

# Resilient Cities at the Intersection of Climate and Health

How cities are advancing priorities that address climate resilience, health, and equity.



Yale

## INTRODUCTION

More than 50% of the world's population lives in urban areas, projected to increase to 70% by 2050. City residents report greater life satisfaction and have greater access to services, technology, and economic opportunities than non-urban dwellers. Despite these benefits, urban residents face substantial challenges to achieving health and well-being. Those in cities experience greater exposure to air pollution and extreme heat, both of which are associated with adverse respiratory, cardiovascular, and mental health outcomes. Obesity, hypertension, diabetes, infectious diseases, injuries and motor vehicle accidents are also more prevalent in urban areas. Beyond these physiological consequences, the Intergovernmental Panel on Climate Change concludes that climate change adversely impacts mental health. Studies link climate-fueled disruptions to many forms of psychopathology, including anxiety, depression, post-traumatic stress disorder, and suicide.

Within cities, those living in concentrated poverty and/or with poor access to health and social services are disproportionately vulnerable, resulting in profound inequities. As such, cities are on the frontline to promote climate resilience, health and equity. Building capacity to serve cities' most vulnerable populations reduces strain on healthcare systems, where competing priorities require scarce resources to be allocated equitably and efficiently.

Representing nearly 100 cities worldwide, the Resilient Cities Network reaches 220 million urban dwellers and is dedicated to accelerating sustainable development by ensuring social equity, promoting climate resilience, and enabling economic value.



## ABOUT THIS REPORT

The partnership between the Resilient Cities Network and Yale University was formed to explore co-benefits of climate and health resilience and identify evidence-based interventions. We conducted a brief survey among city leaders in 2023 to identify priority areas in climate and health, capacity and existing infrastructure, and opportunities for collaboration. We received 34 responses from 29 cities across five regions.

62%

Resilience and Sustainability Directors/ Officers

38%

Environmental, Urban Planning, Health Officers, and others



## SURVEY RESPONDENTS

### Africa

Addis Ababa City, Ethiopia

### Asia Pacific

Can Tho, Vietnam  
Chennai, India  
Da Nang, Vietnam  
Jakarta, Indonesia  
Surat, India  
Sydney, Australia

### Europe & Middle East

Athens, Greece  
Barcelona, Spain  
Glasgow, United Kingdom  
Manchester, United Kingdom  
Milan, Italy  
Rotterdam, Netherlands  
Thessaloniki, Greece  
Vejle, Denmark

### Latin America & the Caribbean

Medellin, Colombia  
Monterrey, Mexico

### North America

United States  
Berkeley  
Dallas  
Louisville  
Miami  
Miami-Dade County  
New Orleans  
Norfolk  
Oakland  
Pittsburgh  
San Francisco

### Canada

Montréal  
Vancouver

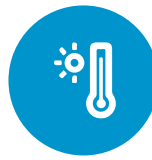
## KEY FINDINGS



**Climate and health** are major concerns for these cities. Leaders rate both issues equally vital.



**Health stresses** rated most important are built environment, inequalities, air pollution- and heat-related diseases, and strains on healthcare systems.



**Climate-related shocks** most important are extreme heat, flooding, insufficient urban greenspace, and poor air quality.



**Vulnerable populations** such as children, older adults, those with chronic health conditions, marginalized and poor communities) all rank highly as populations of specific concern, and need dedicated resources to thrive.

