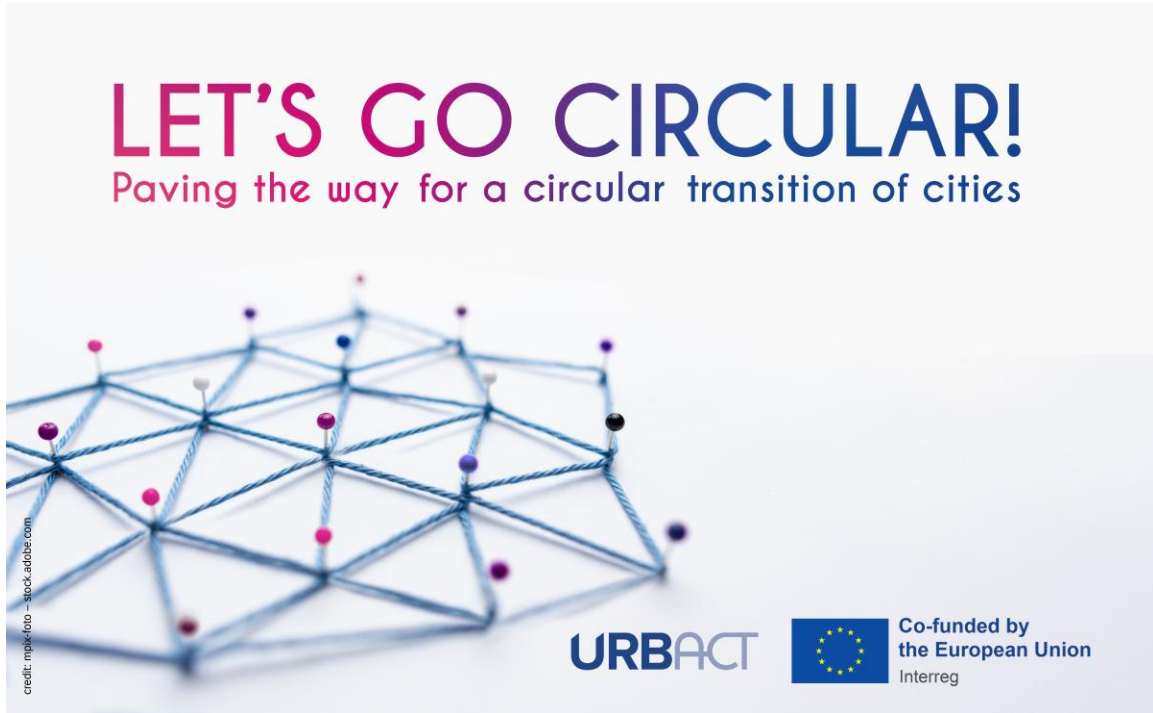
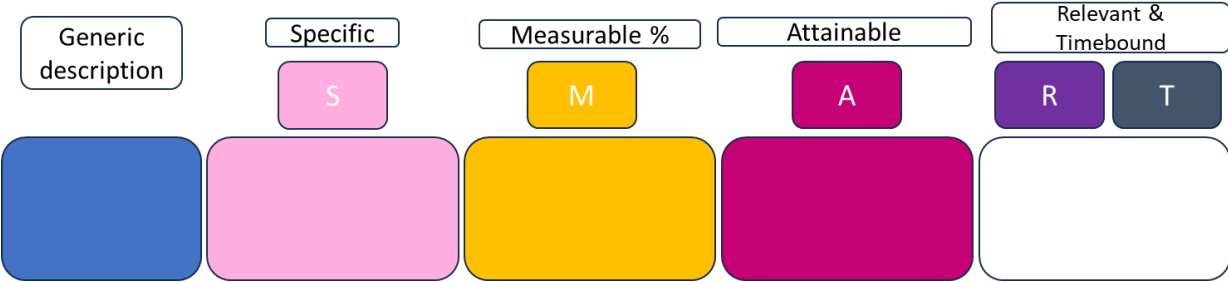




From vision to measurement: Building SMART Circular Economy objectives and indicators for cities

By Dr. Eleni Feleki, Lead Expert LET’S GO CIRCULAR! URBACT network

Cities across Europe are increasingly called upon to lead the transition to a circular economy (CE), an economic model based on resource efficiency, waste prevention, and regenerative systems. Yet local authorities often struggle to translate circular ambitions into measurable progress. To ensure impact, circular strategies must rest on SMART objectives-Specific, Measurable, Attainable, Relevant and Timebound-supported by indicators that capture both actions and results (URBACT, 2024).



