Circular Economy Research (ECHO) Forum – May 19–20, 2025 at the University of Liège

GIS-BASED MAPPING OF THE CIRCULARITY POTENTIAL OF PLASTICS IN THE BUILDING SECTOR: A SPATIAL ASSESSMENT METHODOLOGY APPLIED TO WALLONIA (BELGIUM)

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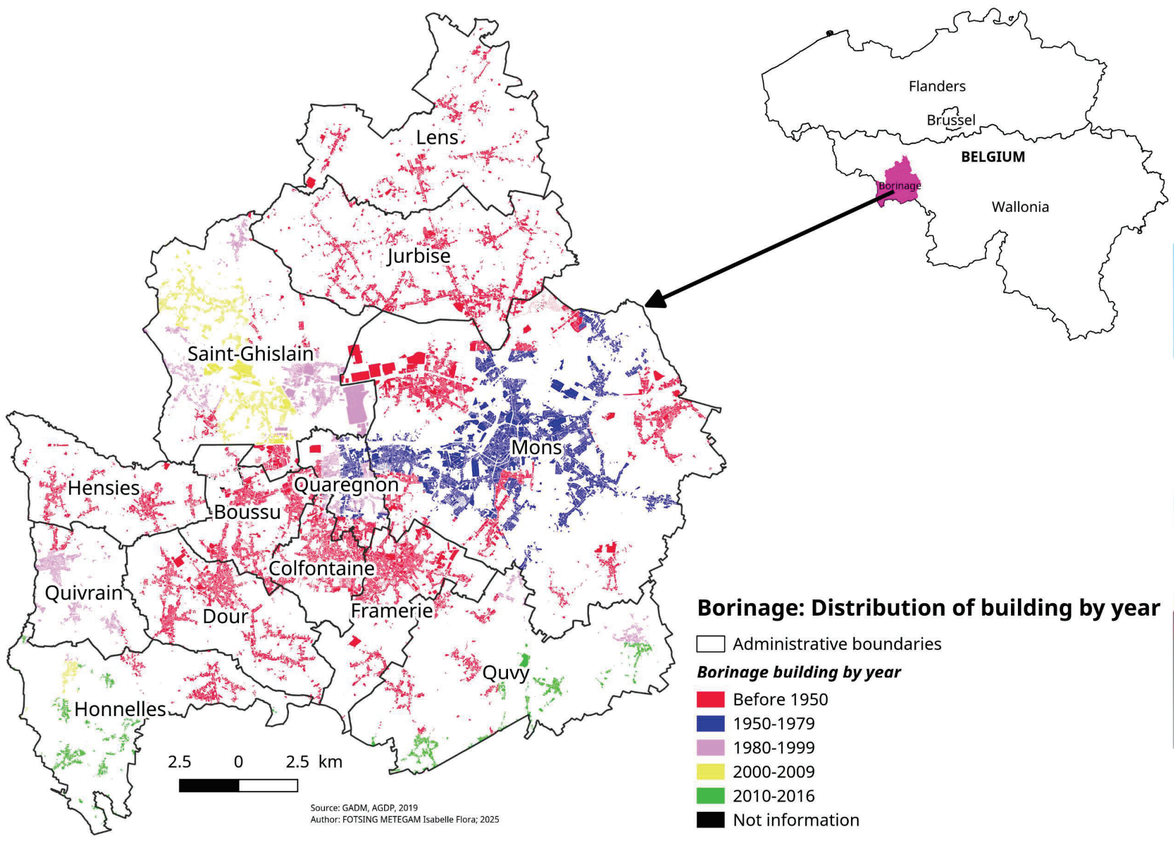
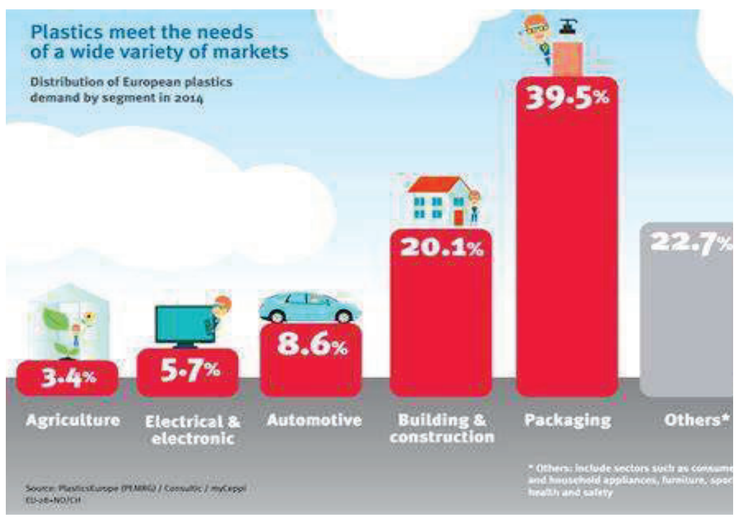
CONTEXT

- Plastics are widely used in construction due to versatility and low cost (EEA, 2021).
- Most end-of-life plastics are landfilled or incinerated, with limited reuse or recycling (Ellen MacArthur Foundation, 2019).
- Circular economy strategies for CDW plastics are gaining momentum.
- GIS can reveal spatial synergies between demolition waste and reuse/recycling potential an underexplored opportunity (Gontia et al., 2022; Khosrowshahi et al., 2023).
- This research contributes to Win4C, a strategic initiative promoting circularity in Wallonia and cross-border material flow by 2030.
- This study proposes a GIS-based method to assess the spatial circularity potential of plastics in buildings in Wallonia, Belgium.





