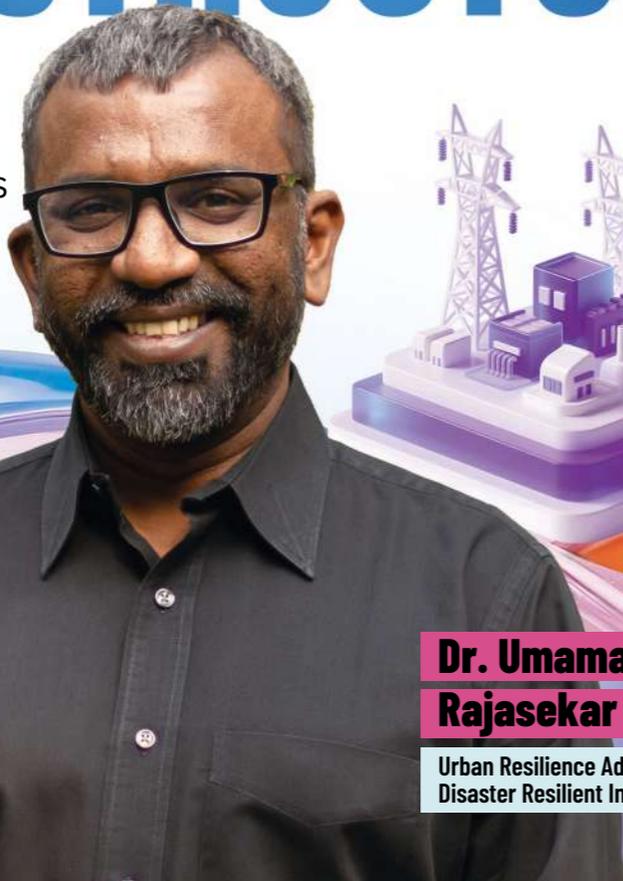


COOL

INFRASTRUCTURE

Extreme heat threatens everything from roads to railways. The CDRI helps cities build resilient infrastructure for a hotter world.



Dr. Umamaheshwaran Rajasekar

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“Our goal is to promote data-informed decision-making at all levels of government.”

How does CDRI help cities understand and adapt to urban heat?

The Coalition for Disaster Resilient Infrastructure (CDRI) views urban heat as an infrastructure challenge with multiple dimensions. Water systems struggle with shortages. Energy grids face surging cooling demand, raising the risk of equipment failures and blackouts. Roads can soften, rail lines buckle, and airports face operational delays. These cascading pressures raise maintenance costs, disrupt essential services, and undermine economic stability.

We help cities use geospatial infrastructure risk data including climate information to identify communities and critical infrastructure at risk.

For example, by combining satellite-based land surface temperature data with local land use and socio-economic indicators, we can identify hotspots and suggest interventions for climate adaptation such as the use of reflective materials, planning for blue and green corridors, or improved building design including options for passive ventilation. Our goal is to promote data-informed decision making at all levels of government.

You've urged all cities to invest in resilience. Are they doing it?

There's growing awareness but action is uneven. Most cities understand the urgency of resilience but face barriers in translating plans into investments. Political and financial cycles tend to be short-term, whereas resilience dividends accrue over decades.

But momentum is building. Cities such as Ahmedabad, Bangkok, and Singapore have shown that resilience can be mainstreamed into infrastructure projects, not just added on as an emergency measure. The Coalition for Disaster Resilient Infrastructure (CDRI) is helping cities develop "risk-informed governance and investment frameworks" to show that investing today builds competitiveness tomorrow.

How successfully are cities adapting to the challenge of urban heat? Besides tree-planting, where are the best examples you'd highlight?

Tree planting is a small part of the solution. Heat resilience requires a systems approach combining

interventions based on master plans and building design informed by natural systems and climate data.

