

Climate adaptation: The race to cool down Europe's cities

Filipe Ataíde Lampe
Junior Project Manager,
Connecting Europe

INTRODUCTION

Europe's cities are heating up at a record-breaking pace. Cooling them down will require further anchoring of nature-based solutions into urban development. The EU can help cities adapt to the effects of climate change, but it requires ambitious and urgent actions.

Last year, heat contributed significantly to Europe's climate crises, from the worst drought in 500 years to the hottest summer on record. Overall, Europe experienced a temperature increase of more than twice the global average. Yet, what seems to be an unusual year threatens to become European normality in future decades, with a direct impact on citizens' health and well-being.

Heatwaves can be silent killers, responsible for up to 91% of the fatalities associated with climate events in Europe.¹ It is estimated that last year's heatwave caused 20,000 deaths in Europe.² Furthermore, the number of physical and mental diseases related to the rise of temperature is still much higher - with the continent's ageing population at particular risk. The numbers can climb even higher when considering the risks caused by the spread of wildfires, which in 2022, came closer to Europe's cities.

Heatwaves can be silent killers, responsible for up to 91% of the fatalities associated with climate events in Europe. It is estimated that last year's heatwave caused 20,000 deaths in Europe.

These threats become especially worrying when looking at cities. The EU has a role in cooling down Europe's cities and regions to strengthen their climate resilience and safeguard their citizens' health and well-being.

BACKGROUND: CLIMATE CHANGE IMPACTS CITIES, ECONOMY AND CITIZENS

Europe's cities face many climate-related threats, from heatwaves, river and coastal flooding, drought and scarcity, wildfires, and windstorms to water and vector-borne diseases.³ However, it is particularly the extreme heat causing life-cycle risks and even deaths. The mixture of concrete, metal structures, asphalt and little to no green areas make urban areas absorb heat, turning them into deathly heat islands. Dangerous also due to the deterioration of air quality, which contributes to further health and life-cycle risks for citizens. The EU's Copernicus observation programme discovered that temperature could be up to 10°C higher in urban areas compared to rural ones, a development that will, without doubt, affect more citizens as cities and inner-city 'heat peaks' are constantly expanding.⁴ The European Commission expects that by 2030, 83.7% of Europeans will be calling cities their home.⁵ By the same year, built-up areas all over the EU will have expanded considerably, especially in Italy, Germany and Poland.

Urban areas need more ambitious adaptation measures to avoid economic losses linked to climate change. Cities are engines of the economy, being accountable for over 80% of economic growth, a growth that is volatile and dependent on the level of health, well-being and living conditions in cities.⁶ According to the International Monetary Fund, persistent changes in climate have a long-term negative impact on economic growth.⁷

The same study reveals that adaptation measures can substantially decrease climate-related losses only if implemented quickly and efficiently.

Finally, if adaptation measures are not adjusted, the socio-economic composition of citizens in cities will lead to further inequality. The fact that heat islands are more dangerous in neighbourhoods with lower socio-economic status demonstrates, yet again, that climate change exacerbates social inequalities. According to a study by the European Environmental Agency (EEA), neighbourhoods with lower socioeconomic status often have less or lower quality green spaces and so-called green-blue infrastructure.⁸ In total, only 44% of Europe's urban population lives within walking-distance of green space.⁹ Less urban nature also means fewer heat sinks leading to higher temperature exposure of citizens and consequently an increase of life-cycle risks. To avoid deteriorating social inequalities in cities, adaptation policies need to take into account "greater integration of social justice into the decision-making process".¹⁰

The answer is two-worded: urban adaptation. Investing in green adaptation will help mitigate high inner-city temperatures and has multiple benefits: a win for citizens' health and the EU's economic growth, social equality, and well-being.

STATE OF PLAY: THE EU'S ACTION AND MOMENTUM

Under its European Green Deal, the EU has implemented various initiatives and frameworks to build up climate resilience. Moreover, with its Adaptation Strategy adopted in 2021, the EU has launched an ambitious and comprehensive strategy to promote climate adaptation, calling for action on all governance levels, within and outside its borders. In addition, the Climate-ADAPT platform provides a comprehensive database of European, national and regional adaptation planning. The Union's Climate Law, adopted in 2021, has already incentivised many EU countries to implement climate adaptation measures within their national climate legislation. However, there remains great challenges with regards to financing adaptation measures on a local level. Like the case for implementing several other policies related to the European Green Deal on the local level, regions struggle to access sufficient funding. The criticism persists that the EU has been too slow and reactive in mainstreaming adaptation into several other policy areas and investment fields.¹¹

The criticism persists that the EU has been too slow and reactive in mainstreaming adaptation into several other policy areas and investment fields.

