# Degrowth for cities

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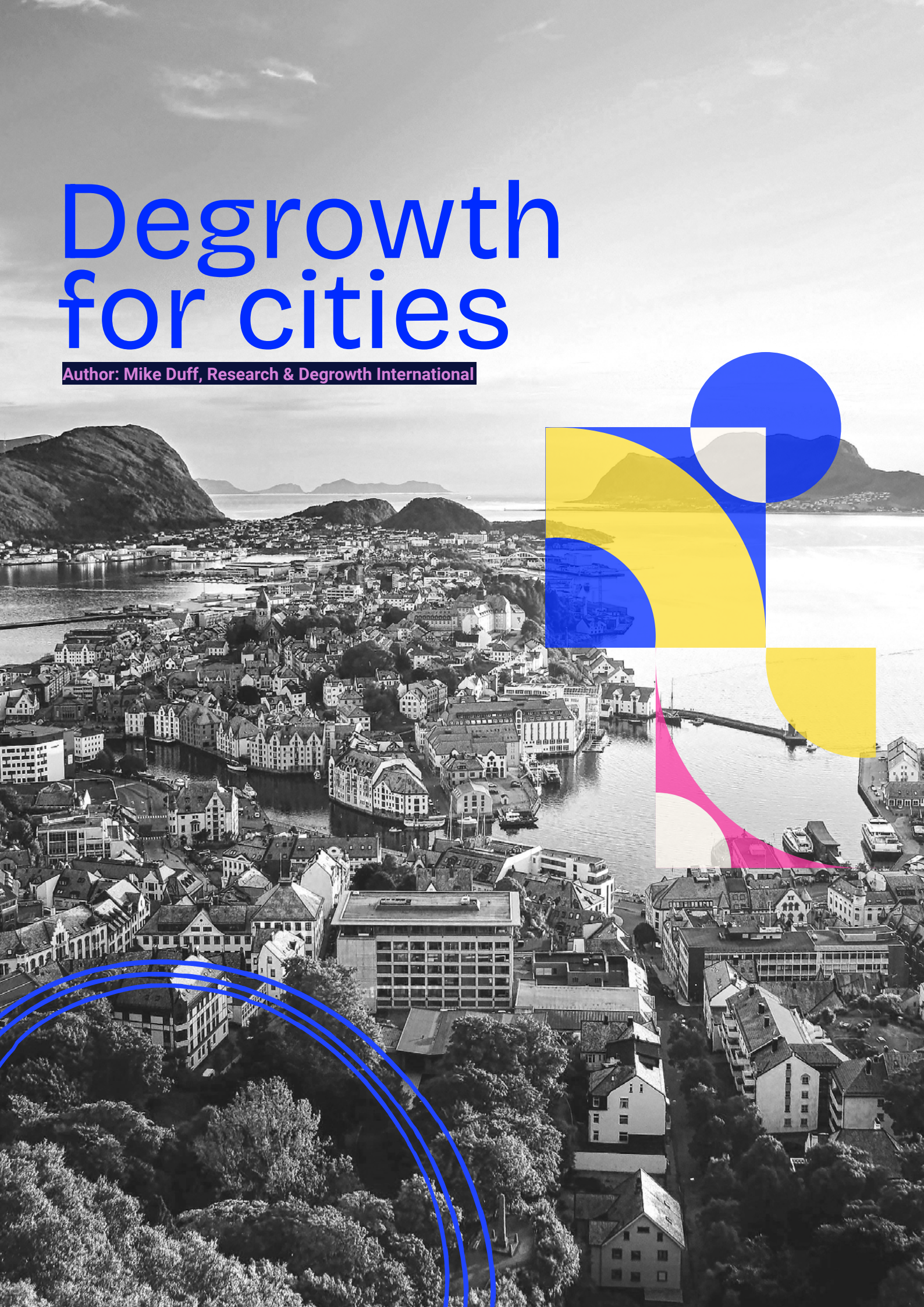

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POLICY BRIEF

**Cities are centres of hard and soft power, at the forefront of intellectual and cultural innovation and creativity. As such, they are potentially powerful hubs for the changes required to tackle the climate and biodiversity crises, and to spread transformative intersectional ideas. Changes in European urban centres – driven by cities mutually collaborating – along municipalist lines, could substantially reduce the continent's climate impacts, and act as a powerful engine for the two-pronged strategy of mindset and material shift.**

Cities represent over half of the global population, and three of four Europeans live in cities. Cities risk being harder hit by climate change, and they drive climate change. Urban centres produce three quarters of global greenhouse gas (GHG) emissions, while the top 10 cities in 34 European countries assessed collectively contribute 33.4 percent of the continent's emissions[1]. This brief outlines some necessary degrowth policies for European cities via a two-pronged approach: material degrowth at the scale required, and policies which sow a mindset shift in city stakeholders. Political actions must address both the hard material side, and the softer, socio-cultural side to enable a degrowth paradigm shift.

