The Urban Lab of Europe!

THEORICAL BACKGROUND

EDIT 25 FEBRUARY 2022

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Cities, Jobs and Just Transitions - Context

See on UIA website

The shift to climate neutrality presents many opportunities for Europe's economy and labour markets. However, it also poses significant challenges, particularly as its distributional impact will be uneven – both in territorial and societal terms. Some industry sectors will be disproportionately affected whilst the implications for workers – particularly those with lower-skills levels – are significant. If not managed effectively, the transition can widen inequalities across Europe. This could undermine social acceptance of the climate neutral transition, especially in the short term, with societies already under pressure following the coronavirus pandemic.

Introduction

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Implementing Just Transitions acknowledges the dual challenge of achieving climate neutrality whilst ensuring that no person or place is left behind. The concept was developed in the last century, initially by coal mining trade unions in the United States and Canada. Since then, it has been widely adopted, including within the European

Green Deal.

In Europe, cities are central to this process. Almost 80% of citizens live and work there and urban areas are highly vulnerable to the impacts of climate change. Cities are part of the problem – consuming 78% of the world's energy and generating more than 60% of Greenhouse Gas Emissions (UN Habitat). They are also in the vanguard of finding solutions, through the facilitation of behaviour change and the design and implementation of innovative interventions.

This report marks the starting point for research focused on the job market renewal – Skills for a green future. It forms part of a wider two year long knowledge development activity launched by the Urban Innovative Actions Initiative (UIA) that will also consider the urban exclusion risk – Make cities affordable for all; and the renewal of governance and participative structures – Democratic transitions for all. The interconnected relationship between these three dimensions is integral to this work.

UIA is badged as Europe's Innovation Lab. It has supported 86 city projects working under 14 policy themes, many of which relate to Just Transitions. The scope of this work is to explore the most relevant projects to identify key lessons emerging for Europe's urban policy makers and practitioners. In this way, UIA wants to encourage the replication and upscaling of innovative approaches that can facilitate Just Transitions.

1. How the transition to a climate neutral Europe will impact on businesses, jobs and skills

Forecasts of the impact of a full implementation of the Paris Agreement by 2030 indicate that GDP in the EU could rise by an additional 1.1% and employment by 0.5% (Eurofound, 2019). This is compared to a scenario without climate action policies. However, existing megatrends such as digitalisation and automation present challenges to any neat forecasts relating to the greening of the economy.

Some of the risks of greening the economy are clear, particularly in relation to the uneven distribution of impact across territories, industry sectors and sections of the labour market. The European Commission has identified three sectors it expects to decline and a further four expected to be transformed by the transition to a carbon neutral economy (European Commission 2018). The former includes coal and lignite mining, plus crude oil and gas extraction together with mining support services. These industry sectors, which are likely to disappear completely, account for around 338,000 jobs in the EU[1] (Bruegel 2020). The sectors expected to transform, are chemical manufacturing, non-metallic-mineral manufacturing, basic metal manufacture and the automotive sector.

As many of the most affected industry sectors are characterised by regional clustering, this means that the geographical impact will also be uneven, both amongst and within EU Member States. Consequently, the employment implications vary from region to region, as Figure 1, below shows.

