The Urban Lab of Europe!

THEORICAL BACKGROUND

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Inception Report

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The Intergovernmental Panel on Climate Change (IPCC) stressed once more in its latest report the tremendous scale of the impact of human activity on climate change and the need to implement immediate solutions (IPCC, 2022). It is now known that conventional approaches to increasing energy-efficiency and limit climate impact are not sufficient (European Environment Agency, 2019). Green transitions are not an option anymore and need to be on their way.

The process of transitioning from a carbon-based economy to a non-polluting economy implies systemic change which includes all citizens, therefore focusing on those who have been excluded to ensure equitable opportunities for all. In recent years, the growing use of the Just Transitions concept has resulted in more expansive definitions from environmental, human rights and labor organisations so that it includes wider concerns such as poverty, racism, sexism, indigenous rights, food and energy justice, and overall global inequality. We refer to "just transition" in a holistic manner, which encompasses the need to end the extractive economy and create pathways for green, healthy, thriving, and connected local economies.

1. Introduction

Resilio (Amsterdam, NL)

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The European Green Deal underlines the need to leave no one behind during these transitions. All citizens, without exclusion, should benefit from newly developed green and innovative services and technologies.

In particular, cities, where 78% of the world's energy is consumed and more than 60% of greenhouse gas emissions are generated (UN Habitat, n.d.) can be key drivers to ensure Just transitions (see the UIA Cities, Jobs and Transitions Inception report).

This Inception Report is the starting point of research focusing on Green transitions in cities – ensuring accessibility and affordability to all. It is part of a two-year long knowledge activity, including research on green jobs and skills and on democracy and participation. Within the scope of this activity (detailed in the Just Transitions Inception Report), we identify major lessons from UIA cities to inspire Europe's urban policy makers and practitioner, foster the replication and upscaling of innovative approaches that can facilitate Green and Just Transitions and link to the Cohesion Policy.

Based on a first review of the 86 UIA city projects working under 14 themes, an initial literature review and key witnesses' interviews, this Inception Report is an intermediary step, aiming at setting the scope of definition and methodologies of the Make the city affordable to all by:

- Presenting the main issues at stake, the role of cities within the EU policy context;
- Detailing four pre-identified topics and some initial findings;
- Selecting UIA projects and other cities that will be involved in the process;
- Presenting the methodology for the whole study, a combination of interview with key witnesses and Managing authorities, detailed case studies as well as desk research.

2. Why do we need to ensure that no one is left behind in green transitions?

This section presents the main concepts used in this research, together with the rationale for researching experiences of ensuring that all citizens without exclusion can benefit from green transitions.

Vulnerable groups in green transitions

Decreasing the climate impact of services and technologies has been high on the agenda since at least the Brundtland report in 1987 (Brundtland, 1987). Green transitions should continue to take place in a range of areas such as climate adaption and environment protection, renovation and housing, food, transport, energy, waste management (European Commission, 2019). However, on the one hand, the uneven distribution of the climate and environmental impacts reflects closely the socio-demographic differences within Europe (European Environment Agency, 2018); on the other, not all citizens are equal in benefiting from these services and technologies.

In this regard, the United Nations Foundations has stressed the need to reduce vertical (amongst people) and horizontal (amongst groups) inequalities, leaving "no one behind" as a: "A concerted effort to identify and lift up those who are furthest behind first. This means targeting the most vulnerable people who societies so often miss: from youth, and especially girls; to refugees and migrants; to rural farmers and indigenous populations – and so many others living on the margins of society"(United Nations Foundation, 2016).

Amongst those potentially at risks of being left behind, 5 factors of vulnerability might apply (UNDP, 2018):

1. Discrimination: vulnerable groups to those experiencing exclusion, bias or mistreatment in laws, policies, access to public services and social practices due to their identity (ascribed or assumed, and primarily relating to their gender, but also age, income, ethnicity, caste, religion, disability, sexual orientation, nationality, as well as indigenous, refugee, displaced or migratory status);
2. Geography: vulnerable groups are those who are denied social and economic opportunities, human security and/or quality public services based on their place of residence. This might relate to the natural environment (contaminated or degraded natural resources preventing from sustaining livelihoods or natural disasters), to the lack or inequity of

infrastructure, transportation and/or public services (limiting the choices, mobility and opportunities of people in some localities), to the effects of climate change such as climatic conditions, altitude, desertification and/or proximity to high-risk areas such as floodplains or steep embankments (isolating and leaving in setbacks).
3. Governance relates to lack of adequate institutions (which can be ineffective, unjust, exclusive, corrupt, unaccountable and/or unresponsive) or of laws, policies and budgets that are inequitable, discriminatory or regressive, couple with the little consideration of poor, disadvantaged and marginalized communities in local policies affecting them.
4. Socio-economic status: vulnerable groups are those who lack the opportunities and capabilities to earn an adequate income, accumulate wealth or otherwise fully and equitably participate in their economy and society.
5. Exposure to shocks and risks: vulnerable groups are those affected by violence, conflict, displacement, large movements of migrants, environmental degradation, natural hazard induced disasters and other types of climate events, or health shocks, such as epidemic outbreaks.

Some other groups (e.g. elderly people) might also be affected by vulnerability on the ground of digital divide, without being able to access some services available only through this means.