The increase in the urban share of GHG emissions and resource consumption over the last 30 years demonstrates it is systemic change, not mere efficiency improvements, which are required, and that this must happen across all cities, not in isolated pilot projects. The bulk of climate change-related policies being enacted at present – even in cities considered to be advanced – merely aim to swap out 'dirty' technology or practices, with less polluting alternatives. This ignores the material reality that such 'decarbonised product replacement'-based strategies have no chance of meeting the extreme reductions in emissions the scientific community agrees are required (according to the Intergovernmental Panel on Climate Change or IPCC[2] we must reduce emissions by almost half by 2030). Such reductions will require not only decarbonization but also degrowth in the production and consumption of cities.

Without profound mindset shifts in the Global North, the necessary reduction in production and consumption will continue to be viewed as neither desirable nor politically viable. New versions of old solutions – such as replacing fossil fuelled cars with electric vehicles, rather than reducing the need for private vehicles, or simply building better insulated housing units without addressing the existing stock´s poor insulation or adding renewable energy to the urban mix rather than replacing fossil fuel energy – are insufficient, and require tremendous amounts of resources to manufacture, mine and transport.

The transdisciplinary field of degrowth advocates a planned reduction of unnecessary and destructive production and consumption predominantly in Global North economies, and an economy focussed on human and planetary well-being, not financial profit. Indeed, an IPCC Working Group report highlighting the urgent and devastating reality of climate change, refers to degrowth repeatedly as a mitigation strategy, declaring "prosperity and the 'Good Life' are not immutably tied to economic growth" and that "several

studies find that only a GDP non-growth / degrowth or post-growth approach enable reaching climate stabilisation below 2°C"[3]. Yet the neoliberal capitalist narrative that 'growth is good' and GDP (Gross Domestic Product) is a good measure of the health and success of an economy, is so entrenched that for 'hard' material de-growth to occur, a removal of the cultural hegemony of the growthism agenda is necessary. At present, it can be said that the acknowledgement of the need for degrowth is at 'lip service' stage in European cities, where the term is beginning to see adoption and co-option in economic policy circles, but is far from the mindset shift which could catalyse widespread policy innovation.

Subtle changes in perspective can be fostered at city-level, and examples of projects which do this are proposed here. These mindset shifts include the decolonisation of urban economic systems, legal rights for nature, and political representation for future generations; and they need to be fostered along with a radical scaling-up of the critical physical ideas of the last 30 years of policy proposals from the global climate justice movement, like enabling the circular economy, management and prioritisation of re-sources, localised production, of bio-based materials, material flow registries, and at a pace hitherto unheard of. In doing so, a systemic change ending cities' role as engines of endless growth must come to pass.

# CITIES & GROWTH

## Cities as a system for economic growth

In Europe and in the Global North more generally, urban development is caught up in the structures of neo-classical economic thinking, and the vast majority of GHG emissions in cities are from private-sector sources. The provision of public infrastructure for well-being – such as water, care structures, and social and affordable housing – depend on the income of the public purse from, for example, development fees, utility fees, real estate, and land taxation. Therefore, these services, which ought to be human rights, depend upon – and are coupled to – an increase in economic output, under a growthism-driven system. In the eyes of the degrowth movement, things like housing, water, energy, and food, which are critical for survival, and even things like transport, and access to culture, nature, internet and other such enablers of a quality life, ought not to be directly connected to a growth economy, motivated by individual accumulation, but rather be considered 'good' in their own right.

European city economies display the systemic negative features of the dominant, for-profit economy. Overconsumption is prominent, and urban inequality increases with population size. Market-capture typical of late-stage capitalism, where businesses grow, buy others, and colonise more area and market share, is typical. Political capture, whereby governments are influenced by business and lobbyists, is increasing its impact on cities. Urban elections, which can be won or lost based on seemingly prosaic urban policies, can be leveraged for the benefit of national parties, co-opting parts of the city for national political or economic goals, and sometimes, policies critical to a just ecological transition, can be deemed "obstacles to the EU single market"[4].

