



# A Circular Bioeconomy Network for the Management and Valorisation of Agrifood Waste in Europe: The case of Italy

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## Introduction

- ✓ Agrifood waste management and valorisation are key to sustainable, circular European food systems.
- ✓ In line with the COST CA22134 FoodWaStop action, thERBN created a practice-oriented circular bioeconomy network in 11 European countries, including Italy, to support the management and valorisation of agrifood waste through knowledge exchange, innovation adoption and the empowerment of local actors.

## Project Objectives

- ✓ Establishes an EU-wide multi-actor network to share practical circular bioeconomy solutions for farmers and foresters.
- ✓ Identifies and disseminates needs-driven, practice-oriented solutions through training, demos, and open-access platforms.
- ✓ Strengthens cross-border collaboration, reduces knowledge gaps, and supports sustainable, climate-neutral rural practices and policy uptake.

## Critical by-products for circular bioeconomy supply chains in Italy



Olive mill by-products such as pomace, pits, and wastewater



Olive and vineyards prunings



Woody biomass



Manure and slurry

## Activities Completed

### Mapping Urgent Needs

A participatory need assessment was conducted with practitioners to identify priority biomass streams, current management practices, and the main constraints and opportunities affecting residue valorisation.

### AKIS Validation

Mapping results were compiled into thematic fact sheets and reviewed with 14 AKIS experts, mainly researchers and academics. This process allowed combining practitioner and expert insights to strengthen the findings.

### Knowledge Sharing

Dissemination of circular bioeconomy practices for waste management was done via trainings and on-farm demonstrations, bimonthly online meetings, and multimedia materials like practice abstracts, videos, and podcasts.

## Results Obtained

### Priority Biomass Streams

- Italian small- to medium-sized enterprises' main residues include vineyard and olive prunings, olive mill by-products, manure and slurry, and woody biomass.
- Residues are seasonal and underutilised.
- Better valorisation could enhance nutrient recycling, renewable energy, and local bio-based chains.

### Current Management Practices

- **Biogas** is popular but constrained by high costs and biomass supply requirements.
- **Composting** is widespread but often impractical for small farms due to scale, infrastructure, and seasonality.
- Burning, soil incorporation, and uncontrolled spreading are common, driving emissions, nutrient leaching, and water pollution.

### Emerging Opportunities

- **Shared solutions:** cooperatives reduce scale and cost barriers.
- **Advanced technologies:** feasible but constrained by cost, markets, and support.
- **Biochar:** high potential, limited uptake; collective models and carbon credits may improve its adoption.

### Systemic Barriers

- **Non-technical limits:** knowledge gaps, weak advisory services, low cooperation, fragmented chains.
- **Economic limits:** scarce finance, unstable incentives, weak business models.
- **Strategic gap:** lack of a holistic bioeconomy vision beyond economics.

## Conclusions

By strengthening cooperation and know-how, thERBN supports the uptake of circular bioeconomy solutions for agrifood waste management in Italy, complementing FoodWaStop and other European initiatives.



Funded by the European Union

Funded by the European Union under GA no. 101182955. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency (REA). Neither the European Union nor the granting authority can be held responsible for them.