## QUALITY OF LIFE/BUILT ENVIRONMENT AND EXTREME HEAT RATES MOST IMPORTANT TO CITIES

Average importance on a scale of 1-10

### Health outcomes related to climate change

Quality of life/built environment



Air pollutant-related diseases



Health inequalities



Healthcare system strains



Heat-related illness



Risk of another global pandemic



Food-, water-, vector-borne diseases



Chronic stress, mental illness



Food insecurity and malnutrition



### Climate-related shocks

Extreme heat



Flooding, hurricanes



Insufficient urban greenspace



Poor air quality



Quality of built environment



Poor food and water quality



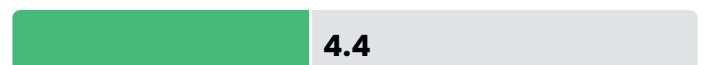
Population displacement



Drought, desertification

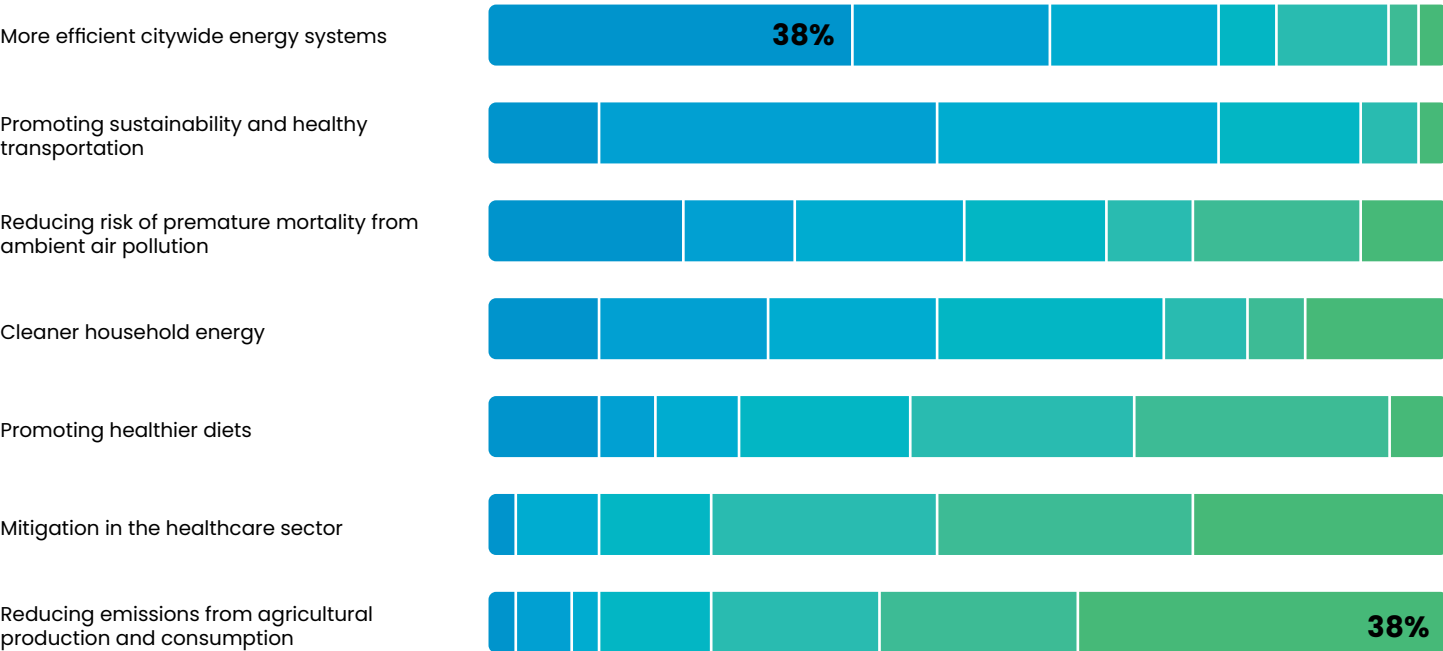


Wildfires



The Lancet Commission (2022) identified a set of seven climate mitigation actions and health co-benefits. Cities were asked to rank the importance of each:

Top strategies identified by cities are more efficient energy, sustainable transportation, and reducing air pollution




Rank, where 1 is most important and 7 is least important.




Most cities have a City Resilience Plan; however, only **52%** of these plans directly address health. While cities recognize the importance of health, only **35%** have sufficient resources to respond to a major health threat.


CLOSER LOOK: MOST IMPORTANT CLIMATE AND HEALTH CONCERNS AND STRATEGIES

Stratified analyses by region, income level, and city size

	Climate Shocks and Stresses	Health Outcome Related to Climate	Climate Action
Asia (6 cities)	Flooding	Healthcare strains	More efficient citywide energy systems
Europe (9 cities)	Insufficient green space	Healthcare strains	Sustainable transportation
North America (12 cities)	Extreme heat	Quality of life/built environment	More efficient citywide energy systems

	Climate Shocks and Stresses	Health Outcome Related to Climate	Climate Action
Low/Middle Income* (9 cities)	Extreme heat	Quality of life/built environment	Sustainable transportation
High Income (25 cities)	Flooding	Healthcare strains	More efficient citywide energy systems

\*≤13,205/capita (World Bank 2022)

	Climate Shocks and Stresses	Health Outcome Related to Climate	Climate Action
Small - <0.5M (7 cities)	Flooding	Quality of life/built environment and health inequities	Cleaner household energy
Medium - 0.5 - 1.5M (14 cities)	Insufficient green space	Quality of life/built environment and air pollutant-related diseases	More efficient citywide energy systems
Large - >1.5M (13 cities)	Flooding	Healthcare strains	More efficient citywide energy systems

\*Note: We received 2 responses from Latin America and 1 from Africa, not included here due to sample size limitations.

CITIES WANT TO COLLABORATE ON FUTURE EFFORTS AT THE INTERSECTION OF CLIMATE, HEALTH, AND EQUITY:

94%

want more information on climate and health

91%

want to join a climate-health working group

85%

will participate in future research

Survey results will inform future collaborative work between Resilient Cities Network and Yale University, including opportunities for broad engagement and discernment of climate and health solutions (e.g. sharing knowledge and resources) that could be scaled-up. We are designing solutions and actively finding ways to fund them.

OUR VISION IS TO CULTIVATE URBAN RESILIENCE AND HEALTH:

Increasing the capacity of systems and individuals to thrive, despite chronic stresses and acute shocks of climate change. Urban governance is siloed, with separate teams addressing health and mental health, designing disaster recovery plans, exploring sustainability, and examining land-use planning and infrastructure. An integrated, multi-sector approach advances our collective understanding of the impacts of climate on health, empowering us to meet the demands of today’s interconnected world.