Strategies that integrate technology, governance, and community

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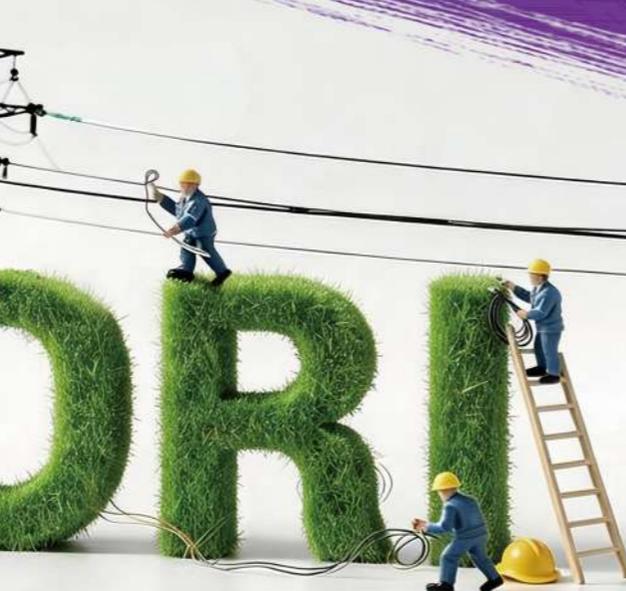
engagement include Singapore’s district cooling systems and Barcelona’s use of permeable pavements; and in India, the Mahila Housing Trust’s impact-based early-warning initiative, where women in poorer, more vulnerable settlements receive alerts and support when temperatures exceed hazardous thresholds, helping protect their income-earning capacity.

What’s common among successful cases is the use of data and coordination. They are not one-off projects, but integrated parts of broader urban systems planning.

In the past, you’ve said inconsistent data collection and a lack of shared metrics makes it hard to

measure progress. What’s the role of technology in addressing this problem?

AI and data-driven technologies have enormous potential to transform how cities understand and respond to heat risk. But the value lies in integration. For example, machine-learning models combining satellite, on-ground sensor, and land-surface data can help predict heat patterns. This could allow you to develop targeted interventions such as early warning systems or



Disaster Resilient Infrastructure (DRI)

to identify spots for creating cooling shelters. AI simulations could guide the use of cooling materials for shaded corridors or ventilation corridors that minimize heat absorption.

Smart grids and clean mobility systems can dynamically balance energy demand and reduce emissions during heat waves.

You’ve argued that the key to resilient infrastructure planning is decision-making informed by data. Why is that important, and what role can tech companies play in providing the infrastructure, platforms and the secure and accessible storage for that data?

Data-informed decisions allow cities to anticipate risk rather than react to loss. With the right data systems, cities can simulate climate risks, prioritize investments, and design infrastructure that performs under a range of future conditions.

Technology companies play a pivotal role in building this capability. They can support open, interoperable, and secure platforms that facilitate collaboration between public and private sectors.

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Importantly, they can help ensure that smaller or resource-constrained cities can also participate—democratizing access to digital resilience tools.

At The Coalition for Disaster Resilient Infrastructure (CDRI), we see resilience as a shared responsibility. Our approach is to foster “co-creation ecosystems,” where governments, academia, and industry jointly build the knowledge infrastructure needed for climate-ready cities.

This is also why we are actively expanding our Coalition membership, inviting countries as well as the private sector to join us in shaping a global, data-driven disaster-resilient infrastructure agenda that delivers shared benefits and scalable impact.

What future plans does the CDRI have in this area—and are you confident that cities and city leaders (often mindful of more short-term political priorities) are stepping up to the long-term challenge of urban heat?

Urban heat is a preview of how cities must adapt to a changing climate. At The Coalition for Disaster Resilient Infrastructure (CDRI), we focus on helping governments build systems where data, institutions, and infrastructure evolve together to manage long-term risk.

Our Urban Infrastructure Resilience Program is giving cities practical guidance to assess heat and climate risks, learn from global good practices, and connect with peers. We are also working with national disaster management authorities to embed resilience into the design and operation of public transit, cooling shelters, schools, and hospitals so that essential services remain safe during extreme heat.

To support this, The Coalition for Disaster Resilient Infrastructure (CDRI) is advancing common resilience metrics and data frameworks so cities can integrate spatial, climate, and socio-economic data into planning. Through the Global Infrastructure Risk Model and Resilience Index (GIRI)—the first publicly available probabilistic model of global infrastructure risk—we are making climate and hazard data more interoperable and accessible, especially for developing countries.

Reliable, transparent data systems are essential for risk-informed decisions. I am cautiously optimistic: more city leaders now understand that resilience is not only about preventing losses, but improving quality of life, economic stability, and urban sustainability. Addressing extreme heat is therefore both a scientific necessity and a social opportunity.

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