The Circular City Centre – C3

CIRCULAR CONSUMPTION IN CITIES

Circular Cities & Regions Initiative

INVESTEU ADVISORY HUB

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CIRCULAR CONSUMPTION IN CITIES
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98-100, boulevard Konrad Adenauer
L-2950 Luxembourg

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You can contact the C3 team at C3@eib.org.

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Contents

1 Introduction

Cities stand at the forefront of a critical global transformation, shaping how we live and consume. As vibrant hubs of commerce and culture, urban areas have increasingly driven excessive consumption, encouraging a linear "take-make-waste" system where goods are rapidly produced, consumed, and then discarded, driving material extraction and fuelling waste generation at unprecedented rates. Over time, cities have evolved to support an ever-growing appetite for new products through fast retail cycles, disposable goods and the relentless demand for novelty. This unsustainable pattern strains urban ecosystems and drives environmental degradation far beyond cities' boundaries.[1] However, by adopting a more circular model of consumption, where we use fewer resources more efficiently and minimise waste, cities can lead the way in ensuring that consumption stays within the planet's ecological limits.

This guidance document serves as a call to action for local governments to embrace their role as catalysts for change. It provides cities with practical tools to drive the circular economy transition at the local level and directly harvest its benefits, which extend far beyond waste management. By addressing the root cause of environmental degradation, the overconsumption of natural resources, cities can drive systemic change. Circular economy principles, such as reducing, reusing and extending product lifecycles, can empower cities to reshape how resources are consumed by individuals and businesses. Through these approaches, cities can prevent the consequences of overconsumption rather than managing them, contributing to the wellbeing of people and the planet, and the prosperity of future generations. Nevertheless, while cities can be hotspots for change, they cannot drive the transition alone, as key responsibilities fall outside the jurisdiction of most local governments. Systemically shifting to a circular economy will require the involvement of all levels of government, the private sector and civil society. To achieve meaningful change, the tools provided in this document need to be aligned with and complemented by dialogue and collaboration with different levels of governance and stakeholders.

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More information about C3 is available on the C3 web page, which features other C3 guidance documents for download and information about the Circular City Advisory (CCA) and Circular Project Advisory (CPA) programmes that C3 offers to cities.

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[1] All references in this document are presented in the References list at the end of the document.

2 Circular consumption principles and approaches

2.1 The case for circular consumption in cities

With over 55% of the world's population living in cities, a share projected to rise to 68% by 2050,[2] cities and urban areas are undeniably central to the global consumption crisis. They are driving resource demand at an unprecedented scale. According to the International Resource Panel, global resource use has tripled since 1970.[3] Raw material extraction has soared, placing immense strain on ecosystems and leading to environmental degradation, biodiversity loss, and increased greenhouse gas emissions. In Europe, 72% of the population already lives in cities, and this is expected to grow to 83% by 2050.[4] If everyone around the globe consumed resources at the rate of the average European, nearly three planets would be needed to sustain this lifestyle.[5]

The high concentration of population, wealth, infrastructure and industry in urban areas, as well as the higher standards of living held by urban residents, fuel these unsustainable levels of consumption. Cities are responsible for consuming more than 75% of global natural resources, including raw materials, energy and water, generating over 70% of carbon emissions and waste.[6 7] Urban construction and building sectors alone account for around 40% of global material consumption, driving the bulk of the demand for raw materials such as steel, cement and timber.[8] At the household level, urban residents typically have higher purchasing power, leading to greater consumption of short-lived products, such as shoes and clothes, electric and electronic devices, food and related packaging, that often have significant associated impacts and generate large volumes of waste. When considering not only the emissions generated directly within city boundaries but also those embedded in goods and services consumed within cities by households, businesses and the public sector, known as 'consumption-based emissions,' the scale of change needed becomes clear. At the current rate, consumption-based emissions could nearly double by 2050, making it difficult for cities to reach climate mitigation and adaptation goals. To meet climate-safe targets, cities must halve these emissions by 2030, with particularly steep reductions needed in high-income urban areas. Cities have a unique role to play in reducing global greenhouse gas emissions, not only through local decarbonisation efforts but also by influencing consumption patterns and supply chains that extend far beyond their borders.[9]

Current consumption patterns predominantly follow a linear "take-make-waste" approach where individuals and businesses **acquire** products and materials, **use** them, and eventually **dispose** of them as waste, often after a short lifecycle.[10] This linear model results in the over-extraction of raw materials, significant waste generation, accelerated environmental degradation, increased greenhouse gas emissions and the loss of biodiversity, all while placing immense pressure on finite resources. In contrast, the circular economy fundamentally rethinks each step of this process. Circular consumption encourages consumers and businesses to adopt practices that minimise the need for new resources, maximise the value of products and materials already in circulation, and ultimately reduce waste.[5] Circular principles can be prioritised along each step of the consumption cycle to achieve these goals; for example, by choosing products that align with the 9R framework defined in the following sections.

2.2 Defining the 9R framework

The 9R framework (shown in Table 1) comprehensively defines the circular economy and its key strategies.[11] [12] [13] This framework provides a strategic hierarchy that promotes circular consumption throughout nine stages: Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover. Strategies at the top of the hierarchy, such as Refuse, Rethink, and Reduce, are the most effective at reducing consumption as they focus on avoiding or minimising resource use and waste during the acquisition phase (see Section 2.3). Ideally, a circular economy prioritises these strategies to proactively prevent environmental impact, rather than managing the consequences of consumption. As seen in Table 1, the 9R framework also includes a tenth strategy, Recover, which nevertheless remains a principle that aligns more with the linear economy, since in most cases it consists of recovering energy from incinerated waste.

The 9R hierarchical structure parallels the EU *Categorisation system for the circular economy*, a sector-agnostic framework that classifies activities contributing significantly to circularity.[14] This classification system was designed to help investors and businesses identify which initiatives advance the European Union's sustainability objectives and to direct financing towards those projects. Cities that adopt circular activities under this framework can increase their chances to access vital EU funds and attract investors, facilitating their transition to a circular economy.

2.3 Consumption and the 9R framework

Specific R-strategies can be adopted to reduce resource use and environmental impact at each stage of consumption. The earlier R-strategies are implemented in the consumption cycle, the greater their potential benefit. The consumption cycle has three phases: **acquisition**, **use** and **end of life** (see Table 1).

Table 1: Circular consumption and the associated 9R strategies (based on 5, 6, 7 and 9) (Cont.)

Consumption Phase	R-Strategies	Description	Examples	Potential Impacts [9]
Acquisition	R0 – Refuse	Making a conscious decision not to purchase items deemed unnecessary	• Adopt minimalism • Avoid fast fashion • Swap or borrow instead of buying	Reducing the number of clothing items purchased annually could reduce emissions by 37% by 2030, and 66% by 2050. Similarly, rethinking dietary habits to align with health recommendations and prioritising lower-impact foods could achieve 27% emissions reductions by 2030, and 45% by 2050.
	R1 – Rethink	Critically evaluating the necessity and functionality of products before making a purchase	• Assess needs before buying • Consider Product-as-a-Service (PaaS) • Choose modular designs	
	R2 – Reduce	Decreasing overall consumption and the material intensity of manufactured products	• Buy fewer, quality items • Select durable products • Minimise packaging • Plan meals and buy only what you need	

Table 1: Circular consumption and the associated 9R strategies (based on 5, 6, 7 and 9) (Cont.)

Consumption Phase	R-Strategies	Description	Examples	Potential Impacts [9]
Use	R3 – Reuse	Using products and materials multiple times for their intended function	• Hand down items that are no longer needed • Purchase second-hand products	Optimising the lifetimes of electronic devices and equipment through different strategies like Reuse, Repair, Refurbish or Remanufacture could achieve reductions in associated emissions of 18% by 2030, and 33% by 2050. In buildings, enhancing the building utilisation combined with material efficiency measures would achieve emission reductions of 18% by 2030, and 29% by 2050.
	R4 – Repair	Fixing damaged or malfunctioning items to restore their functionality	• Take broken products to repair cafes • Mend clothes instead of buying new ones	
	R5 – Refur-bish	Updating or enhancing old products to restore them to a like-new condition	• Purchase refurbished products • Sell or donate products instead of refurbishment	
	R6 – Remanu-facture	Disassembling used products, repairing or replacing worn parts, and then reassembling them to meet original specifications	• Consider buying remanufactured products • Participate in return schemes by vendors • Purchase items that can later be returned for remanufacturing	
	R7 – Repur-pose	Modifying products or materials for new uses beyond their original intention	• Upcycle clothes • Buy products that can later be used for a new purpose	
End of life	R8 - Recycle	Purchasing products made from recycled materials and disposing of products correctly	• Buy products made out of recycled materials • Correctly dispose of bioplastics • Separate food waste	While not as impactful as higher R-strategies in this hierarchy, Recycle and Recover strategies can contribute to channelling a greater volume of secondary materials back into the economy, but also contribute to recover value in the form of energy or nutrients (in the case of biomass).
	R9 – Recover	Opt for products made using renewable energy sources that are compostable or that enable energy recovery	• Choose a green energy provider • Buy compostable plastics	

Acquisition phase: Refuse, Rethink, Reduce

Acquisition refers to the process of obtaining goods or services. It emphasises the decision-making process behind purchasing, such as whether to acquire an item and how this affects resource consumption and sustainability. The **acquisition phase** is critical for **minimising resource consumption** and its associated environmental impact. In this phase, the strategies Refuse, Rethink and Reduce tackle the root causes of excessive resource consumption by preventing, questioning, or (at the least) limiting the consumption of unnecessary products.