Introduction

This article offers a practical framework for developing measurable circular objectives and indicators for city strategies. It draws on resources from the LET'S GO CIRCULAR! URBACT Action Planning Network, the Conference of European Statisticians Guidelines for Measuring the Circular Economy (UNECE, 2022), OECD and Eurostat frameworks, and the Indicators for Specific Operational Objectives dataset (2024).

From vision to strategy

Every CE roadmap begins with a vision statement—a shared aspiration such as “*a city without waste*” or “*a regenerative local economy*”. Translating this vision into strategic objectives bridges ambition with implementation.

Strategic objectives are long-term, cross-sectoral goals aligned with the city’s overarching development strategy. They:

- Mobilise multiple stakeholders
- Promote systemic change rather than isolated projects
- Are anchored in existing strategies such as climate neutrality, innovation, or resilience plans.

For instance, the slogan “*Test, learn and dare together*” only becomes actionable when redefined as:

“Reduce textile waste received at municipal recycling points by 30 % by 2030 through cooperation with R&D actors, universities, and standardisation bodies.”

This transformation ensures the goal is measurable, time-bound and achievable.



Figure 1: Pyramid illustrating the hierarchy

Cities usually struggle to follow the intervention logic, matching actions to objectives in order order to meet the vision and the same time introduce reliable indicators to monitor objectives and actions.

The struggle starts with the definition of the terms. Result indicators are those measuring the objectives while output indicators are those measuring the actions.

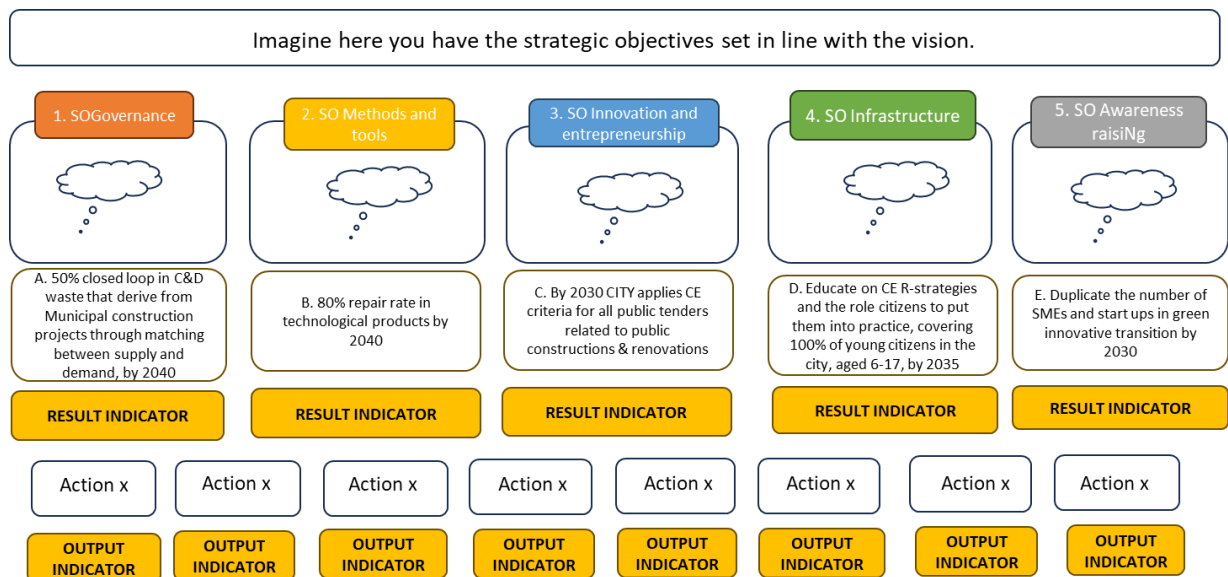


Figure 2: From vision to actions

Anchoring strategic objectives in R-strategies

Strategic objectives can be strengthened by aligning them with the R-strategies (Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover). These define the different levers of circularity, from prevention to recovery (Kirchherr et al., 2017).