## Cities as a source of climate change

Cities are the source of 70 percent of global GHG emissions[5]; at the same time 600 cities produce 60 percent of global GDP. Much of the vast emissions of cities come from fossil fuel-predominant transport systems, carbon intensive construction, and heating and cooling needs– what is generally referred to as scope 1 and 2 emissions[6]. However very little work is done to measure the carbon emissions outsourced to other places, such as from growing then importing food or manufacturing then transporting consumer goods to cities, also known as scope 3 emissions[7]. Not to mention the radically different emissions profiles of the minority of wealthy urbanites compared to the poorer majority.

In the dominant system, as economies modernise they tend to urbanise, as well as increase per capita energy consumption as GDP increases (particularly in low and middle income areas, where there is a need for more goods, services and growth, but also more targeted marketing). Therefore, if we do not address the cities' climate impact, why bother trying addressing emissions at all, for we will surely fall into unrestrained climate chaos.

## Cities as victims of climate change

In cities many aspects of climate change will be amplified, including the impacts of excessive heat (e.g. urban heat island effect), or sea level rise. However cities are utterly dependent on their hinterland and the global supply chain for critical resources. Already, European cities are planning for scenarios of 'plausible eco-social collapse'[8], in the knowledge that the "water, energy, food nexus"[9], a term for the interlinked policies of providing these critical resources, is at risk. In Catalonia, where the author is based, water reservoirs reached as low as 20 percent capacity[10] in 2023, and the drought[11] halved Spanish olive oil yields and hit cereal production hard. The war in Ukraine has raised global grain and energy prices and migration from Africa and the Middle East where 'water, energy, food' crises have fomented insecurity for years is increasing.

# LEVERAGING THE POTENTIAL OF CITIES FOR SYSTEMIC CHANGE

## Cities as positive contributors to the climate transition

Population concentration in cities means they have tremendous soft and hard power in the socio-political system. Urban governments are well-networked and share information amongst them. Success in one city can spread as governments re-deploy each other's solutions, such as bike and car sharing schemes have in European cities.

Cities concentrate innovation, and surveys such as the United Nations Development Programme's People's Climate Vote[12] – which covers over half of the planet's population – prove categorically that urban populations "often want broad climate policies beyond the

current state of play". Recalling the words of Margaret Mead who said: "never doubt that a small group of thoughtful committed citizens can change the world", it seems reasonable that if degrowth messaging is deployed in cities, a small group of thoughtful committed citizens can have a powerful impact.

The author's experience working within the EU's Net Zero Cities Programme[13] (NZC), in which 112 European cities are working towards net zero scope 1 and 2 carbon emissions by 2030, can attest to a cities' tremendous desire to learn from each other, rather than compete. Cities are increasingly working together on projects such as NZC, in National Platforms, such as citiES in Spain (15 cities, 36 percent of the Spanish population), or Viable Cities in Sweden (23 cities, 40 percent of the Swedish population). They find joining forces enables them to share knowledge and insights rapidly – speeding up policy implementation – but also this boosts their collective bargaining power when it comes time to argue against growthism, with national governments. The Porticus Foundation in Spain is currently funding a study of these two city platforms, seeking to systematize the approach, and establish others in Europe, to counter materially impossible ideas of 'green growth', or 'green capitalism'. Population numbers matter in taking green decisions which might go against national policy. Istanbul, with a population of around 20 percent of Türkiye´s, is enforcing stricter building regulations regarding environmental performance than nationally mandated, whilst four cities with whom the author works are creating an alliance to resist their national government's attempt to force them to change plans to convert coal-fired district heating plants to renewable energy, in favour of natural gas.

From a degrowth viewpoint, there are advantages to city life. Potential for commoning, sharing, and mutual care, promote resilience in the face of crisis, and the crisis is here. Europe is still suffering from the impacts of a 1-in-500 year drought in 2022/3[14], is warming faster than other continents, has disproportionately more pollution-related cancer cases, and the cushion of higher relative wealth is not mitigating the impact of heatwaves, droughts, fires and floods[15] .