- **Refuse** centres on making a conscious decision to avoid the purchase of unnecessary items, refocusing from the "wants" to real needs and sufficiency. This prevents the influx of new products into the market.
- **Rethink** involves critically evaluating the necessity and functionality of products before making a purchase. This strategy encourages a more thoughtful approach to consumption. This may involve questioning existing consumption patterns or manufacturing methods and exploring alternatives that have a lower environmental footprint, such as Product-as-a-Service (PaaS) offerings or modular design options.[15]
- **Reduce** focuses on decreasing overall consumption as well as the material intensity of manufactured products.[16] This involves buying fewer products, opting for products with longer lifespans, and choosing items with less packaging.

Use phase: Reuse, Repair, Refurbish, Remanufacture, Repurpose

In the **use phase**, a product is actively in use by consumers, businesses or industries. During this phase, the circular economy emphasises **keeping materials and products in circulation for as long as possible** through the Reuse, Repair, Refurbish, Remanufacture, and Repurpose strategies. These strategies extend product lifespans, maximise value retention and reduce demand for new resources. This approach can help individuals transition from a "use and dispose" mentality to one of "care and stewardship," promoting a cultural shift towards circular consumption.

- **Reuse** involves finding new ways to use products and materials beyond their initial purpose, such as donating clothes or repurposing furniture. This helps keep items in circulation and reduces waste.
- **Repair** focuses on fixing damaged or malfunctioning items to restore their functionality. Repair activities, whether conducted by professionals or individuals, prevent the need to discard and replace broken items, prolonging their useful lifetime, conserving resources and reducing waste.
- **Refurbish** involves updating or enhancing old products to restore them to a like-new condition, and often involves aesthetic and functional improvements.
- **Remanufacture** takes Refurbish a step further by disassembling used products and repairing or replacing worn parts, eventually reassembling them to meet original specifications. This method helps to retain material value and reduce the environmental impact associated with producing new items.
- **Repurpose** involves modifying products or materials for new uses beyond their original intention. By finding alternative applications for products, repurposing reduces waste and maximises materials' utility.

End-of-life phase: Recycle

The **end-of-life phase** is the final stage of a product's lifecycle, where end-of-life products are managed to prevent them from becoming waste. In the circular economy, the Recycle strategy is employed to **close resource loops**, creating a cycle where nothing is wasted, by managing products at their end of life. Although still important, Recycle is less preferable than other circular economy strategies, as it has a marginal impact on reducing consumption relative to strategies earlier in the 9R hierarchy. For example, choosing a product made from recycled materials is less desirable than not buying a product at all. Furthermore, while recycling reduces the need for virgin raw materials and decreases the environmental impact, related processes entail challenges of their own, such as contamination, inefficiencies in material recovery and energy-consuming processes. However, a strong focus on the need for recycling at products' end-of-life strategies can also help consumers make informed choices.

- **Recycle** involves designing products for recyclability, collecting recyclable materials separately, sorting and refining recyclable materials, and recycling them to secondary materials that can replace virgin materials in production. Designing for recyclability ensures that products can be easily disassembled, sorted and processed at the end of their life. This involves minimising the use of harmful additions or mixing different kinds of materials.

While not always considered part of the circular economy, **recovery** plays a supporting role in the transition by encouraging the energy recovery from combustible materials that cannot be recycled.

3 Redefining urban space to facilitate circular consumption

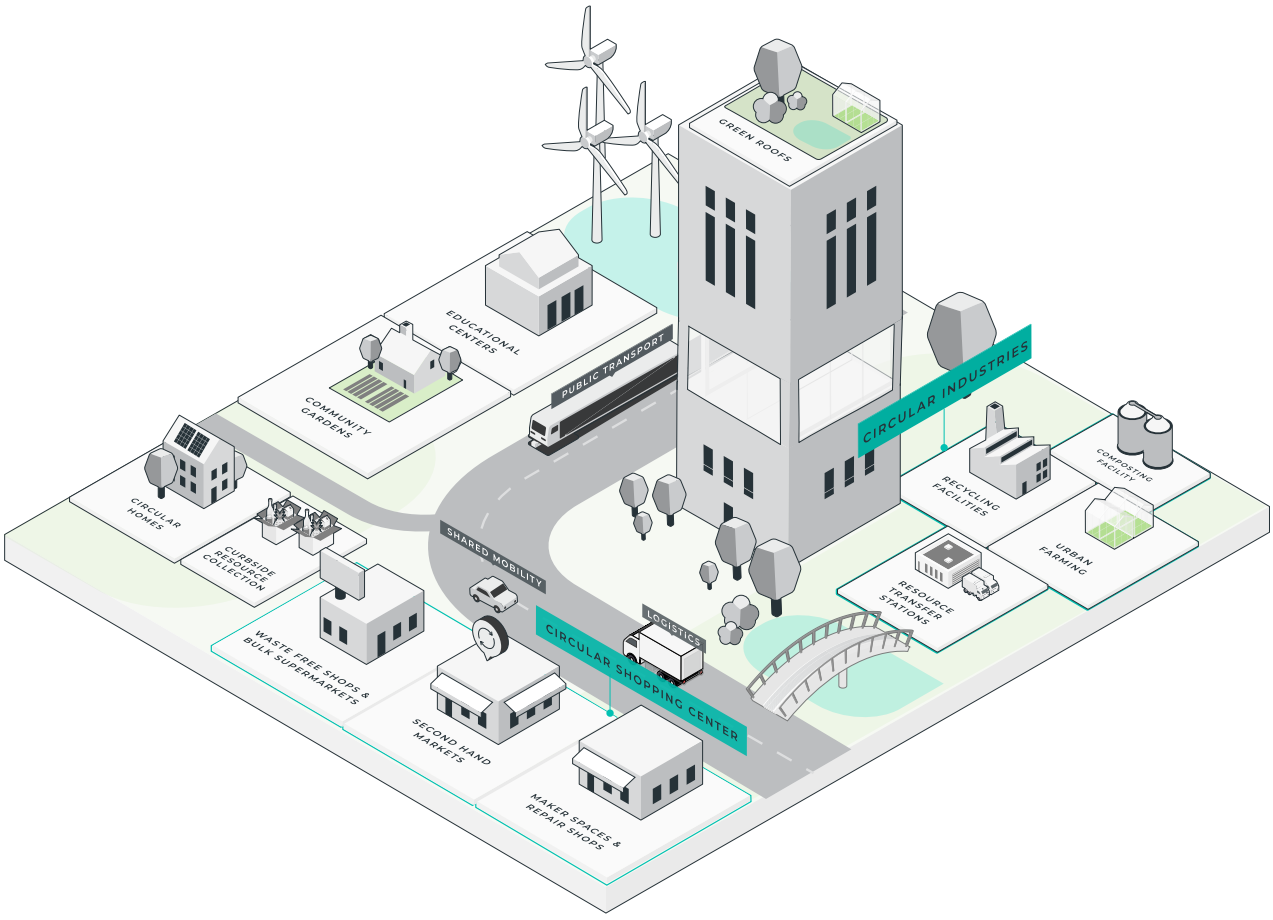
3.1 Consumption in linear and circular cities

The layout of a city that promotes and facilitates circular consumption would differ significantly from the appearance and structure of most cities currently rooted in the linear economy. Transitioning to a circular consumption model would require transformation of businesses, shops, restaurants, as well as public organisations. These changes would render certain urban features, facilities and logistics systems that are deeply connected to the linear past obsolete, as outlined below.

- **Commercial streets dominated by fast-fashion and low-priced household goods retailers with poor quality throw-away products:** These goods are typically characterised by low transparency across their value chains, with far-reaching impact across the globe, and large volumes of waste concentrated in urban centres. As textile waste collection rates rise across Europe, the quality of collected items has dropped due to the proliferation of fast-fashion suppliers.
- **Food and drink takeaway shops:** Cities are experiencing a surge in food and drink franchises primarily built on takeaway service. This convenience-based business model often entails individually and heavily packaged items resulting in higher waste generation.
- **Overflowing garbage bins on the streets:** This familiar sight highlights the excessive waste generation resulting from a linear economy. Even the most advanced collection systems are put under strain due to the vast quantities of waste generated in cities.
- **Large residual waste treatment facilities such as mechanical biological treatment plants, incinerators and landfills located on the periphery of cities:** These have become essential features to manage the large volumes of residual waste accumulating in urban areas.

Instead, circular cities would feature a combination of efficient logistics systems, spaces for repair and sharing and other new facilities designed to enable residents and businesses to adopt more circular consumption patterns, as presented in the illustration below.

