

# CIRCULAR DEVELOPMENT



Striving to achieve socio-economic progress for their constituents, cities consume 75% of global resources and are responsible for the half of all waste produced. Many of these resources are finite and even renewable resources depend on balanced, planetary cycles for regeneration and replenishment. Additionally, **materials management - extraction, processing, transportation, disposal - is responsible for over 50% of all GHG emissions**. To confront climate, biodiversity and resource scarcity challenges, cities must transition away from take-make-dispose production models.

To support local governments in providing socio-economic benefits while respecting ecological boundaries, ICLEI has identified circular development as one of its five integrated pathways towards sustainable urban development.

The circular development pathway offers an opportunity to rethink how resources are managed to **avoid the generation of waste and reduce demand for primary resources**. It aims to close material loops and maximize the value derived from resources by **examining the whole value chain** (source, conversion, consumption, reversion and disposal) and applying the following hierarchy where applicable: **Reduce, Reuse, Recycle and Recover**.

**To invest in an economic model that prioritizes resources and people, local governments may consider the following key entry points (e.g. activities, tools or methodologies) to circular development:**

## Urban metabolism

Urban metabolism analyses measure material, waste, water and energy flows and stocks in cities in a systemic manner. This approach can be used to explore the city's dependence on key resources and to identify policy interventions to overcome sustainability challenges related to resource management.

ICLEI supports cities and regions in bridging the academic theory on urban metabolism with local policy making, investments decisions and the practice of urban planning.

## Business engagement

Implementing circularity requires businesses to fundamentally change their product design, production processes and marketing activities. This challenge can represent an opportunity for cities to create local value and employment and influence global supply chains. Early-market engagement activities, creating exchange platforms on local or regional material flows or designing incentives for the market uptake of ecologically-designed products and infrastructures are some of the many ways local governments can support businesses in delivering circular solutions.

## Social equity

Circularity is an opportunity to reconnect people with resources at the local level. Local governments are well positioned to design projects that change how resources are allocated and accessed, create circular jobs, support community-driven initiatives and encourage sustainable consumption patterns. Circular projects must be designed so that they create tangible benefits for the local population, especially vulnerable groups. In developing economies, the well-being and empowerment of informal workers is vital for the sustainability of local circular initiatives and infrastructures.

## Circular public procurement

Public procurement is a powerful intervention tool to develop more circular products and infrastructures and influence the supply chain to shift away from the linear model. Circularity can be embedded in public procurement through principles such as lifecycle costing, local sourcing, encouraging low energy and water footprints and cradle-to-cradle management of resources.

## Lifecycle planning

A lifecycle approach to waste and resource management looks at intervention points across the whole value chain of products and infrastructures, from their design to the end-of-life phase. As such, it implies designing local strategies that prevent waste from occurring (e.g. designing buildings for disassembly) or finding synergies between systems (e.g. energy recovery from wastewater).

## Green Circular Cities Coalition

ICLEI's Green Circular Cities Coalition is an opportunity for cities across the world to become global leaders in urban circular economy transitions. The Coalition provides a platform to connect cities, experts, businesses, and other relevant stakeholders to foster circular development through knowledge and experience exchange, mutual learning and technical support.

Participating local governments include **Changchun** (China), **Bonn** (Germany), **Turku** (Finland), **Nagano** and **Yokohama** (Japan).



# ICLEI's Circular Development Activities

Involving 100+ local governments, ICLEI's current circular development projects and initiatives tackle issues of production, consumption and waste prevention from multiple perspectives and span a diverse set of resource flows.



waste



construction  
materials



food



wastewater



e-waste



plastics

## Systems perspective

### Monitoring and planning tools

Through the CityLoops project, ICLEI and partners are developing a series of in-depth methodologies and tools aimed at closing the loops of urban material flows at the local level (specifically organic and construction and demolition waste flows, including soil) and conducting demonstration programs in six small-to-medium sized European cities, including **Porto** (Portugal) and **Mikkeli** (Finland).



### Carbon accounting

Having developed the "Recycling and Composting Protocol for GHG emissions accounting", ICLEI USA is now working with the World Resources Institute to develop and incorporate a "Forest Accounting Appendix" into the US Community Protocol for Accounting and Reporting Community GHG emissions in order to better address scope 3 emissions related to production and consumption and related negative biodiversity impacts.



### Food systems

ICLEI-RUAF CITYFOOD accelerates local and regional government action on sustainable and resilient city-region food systems. CITYFOOD combines networking with technical expertise through training and policy guidance for its 27 members, including **Baltimore** (United States), **Arusha** (Tanzania), **Malmö** (Sweden) and **Belo Horizonte** (Brazil) which have strong circular development programs. Well-designed food systems reduce food waste, promote reuse and protect and restore ecosystems.



## Designing out waste

### Waste prevention

The UrbanWins Project studies how cities consume and discard resources and products in order to develop innovative plans and solutions aimed at improving waste prevention and management in eight pilot cities: **Cremona**, **Turin**, **Albano Laziale**, **Pomezia** (Italy), **Sabadell**, **Manresa** (Spain), **Leiria** (Portugal) and **Bucharest** (Romania). Active participation from all stakeholders is facilitated through in person and online urban forums.



### Plastic waste

ICLEI Europe is working with several cities to improve the plastic packaging value chain from a circular development approach. Several European cities are conducting pilot projects, including the development of smart containers for separate waste collection, improvement of transport routes and sorting technologies and - as in **Zaragoza** (Spain) and **Arnhem** (the Netherlands) - creation of innovative formats and testing materials that improve recyclability.



### Integrated waste solutions

ICLEI South Asia supports integrated waste solutions by providing technical support for assessing urban waste management baselines and engaging all relevant stakeholders in **Hyderabad**, **Warangal** and **Pimpri Chinchwad** (India) in order to design potential mechanisms, plans and projects to address waste management issues in a systemic way.



## Governance and partnerships

### CiBiX

CiBiX is ICLEI's City-Business Collaboration Accelerator program, a service that helps local governments define sustainability challenges and finds businesses to solve them. By bringing businesses and cities together during early-engagement dialogue workshops, CiBiX helps identify collaboration barriers, new opportunities and innovative partnership models to address urban challenges through sustainable and circular solutions.



### Circular public procurement

ICLEI supports municipalities to embed circular principles in their public procurement by considering the whole life-cycle of goods and services. Good practices and resources on circular procurement are shared through the Global Lead City Network on Sustainable Procurement - which includes **Tshwane** (South Africa), **Auckland** (New Zealand), **Oslo** (Norway), **Seoul** (South Korea) and 10 other local governments - and the Procura+ European Sustainable Procurement Network, which connects over 40 public authorities, including **Copenhagen** (Denmark), **Barcelona** (Spain) and **Budapest** (Hungary).



### Urban Nexus

Since 2013, ICLEI has been working with UNESCAP and GIZ in cities to create frameworks that enable synergies between sectors, jurisdictions and technical domains - the urban nexus. Our approach guides stakeholders to identify and pursue these synergies to increase institutional performance and optimize resource management and service quality. Participating local governments include **Dar Es Salaam** (Tanzania), **Tianjin** (China) and **Medellín** (Colombia).



## Contact

For more information on ICLEI's Circular Development Program, please contact: [circular.development@iclei.org](mailto:circular.development@iclei.org)

ICLEI World Secretariat



[www.iclei.org](http://www.iclei.org)



@ICLEI



ICLEI



@ICLEIworld