

Newsletter III

MAY 2026



PROJECT REFERENCE NUMBER 101139912



:: About the Work Package 3 deliverables of the project

The CIRCOLIVE partners actively collaborated within Work Package 3 (WP3) to promote the recovery of olive waste and by-products across the entire olive oil sector.

[+ INFO](#)

:: D3.1 – Assessment Report on state-of-the-art circular business models

The first stage involved data collection and analysis, carried out through field and desk research, including interviews with industry professionals.

[+ INFO](#)



:: D3.2 Workshops with stakeholders

In the second phase, D3.2, national workshops were organised in the five partner countries, involving stakeholders from different sectors of the olive oil industry, including producers, mills, associations, researchers, public entities, technical experts and business support organisations in the analysis of the CBMCs resulting from the previous phase.

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:: D3.3 Holistic circular business models for olive waste and by-product valorisation

Finally, the third phase, D3.3 Holistic circular business models for olive waste and by-product valorisation, resulted in the validation of the CBMCs developed in phase D3.2 and the preparation of a deliverable.

[+ INFO](#)



:: European impact of WP3 & The CIRCOLIVE Alliance

This phase of the CircOlive project, WP3, demonstrated the potential of the circular economy to enhance the sustainability, resilience and competitiveness of the European olive sector.

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:: Next steps for the project

The results of WP3 will contribute directly to the project's subsequent work packages, namely:

- WP4: Development of VET curricula and e-learning modules on the circular economy, circular business models and digital skills.
- WP5: Development of continuous professional development programmes for micro and small businesses in the olive sector.

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:: About the Work Package 3 deliverables of the project



The CIRCOLIVE partners actively collaborated within Work Package 3 (WP3) to promote the recovery of olive waste and by-products across the entire olive oil sector.

This phase aims to act as enabling actor for the flow and co-creation of knowledge between higher education institutions, vocational training providers, research bodies, public authorities, and enterprises. The utter goal is to form a common understanding on how circularity can be applied in the olive oil sector and to co-develop practical solutions form SMEs.

WP3 was carried out in three complementary stages, focused on promoting the circular economy and digital innovation in the olive sector: **D3.1 – Assessment Report on state-of-the-art circular business models**; **D3.2 – Workshops with stakeholders**; and **D3.3 – Holistic circular business models for the valorisation of olive waste and by-products**.

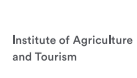
Objectives of WP3:

- Identify and analyse existing circular business models in the olive oil sector;
- Develop new circular business models tailored to the specific circumstances of each partner country;
- Develop innovative solutions for the valorisation of olive waste and by-products;
- Validate holistic circular business models through international workshops;
- Promote cooperation between stakeholders, research, vocational training and businesses;
- Support the transition to a more sustainable and circular olive oil sector;
- Strengthen knowledge transfer, innovation and stakeholder engagement;
- Contribute to future training and capacity-building activities under WP4 and WP5.

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::D3.1 – Assessment Report on state-of-the-art circular business models

The first stage involved data collection and analysis, carried out through field and desk research, including interviews with industry professionals.

Using Data Extraction Templates (DETs), it was possible to develop Circular Business Model Canvases (CBMCs) and Transferability Assessment Matrices (TAMs) for both successful and unsuccessful case studies.

This work resulted in 10 new CBMCs, two for each country, and adapted to their specific circumstances and needs, with the aim of identifying and creating sustainable strategies for the valorisation of waste and by-products from the olive oil sector – a fundamental step for the second part of WP3: D3.1.