Figure 1: Urban features supporting circular consumption



Key elements supporting the transition to circular consumption

Key elements that would support the transition to more circular consumption in a city are presented below:

- **Reimagined retail and shopping streets:** Unlike today's cities, which are heavily centred around the consumption of new goods and services, a circular consumption focused city would encourage residents to buy durable items with potential for repair and extended life, or to share or lease products instead of buying them. Improved product labelling would facilitate choices by offering detailed insights into product origins, sustainability certifications and repairability, enabling consumers to make well-informed, responsible choices.[17]
- **Local food markets and bulk sale/packaging-free supermarkets:** This involves providing residents with convenient access to more local products, promoting community and sustainability, and allows consumers to buy food without unnecessary packaging. As these smaller markets grow in popularity, larger chains may respond by increasing offerings for products coming from shorter circuits and contribute to making zero-waste shopping the standard in the future. Additionally, redistribution mechanisms are put in place to prevent excess food from ending up as waste, ensuring instead that any left-overs and non-sold products and meals are channelled to food banks, charities and community programmes.
- **Facilities for sharing-economy solutions:** This would include libraries of tools and equipment for borrowing or renting items that most people only use occasionally, such as specialised gardening or repair tools, deep-cleaning material or sports equipment. These 'libraries of things' reduce the need for individual ownership of many bulky and seldomly used items, minimising resource consumption and avoiding those products to become idle and take up storage space, while providing affordable accessibility to those who need them.
- **Neighbourhoods that include repair and craftsmanship activities:**
  - **Lively second-hand markets and warehouses:** These would become community hubs where residents can buy, sell or trade pre-owned goods. Although second-hand clothing and furniture have grown in popularity, they are still overshadowed by traditional linear options, and their price competitiveness with new products can vary.
  - **Repair and reuse centres that offer access to skilled circular practitioners to repair and refurbish items:** This can significantly reduce waste while providing communities with affordable alternatives to new products. Strategically locating these centres would increase their use.
- **Common spaces to engage with and learn from others:**
  - **Community gardens and innovative urban agriculture:** These areas enhance the urban environment while contributing to local food production, fostering a stronger sense of community and educating consumers to become more familiar and connected with food-growing practices. This would not only reduce the need for transport of food and related emissions, but also help consumers accept buying "imperfect" but edible foods.
  - **Dedicated education and circular craft centres to equip residents with the knowledge and skills for a circular lifestyle:** These could offer comprehensive do-it-yourself workshops, including sustainable practices like upcycling, repair and waste reduction. These centres could also include learning programmes to introduce sufficiency focused lifestyles and sharing-economy models to change the way people approach consumption. This could help shape a community dedicated to both environmental stewardship and wellbeing.
  - **Co-living and co-working spaces:** These spaces promote collaboration and interaction among residents, reducing the need for new construction and urban expansion. By sharing resources, amenities and workspace, these environments not only decrease individual resource consumption but also foster a sense of community, encouraging cooperation and innovation.

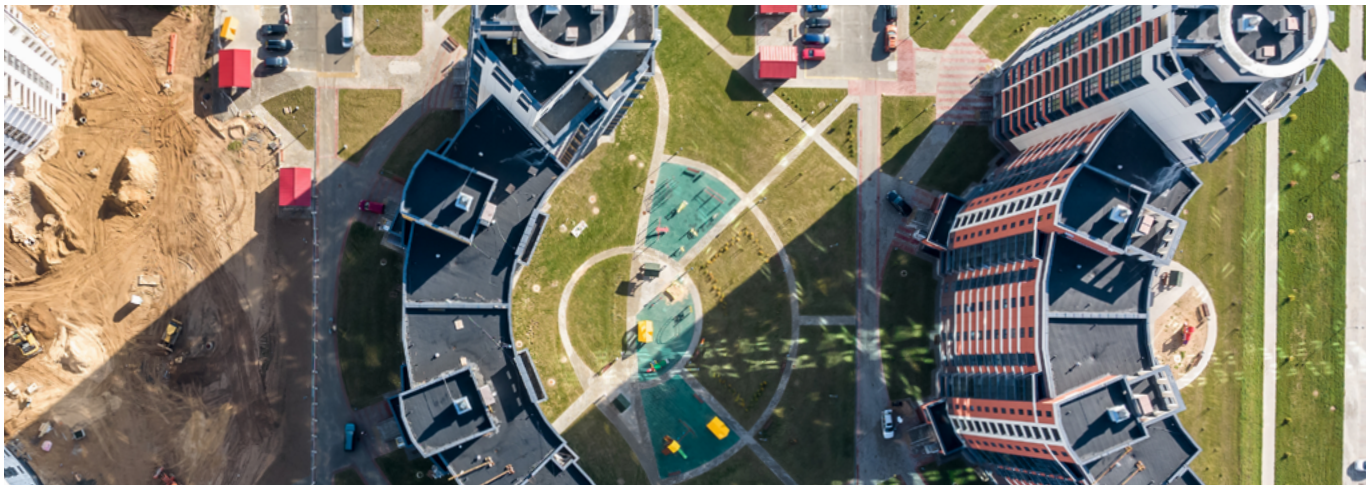
3.2 Benefits of circular consumption

As cities grapple with the challenges of rapid urbanisation, resource depletion and waste management, circular consumption emerges as a very attractive alternative approach. By incentivising circular consumption and prioritising higher R-strategies, cities can reap numerous benefits both on an individual and city-wide level. These include reducing resource use and eliminating waste by reducing and changing approaches to consumption and by closing resource loops, which together will reduce wastage and environmental impacts. Such a shift would also offer a range of wider socioeconomic benefits, especially at the city level, as discussed below.

- **Integration of circular economy with broader sustainability goals:** The bulk of global environmental impacts, including climate change, biodiversity loss, habitat degradation and pollution, are closely linked to material consumption.[1] As cities are major consumption hubs, adopting circular practices can lead to substantial reductions in material and carbon footprints, which aligns urban development with global sustainability targets. The benefits of a circular economy beyond just recycling must be

clearly articulated to bridge existing knowledge gaps and foster awareness. By framing the circular economy as a means to attain broader sustainability goals, cities can encourage individuals and businesses to adopt sustainable practices, and ultimately foster a culture where sustainability is the norm rather than the exception.

- **Enhanced quality of life and wellbeing:** Circular consumption involves a shift from the materialistic pursuit of possessions and novelty as a route to personal happiness to focusing more on the traditional values of wellbeing, social cohesion, creativity, environmental stewardship and preservation.
- **Value and affordability:** A circular approach to consumption also means that for individuals and organisations, the need to buy and replace goods and assets frequently is reduced, while other options like sufficiency, sharing or leasing are prioritised, helping to save unnecessary consumption and its associated costs. For example, sharing models like co-working spaces, shared mobility services, or communal living also allows users to benefit from economies of scale, achieving lower costs by pooling common resources, particularly in densely populated areas. Cost and resource savings are also achieved through the reduced need for waste management, since emphasis is placed on extending the lifespan of products, and sharing them when possible, thereby reducing waste generation.
- **Safer and more liveable spaces:** An economy based on sharing and sufficiency could free up living spaces in buildings and on roads. A sharing-based economy can lead to fewer cars on the roads and less cluttered urban spaces, freeing up space for parks and recreational areas, pedestrian zones and other public spaces. Similar benefits can be achieved in buildings, both residential (with communal kitchens, laundry rooms) and non-residential (co-working spaces in offices), helping to reduce the need for these amenities within each individual apartment unit or office. This, combined with modular design and a smarter allocation interior space, can achieve significant resource-efficiency gains.
- **Community development:** Community-based and non-market activities, such as volunteering, caregiving and running a household, strengthen community ties and contribute to physical and mental wellbeing.[18] Community-driven initiatives, such as community gardens or tool libraries, can cultivate a sense of belonging and connection within communities. By encouraging collaboration among residents, businesses and local governments, cities can strengthen community ties and promote collective responsibility for sustainability.[18]
- **Employment opportunities:** The transition to more circular consumption presents a significant opportunity for new job creation in cities. Circular economy strategies typically entail labour-intensive activities in services, remanufacturing and repair, processes that will require a greater workforce as the demand for new and existing roles in such industries increases. Workers in related sectors and jobs will have to be reskilled to ensure a fair transition where no one is left behind. Social enterprises, which prioritise community wellbeing, are particularly well-positioned to lead the charge in providing such opportunities, further showcasing how the circular economy can create meaningful employment and contribute to greater resilience. Overall, emphasising the circular economy's job creation potential can help garner support for the transition from individuals and businesses.[19]
- **Localised and resilient economies:** Circular consumption helps localise economies by encouraging local sourcing and decentralising production and consumption activities. This shift can also incentivise local industries to find new synergies to achieve cost and resource savings, while decreasing dependence on global supply chains and enhancing economic resilience and stability. By supporting local businesses that offer repair, reuse and rental services, cities can also significantly reduce expenses related to waste management. Together, this can boost long-term financial stability while lowering vulnerability to global market fluctuations.



4 Challenges in the transition to circular consumption

While the benefits of circular consumption in cities are compelling, the transition to circular consumption is not without its challenges, since this requires both individual behaviour changes and systemic socioeconomic reforms, in addition to new infrastructure, facilities and logistics solutions. Although it is essential to promote sustainable practices among consumers, these efforts often fall short if not accompanied by broader transformations in policies, business models and societal norms. This highlights the need for a coordinated approach. However, the transformative change needed is often hindered by entrenched systems and inconsistent regulations.

4.1 Challenges and barriers at the individual level

Adopting circular consumption practices at the individual level requires overcoming deeply ingrained habits and perceptions. To shift these paradigms, it is first crucial to understand the interplay between convenience, cultural norms, economic factors and knowledge gaps, all of which prevent the widespread adoption of circular practices. These factors are summarised below.

