

# United Nations University (UNU)

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UNU tackles extreme heat by collaborating on projects that enhance urban resilience, inform policy development, and implement nature-based solutions.

The United Nations University is the think tank and academic arm of the United Nations. The mission of the United Nations University is to contribute, through collaborative research and education, to efforts to resolve the pressing global problems of human survival, development, and welfare that are the concern of the United Nations, its Peoples, and Member States.

The United Nations University's Institute for Environment and Human Security (UNU-EHS) focuses on advancing human security and well-being by reducing current and future risks from environmental hazards and climate change. Heat is such a hazard that is increasingly putting humans and ecosystems at risk, and that UNU-EHS is researching on to inform policy at local, national and international levels.

## Lead Heat Entities:

- Interconnected Disaster Risks Flagship Team
- Urban Futures and Sustainability Transformation Division
- Vulnerability Assessment, Risk Management & Adaptive Planning Division

## Technical Focal Points:

**Simone Sandholz**, Academic Officer, Head of Urban Futures and Sustainability Transformation (FAST) Division

## KEY FACTS

### Urban inhabitants beyond “classic risk groups” are affected by heat stress in ways that may not be accounted for in current urban policy.

All socioeconomic groups are at risk of urban heat stress, though to differing extents and for different reasons. Exposure was found to be lowest in groups typically considered to be of higher risk, such as older respondents, who at the same time have the highest susceptibility. Students and other younger respondents, on the other hand, face comparably high exposure and have the lowest coping and adaptive capacities. At the same time, each group has its own capacities with the potential to mitigate risk.

**Rethinking urban heat stress: Assessing risk and adaptation options across socioeconomic groups in Bonn, Germany**

### Many informal settlements and their dwellers are ill-prepared for climate-related hazards, such as and heatwaves.

When disaster strikes, they are frequently excluded from regular urban planning and disaster risk management processes, risk transfer measures, aid distribution and post-disaster reconstruction programmes which increases their vulnerability to future disasters. As a result of this severe lack of preparedness and the high exposure and vulnerability, informal settlement dwellers are threatened by severe losses and damages through climate-related disasters.

**Loss and Damage in Informal Settlements: Study Report**

### Exceeding heat related tipping points can result in organ failure.

When wet-bulb temperatures exceed 35°C (95°F) for over six hours, the body can no longer regulate heat, leading to organ failure and brain damage if conditions persist. This represents a critical heat-related tipping point that poses severe health risks.

**Technical Report: Unbearable heat**

### Annual Interconnected Disaster Risks Report

Interconnected Disaster Risks is an annual science-based report designed to be accessible for the general public. The report analyzes several concrete examples of disasters each year and explains how they are interconnected with each other and with human actions. The idea for the report was developed based on the recognition that disasters are occurring at an ever-faster rate. It seeks to shed light on the interconnections that might otherwise be missed, and describes how to develop solutions to use these connections to an advantage.

The report is based on thorough scientific analysis and includes technical background reports for each of the cases. Heat risk has been a topic twice, namely the British Columbia Heatwave and Unbearable Heat as a critical tipping point.

### CLIMPRO-Bonn Project (2023-2025)

The CLIMPRO-Bonn project collects and analyzes data on climate protection and adaptation acceptance and behavior of Bonn households to inform policy, including on addressing growing heat stress. This project aims to produce the knowledge needed not only on the built environment, but also on social aspects, including perception and awareness of affected population to design the best-suited instruments for urban climate action.

**Core Partners:** City of Bonn Municipality

### ZURES Project (2016-2019)

The ZURES project aims at developing new methods and instruments for future-oriented urban vulnerability and risk assessment regarding heat stress in particular, for promoting the resilience of cities and urban infrastructure to create planning principles on the topic of urban climate, including heat, for 2 cities in Germany (Bonn and Ludwigsburg). As a research organization, UNU-EHS focuses on providing data and analyses to ensure implementing partners can take action.

**Core Partners:** Municipalities

#### ★ Featured initiative

### Transformative Urban Coalitions (TUC) Project (2021-2026)

The Transformative Urban Coalitions (TUC) Project is a central element of UNU-EHS's Urban Futures and Sustainability Transformation (FAST) Programme. Transformative Urban Coalitions (TUC) supports cities to find joint solutions to become more green, inclusive, and sustainable.

The project has launched Transformative Urban Coalitions in Five Latin American cities, facilitating the development of new strategies for addressing local challenges in urban development and inequality, while at the same time reducing carbon emissions.

Through collaborations with schools, community groups, policymakers and researchers, the initiative has fostered environmental awareness and climate resilience by adding nature-based solutions to mitigate extreme urban heat and improve the health and livability of the most vulnerable groups across the neighbourhood. The Urban Lab in Barrio 20, an informal settlement in Buenos Aires, is an award-winning initiative.

**Core Partners:** International Institute for Environment and Development - Latin America (IIED-AL), International Institute for Environment and Development (IIED), German Institute of Development and Sustainability (IDOS), World Resources Institute (WRI)





## HEAT RESOURCES

Applying recent advances in climate adaptation research to urban heat risk management

2024

Loss and Damage  
Urban Settlements  
Informal Urban Settlements

2024

TUC Urban Lab  
Profile: Barrio 20, Buenos Aires, Argentina

2024

### Foundational documents governing institutional heat activities

**United Nations University - Strategy 2025-2029: Developing Multilateral Solutions Through Research, Education and Innovation**

UNU's strategic approach, characterised by its impartiality and practicality, delivers tangible solutions to pressing global issues in sustainable development, including climate change

Interconnected Disaster Risks  
2023: Risk Tipping Points – Technical Report:  
Unbearable Heat

2023

Interconnected Disaster Risks  
2022: British Columbia  
Heatwave

2022

Rethinking urban heat stress:  
Assessing risk and adaptation options across socioeconomic groups in Bonn, Germany

2024

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## SUPPORTING THE SDGs, INCLUDING:



This heat action profile was developed by the [Global Heat Health Information Network](#) in partnership with the World Meteorological Organization (WMO) and the UN Office for Disaster Risk Reduction (UNDRR), as a contribution to the [United Nations Secretary-General's Call to Action on Extreme Heat](#) (2024). The content was validated by focal points from the profiled international organization / agency, and captures a snapshot of its heat work at the time of publication. The profile will be periodically updated.

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