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COMPARATIVE ANALYSIS OF HOLISTIC CIRCULAR BUSINESS MODELS (CBMCS)



CBMC CODE & NAME

ES-1
OlivChar

PRIMARY BY-PRODUCTS UTILISED
Olive pruning residues, pomace

CORE VALUE PROPOSITION
Biochar production for soil & carbon storage

KEY OUTPUTS / VALUE CREATED
Biochar, soil improver, CO₂ sequestration

TARGET USERS / COSTUMERS
Farmers, agribusiness, carbon markets

KEY PARTNERS
SMEs, research centres, farmers associations

REVENUE STREAMS
Sale of biochar, carbon credits, consulting

CIRCULAR IMPACT
Carbon storage, soil fertility, climate mitigation

MATURITY / READINESS
(Stakeholder feedback)
High - strong interest, already tested

ES-2
Olea Nexus

PRIMARY BY-PRODUCTS UTILISED
Olive pomace, leaves, pits, wastewater

CORE VALUE PROPOSITION
Integrated cascade valorisation of olive by-products

KEY OUTPUTS / VALUE CREATED
Biofertilisers, bioplastics, biocompounds, biogas

TARGET USERS / COSTUMERS
Agriculture, industry, bio-based product markets

KEY PARTNERS
SMEs, clusters, tech providers, public authorities

REVENUE STREAMS
Sale of biofertilisers, bioplastics, energy, consulting

CIRCULAR IMPACT
Circular economy, zero waste approach

MATURITY / READINESS
(Stakeholder feedback)
Medium - requires coordination & market uptake



CBMC CODE & NAME

IT-1
Olivagreen Hubs

PRIMARY BY-PRODUCTS UTILISED
Olive pomace, pruning residues, leaves, wastewater

CORE VALUE PROPOSITION
Valorisation of olive by-products into energy, soil inputs and circular products Recovery of high-value bioactives

KEY OUTPUTS / VALUE CREATED
Compost, pellets, digestate, biochar, polyphenols

TARGET USERS / COSTUMERS
Farms, municipalities, SMEs, households, cosmetics & food industry, pharma

KEY PARTNERS
Universities, cooperatives, municipalities, technology providers

REVENUE STREAMS
Sale of extracts, B2B contracts, licensing

CIRCULAR IMPACT
Waste reduction, renewable energy, soil improvement, low-carbon products

MATURITY / READINESS
(Stakeholder feedback)
Testing phase, high interest

IT-2
OliveEnergy cluster

PRIMARY BY-PRODUCTS UTILISED
Olive pomace (pomace oil cake, solid residue), pits

CORE VALUE PROPOSITION
Circular biomass solutions and fossil-fuel substitution

KEY OUTPUTS / VALUE CREATED
Heat energy, solid biofuel

TARGET USERS / COSTUMERS
Olive mills, farms, municipalities, households

KEY PARTNERS
Cooperatives, energy providers, green-waste services, technology suppliers

REVENUE STREAMS
Pellets, compost, biochar, service contracts

CIRCULAR IMPACT
Reduced GHG emissions, biomass valorisation, renewable heat

MATURITY / READINESS
(Stakeholder feedback)
Feasible with investment, high interest

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COMPARATIVE ANALYSIS OF HOLISTIC CIRCULAR BUSINESS MODELS (CBMCS)



CBMC CODE & NAME

GR-1
AgrooLoop

PRIMARY BY-PRODUCTS UTILISED
Olive pomace, pits, pruning biomass

CORE VALUE PROPOSITION
Renewable energy & circular resource utilisation

KEY OUTPUTS / VALUE CREATED
Electricity, heat, biochar, pellets

TARGET USERS / COSTUMERS
Energy users, agriculture, local industry

KEY PARTNERS
Cooperatives, energy companies, tech providers

REVENUE STREAMS
Energy sales, biochar, carbon credits

CIRCULAR IMPACT
GHG reduction, renewable energy mix

MATURITY / READINESS
(Stakeholder feedback)
Medium - feasible with financial support

GR-2
BioPhenol Loop

PRIMARY BY-PRODUCTS UTILISED
Olive leaves, pomace, seeds

CORE VALUE PROPOSITION
Natural extracts for health & well-being

KEY OUTPUTS / VALUE CREATED
Oleanolic acid, hydroxytyrosol, COSMETIC/FOOD ingredients