## Cities as systems change demonstrators

A principle of permaculture, a degrowth-compatible nature-based design system for human settlements is "the problem is the solution". The classic example is of a food-forest system suffering slug attacks on cultivated mushrooms. The non-systemic solution is to chemically kill the slugs, causing soil and water contamination and unknown downstream effects on other organisms. A systemic permacultural solution is introducing ducks, who eat slugs, lay eggs, and fertilise trees with droppings. A sustainable urban drainage system[16] (SUDS), is a systemic intervention for urban centres. These street landscape features look like parkland, but absorb rainwater in planted beds and retention ponds, diverting it from costly energy intensive treatment plants, mitigating extreme weather, rehydrating landscapes, cooling air, increasing soil quality, cleaning wastewater naturally, while providing habitat for urban wildlife, such as bats, birds, microorganisms and pollinators, who contribute to disease control by eating mosquitoes.

A storm drain and a water treatment plant can also collect rainwater, but have none of the aforementioned co-benefits, though are more often deployed because these co-benefits of softer approaches are not represented as having economic value during budgeting or financing stages. Participatory budgeting exercises, such as those in Barcelona, Valencia and Vitoria-Gasteiz among other places, can begin to reflect a broader menu of benefits (and therefore value) in urban budgeting, driven by citizens – helping to favour projects that offer whole system and not just economic benefits – but account for a tiny percentage of implemented projects.

Rolling out this systemic approach in cities is a nascent practice, where governance, investment and management structures – currently tuned to perform in the growthism economy – must be adjusted to measure or incentivise 'entangled value' and account for co-benefits across sectors, departments, and sometimes parties. The relatively recent practice of initiating 'Systems Demonstrators' in cities can be critical to honing system-wide skills in the multi-actor coalitions of those who must collectively drive the ecosocial transition of cities, by deploying portfolios of different projects, linked by their co-benefits or entangled value. For example, the Swedish government's innovation agency, Vinnova, initiated a System Demonstrator working on retrofitting existing building stock to reduce emissions, and argues that the "demonstrator [is] producing ripple effects through all their inherent services, experiences, infrastructures, cultures, biodiversity, [and] forms of governance"[17].

Such initiatives are organisationally different from 20th century urban projects, managed by a sectoral supervisor in government, outsourced to a specialist consultant, delivering a design conceived with minimal input from citizens, businesses, or other local actors. A concrete example of this new thinking is the Ladywood Neighbourhood Retrofit scheme, in Birmingham, UK. The project is a portfolio of retrofit and renewable initiatives, and uses existing government funding, plus income from renewable energy generated on the roofs of the public and private buildings of the street, to create a fund to retrofit every house on the street, improving energy performance by 80 percent. The involvement of residents and landlords through fun retrofit-themed events means they understand their buildings better, and the structure of the economic model means that there is predictable consistent demand for retrofit services from builders. This results in economies of scale, an opportunity to develop a corps of certified retrofitters, a market for locally grown bio-based materials, and that tenants of properties they do not own are included in decision-making.

## Lessons from Mataró

In 2022 the city government of Mataró in Catalonia asked the Research & Degrowth International association and the Fundació ENT to study how degrowth-related interventions could increase urban resilience to a "plausible eco-social collapse". Mataró's government at the time was pro-'green growth', as are most European cities, where researchers assert "the top-down efforts to couple urbanisation with environmental protection are dominated by market-led practices shaped by the eco-modernisation paradigm"[18]. To expose the city to a range of degrowth-inspired projects on a shoestring budget, the authors produced a catalogue of 39 proposals, and a short essay arguing the key tenets of systemic urban degrowth.

The work received push-back from centre and right-leaning parties; those behind the techno-optimistic green growth agenda. Critics treated the proposals as a menu, rather than a whole, supporting some projects, dismissing others, and sometimes asserting that some were underway in “better” ways (i.e. profit-driven, rather than held in common).

For example, Time Banks and Libraries of Things[19] were proposed. Without being part of an systemic portfolio of projects for simultaneous deployment, such interventions become open to appropriation by a system which still pursues growth. They can even perpetuate the growthism-driven system, by gap-filling vulnerable or excluded populations´ access to resources, whilst the total resource throughput of the city remains high, and continues to accumulate wealth for a minority.

