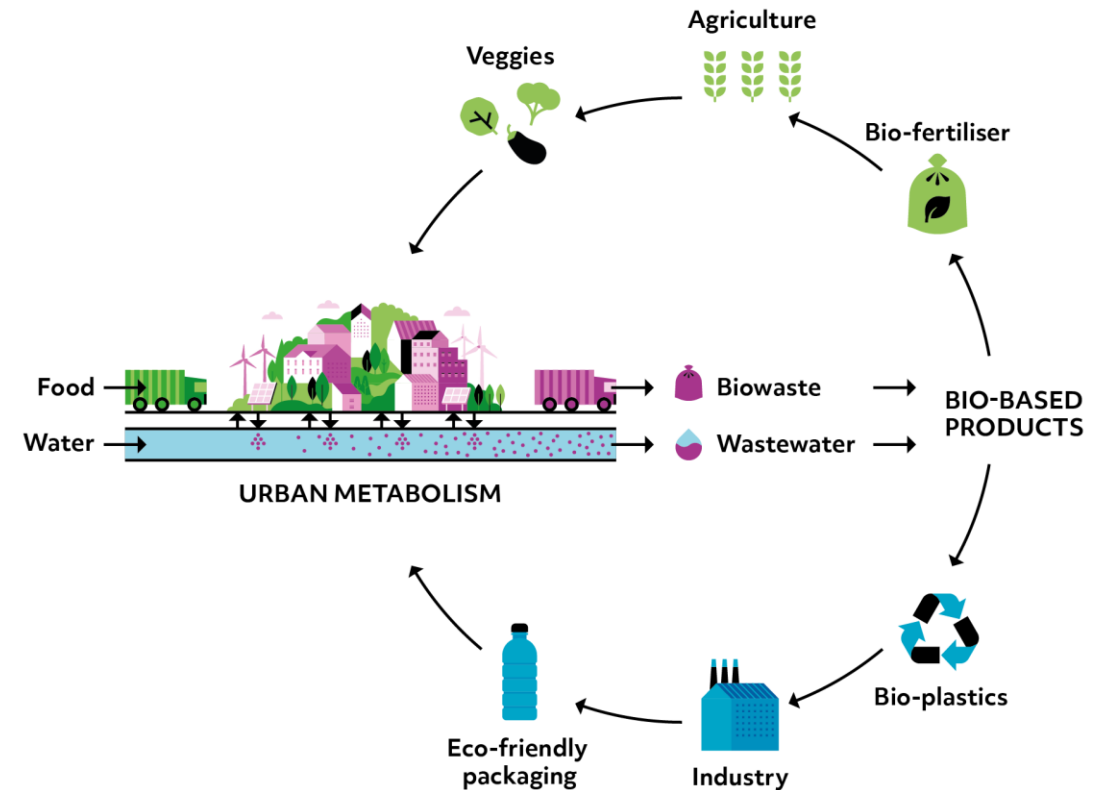
€143 billion annual
costs associated with
biowaste in EU

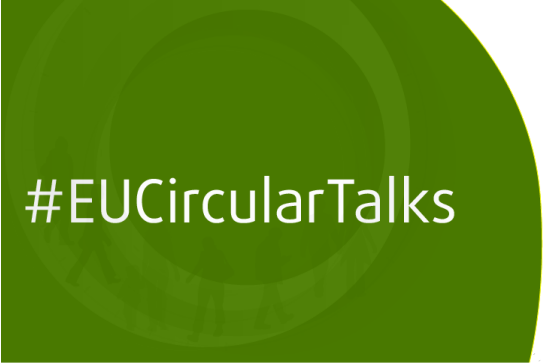
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Vision: Urban Circular Bioeconomy

The EU Bioeconomy Strategy sees cities becoming **major circular bioeconomy hubs**, where biowaste is a feedstock for safe and sustainable bio-based products.

But up to now very few cities & regions have developed **circular bio-based economy strategies** or projects for the production of **innovative bio-based products**.





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The HOOP Solution

The HOOP project supports 8 lighthouse cities and regions in developing large-scale urban circular bioeconomy initiatives. As well as unlocking significant investments in the 8 territories HOOP will foster replication across Europe.

