

DESIGN AND TECHNOLOGY. PEOPLE, SYSTEMS, ENVIRONMENT

PNRR - The Systemic Approach for circular agriculture: strategies for waste and by-product valorization

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Context of the research activity	<p>Systemic Design can play a key role in the development of circular models to increase the sustainability and resilience of agro-industrial value chains. Through a holistic approach capable of integrating technologies and strategies together with a broad and deep understanding intervention context, the research aims to exploit the value of waste and by-products derived from agricultural and productive processes, defining innovative high-value applications and creating new flows of resources.</p> <p>Progetto finanziato nell'ambito del PNRR - PNRR M4C2, Investimento 1.4 - Avviso n. 3138 del 16/12/2021 - CN00000022 National Research Centre for Agricultural Technologies (Agritech) - CUP E13C22001010001</p>
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	<p>Many are the challenges that the agro-industrial sector will have to face in the coming decades: food safety and availability, climate change endangering productivity and biodiversity, as well as the reduction of environmental and social impacts, are certainly some of the complex issues related to this scenario. The CN Agritech initiative sets its starting point on these challenges and brings together leading Italian universities, research institutions and companies to define new materials and tailor-made production strategies that best meet the constraints imposed by the current scenario.</p> <p>In this context, Systemic Design can provide theoretical and methodological tools to develop new circular models and to increase sustainability and resilience of agroecosystems. Following the Systemic approach, in which the output of a system can become the input for another productive chain, this research aims to improve and exploit the embodied (and sometimes hidden) value of waste and by-products derived from agro-industrial value chains. Through the integration of technologies and strategies, as well as the</p>
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Objectives

Through the integration of technologies and strategies, as well as the knowledge of the local context, the outputs derived from agro-food, no-food, forest and animal production chains can be upgraded into high-value products or can become strategic assets to regenerate natural systems. This enables new local dynamics in which waste is the input of new processes, generating relevant impacts from an environmental, socio-cultural and economic point of view and contributing to ecologic transition, sustainable resource management, innovation and new job creation.

The research will be carried out in close relationship with companies and other involved stakeholders, fostering an applied approach based on the analysis of real value chains and promoting connections and technology transfer between academia and productive systems.

In addition, close attention will be paid to the topic of policies, meant as tools to support the adoption of good practices and achieve tangible changes in the medium and long term, finally defining new paradigms for the next generation agro-industrial models.

Skills and competencies for the development of the activity

- Deep knowledge of the Systemic Design approach and methodology
- Ability to develop a Holistic Diagnosis of a given productive process and its territorial context, analyzing complex flows of energy, matter and information
- Understanding of Italian Language and Fluent English
- Experience of close collaboration with companies in the agri-food sector and involvement in pilot or applied projects