These vulnerabilities might in addition complete each other: being vulnerable on the labour market might prevent from accessing essential services and/or contributing to (local) governance. Quite often several factors are interlinked (UNDP, 2018).

Lack of affordability

The new green and innovative services and technologies are usually more expensive than conventional ones: they often remain un-affordable to a wide range of populations. This might lead to displacement, stress and alienation, which counterbalances the effects in-between the benefits of services. For example, greening as a form of revitalisation, increases property values, improves health, and increases resilience. However, it induces a non-distributive effect of increased housing costs - quality and energy efficient housing being more expensive- and loss of belonging (BCNUEJ, 2018). Making cities greener, cooler, less polluted by reducing traffic, with better parks and more biodiversity might lead to "ecological gentrification" and displace long term residents of disadvantaged neighbourhoods when regeneration takes place (Beretta and Cucca, 2019). Another example is that of low-income people with difficulty in paying energy bills who will face strong difficulties in paying for cooling if temperatures keep on rising (European Environment Agency, 2021).

Lack of accessibility

Some groups might also have difficulties in accessing green and innovative services and technologies. People in socio-economically disadvantaged neighbourhoods, for example, might be excluded from urban sustainability infrastructure (e.g. parks, food cooperatives, green roofs, regenerated river fronts, sustainable mobility initiatives, etc.) because of the underlying conditions of inequality and (distributive, intersectional, procedural) injustice (UrbanA, 2020a). Unprivileged populations might also lack the knowledge of existing schemes to be actually able to access them (UrbanA, 2020c). Increasing digitalisation might also prevent some poor people to access all available services (UNDP, 2018).

The need to include all citizens in green transitions

As stated in the European Green Deal green transitions "...must be just and inclusive... The most vulnerable (people) are the most exposed to the harmful effects of climate change and environmental degradation. At the same time, managing the transitions will lead to significant structural changes in business models, skill requirements and relative prices. Citizens, depending on their social and geographic circumstances, will be affected in different ways" (European Commission, 2019).

Pushing forward green and innovative services and technologies without considering those who might be left out of making the most of them might increase social and economic divide in our societies, as well as undermine the steps taken to reduce our overall carbon footprint and consumption within the overall planet's limits.

Distributive justice, understood as a fair way of both distributing resources and accessing them and bearing their burdens and impacts, will involve "understanding and responding to the varying degrees and forms of social vulnerability, ensuring that all communities are effectively protected from the negative consequences of climate impacts and analysing the consequences of adaptation responses to different groups".(European Environment Agency, 2021)

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3. The role of cities

Umea (URBACT Genderlandscape)

The last three decades have been characterised by the economic, demographic and symbolic come-back of cities. After a long period dominated by suburbanisation, cities have found a new and unchallenged economic centrality (Böhme et al., 2019), while city living has become newly attractive to a variety of social groups. Such sustained urban vitality is a critical resource for the successful pursuit and achievement of the ecological transition: dense cities are in many ways more resource-efficient than suburban developments, and they have also tended to be the hotbeds of many important socio-technical innovations that lead towards further efficiency in the use of ecological resources.

Cities are key to ensure that everybody can access and afford green and innovative services and technologiesThe Basque Declaration and the Mannheim Message responds to the EU Green Deal and calls for systemic changes to bring about a resilient, inclusive and sustainable Europe, while emphasising inclusion and affordability. The 'just city' dimension included in the New Leipzig Charter in 2020 is a welcome novelty for European policies and debates. Rooted in the Lefebvrian concept of 'right to the city' and its subsequent elaborations, the 'just city' approach entails a radical critique of the idea of cities as engines of economic growth and surplus value creation, producing and reproducing unequal societies (Colini, 2021). At the cross-roads of affordable and accessible green and innovative services and technologies, several Urban Agenda for the EUpartnerships have also designed specific actions for targeted groups: on energy transition, housing, mobility, climate adaptation, sustainable land use, urban poverty, ... Signatories of the Covenant of Mayors also seek commit to transition to "decarbonised and resilient cities with access to affordable, secure and sustainable energy".

The table below summarises some policies and measures cities have developed to guarantee that all city residents' access and afford green and innovative services and technologies.

Table 1: Ensuring a fair transition towards climate neutrality (Eurofound and European Environment Agency, 2021) (BCNUEJ, 2018)

Objectives	Actions

Prioritising and designing win-win social-climate mitigation policies	**Policies** • Integrated greening policy Green rhetoric and the voicing of ambitions to become the greenest city in comparison to peers **Investments** • Physical implementation of greening projects • Public investment in and support for sustainable transport • Support for energy efficiency investments in residential buildings (e.g. Building retrofits)
Minimising the monetary distributional inequality of the transition to carbonneutral economies	• Compensation measures, relief measures • Support for low-income households
Maximising nonmonetary co-benefits, such as health benefit	• Rhetoric around health and the healthy city • Strategically prioritising support, incentives and compensation measures to specific sectors and social groups. • Procedural participation and the involvement of residents

4. EU framework

As an overall framework, the European Green Deal (EGD) provides a key ambition for Europe: transitioning towards more carbon neutrality where economic growth is decoupled from resource use and no person and no place is left behind (as detailed in the Inception Report on Cities, Jobs and Transitions).