| Proposals | | Priority | Difficulty | Cost |
|---|---|---|---|---|
| **Energy** | | | | |
| 1 | Promote the formation of energy communities | ★★★ | ● | € € € |
| 2 | Promote the contracting of electricity from renewable source | ★★ | ● | € € |
| 3 | Promote the rehabilitation of buildings to increase energy performance | ★★★ | ● | € € |
| 4 | Green or bio-Solar roofs | ★★★ | ● | € € € |
| 5 | Network of climate refuges | ★★ | ● | € € € |
| 6 | Increase connections to the municipal district heating network | ★★★ | ● | € € |
| 7 | Modify council ordinances related to the use of gas stoves to heat restaurant outdoor terraces | ★★★ | ● | € |
| **Mobility** | | | | |
| 8 | Increase the proportion of space for pedestrians in the city | ★ | ● | € € € |
| 9 | Deploy various strategies to increase cycling | ★★★ | ● | € € |
| 10 | Cyclologistics | ★★ | ● | € € |
| 11 | Park-n-ride stations connected to shuttle bus service | ★ | ● | € € € |
| 12 | Create a cooperative which makes municipal electric vehicles available for shared use in hours when they are not being used by the city | ★ | ● | € € |
| **Food** | | | | |
| 13 | Campaign (publicity & education) for the conversion of traditional agricultural practices to regenerative agriculture, with local, organic produce | ★★★ | ● | € € |
| 14 | Climate adaptation and water accessibility strategy for the city's peri-urban agricultural zone | ★★★ | ● | € € |
| 15 | Prioritise the procurement of agricultural produce which is low-impact and as local as possible, for all public sector facilities in the city | ★★★ | ● | € |
| 16 | Promote the roll-out of multiple urban agricultural projects | ★★ | ● | € € |
| 17 | Strategy for urban food forests and edible gardens | ★★ | ● | € € € |
| 18 | Integrate the use of livestock for forest management and fire prevention | ★★ | ● | € € |
| 19 | Community Food Workspaces: create and manage shared spaces for agro-alimentary work (e.g. canning, fermenting, etc) | ★★★ | ● | € € |
| 20 | Promote community kitchens | ★★ | ● | € € |
| 21 | Low-energy cooking systems | ★ | ● | € € |
| 22 | Logistics and storage centre to facilitate the commercialisation of local agricultural produce (urban and peri-urban) | ★ | ● | € € € |
| 23 | Strategies for create re-use of food "waste" | ★★★ | | € € € |
| **Water** | | | | |
| 24 | Water saving municipal ordinances | ★★★ | ● | € € |
| 25 | Denitrification of ground water, elimination of use of chemical fertilizers by council | ★★★ | ● | € € € |
| 26 | Convert water distribution pumps to renewable energy | ★★ | ● | € € € |
| 27 | Reduce irrigation demand of public open spaces | ★★★ | ● | |
| 28 | Implementation of Sustainable Urban Drainage Systems | ★★★ | ● | € € |
| 29 | Flood risk reduction strategies | ★★★ | ● | € € |
| **Health** | | | | |
| 30 | Strategies related to plant-derived medicine | ★★ | ● | € € |
| **Circular Economy** | | | | |
| 31 | Network of repair spaces, time Banks & libraries of things | ★★ | ● | € € € |
| 32 | Urban composting | ★★ | ● | € € € |
| 33 | Biochar production | ★★ | ● | € € |
| 34 | Deploy strategies to reduce the non-sorting of recyclables | ★★ | ● | € € |
| 35 | Increase the capacity of the bio-digestor in the Integrated Centre for Valuing Waste | ★★ | ● | € € |
| 36 | Urban Mining | ★★ | ● | € € |
| **Education & Awareness Raising** | | | | € |
| 37 | Promote activities related to horticulture, healthy diets, repairing, making and recycling in local educational centres | ★★★ | ● | € € |
| 38 | Public series of talks on urban resilience and climate adaptation | ★★ | ● | € € |
| **Transversal Measures** | | | | |
| 39 | Fast track project proposals which promote resilience, community-sufficiency and increase the autonomy of the city | ★★★ | ● | € |
| 40 | Climate-resilience-driven re-design of the city masterplan | ★★★ | ● | € |
| 41 | Re-devise municipal taxes to incentivise pro-environmental and pro-social behaviours | ★★ | ● | € € |
| 42 | Mobile Application: Incentives system to increase participation in the civic economy, to drive sustainable consumption | ★ | ● | € € € |
| 43 | Local currency | ★★ | ● | € € |

# NEW GOVERNANCE TO CATALYSE MINDSET SHIFT

Technology-driven decarbonised product replacement strategies will not achieve the emissions reduction and system change a just climate transition demands. Urban policy needn't only focus on 'material' or 'hard' sectors, and what follows is a selection of "softer" examples of how changes to governance and regulation, inspired by the 'pluriverse' of degrowth movements, could develop a mindset shift in cities.