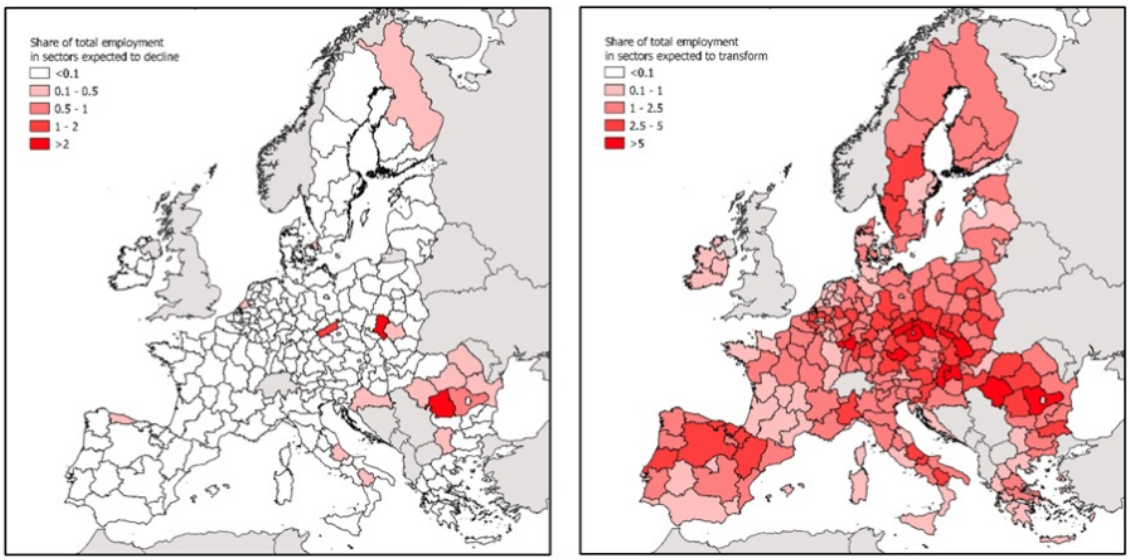

Figure 1: Source: Bruegel 2020, based on Eurostat data

A key consideration is how these jobs will be replaced. The latest EU data (European Commission, 2019) shows that absolute numbers working directly in the 'Green Economy[1]" remain relatively small, at 4.5 million in 2016[2]. However, related low carbon industries and service sectors producing less than 10 per cent of all CO2 emissions,

employ more than 70 per cent of the EU workforce. Encouragingly, they are also the sectors with the strongest employment increases: 7.5 per cent increase in the period 2013–2018 (1.5 per cent annually) compared to 3.4 per cent (0.7 per cent) in the other sectors (Griffin et al, 2019)

Another important dimension is the skills distribution within industry sectors. Across the board the proportion of low-skilled occupations will decrease in the transition to carbon neutrality. This will exacerbate skills mismatches already evident and widely acknowledged in Europe. The figure below shows the current skills mismatches between existing non-green jobs and emerging green jobs, analysed by sector. Projections suggest that construction, transport and public administration will see the largest increases in high-skilled job growth associated with the climate neutral transition. These shifts have significant implications for Europe's skills agenda.

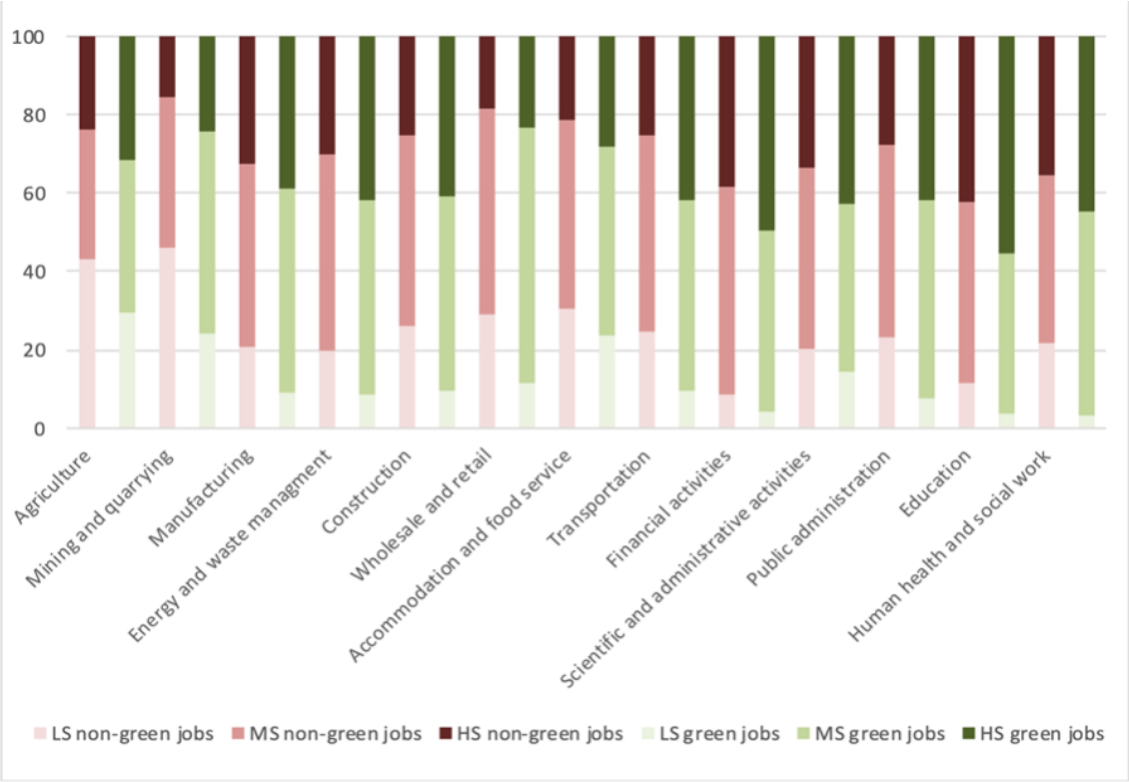

Figure 2: Source, Breugel (LS=Low Skills; MS=Medium Skill, HS=High Skill)

