



UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" FROM
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A STUDY ON WASTE MANAGEMENT IN A CIRCULAR ECONOMY

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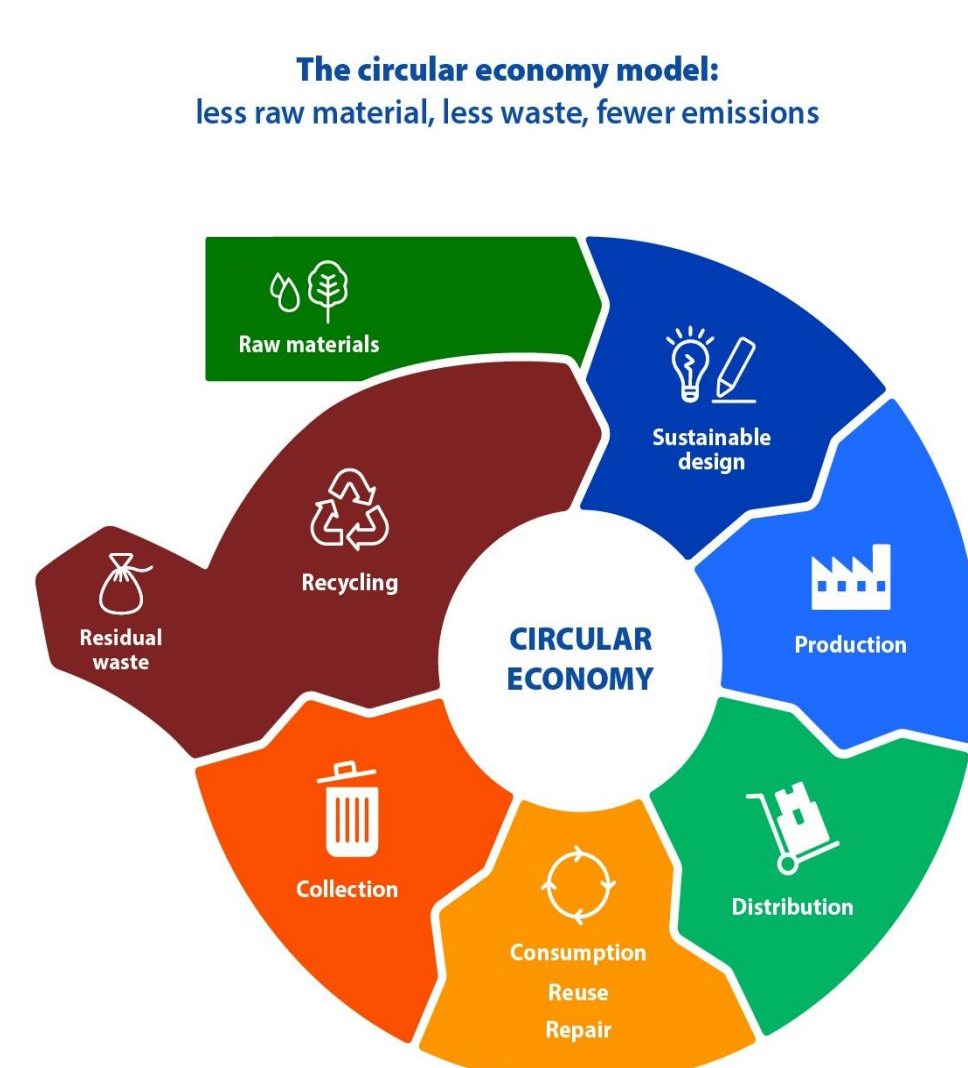
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Abstract: Moving from a Linear to the Circular Economy model means far more than simply changing waste management praxis to focus on resource efficiency for mean of disposal. An element of the Framework is a demonstration paper that investigates waste-to-Value frameworks in circular economy outlook including management strategies, material recovery/recycling/reuse methods essential to meet sustainability targets. This study combines the use of both qualitative and quantitative measures to compare different waste management alternatives across for case studies in Europe and Romania. Significant decreases in resource use and waste generation as a result of the transition to circular economy pathways are observed, leading researchers to consider the potential benefits for environmental and economic development.

• Introduction

The Circular Economy is a production and consumption model focused on extending the life of products through sharing, leasing, reusing, repairing, and refurbishing. This approach helps to minimize waste by keeping products and materials in use as long as possible. When products reach the end of their usable life, they are recycled and reintroduced into the economy, creating a cycle of reuse that adds ongoing value. This differs from the traditional linear economy, where raw materials are used to create products that are eventually discarded when they can no longer be repaired or upgraded. The linear model relies heavily on a continuous supply of inexpensive resources and energy, making it less sustainable over time.

