Urban Releaf

From Citizens to Policy: Data-Driven Collaboration for Climate Action

4 March 2026
ECSA | Oulu, Finland

Harwell, T., Moorthy, I., Hager, G. (IIASA)
Christantoni, I. (City of Athens), Coelho, B. (Cascais Ambiente), Hunia, A. (City of Utrecht),
Tsakanika, D. (City of Athens), & van Leeuwen, E. (Province of Utrecht)

Funded by the European Union
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Urban ReLeaf

Urban ReLeaf empowers communities with citizen-driven data to influence public policy and strengthen city resilience for all.

6 Cities

Athens, Cascais, Dundee, Mannheim, Riga, **Utrecht**

4 Themes

- Greenspace perception
- Urban Trees
- Air quality
- Heat stress

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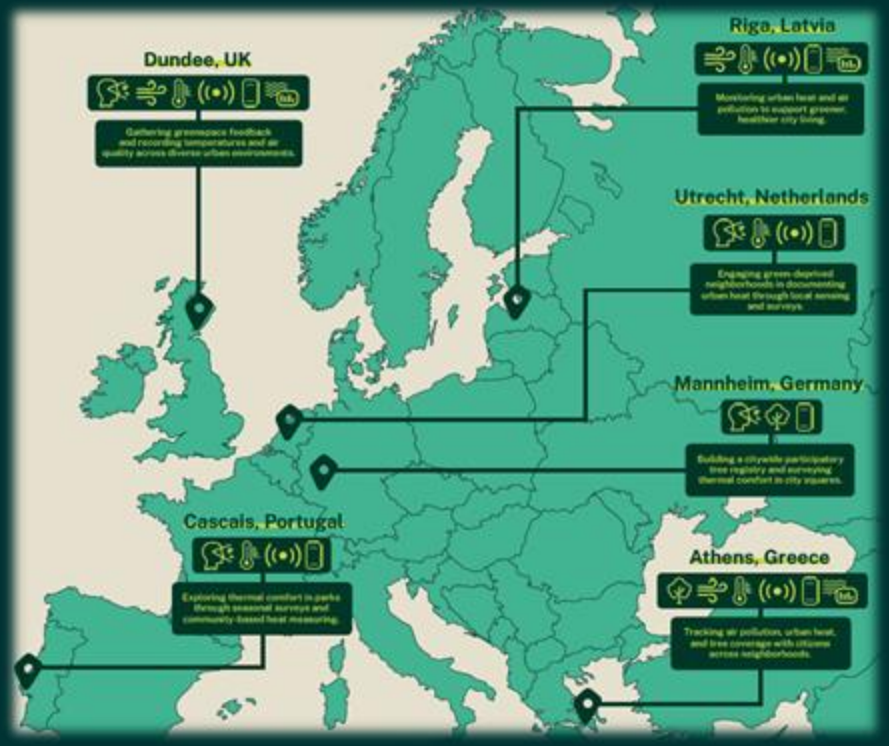


Data collection & *engagement* metrics

- 330.000+ air quality measurement hours
- 3.500+ citizens engaged
  59% female participants
- 450.000+ temperature & relative humidity observations
- 110+ parks, greenspaces, neighbourhoods, sites investigated
- 2.500+ surveys completed
- 350+ sensors installed/deployed
- 1.000+ tree updates
- 600+ app downloads/users

Key Challenges Experienced

Inclusive Engagement

- Facilitating participation beyond already-engaged groups.