On an optimistic note, there are indications that active climate change policies – such as the European Green Deal – will contribute to inclusive job growth. Provided that there is effective reskilling and labour market support, these policies should add middle-skilled and middle-paying jobs, especially in the services and construction sectors. Figure 3 illustrates the European Commission's estimates on this:

The most vulnerable territories and social groups will be where the risk factors overlap. For example, older low skilled workers in carbon-intensive industry clusters across Europe. There are also gender dimensions to this shift. One specific challenge will be the fact that training participation rates need to improve, particularly in those energy intensive industries where they are currently low. (Griffin, 2019) Evidence from other transition experiences underlines the need for collaborative approaches to effectively support the most vulnerable in these transitions. Locally focused governance models with active involvement of all stakeholders and high levels of trust appear to have been particularly effective[4].

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[1] Cameron A, et al (2020). A Just Transition Fund: How the EU budget can best assist in the necessary transition from fossil fuels to sustainable energy. Breugel for the European Parliament Budget Committee

[2] This includes waste management, environmental protection and energy preservation

[3] Compared, for example to Europe's ICT industry that employs 7.4 million people

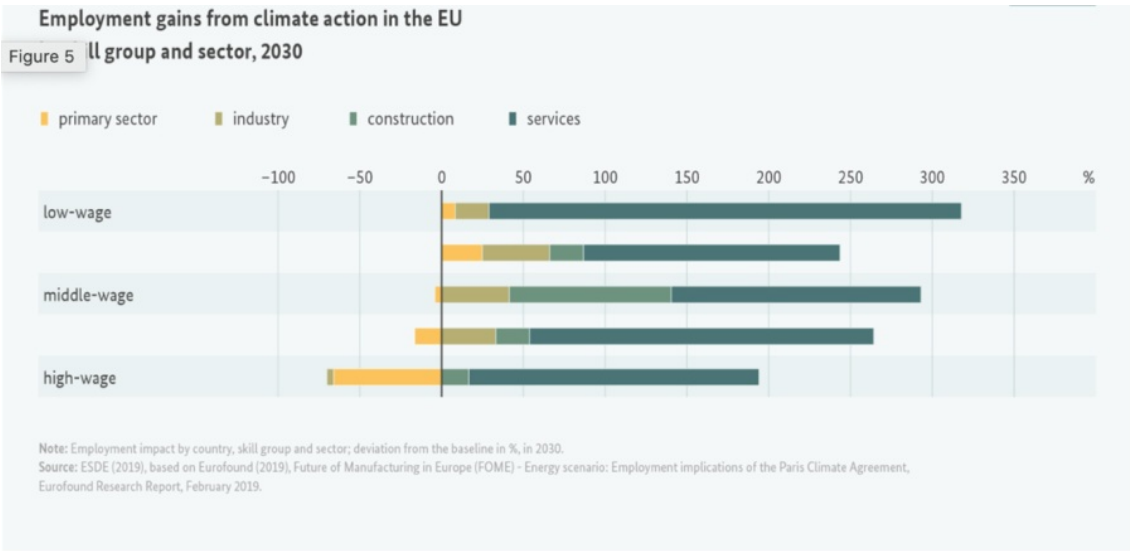

Figure 3 Source: ESDE (2019) based on Eurofound (2019), Future of Manufacturing in Europe (FOME)

2. EU Support for Just Transitions

The European Green Deal (EGD) aims to transform the EU into a modern, resource-efficient and competitive economy, ensuring that net emissions of greenhouse gases are achieved by 2050, where economic growth is decoupled from resource use and no person and no place is left behind (European Commission, n.d.). In particular: "... these 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).

The EGD is consistent with the EU's adherence to achieving the 17 UN Sustainable Development Goals (SDGs), the first of which is the eradication of global poverty. It is also complementary to the block's ambitious target to lift 15 million European citizens out of poverty by 2030, as set out in the European Pillar of Social Rights. These high level policy priorities are supported by ancillary programmes designed to facilitate the shift to climate neutrality (such as the "Fit for 55" Package, the Just Transition Fund (JTF) and the Climate Action Social Fund (CASF) as well as resources supporting the post pandemic recovery (e.g. the Recovery and Resilience Facility [1] (RRF). These finances are, of course, necessary and highly welcomed, but combining them effectively will be important. So too, will be the territorial distribution mechanism to ensure that funds reach cities with sufficient flexibility.

Effectively localising these macro initiatives will be key to their potential success. Examples like the Local Green Deals can play an important part in this, as can the implementation of local pacts for skills. The latter forms part of the European Skills Agenda launched by the EU in recognition of the need to address the skills gap, especially alongside the EGD. The local pacts for skills potentially place cities centre stage in tackling the risk of growing skills mismatch. Cities like Pori in Finland are using the Pact for Skills mechanism to improve their labour market intelligence and their training offer, working closely with employers, providers and job seekers.

