Workshop Summary

Summary of the Workshop on "Mitigating Urban Heat Island Effect: Learning from Best Practices in European Cities"

Date: 14.04.2025, 10:00-12:30 (online)

Organized by: Ecologic Institute

Summary

The workshop on "*Mitigating Urban Heat Island Effect: Learning from Best Practices in European Cities*" showcased diverse approaches from Athens, Milan, and Vienna to mitigate Urban Heat Island (UHI) effects. Athens emphasized the role of youth engagement and innovative communication tools, including virtual reality and public platforms, to raise awareness and foster climate resilience through collaborative projects and living labs. Milan presented a systematic, data-driven strategy that integrates UHI mitigation within its broader air and climate plan by leveraging nature-based solutions and targeted initiatives such as the "School Oasis" project. Meanwhile, Vienna highlighted the use of technical analyses, ranging from historical heat wave data to microclimate simulations, and regulatory measures to promote green infrastructure and sustainable urban planning. Overall, the discussions underscored that the scale of planning is important, that developing effective measures is an iterative process, and that financial investments and regulations are pivotal. In addition, models and analytical tools play a key role in helping to identify priority areas for interventions and planning the implementation of measures. Finally, and most importantly, priority must be given to the areas and populations most affected by urban heat, incorporating social justice concerns.

Case study presentations

Athens – Presented by Elissavet Bargianni (Chief Heat Officer) and Sophia Papageorgiou

The city of Athens outlined its approach to mitigating the Urban Heat Island (UHI) effect with a strong focus on youth engagement and communication strategies. By involving schools and young people and introducing tools such as virtual reality, the city works to raise awareness and foster a culture of climate resilience. Within the ARSINOE project, Athens was able to identify innovative pathways to climate resilience through the participation of stakeholders from different sectors within "living labs". The REACHOUT project's Climate Resilient City Tool (CRC Tool) further enabled effective public communication. The city also developed accessible platforms like a public climate board and a Youth Climate Assembly to ensure visibility and inclusiveness. Key challenges included working across siloed departments and engaging diverse stakeholders with limited resources. The role of a Chief Heat Officer is an excellent example of overcoming this challenge. A key lesson was the central role of communication in overcoming

these barriers, particularly when aiming to create impact without extensive budgets. EU funded projects were very helpful for capacity building and the exchange of experiences. The key takeaway was that by leveraging existing resources, raising awareness, and involving citizens to create ownership, climate resilience can be advanced even under resource constraints.

Milan – Presented by Lisa Bitossi (Urban Resilience Department)

Milan showcased its systematic and structured approach through the work of its Urban Resilience Department, operating within the Green and Environment Department. A core element of its strategy is the integration of UHI mitigation into its air and climate plan, which targets both air quality and the climate crisis. Key actions for adaptation focus on nature-based solutions. Thereby, one of Milan's standout initiatives is the "School Oasis" project, which transforms school courtyards into accessible green spaces, open to be used by societal organizations and private entities. The city places a strong emphasis on data collection and collaboration with authorities, using heat risk maps to identify priority areas for implementing measures. This data-driven approach supports cross-sectoral integration and strengthens Milan's capacity to implement and scale effective climate solutions. A specific suggestion mentioned by Milan, is to collaborate with regional and local authorities who can provide open-access data.

Vienna – Jürgen Preiss (Unit of Spatial Development)

Vienna presented a long-standing commitment to integrating climate adaptation into urban planning through its dedicated MA22 Environmental Protection Department. The city's approach included analyzing heat wave days from 1950 to 2024 and using a thermal image of Vienna to understand the main reasons behind UHI effects. Vienna published its UHI strategy in 2015 and has since implemented a climate guide, a climate law, and amendments to the building regulation code. The latter mandates the design of flat roofs, regulations on the greening of facades on buildings, the number of unsealed gardens, and regulates rainwater management. Climate-sensitive planning tools, including microclimate simulations based on four models support development decisions. Furthermore, dedicated public funding for greening measures on public and private properties, particularly for social housing, as well as for a hotline providing advice on greening measures, further strengthen the initiative. The approach also incorporates lessons from Copenhagen on rainwater management. Vienna's use of climate simulations and pilot projects illustrates a highly structured and regulatory-driven model for UHI mitigation.

Q&A session

During the discussion, participants explored how specific institutional roles contribute to climate resilience. A question asked whether the presence of a dedicated position such as the "Chief Heat Officer" in Athens, or a department such as in Milan, facilitates the implementation of adaptation measures. Both speakers affirmed that such structures provide a focal point for coordination, strengthen internal communication, and help elevate the visibility of climate initiatives.

Another question posed was about how to make sure that interventions produce a systemic effect throughout the city. The discussion emphasized that monitoring and evaluation are crucial to evaluate large-scale measures. In Vienna, interventions are assessed not only through monitoring and microclimate simulations that identify effective measures like optimal ventilation and strategic tree planting, but also by evaluating the number of people reached by these efforts, highlighting that isolated measures such as individual fountains are less impactful. In Milano, the strategy involves working concurrently at both the city and neighborhood scales using

pilot projects, while Athens focuses on gathering evidence to ensure the replicability of successful measures across other areas.

Moreover, the question was raised as to how social justice can be ensured in the course of the green transition. Key insights include ensuring that transformed green areas in Vienna remain commercial-free to serve the public good. Milano is undertaking heat risk analysis while engaging local stakeholders to support the most vulnerable neighborhoods, and Athens incorporates a social vulnerability index to identify and prioritize areas for cooling interventions.

One question also asked what the speakers see as the main limitations for advancing climate change adaptation. Besides financial limitations and costs for the maintenance of green infrastructure, personnel costs were also mentioned. One suggested solution mentioned for the latter is integrating citizens to take on responsibilities for the maintenance of green infrastructure, thereby potentially alleviating some of the resource constraints.

Panel discussion

At the start of the panel discussion, **Mikel González Vara (City of Bilbao)** presented the environmental strategy of the City of Bilbao, emphasizing risk assessment for floods and heat waves, and discussed the challenges of data management and narrative framing. **Marta Chillida Munguet (City of Granollers)** elaborated on the main challenges the City of Granollers has with UHI, including bringing together partners and stakeholders, and mentioned interventions such as microclimate assessments and sensor networks applied throughout the city which aim to provide evidence on the implemented measures. **Efren Feliu Torres (TECNALIA)** explored various approaches for urban overheating analysis and management, noting the critical role of aligning tools with decision-making processes. **Edoardo Zanchini (City of Rome)** highlighted the increased technical capabilities like heat maps and their importance in understanding priorities for implementation, and the need to apply different scales to tackle UHI effects in the city.

During the panel discussion, participants exchanged insights on effective collaboration and managing urban challenges. They identified that using database evidence and actively involving the public are key for collaboration across stakeholders. The discussion also covered the dynamic field of urban analytical tools, which are constantly evolving. Key challenges are the selection of the most appropriate tool for each specific case and city, difficulties posed by siloed departmental approaches, and investment in the analysis of planned urban interventions. Finally, the need for green indicators for green public procurement was highlighted.