Qualitative vs Quantitative Data

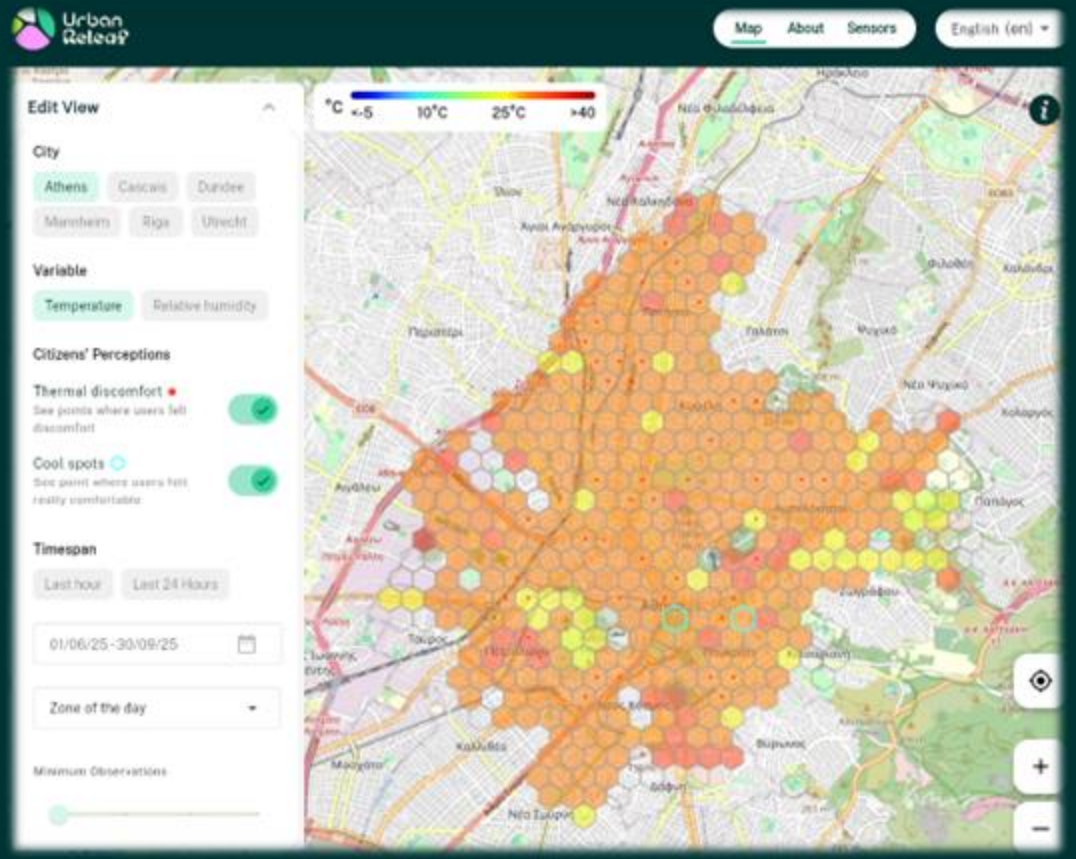
- Combining subjective perceptions with technical datasets.

Trust & Uptake

- Ensuring citizen science data is not symbolic, but actionable.

Athens:
Embedding Heat Monitoring in Daily Practice

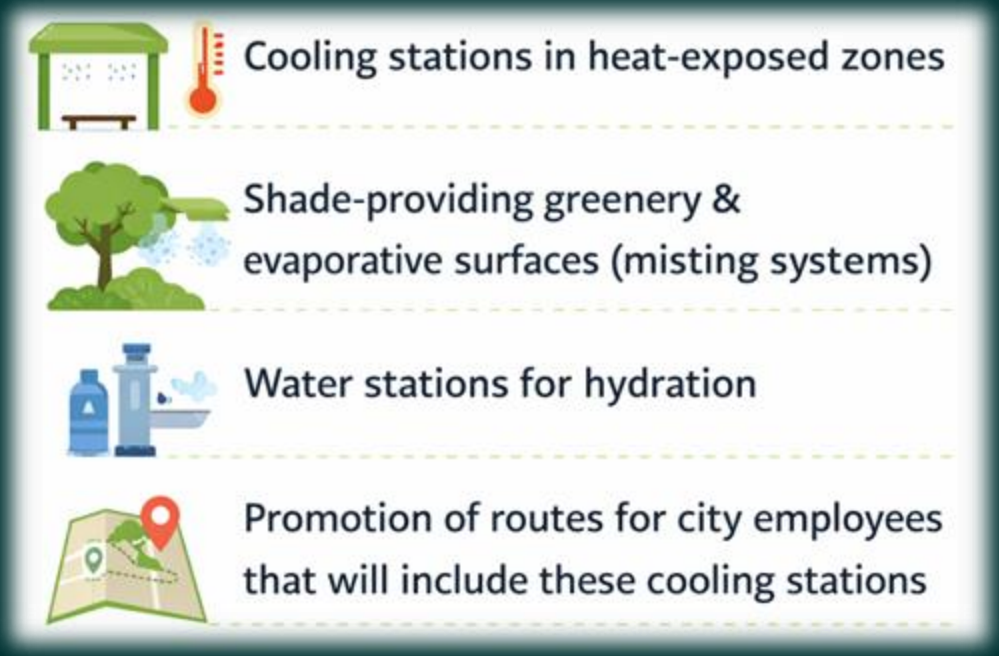
- Engaged 92 volunteer municipal street cleaners across 7 districts
- Collected 136,800+ data points measuring temperature, relative humidity, and perceived “hot or cool spots”
- On average, sensors measured 3.76°C higher than local reference station temperatures for the same day/time



Athens:
Embedding Heat Monitoring in Daily Practice

- **Forecasted heatwave + real-time temperature tracking resulted in official regulation and policy update for municipal workers to conclude activities earlier in the day**

