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Fostering a circular economy at local and regional levels

Committee on Governance, Civic Engagement and the Environment (Governance Committee)

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Kristoffer TAMSONS, Sweden (R, EPP/CCE)

Summary

The report extensively discusses the evolution of economic models from linear to circular, particularly highlighting the shift towards sustainability and resource efficiency initiated across Europe. It outlines how traditional linear economy models have led to over-consumption, dependence on imports and significant environmental degradation with visible climatic disturbances and advocates for a transformation to a circular economy where resources are conserved, through prevention and ecodesign, reused and recycled and where focus is shifted to sourcing supplies locally.

The circular economy not only addresses environmental and economic sustainability but also strengthens the realisation of human rights by promoting equitable resource distribution, fostering inclusive participation in economic opportunities, and supporting healthier environments.

Recommendations include boosting local governance roles and actions in circular economy strategies; embracing public-private partnerships to foster circular economic principles and social justice and adopting sustainable manufacturing practices through sustainable supply chain shifts and ecodesign. The report also emphasises the importance of integrating circular economy practices across all levels of policy, infrastructure and community engagement, describing how this acts to enhance environmental sustainability and human rights.

1. L: Chamber of Local Authorities / R: Chamber of Regions
EPP/CCE: European People's Party Group in the Congress
SOC/G/PD: Socialist, Greens and Progressive Democrats Group
ILDG: Independent and Liberal Democrat Group
ECR: European Conservatives and Reformists Group
NR: Members not belonging to a political group of the Congress.

RESOLUTION 503 (2024)[2]

1. The Congress of Local and Regional Authorities of the Council of Europe ("the Congress") refers to:

a. the European Charter of Local Self-Government (ETS No.122, "the Charter"), in particular its Articles 3, 4 and 9;

b. the Priorities of the Congress 2021-2026, in particular Priority d: Environmental issues and climate action in cities and regions;

c. Congress Resolution 500 (2024) "Local and regional responses to natural disasters and climate hazards: from risk preparedness to resilience";

d. Congress Resolution 489 (2022) "A fundamental right to the environment: a matter for local and regional authorities. Towards a green reading of the European Charter of Local Self-Government";

e. the Sustainable Development Goals (SDGs) and Agenda 2030 for Sustainable Development of the United Nations, in particular SDG 1 "End poverty in all its forms everywhere", SDG 3 "Good health and well-being", SDG 6 "For clean water and sanitation for all", SDG 11 "Sustainable Cities and Communities", SDG 12 on "Ensuring Sustainable Consumption and Production patterns", SDG 13 "Take urgent action to combat climate change and its impacts", SDG 14 "For life below water" as well as SDG 16 "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels".

2. The Congress underlines that:

a. the Russian war of aggression against Ukraine and the fallout of the COVID-19 pandemic have exposed significant weaknesses in the global supply chain; coupled with the ongoing consequences of climate change and resulting global warming, these developments underline the urgency of reimagining various aspects of economies and making them more resilient to current political realities and future challenges, notably, climate change;

b. the "take-make-waste" linear economic model used throughout the 20th century causes significant harm to the environment and social justice and is no longer viable;

c. the circular economy, a restorative model that decouples economic growth from natural resource use, and emphasises longevity, reuse, and recycling, has emerged as an alternative to the linear economy;

d. the circular economy has the potential to boost social and economic resilience at local level and to foster equality, enabling redistribution of resources and jobs and addressing resource scarcity;

e. a multi-level and multidisciplinary strategic approach is required for making the ambition of a circular economy a reality. Community involvement is crucial for the success of circular initiatives;

f. local and regional authorities are uniquely well-placed to contribute to the development of resilient, circular economies rooted in the particular needs of their communities and foster circular policies.

3. In light of the above, the Congress calls on the local and regional authorities of Council of Europe member States to:

a. develop and actively implement local and regional circular economy strategies and action plans tailored to local and regional contexts and promoting human rights and local democracy; establish clear goals and metrics to define and track the progress towards circularity; support the development of circular practices, such as preparation for reuse, recycling, upcycling, local renewable energy production, urban greening including the undoing of soil sealing, localised food growing, low and zero emission mobility;

2 Debated and adopted by the Congress on 15 October 2024 (see document CG(2024)47-14, explanatory memorandum), co-rapporteurs: Linda GILLHAM, United Kingdom (L, ILDG) and Kristoffer TAMSONS, Sweden (R, EPP/CCE).

b. integrate circular economy principles into urban planning and development; designing spaces that encourage sharing resources, such as tool libraries and community gardens with local food production and incorporating green infrastructure to manage waste and resources more effectively;

c. ensure that circular economy benefits human rights and is accessible to all residents, including marginalised and economically disadvantaged groups; this includes providing access to recycling programmes, repair services, and energy-efficient housing;

d. establish robust local and regional regulatory frameworks that support circular principles; this includes creating incentives for sustainable practices;

e. promote and implement Green Public Procurement, prioritising the procurement of sustainable and recycled products, leading by example and setting a standard for private sectors to follow;

f. encourage collaboration between the public sector, private companies, and the civil society to enhance local democracy and develop new technologies and business models that support circularity; leverage data and technology to monitor waste management, resource usage, and the lifecycle of products;

g. invest in circular infrastructure, building or upgrading facilities that support the circular economy, such as advanced recycling plants, community repair shops, anaerobic digestion and composting centres; making it easier for residents and businesses to participate in circular practices;

h. develop policies to prevent waste and implement separate collection, reuse, recycling and recovery of waste;

i. invest in circular mobility, providing low to zero emission transport options to citizens with easy transfers and access to the entire municipality at low cost, so encouraging the shift away from private vehicles for daily, routine movements;

j. engage the community through education and participation to inform the public about the benefits of this circular economy transformation for them and the ways in which they can engage with it and contribute to it.

4. The Congress calls on the local and regional authorities and their national associations to take account of this resolution and the accompanying explanatory memorandum, on this specific issue. It also asks its statutory bodies to take the present resolution into account in their activities.

RECOMMENDATION 512 (2024)[3]

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b. the Priorities of the Congress 2021-2026, in particular Priority d: Environmental issues and climate action in cities and regions;

c. Congress Recommendation 510 (2024) "Local and regional responses to natural disasters and climate hazards: from risk preparedness to resilience";

d. Congress Recommendation 484 (2022) "A fundamental right to the environment: a matter for local and regional authorities. Towards a green reading of the European Charter of Local Self-Government";

e. the Sustainable Development Goals (SDGs) and Agenda 2030 for Sustainable Development of the United Nations, in particular SDG 1 "End poverty in all its forms everywhere", SDG 3 "Good health and well-being", SDG 6 "For clean water and sanitation for all", SDG 11 "Sustainable Cities and Communities", SDG 12 on "Ensuring Sustainable Consumption and Production patterns", SDG 13 "Take urgent action to combat climate change and its impacts", SDG 14 "For life below water" as well as SDG 16 "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels".

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f. local and regional authorities are uniquely well-placed to contribute to the development of resilient economies rooted in the particular needs of their communities and foster circular policies.

3. In the light of the above, the Congress calls on the Committee of Ministers to invite the respective national authorities of the member States of the Council of Europe to:

a. adopt and implement national policies and legislation that incentivise the development of circular economy, including subsidies for circular business models, tax breaks for sustainable practices;

b. foster collaboration across different levels of government, the private sector, and the civil society to develop and implement circular economy strategies supporting human rights, democracy and social inclusion; develop platforms for knowledge sharing and joint problem-solving;

c. adopt and promote the use and verification of existing harmonised standards and certifications for circular products and services to ensure quality and facilitate trade in a circular economy, helping

3 Debated and adopted by the Congress on 15 October 2024 (see document CG(2024)47-14, explanatory memorandum), co-rapporteurs: Linda GILLHAM, United Kingdom (L, ILDG) and Kristoffer TAMSONS, Sweden (R, EPP/CCE).

consumers make informed choices and driving business towards more sustainable practices; where such standards or certificates are not available nationally, develop and adopt them;

d. invest in the necessary infrastructure to support circular practices, such as recycling centres, anaerobic digestion and composting facilities and systems for the separate collection and prevention and treatment of waste (to ensure waste is managed more effectively and turned into material resources as a priority and energy is recovered and used rather than landfilling residues);

e. support demand for recycled and sustainably produced goods by adopting and implementing green procurement policies and practices;

f. support research in technologies that enable circular economy practices, such as advanced recycling technologies, sustainable materials, and systems for product life extension; promote partnerships between academia, industry, and government to foster innovation;

g. provide platforms and funding for local authorities to pilot innovative circular economy projects, scaling up successful projects and promoting them across regions;

h. implement educational initiatives at all levels to raise awareness about the circular economy; include circular economy concepts in the national curriculum and provide training programmes for professionals transitioning from traditional to circular industries and for the public at large;

i. ensure monitoring and evaluation of circular economy policies, tracking progress in meeting sustainable development goals; use data to refine and update circular policies;

j. support international cooperation and partnerships to promote circular economy practices in Europe and beyond; adopt and contribute to the development of relevant international standards and support the UN Sustainable Development Goals.