The EU is also promoting concrete measures to build and extend blue and green spaces in cities - crucial to cool down inner-city heat. The EU's Biodiversity Strategy sets a framework to "bring nature back to cities" with investments in accessible and biodiverse green urban infrastructure (GUI).¹² Investing in nature-based solutions is also recognised as essential in the latest Adaptation Strategy. As a major tool to bring this strategy into practice, the EU Mission on Adaptation to Climate Change supports over 150 regions and cities to build resilience against climate change. The objectives are threefold: helping communities understand present and future climate risks, developing adaptation pathways, and test and deploy necessary adaptation methods. Moreover, under the EU's Green City Accord, over 100 cities - from Ponta Delgada to Lahti - commit to increasing green areas while protecting and restoring their biodiversity. Programmes and funds, like the LIFE+ Programme, the Cohesion Fund, the European Fund for Strategic Investments or Horizon 2020, are essential tools through which the EU finances green infrastructure in cities.

Investing in nature-based solutions is also recognised as essential in the latest Adaptation Strategy.

Regarding the long-term picture the EU's 2022 Strategic Foresight Report indicates the need for green buildings and urban infrastructure by promoting the energy efficiency of buildings stock. The report also points out that the green and digital twin transition is vital to changing how urban spaces are conceived, monitored, and managed, eventually leading to a significant decrease in urban emissions, increased resource efficiencies, and quality of life.¹³ Yet, the report does not address the need for climate adaptation in an urban context, the need to restore, protect and build natural carbon sinks in cities, nor the need to address aggravating adaptation inequalities. Bringing nature back to cities requires the support of decision-makers, civil society and businesses at a regional and local level. However, the EU must assume more than a supportive role in promoting green urban infrastructure and innovative solutions to cool down cities. More strategic foresight enabling long-term adaptation thinking and planning is needed at the EU level.

While the EU has been active in issuing strategies to address climate adaptation with regard to cities, there is now a momentum for more action: increased biodiversity and nature protection in cities, within Europe and beyond.

This year's EU Cities Forum will be an important milestone. Under the motto "Together for green and just cities", it will be a crucial opportunity to make a case for a rapid extension of accessible green spaces in cities and recalibrate the EU's support for urban climate adaptation. The EU's first progress report on climate adaptation is expected to be issued in October of this year. Based on the report, the Commission has to evaluate progress made on a national level and provide recommendations for those countries making little progress.¹⁴ An exercise which could be enhanced by assessing the local and regional level.

With the '30 by 30' agreement, more than 190 countries have committed to protecting 30% of the world's land and maritime space until 2030.

Finally, there is momentum for more multilateral cooperation on urban adaptation. A ground-breaking agreement was recently reached at the UN 15th Biodiversity Conference (COP15) in Montreal last year. With the '30 by 30' agreement, more than 190 countries have committed to protecting 30% of the world's land and maritime space until 2030. There is even a designated target for cities: signatories commit to significantly increase the access to the benefits of green and blue spaces in urban and densely populated areas. Additionally, the global framework foresees biodiversity-inclusive urban planning. International city alliances such as the C40 network of mayors' 'Cool city network' led by Athens aims to support this goal. The EU could use this global momentum to find new allies and place urban adaptation prominently on the agenda of upcoming climate and environment negotiations.

PROSPECTS: GREENER CITIES TODAY MEANS COOLER CITIES TOMORROW.

If the EU wants to prepare its cities for the heatwaves that are yet to come, it has to speed up its adaptation efforts across policy areas.

EU citizens favour more green areas, innovative solutions to cooling down cities and increasing attractiveness. Therefore, urban development has to incorporate many existing solutions such as painting light colours on facades of buildings, planning fresh air corridors, expanding dedicated car-free zones (as exhaust gases exacerbate heat), signposting public spaces with shades or protecting urban biodiversity and investing in green infrastructure (for example, green or blue roofs, vertical gardens, stormwater green streets and rain gardens).

Many of these measures were also among the citizens' recommendations following the Conference on the Future of Europe.¹⁵

Undoubtedly, strengthening the integration of nature into Europe's cities is crucial to mitigate the various consequences of extreme heat. The EU has played an important role. But there is much the EU can do, both as a facilitator and coordinator of urban adaptation rather than having local governments reinventing the wheel.¹⁶ More specifically, the EU should take the following concrete actions:

