Sara Mehryar Declan Conway August 12th, 2025

Why the UK needs more proactive heat risk management

Heatwaves are becoming increasingly common and increasingly intense, with severe consequences. But the state's response to the impacts of extreme heat continues to be temporary and disjointed. ***Sara Mehryar*** *and* ***Declan Conway*** *argue that the UK needs to build more heat resilience through urban and infrastructure planning, improved comms on the risks of heat, and the establishment of a National Heat Risk Commission.*

When the UK recorded temperatures above 40°C for the first time in July 2022, it marked a clear signal: extreme heat is no longer a distant or unlikely threat. In 2025, the Met Office warned that, due to climate change, such heatwaves are now becoming the norm, underscoring the urgent need for preparedness. Yet, as our new study published in Earth's Future shows, the country's readiness to manage heat risk remains fragmented and reactive, focusing on immediate impacts rather than the complex interdependencies that amplify these risks.

Heatwaves are increasing in frequency and intensity due to climate change. But their effects ripple far beyond immediate health concerns. Using a forensic disaster analysis combined with participatory system mapping—a method that brings diverse stakeholders together to map interconnections between risks, responses, and impacts—we worked with 38 stakeholders across government, utilities, first responders, and civil society to build a holistic picture of how heat risks unfold in the UK.

The hidden web of heatwave impacts

Our research revealed that many of the most serious heatwave impacts were not direct effects of high temperatures alone. Instead, cascading effects, such as wildfires, water shortages, transport

disruptions, and pressure on first responders, amplified the dangers. For example, health issues like heatstroke or exacerbated chronic conditions often arose not just from heat, but from these secondary effects.

Equally important were the amplifiers of risk. Factors such as socio-economic vulnerability, heat-vulnerable buildings, and non-adaptive public behaviour made communities even more susceptible. Socio-economic vulnerability plays a major role: people living in poorly insulated housing, with limited access to cooling or green spaces, and fewer financial resources to adapt, face higher risks during extreme heat. In addition, many UK buildings are designed for colder climates, prioritising insulation over cooling. Vulnerable groups, including the elderly, outdoor workers, and people with pre-existing health conditions, were disproportionately affected.

A reactive system, not a resilient one

While stakeholders praised early warning systems and public messaging efforts, these were largely limited to last-minute interventions. The real gaps lay in longer-term, system-wide actions: retrofitting buildings, assessing vulnerability across communities, and embedding heat risk into national policy frameworks.

Strikingly, we found that most actions taken during the heatwaves targeted immediate problems rather than root causes. For example, handing out water bottles or adjusting work hours helps in the moment but does little to reduce future vulnerability. Moreover, stakeholder groups often had a narrow focus based on their roles—first responders prioritised emergency actions, while government agencies looked at broader planning, but no single group had a full view of the heat risk system.

> *Right now, heat risk planning in the UK is fragmented and mostly focused on health, with little coordination between sectors.*

Urban areas, with dense building materials and limited green space, face intensified “urban heat island” effects, while rural areas may be more exposed to wildfires and water scarcity. Both

contexts present distinct risks, but our findings show that cities often require focused cooling strategies due to concentrated population vulnerability.

Building heat resilience means connecting the dots

The UK's approach to heat risk needs to move beyond siloed responses. Our research suggests three clear priorities:

1. **Address Root Causes:** Heat resilience starts with building design, urban planning, resilient infrastructure, and social equity. Retrofitting buildings—especially homes and care facilities—with passive cooling measures such as ventilation, shading, reflective materials, and, where appropriate, heat pumps that both cool and warm, should be a national priority. Infrastructure must also be adapted to withstand heat risks—this could include cooling systems in public transport, fire-resilient design in urban planning, and improved management of green spaces and forested areas to reduce wildfire risk.

2. **Improve Risk Communication:** Public awareness campaigns must go beyond simple warnings to foster adaptive behaviour. People need to understand not just *when* a heatwave is coming, but *how* to protect themselves and others. That means clear, timely advice tailored to different settings—like care homes, schools, or outdoor workplaces—and messaging that encourages sustained behavioural change.

3. **Establish System-Wide Coordination:** Right now, heat risk planning in the UK is fragmented and mostly focused on health, with little coordination between sectors. A "National Heat Risk Commission" could change that—bringing together public health, emergency services, utilities, and local authorities to plan across sectors and make sure heat risks are factored into everything from infrastructure to city planning. It's about moving from isolated efforts to joined-up action.

A broader message for climate adaptation

The lessons from the UK's 2022 heatwaves apply far beyond British shores. Many countries face similar challenges as climate risks grow more interconnected. Cascading impacts—from power outages, like those seen in Australia and Vietnam, to supply chain disruptions in India and Pakistan—demand adaptation strategies that recognise systems, not just individual events.

Our findings underscore the need for participatory approaches to climate risk planning. By gathering diverse perspectives through system mapping, we captured nuances that conventional

risk models often miss. This pluralistic approach ensures that no critical risks fall through the cracks.

As extreme heat becomes a defining feature of our climate reality, the UK—and other countries—must invest not only in emergency response but in long-term resilience. Otherwise, we risk facing the same cascading failures with each new heatwave.

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About the author

Sara Mehryar

Sara Mehryar is a research fellow at the Grantham Research Institute on Climate Change and the Environment, at London School of Economics and Political Science. Her research is mainly focused on supporting decision-making and governance of climate change adaptation and resilience. Sara applies various tools and methods including mental modelling, social simulation, resilience assessment, and policy analysis tools to understand adaptation behaviours and identify ways to improve resilience of communities against future climate risks.

Declan Conway

Declan Conway is Research Director at the Grantham Institute, London School of Economics. He has current interests in behavioural and psychological approaches to water security and adaptation. Declan draws on insights from different disciplines to pursue problem focused research. He has over 25 years of experience working in the UK/Europe, sub-Saharan Africa and Asia. Declan's research funding has included the EU, UK government departments FCDO and Defra, UK NERC and ESRC, US NSF, Canadian IDRC and the World Bank.