4. The Congress calls on the Committee of Ministers and the Parliamentary Assembly of the Council of Europe to take account of this recommendation and its explanatory memorandum in their activities relating to Council of Europe member States.

EXPLANATORY MEMORANDUM

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INTRODUCTION[4]

1. Since the late 18th century, the Western world has followed an economic model that favours and awards ever increasing growth – emphasising increases in company size, turnover and profits along with GDP growth. This era has ushered in remarkable inventions and discoveries, yet it has also led to considerable environmental degradation. The relentless pursuit of growth encouraged manufacturing aimed at cutting costs and maximising sales and profits, which in turn increased product disposability. Urban environments prioritised efficiency at the expense of green spaces, contributing to a consumer-driven society increasingly detached from nature. As a result extreme climate events are hitting Europe causing harm to communities, destruction of property and infrastructure.

2. Historically the prevailing belief was that resources were infinite and that nature could withstand any level of pollution without disturbing the natural balance. In recent decades, populations in developing countries have also joined this consumption frenzy, increasing the size of the global population applying pressure on the environment. Both public and private sector have long ignored the detrimental effects of this linear economic model, as depicted in Figure 1 below.

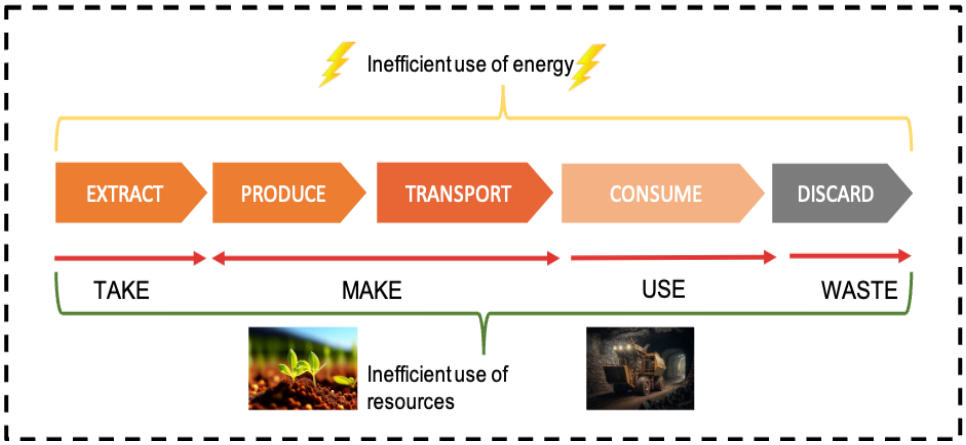

Figure 1: Diagram of a Linear Economy

3. The disconnect between urban populations and nature has grown, with lifestyle choices centred on consumerism adversely affecting physical and mental health and altering attitudes towards production and consumption. This issue was first formally recognised in the 1972 publication "The Limits to Growth" by the Club of Rome[5], which warned that our planet's natural systems might not sustain the current rates of economic and population growth indefinitely, even with technological advancements. In 1975 the Council of Europe Parliamentary Assembly (PACE) recognised the contribution of the Club of Rome and called for organising the economic development “in a way compatible with the world’s ecological needs and with more emphasis on the most rational use of the world’s resources”[6]. Fifty years on the world is living the effects of the imbalance created to the natural systems by the increasing consumption of resources. Further degradation of the environment and natural capital compromise prospects for future sustainable growth and human well-being.

4. Despite the resistance stemming from economic, technological, and behavioural challenges, the importance of a circular economy lies in its comprehensive approach to addressing some of the most pressing issues of our time, including environmental degradation, climate change, and sustainable growth. Recognising that sustainable economic growth is a prerequisite for well-paid jobs and a cornerstone of our welfare, the circular economy provides a policy response that not only addresses environmental degradation but also fosters economic prosperity and job creation. Its potential to create a more sustainable, resilient, and equitable world makes it a crucial model for future economic and environmental policies.

5. Prompted by global climate discussions and evidence, the EU[7] adopted its first Circular Economy Action Plan in 2015, inspired by the 17 UN Sustainable Development Goals[8] and influential reports such as "Towards the Circular Economy" by the Ellen MacArthur Foundation. This plan reflects a shift towards

4 The report was drafted with the contribution of Vanya Veras, Secretary General, Municipal Waste Europe.
5 Club of Rome, Meadows D.H., Meadows D.L., Randers J., Behrens III W. (1972), ”The Limits to Growth”.
6 Parliamentary Assembly Recommendation 760 (1975) “Limits to growth and social values”.
7 Any mention of EU Member States includes all members of the European Economic Area (EEA).
8 United Nations 17 Sustainable Development Goals.

an economy that respects ecological balances and values human and natural resources—principles also echoed in Doughnut Economics by Kate Raworth, which visualises sustainable development via two concentric rings representing essential human needs and ecological limits[9] (see Figure 2 below).

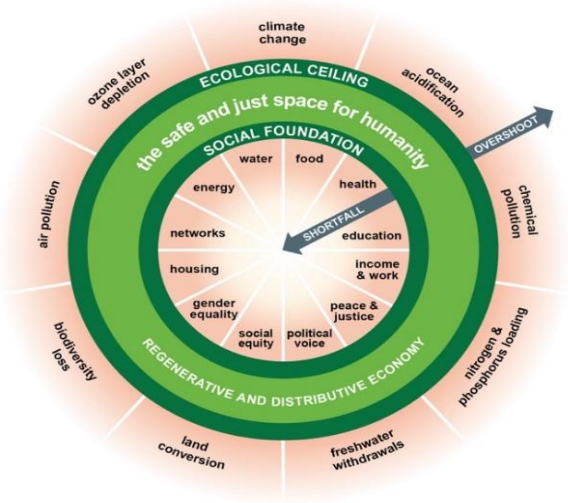

Figure 2: Diagram of a Doughnut Economy by Kate Raworth

6. The EU[10] and OECD[11] define a circular economy as one where the value of products, materials, and resources is maintained in the economy for as long as possible, minimising waste generation. The circular economy is based on three principles: i) design out waste and pollution; ii) keep products and materials in use; and iii) regenerate natural systems.[12]

7. Practical implementation of a circular economy for local and regional authorities includes transitioning manufacturing from a "make to break" to a "build to last" mentality, evolving agricultural practices to work in symbiosis with nature, ensuring fair wages instead of exploiting cheap labour and adopting purchasing strategies that prioritise product longevity and sustainable resource use over lowest price.

8. The Ellen McArthur Foundation illustrates these concepts in Diagram 3, showing the flow of materials in a circular economy.

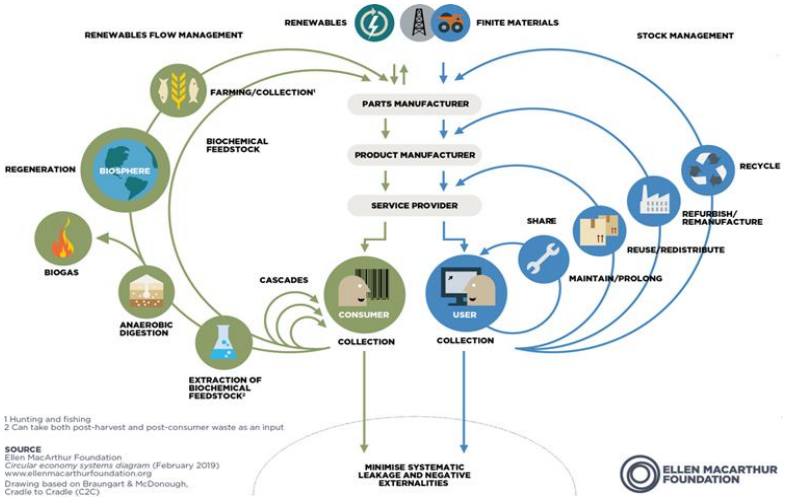

Figure 3: Ellen McArthur Foundation Diagram of a Circular Economy

9 See Doughnut Economics Action Lab (DEAL), ”About Doughnut Economics”.
10 European Parliament (2023), ”Circular economy: definition, importance and benefits”.
11 OECD (2020), Report “The Circular Economy in Cities and Regions”.
12 See Ellen MacArthur Foundation, ”What is a circular economy?”.