They are:

- Rights of nature;
- Institutional anchors and tools for long-term vision and policy;
- Governance mechanisms for material degrowth.

## Rights of nature

The book 'Sacred Civics: Towards Seven Generation Cities'[20] looks to indigenous practices around land stewardship to inspire mindset shifts in urban planning. It asks, "how would cities be planned, if planners treated Earth, humans and other species as sacred?"

For one, nature might have legal rights. According to the Earth Law Centre, "modern European Union (EU) legal frameworks treat nature as property and implicitly legalise damage through regulations which treat ecosystems as objects and not subjects of law."

The idea that accountability for healthy ecosystems is a legal responsibility of residents of Earth could offer a powerful, alternative way of stimulating policies the ecological transition requires. At present, most environmental laws are not actually made to protect nature, but to regulate its use and abuse[21]. In cities, natural elements like ancient trees are seen more as liabilities than natural infrastructure providing co-benefits. Legal personhood for natural elements would give them representation in law courts, and rights to exist, flourish, evolve, and regenerate natural cycles.

This is an evolving field, ripe for scaling in a European urban context. Some rivers now have legal rights in New Zealand, Spain, and India, and this is being explored for the River Dôn[22] in the UK.

## Institutional anchors for long-term vision

Current urban regulatory frameworks and political systems are not conceived for long-termism, so tend to spawn micro-adjustments rather than system change. Urban politicians play a temporally precarious 'service-provider' role, and avoid radical proposals which could put re-elections at risk. So the focus remains on private product replacement, instead of a move towards what one might call 'public affluence' which would require a major adjustment. Such a shift would see 'abundance' redefined, from for example having a medium-sized private pool, to liv-

ing in a comfortably accessible neighbourhood with a stunning public pool, affordably priced or even free. Degrowth needs to be seen as a route to public affluence, instead of maligned as 'tightening belts' or 'giving things up'. It should be the 'politics of more'; that is, more environmentally conscious children, better and larger pools, better equipped schools, amazing parks, huge and abundant libraries, seamless public transport, and healthy, biodiverse, wild natural spaces right inside cities.

## Representing Future Generations

One emerging tool for urban governments to overcome this mindset blockage, is legal rights for future generations. The '7Gen Cities' concept, derived from the Iroquois Confederacy[23], on Turtle Island (now known as the Americas), attempts this, by managing cities in a way that considers the impact of interventions on seven future generations of inhabitants.

This is a new (but old) way of considering the future in urban governance. Roman Krznaric, who developed the 'Legacy Mindset' in his book 'How to be a good Ancestor', says the dominant process of city-making means "humankind has colonised the future, and treats it as a dumping ground for ecological destruction and technological risk". '7Gen Cities' seeks to "liberate cities from the straitjacket of neoliberal urbanism, that increasingly works to transform complex, pluriversal urban worlds into commodities ruled by the dictates of technocratic-economic systems and elites".

In 2015 the government of Wales passed the Well-being of Future Generations Act creating the role of a Commissioner for Future Generations, involving foresight, participatory design, prevention, and applying the principle of regeneration. With a legal obligation to plan based on the impact on future generations, this act led to a freeze on road building, including scrapping a motorway extension around Newport, redirecting funds to public and active transport, and schemes to increase walking and cycling modal share to 45 percent by 2045.
Speaking of the Welsh work, the UN stated "what Wales is doing today, the world will do tomorrow". In May 2023, the Parliament of the Balearic Islands enacted its Well-being of Present and Future Generations Act, as a "response to institutional inertia, and an unwillingness to adjust regulatory instruments to confront the numerous worrying challenges of the climate and ecological crisis".

At city scale, in Viladecans, Catalonia, the council has an 'Office for the Future'. Its civil servants give future generations a voice in decision making. The office has moved the city to 'Mission-based' working – a model pioneered by the EU – which rallies the talent and resources of a broad coalition of stakeholders around a transversal goal. Viladecans´s five missions[24] to 2030, thanks to the Office for the Future, are geared to address the polycrisis with future generations in mind.