In order to ensure this at the level of cities, the new Cohesion Policy for 2021-2027 continues investing strongly in sustainable urban development (SUD) with an 8% urban earmarking of the European Regional Development Fund. The combination of Policy Objective 5 'A Europe closer to citizens' and Policy Objective 4 'More social Europe' support urban transformation challenges in a just and fair way with the socioeconomic inclusion of marginalised communities, low-income households and disadvantaged groups. Together with Policy Objective 2 "Greener Europe", actions can cover a wide range of possible areas of support such as promoting energy transition, climate change mitigation and adaptation, protection and preservation of nature, biodiversity and green infrastructure, sustainable urban mobility, etc. Article 7 cities of the 2014-2020 period and future Article 11 cities of the 2021-2027 period under the European Regional Development Fund regulation will focus on integrated Sustainable Urban Development (SUD), and these provide a framework to include all groups of society in green transitions.

The recently selected 100 climate-neutral and smart cities by 2030 will also implement the EU Mission on Climate-neutral and Smart Cities, giving a local dimension to the European Green Deal, through a bottom up approach. These cities will act as experimentation and innovation hubs to enable all European cities to follow suit by 2050. Such a Mission is part of the EU Strategy on adaptation to climate change with the related European Climate Law, which sets out how the European Union can adapt to the unavoidable impacts of climate change and become climate resilient by 2050, with a specific responsibility of "Local authorities, in particular, [to be in charge of] making this process inclusive, giving to urban communities - and in particular to the most vulnerable groups - the chance to take part in and influence the changes required to make their city resilient."

In this regard, ensuring that no one is left behind is also coterminous with the EU's ambitious target to lift 15 million European citizens out of poverty by 2030, as set out in the European Pillar of Social Rights. In parallel, the European Social Fund Plus has the objective to protect the most vulnerable ones in the fields of employment, education and training, social inclusion and social innovation. Support to those most likely to face the greatest transition challenges is also provided by the Just Transition Fund (JTF) (with a specific focus on energy poverty and housing conditions) and the Recovery and Resilience Facility (RRF). In addition, the Climate Action Social Fund (CASF), will be key in supporting vulnerable households and support measures and investments that reduce emissions in the road transport and buildings sectors, addressing part of the social and distributional challenges of the EU's transition to carbon neutrality.

The current consultation processes for the "Fit for 55" Package are also a chance to further support transition towards sustainable energy and climate neutrality which is more affordable and accessible to all. The Smart

specialisation strategies provide also a crucial framework for regions to support a smarter, more sustainable and more inclusive economy in Europe.

Last but not least, the integration of sustainability and affordability goals is currently one of the major areas of research and intervention of social housing providers in Europe: in relation to the implementation of 100 Lighthouse Districts projects related to the "Renovation Wave Strategy" promoted in 2021 in the framework of the Affordable Housing Initiative, the European Commission aims at reducing emissions by at least 55% by renovating 35 million inefficient buildings by 2030, while making these accessible to all. This is complementary to the EU Energy Performance of Buildings Directive which supports cities to deliver energy renovations and new buildings meeting nearly zero energy standard since 2012. The Shape EU Initiative brings together national social housing providers, construction sector associations and academic and research institutions in further addressing this.

The diverse above-mentioned EU framework can create opportunities to improve synergies across funding streams, which are crucial to ensure green transition is accessible and affordable to all. Cities will play a key role in ensuring that these finances are localised and spent effectively.

5. Initial insights

An initial analysis of the 86 UIA-funded projects identified 4 main areas in which UIA cities had been the most active in ensuring that green and innovative services and technologies are accessible and affordable to all groups of society. These 4 areas are: climate adaptation, energy, housing and mobility. The sections below sketch the main issues at stake for each of these approaches, with some preliminary solutions proposed by UIA and non UIA cities, before providing initial insights into the current state of play.

Nota Bene: The Projects selected here are projects and practices that have already been implemented and that are successful. The aim is to encourage their dissemination to inspire their mainstreaming (implementation at a wider scale) and transfer (implementation in more Member States and cities). ***Iccarus (Ghent)***

5.1. Climate adaptation

The European Environment Agency (EEA) argues that "The most pronounced impacts of climate change in European cities are likely to be caused by extreme weather, such as heatwaves, heavy precipitation, flooding and droughts, but other risks — including wildfires and vector borne diseases — are also on the rise"(European Environment Agency, 2020a). Adaptation of cities and towns to climate change is crucial for the overall resilience of European Society because of the population concentration – including vulnerable groups - assets and economic activities in urban areas(European Environment Agency, 2021).

Municipalities are in general under-prepared for climate change and lack resilience against future impacts (UAP on Climate Adaptation, 2018). In particular, women, children, elderly, ethnic minorities, and the homeless are more likely to be impacted by the effects of climate change and less eager to be able to benefit from the proposed services and technologies (UAP on Climate Adaptation, 2018). As such, social justice must be kept in mind in the design of urban adaptation responses (UAP on Climate Adaptation, 2018).

Heatwaves affect those with low incomes in cities, as well as elderly[1] – who do not have the resources to leave the city during Summer and/or or do not have access to cool islands during these peaks. In particular, the lack of central green spaces and/or absence of car or adequate public transport can prevent all citizens to access green areas. Parks in low-income neighbourhoods may be of lower quality and feel less secure because of vandalism and antisocial behaviour (European Environmental Agency, 2022). This adds in turn to the low level of security some women might feel when seeking to benefit from them (Polko and Kimic, 2022).