9. The European Union renewed its commitment with a new Circular Economy Action Plan in 2020[13], embedding circular economy principles in its waste legislation[14], which includes targets for reuse and recycling and mandates waste sorting by material type at the point of generation. This facilitates high-quality recycling and supports Extended Producer Responsibility systems, ensuring producers contribute financially to waste management, crucial for achieving recycling ambitions and supporting local authority infrastructure for waste handling.

10. The circular economy not only addresses environmental and economic sustainability but also strengthens the realisation of human rights by promoting equitable resource distribution, fostering inclusive participation in economic opportunities, and supporting healthier environments.

11. The Council of Europe as a whole, and the Congress in particular, increasingly focus on environment and climate change[15]. A number of the international legal standards developed by the Council of Europe notably including the European Convention on Human Rights (ETS No.5), the European Social Charter (revised) (ETS No.163), the Convention on the conservation of European wildlife and natural habitats (ETS No.104) and the Council of Europe Landscape Convention (ETS No.176) have contributed to make progress on environmental issues. In its judgment in the case *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland* the European Court of Human rights introduced a new duty on States to adopt adequate mitigation measures against climate change.[16] Overall, the European Court of Human Rights has so far ruled on some 300 environment-related cases,[17] related to the right to life, free speech and family life and to a wide range of issues including pollution, man-made or natural disasters and access to environmental information.

12. The Congress promotes a safe and healthy environment as a precondition for the enjoyment of human rights, advocating the strengthening of the position of local and regional authorities in environmental decision-making. Congress encourages a green reading of the European Charter of Local Self-Government and of its additional protocol on the right to participate in the affairs of a local authority.[18] It has adopted a Human Rights Handbook for local and regional authorities (volume III) on human rights and the environment, which contains best practices on circular economy[19] and the European Urban Charter III (2023), which contains principles for the urban living in the era of transformations, notably in relation to the environment and climate change, including a principle on circular economy.[20]

13. Since a clean and safe environment is increasingly recognised as a human right, practices that reduce environmental degradation directly support this right. By minimising the release of toxic substances and reducing waste, the circular economy can help ensure cleaner air, soil, and water for all. The effective management of various types of recovered waste can create jobs, enhance self-sufficiency, foster local economic development and lead to environmental and health improvements.

14. The establishment of a circular economy in the municipalities and regions of the Council of Europe member States is of key importance.[21] The absence of a circular economy signifies the continuation of polluting manufacturing practices, exploitation of children and cheap labour, continued over-consumption of disposable products, continued soil degradation, heating of the seas and oceans, which leads to ever worsening extreme climate events and social injustice. There is a growing civil society and youth outcry for the protection of our future which currently is in jeopardy as, without change, countries across Europe will be confronted with more environmental challenges and consequently more human rights violations.

13 European Commission, ”Circular economy action plan”.
14 Waste Framework Directive (EC/2008/98) revised in 2018, and its secondary legislation on packaging, electrical and electronic equipment, batteries and landfilling.
15 Council of Europe (2023), Fourth Summit of Heads of State and Government of the Council of Europe, ”Reykjavik Declaration”.
16 European Court of Human Rights, Grand Chamber, *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland*, Application no. 53600/20, Judgement of 9 April 2024.
17 European Court of Human Rights, Factsheet ”Environment and the European Convention on Human Rights” .
18 Congress Report CG(2022)43-15final, ”A fundamental right to the environment: a matter for local and regional authorities. Towards a green reading of the European Charter of Local Self-Government”.
19 Congress (2022), ”Human rights handbook for local and regional authorities (vol. 3) – Environment and sustainable development” , p. 84 et seq.
20 Congress (2023), ”European Urban Charter III (2023): Urban living in the era of transformations” .
21 Council of Europe (2022), ”Manual on Human Rights and the Environment (3rd Edition)” , p. 190 et seq.

CHAPTER I - ECONOMIC GOVERNANCE REDEFINED: A DYNAMIC SHIFT FOR SUBNATIONAL PROSPERITY

I. 1. Role of local and regional authorities in the circular economy

15. Local and regional authorities are the closest to people and local businesses and are ideally positioned to develop and implement circular economy strategies and action plans. They can swiftly implement initiatives due to their proximity to local actors, facilitating regular and direct interactions that are conducive to testing grounds for innovations and creating tailored incentives. Their broad responsibilities include managing construction and demolition, road maintenance, waste management, green public procurement, urban planning and design (including urban greening), mobility, local energy and water supply.[22] Furthermore, municipalities and regions possess invaluable data which can be leveraged to drive public education and awareness campaigns aimed at promoting waste prevention, reuse, recycling, and the use of public transportation.

16. To fully capitalise on a circular economy, cooperation and coordination across various value chains are required to optimise resource use. Local and regional authorities are well-placed to set up frameworks that encourage networking between local businesses and other stakeholders (for example by providing spaces for stakeholder meetings), fostering local sustainable growth and facilitating potential synergies.

17. Moreover, regional and municipal governments play an important role in establishing a supportive environment for business, by offering access to pertinent information, necessary permits, and funding opportunities. They can guide businesses on how to access financial support from national, european and international sources. The present report presents below examples of municipalities having successfully implemented financial incentives to boost local social and economic development.

18. Additionally, local and regional authorities can support training initiatives that integrate circular economy practices, offer back-to-work programmes, internship opportunities, and wage support funded through regional budgets. Sustainable economic growth in essential sectors such as tourism, agriculture, renewable energy, construction, and refurbishment for energy efficiency can be encouraged through fiscal incentives like reduced tax rates and VAT exemptions for local businesses.

19. Municipalities and regions are usually among the largest customers. They can drive the demand for circular products by adopting Green Public Procurement policies. Committing to purchase only recycled stationery and repairable electronic equipment not only supports local suppliers but also encourages them to offer these products to other businesses and residents.

20. Finally, establishing a solid framework for measuring and monitoring the progress of circular economy initiatives ensures accountability and promotes ongoing improvement, fostering a sustained transition towards circular practices.

I. 2. Benefits of a circular economy at local and regional levels

21. The circular economy concept transcends environmental sustainability, embracing social equity and justice to ensure that the needs of all community members are met. This holistic approach includes ensuring access to employment, education, healthcare, eldercare, childcare, and mobility. It also covers the provision of green, biodiverse spaces, local food growing and infrastructure for sports, entertainment, and community building. A socially just municipality is characterised by a high happiness index.

22. Adopting a circular economy offers significant social benefits across various sectors, enhancing community well-being. For instance, investments in green roofs and energy-efficient systems in public buildings like town halls and schools can yield substantial long-term savings through reduced energy costs and maintenance expenses, while simultaneously improving the health and productivity of building occupants. Research has shown that access to natural views or green spaces can reduce sick leave by up to 23%.[23]

22 Congress (2022), ”Human rights handbook for local and regional authorities, vol. 3 - Environment and sustainable development” , p. 17.
23 Business in the Community (BITC) Network (2021), Toolkit “The Power of Nature for Employee Wellbeing”.

23. According to the World Health Organisation's 2016 report "Urban Green Spaces and Health"[24] urban areas must provide well-maintained, safe and biodiverse green spaces to reduce morbidity and combat mortality. These spaces should include rest areas, pathways, outdoor gyms and play areas for all ages. It also states that such access to green spaces reduces violence and criminality among disadvantaged youth. Research[25] suggests a minimum of 9 square metres of green space per person, with an optimal 50 square metres per person to achieve significant health benefits. The relevant examples are mentioned below in Chapter II.2, Circular bioeconomy.

24. The circular economic model supports economic rights and drive substantial economic benefits. This includes job creation by offering re-education and back-to-work programmes. These efforts foster social and economic stability and provide opportunities for disadvantages groups.

25. Setting up repair and reuse networks, which not only reduce waste but also create employment opportunities and facilitate skill development, offering affordable, high-quality products can be an effective circular economy strategy. For example, Flanders, Belgium, has legislation that supports social enterprises in preparing waste for reuse, with financial incentives for hiring unskilled, unemployed individuals.[26]

26. Circular economy practices empower consumers by providing durable, repairable and recyclable products, thus supporting consumer's rights to fair trade, information, and choice. This encourages a consumer culture that values quality and sustainability over disposability and excess.

