CONSUMER ACCEPTANCE AND INNOVATIVE CIRCULAR BUSINESS MODEL

ECOSYSTEM DIGITAL TWIN AS AN ASSISTANCE TOOL FOR NOVEL STRATEGIES

MAGNO

Transforming EU food systems with innovative strategies for sustainable packaging

SUSTAINABILITY AND END OF LIFE OPTIONS

PACKAGING MANUFACTURING PRACTICES

PACKAGING USE IN THE FOOD SYSTEM

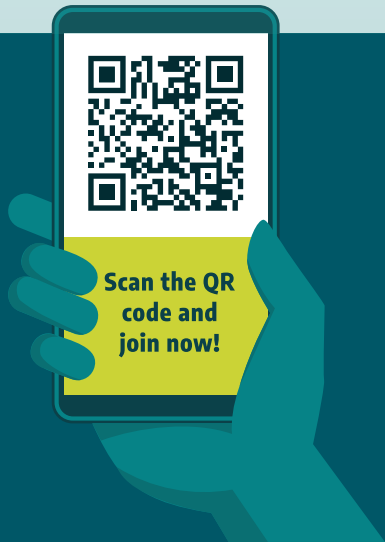
By harnessing cutting-edge technologies like AI-driven Digital Twins and advanced computational models, MAGNO is optimizing the entire packaging lifecycle—from design and production to end-of-life processes like recycling and reuse. These innovations support Safe and Sustainable by Design principles, aligning with the ecological transition goals set by the European Green Deal and the EU 2030 climate targets.

Join our Multi-Actor Community and become part of MAGNO project!

This initiative unites stakeholders from the food packaging value chain, including companies, academic institutions, research centers, NGOs, local authorities, and European associations.

Why Join? Shape the Future:

Engage in key discussions that will shape the future of food packaging. Network: Discover synergies and connect with industry professionals. Early Access: Get a sneak peek at emerging trends, technological advancements, and consumer behavior studies. Collaborate: Participate in webinars, workshops, and initiatives with consortium partners. Innovate: Gain insights on digital solutions promoting a circular economy in food packaging.



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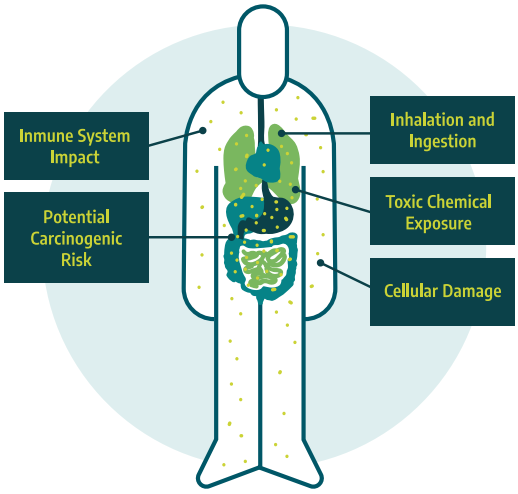
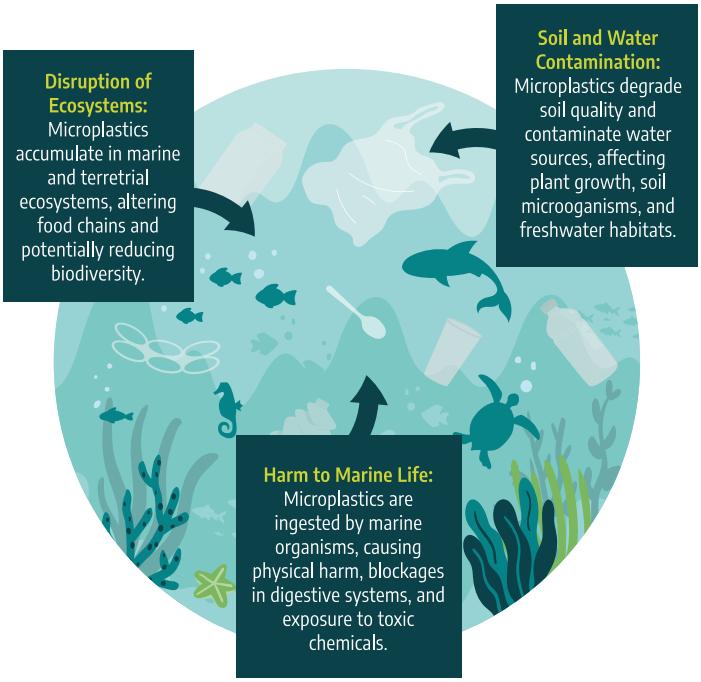
MAGNO on plastics and microplastics pollution

Microplastics (MPs), defined as plastic particles smaller than 5mm, pose significant risks to both environment and human health, affecting the immune system and potentially increasing susceptibility to diseases. Their ability to carry toxic chemicals raises concerns about carcinogenic risks and cellular damage through inhalation and ingestion.





Further Microplastics disrupt ecosystems by accumulating in marine and terrestrial environments, altering food chains and reducing biodiversity. They harm marine life through ingestion, causing physical damage and toxic chemical exposure and even mortality in species ranging from plankton to large mammals. Additionally, microplastics degrade soil quality and contaminate water sources, affecting plant growth and freshwater habitats worsening the condition of habitats.

The economic impact of microplastics is also profound. Municipalities face rising waste management costs as they struggle to clean up contaminated environments. Microplastics increase waste management costs as municipalities spend more on cleanup efforts. They also cause economic losses in fisheries and tourism, harming local livelihoods. Furthermore, public health expenses escalate as pollution-related diseases become more prevalent, increasing the burden on healthcare systems, while the degradation of natural landscapes affects recreational activities and cultural practices.

MAGNO's Response to Microplastic Pollution

The MAGNO project is committed to combating microplastic pollution through its focus on sustainable packaging innovation. By developing bio-based materials and improving packaging designs that emphasize recyclability, MAGNO seeks to reduce the production of plastics that degrade into microplastics. Its **Digital Twin** technology allows for predictive modelling of packaging choices, enabling stakeholders to evaluate the environmental impacts of different strategies and minimize the generation of microplastics across the lifecycle of packaging products.

MAGNO also promotes circular economy approaches, ensuring that plastics remain within closed-loop systems, reducing their release into the environment. By aligning with EU regulations and the European Green Deal, MAGNO fosters collaboration between industry, policymakers, and consumers to create packaging solutions that mitigate the harmful effects of microplastics on both ecosystems and human health.