Also, flooding impacts all European citizens annually for about 3 billion EUR. Yet, the scale of the damages will be higher for low-income households relatively speaking than for high income households (Osberghaus, 2021). The increase of fires due to climate change, particularly in south-western Europe and more and more towards the North, affects people living on the urban fringes of cities and has an impact on the financial capacity of vulnerable groups living flood risk areas: in some counties, insurers can refuse insurance or charge prohibitively high premiums due to their locations[2].

Approaches to addressing it

Typically, climate adaptation remedies are infrastructure based and therefore require collective action usually coordinated by the local authority. It is therefore incumbent on local authorities to consider how climate adaptation measures will impact on lower-income and other vulnerable groups such as the elderly and homeless

and for them to benefit from existing measures, services and technologies.

Throughout the Covenant of Mayors for Climate and Energy, one eighth of all EU municipalities have signed a commitment to adopt action plans to implement the EU climate and energy objectives[3]. The Adaptation Support tool on risk and vulnerability assessments is supporting them in identifying the most relevant actions to undertake for specific target groups. They can for example decide to prioritise poorer neighbourhoods in initiatives such as establishment of cool islands, tree planting and nature parks or in the protection from natural disasters such as flooding and forest fires adjacent to cities.

Cities' experiences

Some identified UIA projects dealing with climate adaptation address solutions to create cool islands and reduce heatwaves. They can adopt a nature-based solutions approach: for example, the UIA OASIS project in Paris (FR) and the UIA GBG_AS2C project in Barcelona (ES) both chose to improve school yards with the aim of providing a cool island during heat waves. School students are already benefiting from having nature, water and shade in their playgrounds. In both Paris and Barcelona the community has also access to these spaces (and in Paris, linked to Mayor's 15 minute city initiative).

Cities can also create cool islands by revitalising neighbouroods at the same time as improving the overall quality of local life. In Sevilla (ES), UIA project CartujaQanat has been improving a public space on an island in the river which was used for the World Expo. The idea is to use innovative water-based solutions to cool a public open space facility to provide vibrant street life. Under the Sustainable use of land and nature-based solutions UIA theme, UIA PUJ project (implemented in Prato, IT) has been greening the city with an urban 'jungle' with the aim of reducing the heat in the city: one tree per citizen will be planted with an objective of 190,000 trees. Particular emphasis has been put on access for low-income residents and sites for greening have been chosen with accessibility in mind.

Another UIA project has focused on water retention: the UIARESILIO project In Amsterdam (NL), seeks to limit water damage in the city by developing smart climate adaptive so-called "blue green" rooftops on social housing buildings with the aim of reducing runoff during heavy rain. The project has installed the smart blue green roofing on 10,000sqm of rooftops with plans to extend this to 50,000 sqm beyond the project timeframe.[4]

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[1] The 2003 "canicule" heat-wave in Europe illustrated that the elderly were particularly at risk from heat effects. 14800 people died in France, mostly elderly.

[2] Insurance rules vary by Member State but in those countries where building insurance is not mandatory many householders do not have flood options. Between 1980 and 2020 EEA estimates that 450-520Billion EUR of economic damage was caused by flooding. Between a quarter and a third of these losses were insured (European Environment Agency, 2022)

[3] of which 7500 have actually adopted action plans

[4] As such it is the only UIA climate adaptation project to have its focus on flooding despite this being the largest climate change risk affecting Europe.

5.2. Energy

Energy accounts for 72% of total greenhouse gas emissionsworldwide. For example, electricity accounts for a quarter of all EU greenhouse gas emissions (European Environment Agency, 2020b). Yet, renewable electricity could allow a net 55% reduction in greenhouse gas emissions by 2050 (European Environment Agency, 2021). Still, in 2019, the EU-wide share of renewable energy was less than half a percentage point below the binding 20% target for 2020 (European Environment Agency, 2021). More sustainable production systems for electricity remain limited in terms of accessibility (available offer) and affordability (prohibiting price for many).

In particular, 6.9 % of the EU population cannot afford to heat their home sufficiently (Eurostat, 2021). As such, "alleviating energy poverty[1] is a key precondition for achieving just transitions towards sustainability" (EU Energy Poverty Observatory, 2020). Yet, energy poverty is often described as "the inability to keep homes adequately warm in the winter or the lack of access to sustainable modern energy services and products" (MajdandŽiĆ et al., 2021), because of their limited revenues, the low energy performance of buildings (see below) but also their consumption patterns. Climate change has amplified these effects (Eurofound and European Environment Agency, 2021). The most at risk of energy poverty are : women, people with disabilities, single parents, low-level education family, older persons, children, migrants, and persons with a minority ethnic background (Energy

Cities, 2021; European Environment Agency, 2018; Janikowska and Kulczycka, 2021). Related to these, changing current consumption patterns and habits at individual and industrial level – which also affect the overall impact on climate - is not accessible to all.