27. A fundamental principle of human rights is the participation of all stakeholders in decision-making processes that affect them. The circular economy often involves community participation in waste management schemes, such as recycling programmes or local decision-making about resource use. Ensuring that communities have access to information about circular economy practices, such as those related to waste management, and are involved in shaping these practices can support their rights to participate meaningfully in governance.

28. Incorporating environmental and social considerations in urban planning can lead to immediate and long-term cost savings, minimising resource input and maximising product longevity. For example, efficient urban road designs with rain gardens and roadside plantings reduce flooding and maintenance costs, while strategically placed trees can minimise thermal expansion of road surfaces and enhance rainwater absorption.

29. Each European municipality, whether rural or urban, generates demand for a similar set of products and consequently produces a comparable mix of urban waste. By managing consumption to minimise waste and optimising waste management to maximise material and energy recovery, municipalities can significantly enhance sustainability. This approach reduces waste and increases self-sufficiency in renewable energy and other resources, supporting initiatives in repair, reuse, and sharing economies.

30. Public authorities that adopt a circular economy contribute to conserving natural resources and managing various externalities. For businesses, it provides a competitive edge and strengthens customer relationships by mitigating economic, environmental, and social risks. For residents, it leads for more inclusive job market, lower costs for goods and services and increased well-being.

31. In summary, a well-designed circular economy, tailored to both common and unique local needs, is essential for fostering social and economic stability and prosperity and is a key element in combating climate change and ensuring sustainable development.

24 World Health Organization, Regional Office for Europe (2016), "Urban green spaces and health".
25 Russo A., and Cirella G.T. (2018), "Modern Compact Cities: How Much Greenery Do We Need?".
26 TAIEX EIR PEER TO PEER, Project Flanders and Denmark on reuse (2018).

I. 3. Main risks and challenges

32. At this stage of climate change inaction poses the greatest risk. Environmental and climate challenges threaten stability of our societies. Locations proactive in mitigating these risks will become the most desirable places to live and work.

33. The main challenges of transitioning to a circular economy are multifaceted, including an interplay of economic, technological, and behavioural challenges, each contributing to the intricacies of achieving a sustainable model that reduces waste and promotes the reuse and recycling of resources. Each of these challenges requires tailored remedies, involving collaboration between local and regional authorities, industries and civil society.

34. Supporting circular transition can be challenging without adequate regulatory and fiscal incentives. Funding is a critical hurdle, with various sources available for EU and non-EU members but requiring careful navigation to unlock. Accessing the necessary funds can be more difficult for startups and SMEs.

35. Developing new technologies that facilitate circular processes, such as advanced recycling techniques or biodegradable materials, requires supporting research and innovation. Efficient permitting processes and the promotion of local business development need support to create a conducive environment for the circular economy to thrive. Existing infrastructure might need considerable modifications to accommodate new circular processes.

36. Changing consumer behaviour is often cited as one of the most significant barriers to a circular economy. Consumers may be resistant to purchasing recycled or upcycled products due to perceptions of inferior quality or higher costs. In many societies, consumption is a status symbol. It is imperative to support shifting this mindset to reuse, and sustainability. Knowledge gaps need addressing through educational initiatives, training, and networking to ensure a well-informed implementation of circular strategies.

37. The measures that local and regional authorities can take in response to these challenges are outlined in Chapters II and III.

CHAPTER II - URBAN METAMORPHOSIS: EMBRACING A CIRCULAR ECONOMY IN MUNICIPALITIES AND REGIONS

II. 1. Waste as a local resource

38. To be successful, economies need a consistent supply of affordable raw materials, water, and energy for the production and consumption of goods and food. Historically, waste was viewed as a problem to manage. However, a significant shift in perspective occurred around 2015 when it was realised that Europe imports twice as much as it exports, prompting the embrace of a circular economy. This approach recognises waste as a valuable source of secondary raw materials and renewable energy, leading to a rise in the popularity of products made from reused and recycled materials.

Figure 4: Waste hierarchy

39. Municipalities and regions can capitalise on this shift by implementing systems to recover materials from waste, focusing on the recycling and reuse of various waste streams like packaging, textiles, mattresses, electronics, vehicles, and biowaste. The costs of these systems are often covered by Extended Producer Responsibility (EPR) for identifiable groups of producers, while local waste charges fund the separate collection of biowaste and residual mixed waste. The local treatment of biowaste not only generates renewable energy but also produces high-quality, nature-based soil improvers, benefiting local communities and farms.

Waste prevention

40. Prevention is the foundation of waste management, typically visualised as a reversed triangle that prioritises waste reduction, sharing economy initiatives, and product longevity (see Figure 2).

41. Consumers and businesses can contribute by choosing durable, good-quality goods over single-use items and preferring un-processed food with minimal packaging. Local authorities can facilitate this behavioural shift through targeted communication campaigns.

42. In manufacturing, waste prevention starts with product design that incorporates eco-design principles, ensuring the use of sustainable raw materials and full recyclability. Production processes should focus on energy and water efficiency and waste reduction, all aimed at environmental protection, safe working conditions, living wages, and the durability, repairability, and recyclability of products.

43. Municipalities and regions can also promote sustainability by preferring ecodesigned products and services in their procurement processes, giving priority to vendors that invest in sustainable and circular business practices.

44. Sharing economy models further reduce consumption and waste by allowing consumers access to shared items like tools, bicycles, and cars without needing to own or store them. Examples such as Shareshed[27], Library of Things[28] and Edinburgh Tool Library[29] in the UK demonstrate successful implementations. Municipalities can support the development of such libraries by spreading awareness and creating favourable conditions for entrepreneurs.

Separate collection

45. Effective waste management systems start with how waste is collected, focusing on extracting raw materials and reusable products from the waste stream for preparation for reuse and recycling into secondary raw materials. These materials are then used in new production cycles for ecodesigned, reusable, and recyclable products. The design and implementation of a separate waste collection system are crucial for producing high-quality secondary raw materials.

46. Across Europe and globally, various waste collection systems demonstrate that the method of collection significantly impacts the volume of waste processed through energy recovery or sent to landfills. Poorly organised separate collections lead to a higher percentage of residual waste.

47. Recognising the importance of maintaining waste quality, EU has advanced the effectiveness of reuse and recycling through the Waste Framework Directive[30] and related legislation, which mandate the separate collection of specific waste types. These regulations aim to educate citizens and businesses to sort waste at the source to meet reuse and recycling targets and advance the circular economy, serving as a model for waste management worldwide. The EU mandates the separate collection of packaging waste and biowaste, including food and garden waste, with textiles to be added by 1 January 2025, extending this obligation to all EEA (including Iceland, Liechtenstein and Norway) and EU candidate countries (Albania, Bosnia and Herzegovina, Georgia, Moldova, Montenegro, North Macedonia Serbia, Türkiye and Ukraine). Switzerland's environmental legislation has been harmonised with EU regulations to a significant extent. On one side this country has the highest municipal waste per capita in the OECD, on the other it has one of the highest recycling rates in Europe (it has pioneered by introducing an obligation to recover nutrient phosphorus). All Council of Europe member states should be encouraged to implement separate collection of food, garden waste and textiles, introducing relevant national EPR systems. This would ensure an efficient framework for the reuse and recycling for the whole of Europe.

48. The methodology of separate collection varies based on several factors that municipalities must consider, including population density and demographics, urban layout, available space for storing sorted waste, feasibility of installing underground containers, regularity of different waste fractions collections, type of waste collection vehicle, and national political decisions like implementing deposit-return systems. The table below highlights these key parameters essential for designing effective waste collection systems.

27 See Share Shed, A Library of Things.
28 Library of Things, "Borrow useful Things for your home, projects and adventures".
29 See Edinburgh Tool Library.
30 European Commission, "Waste and recycling" .