All this work sits within the model of sustainable urban development (SUD) [2] already well-established across Europe. This benchmark model promotes approaches to urban strategic development that are at once integrated, sustainable and participative. Cities that are versed in the experience of transition have contributed to its refinement, which can be explored on the European Commission's Urban Data Platform Plus. They include UIA cities that will feature in this work, such as Rotterdam, Milan and Paris.

Within the SUD framework, Europe's cities are also exploring new concepts to implement climate neutrality in a way that creates businesses, provides employment and offers social equity. One such approach, is the 15-minute city model, developed by Carlos Moreno and being explored by DG GROWTH with cities under the banner of proximity cities. Another is the Doughnut Economics model, designed by Kate Raworth which encourages cities to operate in a space between an ecological ceiling and a social foundation. The Doughnut's strong focus on circularity is currently informing the strategic development of many leading cities, including Amsterdam and Brussels.

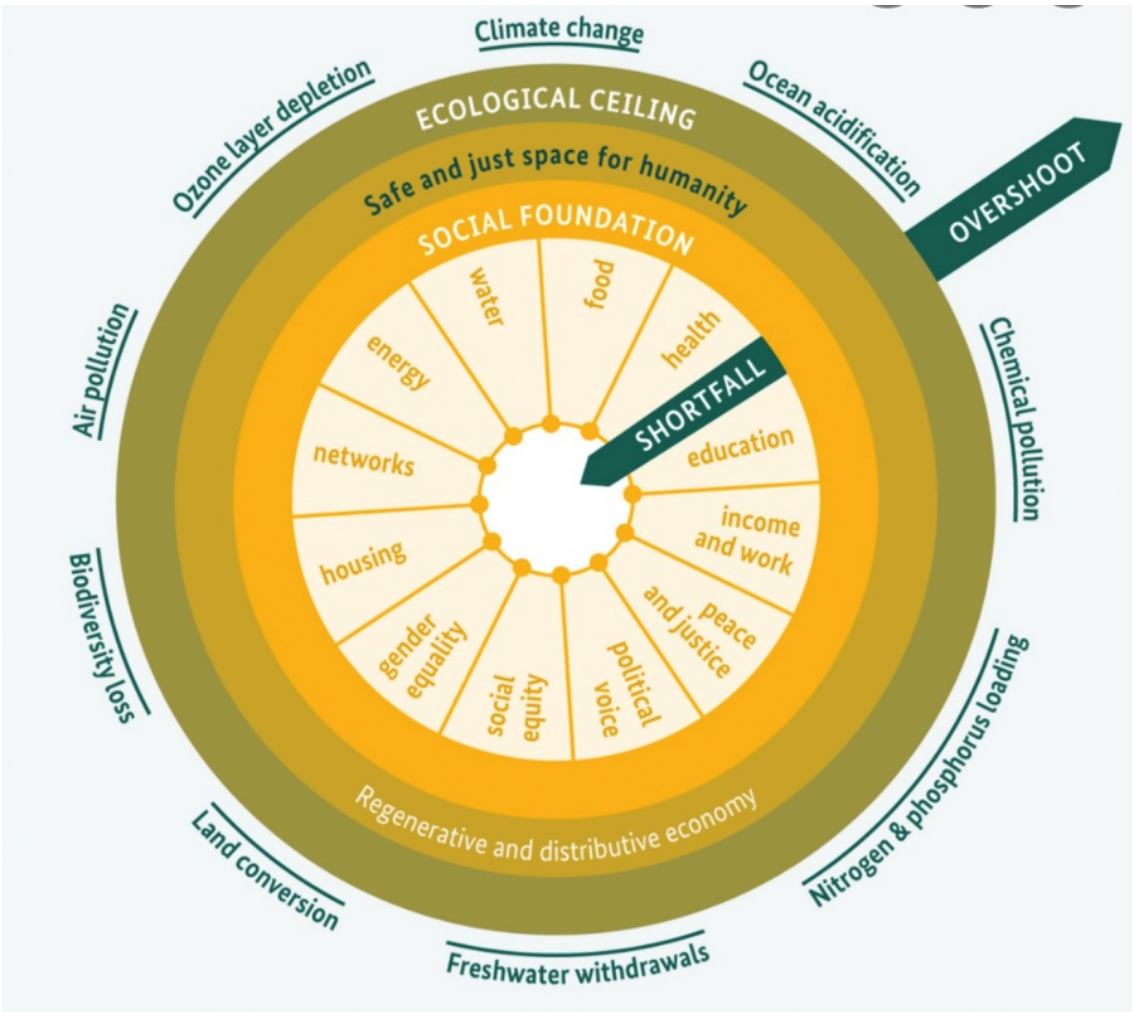

Figure 4: The Doughnut Economy model, Source: Doughnut Economics Action Lab

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[1] The RRF was established to mitigate the economic and social impact of the coronavirus pandemic