Financial Information	€9M budget	€5.8M for PDA Management	€51.7M Investment Induced	€8M EC Contribution
Implementation	48 months	9 Work Packages	10 Countries	23 Partners



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Partners



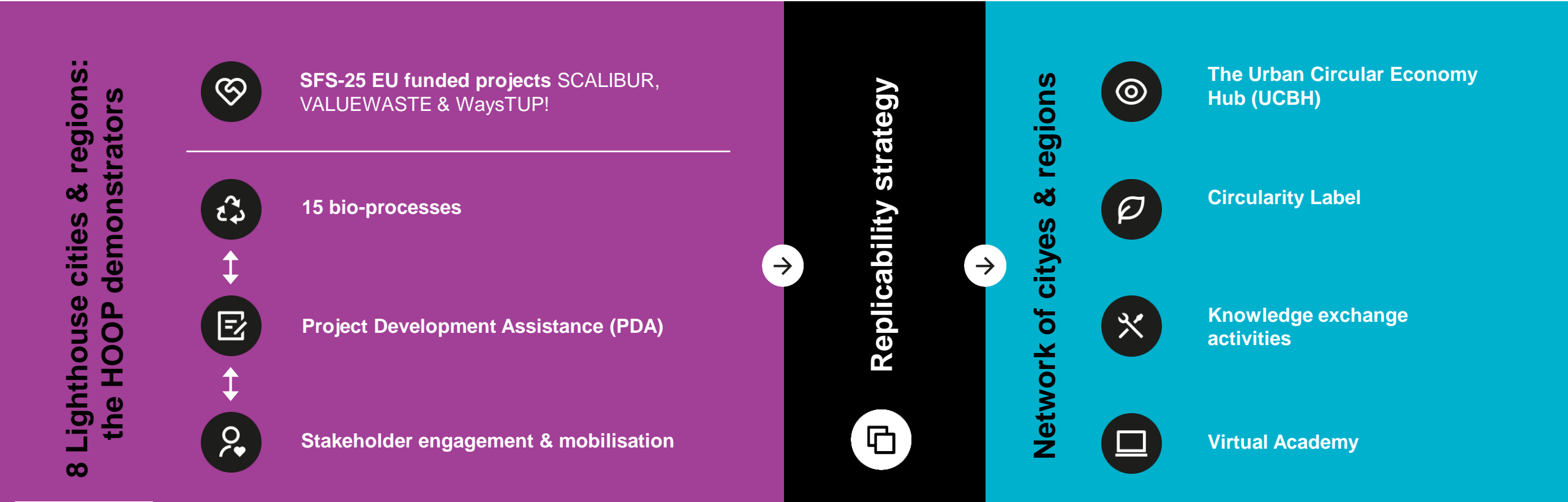


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Project Concept



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8 Lighthouse Cities and Regions



Albano Laziale



Almere



Bergen



Kuopio



Greater Porto



Münster

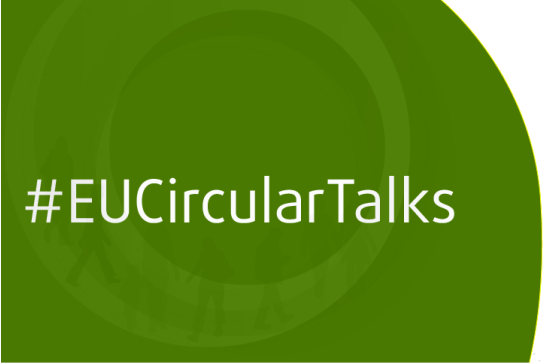


Murcia



Western Macedonia





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Project Development Assistance




The HOOP project will provide Project Development Assistance (PDA) to the 8 lighthouse cities and regions – providing them with the **technical, economic, financial and legal expertise needed to develop concrete investments** to valorise OFMSW (Organic Fraction of Municipal Solid Waste) or UWWs (Urban Wastewater Sludge) with the aim of obtaining safe and sustainable bio-based products.


PDA elements




Local context & urban metabolism



Circular business models



Technological and environmental assessments



Innovative financial engineering & procurement



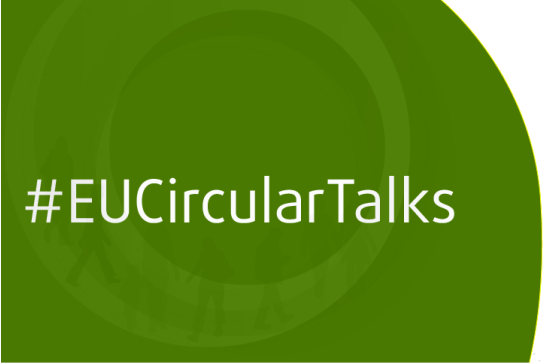
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Portfolio of Bio-Processes

HOOP offers a portfolio of 10 processes to valorise **Organic Fraction of Municipal Solid Waste (OFMSW)**, and 5 processes to valorise **Urban Wastewater Sludge (UWWS)**. These processes build on the results of Horizon 2020 projects SCALIBUR, ValueWaste and WaysTUP!.