Checklist for designing an effective separate collection system:

- larger containers for low urban density areas with wide streets; underground containers near buildings or in nearby squares or multi-compartment collection vehicles for high-density areas such as narrow streets and historical areas;
- differentiated collection strategies for household waste and similar waste from shops, restaurants, and offices, usually not suitable for standard collection points; collection systems most effective when waste containers are placed within 150 metres for daily or heavy waste; collection points for textiles and similar can be positioned further away in high-traffic areas like near shopping centres;
- frequent collection of mixed waste, daily or twice a day, indicates missed opportunities for recovering recyclable materials and reducing waste volume; but in hotter climates need to have frequent collection of food waste and mixed waste, with containers adapted to locations;
- door-to-door collection for high-quality recycling, implementing fines to ensure compliance;
- Extended Producer Responsibility (EPR) scheme, which mandates producers to cover the full costs of their waste's collection and transport, is crucial for enabling municipalities to invest in the necessary infrastructure and systems to deliver high-quality recyclables;
- for an effective EPR - one PRO (Producer Responsibility Organisation) per waste stream or clearer transparency in reporting data on the amounts of waste generated and recycled each year with multiple PROs;
- economic incentives such as Pay As You Throw (PAYT) system, where mixed waste management costs are billed directly to residents (ex. with personalised digital cards to access locked containers), encouraging recycling by not charging for waste covered under EPR;
- non-financial incentives such as donation of the savings made from better waste management to charities or investment in local urban greening, children's playgrounds and other investments to improve the community and living standards;
- regularly emptying and cleaning bins and surrounding areas by municipalities; ensuring proper licensing and maintenance of bins managed by third parties to encourage proper waste disposal by residents and businesses;
- effective, informative and continuous communication (covered through EPR) to educate residents and businesses about how to prevent waste, how and where to sort it and what happens to it after collection;
- "Nordic labelling system" for waste sorting, originating from Denmark and managed by the EUpicto association, offers the system and implementation support for free;
- Recycling yards / civic amenity sites, located typically on municipal outskirts, crucially support separate waste collection and are used for waste electrical and electronic equipment and small e-vehicles; supplying reusable products to social enterprises.

Figure 5: Nordic Pictograms

Figure 6: Recycling Yard with Nordic Pictograms

Preparation for reuse

49. Preparing for reuse is an integral part of the waste hierarchy, as it extends product lifespans and reduces waste generation, thus serving as both a prevention measure and a means to achieve recycling targets.

50. Many municipalities currently lack the infrastructure for repair and reuse activities or partnerships with social economy organisations that prepare items for reuse. Promoting social enterprises in this area helps municipalities progress towards a circular economy by reducing environmental impact and promoting social justice[31]. Such companies provide employment and skill development opportunities for unemployed and unskilled individuals, offer retired citizens a sense of community and meaningful activities, and help municipalities reduce costs while strengthening their environmental and social commitments. Additionally, repair and reuse shops give low-income citizens access to affordable goods like appliances and clothing, which would otherwise be unaffordable.

31 Amsterdam in the Netherlands promotes innovative partnerships with social enterprises for waste reuse significantly reducing landfill reliance while creating job opportunities for refugees.

51. There are numerous examples of successful collaborations between municipalities and social enterprises across cities,[32] regions,[33] and Europe.[34] These partnerships not only facilitate reuse but also create long-term employment opportunities and support community development.

52. Supporting the creation of a reuse outlet or network in all municipalities and regions can significantly reduce the quantity of waste dumped, incinerated and sent to landfill while at the same time making high quality products available at low prices, promoting their continued circulation within the circular economy.

Recycling

53. Sorting waste at the source is crucial for a circular economy, facilitating recycling and the supply of local materials.

54. Since January 2024, EU municipalities must separately collect food and garden waste, with benefits including reduced landfill use and methane emissions, as well as production of biogas and compost. From July 2024, the EU and associated countries will offer accelerated permitting for biogas plants to boost renewable energy, aligning with sustainability goals[35]. This development responds to the current significant shortage of biogas in Europe. Further details are found in the section "Circular bioeconomy". As of January 2025, separate textile waste collection is mandated in the EU, necessitating municipal investment in collection systems without immediate Extended Producer Responsibility (EPR) support. Currently, only France and the Netherlands have implemented EPR systems for textiles. Packaging waste is also separately collected, with ongoing revisions to EU legislation to increase recycling rates and ensure recycled content, focusing on both mechanical and chemical recycling. These standards are relevant for the EEA and EU candidate countries.

55. Best practices in Belgium, like the distinct collection systems of FostPlus (PRO dealing with post-consumer packaging)[36] and Valipac (PRO for commercial and industrial packaging)[37], achieve high recycling rates and consumer satisfaction.

56. Some countries implement Deposit Refund Schemes (DRS) for beverage packaging, Germany having the highest level of implementation, operating the world's largest DRS scheme. Nordic countries, Lithuania and Slovakia also have high levels of separate collection of packaging.

Recovery

57. Recovery in waste management includes both material and energy recovery. The two main methods for energy recovery are: biogasification (biowaste anaerobic digestion to produce biogas and biomethane) and energy from waste (obtained through waste incinerators for heat and electricity). Modern incinerators also process bottom ashes to extract residual metals for recycling, and the inert remaining materials are often used in road construction.

58. When planning a local or regional waste management system, it is crucial to ensure the effectiveness and efficiency of the separate collection system, the repair and reuse network, and the biowaste treatment system. These elements should be optimised before determining the volume of mixed waste that will be processed through incineration. Incineration, while efficient and advanced, is costly; therefore, capacity planning is essential to avoid stifling recycling and over-investment. Many

32 Ljubljana, Slovenia. In 2013, a successful campaign on reuse was launched, resonating nationwide and beyond. It centred on the reuse of an old, forgotten song and led to a great increase in the repair and reuse rather than disposal of bulky waste, household items, textiles and more. The city's multi-utility public company operates a reuse shop where retired women transform old textiles into new items. Additionally, many other individuals contribute by repairing, upcycling, and cleaning collected waste for reuse.

33 Flanders, Belgium. The Kringwinkel Network serves as a prime example of successful municipal reuse initiatives. Under Flemish legislation registered social enterprises are permitted to collect or directly receive bulky waste and textiles for reuse preparation. On this basis, Flemish municipalities can establish contracts with their local Kringwinkel centres, which then handle the collection and processing of bulky waste, household items, and textiles. The Flemish legislation mandates the employment and training of previously unemployed individuals to sort and repair these items. In return, the regional government pays 50% of the salaries, the remaining 50% coming from the sale of repaired items. See Kringwinkelcentra in Vlaanderen.

34 The organisation RREUSE brings together numerous national organisations of social enterprises that collect, prepare for reuse and sell reusable items, such as INSIEME in Italy which was created in 1979.

35 Directive (EU), 2023/2413 (Renewable Energy Directive).

36 See Fost Plus.

37 Valipac,"Let's act together for a circular economy".

countries integrate the energy produced from waste incineration into their energy security long-term planning and strategic decision-making, considering both electricity and heat.

Disposal

59. Several European countries, such as Germany in 2005, have implemented landfill bans, restricting landfill use to only pre-treated and inert waste. These bans are reinforced by high landfill taxes, which serve to discourage landfilling while funding improvements in waste collection and treatment infrastructure. For example, the UK uses landfill tax revenue to invest in closing landfills, treating post-closure waste, and enhancing waste treatment facilities. Despite these efforts, landfilling still remains a major problem in Europe, some countries seeing rates as high as 90%.

60. This situation underscores a broader issue: lower recycling rates, the absence of recycling and reuse facilities, high rates of landfill use, and poor national economic performance are interconnected, signaling slow progress towards achieving circular economy goals.

61. Separately collecting and treating biowaste can significantly reduce the volume of waste sent to landfills (between 20% to 50%), depending on the current proportion of biowaste in the waste stream. This process not only cuts down methane emissions from biowaste in landfills but also supports the achievement of landfill reduction targets. Additionally, the separate treatment of biowaste brings economic benefits, such as investments in new technologies, job creation, the generation of renewable energy, and the production of soil improvers for local agricultural use. These practices offer universally applicable benefits that advance both environmental sustainability and socio-economic progress.

Construction and demolition

62. Landfilling of construction and demolition waste remains high in Europe, resulting in the loss of valuable resources and potential job opportunities.

63. Local and regional authorities can significantly enhance the sustainability of construction practices through effective permitting, monitoring, and inspections. By adopting green public procurement for their own needs, they set a strong example for the industry. Eco-design is crucial in construction and demolition, emphasising energy efficiency, the use of sustainable materials, and designs that facilitate easy repair and dismantlement.

64. Some European countries have established specific rules for the sorting of construction and demolition waste at the source, enhancing recycling efforts. Additionally, some have integrated these practices into an Extended Producer Responsibility (EPR) system, requiring all construction companies to register. The EU Waste Framework Directive sets goals for construction and demolition management and there are non-binding guidelines[38] on this matter. These regulations and guidance can be used to improve management of construction and demolition waste and the prevention of such waste.