[2] Handbook of Sustainable Urban Development Strategies

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3. The Cities, Jobs and Just Transitions

3.1 Introduction

The UIA cases that will be identified through this work will help inform ongoing refinements to the SUD model, signposting innovative ways to reach climate neutrality whilst sustaining skills, jobs and businesses. Three specific dimensions of this transition process are of special interest here:

- Forecasting new skills
- Supporting emerging green sectors; and
- Skilling and reskilling

A short chapter on each of these is included in this section, to set the scene for the work ahead.

3.2 Forecasting new skills

As economist Edward Glaeser put it, urban economic success is dependent on a city's ability to nurture, (re)train and attract talent.[1] However, skill requirements are ever-changing and causing great difficulties for both employers and workers to make sense of them and to engage in a viable match. While economies are recovering from COVID-19, there is a sizeable group of vulnerable workers that runs the risk of increased alienation from the labour market. To prevent this, it is paramount to realize accurate, timely and relevant information on jobs and skills. This input is critical for promoting sustainable urban development in Europe: anticipating and addressing future skill shortages is dependent on understanding the skills supply needs. As such, skill forecasting is a critical

first step for cities to successfully transition into the Next Economy. Ultimately, it is a prerequisite for avoiding mismatches between job seekers and jobs, which are occurring across the world. How can this be accommodated, especially in the light of the green energy transition?

Before answering this question, it is important to denote that mismatches are a matter of information transparency. Drawing an analogy with the dating market, in simplified terms, the matching process between job seekers and jobs is prone to information gaps stemming from the heterogeneity of actors involved. Both parties need to engage in a costly and time-consuming process to find each other and determine compatibility. [2] In recruitment processes, for instance, this translates into a pre-selection, selection, and interview stage, to establish person-job fit: compatibility between an individual and a job and its tasks.[3]

As such, a key first step in the matching process between workers and firms is to realize a common understanding of the skills involved through an underlying skill classification (taxonomy.) Examples of leading taxonomies include the US-based O*NET and ESCO in Europe. Both are classifications of skills which are tied to specific occupations. By coupling these, it provides an in-depth and common understanding of worker and job characteristics. Based on this common perspective, both employers and workers can be provided with the required common ground in pursuit of a match.

Once this common ground is established, the dynamics of changing skills can be captured and used for short-term and long-term labour market projections and forecasts: which jobs will cease to exist, which will appear, and how do existing jobs change. There are three drivers for change to consider. The first is the exponential growth of technology. This has severe implications for the relevance of routine and non-routine based skills. The former will significantly decrease in demand due to robotic process automation (RPA) and AI. Instead, there will be higher demand for cognitive skills, such as abstract reasoning. Second, changing demographics can drastically alter the landscape for many sectors of industry, with the proportion of workers aged over 65 increasing in many parts of the world (for instance, in 2030, the number of people aged 65 or over in Western Europe grows to 55%, compared to 42% in 2017). The question is how labour markets can adjust to this shift in worker demographics. Third and finally, climate change and its accompanying green transition call for specific knowledge and skills.

This research initiative will shed light on the challenges and barriers cities face, showcasing hands-on practice and policy responses through case studies, resources and strategies adopted by UIA cities. One focal point, for example, is the matter of who is around the table: which key stakeholders and partnerships are required to engage in forecasting effectively? The assignment will also consider the frameworks being used to codify this skills intelligence, as well as checking how this is packaged for effective use by policy makers and end users. For instance, previous research has identified several drawbacks pertaining to skills intelligence, including high levels of complexity and abstraction[4], as well as their lack of regional and contextual specificity[5]. O*NET, for example, is applicable to the US labour market, but to what extent does it apply to other regions and cities? Furthermore, leading taxonomies do not emphasize the specific skills required for the green skills transition, referred to as "competences for sustainability".[6]

Several UIA projects are engaged in pioneering work on skills forecasting and the above-mentioned issues. A few examples are the Dutch high-tech city Eindhoven, a smaller Spanish city, Cuenca, in the niche area of urban forestry, and Aveiro in Portugal. In the Eindhoven Passport4Work project, the O*NET taxonomy is used as a basis for a new Dutch skills language. This skills language is key to facilitate green energy transitions within construction and health care (for instance, to achieve gas-free neighborhoods in the Eindhoven vicinity). In Cuenca, the utility and development of 21st Century Skills are central to its forest bio economy. In Aveiro, the growing importance of digital skills is addressed through its Labour Observatory, which is involved in the forecasting of qualification and requalification needs.
In the upcoming report, the contributions of these cities will be described, while also accounting for the challenges and barriers they faced, and remediating strategies.