## Mayors for the future

Long-termism can also be integrated through the concept of 'Mayors for the Future". In the Catalan municipality of La Pera – where the author was participation and urbanism councillor until June 2023 – the idea of a split-mayorship is being explored informally, and sees a Mayor of the Present focus on the delivery of services, the maintenance of order, and the present-day mitigations of the effects of the climate crisis, whilst a

Mayor of the Future is occupied with representing the interests of future generations and nature, as well as co-creating a post-transition vision. This way, this small town council can address polycrisis issues across time, with a small staff. They can ensure there is enough good-quality water for citizens, whilst simultaneously beginning to examine ways to subsidise the transition of the local agricultural sector to regenerative agriculture, and sustainable land stewardship (which would contribute to water retention and quality in the area surrounding the town), as well as finding local sales channels for their produce (cultivating things the town needs, rather than animal feed or whatever happens to be subsidised by the EU that year).

Jayne Engle, editor of 'Sacred Civics' and proponent of Mayors of the Future, likens this structure to the "two loop model", which asserts that in society, there are more "dominant" systems which drive the economy and culture – for the Mayor of the Present – and there are "emergent" systems and deeper trends, making progress to eventually become dominant, such as a municipal system with rights for nature and future, and prioritised well-being.

## Civic finance for good

Mayors with an eye on future impacts will have to consider systemic ways of shaping urban investment frameworks, to think across time and the entangled values of systemic interventions. Investment in European cities is shaped by the neoliberal capitalist nature of the European economy, and is 'allocative'; aiming to make use of fixed resources, at a single point in time, according to parameters set largely by the investor.

Delivering the complex, multi-sectoral, multi-stakeholder systemic interventions our cities require, demands the 'dynamic allocation' of finance, to enable complexity and adaptability in urban design rather than hampering it. Dynamic financial frameworks, like those being developed[25] by Mariana Mazzucato at UCL´s Institute for Innovation & Public Purpose, which have inspired the Civic Finance work by 7GenCities[26], assign financial resources to interventions as they are required, to enact a certain change, for a variety of beneficiaries, by a variety of actors. Drawing on complexity theory, this system can prioritise adaptable policy choices which can be deployed as uncertainties unfold, and spawn urban financial systems which outlast a single mayor (like urban problems do).

## Material degrowth

The European approach to the material consumption of cities needs to be changed from "how to obtain cleaner material to continue building" to "how to make better use of what we have". Europe's disproportionate thirst for materials shows no sign of abating, as President of the EC Ursula von der Leyen's opening to her speech at the first African Climate Summit earlier this year implies: "we´re not only interested in extracting resources, but…". In addition to this union-level direction, there is very little understanding of the material throughput of European cities, something materials registries like the one planned in Copenhagen (see below) could help understand.

## Infrastructure and regulatory frameworks for circularity

The 'Circular Economy', where waste from one process be-

comes an input of another, is an oft-stated goal for greening economies. The truth is that it is hard to achieve in full, and has been subject to appropriation and greenwashing. According to the Ellen MacArthur Foundation, the global economy is only 7.2 percent circular,[27] and declining, as material extraction increases.

Not only do European cities continue to demand more materials (the continent is on track to double material extraction levels by 2050), but material recovery rates are dangerously low, compared to the objectives for the construction sector in the EU´s Circular Economy Action Plan. Recent work by Simon Michaux[28] at the Geological Survey of Finland (GTK) is sceptical of full circularity, highlighting that for a waste output to become an productive input in another, some energy and resource will always be required.

## CircuLaw

Work by the City of Amsterdam with a coalition including Dark Matter Labs[29] (DML), a not-for-profit trying to build citizen-led economies which prioritise well-being, seeks to devise legal infrastructure to support a circular economy. DML asserts that ownership, legal systems, governance, accountancy, and insurance will all have to change. The project involves a deep listening exercise and systemic legal analysis of existing regulations, working collaboratively with stakeholders to identify regulatory barriers to material circularity. Community-building around a mission of circular transition is key, and the output is a legal knowledge platform[30] where policymakers can navigate opportunities in existing regulations by theme, such as timber construction and circular wind turbines.

## Material Zero

The Material Zero agenda in Copenhagen is an emerging precedent of municipal work that recognises that most European cities must radically degrow their material footprint and suggests several ways. Copenhagen is aware – and one of the few cities currently publicly acknowledging – that we do not have (among other things) the timber, copper, sand and rare earths to advance our current material economy ('green growth'), or to meet the demands of our industrial society in its current form.