1. Biochemical conversion of the OFMSW
2. Insects reared on HORECA waste
3. Bioprocesses involving methanotropic bacteria using biomethane arising from the anaerobic digestion of the OFMSW
4. Black Soldier larvae fed with OFMSW or digestate from anaerobic digestion
5. Nutrients recovered from the residual dewatering liquid from anaerobic digestion
6. Fermentation of spent coffee grounds
7. Biochemical production of functional ingredients from animal by-products
8. Bioprocess, fermentation 2,3 Butanediol from OFMSW + garden + UWWS
9. Fermentation of used cooking oils
10. Production of biofertilisers and biostimulants

1. Bioconversion of UWWS: steering CO₂ fermentation with bioelectrochemical systems
2. Bioconversion of UWWS: PHBV production
3. Slow pyrolysis of UWWS
4. Production and purification of volatile fatty acids
5. Cellulosic rejections WWTP to Ethyl lactate biosolvents



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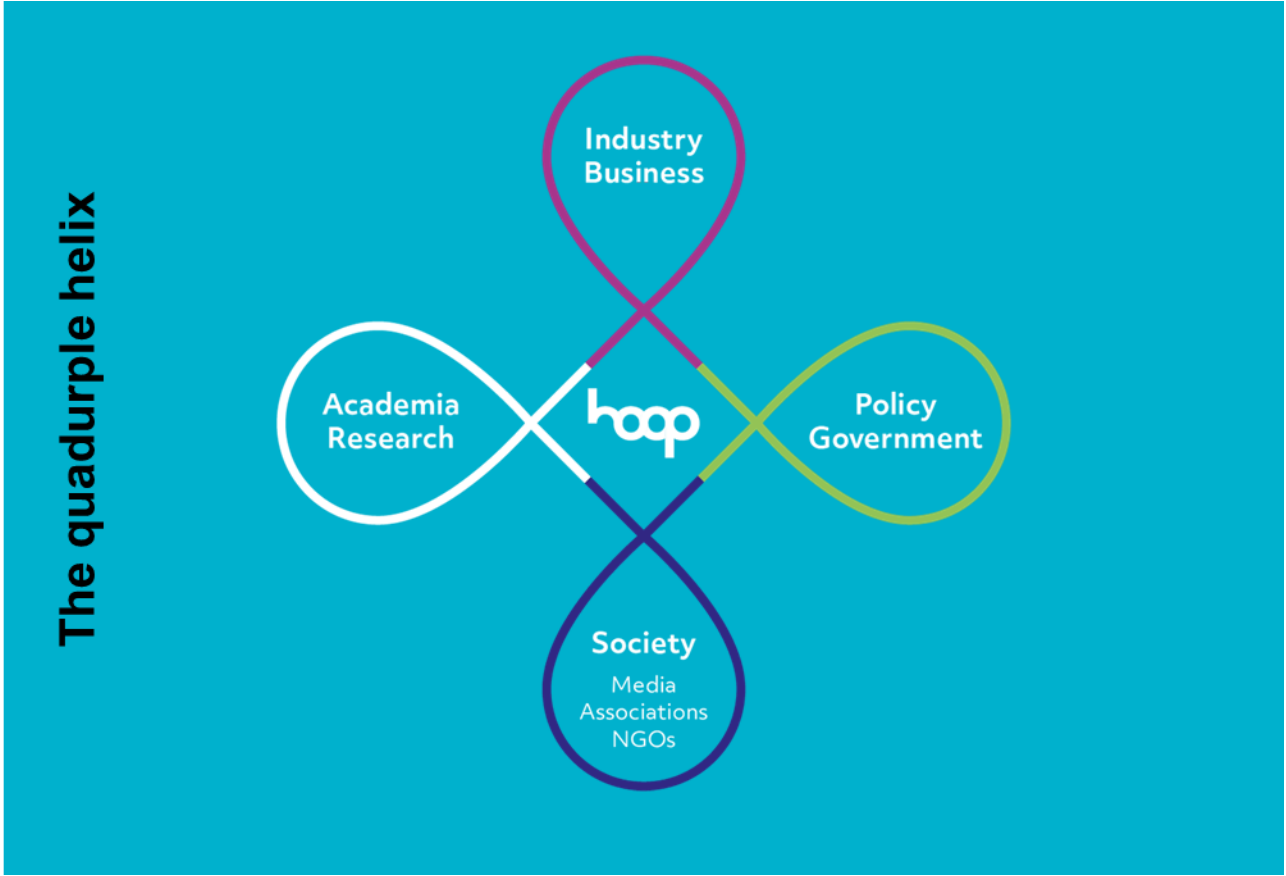