- **Knowledge gaps:** Many consumers are unaware of the principles of circular consumption and how to adopt and apply them. While individuals may have environmental concerns, they may not fully understand the impact of their choices. Additionally, unclear product information and insufficient information on how to make circular and sustainable choices lead to consumer hesitation and slow adoption. This underscores the need for clearer communication to make circular consumption better understood and aligned with everyday habits and values.[12 18]
- **Cultural and behavioural norms:** Traditional (linear) consumption patterns are often linked to material status, owning and displaying the latest products, which can make it difficult for individuals to embrace circular alternatives due to fear of social judgment or exclusion.[5] Shifting these norms requires systemic changes, including policy interventions and public awareness campaigns that aim to set alternative circular examples.[15 16 18]
- **Perceived inconvenience:** The additional effort required for practices like repair, recycling or product return require change in consumers habits and can create resistance, which increases in contexts where circular consumption systems are poorly integrated or streamlined. This highlights the importance of improving convenience and demonstrating how circular consumption can benefit consumers to increase engagement with these practices.[10 20 21]
- **Attachment to ownership and newness:** Consumers often associate ownership with control and exclusivity. This makes the shift to access-based models, like leasing or sharing, challenging.[5] Furthermore, cultural and marketing messages reinforce the preference for new items, leading to perceptions that second-hand products are less reliable or valuable.[22 23]
- **Cost of circular products:** A higher price of sustainable products can deter consumers, especially when this is combined with perceptions of inferior quality or inconvenience. The absence of financial incentives further discourages a shift away from linear consumption models. This point is explored further in Section 4.2.[7]

4.2 Challenges and barriers at systemic level

To achieve a sustainable circular economy in cities, we need broad structural changes that support circular consumption throughout the entire system, removing barriers in supply chains and business operations. A good example of this is shared products or equipment, such as libraries for electric or garden tools, sport equipment or communal washing machines in apartment buildings. This necessitates new market offerings in the form of rental tools and equipment, and a change in mindset among residents, homeowners' associations, etc. This example illustrates how consumers can more easily engage in circular practices when supported by coherent policies, adapted infrastructure and collaboration amongst all value chain actors.[8] Systemic barriers to a more circular consumption are presented below.

- **Policy and regulatory barriers:** Inconsistent policies and regulations make it difficult for consumers to engage in circular consumption practices. Diverse legal frameworks often create confusion over compliance and best practices, as local, national and international policies are commonly misaligned.[24 25 26] For example, creating uniform recycling standards across countries would make it easier for consumers to dispose of products responsibly. This is beginning to take place, with the European Union driving efforts to standardise e-waste recycling and packaging labelling, for example.

- **Lack of public investment in infrastructure and space:** The infrastructure needed to support circular consumption remains limited. Competition for urban space makes it difficult to establish sufficient infrastructure for initiatives like repair services or second-hand goods drop-offs. Cities often prioritise commercial establishments, offices or residential developments over circular businesses, as these spaces are perceived as more profitable or desirable. Many cities lack affordable, centrally located repair cafés, and reuse centres and dedicated spaces for returning used items, such as clothing or electronics, are scarce. This prevents consumers from engaging in sustainable and circular consumption practices. Expanding circular infrastructure requires city officials to rethink urban planning and prioritise these activities alongside traditional commercial and residential uses.
- **Misaligned economic incentives:** The linear economy incentivises businesses to sell as many products as possible and individuals to consume more new products. However, tax incentives for businesses that produce sustainable products or consumers who repair, lease or purchase them remain limited in many countries. To drive meaningful change, economic incentives must shift. For businesses, product longevity, resource efficiency, and superior sustainability performance should be rewarded,[27] while consumers should be incentivised to adapt their habits.[28] Currently, government incentives and financial support are insufficient. True pricing, which reflects the environmental costs of production, and taxation schemes that discourage linear consumption, are rare. Moreover, policies often focus on technocentric solutions without addressing overconsumption directly.[29 30]
- **Resistance from established businesses:** Many established businesses and industries are reluctant to adopt circular models because they think that this may risk disrupting their current structures and operations. Design, sales and logistics systems are often optimised for linear production, which encourages excessive consumption through practices like planned obsolescence.[31] Transitioning to circular systems requires significant changes in business models, product design and manufacturing, which are often perceived as risky and costly. Circular production demands that entire value chains are reshaped in sectors like consumer goods and transport, which require substantial investments that many businesses, focused on short-term profitability, are hesitant to make.[25 32]
- **Need for cultural transformation:** The success of circular consumption relies on more than just economic incentives and supportive infrastructure; it also requires a change in societal values and cultural norms.[10] Urban interventions should aim not only to change consumer behaviours but also to tackle larger systemic issues. Cities play a crucial role in fostering these new values and practices. By creating physical spaces like repair cafés or living labs, cities can encourage sustainable behaviours on a small scale. It's also important to develop policies and regulations that make it easier for initiatives supporting circular consumption to thrive. Through these efforts, cities can drive small changes that gradually build a broader network of shared values and resources, making sustainability a societal priority.[8 10 33] This shift can help change the mindset of consumers and businesses from linear "use and dispose" to one of circular "care and stewardship", fostering a sustainable culture that values long-term care and resourcefulness.[5 10 34]

5 The role of cities in promoting circular consumption

Cities have a crucial role in addressing the challenges of transitioning to circular consumption. While these challenges can be daunting, cities can make a significant impact by investing in circular consumption systems and initiatives, and implementing targeted strategies to tackle specific issues. By fostering both individual and systemic change, cities can effectively promote circular consumption. This section highlights key urban policy instruments that cities can adopt to support the change to a more circular consumption. These tools are most effective when integrated into the context of and customised to meet the unique needs and circumstances of a particular city.

5.1 Foster cultural and behavioural change in people and businesses

Local governments have significant ability to shape the consumption patterns of their residents to promote and facilitate more circular consumption and lifestyles, as summarised in Table 2 and elaborated in more detail in the following sections. To create a culture of sustainability, cities must go beyond merely raising awareness and instead actively involve different stakeholders in the transition to circular consumption. These initiatives must engage residents, visitors, businesses and local organisations while cultivating a sense of community and shared responsibility, making sustainable consumption a collective goal rather than an individual burden.

Table 2: A city's tools to promote cultural and behavioural change in people and businesses

Tools for cities	Description	Example
Community events	Events organised by cities should be based on circular principles to lead by example. Specific events around circular practices can be organised.	Vienna, Austria
Education	To cultivate conscious consumers, cities can integrate circular economy principles into education by collaborating with schools, universities and extra-curricular organisations to promote sustainability, critical thinking and innovation, while engaging students in real-world projects and training for circular skills.	Brussels, Belgium
Information and data sharing	Support informed consumer behaviour with data accessibility. Better monitoring means shared accountability between businesses, residents and authorities.	Gothenburg, Sweden
Research and skills development	To support innovation in circular consumption, cities can set up innovation hubs and living labs.	Helsinki, Finland

By leveraging effective communication and engaging residents through hands-on events, living labs and partnerships with educational institutions, municipalities can tackle individual-level barriers such as perceptions, cultural norms, and lack of awareness. At a more systemic level, these initiatives contribute to building the necessary infrastructure and support networks, encouraging collaboration among local authorities, businesses and community organisations. Strategies that can help promote circular consumption are presented below.

- **Community events:** Cities can change consumer habits and involve residents in circular economy activities by hosting events that showcase sustainable practices and products. Initiatives such as city-wide "repair festivals" or "sustainability weeks," as well

as networks of repair cafés offering do-it-yourself workshops, can give residents hands-on experience and help them develop the skills needed to repair broken items, promoting a mindset of durability and repair over disposal. Substantial efforts can be made in the promotion of local culture, both for residents and visitors, with an emphasis on putting forward smaller-scale and local craftsmen, restaurants, museums and artists. By supporting activities that showcase authentic experiences that lie outside most traditional tourist circuits, cities can minimise the impact of leisure and culture while fostering deeper connection between locals, visitors and businesses.

- **Education:** To influence new generations of conscious consumers, cities should embed circular consumption principles into different education streams. This can be done by collaborating with local schools, universities and extra-curricular organisations (such as sports centres and art schools) to encourage them to promote a comprehensive curriculum that introduces sustainability, critical thinking and innovation. Most importantly, cities can foster a sense of responsibility among younger generations by giving students the opportunity to participate in projects that tackle real-world challenges related to overconsumption and wasteful practices through collaborations with local educational institutions. Cities can also encourage businesses to co-host hackathons: events where people come together to solve an issue or identify opportunities collaboratively and offer workplace training centred on circular skills to ensure that students and professionals are prepared for the transition.

Box 1: Neighbourhood interventions

Neighbourhood-level interventions: a catalyst for circular consumption

Neighbourhoods are ideal for piloting circular economy initiatives because they are large enough to represent diverse urban populations but small enough to avoid complex governance and high costs. Interventions at this scale can promote meaningful community engagement, making it easier for municipalities to mobilise residents, businesses and decision-makers to test new approaches and showcase the benefits of circular consumption. By doing so, local governments can also create impactful, localised change, and enable residents to drive change from the bottom-up and directly experience and benefit from these solutions in their daily lives.[35]

A circular neighbourhood is a community that fully integrates circular economy principles into its local activities. Due to its smaller scale, a circular neighbourhood allows for more flexible and responsive governance, encouraging innovation and enabling faster testing of new approaches. These neighbourhoods are characterised by strong collaboration between businesses, residents and local government, creating opportunities for partnerships and active community participation. Circular neighbourhoods focus on local knowledge and needs, ensuring that the benefits, such as job creation, skill development and wealth, are distributed so that all residents can participate in the transition to a more sustainable economy. Hanover's Ecovillage, for example, is a pioneering circular neighbourhood that combines sustainable housing with shared resources and green spaces to minimise its environmental impact. By integrating community gardens, shared utilities and eco-friendly building practices, this neighbourhood inspires strong collaboration between residents and promotes a sustainable, community-driven lifestyle.