Approaches to addressing it

A realm of policy instruments exists to support the deployment of renewable energy, energy efficiency improvements, the promotion of low-carbon technologies and behaviour change: economic tools (e.g. EU Emissions Trading System (ETS), carbon taxes and energy taxes to discourage fossil fuel use and encourage energy efficiency, economic incentives and other instruments such as standards (e.g. on cars, buildings, cooking appliances, etc.), regulations (e.g. energy labelling), education, awareness raising, training, technology transfer, research and development, and public investment in low-carbon and active mobility infrastructure (Eurofound and European Environment Agency, 2021).

However, regulatory instruments and industry standards (e.g. energy efficiency labelling, standards for cars, building standards) could have regressive effects. Many measures which are meant to increase the sustainability of energy lead to increased energy prices (e.g. carbon and energy taxes): this disproportionately affects the finances of lower-income households. On the one hand, some households are accumulating disadvantages, and are particularly sensitive to climate mitigation policies, on the other, the most advantaged ones benefit from the climate mitigation policies – which exacerbates existing inequalities. Also, the redistributive effects of energy and carbon taxes show that this tool alone cannot simultaneously achieve climate mitigation targets while avoiding all potential negative monetary distributional outcomes: the higher energy prices puts more pressure on lower income households due to the larger share of budget they spend on energy bills (Eurofound and European Environment Agency, 2021). To support energy justice, the Covenant of Mayors for Climate and Energy, has developed specific activities and the EU developed an Energy poverty advisory Hub.

At the level of Member States, many have tried to reduce the regressive effects of climate policies such as carbon taxes by addressing the issue of energy poverty through policies and measures supporting the most vulnerable groups, for example grants and subsidies to help reduce the energy burden on household expenses by making housing more energy efficient and/or installing renewable energy sources[2] (MajdandŽiĆ et al., 2021).

Cities' experiences

An initial scan of European cities has shown better and more targeted initiatives to support those most at risk to better manage their energy consumption (Energy Cities, 2022). Cities such as Antwerp have signed pledges to provide access to essential services to all residents with a focus on energy poverty. The UIA EPIU project coordinated by Getafe (ES) is tackling directly energy poverty especially affecting people in poverty, ageing, migrants, low income, unemployed, and those in poor quality housing. An intelligent data analytics system has been developed to analyse energy consumption habits, socio-demographic data, income, building characteristics and set up a related programme to reduce the risks to be excluded from (unstainable) energy consumption. In Zagreb (HR), a member of Eurocities, a multi-stakeholder partnership is also working with residents to carry out simple energy audits in households that have trouble paying their energy bills and to implement low-cost energy improvements. The UIA Vilawatt project, coordinated by Viladecans (ES), focused on developing a participated, decentralised renovation model for housing for promoting energy transition and sustainability. The project established i) a Local Energy Operator - a local energy supplier and renewable energy producer; ii) an Energy Savings Company, offering renovation and energy saving services to its members (the municipality, businesses and residents); and, iii) a financial mechanism in the form of an alternative currency called "Vilawatt" which aims to incentivise energy saving by residents while increasing the economic capacity of vulnerable groups.

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[1] Energy poverty is usually defined as "the inability to adequately heat the home or use the energy needed because the cost is unaffordable" (EU Energy Poverty Observatory, 2020; MajdandŽiĆ et al., 2021).

[2] Even these can be subject to debate as when someone struggles paying for their basic bills, they will be unable to invest in energy efficiency solutions.

5.3. Housing

As documented in the UIA and URBACT- led Right to Housing initiative, as urban density has become very attractive and urban housing has become a critical area for financial investment and accumulation, housing affordability issues have become paramount. Of the 220 million EU households, around 82 million spend more than 40% of their income on housing while the lack of investment in affordable housing is estimated to be around EUR 57 billion per year (European Commission, n.d.).

At the same time, the growing economic and demographic divergence between very dynamic metropolitan areas on one side and declining regional centres and smaller towns on the other have left much physical capital - and therefore housing - often under-used and neglected, a trend that represents a threat to an ecologically efficient management of resources that is needed to achieve the transition (Coppola et al., 2021). In particular, between 2001 and 2011, more than a quarter of the 610 FUAs in the EU shrank and this shrinkage continued between 2011 and 2018 (European Commission, 2022).

In parallel, buildings account for 40% of energy consumption and 36% of CO2 emissions. The EU is aiming for climate neutrality by 2050. Yet, 80% of today's buildings will still be standing, with new ones built during the same period, with a strong need for increasing their energy performance. Furthermore, 11% of building emissions at a global scale come from embodied carbon in construction, i.e. the emissions created from the construction, demolition, and the wider supply chain (Eurocities, 2021)

Those affected by the difficulty to access an adequate housing, - people facing homelessness, living in overcrowded housing, or risking eviction, victims of domestic violence, women and gender diverse people (REF) – are also the least eager to benefit from housing schemes contributing to reducing urban sprawl, energy or material consumption.

Approaches to addressing it

The levels and forms of affordable, sustainable housing production in specific localities are greatly mediated by national regulations and policies. However, the dimensions of governance, finance, land and housing-related climate interventions are common, critical areas for developing affordable and sustainable housing policies. More specifically, the deployment of planning instruments like public land banks, inclusionary zoning, land adjustment, land value recapture and community land trusts are proven to be effectively related to the ability of local and metropolitan governments to provide and maintain the needed amounts of affordable, sustainable housing (Housing 2030, 2021): the deployment and generalisation of these tools represents a highly transformational transition approach (Urbana, 2020), as they intervene on the essential institutional structures and market mechanisms of how housing production works.