Copenhagen acknowledges that the carbon budget for Europe from the Paris Agreement figures, means the continent can afford to build only 140,000 new homes, equating to Denmark's annual target! The city's Reduction Roadmap[31] takes the global emissions 'budget', then scales to national, urban, industrial, and sectoral levels to determine a target level of emissions per sector. In their housing sector, emissions from construction must be an astonishing 97 percent lower than at present. The city looked at the radically sustainable Living Places[32] housing project, on the cutting edge of what is currently possible, which 'only' manages a reduction of 50 percent over current construction sector emissions.

From this analysis, the tenets of the Material Zero agenda emerged:

- Dematerialised (natural) regenerative public spaces / de-asphalting outdoor urban areas;
- Biodiverse, polycultural, localised cultivation of bio-materials (materials which can be the product of polycultural, locally-attuned regenerative agriculture, like wood, straw, certain plant fibres, wool, hemp, plant-based plastics, and also stone, earth);
- Shifting from private sufficiency to public affluence;

- New built form, without occupying new land;
- Maximising agility, flexibility, and efficiency of use of existing spaces;
- Developing infrastructure for 100 percent reuse of all materials;
- Shifting from global fossil-fuelled logistics and supply chains, to reactivation of local supply routes, modes, and chains.

In a low-income neighbourhood in Bristol, UK, a housing project called WeCanMake[33] is working in the Material Zero style. Using micro-factories employing local people (including future residents) to fabricate insulated wooden components for affordable houses which can be assembled by hand, WeCanMake could be replicable and scalable. It requires a public-sector-inspired mindset shift within the construction industry, and house buyers. This is not impossible: observe the boom of 'tiny houses' across Europe.

In Bristol they required no new land, building on unwanted parts of existing plots between existing homes. The team built the lightweight components, delivering them from micro-factory to construction site on bicycles. European cities must attract ideas freely from around the planet, but convert them to physical form locally, with local workers, production facilities, bio-based materials, all financed by frameworks which prioritise local social goals, not return for investors.

**"'Local', 'neighbourhood', 'community' do not have to mean small or slow. They can be the infrastructure engines of a new big and bold kind of economic future, one that is collective, regenerative and cares about the long view."**

**— Melissa Mean, WeCanMake**

## Radical sharing

Material Zero Copenhagen acknowledges urbanites must radically share things and places in new ways (like the commons of the past). As availability of basic materials peak or decrease, cities must disincentivise hoarding, and proliferate models like Libraries of Things, eliminating unnecessary duplication (and therefore production) of items, from tools to buildings.

Without a mindset shift to acknowledge beauty in sharing, and wealth as something which can be held in common ('public affluence'), which brings with it new conviviality, relationships, learning, collaboration and care, this kind of policy runs the risk of being stifled before reaching the public, and misunderstood as the removal of a privilege or property, in the mindset of the citizen-consumer or growthism proponent.

# CONCLUSION

## Mindset shift is required to turn European society away from colonial growthism

**The EU's current green-growth infused Green Deal and Climate Target Plan still rely on extractive and exploitative relationships with land, labour, and nations across the Global South for materials Europe does not have or make. The majority of net zero plans for European cities are well-intentioned, but mostly 'decarbonised product replacement' plans, not only are insufficient, but are also continuing to exploit the earth and humans in other locations for the benefit of Global Northern capital accumulation.**

The structural concepts which underpin the growth-based system, such as the growth imperative, 'rational economic man', perfect information, or colonialism are not just taught in university level economics but acquired culturally from a young age. From military-themed or outer space-conquering toys for children inspiring ideas of domination of distant lands, property-inspired board games, to witnessing adults engaging in an ownership-based 'keeping up with the Joneses' game of socioeconomic competition for property and goods, the imaginary of growthism is inculcated from birth in the Global North. Degrowth-inspired policies therefore need mindset-shifting initiatives, and an 'un-learning' process, not just physical or numerical impositions.

Professor Robert Costanza calls growthism an addiction and says that "for successful implementation of sustainable wellbeing, we are going to need societal therapy, because we are addicted to the current system"[34]. Cities, as the heart of production and consumption, are predominantly where this addiction is fostered by those driving consumption, turning citizens into consumers. They must therefore be where Europe acts.

City governments must both embolden their 'hard', material policies, to make better use of resources they already have or control, whilst adapting their municipal governance and budgeting systems to redefine value and capture co-benefits across sectors. At the same time, they must broaden the sphere of influence of their policies and focus on fomenting mindset shift in all municipal actors, through education, culture, civil society, and social structures.

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