- **Information and data sharing:** Empowering residents with data and insights can transform consumer behaviour and promote accountability. Cities should invest in advanced information management and dissemination on topics covering consumption patterns, waste generation, the impact of circular consumption and ongoing city-led efforts and initiatives, for example. By providing residents with access to this information through user-friendly platforms, municipalities can foster transparency and encourage more informed decision-making. Additionally, by developing dashboards and signs across the city that share data among businesses, residents and tourists, cities can create a communal sense of responsibility for achieving circularity and encourage responsible behaviour.
- **Research and skills development:** Cities can position themselves as innovation hubs for circular consumption by investing in research and development that drive sustainable solutions. Establishing living labs and circular innovation hubs will enable residents, entrepreneurs and researchers to collaborate and explore new models of consumption through real-world experimentation and people-centred research for societal challenges. This allows participants to get involved in ideation, testing, and pilot project implementation in real-world settings, ensuring that key stakeholders have a direct role in shaping the solutions. Initiatives like living labs generate buy-in and support for the circular economy and can also provide businesses with the skills and knowledge needed to adopt more circular practices.

Case studies

- **Community events: Vienna, Austria – re:pair festival**

Based in Vienna's Museums Quartier, the re:pair festival is dedicated to promoting sustainability and circular consumption by encouraging repair over replacement.[35] The thematic areas explored vary on an annual basis but centre on industries and value chains known for their detrimental environmental impact. During the festival, visitors can attend workshops on mending textiles and restoring furniture and take guided tours that highlight ongoing opportunities and initiatives around the city.

Circular strategies: These types of events aim to familiarise people with strategies like Reuse, Repair and Refurbish by practically demonstrating what can be done with used products.

- **Education: Brussels, Belgium – "Maîtres-Frigo"**

Brussels' "Maîtres-Frigo" is a community-driven initiative to raise awareness about food waste reduction.[36] Trained volunteers educate residents on sustainable food practices, teaching skills like food storage, zero-waste cooking, and efficient grocery management. This programme demonstrates how cities can embed circular principles in public education, promoting sustainability and resourcefulness among residents. It serves as a hands-on model of how local governments can encourage environmentally conscious habits through collaborative, real-world learning experiences.

Circular strategies: This programme promotes Reduce by teaching efficient grocery management, Reuse through food storage techniques to extend ingredient life, and Rethink by encouraging sustainable daily food habits, embedding circular principles via community education.

- **Information and data sharing: Gothenburg, Sweden – Smarta Kartan**

The Smart Map (Smarta Kartan), developed in collaboration between the non-profit association Kollaborativ Ekonomi Sverige (KES) and the City of Gothenburg, maps sharing-economy initiatives such as bicycle kitchens, exchange groups, free shops, and carpools. The platform encourages access over ownership and fosters community engagement.[37] The map is not a directory of businesses but a tool to highlight people and communities sharing resources, promoting transparency and accountability in consumption practices. Funded by municipal and national programmes, the initiative demonstrates how cities can use accessible platforms to inform residents about the availability of circular options in their neighbourhood.

Circular strategies: This platform encourages all R strategies in the acquisition phase and in the use phase of consumption. By providing a library of options, consumers can act according to circular strategies in these phases.

- **Research and skills development: Helsinki, Finland – Kalasatama Urban Lab**

The Smart Map (Smarta Kartan), developed in collaboration between the non-profit association Kollaborativ Ekonomi Sverige (KES) and the City of Gothenburg, maps sharing-economy initiatives such as bicycle kitchens, exchange groups, free shops, and carpools. The platform encourages access over ownership and fosters community engagement.[38] The map is not a directory of businesses but a tool to highlight people and communities sharing resources, promoting transparency and accountability in consumption practices. Funded by municipal and national programmes, the initiative demonstrates how cities can use accessible platforms to inform residents about the availability of circular options in their neighbourhood.

Circular strategies: This urban lab incorporates ideas of Rethink by experimenting with new solutions for urban sustainability in their Smart Living showrooms.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5.2 Urban planning to facilitate access to circular consumption options

In today's densely populated cities, space is a critical asset competing with various interests, like housing and commercial developments. Urban planning to promote circular consumption requires careful planning and may involve significant investments, not only in innovative new facilities like community gardens and waste processing centres. It also offers good circular opportunities for repurposing idle assets such as post-industrial buildings and districts for essential activities, including material exchange hubs and reverse logistics centres.[39] Strategic placement of these facilities is essential to increase convenience and avoid segregated access. For example, cities may choose to place community repair cafés in diverse neighbourhoods instead of only in affluent areas, or integrate these facilities with reliable public transport routes, making them accessible to residents without private vehicles.

Table 3: Urban planning tools to make circular choices widely available

Tools for cities	Description	Example
Zoning regulations	Zoning regulations can be leveraged to incentivise resource sharing among industries, to encourage co-living or to minimise the impact of overtourism.	Espoo, Finland
Land-use planning	Land-use planning for mixed-use and compact development promotes circular consumption by creating walkable neighbourhoods that support local shopping, reduce waste and facilitate sustainable retail hubs, fostering community self-sufficiency and resource circulation.	Paris, France
Permitting	Permitting governs whether certain activities or projects can happen within planned spaces. It can thus be used to promote circular solutions as an alternative to linear practices.	Espoo, Finland
Site planning	This involves creating detailed designs and layouts for individual sites, organising structures, utilities and spaces to promote efficient operations, integrate circular logistics infrastructure, select sustainable materials and encourage shared amenities that foster circular lifestyles within communities.	Malmö, Sweden
Urban farms and green spaces	Through zoning and land-use planning measures, municipalities can allocate space for community gardens, urban farming, and local food markets.	Prague, Czech Republic
Develop lesser-known sites and areas	Cities can alleviate congestion in popular, central areas and promote economic equity by supporting development and promoting less-known, peripheral neighbourhoods and cultural experiences, fostering integrated, accessible communities aligned with the 15-minute city model.	Budapest, Hungary

Proper urban planning can address key challenges of circular consumption as summarised in Table 3 and elaborated further in the following sections. At the individual level, it can mitigate barriers like lack of awareness and access to circular options, encouraging residents to shift their habits. At systemic level, it can resolve issues such as lack of infrastructure, creating a supportive environment for circular activities, and prioritising the redevelopment of existing spaces to optimise land use and curb urban sprawl.

- **Zoning regulations:** Local governments can use zoning laws in various ways to support sustainable development and circular economy principles and practices. Municipalities can modify zoning laws to enable co-living spaces in areas once reserved for single-family homes or traditional apartments, making it easier to develop communal housing that encourages resource sharing. Zoning regulations can also help protect residential areas from overtourism by restricting tourist facility developments, thus preserving local character and maintaining quality of life for residents. Through these targeted zoning adjustments, cities can foster community wellbeing and drive sustainable resource use across sectors.

- **Land-use planning for mixed-use and compact development:** City planners can use smart land-use planning to create neighbourhoods that support circular consumption. Mixed-use developments and walkable, compact neighbourhoods can encourage people to shop locally, reducing the need for packaging and transportation-related waste while promoting more active modes of transport for residents that contribute to their wellbeing. These areas could also host sustainable retail hubs, helping consumers acquire circular products and use their existing products in a circular way. This approach encourages communities to become more self-sufficient by keeping resources circulating within the neighbourhood.
- **Permitting:** Permitting establishes whether certain activities or projects can take place in planned areas. Cities can use their permitting processes to prioritise circular businesses, such as repair cafés, community gardens, and material recovery centres, which often struggle to compete with profit-driven enterprises in central urban areas. These vital initiatives are frequently pushed to city peripheries due to commercial pressures. By granting favourable permits, limiting permits for linear businesses, and ensuring central, accessible locations, cities can create thriving hubs for circular and sustainability-driven enterprises.
- **Site planning:** This entails the detailed design and layout of individual sites, determining how structures, utilities, and spaces are organised within a specific area. Circular logistics infrastructure should be integrated in urban developments to ensure that reuse centres are well-connected to transportation networks for efficient operations and product redistribution. Site planning also plays a crucial role in the choice of materials for the construction of buildings, roads, and other infrastructure, and should ensure components and materials are selected based on their circularity, including, for example, their potential for disassembly, repair, reuse or recycling. Finally, site planning can promote circular lifestyles by incorporating shared spaces in housing designs. For instance, new apartment complexes could be required to include a minimum number of shared amenities, such as laundry facilities, exchange areas for tools and other items, or even repair cafés. By rethinking the use of goods at the household level, site planning can be leveraged to reshape new building layouts to enable communities to make more sustainable choices in their daily lives.
- **Urban farms and green spaces:** Through zoning and land-use planning measures, municipalities can allocate space for community gardens, urban farming and local food markets. This can reduce food waste and reliance on imported goods while bolstering community cohesion and creating a sense of belonging that in turn positively contributes to physical and psychological wellbeing.[40] As community members engage with these spaces, they often develop greater awareness and appreciation for sustainability, which can have a ripple effect and lead to more conscious choices in their daily lives. Supporting urban farms is also in line with the EU Farm to Fork strategy, which aims to make food systems fairer, healthier and more environmentally-friendly.[41] By prioritising investment in parks, green spaces and recreational areas over commercial developments, cities can encourage residents to engage in sustainable activities that do not revolve around consumption. This can prompt residents to organise their free time around nature, fostering healthier lifestyles.
- **Develop lesser-known sites and areas:** By highlighting underappreciated neighbourhoods and cultural experiences, urban planners can effectively disperse both residents and tourists, alleviating congestion in overcrowded hotspots while revitalising local communities. This approach helps prevent the segregation of isolated residential areas, fostering integrated neighbourhoods that provide a rich mix of cultural, social and economic opportunities, in line with the concept of a 15-minute city.[42] This model reduces pressure on popular locations while distributing economic benefits more equitably throughout the city. A similar approach can also be taken to support the revitalisation of city centres abandoned by retail brands that have relocated to peripheral shopping centres, leaving behind abandoned commercial space and for lease signs. By facilitating and promoting the establishment of circular shops and businesses in such central empty spaces, the city can promote the development of a circular city centre as an alternative to consumption-focused peripheral shopping centres.