TARGET USERS / COSTUMERS
Pharma, cosmetics, dietary supplements industry

KEY PARTNERS
Research centres, extractors, pharma companies

REVENUE STREAMS
Sale of extracts, value-added ingredients

CIRCULAR IMPACT
Health benefits, natural ingredients, waste reduction

MATURITY / READINESS
(Stakeholder feedback)
Medium - high potential in niche markets



CBMC CODE & NAME

PT-1
OliveLoop: Soil and Heat

PRIMARY BY-PRODUCTS UTILISED
Olive pomace, leaves, pits

CORE VALUE PROPOSITION
Soil Regeneration & renewable heat production

KEY OUTPUTS / VALUE CREATED
Compost / soil amendments, heat

TARGET USERS / COSTUMERS
Farmers, cooperatives, land managers, local communities

KEY PARTNERS
Cooperatives, composting operators, energy

REVENUE STREAMS
Sale of compost, heat sales, service provision

CIRCULAR IMPACT
Improved soil health, carbon sequestration

MATURITY / READINESS
(Stakeholder feedback)
High - strong interest and applicability

PT-2
OliveWater MicroHub

PRIMARY BY-PRODUCTS UTILISED
Olive mill wastewater (OMWW)

CORE VALUE PROPOSITION
Decentralised water treatment & recovery of bioactives

KEY OUTPUTS / VALUE CREATED
Treated water, polyphenols, antioxidants

TARGET USERS / COSTUMERS
Olive mills (MSMEs), agri-food companies

KEY PARTNERS
Technology providers, research centres, local authorities

REVENUE STREAMS
sale of treated water & extracts, service contracts

CIRCULAR IMPACT
Water reuse, pollution reduction, resource recovery

MATURITY / READINESS
(Stakeholder feedback)
Medium - needs investment & regulatory clarity

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CBMC CODE & NAME

HR-1
Pomace to soil



Wet pomace (two-phase), shredded prunings/leaves



Easy and legal pomace handling; cheaper fertilization; better soil quality



Waste to compost, soil improvement, nutrients cycled locally



Olive oil mills and growers, co-op hub, external buyers when surplus available



Olive mills and growers, cooperatives, VET institutions, municipality



Avoided disposal and reduced fertiliser costs, compost sale



Waste-to-resource, regeneration, localism



Medium - technically feasible, scaling needed

HR-2
Pomace to fuel



Wet pomace (two-phase), pruning residues, pits



Compliant pomace clearance in peak season



Waste to energy product (pellets/briquettes), fossil fuel displaced



Industrial/commercial heat users, B2B pellet/briquette buyers



Olive mills and growers, pellet/briquette partner, hauliers, municipality



Service fees for drying/blending, sale of pellets/briquettes



Waste-to-resource, industrial symbiosis, localism



Early - promising innovation, market to develop

COMMON ELEMENTS ACROSS THE 5 COUNTRIES



1. VALUABLE BY-PRODUCTS

Pomace, leaves, pits, pruning residues and wastewater are key resources.



2. CIRCULAR APPROACH

Turning waste into value through cascading and resource efficiency.



3. ENVIRONMENTAL BENEFITS

Reduced emissions, improved soil & water quality, biodiversity protection.



4. ECONOMIC OPPORTUNITIES

New products, energy solutions and markets for rural development.



5. MULTI-ACTOR COLLABORATION

Partnerships between MSMEs, research, authorities and clusters are essential.



All countries are moving towards a circular olive oil sector, adapting innovative business models to their local needs and opportunities.



Cooperation, innovation and capacity building are the drivers for a sustainable and competitive olive value chain in Europe.



CIRCOLIVE: Developing skills for introducing circular business models and digital technologies in the olive oil sector.

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::D3.2 Workshops with stakeholders

In the second phase, D3.2, national workshops were organised in the five partner countries, involving stakeholders from different sectors of the olive oil industry, including producers, mills, associations, researchers, public entities, technical experts and business support organisations in the analysis of the CBMCs resulting from the previous phase.