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[2] Mortensen, D. T., & Pissarides, C. A. (2011). Job matching, wage dispersion, and unemployment. Oxford University Press.

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[6] Cedefop (2019). Skills for green jobs: 2018 update. European synthesis report. Luxembourg: Publications Office. Cedefop reference series; No 109

3.3 Supporting new emerging green sectors

Cities and climate change have a three-fold relationship:

1 - Cities produce about 70% of all global greenhouse gas emissions, a fact which implies the need for decarbonization strategies for sectors such as energy, transport, buildings and industry. If efficient measures are not implemented and considering the urbanization trends recognized in the European Union[1], it is expected that the share of cities to the emissions of greenhouse gases will further increase.

2 - Recent publications (IPCC, 2021; EEA, 2021) indicate climate risks and pressures for the cities in Europe and conclude that along with a considerable increase of air temperature of the order of 2.5 degrees Celsius, extreme weather events will increase in frequency, duration and intensity.

3 - The way cities grow defines the patterns of land use that affect the traffic patterns and the building density, and thus the consumption of energy and the resulting emission of greenhouse gases.

Cities need to develop mitigation plans for their transition to climate neutrality as well as adaptation plans in order to cope with the enhanced impacts of climate change. In both cases, they also need to be Climate Smart in order to exploit digital technologies in such sectors as transport, urban planning, energy distribution and others.

In both cases, that is mitigation and adaptation to climate change, a number of green sectors emerge in support of cities' quest to address new challenges related to climate change as well as to shape promising roadmaps for carbon neutral transition. Such sectors are:

- green fuels and clean transport
- energy retrofitting and zero energy buildings
- smart grids and green energy systems (renewable micro-generation, district heating and combined heat and energy plants)
- ICT technologies[2] (navigation systems, geographic information systems, sensors and digital measuring platforms and devices) exploring artificial intelligence and machine learning for improved city governance and smart transport systems (to tackle congestion, facilitate road user charges or supply real-time information on traffic problems)
- nature based solutions and urban forestry
- green buildings (roofs and facades)
- new materials for cooling the cities and
- climate oriented urban planning

The exploitation of the green sectors above, can support the development of roadmaps towards climate neutral transition on the one hand and integrated adaptation plans to the impacts of climate change on the other. However, it should be noted that one roadmap does not fit all, meaning that roadmaps need to be differentiated based on the prevailing local environmental, climatic, economic and social conditions as well as the varying climate risks and challenges faced by each city.

UIA has promoted several projects which link directly to emerging green sectors, facilitating the needed carbon neutral transition roadmaps and supporting differentiated climate change adaptation plans. The projects also introduce innovation, which is not limited to the use of novel technologies, but also supports new participatory schemes for the involvement of citizens as well as for the promotion of smart business plans and governance practices.

They include Paris and Barcelona promoting urban planning which is aligned to climate pressures such as the burdened thermal environment and the increased frequency of heat waves; their approach refers to the conversion of open schoolyards to cool islands acting as climate shelters. In Manchester urban green infrastructure and nature-based solutions are used to combat urban over-heating and flooding. In Amsterdam, smart blue-green roof technology is promoted to facilitate smart water management. In Viladecans (Spain), energy transition is based on new local tools such as energy supply, energy currency, energy savings services, deep energy renovation investments and renewable energy production. In terms of the reduction of carbon dioxide emissions, Lappeenranta uses new technology and sustainable materials with focus given to modern construction engineering, whereas Brussels applies an urban transportation modal shift in view of the reduction of the use of cars and vans. Finally, Cuenca is prioritizing measures for sustainable forest exploitation as well as the development of a local bio-economy.

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[1] 80% of European citizens will live in cities by 2030

[2] Information and Communication Technologies (ICTs) could deliver approximately 7.8 GtCO2e of emissions savings, representing around 15% of total emissions in 2020. (GESI 2008)

3.4 Skilling and Reskilling

The transition to a greener economy will require skilling and reskilling of workers to reduce the negative impact of the productive reconversion on labour markets and local economies. The investment in reskilling and upskilling programmes is decisive to equip the people most vulnerable to the transition, particularly workers employed in low and medium skilled occupations, with hard and soft skills required by the new emerging sectors.
Retraining and reskilling workers can be important to make them profit from new employment opportunities, but also to facilitate the transition from declining sectors (with a strong polluting impact on the environment) to green and sustainable jobs.

