Greek National Heatwave Plan (Εθνικό Σχέδιο Διαχείρισης Καύσωνα) & Athens Chief Heat Officer / Urban Cooling Initiative

Factsheet prepared by Evangelos Kyrou (ABUD) | July 2025

Background and objectives

Greece has experienced an intensification of extreme heat events, with temperatures regularly exceeding 43 °C, especially in dense urban zones like Athens. In fact, Athens is one of Europe's hottest capitals.

In response, the **Greek National Heatwave Plan** was launched in 2022 by the Ministry of Health, in coordination with EODY, the Civil Protection Authority, and EMY (National Meteorological Service), in order to reduce heat-related morbidity and mortality.

Meanwhile, Athens has become a leader in heat resilience and pioneered in municipal heat resilience by appointing Europe's first **Chief Heat Officer (CHO)** in 2021, in partnership with the Adrienne Arsht-Rockefeller Foundation Resilience Canter and C40 Cities, becoming the first city globally to hire a CHO. The goal was to orchestrate citywide measures to protect residents from extreme heat, by leading efforts to mitigate the urban heat island effect, enhancing public cooling infrastructure, while institutionalising long-term urban adaptation planning.

Athens now embeds "*cooler city*" strategies into planning. Measures include urban greening (planting pocket parks and shade trees to lower street temperatures), reusing water from an ancient aqueduct for irrigation, and promoting simple fixes, like whitewashing building exteriors and installing exterior shutters to block sun. The city has published design guidelines for cool public spaces (using materials and landscaping to dissipate heat). Implementation is driven by the municipality and resilience partners, with community engagement. While quantitative energy savings are still being assessed, Athens's example highlights leadership and planning as "*policy lab*" for urban cooling.

Key features

The programme key features can be categorised into three aspects, as follows:

1. **Early Warning & Communication:**
    - Multi-level heat alerts (categories 1-6) issued by EMY and the National Observatory, based on historical mortality and weather data.
    - A heat-health risk algorithm and a public "*heatwave survival guide*" provides guidelines and practical advice, i.e., hydration, timing outdoor activities, staying indoors or in other cool places, and seeking public cooling facilities, via municipal communication channels, media and SMS.

2. **Cooling Infrastructure & Behavioural Measures:**
    - **Passive urban cooling initiatives**: tree planting and awareness campaigns, façades whitewashing, shading canopies, expansion of green infrastructure, e.g., cool corridors, establishment of cooling routes and cool neighbourhoods with increased shade and vegetation, and pocket parks in dense urban zones. An example of urban cooling initiative in Athens municipality is the reuse of the ancient Hadrian's aqueduct for sustainable irrigation and revitalisation of urban parks and green space.
    - Activation of **"*Cooling Centers*"** across many municipalities during heatwaves**,** established city-wide in libraries, community halls, and public buildings; used by approximately 35,000 people during the

The CoolLIFE project has received funding from the LIFE Programme of the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

summer of 2023. Moreover, Athens launched the *Extrema* mobile app, integrating GIS mapping for identifying nearby cooling centres and safe walking routes.

- **Operational & behavioural changes**: relaxed dress codes for public employees, shifted working hours for municipal facilities, night-time ventilation in public spaces, and monitored outdoor working schedules.

3. **Coordination Across Actors & Leadership**
   - Local "*heat action teams*" established across municipalities, linked to pandemic-like capacity**,** to prepare and operate during heat events, by focusing on vulnerable groups.
   - Interagency partnerships emphasised in Athens: municipal and NGO collaboration, e.g., Red Cross trainings, Mayor's office and urban planning departments coordination with NGOs Resilience Center, Chief Heat Officer (CHO)'s office setting city targets, and health services to protect vulnerable groups, including elderly, homeless, and chronically ill.

Specifically for Athens under **CHO** leadership, it has implemented passive and nature-based solutions, including:

- **Building retrofits**: encouraging white exterior paints and external shutters to reduce heat absorption.
- **Urban greening**: creating *pocket parks*, planting trees on streets and squares to shade surfaces and cool the air.
- **Design guidelines**: use of heat-reflective materials and water features in public spaces.
- **Using ancient aqueduct water**: irrigating new green belts and fountains to increase evaporative cooling.

