

Advancing Circular Economy Practices in Waste Management at AUB: A Data-Driven and Stakeholder-Centered Approach

PI: May Massoud

Department of Environmental Health

Co-PI: Mahmoud A-Hindi

Department of Mechanical Engineering

American University of Beirut

The proposed project aims to transform AUB's waste management system by implementing a Circular Economy (CE) framework that emphasizes resource efficiency and waste reduction. The initiative will begin with a comprehensive assessment, including waste audits, stakeholder engagement, and a strategic analysis to identify gaps and opportunities. Building on this foundation, the project will pilot a range of CE solutions such as repair cafés, enhanced recycling systems, and resource-sharing initiatives, all aimed at promoting sustainable practices across the campus. A primary focus will be to understand stakeholders' motivations and behaviors, using insights gathered from surveys and participatory methods. These findings will inform tailored interventions and awareness campaigns, ensuring broad participation and engagement. Stakeholder feedback, along with a comparative analysis of AUB's existing waste practices against global best practices, will further refine the proposed solutions. Guided by the Design Thinking framework, the project will foster the creation of user-centered, adaptable solutions through iterative stages of engage, ideation, prototyping, and testing. The expected outcomes include increased waste diversion, greater community engagement, and the establishment of a replicable model that can inspire other institutions. By embedding CE principles into everyday operations, AUB has the opportunity to significantly reduce its environmental footprint, cultivate a culture of responsible consumption, and position itself as a regional leader in sustainability. Ultimately, this project will provide practical, scalable solutions, empower the AUB community to actively combat waste, and contribute to the advancement of sustainability knowledge and innovation, setting a benchmark for universities both locally and globally.