R-Strategy	Example Strategic Objective	Indicator
Reduce	Integrate CE criteria in all public tenders for municipal construction by 2030	% of tenders with CE clauses
Reuse / Repair	Achieve 80 % repair rate for electronic products by 2040	% repaired vs. received products
Recycle	Reach 50 % closed-loop rate for C&D waste from municipal projects by 2040	Tonnes of C&D waste reused / total generated
Rethink	Double SMEs and start-ups in green innovation by 2030	# of circular SMEs / total SMEs

Operational objectives: Turning strategy into practice

Strategic goals must cascade into specific or operational objectives: short-term, measurable steps that drive progress. Based on the LET'S GO CIRCULAR! framework, five themes of focus are proposed (URBACT, 2024)

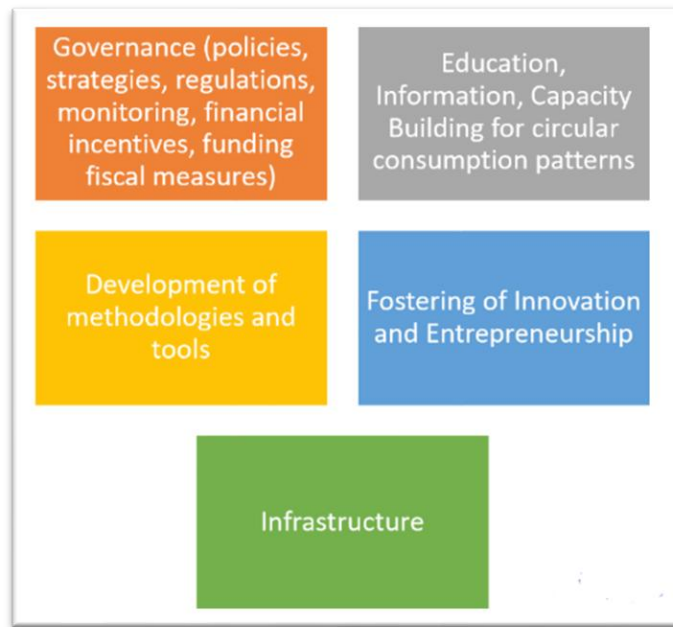


Figure 3: LET'S GO CIRCULAR! themes of focus

1. **Governance** – embedding circularity in regulation, procurement, and planning.
2. **Awareness & Education** – empowering citizens and public officers.
3. **Methods & Tools** – improving measurement, data, and digital systems.
4. **Innovation & Entrepreneurship** – supporting businesses and clusters.
5. **Infrastructure & Implementation** – enabling projects and facilities.

In line with the LET'S GO CIRCULAR! Roadmap depicted below, the following chapters suggest an indicative set of indicators that have been introduced by the cities to monitor lines of intervention reflecting the themes of focus.