In addition, new policies and tools are needed to intervene not just on the new housing production but also on renovation processes of existing housing that is often at risk of creating trade-offs between sustainability goals - to reduce emissions by making housing more efficient in energy and material consumption - and social justice and inclusion goals. By "renoviction" (Grossmann, 2019) housing researchers and policymakers indicate the effect determined by ecologically-motivated renovation processes that end up in rising housing costs and neighbourhood gentrification and, ultimately, to the displacement of lower income tenants. Instead, renovation processes should aim at preserving affordability while reducing "energy poverty" (see section above).

The challenge is twofold then: on one side it is to make sure that renovation does not mean displacement where there is housing market potential enough to justify investment interest in renovations, on the other it is to ensure that a sustained flux of investment involves also the sections of the housing stock that are located in less marketable locations and where often low-income dwellers are located (Eurocities, 2020).

Cities' experiences

In this perspective, there are various policies currently under implementation that are promising. One key area is the standardisation and increased cost-effectiveness of renovation approaches focusing on large social housing estates where mostly low-income families live and who can benefit the most from lowering energy costs. For example, the Energisprong initiative in the Netherlands, and now under implementation in other EU countries, funds investments in retrofitting based on energy savings with no further costs to tenants. The UIA ICCARus project in Ghent (BE), is renovating 85 houses of so-called captive residents, i.e. people who live in low-quality housing and lack the means and skills needed for renovation. A revolving fund based on the principle of subsidy retention makes renovations possible also for low-income target groups while the return of the subsidy to the fund in case of the selling of a renovated building makes sure that increase in value goes back to collective, future use and benefit triggering future "waves'' of renovation.

The UIA Super Circular Estate project in Parkstad Limburg (NL) is experimenting with a model for the sustainable, low carbon, resource-efficient demolition and renovation of social housing estates in shrinking urban areas focusing both on material circularity and residents' engagement. Finally, the UIA Yes we rent! project in Matarò (ES) aims at generating an accessible housing stock targeting medium-income households by using properties that have been left empty. By offering guaranteed rent and financial and organisational support to renovate properties, the initiative reduces the risks for landlords facilitating them to rent below market levels. The initiative also aims to establish a multi-stakeholder cooperative, which can be publicly funded and controlled and that is aimed at the long-term affordability of housing.

5.4. Mobility

Over 70% of EU citizens live in cities which generate 23% of all transport greenhouse gas emissions. The European Commission is willing to support the transition to cleaner, greener, and smarter mobility, in line with the objectives of the European Green Deal by increasing connectivity and shifting more passengers and freight to rail and inland waterways, by supporting the roll-out of charging points, alternative refuelling infrastructure, and new digital technologies, by placing a stronger focus on sustainable urban mobility, and by making it easier to choose different transport options in an efficient multimodal transport system. The proposals will put the transport sector on track to cutting its emissions by 90% by 2050.

The Cohesion policy supports sustainable and green mobility with the Policy Objective 3 "a more connected Europe by enhancing mobility",. As for urban mobility under Cohesion policy, the Policy Objective 2 "Greener Europe" includes a focus on the promotion of sustainable multimodal urban mobility, as part of transition to a net zero carbon economy; and since 2002, through the European Mobility week - the flagship awareness-raising campaign on sustainable urban mobility, has been promoting in European Cities behavioural change in favour of active mobility, public transport, and other clean, intelligent transport solutions.

But, in addressing climate-neutral strategies for urban mobility, Governments and Local Authorities need to pay attention to include all the inhabitants, especially the vulnerable ones. Easy and equal access to convenient, safe, affordable, and environmentally friendly means of transport is a base requirement for the comfort of all inhabitants of urban environments and to enable the balanced functionality of the cities with a high standard of living for all their users, taking a special attention to the marginalised/vulnerable people, especially people with temporarily or permanently reduced mobility, children and young people, older people, migrants and ethnic minorities, low income and unemployed, people living in rural and deprived areas, and people with no or little IT skills and persons with no access to internet (European Platform on Sustainable Mobility Plans, 2020).

Approaches to addressing it

The COVID-19 Pandemic has driven cities to invest in more sustainable equal, just mobility infrastructures. For example, several European cities have been improving walkability and cyclability both in central urban areas and in the peri-urban neighbourhoods. These investments are considered the most democratic facilities regardless of income, ethnic group, gender, and powerful means of moving for decreasing pollution which particularly impacts the poorest areas. The public transportation system has been reinforcing taking care of people with reduced mobility and somewhere considering a gender sensitive approach. The ICT and the smart city approach have been boosted to facilitate cities in collecting mobility data and enhancing transportation services.

Affordable sustainable mobility for all should not be treated as an isolated topic. It is strictly connected to affordable housing and affordable energy. We cannot provide affordable mobility without an affordable housing strategy: if a city wants to be inclusive in terms of transportation, it is important to guarantee enough affordable housing inside the urban area[1] avoiding gentrification which pushes people (low- and medium-income households, single parents, etc) in peri-urban low-price areas distant to jobs and schools, requiring the use of cars. Integrated planning strategy for housing, mobility, energy is needed to provide equal and sustainable plans including the social dimensions.