Case studies

- **Zoning regulations and Permits: Espoo, Finland – Kera district**

The Kera district in Espoo, Finland, is undergoing a transformation from an industrial area into a vibrant, sustainable neighbourhood that embodies circular economy principles.[43] To support this transition, the City of Espoo has implemented zoning regulations to facilitate the shift from an industrial zone to a circular neighbourhood. As part of this transformation, the city can use permits to prioritise cultural and leisure facilities, as well as businesses that promote circular lifestyles and consumption. Through this conscious development, the city is facilitating access to circular consumption options. The redevelopment also aims to create a 20-minute city, where residents can access essential services within a short walk or bike ride, fostering local living and reducing reliance on cars.

Circular strategies: This development Rethinks urban planning by fostering local living, Reducing car dependency and Repurposing industrial land into a sustainable neighbourhood to minimise resource consumption.

- **Land-use planning: Paris, France – 15-minute city plan**

Paris's "15-minute city" plan aims to create compact, mixed-use neighbourhoods where essential services, such as shops, schools and parks are all within a short walk or bike ride from residents' homes.[44] This approach promotes local shopping and reduces the need for car travel, which minimises packaging waste and transportation emissions. The design encourages a self-sufficient community model, with neighbourhoods supporting local economies and residents benefiting from a healthier, more active lifestyle.

Circular strategy: The 15-minute city makes use of the Reduce principle. Residents and products need to travel less, lowering emissions and negative effects related to commuting.

- **Site planning: Malmö, Sweden – Augustenborg neighbourhood**

Augustenborg, a neighbourhood in Malmö, Sweden, is a leading example of circular site planning.[45] Known for its extensive botanical roof gardens, which have increased the neighbourhood's biodiversity by 50%, Augustenborg seamlessly integrates sustainability in its residents' everyday lives. Augustenborg's innovations include stormwater management systems, solar and wind power, and communal reuse and recycling initiatives. The community actively participates in designing various solutions, such as car-pooling schemes, biogas production, and educational projects for children. These initiatives have transformed the neighbourhood into a living model for circular economy practices.

Circular strategies: The neighbourhood employs multiple R-strategies, including Rethink, through communal and educational initiatives, Reuse, through reuse projects, Recycle, by implementing communal recycling programmes, Repair and Refurbish, through community repair initiatives as well as Reduce, by reducing emissions via renewable energy sources.

- **Urban farms and green spaces: Prague, Czech Republic – The Holešovice community garden**

Prague's Holešovice community garden showcases exemplary circular practices. This pioneering community garden, created in 2012, inspired the now approximately 60 community gardens scattered throughout the city. These spaces are hubs for sustainable urban agriculture, where residents can grow their own food and compost organic waste. The gardens also showcase how urban areas can incorporate green spaces to support local food systems, promote biodiversity and enhance social cohesion while fostering a greater connection to nature among residents.[46]

Circular strategies: Community gardens encourage consumers to Rethink their food habits by promoting locally sourced and seasonal produce. By consuming what they grow, participants Reduce the waste generation and environmental impact of their food choices. Additionally, composting practices in these gardens embody Recycle principles, further supporting sustainable consumption.

- **Develop lesser-known sites and areas: Budapest, Hungary – Normafa rehabilitation site**

The rehabilitation of the Normafa area in Budapest exemplifies how developing lesser-known sites can alleviate congestion in overcrowded hotspots while revitalising local communities and promoting wellbeing and non-consumption behaviours.[47] As part of the project, the municipality has transformed this underappreciated natural site into an accessible and inclusive recreational area, emphasising wellbeing activities such as hiking, cycling, and nature exploration. This approach disperses residents and tourists away from overcrowded urban attractions, fostering a deeper connection with nature while promoting sustainable leisure practices. This model not only reduces pressure on popular locations but also distributes economic and social benefits more equitably across the city, revitalising surrounding neighbourhoods and creating an integrated urban ecosystem.

Circular strategies: Shifting from consumption-heavy tourism to sustainable, nature-based leisure involves Rethinking the integration of urban spaces and natural sites within city ecosystems. Repurposing underutilised natural areas for activities like hiking and cycling minimises resource consumption and Reduces the environmental impact compared to traditional tourism.

5.3 Approaches to reshape how people and businesses consume

Cities can play a crucial role in promoting circular consumption by leveraging direct incentives for businesses and consumers. Cities in different countries have different tools at their disposal depending on relevant national regulations, as outlined in the table below and elaborated further in the following sections.

Table 4: Direct incentives to reshape how people and businesses consume

Tools for cities	Description	Example
Financial support and fiscal incentives	Align financial interests with sustainable consumption through grants, subsidies, tax breaks, credits, charges, tariffs and investment funds.	
– Grants and subsidies	Grants and subsidies enable businesses and residents to adopt circular practices by providing non-repayable funding.	Budapest, Hungary
– Investment funds	Investment funds pool resources from city governments and private investors, requiring a return on investment.	Amsterdam, the Netherlands
– Tax breaks and credits	Tax breaks and credits and partnerships with financial institutions can reduce interest rates or provide risk guarantees, recognising the public benefits these businesses generate. Municipalities can use taxes to fund certain sustainable investments.	United Kingdom
– Charges and tariffs	Linear consumption practices can be disincentivised by levying charges.	London, United Kingdom
Public procurement	A city can embrace the principles of circular consumption in their procurement policies.	Barcelona, Spain
Public-private and public-civil partnerships	Through these collaborations, public-civil partnerships can engage community organisations and residents in circular initiatives.	Slovakia

- **Financial support and fiscal incentives:** These play a crucial role in motivating businesses and residents to adopt circular practices and to shift their behaviour by aligning financial interests with sustainable consumption. It can be especially effective to forge collaboration between a city and higher levels of government to create and implement fiscal policies that support a circular economy.[48] This could involve:

  Financial support:

  - **Grants and subsidies**, which can provide businesses with the resources they need to adopt circular practices in their operations and offerings.[49] For example, cities could offer a subsidy for restaurants that offer reusable takeaway container systems to reduce packaging waste. Residents may also receive subsidies for purchasing energy-efficient appliances that are designed for durability. Cities can further incentivise the greening of transport by offering free or reduced parking fees for electric vehicles.
  - **Through collaborations with investment funds,** cities can explore funding opportunities and connect with other cities to learn how they've secured resources for circular economy projects.[42] These funds are especially valuable for high-cost or high-risk initiatives, helping businesses access the early-stage capital needed to grow. For example, a city might partner with private investors to launch a recycling pilot or fund a community tool library, reducing waste and supporting local business models. By working with banks and investment funds, municipalities can also provide low-interest loans or credit guarantees to small and medium-sized enterprises, helping to cover interest costs or providing guarantees to improve access to financing for circular projects.

Fiscal incentives:

- **Through local tax breaks and credits**, cities can support sustainable development and reward circular practices.[50] Local governments can reduce specific taxes, like property or waste taxes, for businesses dedicated to circular practices, thus recognising the "public good" they generate. For example, a local repair café could receive tax credits for services that reduce waste. Similar incentives can be offered to individuals: homeowners who install rainwater harvesting systems, for instance, might receive tax deductions. Cities can use these measures to make the adoption of circular practices more convenient for individuals and businesses.
- **Implementing charges, tariffs and taxes** can effectively discourage linear consumption practices and support sustainable urban development. For example, a coffee shop could be charged a fee for using single-use cups, incentivising a shift towards compostable or reusable alternatives or even away from the "takeaway" model altogether. Similarly, visitors to cities could face an overtourism fee when booking accommodation, and empty apartments might incur vacancy taxes, addressing the high consumption rates driven by tourism and underutilised spaces. The revenue generated from these charges could then be reinvested into circular infrastructure projects, such as improved waste management facilities or community-based circular economy initiatives. Such instruments can also be used to better capture value. For example, urban infrastructure that raises land value can be co-funded through mechanisms like land value capture or tax increment financing. However, it is crucial that these measures are implemented as part of a comprehensive policy package to mitigate potential negative outcomes, such as gentrification and displacement, ensuring a balanced approach to sustainable urban development.