65. There are many examples of good practices in Europe at both local[39] and regional[40] levels.

II. 2. Circular bioeconomy

66. A circular bioeconomy focuses on replenishing the plant and animal matter used by society, incorporating nature and biodiversity into urban environments, and employing nature-based solutions to mitigate urban heat island effects.

67. To achieve this, municipalities and regions must foster collaboration across various sectors. This collaborative approach promotes urban greening, regenerative agriculture, and carbon capture and storage in local soils, delivering mutual benefits by creating more sustainable and resilient urban environments.

38 European Commission, “Construction and demolition waste”.
39 The circular management of soil from metro construction in Stockholm in Sweden demonstrates the environmental and economic benefits of reusing excavated materials in local development projects.
40 Gelderland in the Netherlands received acclaim for the sustainable demolition of its provincial office building, with 92% of the materials repurposed for new construction. This project exemplifies how circular practices can be implemented in public infrastructure projects, emphasizing the environmental and economic benefits of material reuse.

Figure 7: Coulée Verte, Paris

Sustainable greening of cities

68. Sustainable greening of cities involves a range of both small and large actions, implemented by local authorities independently and in collaboration with their communities.

69. When planning the greening of urban areas, it is crucial to consider various infrastructure aspects that impact people's movement, health and well-being. These elements include enhancing mobility, developing flood-prone areas, planting tree-lined streets, and installing green roofs for shade and cooling. There are many examples of good practices implemented, highlighting practical uses and benefits of these elements[41].

70. Replacing chemically treated lawns with wildflower roadside verges enhances biodiversity, supports pollinators, and reduces maintenance requirements[42].

Figure 8: Amsterdam Green Infrastructure Vision 2050

71. Such initiatives form part of a broader commitment by many cities to embrace sustainable urban design, aiming to create environmentally friendly and livable urban spaces[43].

Green roofs

72. Green roofs, first gaining attention in Switzerland in the late 1970s and popularised in Germany, have become recognised for their ability to reduce building energy needs for heating and cooling and to mitigate heat emissions from air-conditioning units. Due to these benefits, green roofs have been

41 The image 7 features the lesser-known La Coulée Verte in Paris, a 14 kilometre green walkway and cycle path that stretches from Bastille to Vincennes. This elevated route provides pedestrians and cyclists with a peaceful, safe and green route through the city's streets.See Ville de Paris, "De Bastille à Vincennes par la coulée verte".
42 Worcester City Council, "Splash of colour along roadside verges as nature is allowed to take its course".
ICLEI Europe, Wilk B., Rebollo V., Hanania S. (2019), "A Guide to Pollinator Friendly Cities".
43 For example, the city of Amsterdam which underscored commitment to its Green Infrastructure Vision 2050, detailed in the accompanying figure 8.

incorporated into the EMAS (Eco Management and Audit Scheme) Regulation[44] and various urban greening initiatives.

73. In densely populated areas prone to flooding, covering at least 30% of rooftops with greenery can significantly mitigate flood risks, protecting roads and properties. Additionally, by providing thermal insulation, green roofs can lower the heat emitted from buildings. With 30-40% of inner-city roofs covered, ambient air temperatures could potentially decrease by around 10%, offering a substantial benefit during increasingly hot summer seasons.

74. Green roofs are also being utilised on bus shelters, providing multiple environmental benefits such as capturing particulates, storing rainwater, cooling urban environments during hot weather, enhancing urban biodiversity, and supporting bees and other insects.

Figure 9: Utrecht

75. Cities increasingly partner with advertising agencies to replace bus stops with new shelters equipped with green roofs and smart solar lighting.[45] These projects can be managed through tenders with advertising companies, allowing implementation at no direct cost to municipalities.[46]

76. Green roofs on bus shelters allow repurposing old, disused sites to make the city greener, making bus shelters more attractive and inspiring residents to install their own green roofs.[47]

Tiny urban forests

77. Tiny urban forests[48] inspired by Japanese botanist Dr Akira Miyawaki and further developed by Indian engineer Shubhendu Sharma, offer an efficient method for habitat restoration using native trees. This approach, known as the Miyawaki method, involves densely planting a diverse array of tree and shrub species - typically three plants per square metre. These tiny forests grow ten times faster and are thirty times denser than traditional woodlands. Europe saw its first two tiny forests planted in the Netherlands in 2015. Each urban tiny forest acts as a tiny carbon sink, capturing on average 127.5 kilograms of CO_2 per year according to a study by Wageningen Environmental Research (WENR).[49]

Biowaste management

78. Biowaste management plays a pivotal role in a circular bioeconomy, essential for urban soil enhancement and sustainable agricultural practices. The separate collection and treatment of biowaste generate biomethane, a local renewable energy source, and produce digestate that, when mixed with garden waste, can be used in anaerobic composting to create high-quality compost.

79. Applying 1 ton of such compost to untilled soil with a cover crop can store 30kg of carbon, facilitating sustainable soil management and carbon farming.

80. A certification system for Carbon Removal Certificates is being developed in Europe[50]. For certification, farms must apply compost using regenerative practices and avoid tilling for at least five years to maintain soil mycelium, which stores carbon and processes nutrients. Compost's slow nutrient release also helps prevent soil over-fertilisation[51] and protects nearby water bodies from eutrophication.

44 Regulation (EC) No. 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).
45 This is the case of the city of Leicester in the UK has partnered with Clear Channel advertising agency to replace all bus stops with new shelters equipped with pollinator-friendly green roofs and smart solar lighting. See “New network of living roof, bee-friendly bus stops springing up in Leicester”.
46 This was the case of the city of Utrecht in the Netherlands which began installing green roofs on their 316 bus shelters. The bus-shelter operator pays for the installation and maintenance with income from advertising.
47 For this purpose Utrecht's residents can apply for a grant through a dedicated website. See Gemeente Utrecht, “Green-roofed bus shelters in Utrecht”.
48 See IMAGIN[s], ”The tiny forests regreening our cities”.
49 See Natuur Educatie, ”Tussentijdse resultaten Tiny Forests 2017-2020” .
50 European Commission ”Carbon Removals and Carbon Farming”.
51 California State University Chico, Center for Regenerative Agriculture and Resilient Systems, ”How the Fungus Might Save Us”.

81. Digestate, rich in stable organic carbon, enhances soil humus, fertility, and carbon sequestration potential, improving soil structure, aeration, and water retention, which support a healthy microbial community and optimise carbon utilisation. While exact carbon sequestration rates from digestate are not fully determined, its contribution is significant.

82. Regenerative farming offers substantial benefits, enhancing crop and livestock quality and increasing farm revenues through Carbon certificates. With each application of biofertiliser, soil health and biodiversity improve, entitling farmers to new Carbon certificates, thus creating a sustainable cycle of benefits.

83. The World Bank supports regenerative farming globally through the Verified Carbon Standard (VCS) programme, which is the most widely used greenhouse gas crediting programme.[52] Each Verified Carbon Unit (VCU) represents the reduction or removal of one tonne of CO2e.

Figure 10: Mycelium

84. Farmers globally have been enhancing their yields and incomes with carbon credits since pioneering efforts by smallholders in Kenya in 2014,[53] with practices spreading worldwide, including innovative approaches in Ghana emphasising compost use for increased soil fertility and yields.[54]

85. Overall, regenerative farming, backed by economic incentives like carbon credits, bolsters the circular bioeconomy. In practice, food waste from the community, local commerce and industry can be transformed back into rich compost via anaerobic digestion and co-composting of the digestate with garden waste, for use in local farms and community food growing.

II. 3. Circular mobility

86. Planning for circular mobility involves integrating spatial urban design and developing affordable, efficient public transport. This transition allows for the pedestrianisation of urban spaces, transforming them into parks with cycling and walking paths instead of traditional pavements. Where necessary, sustainable, permeable pavements planted with local wild grasses and wildflowers can enhance biodiversity.

87. Cities like Paris exemplify careful planning with dedicated cycle paths that separate cyclists from pedestrians and demarcate cycle lanes on vehicular roads with low barriers or trees for safety and comfort for cyclists.

88. To effectively reduce private vehicle traffic in city centres, providing free park-and-ride facilities on the urban outskirts is crucial. This, combined with affordable, clean, and efficient public transportation that offers seamless citywide connections, promotes sustainable mobility.

89. Examples of incentivising public transport use include Scotland's Young Scot card, which offers free public transport to individuals under 25, and similar initiatives in many other European countries for citizens over 65. These incentives, along with efficient services, help reduce road congestion, pollution from fossil-fuel-powered vehicles, and overall stress in urban environments.