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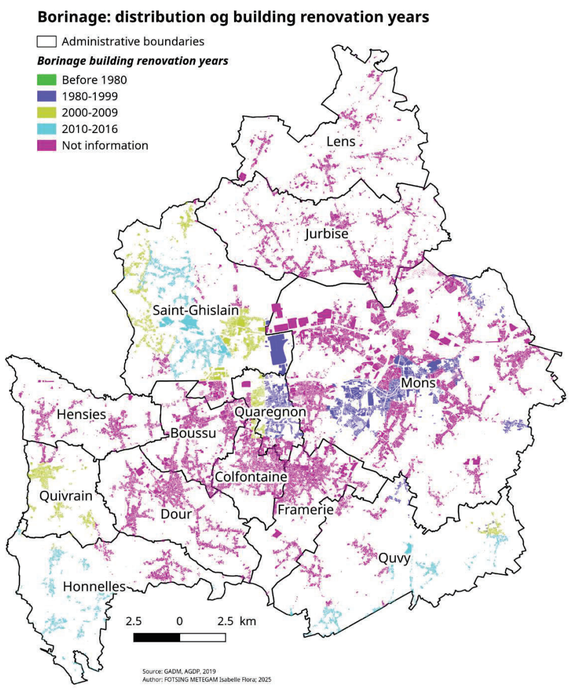
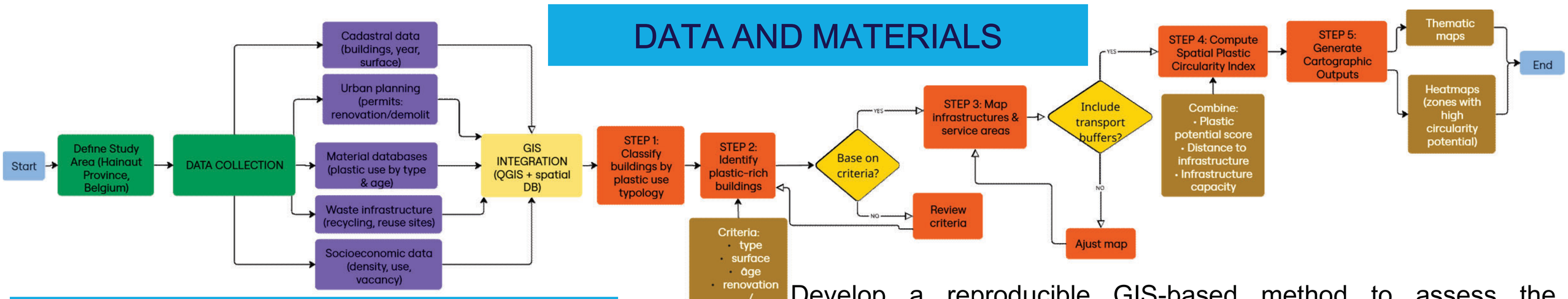


DATA AND MATERIALS

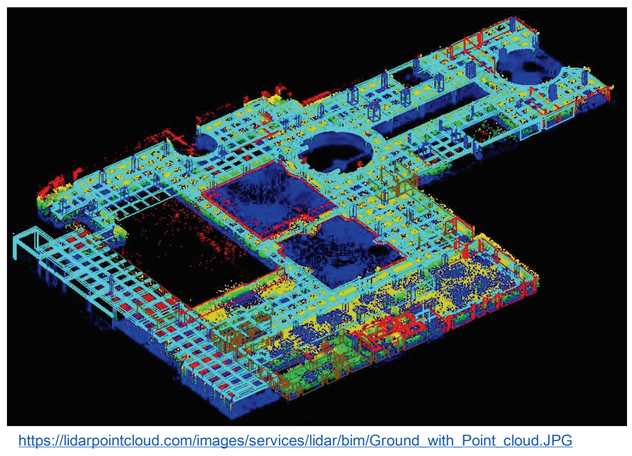


Develop a reproducible GIS-based method to assess the circularity potential of plastics in buildings in Wallonia (Borinage).

EXPECT RESULTS

- Spatial typology of plastic use in buildings
- Maps of high circularity potential areas.
- Spatial Plastic Circularity Index (SPCI)
- Territorial guidelines for stakeholders.

PERSPECTIVES



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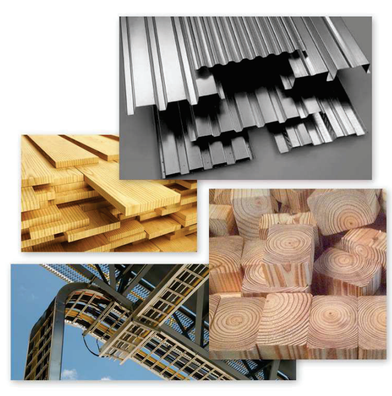

https://www.metals-inc.com/wp-content/uploads/2016/03/building-materials.jpg

Leveraging machine learning with satellite imagery and LiDAR for material inference.

Incorporating real-time data from smart renovation platforms.

Expanding the approach to additional material flows (wood, metals, composites).

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