- **Public procurement:** Local governments' own procurement and consumption can significantly impact the circular economy. Cities can leverage public procurement to prioritise local and circular suppliers by introducing circular criteria in procurement contracts. For example, when a city needs to buy new playground equipment, it can choose suppliers that use recycled materials or offer products designed for easy repair. Public equipment and furniture, etc. should be acquired and managed in a way that maintains their value and enables use for as long as possible. Cities may endeavour to repair broken streetlights or upgrade them to use more energy-efficient technology, rather than simply replacing them. By adopting circular procurement practices, cities set an example that helps shift public habits and attitudes toward sustainability. This approach also helps close knowledge gaps by showing how sustainable choices can be integrated into everyday operations.
- **Public-private and public-civil partnerships:** Through these collaborations, cities can engage with community organisations and residents in circular initiatives. For instance, a city could work with local NGOs to organise community workshops on upcycling and repair, empowering residents to adopt more sustainable consumption habits. Additionally, cities can create business incubator and accelerator programmes specifically targeted at circular economy startups. For example, a city could partner with a local university to support startups that focus on sustainable product design or switch from the sale of products to services, offering mentorship and resources to help them grow. Public-private and public-civil partnerships enhance community wellbeing by connecting people through sustainable initiatives like repair cafés or shared resources, which build social ties and promote sustainable habits. Supporting local startups focused on circular solutions also drives innovation, providing residents with access to sustainable products and fostering a strong, community-based economy.

Case studies

- **Grants and subsidies: Budapest, Hungary – Subsidised native fruit tree programme**

The Hegyvidék Green Office in Budapest's 12th district has initiated the "Gyümölcsöző Hegyvidék" (Fruitful Hegyvidék) programme, offering residents subsidies to plant native fruit trees in their gardens.[51] Through this initiative, the municipality provides up to two fruit saplings per property at half price, along with a wooden post for support and a "Care Package" to assist in proper cultivation. By encouraging residents to grow their own fruit, the programme aims to promote self-sufficiency, reduce food waste and foster sustainable consumption habits. This approach not only enhances local biodiversity but also educates the community on the benefits of homegrown produce, leading to more conscious consumer behaviour and a stronger connection to the environment.

Circular strategies: By subsidising fruit trees, the municipality aims to teach people how to Rethink their consumption habits and Reduce food waste.

- **Investment fund: Amsterdam, the Netherlands – Sustainability Fund**

The City of Amsterdam's Sustainability Fund provides smaller, low-risk loans of up to €500 000.[52] Projects receiving funding must contribute to the aims of the city's sustainability agenda and are judged according to the environmental effect per euro invested. To encourage private sector involvement, the fund offers a discounted interest rate when at least one-third

of financing comes from non-governmental sources. In addition to energy saving and production projects, the fund is experimenting with loans for advancing the circular economy.

Circular strategy: The fund aims to Reduce energy consumption by funding energy-saving projects and promotes innovative circular economy projects that Rethink traditional business models and investment approaches.

- **Tax breaks and credits: United Kingdom – Charity shops**

Municipalities can actively offer consumers circular options by influencing the street scene. The United Kingdom's charity shops are an illustrative example, with medium-sized retail spaces in shopping streets designated for charities selling second-hand goods.[53] These charities receive tax benefits, which makes it feasible for them to be located in often-costly retail streets.

Circular strategies: Supporting charity shops that sell second-hand items serves to Reduce the consumption of new materials. Consumers are incentivised to Reuse items already in circulation or creatively Repurpose second-hand items.

- **Charges, Tariffs and Taxes: London, United Kingdom – Congestion charges**

The congestion charge in London, implemented by Transport for London, is a daily fee for vehicles entering designated high-traffic areas in central London during peak hours.[54] This charge encourages residents to use public, shared or alternative transportation instead of private vehicles, reducing fuel consumption and emissions in cities and disincentivising car ownership. The congestion charge thereby decreases the city's overall environmental impact and congestions and conserves resources through reduced fuel consumption, vehicle ownership and wear and tear.

Circular strategy: Imposing a fee on vehicles incentivises people to Rethink their commuting habits and use alternative transportation methods. It can Reduce fuel consumption and vehicle ownership in the city.

- **Public procurement: Barcelona, Spain: +Sustainable City Council programme**

Barcelona's +Sustainable City Council programme,[55] launched in 2006, prioritises environmental and social responsibility in municipal contracts. The programme addresses the consumption impact of municipal operations and mandates sustainability criteria in areas like construction, energy and public events, emphasising renewable energy, recycled materials and low-emission vehicles, thereby aiming to reduce resource consumption and environmental footprints. Regular monitoring and engagement by over 300 staff members help to ensure compliance. The programme supports a circular and sustainable economy by leveraging public procurement to drive innovation and reduce environmental impact.

Circular strategy: Barcelona's public procurement strategy Rethinks traditional procurement practices. It emphasises Reducing emissions, the use of Recycled materials and the use of energy from Recovered sources.

- **Public - Private Partnerships: Slovakia - Circular Slovakia**

Circular Slovakia exemplifies a successful public-private partnership aimed at advancing circular consumption. Established in 2018, this platform unites businesses, government entities, knowledge institutions, associations and NGOs to accelerate Slovakia's transition to a greener, circular economy. By fostering interdisciplinary exchange, Circular Slovakia promotes sustainable production, consumption, waste management and the use of secondary raw materials. It includes initiatives such as specialist webinars, circular breakfasts, summits, networking events, and the development of tools like the Circular Summit and Circular Academy.[56] [57] Through these collaborative efforts, Circular Slovakia effectively integrates circular economy principles across various sectors, demonstrating the impact of coordinated public and private actions in promoting sustainable consumption.[58]

Circular strategy: Depending on the needs of the businesses, government entities, knowledge institutions, associations and NGOs that the platform advises, all 9R strategies are used to increase circularity and reduce waste generation.

5.4 Regulatory measures to support circular consumption

While they may have less regulatory power than national or supra-national governments, cities can still use specific regulatory and legislative instruments to promote circular consumption and lifestyles (Table 5). Cities can introduce restrictive measures, limiting or completely banning specific activities, or prescriptive measures, which mandate circular practices in certain contexts. Additionally, cities can ensure that local regulations and policies and their enforcement are implemented in a way that aligns with national and international laws, and advocate for stronger national-level legislations that support a more systemic approach towards circular consumption. Measures that cities can already adopt to support this shift are presented in the table below and elaborated further in the following sections.

Table 5: Regulatory measures to support circular consumption

Tools for cities	Description	Example
Bans and restrictions	Commonly used by cities to phase out certain harmful products or activities.	Lyon Métropole, France
Policy advocacy	In areas where cities lack authority, they can still influence policy by advocating for changes at higher levels of governance, including regional, national, or European levels.	A coalition of cities urges the European Parliament to drive legislative change
Benchmark and standards	Cities can set benchmarks and standards that define success in circular economy practices and embed these as regulatory tools in urban policy.	Various cities across Europe coordinated by the NiCE project

- **Bans and restrictions** can be used by cities to phase out clearly unsustainable products and activities, and instead, incentivise businesses and consumers to switch to more sustainable alternatives. Cities may, for example, impose restrictions on certain types of advertising for products or practices which are now clearly categorised as unsustainable (see example from Lyon in the text box below). An example particularly relevant at the city level is the recent trend of introducing bans and restrictions on short-term accommodation rentals for tourists and visitors amid concerns from local residents (especially tenants), who are being pushed out of the housing market in many touristic cities.[59] European cities like Amsterdam, Vienna, Paris, Barcelona, Berlin, Florence and others have already implemented restrictions,[60] mostly in the form of a limited number of days that tourists can stay, but in certain cases also through outright bans. This alleviates pressure on housing while limiting overtourism and its associated overconsumption and waste generation.
- **Cities can collaborate with national governments to advocate for better policy regulation.** While cities play a vital role in promoting circular consumption through direct measures, their ability to introduce and enforce regulations can vary significantly based on their mandates and authority. Not all cities have the power to enact the full range of regulations necessary for a circular economy. However, in areas where cities lack regulatory and legislative authority such as setting taxes, they can still influence policy by advocating for change at higher levels of governance, including regional, national, or European levels. An example could be to argue for reduced VAT on circular consumption related activities, such as repair, which has been done in some countries, for example Ireland, Netherlands, Poland and Sweden. By supporting and advocating for national and supra-national policymaking supporting circular consumption, cities can also, indirectly, contribute to the development of new laws that will have substantial and tangible impact at the city level: for example, Extended Producer Responsibility schemes or regulations that require businesses to facilitate or adopt reuse and repair practices.
- **Setting benchmarks and standards.** Once cities have gathered sufficient data and monitored performance over time, they are well-positioned to set standards and benchmarks, using these metrics to define success and establish minimum expectations for circular economy practices. When implemented as regulatory instruments, data-backed benchmarks and standards become powerful tools embedded in urban policy, requiring compliance from local stakeholders and ensuring alignment with circular objectives. For example, cities might mandate specific reuse targets for retailers, accessibility to repair services, energy consumption in buildings, or minimum waste diversion rates. Through ongoing monitoring and data collection, cities can evaluate impact, raise standards over time, and maintain alignment with broader environmental and sustainability goals, creating a resilient, data-driven pathway to a more circular urban future.