90. In rural areas, public buses powered by biomethane can improve accessibility, offering specialised services for those with mobility issues to attend medical appointments, go shopping, and participate in social outings.

91. Country lanes with permeable surfaces prevent soil sealing and flooding while maintaining healthy soils. These surfaces are more stable, requiring fewer repairs and minimal maintenance. Coastal roads prone to erosion can also benefit from permeable paving planted with local grasses and wildflowers, enhancing soil stability and protecting against flooding and erosion.

52 Verra, ”Verified-carbon-standard”.
53 The Kenya Agricultural Carbon Project (KACP) engages 60,000 farmers across 45,000 hectares to promote more productive, sustainable, and climate-friendly farming practices. Through various methods, farmers increase soil organic matter to combat land degradation, enhancing soil water absorption, nutrient availability, and biodiversity while curbing erosion. See World Bank Group, ”Kenyans Earn First Ever Carbon Credits From Sustainable Farming”.
54 Adwoa Akyaa 15-acre cocoa farm was transformed, boosting cocoa production while cutting greenhouse gas emissions and earning carbon credits as a result.

92. The pillars of successful circular mobility include:
- an accessible, affordable, and efficient mobility framework;
- a multi-modal structure integrating public transportation with flexible last-mile options like on-demand cars;
- a focus on electric-powered, shared, and automated transportation options.

93. For practical implementations and further understanding, explore the resources showcasing circular mobility strategies in European cities[55] and regions.[56] There are also useful international guides for sustainable mobility.[57]

II. 4. Renewable energy and resource efficiency

94. Increasing the share of renewable energy in heating and power supply in Europe is essential for progress towards the Sustainable Development Goals (SDGs). Successful national initiatives should be designed to stimulate both corporate and private investment in renewable sources. Using the most effective, efficient local resources contributes to protection wild landscapes and improving energy efficiency in buildings.

95. A crucial component of the circular bioeconomy is the generation of biogas/biomethane from biowaste. Current projections from the European Biogas Association[58] suggest an anticipated delivery of 101bcm by 2030, indicating significant progress.

96. To effectively reduce dependency on fossil fuels, a comprehensive approach is necessary, encompassing enhanced energy efficiency in buildings and increased investment in renewable energies.

97. Specific measures include enacting legislation that requires new buildings to be carbon neutral. Buildings are responsible for a considerable part of greenhouse gas emissions and consume a lot of produced energy, primarily for heating and cooling. With better insulation combined with urban greening, this energy consumption can be significantly reduced.

98. Additionally, many European countries have encouraged the installation of solar panels on homes and businesses, supporting both personal use and integration into the electricity grid. Key considerations for the end of their lifecycle include establishing EPR systems for the collection and recycling of solar panels, prioritising their installation on existing structures and parking area shades to prevent arable land use and biodiversity loss.

99. Wind turbines present unique circular economy challenges due to their bulk and disposal cost. To mitigate the environmental impact of decommissioned turbines and recover valuable materials, national EPR schemes should ensure proper waste management practices.

100. Emerging technologies like ocean wave energy[59] offer a promising, environmentally low-impact renewable energy source for coastal and island communities. This continuous and modular energy could potentially replace other energy sources in smaller coastal towns and smaller islands. As with other technologies[60], installations should fall under an EPR scheme to ensure environmental protection during recycling and disposal to safeguard marine environments.

55 See Official website Paris je t'aime, "Paris by bike: Practical information".
56 See "Green Mobility Car Rentals in Lesvos" (Greece).
57 European Commission "Enacting a Sustainable Urban Mobility Plan" ; UNECE, "Handbook on Sustainable Urban Mobility and Spatial Planning".
58 See European Biogas Association.
59 See Ocean Energy Europe, "Wave energy".
60 See International Renewable Energy Agency (IRENA), "Ocean energy".

CHAPTER III - BUILDING TOMORROW: A BLUEPRINT FOR CIRCULAR ECONONOMY INTEGRATION

III. 1. Key elements of a circular roadmap

101. The transition to a circular economy requires a comprehensive approach, encompassing various aspects of life and activity within a municipality or region. Given the interconnected nature of all elements within a circular system, changes made in one area require complementary adjustments across the entire system to maintain balance. Firstly, adopting a circular economy requires a firm decision followed by the creation of a strategy and a detailed action plan. It is of key importance to establish clear goals and targets and to evaluate and communicate progress regularly. These goals should promote human rights and local democracy, contributing to the respect of relevant Council of Europe standards. The local/regional authority staff needs to be trained and an effective communication campaign put in place to keep the public informed and engaged.

102. The essential elements of a Circular Economy Action Plan include the following (for details see Chapter II):

- Materials - designing out waste emphasising sustainable sourcing and maximasing recyclable materials;
- Value - creating economic models that value resource efficiency, with incentives and innovation;
- Renewable Energy - reducing dependency on fossil fuels, protecting landscape and energy efficiency;
- Bioeconomy/biodiversity - supporting biodiversity and regeneration of natural systems;
- Sustainable mobility - promote low and zero emission mobility, affordable and efficient public transport;
- Water Stewardship - enhancing water efficiency and sustainability;
- Society & Culture - fostering shifts towards sustainability;
- Health & Well-being - ensuring environmental changes benefit public health.

III. 2. Governance framework

103. Setting effective governance framework ensuring an enabling environment is key for unlocking the potential of the circular economy. This includes cooperation across various levels of government to drive the circular transition successfully.

104. At the national level many European countries adopted national circular economy strategies[61], roadmaps,[62] action plans,[63] frameworks,[64] white papers[65] and laws.[66]

105. While national governments are pivotal in creating new policies and legal frameworks, the practical application and enforcement of these policies and laws falls to local and regional authorities. They play a crucial role in leading circular economy transition in their territories. Many have taken a proactive stance and declared climate emergencies. Increasingly across Europe cities and regions develop circular economy strategies and action plans tailored to their specific contexts and needs. This leading by example is of central importance.[67]

61 Ex. Denmark, Finland, Netherlands, Spain or Sweden.
62 Ex. Belgium, France, Slovenia.
63 Ex. Portugal.
64 Ex. Italy.
65 Ex. Norway.
66 Ex. France, Ireland.
67 The island of Tilos in Greece achieved energy independence in 2020 and became landfill-free in 2023 through innovative waste management and renewable energy projects, enhancing local employment and attracting eco-conscious tourists. Friesland islands in the Netherlands aim to become the most circular region in Europe by 2025, promoting circular actions in local governance and industry.

III. 3. Multistakeholder approach

106. Creating and implementing a circular city/ region strategy and action plan requires the involvement and engagement of multiple stakeholders in planning, communicating and implementing the agreed-upon actions.

107. To transition to a circular economy, a city or region must engage all actors within its ecosystem, including residents' groups, civil society, private sector, media, academia, youth groups, and schools. Residents, as both participants and beneficiaries, play a crucial role in this transformation.

108. Public authorities should take the lead in their communities by first sharing their vision with all stakeholders to foster informed and sustained engagement. One of the primary benefits of a circular economy is enhanced cooperation among economic actors as well as cross-sector symbiosis, such as between waste management and agriculture.

III. 4. Baseline assessment and planning

109. After deciding to transition to a circular economy, it is crucial to conduct a baseline assessment tailored to the specific location and demographics of the municipality or region. This assessment should identify core values and evaluate the main opportunities and challenges associated with implementing a circular economy model. Key steps in this process include the following:

- Human rights impact assessment: ensure alignment with human rights standards and policies (including on social inclusion, access to information and participation);
- Benchmarking: review examples of good practices from other similar localities to understand potential approaches and solutions;
- Technology and technique alignment: determine which technologies and techniques best suit the local context based on current practices and available resources;
- Sector-specific analysis: conduct a thorough analysis of all environmental and socio-economic aspects across various economic sectors such as industrial and commercial activities, tourism, agriculture, education, business, finance, and hospitality;
- Guided approach: use available guides and frameworks to systematically address the transition, ensuring that each step is clearly defined and actionable.

110. The OECD has provided a checklist for action on key governance dimensions, with a compendium of best practices.[68] The OECD Survey on the Circular Economy in Cities and Regions points to the major gaps which include policy, regulatory, financial, capacity and awareness gaps.