The transnational validation process demonstrated strong interest from stakeholders across the olive sector, including MSMEs, cooperatives, researchers, public authorities and sectoral organisations. All countries held two workshops, with the exception of Croatia, which, given the smaller volume of olive and olive oil production, organised one.

The workshops confirmed the relevance and transferability potential of the models, while highlighting the importance of technical cooperation, regulatory support, training, and collaborative regional ecosystems to facilitate the transition towards a more circular and sustainable olive oil sector.

Overall, the workshops held in the five partner countries provided an opportunity to identify practical recommendations, innovative solutions

and transferable approaches to strengthen the sector's sustainability, competitiveness and resilience.

During the workshops, participants also had the opportunity to join the CIRCOLIVE Alliance, reinforcing their collective commitment to promoting circular and sustainable solutions in the olive sector.











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CIRCOLIVE WORKSHOPS ACROSS EUROPE

9 WORKSHOPS IN 5 COUNTRIES, ONE CIRCULAR VISION

					
 NUMBER OF WORKSHOPS	2	2	2	2	1
 TOTAL PARTICIPANTS	26	51	39	48	24
 KEY THEMES DISCUSSED	<ul style="list-style-type: none"> • Circularity in mills • Digital tools & innovation • Economic opportunities 	<ul style="list-style-type: none"> • Circular economy in olive sector • By-product valorisation • Innovation & digital tools • Training & skills 	<ul style="list-style-type: none"> • Bioactive compounds & natural antioxidants • By-product valorisation • Market & regulatory barriers 	<ul style="list-style-type: none"> • Business models for olive by-products • Circular practices in mills • Regulatory barriers & market opportunities 	<ul style="list-style-type: none"> • Olive by-product valorisation • Technology & innovation • Sustainability challenges
 MAIN OUTCOMES	 Opportunities for competitiveness and circular businesses	 Ideas for innovation, collaboration and skills development	 Identification of high-value bioactives and market potential	 Roadmap for circular business models and cooperation	 Solutions for valorisation and technological improvement

9 WORKSHOPS IN TOTAL



5 COUNTRIES
ONE CIRCULAR VISION


188
TOTAL PARTICIPANTS


9
NUMBER OF WORKSHOPS


5
COUNTRIES


Stakeholders from research, SMEs, cooperatives, public authorities and associations


Working together for a more sustainable and circular olive oil sector



Together, we are building a circular olive oil value chain that creates value for people, businesses and the planet.

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KEY BENEFITS IDENTIFIED IN CIRCOLIVE WORKSHOPS

INSIGHTS FROM 9 NATIONAL WORKSHOPS ACROSS 5 COUNTRIES:
SPAIN (2) | ITALY(2) | GREECE (2) | PORTUGAL (2) | CROATIA (1)

1 VALORISATION BY-PRODUCT



Transformation of olive by-products into valuable economic resources:

- biomass and bioenergy;
- compost and soil improvers;
- fertilisers and bio-stimulants;
- bioactive compounds (polyphenols);
- ingredients with added value.

A consistent opportunity identified in all countries

2 ENVIRONMENTAL IMPACT REDUCTION



Reduction of waste and promotion of more sustainable practices:

- less waste sent to landfill;
- lower environmental pressure;
- reuse of resources;
- contribution to climate change mitigation;
- advancement of the circular economy.

A shared environmental priority across all workshops.

3 NEW ECONOMIC OPPORTUNITIES



Creation of new income streams for the sector:

- new products and by-products;
- diversification of services;
- improved competitiveness;
- cost savings;
- business innovation.

Strong potential to generate value and open new markets.

4 COOPERATION AND LOCAL NETWORKS



Strengthening collaboration among key actors:

- producers and mills;
- cooperatives;
- universities and research centres;
- associations and clusters;
- public and private entities.

Cooperation is essential to make circular models viable.

5 SKILLS DEVELOPMENT AND TRAINING



Identification of training needs in the areas of:

- technical training;
- digital skills;
- sustainability and ESG;
- circular business model development;
- entrepreneurship.

A key foundation for innovation and long-term adoption.