Implementation

The launch of the National Heatwave Plan in 2022 was coordinated by the **Ministry of Health**, in collaboration with the **Civil Protection Authority** and **EODY**, with the target to mitigate health risks and reduce heat-induced illness and deaths through coordination across different levels of government and the healthcare system. The main aspects regarding programme implementation and involved actors are summarised below:

- **Lead agency**: Ministry of Health, Civil Protection Authority & EODY oversee public-health communication, issue annual updates and lead nation-wide guidance for municipalities.
- **Other actors:** EMY and National Observatory of Athens provide climate forecasting and heat warnings/ alerts.
- **Municipal level and activation timeline:** Each municipality is responsible for preparing "*Cooling Center*" lists, forming local heat action teams, and submitting heat readiness reports by 31 May each year. Activities and operations run between **June-August**; however, pre-summer assessments occur between **March-May**.
- **Public awareness**: TV, radio, website alerts, SMS, and municipal communication channels complement local campaigns.
- **Chief Heat Officer (CHO)**: In Athens, the CHO operates from the "*Municipal Climate Resilience Office*", collaborating with urban planners and international partners, e.g., UN-Habitat, C40 Cities. Athens CHO office, established by Mayor Kostas Bakoyannis, partners with *Arsht-Rockefeller Foundation* and *C40 Cities* for programme design.
- **Digital tools**: A GIS-based heat action dashboard & the *Extrema Global* mobile app identify safe public routes and air-conditioned centers.

Budget (or other cost data)

Funding: No major new budget is dedicated, **no fixed or centralised national budget**; resourcing is supported through **municipal operational budgets**, **EU Recovery & Resilience Facility (RRF)** for adaptation infrastructure and communications, and **international partnerships** (Arsht-Rock, Red Cross Climate Centre, UNDP). For instance, existing city maintenance funds were reallocated, e.g., more tree planting in planned budgets.

Athens municipal budget: **~€120,000/year** (2022-2024) dedicated to *Cooling Center* operations (including staffing such as doctors, nurses, or social workers), public campaigns and city awareness efforts**,** shade canopies, app and heat-mapping tool maintenance**,** media outreach**,** Chief Heat Officer (**CHO**) coordination, and equipment deployment.

Results and impacts

As a result, Athens now has an organisational structure for heat, i.e., CHO, dozens of micro-parks ("*cool islands*"), and water misting points have been installed. Preliminary monitoring indicates shaded areas are **~2°C** cooler. Though difficult to quantify yet, these interventions are expected to reduce heat-related illness and air-conditioning usage. Athenians report immediate benefits, e.g. shaded streets are comfortable. The list below summarises key impacts:

- **Cooling-center engagement**: 7 cooling centres in Athens, **35,000+ visits** during summer 2023 heatwaves.
- **Public awareness**: **~70%** of residents in Greater Athens report awareness of heat-health recommendations and heat mitigation actions; many now use *Extrema App* to locate cooling centres and safe walking routes.
- **Resilience building & Increase of green spaces and infrastructure projects**: **~10,000** trees planted since 2021, expansion of urban shade via pocket parks, cool façades, and upgraded ventilation in schools and libraries. Irrigation via Hadrian's aqueduct cools urban hotspots.
- **Global recognition**: through the introduction of the CHO role, as well as a *heatwave categorisation system* (developed in collaboration with *Meteo.gr* to classify heat events based on anticipated health risk, which triggers warning protocols and preparedness actions based on heatwave severity). Athens' **CHO model** is now being replicated in Dhaka, Santiago, Freetown, Miami, and Los Angeles. It is recognised at **COP28** and is featured by **C40 Cities**, the **World Bank**, and **UN-Habitat**.

Lessons learnt

- **Municipal leadership is key and transformative:** Leadership and cross-department teamwork are critical. CHOs can accelerate climate-health strategy adoption and align climate-resilient urban planning agendas.
- **Public engagement strengthens trust, while increasing effectiveness and targeting of interventions:** A key insight is that public awareness through the CHO communications increases support for such changes. Athens, for instance, shows how even a dense Mediterranean city can leverage cultural heritage (aqueducts) and low-tech fixes (façade whitewash) for cooling.
- **Low-cost passive cooling strategies can deliver high-impact, measurable health benefits:** Behavioural and operational interventions, e.g., relaxed dress codes, adjusted working hours, are effective and fast to deploy, low-capital and high-impact.
- **Digital mapping tools offer significant diagnostic value:** Cooling-centre usage and app data enable municipalities to improve targeting and coverage of interventions.
- **Monitoring deficiencies in the digital diagnostics still exist and should be improved**: There is need for systematic tracking of indoor temperatures, visits, and health outcomes, related to the cooling centres.
- **Support for municipalities should expand to ensure nation-wide capacity for heat resilience:** Greater support is needed for smaller municipalities, lacking **technical or financial capacity**, to cover coordination gaps and meet operational standards.