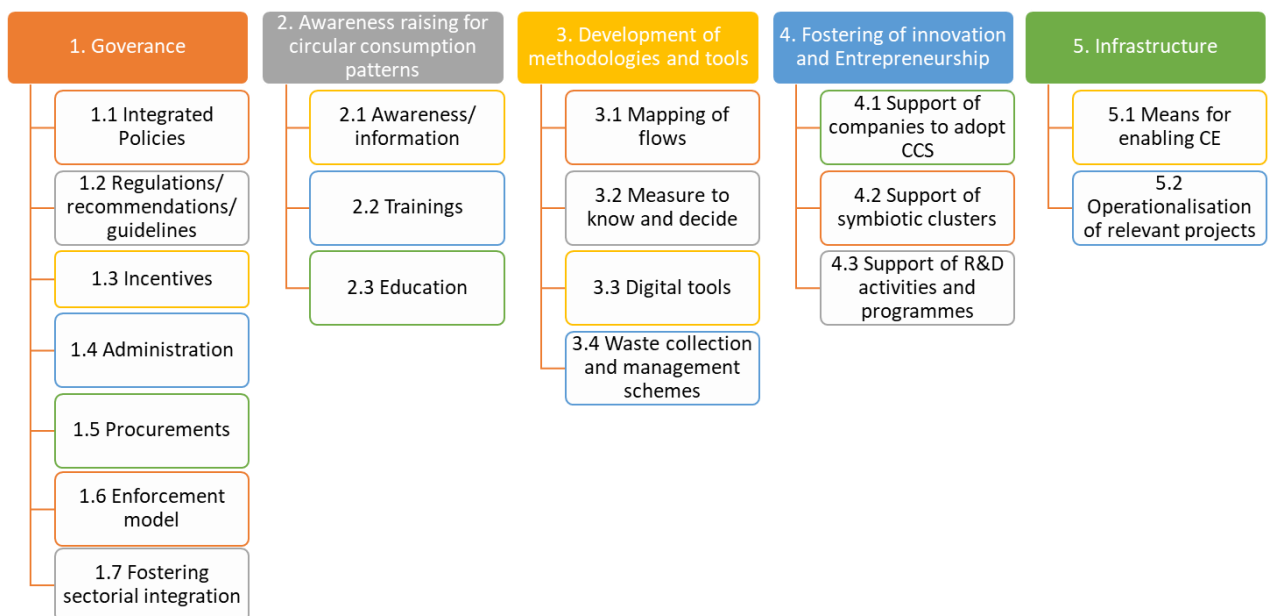


Figure 4: LET'S GO CIRCULAR! lines of intervention

Indicators for Circular Governance

Effective governance translates high-level ambitions into enforceable policy and measurable outcomes. The table below provides examples from the *Indicators for Specific Operational Objectives* dataset and the UNECE guidelines (UNECE, 2022).

Intervention line	Example Indicators	Data Source
Procurement	- # of tenders including CE requirements - Value (€) of circular procurement contracts	City procurement records
Regulation & Incentives	- Existence of city-wide CE strategy with measurable actions - # of fiscal incentives promoting reuse or repair	Municipal policy documentation
Integration	- # of formal CE networks or partnerships created - Qualitative description of stakeholder input in policy revision	Stakeholder engagement templates
Monitoring & Planning	- % of CE objectives tracked through indicators - Publication of annual CE report	City statistical office

Indicators for Awareness and Education

Building circular literacy among citizens and institutions is fundamental. Cities should measure outreach, behavioural change, and inclusion.

Intervention line	Example Indicators	Data Source
Citizen Awareness	- # of CE campaigns organised - # of participants reached	“CE-related education” templates; municipal communication units
Youth Engagement	- % of students completing CE learning modules - # of schools participating in CE projects	Education departments
Public Officer Capacity	- # of training sessions for municipal employees - % of departments with CE focal points	HR/Training records
Community Collaboration	- # of joint actions with NGOs, universities, businesses	Stakeholder engagement surveys

Indicators for Tools and Methods

Developing appropriate tools — from mapping material flows to digital marketplaces — ensures that CE actions are evidence-based (UNECE, 2022; Eurostat, 2023).

Intervention line	Example Indicators	Data Source
Material Mapping	- # of new digital mapping tools created - Mass of materials tracked annually	Evaluation logs; Urban Circularity Assessment
Data Infrastructure	- Existence of open CE databank - Mass/value of materials traded	Operator of digital tool
Indicator Development	- # of indicators adopted from international frameworks (e.g. DMC, RMC) - Baseline data established for all key indicators	Statistical offices

Indicators for Innovation and Entrepreneurship

Circular innovation supports local economic resilience and green employment (OECD, 2023).

Intervention line	Example Indicators	Data Source
Business Models	- # of new CE business models or pilots - Turnover of CE-based companies	Local innovation agencies; incubators
Research & Development	- R&D expenditure on CE technologies (% of total R&D) - # of patents related to recycling, repair, reuse	National statistics; patent databases
Employment	- # of jobs in CE sectors - % of employment in repair, reuse, recycling	Labour statistics

Indicators for Infrastructure and Environmental Impact

Infrastructure is the physical backbone of the circular transition, linking waste management, renewable energy, and ecosystem protection.

Intervention line	Example Indicators	Data Source
Waste management	- Municipal waste recycling rate (%) (SDG 12.5.1) - Proportion of C&D waste diverted from landfill	Eurostat CE database; waste companies
Energy & Materials	- Share of renewable energy in total demand	Power companies; EEA datasets

	- Material footprint per € spent (EEA SCP013)	
Air & Water Quality	- Urban PM _{2.5} and PM ₁₀ levels (mg/m ³) - % of water samples meeting quality standards	Public health & water authorities
Green Space & Resilience	- Open green space area ratio per 100 000 inhabitants - % of urban area protected as natural sites	City planning offices

Building a Monitoring Framework in line with the intervention logic

A structured monitoring cycle ensures that indicators inform decision-making.