111. The Sectoral Reference Document (SRD) for Public Administrations of the EMAS Regulation provides a practical guide for local and regional authorities to identify and assess their activities and decide on the content of their Circular Economy Action Plan. It is recommended to use this as a foundational tool to initiate the planning process.[69] The document includes environmental performance indicators and benchmarks for monitoring performance. It encourages the implementation of environmental management systems and offers support through the EMAS Helpdesk[70] in all official EU languages. Public authorities are encouraged to use EMAS to enhance office management, energy and resource efficiency, mobility, land use, air quality, water supply, and wastewater management, contributing to a more circular economy. In 2019 the EU's Joint Research Centre published a report of Best Environmental Practice for the Public Administration Sector.[71]

III. 5. Enabling circular transition

112. Local and regional authorities play a crucial role in fostering the circular transition by creating conditions that support regulatory adjustments, such as modifying land use permitting. Continuous dialogue with national authorities ensures that local insights shape the national legislative framework.

68 OECD Report "The Circular Economy in Cities and Regions".
69 European Commission "The reference document for the public administration sector".
70 See "EMAS in your country".
71 See JRC Science for Policy Report, "Best Environmental Management Practice for the Public Administration Sector".

113. To promote the circular economy, local and regional authorities should implement Green Public Procurement (GPP) practices. This involves specifying requirements in tenders to support SMEs and local entrepreneurs. In the EU GPP is regulated by voluntary Green Public Procurement Rules as part of the Environmental Management and Audit Scheme (EMAS) Regulation. Resources like the GPP Helpdesk[72] and the European Commission's Green Business page provide tools and criteria to integrate GPP principles.[73]

114. Cities and regions should conduct regular market analyses using a life cycle analysis approach to stimulate demand for recycled and sustainably produced goods. Initiatives like becoming a launching customer and creating incubators can significantly boost circular economy practices.

115. Local and regional governments should facilitate access to essential information on permitting, funding, and business development, making it accessible and regularly updated. Collaborating with European funding programmes, such as Climate KIC,[74] enhances these efforts.

116. Furthermore, these authorities can mobilise and allocate financial resources efficiently by offering subsidised loans, credit guarantees, and tax incentives to businesses adopting circular economy models. Comprehensive guidance on accessing financial support for projects like circular mobility is available in resources like the Circular Mobility Guide.[75]

117. To bridge knowledge gaps, local and regional authorities can utilise education, training, networking, regulatory support, public-private partnerships, and international cooperation. The EU provides several funding tools and opportunities, including regional funding and the Just Transition Mechanism funds "TAIEX-EIR PEER 2 PEER" tool,[76] while non-EU member states can access funds through TAIEX[77] and INTERREG projects.

118. For capacity building, training programmes on the circular economy are essential for both public officials and the private sector. Regular monitoring and evaluation of circular economy targets and goals help in understanding the efficacy of actions and necessary adjustments.

119. Overall, adopting a holistic circular economy action plan creates a favourable investment climate, attracting private investment and promoting economic transformation. This approach is supported by various grants and loans, particularly from institutions like the World Bank.[78]

III. 6. Supporting innovation, research and best practices

120. Supporting innovation, research, and the adoption of best practices are crucial for advancing a successful circular economy. Key factors include the readiness of municipalities and regions to embrace new technologies and practices, the development of efficient waste management systems, and the establishment of structured, low-cost, low-carbon mobility systems. Efficient permitting services also play a critical role in facilitating local economic activity by preventing delays that might discourage business investment and job creation.

121. Local business development is significantly enhanced by innovative projects such as local anaerobic digestion plants, which process separately collected food waste from citizens and businesses, providing renewable energy and integrating into zero-carbon plans. Co-composting of garden waste with digestate from these plants produces high-quality soil improvers for residential gardens and farms, and can generate carbon credits recognised by international bodies such as the World Bank and the EU. Further details are provided in Chapter II.2.

122. Peer-to-peer learning is essential for progress towards a circular economy. The Congress offers such opportunities notably through its technical cooperation activities and initiatives like the European Local Democracy Week[79]. The Human Rights Handbook for local and regional authorities, volume III

72 See "Green Public Procurement Helpdesk".
73 See "Green Public Procurement Criteria and Requirements".
74 See EIT Climate-KIC, Leading climate innovation agency and community.
75 See Circular city funding guide.
76 See TAIEX-EIR PEER 2 PEER.
77 European Commission TAIEX (Technical Assistance and Information Exchange).
78 World Bank Group, "World Bank Approves $450 million to Foster a Greener and More Resilient Industrial Sector in Türkiye".
79 Congress, "European Local Democracy Week".

on human rights and the environment, contains numerous case-studies and examples for implementing a circular economy model.[80]

123. Membership in European organisations such as Municipal Waste Europe,[81] Eurocities,[82] the Council of European Municipalities and Regions (CEMR)[83] or sector-specific organisations related to mobility, drinking water, wastewater, energy provide valuable training and information sharing opportunities.

124. The European Circular Economy Stakeholder Platform gathers actors from all economic sectors, both public and private, to share and promote best practices.[84]

125. The World Bank and others have also published papers that include good examples of implementation of circular economy concepts.[85]

III. 7. Communication

126. Awareness and education are pivotal for achieving systemic change towards circularity and sustainability. Globally, effective communication campaigns have been crucial in addressing issues such as littering,[86] promoting separate collection of food and packaging waste, and encouraging the use of public transport and active mobility. In Europe, a key focus of upcoming waste management policy will be on managing textile waste, as detailed in Chapter II. Continuous communication is essential to educate the public on proper waste sorting at the source and the subsequent processing of collected waste. Implementing a harmonised labelling system can significantly improve public understanding by ensuring that symbols on products and bins are consistent across regions, aiding education and streamlining joint communication efforts to cut costs and expand reach.

127. Effective communication strategies must be persistent and visible. For instance, messages about smart shopping to reduce food and packaging waste should be prominently displayed in supermarkets and farmers' markets. Similarly, campaigns promoting sustainable mobility options should occur in public transport hubs and parking facilities.

128. All communication methods should be used, not only in appropriate locations but also tailored to different age groups and demographics. This includes leveraging different social media platforms for various youth segments, TV advertisements for older demographic groups, and printed media for broad reach.

129. Ultimately, communication campaigns need to be catchy, memorable, culturally resonant, and logically sound to effectively engage the local population. As highlighted by Zero Waste Scotland in their discussion on effective anti-litter campaigns: the impact of a well-named campaign can be significant.[87]

CONCLUSION

130. This report outlines critical elements and essential priorities of comprehensive policy of circular transition in European municipalities and regions. It highlights the interconnectedness and interdependency of a circle where the decisions of each actor in the chain have a direct impact on the actors that come before and after them.

131. In order to make a significant difference in the circularity of cities, local and regional governments must be leaders in this transformation process. This leadership involves designing and adopting

80 Congress (2022) “Human rights handbook for local and regional authorities (vol. 3) – Environment and sustainable development”, p. 84 et seq.
81 See Municipal Waste Europe.
82 See Eurocities.
83 See The Council of European Municipalities and Regions (CEMR).
84 Jointly created by the European Commission and the European Economic and Social Committee, the European Circular Economy Stakeholder Platform holds annual conferences and provides access to a wealth of best practices.
85 See The World Bank, ”Squaring the Circle, Policies from Europe’s Circular Economy Transition” ; Circle Economy Foundation, Knowledge Hub, ”Moving Made Sustainable: A Case Study of BOXIE24's Plastic Box Rental Solution”.
“ReCognition Circular Empowering Communities through Digital Inclusion and Sustainability”
”Sustainable circular cities? Analysing urban circular economy policies in Amsterdam, Glasgow, and Copenhagen” .
86 Zero Waste Scotland, ”Some of the best litter prevention campaigns from around the world”.
87 Idem.

comprehensive circular economy strategies and action plans and embedding sustainable practices into all operations.

132. This does not mean that everything must be done at once. The Circular Economy Action Plan can set goals for each area of circularity and a timeline over several years for its funding and implementation. This can be organised and evaluated according to the method “Plan, Do, Check, Act”. There are many excellent examples of best practice to take inspiration from, beginning with those mentioned in this report. There are also many planning tools and funding opportunities, also presented here, enabling careful planning and stepwise implementation. They should be consistent with and promote human rights and vibrant and inclusive local democracy.

133. Ultimately, as climate change continues to impact both urban and rural lives, immediate action is necessary. This report highlights several nature-based solutions that can yield significant environmental improvements within a single political term. The effects of initiatives such as biowaste collection and treatment with compost production, urban greening and regenerative farming can be noticeable within just one year of implementation, with benefits increasing annually. What will European cities look like over the next decade?