Sources

- Karakatsani, E. (2023). Greece social briefing: The impact of heat waves in the Greek urban and rural areas, China-CEE Institute, SSN 2939-5933 Vol. 64, No. 3 (GR) July 2023, Available at: https://china-cee.eu/wp-content/uploads/2023/08/2023s07_Greece.pdf
- The Guardian: 'It's about survival', Athens mayor focuses on getting capital through extreme heat, Haris Doukas aims to make Athens more resilient to record temperatures by planting more trees and opening air-

conditioned public spaces. Available at: https://www.theguardian.com/world/article/2024/jul/10/athens-mayor-extreme-heat-greece

- C40 Cities: Cities100, Athens - Heatwave Action Plan Protects Vulnerable Residents. Available at: https://www.c40.org/case-studies/cities100-athens-heatwave-action-plan-protects-vulnerable-residents/
- Δήμος Αθηναίων (Municipality of Athens), *#CoolAthens*, Available at: https://coolathens.cityofathens.gr/en/
- Euronews, Heatwave tips from Athens: Cool routes app, new pocket parks and renovating a Roman aqueduct, Available at: https://www.euronews.com/green/2023/07/17/heatwave-tips-from-athens-cool-routes-app-new-pocket-parks-and-renovating-a-roman-aqueduct
- One Billion People More Resilient, Cooling the capital: How Athens is designing a cooler future, Atlantic Council, Climate Resilience Center, Nov 2023. Available at: https://onebillionresilient.org/2023/11/21/athens-designing-a-cooler-future/
- One Billion People More Resilient, Elissavet Bargianni announced as new Chief Heat Officer for Athens, Greece, Atlantic Council, Climate Resilience Center, May 2023. Available at: https://onebillionresilient.org/2023/05/02/new-chief-heat-officer-for-athens/
- One Billion People More Resilient, Hadrian Aqueduct Cooling District: Heat Risk Reduction Guidelines, Available at: https://onebillionresilient.org/hadrian-aqueduct-cooling-district-heat-risk-reduction-guidelines/
- Networked Public Spaces in Halandri: Reclaiming Hadrian's aqueduct, Available at: https://www.tpa.gr/projects/halandri-hadrians-aqueduct/
- Building Urban Heat Resilience: The Athens Case Study, Eleni Myrivili: Senior Advisor for Heat Resilience for the City of Athens, Global Chief Heat Officer UN-Habitat and Arsht Rock Resilience Center, Available at: https://thedocs.worldbank.org/en/doc/9e5105a293323cddf54df62da2e9e862-0070012022/original/D-Athens-Heat-Case.pdf
- 2023 European heatwaves, Available at: https://en.wikipedia.org/wiki/2023_European_heatwaves
- EuroCities, Athens' heat warrior, Aug 2021. Available at: https://eurocities.eu/latest/athens-heat-warrior/
- Greece heatwave: Elderly urged to seek refuge in cooling centres as temperatures soar, Available at: https://www.youtube.com/watch?v=_6PffA0v_v0&ab_channel=GlobalNews
- MedUrbanTools: Rethinking City Development in the Mediterranean, Athens Resilience Strategy & Heat Action Plan, Available at: https://medurbantools.com/portfolio_page/athens-resilience-strategy-heat-action-plan/
- World Economic Forum. From Athens to Dhaka: how chief heat officers are battling the heat, May 2024. Available at: https://www.weforum.org/stories/2024/05/chief-heat-officers-cities-climate-change/
- Climate Centre: Hellenic Red Cross acts ahead of extreme heat in Greece, Available at: https://www.climatecentre.org/13968/hellenic-red-cross-acts-ahead-of-extreme-heat-in-greece/
- Eleni Myrivili, Available at: https://en.wikipedia.org/wiki/Eleni_Myrivili
- Meteo.gr: Heat load hazard map – Χάρτης Επικινδυνότητας Θερμής Επιβάρυνσης, Available at: https://www.meteo.gr/heatwave.cfm

Interview with Dr. Eleni (Lenio) Myrivili – Global Chief Heat Officer, UN Habitat & Arsht-Rock

Interviewee: **Dr. Eleni (Lenio) Myrivili** – Chief Heat Officer, City of Athens (2021-2023)

1. What was the original inspiration behind the "Athens Chief Heat Officer" initiative?

The Athens CHO initiative was rooted in the city's earlier participation in the *100 Resilient Cities* programme, which launched in 2014. During her time as Chief Resilience Officer, Dr. Myrivili led a broad participatory process that involved close to 1,000 interviews with citizens, stakeholders, and experts. Through this process, extreme heat emerged as a top public concern, signalling the need for a new governance approach to urban climate risks. The initiative was designed not only to deliver technical solutions, but also to shift urban culture, while engaging the public in meaningful co-design of urban resilience strategies and encouraging collaboration across departments and with private and civil society actors.

The appointment of a Chief Heat Officer (CHO) for Athens in 2021, supported by the Atlantic Council's Climate Resilience Center (formerly the Arsht-Rock Resilience Center), built on this foundation. Athens became the first city in Europe to establish such a role. The CHO had direct mandate and access to the Mayor, which gave the position visibility and influence across multiple departments. The initiative aimed to promote a holistic heat resilience strategy with a clear urban narrative that would resonate both locally and internationally.