Case studies

- **Bans and restrictions: Lyon Métropole, France – Advertisement ban**

Lyon has achieved a significant milestone by reducing the number of advertising panels in the Lyon Métropole by 75%.[61] Additionally, the maximum size of the remaining panels has been reduced from 12 m^2 to 4 m^2. The city has also taken steps to limit the presence of digital screens in public spaces, removing them from the metro system entirely. While French law prohibits banning digital screens in shop windows, their size has been restricted to 1 or 2 m^2, depending on the available space, and only static images are permitted. Moreover, rooftop advertisements and construction site advertising banners have been completely banned. The rationale behind these measures is clear: external advertising often promotes overconsumption, encouraging purchases that are not essential. Additionally, a single 2 m^2 digital advertising panel consumes as much electricity in a year as an average French household. It is inconsistent to ask residents to conserve energy by turning off lights or lowering their heating while allowing digital screens, advertising products that promote consumption or online betting, high-emission vehicles or flights, that exacerbate climate change.

Circular strategies: This ban primarily supports the Reduce strategy. By limiting the number of advertisements consumers see, it reduces their exposure to promotions for environmentally harmful products and services.

- **Policy advocacy: A coalition of cities urges the European Parliament to drive legislative change**

A coalition of European cities, including Amsterdam, Copenhagen, Turku, Malmö, Vitoria-Gasteiz, Porto, Leuven and Milan, recently signed a letter to the European Parliament to advocate for stronger policies that reinforce the role of cities in the transition and enable circular urban practices across the European continent.[62] The letter stresses the importance of broadening the use of economic and fiscal incentives and measures to support circular models and promote a multilevel governance approach that supports cities in deploying circular projects and initiatives.

Circular strategy: This coalition aims to influence any/all R-strategies.

- **Benchmarks and standards: NiCE project**

Part of the NiCE project, the Circular Lifestyle Monitor Tool for cities helps municipalities assess and track progress in adopting circular lifestyles.[63] By providing a set of indicators across environmental, economic, governance, infrastructure and social sectors, cities can benchmark key areas such as emissions, material reuse and stakeholder engagement. The tool facilitates situational analysis, vision setting and the measuring of outcomes so that cities can tailor actions to boost circularity. Monitoring circularity involves tracking specific behaviours related to consumption, waste management and resource use. The tool includes categories such as circular lifestyle ecosystems, actions, policy interventions and performance indicators, helping cities measure short-term and long-term impacts. By using community-based planning and engaging residents in actions like repair, reuse and recycling, cities can drive behavioural change, aligning policies and infrastructure with circular economy goals. The focus is on creating a sustainable urban environment that balances resource efficiency with social wellbeing.

Circular strategy: This monitoring tool does not focus on one specific R-strategy. By making data available, the NiCE project aids municipalities in deciding which R-strategy to focus on.

5.5 Summary of circular consumption tools

Category	Tools for cities	Description	Example
Cultural and behavioural change	**Community events**	Events organised by cities should be based on circular principles to lead by example. Specific events around circular practices can be organised.	re:pair festival, Vienna, Austria
	Education	To cultivate conscious consumers, cities can integrate circular economy principles into education by collaborating with schools, universities and extra-curricular organisations to promote sustainability, critical thinking and innovation, while engaging students in real-world projects and training for circular skills.	Maîtres-Frigo, Brussels, Belgium
	Information and data sharing	Support informed consumer behaviour with data accessibility. Better monitoring means shared accountability between businesses, residents and authorities.	Gothenburg, Sweden
	Research and skills development	To support innovation in circular consumption, cities can set up innovation hubs and living labs.	Helsinki, Finland
Urban planning	**Zoning regulations**	Zoning regulations can be leveraged to incentivise resource sharing among industries, to encourage co-living or to minimise the impact of overtourism.	Espoo, Finland
	Land use planning	Land use planning for mixed-use and compact development promotes circular consumption by creating walkable neighbourhoods that support local shopping, reduce waste and facilitate sustainable retail hubs, fostering community self-sufficiency and resource circulation.	Paris, France
	Permitting	Permitting governs whether certain activities or projects can happen within planned spaces.	Espoo, Finland
	Site planning	This involves creating detailed designs and layouts for individual sites, organising structures, utilities and spaces to promote efficient operations, integrate circular logistics infrastructure, select sustainable materials and encourage shared amenities that foster circular lifestyles within communities.	Malmö, Sweden
	Urban farms and green spaces	Through zoning and land-use planning measures, municipalities can allocate space for community gardens, urban farming, and local food markets.	Prague, Czech Republic
	Develop lesser-known sites and areas	Cities can alleviate congestion in popular, central areas and promote economic equity by supporting development and promoting less known, peripheral neighbourhoods and cultural experiences, fostering integrated, accessible communities aligned with the 15-minute city model.	Budapest, Hungary

Category	Tools for cities	Description	Example
Direct incentives	**Financial support and fiscal incentives**	Align financial interests with sustainable consumption through grants, subsidies, tax breaks, credits, charges, tariffs and investment funds.	
	- Grants and subsidies	Grants and subsidies enable businesses and residents to adopt circular practices by providing non-repayable funding.	Budapest, Hungary
	- Investment funds	Investment funds pool resources from city governments and private investors, requiring a return on investment.	Amsterdam, the Netherlands
	- Tax breaks and credits	Tax breaks and credits and partnerships with financial institutions can reduce interest rates or provide risk guarantees, recognising the public benefits these businesses generate. Municipalities can use taxes to fund certain sustainable investments.	United Kingdom
	- Charges and tariffs	Linear consumption practices can be disincentivised by levying charges.	London, United Kingdom
	Public procurement	A city can embrace the principles of circular consumption in their procurement policies.	Barcelona, Spain
	Public-private and public-civil partnerships	Through these collaborations, public-civil partnerships can engage community organisations and residents in circular initiatives.	Slovakia
Regulatory measures	**Bans and restrictions**	Commonly used by cities to phase out certain harmful products or activities.	Lyon Métropole, France
	Policy advocacy	In areas where cities lack authority, they can still influence policy by advocating for changes at higher levels of governance, including at regional, national, or European levels.	A coalition of cities urges the European Parliament to drive legislative change
	Benchmarks and standards	Cities can set benchmarks and standards that define success in circular economy practices and embed these as regulatory tools in urban policy.	Various cities across Europe coordinated by the NiCE project

6 Conclusions

There is increasing evidence highlighting the critical importance of transitioning to a circular economy to address the current ecological overshoot. This calls for a systemic shift in how societies consume resources, especially in urban areas, which are major drivers of consumption and associated environmental impact both locally and globally. While the circular economy is increasingly being recognised as a key model to operationalise this shift, local authorities still largely concentrate their circular economy efforts in increasing the recycling of waste. The circular economy should instead be seen as a useful framework to move beyond waste management and address urban overconsumption at the source.

While it is important to acknowledge the limits and constraints cities face in relation to regional, national and international policy frameworks, local governments have various tools at their disposal to promote, facilitate and enable circular consumption. This guide helps cities identify which tools and instruments they can use to support and enable the individual and systemic transition towards more circular consumption patterns in urban areas. Key recommendations for cities to consider in this transition are presented below.

Action plan for local governments to support circular consumption in cities

1. **Raise awareness and build capacity:** Promote a cultural and behavioural shift towards circular consumption among residents and businesses using educational campaigns, as well as direct forms of engagement such as workshops, training sessions, public engagement platforms and neighbourhood-level interviews.
2. **Leverage urban planning instruments:** Use urban planning instruments like zoning, permitting, and site planning to enable the establishment of more circular consumption patterns and options by integrating the necessary infrastructure into the urban landscape but also by allocating spaces for initiatives for sharing models, repair, reuse etc., to ensure greater accessibility to circular options.
3. **Set the right local incentives:** Local governments have the power to promote circular consumption patterns by leveraging economic incentives in the form of financial support and fiscal incentives for circular alternatives, by using public procurement, and by facilitating public-private-civil partnerships to engage a wide range of stakeholders in this transformation.
4. **Adopt targeted regulatory measures:** Establish a supportive legal framework to encourage circular practices, using relevant regulatory measures at the urban policymaking level and by setting targets and standards that support circular consumption at the local level.
5. **Advocate for promoting and enabling circular consumption policies at higher levels of governance:** Push for more ambitious circular policymaking across regional, national and supra-national authorities to ensure a coherent alignment of financial, regulatory and political incentives and support in favour of circular consumption. This should ensure that urban needs are included in national and EU circular economy policies, and that partnerships are set up for sharing experiences, knowledge and best practices between cities.
6. **Monitoring and evaluation:** Establish systems to track and share information about circular progress made, using open-access, data-driven tools to ensure public transparency, engagement and accountability among relevant stakeholders.

The current implementation of these tools and actions across various European cities is illustrated in the case studies presented in this guide, serving as inspiration for other cities that may wish to replicate or adopt similar measures. These examples should be taken as a holistic and comprehensive toolkit, acknowledging that measures are most impactful when combined and tailored to specific city contexts. It is important to stress that multi-level and cross-sectoral governance need to be at the core of cities' efforts to ensure alignment with national and EU policies and guarantee that civil society and business networks have an integral role in shaping the transition to more circular consumption.

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