6 EUROPEAN TRANSFERABILITY



Workshops confirmed the strong potential to replicate circular solutions across the 5 partner countries:

- Spain
- Italy
- Greece
- Portugal
- Croatia

Adaptation to local realities while sharing common challenges and solutions



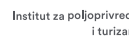
OVERALL CONCLUSION

CIRCOLIVE workshops across 5 countries demonstrated strong alignment on the value of circular business models in the olive oil sector. The main challenges - regulatory barriers, investment needs and logistical constraints - require joint action, innovation, training and supportive policies to unlock the full potential of circular solution in Europe.

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:: D3.3 Holistic circular business models for olive waste and by-product valorisation

Finally, the third phase, D3.3 Holistic circular business models for olive waste and by-product valorisation, resulted in the validation of the CBMCs developed in phase D3.2 and the preparation of a deliverable.

This phase focused on the development of holistic circular business models (CBMs), tailored to the olive oil sector, with a particular emphasis on the valorisation of olive waste and by-products generated by MSMEs. Based on the results of D3.1 and the feedback gathered during the transnational workshops (D3.2), the final product aimed to create adaptable and transferable circular solutions, aligned with the realities of the five partner countries.

The developed CBMs explore sustainable approaches for the recovery and reuse of olive pomace, pits, leaves and OMWW. The models address opportunities related to composting, biomass production, wastewater treatment, extraction of bioactive compounds, soil regeneration and circular resource management, while also identifying economic, technical, legal and organisational barriers affecting its implementation.

The transnational validation process demonstrated strong interest from

stakeholders across the olive sector, including MSMEs, cooperatives, researchers, public authorities and sectoral organisations. The workshops confirmed the relevance and transferability potential of the models, while highlighting the importance of technical cooperation, regulatory support, training and collaborative regional ecosystems to facilitate the transition towards a more circular and sustainable olive oil sector.



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VAKAKIS & ASSOCIATES S.A.



REGIONAL DEVELOPMENT AGENCY

CHECK-IN



CLUST-ER AGRIFOOD AGROALIMENTARE



Sapere utile



Cambrà de Comerç de Lleida



Institut za poljoprivredu i turizam



Institute of Agriculture and Tourism



ALMA MATER STUDIUM UNIVERSITATIS IN NAVARRA DEPARTMENT OF AGRICULTURAL AND FOOD SCIENCE

Co-funding:



Co-funded by the European Union



:: European impact of WP3 & The CIRCOLIVE Alliance

This phase of the CircOlive project, WP3, demonstrated the potential of the circular economy to enhance the sustainability, resilience and competitiveness of the European olive sector.

The CIRCOLIVE project continues to strengthen European cooperation between higher education institutions, vocational training providers, research bodies, agri-food clusters, business support organisations and stakeholders in the olive sector.

The Alliance aims to serve as a collaborative platform for:

- Knowledge sharing;
- Cooperation between stakeholders;
- Dissemination of best practices;
- Promotion of circular innovation.

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THE FUTURE OF THE OLIVE OIL INDUSTRY STARTS HERE

TWO TRAINING PROGRAMS DESIGNED TO ADDRESS THE CHALLENGES AND OPPORTUNITIES OF THE CIRCULAR ECONOMY IN THE OLIVE OIL SECTOR.

| FOR COMPANIES, PRODUCERS AND OPERATORS IN THE SECTOR

- 2 training programs
- 4 modules
- 40 total hours
- Free
- Training according to the trainee's schedule
- 5 months to complete
- Certificate awarded upon completion of the course

| FOR YOUNG PEOPLE, THE UNEMPLOYED, AND FUTURE PROFESSIONALS IN THE SECTOR

- 1 training program
- 4 modules
- 40 hours
- 100% online and free
- 5 months to complete
- Certificate awarded upon completion of the course

Sustainability. Innovation. Valorization of by-products. Skills for the future.

MORE INFORMATION COMING SOON.

**COMING
SOON**

**FREE TRAINING
CIRCOLIVE**

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