Acting on skilling and reskilling can contribute also to intervene on skills mismatch. With the progressive replacement of non-green jobs by green jobs, the proportion of low-skilled positions will decrease: upskilling and reskilling policies can be particularly effective in green sectors where low-skill jobs are going to be increasingly replaced by medium-skill jobs. Planning effective measures to reskill workers will be decisive also to create new opportunities in sectors such as waste management, circular economy and sustainable mobility which are expected to develop faster at urban level on medium and long term.

The European Commission recognized the importance of skilling and reskilling activities in the Energy Union Package, approved in 2015, which underlines that "an energy transition that is just and fair will therefore require retraining or up-skilling of employees in certain sectors and, where needed, social measures at the appropriate level". The need for investments and incentives dedicated, among the other objectives, to skilling and reskilling activities was highlighted also in the European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience (2020) and in the Porto Social Commitment (2021).

Even though local authorities often lack direct competencies on jobs and skills, cities are the places where the impact of the evolution towards a greener economy is more tangible in terms of environmental, social and economic well-being but also in terms of creation of new services, businesses and functions.
An active role for local authorities on skilling and reskilling strategies can be important for reducing the mismatch between the skills given in the framework of programs often created at national and regional level and the skills effectively needed in the local context.

The creation of integrated strategies, which connect the skilling/reskilling programmes to active labour market policies and social policies, is particularly important and can be a crucial ground for collaboration with a series of institutions and stakeholders active at urban level, such as schools, universities, thematic knowledge centres, business sector and welfare structures. Furthermore, local authorities can contribute to keep the skilling and reskilling programmes constantly updated, through an action of review and revision which may improve its impact at local level and the connection with emerging sectors, such as circular economy or sustainable mobility.

This action can promote a stronger adaptation of the skilling and reskilling programs to the real labour market needs and orientate the set of skills delivered by local schools and universities towards green sectors. A strong city commitment to skilling and reskilling will also help intercept the needs of specific categories of citizens requiring specific support. These could include workers at risk of redundancy, residents in areas reconverted from pollutant production, students and aspiring entrepreneurs. This will support them through signposting to thematic programs and initiatives promoting better employability, innovative entrepreneurship and, generally, sustainable growth at social, economic and environmental level.

Cities are testing a mix of strategies and actions to promote skilling and reskilling with the objective of contrasting the negative impact of industrial and productive transformation on local jobs markets. At the same time, they are promoting skilling and reskilling on green topics to create new employment opportunities for specific target groups, thus improving the development of green services and functions at the local level.

UIA cities as Cluj-Napoca and Eindhoven are creating sets of new skills which may improve the employability of specific categories of workers. This includes the skilling of aspiring entrepreneurs in cultural and creative industries and reskilling programs created for workers in sectors threatened by automation.

Other UIA cities, such as Rotterdam, Pozzuoli and Fuenlabrada, are focusing on specific categories to drive citizens' career opportunities towards green sectors. The orientation of secondary vocational training students in South Rotterdam towards major growth sectors, the organization of training activities for students and potential entrepreneurs on urban agriculture in Pozzuoli and the support for the creation of social economy companies on

recycling and green productions for migrants and unemployed people in Fuenlabrada are examples of how UIA cities are turning just transition into practice through the active support to skilling and reskilling activities.

