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Practice abstract 32

Business Model for Circular Bio-waste Valorisation: Turning Organic Waste into Sustainable Soil Solutions #2

The evaluation of business models within the **BIN2BEAN Living Labs** revealed a set of cross-cutting factors that determine the success of circular bio-waste systems.

Technical and Economic Feasibility

From a technical and economic perspective, performance is strongly influenced by the realism of cost assumptions, the degree of alignment with local conditions, the ability to scale solutions, and the incorporation of risk management strategies. These aspects proved essential in distinguishing robust and transferable business models from context-dependent or less resilient ones.

Social Impact

Social dimensions emerged as equally critical. The results highlight citizen participation as a central driver of success, supported by awareness-raising activities, stakeholder engagement processes, equitable access to services and the creation of long-term community benefits. Where these elements were strong, solutions demonstrated higher levels of acceptance, participation rates and overall system effectiveness, indicating that technical performance alone is insufficient without strong social embedding.

Environmental Impact

Environmental outcomes across the tested solutions were positive, particularly in terms of diverting organic waste from disposal pathways, reducing greenhouse gas emissions and contributing to improved urban soil quality. However, the assessment also emphasized the importance of developing robust environmental indicators, continuous monitoring systems and a more detailed accounting of transport-related emissions to fully capture system impacts.

Conclusions

Overall, the structured evaluation framework proved valuable not only for identifying promising business opportunities but also for clarifying trade-offs between economic, social and environmental objectives. It provides a comparative tool for bio-waste valorisation, supporting municipalities in designing circular business models that enhance urban resilience, soil health and circular bioeconomy development.

Project partners

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originally published on

Co-funded by the European Union

EU CAP NETWORK

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