The United Nations through the Interagency report on sustainable transport sustainable development (2021) stimulates Local Governments and Cities in making their own the four "levers" identified by the Global Sustainable Report of 2019 - governance, economy, finance and technology and applying the Avoid-Shift-Improve approach for realising sustainable transport solutions for all. Avoid reduces transport demand through changes in behaviour, technologies, redesign of cities through the use of compact, mixed-use planning with inclusive public spaces. Shift changes the nature of transport demand and supplies by transitioning away from fossil fuel–heavy modes in favour of active, non-motorized mobility (walking or cycling), public transport, carpooling or other sharing mechanisms, and improving multimodal transport. Improve refers to changes in how transport systems and services are provided or managed, through for example: sustainably charged electric vehicles, safer vehicles with improved technology, safe road design with lower speed limits, improving accessibility for under-served populations and geographic areas, and low-carbon transport technologies.

Cities' experiences

Several UIA projects are engaged in pioneering work on sustainable mobility and air quality fostering the above-mentioned issues. Even though they do not address specific vulnerable groups, they seek to make sustainable and public transport accessible and affordable to all, as well as to improve mobility, for the benefit of all city residents. The UIA INNOAIR project in Sofia (BG), foresees to pilot for the first time in Europe the concept of "On-demand green public transport" aiming at reducing pollution and improving public mobility service. This initiative goes hand in hand with a wider strategy of sustainability dealing with low emission zones, green corridors, congestion charge and the promotion of active mobility. The SasMOB project in Szeged (HU) is aimed at building a data-driven and responsive IT-system through the partnership of public entities, private businesses and transport

providers to progress towards environmentally friendly urban mobility and tackle the problem of car dependency . It will develop a data management process to analyse the complex urban mobility behaviour through data collected by smart phone applications and co-design and tailor sustainable commuting solutions for employees. The UIA COMMUTE project in Toulouse (FR) aims at achieving a better mobility and reducing the environmental impact of transport for the Toulouse airport area, through a collaborative mobility planning for co-designing a digital platform dedicated to urban mobility and innovative actions for traffic reduction by encouraging new ways of working (telecommuting, modular timetable, etc...), mobility services (car sharing, ride sharing for small distances, etc) and new infrastructure (autonomous shuttles).

Other European projects have been working to guarantee affordable mobility including targeted vulnerable groups. Umea (SE) is a leading city for a gender landscape programme in urban planning, including mobility services. Umea has conducted extensive research into men and women's travel patterns, workplaces, and socio-economic situations to re-design mobility services with a gender sensitive approach.

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[1] Interview with Peter Staelens, Mobility team Eurocities, on 7 March 2022

5.5 Pulling things together

The initial analysis of 13 UIA and non UIA cities, of the literature and interviews with key witnesses has led to some initial findings:

- The importance of the interconnexion of issues. The four identified topics are strongly interconnected: the housing offer will have an impact on the mobility needs; building renovation on energy consumption, etc. Cities need be bold in addressing these issues in an integrated way, taking into consideration both the negative and positive spill over effects among these topics and beyond. For example, improving living conditions has positive effects on the whole neighbourhood, but can lead to gentrification. Local policies need to be integrated, which goes hand in hand with more transversality in local administration.
- The local context. A neighbourhood-based approach is often the most suitable target for local policies, as it allows to prevent displacement effects, while ensuring that both sustainable and justice are addressed adequately. This approach needs to be embedded in a multi-level governance and multi-stakeholder partnerships.
- Adequate urban planning. Urban planning supported by a strong political vision is key for ensuring all get access to and can afford a sustainable city: using the existing space in the most relevant way and addressing specifically urban-rural linkages and functional areas.
- Smarter cities. Digitalisation is both an opportunity and a risk to European cities. It can improve sustainability by making services more relevant and efficient for the citizens (monitoring energy consumption, access to multi modal public transports etc). At the same time, it can also increase the digital divide for the citizens that don't have access to those services, because they are digital. There is a need for an inclusive approach for the cities to benefit from the digital opportunities without leaving any social group behind.

These first reflections will be part of the future fieldwork and research.