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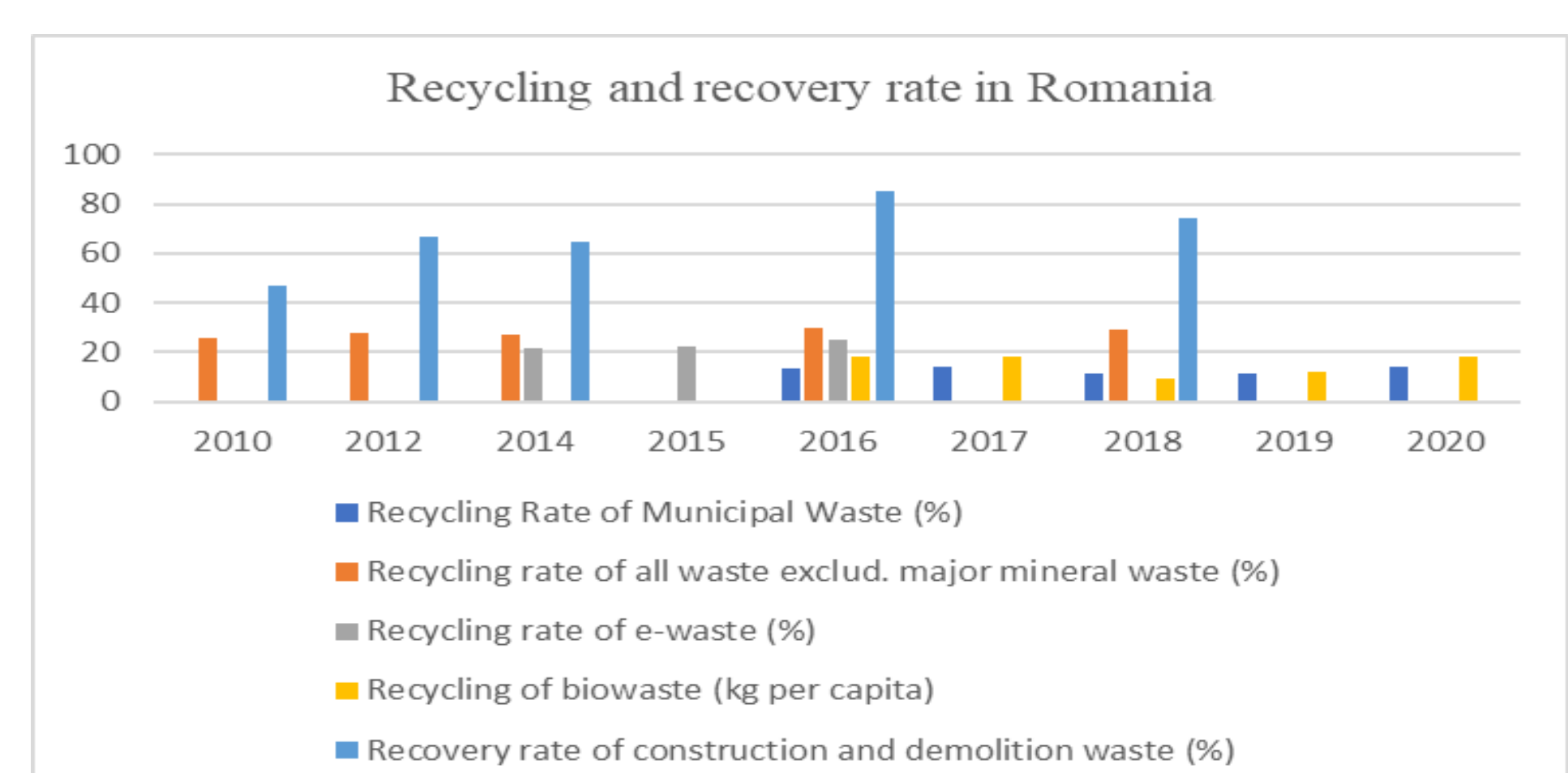


• Material and method

The material used in this paper consists in articles – older and more recent – about the implementation of a circular economy with a focus on waste management. The research method is bibliographic, with focus on two main topics: the circular economy model (which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials) and the benefits of implementing such a system on a European scale.

• Results and discussions

In 2021, Romania enacted Emergency Ordinance no. 6 to implement EU Directive 2019/904, banning certain single-use plastics. Earlier efforts include the National Waste Management Strategy (2013) and Plan (2017), key to assessing Romania's circular economy progress through waste management indicators. Romania lags behind the EU in recycling, although recycling rates have improved, waste management remains heavily landfill-dependent, with about 72% of waste going to landfills. In line with EU recommendations, Romania included waste management in its National Recovery and Resilience Program and committed to a National Circular Economy Strategy by September 2022.



• Conclusions

In conclusion, Romania's journey toward adopting circular economy principles has been gradual yet promising. Despite its early commitment to sustainable development, the country faces challenges in areas such as waste management, green procurement, and recycling infrastructure. Economic and regulatory constraints, combined with limited public awareness, have impacted Romania's ability to fully align with EU circular economy benchmarks.

Nonetheless, Romania has achieved notable progress in some areas, like municipal waste management, certain packaging recycling rates, and reducing per capita waste. Legislative efforts, including bans on single-use plastics and support for food waste reduction, indicate positive steps. However, inconsistent enforcement and delays in updating national laws hinder momentum.