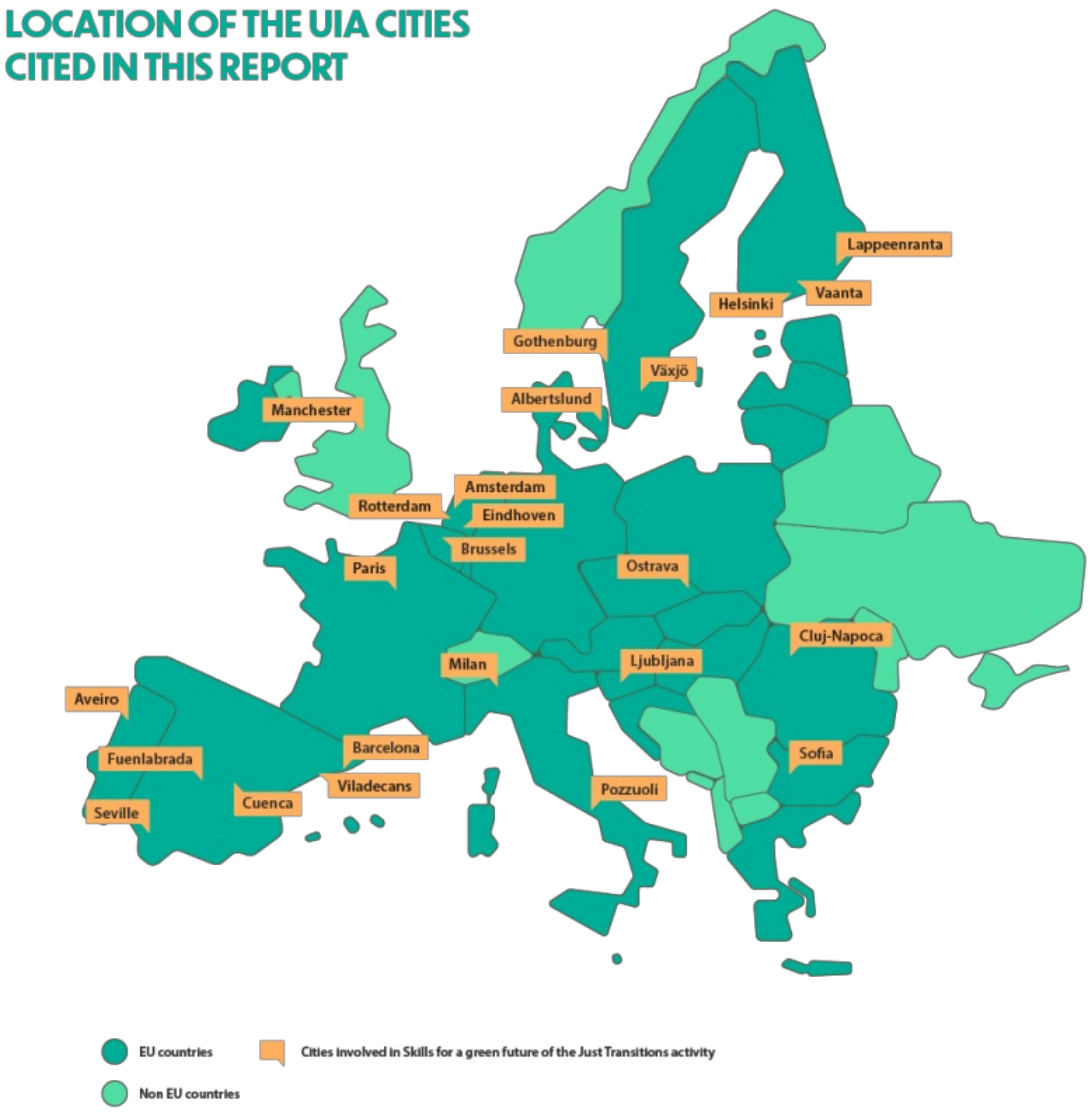
3.5 Pulling things together

This section has shown that in relation to the skills, jobs and business dimension of Just Transitions, multiple drivers are in play. The relentless rise of digital, the shift to climate neutrality and the continued process of globalisation are composite factors. Post-covid recovery is also part of the complex context as cities seek to ensure that no person or place is left behind.

This section has explained why this work's three sub-themes (Forecasting New Skills, Supporting Emerging Green Sectors and Re/Skilling) matter at the city level. The challenges are clear. However, there are clearly eye-catching UIA examples which can inspire others and offer replication potential. It is encouraging to see these examples, which will be explored and presented further in the final conclusions, in spring 2022.

It is also interesting to note some early findings. One is the fact that far more UIA cities are involved in the second and third sub themes, than in Forecasting New Skills. We can make some assumptions as to why this might be; for example, skills forecasting is complex and expensive and often the skills reuired to do it well sit outside city authorities. But these are assumptions, and this work will seek to create a better understanding of what is behind this. Without a clear understanding of future skills and employment patterns, cities will struggle to develop informed strategic approaches. Consequently, understanding the barriers and scoping solutions would make a valuable contribution to the wider debate.

Finally, it is evident that delivering Just Transitions will require vision, investment, clear targets and effective collaboration. In the context of city authorities, the integrated approach, which lies at the heart of the European sustainable urban development model, will be pivotal. The capacity to work across departmental silos is key to this. So too is City Hall's effective liaison with different levels of government and active facilitation of key stakeholders beyond the public sector – most notably citizens, the research community and business, the so-called quadruple helix. From the early days of this work, the centrality of this to achieving Just Transitions has been clear, as has the scale of that challenge. This too is likely to be a central focal point as this work progresses.



4. The Cities, Jobs and Just Transitions process: the approach and what it will produce

This review of UIA cities will focus on three core questions relating to the green jobs transition:

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?

The figure below illustrates the headline process and phasing.

Figure 5: Cities, Jobs and Just Transitions process and phasing

The approach includes a high-level scan of all 86 UIA projects, followed by a fieldwork phase that will encompass a survey and city hearings. The latter will allow a deep dive into the experience and learnings of the most effective cases. The process will also include a series of key witness interviews with other organisations busy in this field as well as consultations with leading edge Just Transitions cities beyond UIA.

The findings will be presented with a practical focus, designed to support and inspire cities seeking to facilitate Just Transitions wherever they are.

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