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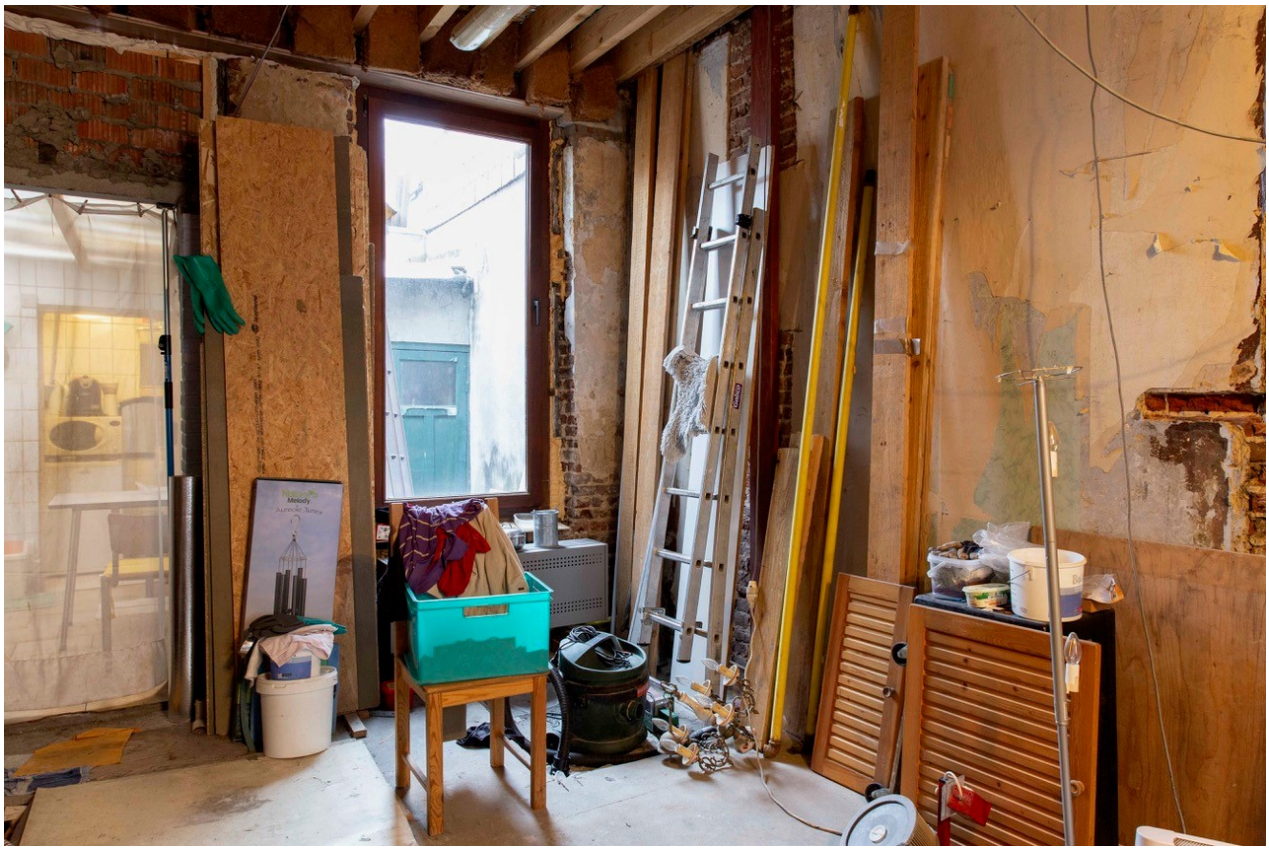
6. Methodology and approach to the research

6.1. Analytical framework



Iccarus (Ghent)

Our first analysis stressed that in terms of accessibility and affordability of green and innovative services and technologies, cities are developing initiatives which on the one hand address public administrations challenges (1), on the other, target vulnerable groups (2).

Based on this, 4 research questions will guide the research:

- **#1A: How do cities use financing green and innovative technologies to enable their access to all/vulnerable groups?**
- **#1B: How do cities design and develop policies giving access to green and innovative services and technologies to vulnerable groups?**
- **#2A: How do cities ensure all/vulnerable groups can afford green and innovative technologies and services?**
- **#2B: How do cities ensure all/vulnerable groups can access green and innovative technologies and services?**

These research questions will be analysed throughout the four identified topics: climate adaptation, energy, housing and mobility. In addition, the review of UIA cities will focus on three core questions relating to making city affordable and accessible to all:

1. What barriers do cities face and how are they addressing them?
2. What key lessons are emerging for the climate-neutral future of cities?
3. What successful approaches can be replicated and scaled across Europe?

6.2. Process

The figure below illustrates the headline process and phasing.

Figure 1: Cities, Affordability and Just Transitions process and phasing

This Inception Report has been drafted on the basis of desk research and literature review, a high-level scan of all 86 UIA projects and some pre-identified non UIA projects, and a series of key witness interviews with other organisations working in this field.

In a second phase - fieldwork - a detailed study of relevant projects, encompassing questionnaires and hearings with relevant urban authorities will take place, allowing a deep dive into the experience and learnings of the most effective good practices. In addition, interviews with relevant Managing Authorities will be carried out. The research and core questions mentioned above will guide the analysis.

In a third phase - analysis and reporting - the findings will be presented with a practical focus, designed to support and inspire cities seeking to facilitate Just Transitions throughout Europe and beyond.

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7. List of key witnesses' interviews

Umea (URBACT Genderlandscape)

Key witness	**Organisation**	**Topic**
Anja de Cunto	Eurocities - Big Buyers	Public Procurement

Richard Harding	Co-author of a JRC Study on Smart Specialisation	Smart Specialisation
Elena Donnari Teresa Aristegui	DG ENER - Renovation Wave	Energy poverty
Brooke Flanagan	Eurocities - Net Zero Cities	Energy
Eugenia Mansutti Anna Iafisco	Eurocities – Covenant of Mayors + Social Affairs	Climate Energy Housing
Karel Vanderpoorten	DG GRWO - Affordable Housing Initiative	Housing
Michaela Kauer	UAP on Housing (City of Vienna)	Housing
Dara Trunbull Joao Goncalves	Housing Europe	Housing
Piotr Rapacz Madeleine Kelley	DG MOVE	Mobility
Peter Saelens	Eurocities	Mobility
Ivone Pereira	European Environment Agency	Climate Adaptation

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See on UIA website