



BIO.CO.R.N.ER – BIO-waste for a COordinated and Regenerative New supply chain of eco-sustainable building materials in Emilia-Romagna

Call | Circuloos Open Call 2 (2025)

Project duration | October 2025 – September 2026

Agro-waste | Materials | Recycling | Construction

Objective | BIO.CO.R.N.ER proposes a new circular, regional value chain that transforms bio-waste from agri-food, aquaculture, and marine residues into eco-sustainable building materials. Based in the Emilia-Romagna region (Italy), the project builds on synergies between agri-food industry, construction, and digital innovation to pioneer low-carbon, bio-based mortars.

The project aims to deliver two validated bio-mortar prototypes (TRL6 and TRL8), achieving a 30% lower carbon footprint and integrating up to 70% bio-waste by weight. It will activate a fully traceable, multi-actor value chain to divert bio-waste from landfill and incineration. Traceability and lifecycle monitoring will be demonstrated using the CIRCULOOS digital platform and its tools (GRETA and RAMP).

The project consortium ensures an integrated circular value chain, from bio-waste sourcing to material development, validation, and production, bringing knowledge, infrastructure and networks. The lead partner is CETMA, an Italian research and technology organisation with experience in secondary raw materials recycling and eco-innovative materials and components for the building sector; its role will be to develop a new bio-based mortar derived from agricultural by-products, using specialised infrastructure, including lab-scale pilot lines for prototyping. The consortium includes: a) the University of Modena and Reggio Emilia (UNIMORE) with its Department of Chemical and Geological Sciences, for the design and optimisation of mortar formulations; b) Agrifood Clust-ER as a multi-actor of research centres and enterprises, for the identification, mapping and engagement of biomass suppliers in Emilia-Romagna; c) NTC&R, a SME manufacturer, producer of prefab building systems and components, as a end-user and industrial co-developer of innovative bio-based mortars.

Status | On-going