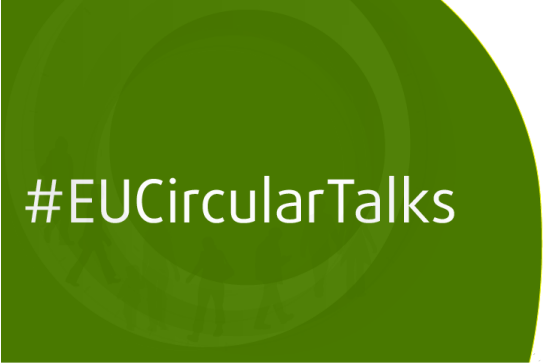
Stakeholder engagement & mobilisation



In order to ensure that the needs and interests of all actors are taken into account, **local stakeholder boards** steer and monitor all engagement activities in the HOOP lighthouse cities and regions. In the 8 **Biowaste Clubs**, the participants develop and implement shared visions for their circular cities/regions.

Ownership of the project activities is, thus, given to the local and regional actors and it will be in their hands to co-create circular solutions and to establish new forms of collaboration and exchange.





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The HOOP network

The [HOOP Network of Cities and Regions](#) will facilitate exchange of knowledge and mutual learning among cities and regions willing to recover valuable resources from urban biowaste and wastewater. Visit our [network page](#) for more information and to register your city/region!



Replicability strategy



Network of follower cities & regions



Urban Circular Bioeconomy Hub (UCBH)



Circularity label

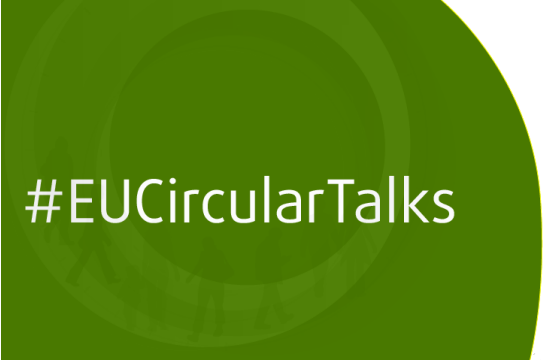


Knowledge exchange activities



Virtual Academy





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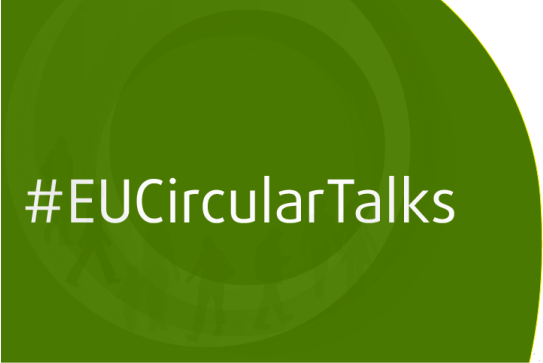
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Expected Impacts

1. **Deliver sustainable circular bio-based economy investments** and support the launch of the innovative projects to valorise urban biowaste and wastewater through the production of bio-based products.
2. **Creation of a European network of cities & regions** to facilitate exchange of good practices and lessons learned.
3. Contribute to **increased recycling of urban biowaste and wastewater**, avoiding landfilling and reducing the associated greenhouse gas (GHG) emissions.
4. Contribute to the **creation of green jobs** in local economies.
5. **Raise awareness** about the potential and benefits of urban bioeconomy among EU citizens and the media.





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Thank you for your attention!

Nikos Ntavos
Manager of Cluster of
Bioeconomy and Environment of
Western Macedonia