- 1. Mainstream green urban planning across the EU.** Taking the citizens' recommendations of the Conference on the Future of Europe seriously, the EU should insist on minimum Green Urban Infrastructure as a mandatory requirement for any major urban development planning. Furthermore, the EU should ensure that newly created urban green spaces are designed to prevent the spread of wildfires, and urban development includes anti-wildfire contingency plans at all levels.
- 2. Launch an EU-wide assessment of environmental equality in urban settings.** Working closely with cities and regions under its Climate-ADAPT platform, the EU should assess how implemented adaptation measures address socio-economic inequalities within urban areas. Assessment results should be publicly available, incentivising low-ranking cities and regions to implement other policies addressing environmental disparities. Furthermore, cities participating in the EU's Mission on Adaptation to Climate Change or the Green City Accord could be supported by linking equal accessibility to nature into their overall adaptation plans.
- 3. Link EU funds to environmental equality.** The EU's funds for urban adaptation should have criteria requiring applicants to incorporate environmental equality into their adaptation efforts. The EU could use existing funds such as the European Regional Development Fund, INTERREG, Life Programme, Horizon Europe, or its Recovery and Resilience Facility to incentivise applicants to address the uneven inter-urban effects of climate change in their regional adaptation projects. This could entail concrete requirements for urban development projects aimed at increasing the share of citizens living within a walking distance from green spaces.
- 4. Make private adaptation financing transparent.** The EU should create an EU-wide mapping exercise to allocate private funding for city adaptation measures. Furthermore, as there is yet to be a pan-European demand, the EU should create a tool where private actors can display respective investments in urban adaptation, creating positive competition and incentivising public-private cooperation.

5. **Make urban climate adaptation a strategic foresight priority.** The EU needs to include urban adaptation into its strategic foresight strategy and make climate adaptation a long-term anticipative exercise rather than just a short-term reflex to extreme weather and natural catastrophes. The need to address the heat island phenomenon through progressively integrating green spaces into urban development should become a priority in the EU's 2023 Strategic Foresight Report complementing its Adaptation Strategy.
6. **Bringing the green urban agenda forward on a global scale.** Together with its international partners, the EU should mainstream urban adaptation into its climate diplomacy. Furthermore, the EU should take a leading role in pushing the urban adaptation agenda forward within fora and negotiating tables such as the 28th UN Climate Change Conference (COP28) in the United Arab Emirates in 2023, at the 16th UN Biodiversity Conference (CBD COP16) in Turkey in 2024 or other fora such as the city diplomacy initiative Urban 20 and the mayor's network C40.

The record-breaking summers of tomorrow require more ambitious urban solutions.

The record-breaking summers of tomorrow require more ambitious urban solutions. Decarbonising its economies and societies remains the EU's safest bet to mitigate the adverse effects of climate change. However, fighting climate change is not a one-way street and requires legislators to constantly re-adjust adaptation measures. Only if we mitigate the further aggravation of the climate crisis while implementing just adaptation measures can the multifaceted effects of the crisis be faced in their entirety. Europe's cities are still relatively cool today, but it will require a long adaptation path to make them liveable and resilient for tomorrow.

The support the European Policy Centre receives for its ongoing operations, or specifically for its publications, does not constitute an endorsement of their contents, which reflect the views of the authors only. Supporters and partners cannot be held responsible for any use that may be made of the information contained therein.

-
- ¹ Guillot, Louise and Bencharif, Sarah-Taïssir, "[Can't take the heat: Aging Europe vulnerable to climate impacts](#)", *Politico*, 9 November 2022.
 - ² Laille, Sandra, "[Over 20,000 died in western Europe's summer heatwaves, figures show](#)", *The Guardian*, 24 November 2022.
 - ³ European Environmental Agency (2020), [Urban adaptation in Europe: how cities and towns respond to climate change](#), Luxembourg, EA Report No 12/2020.
 - ⁴ Copernicus Climate Change Service, "[Demonstrating heat stress in European cities](#)" (accessed 1 March 2023).
 - ⁵ European Commission, "[Developments and Forecasts on Continuing Urbanisation](#)" (accessed 3 March 2023).
 - ⁶ Worldbank, "[Urban Development](#)" (last accessed 3 March 2023).
 - ⁷ Khan, Mathew E. et al (2019), "[Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis](#)", Washington DC: International Monetary Fund, p.7.
 - ⁸ European Environmental Agency (2022), "[Towards 'just resilience': leaving no one behind when adapting to climate change](#)", Luxembourg, Briefing no. 09/2022.
 - ⁹ European Environmental Agency (2020), *op. cit.*
 - ¹⁰ European Environmental Agency (2022), *op. cit.*
 - ¹¹ Giuli, Marco; Hedberg, Annika; López Piqueres, Sofia (2020), "[Adapting to change: Time for climate resilience and a new adaptation strategy](#)", Brussels: European Policy Centre, p. 51.
 - ¹² European Commission (2020), [EU Biodiversity Strategy for 2030](#), Brussels, COM/2020/380, p. 13..
 - ¹³ European Commission (2022), [2022 Strategic Foresight Report](#), Brussels, COM(2022) 289, p. 7.
 - ¹⁴ Nuttall, Philippa, "[Extreme weather forces unprepared Europe to focus on climate adaptation](#)", *Clean Energy Wire*, 2 February 2023.

With the strategic support of



Co-funded by
the European Union