Step 1 – Define: Agree on SMART objectives and corresponding indicators.

Step 2 – Collect: Establish baseline data using reliable municipal and national sources.

Step 3 – Target: Set medium- and long-term benchmarks consistent with EU and SDG frameworks.

Step 4 – Review: Assess results annually and adapt policies accordingly.

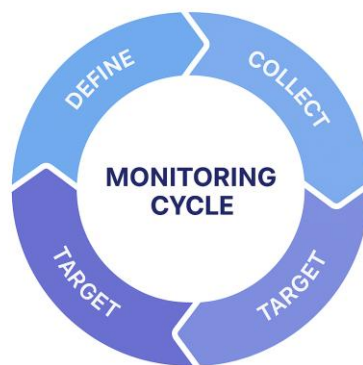


Figure 5: Circular monitoring cycle diagram

Cities such as **Amsterdam**, **Porto**, and **Turku** demonstrate the value of consistent indicator tracking for integrating CE into local planning (Circle Economy et al., 2016; OECD, 2023).

Social and Environmental Co-benefits

Circularity not only saves resources but also contributes to social equity and well-being. Complementary indicators can track these co-benefits:

- Employment in CE sectors;
- Reduction in GHG emissions per capita;
- Improved access to basic services such as clean water and sanitation;
- Reduction of air pollution exposure;

- Improved biodiversity and soil quality.

This integrated approach aligns CE strategies with broader urban sustainability and resilience agendas (URBACT, 2024).

Conclusion

To make the circular transition tangible, cities must pair ambition with accountability. A coherent system of strategic and operational objectives, supported by robust indicators, allows local authorities to measure, compare, and communicate progress.

By introducing local monitoring systems cities ensure that the circular economy delivers real, measurable value, not only for the environment but also for citizens' quality of life and economic vitality.

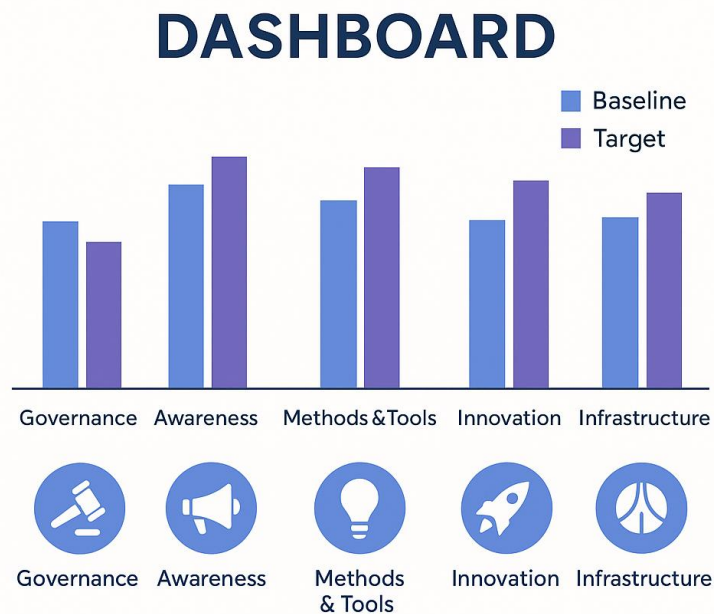


Figure 6: Indicators as a tool to support decision making

#References

Circle Economy et al. (2016) Circular Amsterdam: A vision and roadmap for the city and region. Amsterdam: Circle Economy.

Conference of European Statisticians (2022) Guidelines for Measuring Circular Economy. Geneva: UNECE.

European Environment Agency (2023) Urban Circularity Assessment. EEA Report No 02/2023.

Kirchherr, J., Reike, D. & Hekkert, M. (2017) 'Conceptualizing the circular economy: An analysis of 114 definitions', Resources, Conservation and Recycling, 127, pp. 221–232.

OECD (2023) Measuring Circular Economy in Cities and Regions: Framework and Indicators. Paris: OECD Publishing.

URBACT (2024) Let's Go Circular! Network resources on objectives and indicators for circular economy.

Indicators for Specific Operational Objectives (2024) Internal dataset for local CE measurement.

Dataset from Guidelines for Measuring Circular Economy (2024) Conference of European Statisticians data annex.