2. What challenges arose during its development or implementation?

Despite its innovative character and visibility, the CHO initiative faced several structural challenges. As the position was advisory and not elected or administrative, it relied heavily on political support and soft power rather than formal authority. There was no dedicated municipal budget allocated to the CHO's agenda, which limited its capacity to act and implement. Most resources were secured through MoUs (i.e., *Memoranda of Understanding*) with academia and other public or private partners, or through small project-based grants from Arsht-Rock, complemented occasionally by municipal funding for aligned actions.

Another challenge was that climate adaptation was not a top priority within the city's broader political agenda, which sometimes made it difficult to drive change across departments. Internal silos, bureaucratic inertia, and competing priorities often slowed progress. Moreover, reaching vulnerable populations, e.g., the elderly, low-income residents, or those living in refugee camps or housing, was complicated by incomplete data and limited outreach infrastructure. While the role generated significant awareness, translating this into systemic policy shifts required further institutional backing.

3. Which factors contributed most to its success?

Several elements were pivotal to the initiative's early success. First and foremost was the direct link to the mayor's office, which ensured that the CHO had access to decision-making spaces and visibility at the highest level. This political positioning was essential for mobilising support across departments and for attracting media attention. The initiative received significant local and international coverage, which helped elevate heat as a mainstream climate concern and boosted public engagement.

Substantively, the CHO office developed key tools to enhance heat preparedness in the city. These included Athens' first heatwave categorisation system in collaboration with Meteo.gr, along with the development of early warning protocols, municipal hotlines, and clinical guidelines for the health sector to respond to extreme heat events [*i.e. to guide medical professionals how to prevent or treat heat-related illness during extreme events*]. Moreover, the initiative promoted the link between urban greening and cooling, contributing to major public investment in park renovations and urban nature. The public narrative shifted as citizens increasingly understood the importance of shade, greenery, and public space in managing rising urban temperatures.

4. How has the scheme evolved (main changes, etc.) in recent years?

Following Dr. Myrivili's tenure, the CHO initiative has been further institutionalised within the Municipality of Athens. Her successor, *Elissavet Bargianni*, continues the role from within the city administration, ensuring continuity. The scope of work has been refined into a more structured Heat Action Plan, with clearer metrics and implementation pathways. Mapping of vulnerable groups has improved, and coordination with national frameworks, such as the National Heatwave Plan and Civil Protection alerts, has become more integrated.

The initiative has moved from being a high-level pilot to an operational policy stream within the city. It now supports the development of more systemic resilience-building efforts, spanning from neighbourhood-level interventions to broader strategic planning. While resource challenges remain, the institutional memory and public awareness generated by the initiative have laid a strong foundation for future action.

5. What future developments or adaptations are planned? What are the main challenges ahead?

Although Dr. Myrivili is no longer directly involved with the municipality and cannot speak to its current plans, she outlined several priority actions that she personally considers essential to advancing urban heat resilience in Athens. Firstly, she stressed the importance of securing a stable, multi-year budget specifically dedicated to heat adaptation projects, alongside scaling data-driven outreach and support services targeted at elderly and low-income households. Moreover, she emphasised the need to formally embed heat metrics and related regulations into local building codes, urban planning processes, and renovation schemes.

In relation to public space management, she recommends adopting the comprehensive Heat Risk Reduction Guidelines developed specifically for the Athens Metropolitan Area. Further, she highlights the necessity of closer collaboration across multiple levels of government to streamline policy implementation, financing, and coordination. Dr. Myrivili also envisages practical infrastructure and mobility transformations, including establishing a fleet of small municipal buses, prioritising slow and sustainable mobility, and reducing car usage in the center of Athens.

Additional key measures include setting regulations for sustainable air-conditioning use, introducing clear cooling targets, pedestrianising major urban streets, and creating vertical, densely forested green corridors across the city. She also proposes using compact, mobile sewage-treatment units for efficient park irrigation, allocating dedicated funding for urban tree care and biodiversity protection, and developing a robust network of public drinking-water fountains.

Together, these comprehensive actions would significantly strengthen Athens' resilience against heat risks, enhancing both the urban environment and public health.

6. If you could go back in time, what do you think could have been done differently?

Reflecting on her tenure, Dr. Myrivili notes that, given the opportunity, she would have placed greater emphasis on securing a stable and dedicated budget, along with a formal mandate to ensure effective, institutionalised cross-departmental coordination. She also highlights the importance of establishing clear and measurable targets, particularly for urban cooling strategies and outreach to vulnerable communities, enabling better tracking of impact and effectiveness.

In addition, Dr. Myrivili emphasises that she would have advocated more strongly for the comprehensive actions outlined in her vision for the future (as described in her response to question 5), to accelerate Athens' resilience against heat risks.