- **Proposed strategies for the city to tackle urban heat challenges:**

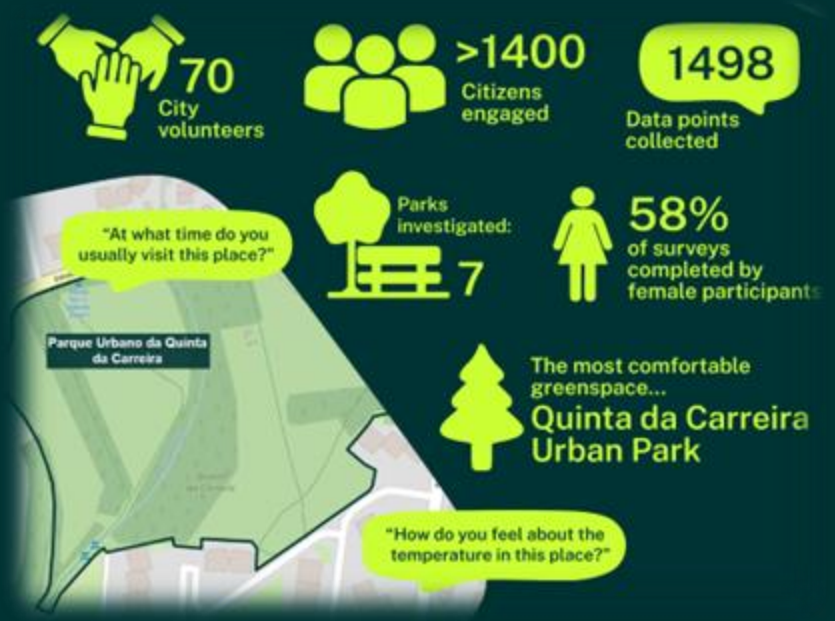


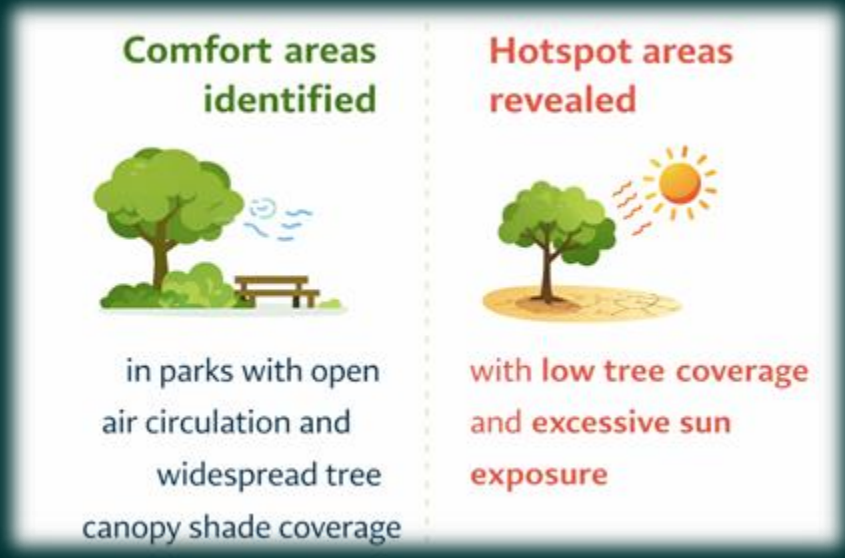
Cascais:
Inclusive Park Monitoring

- Collecting visitor and resident insights across the four seasons to capture thermal variations and usage patterns in 7 urban parks
- Digital surveys completed via QR codes plus intercept surveys facilitated by youth volunteers
- Identification of thermal comfort locations based on the direct experience of park users

Cascais:
Inclusive Park Monitoring

- **The combination of accessible technology with human presence ensured high participation rates and demographic representativeness**





- **Data has been used to revise the Municipal Green Spaces and Tree Protection Regulation and to justify strategic investments and resource allocations for parks**

Utrecht:
Integrating Citizen Data for Planning

- Neighbourhood-based heat campaign that engaged 320+ residents via surveys and sensor measurements

- 239 “hot spots” and 41 “cool spots” identified, linking measured temperature differences (4–5°C warmer than official monitoring stations) to local perceptions

- Citizen data translated into indicators compatible with the municipal Digital Twin

Utrecht:
Integrating Citizen Data for Planning

- Findings confirm national heat island models and have potential for further research to provide insights on humidity, greenery, paving, and social vulnerability factors

- Evidence feeds into the Utrecht City Climate Adaptation Vision, municipal council briefings, and local heat risk dialogues

- Results are being used collaboratively with residents to identify greening, shading, and paving interventions in “hot spot” areas

Cross-City Insights

Inclusion requires infrastructure

- Leverage facilitation, youth mediators, institutional or community anchors plus low/no tech approaches.

Data literacy is co-produced

- It is built through structured interpretation processes connecting subjective and technical evidence.

Policy uptake depends on alignment

- Citizen science data gains traction when it fits municipal workflows, planning tools, and political priorities.

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Urban Citizen Science has great potential for success and impact when it is socially embedded, technically interoperable, and institutionally connected.

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