

The Role of Geographic Information Systems (GIS) in Implementing Circular Economy Strategies: International Experience and Georgian Perspective

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Circular Economy (CE) is increasingly being considered as an effective approach to climate change mitigation and sustainable resource management. However, the practical implementation of circular economy strategies often faces challenges related to data scarcity, monitoring difficulties, and neglect of spatial inequalities. In this context, Geographic Information Systems (GIS) are emerging as an important tool, as they provide spatial analysis of waste generation, movement, and recycling processes and visualization of policy outcomes.

The workshop discusses international practices in integrating the circular economy and GIS, using the example of the European Union, where GIS is widely used in waste management planning, infrastructure optimization, and climate policy support (Kirchherr et al., 2017).

The current waste management system, legislative framework, and current practice of using GIS are also analyzed using the example of Georgia. The results indicate that the integration of GIS into circular economy policies is still limited. However, in Georgia, these policies are gradually improving, and there is international support, which creates the basis for a more systematic implementation of GIS, both in waste management and in the broader policy frameworks of the circular economy (UNDP in Georgia, 2025).

The final part of the seminar offers recommendations.

References:

- [1] Kirchherr, J., Reike, D., & Hekkert, M. Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation & Recycling*, 127, (2017) 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>
- [2] UNDP in Georgia. <https://www.undp.org/georgia> (2025).