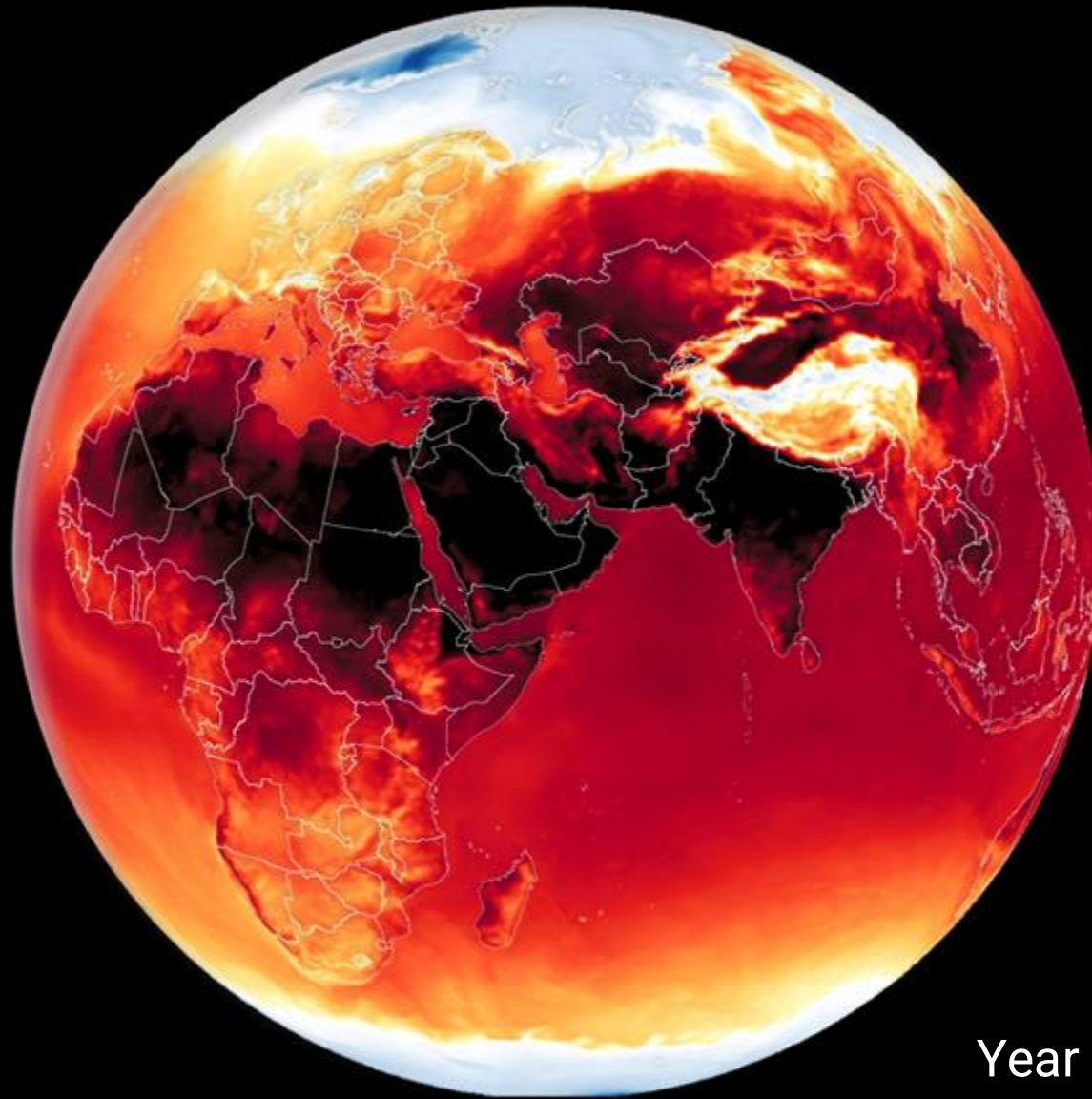




# Subnational Cooling Pledge

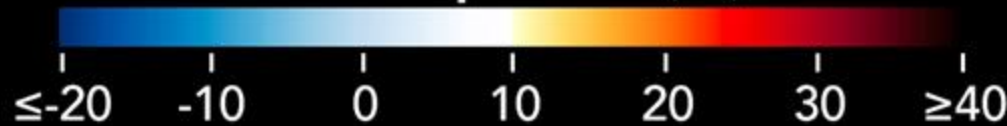
Presentation for Cities

# In the Grip of Global Heat



Year of record-high monthly temperatures

June 15  
Air Temperature (°C)

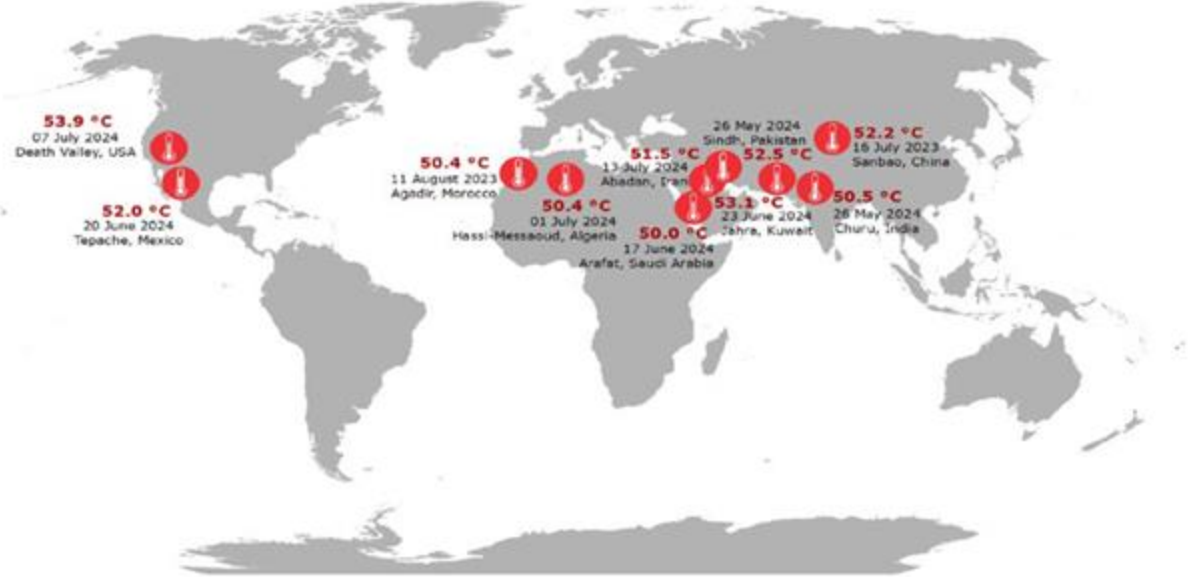


25 July 2024

# United Nations Secretary-General's Call to Action on Extreme Heat



## Extreme daily temperatures of 50°C or more July 2023 to July 2024



Note: Based on reported daily maximum near surface air temperature by NMHSs. List is not exhaustive and includes provisional data.

Source: World Meteorological Organization, 2024

## Extreme heat: Impacts

**489,000**

heat-related deaths occurred  
2000–2019 each year, more than  
from tropical cyclones

**12%**

About 12 per cent of all food  
produced is lost due to a lack of  
cooling

**Triple**

The installed capacity of cooling  
equipment globally will almost  
triple by 2050

**80 million**

Working hours equivalent to 80  
million full-time jobs could be lost  
due to heat stress by 2030

**9.1%**

An annual 1°C increase in  
temperature leads to a 9.1 per  
cent increase in poverty

**80 million students**

More than 80 million students are  
impacted by worldwide school  
closures due to heat in 2024

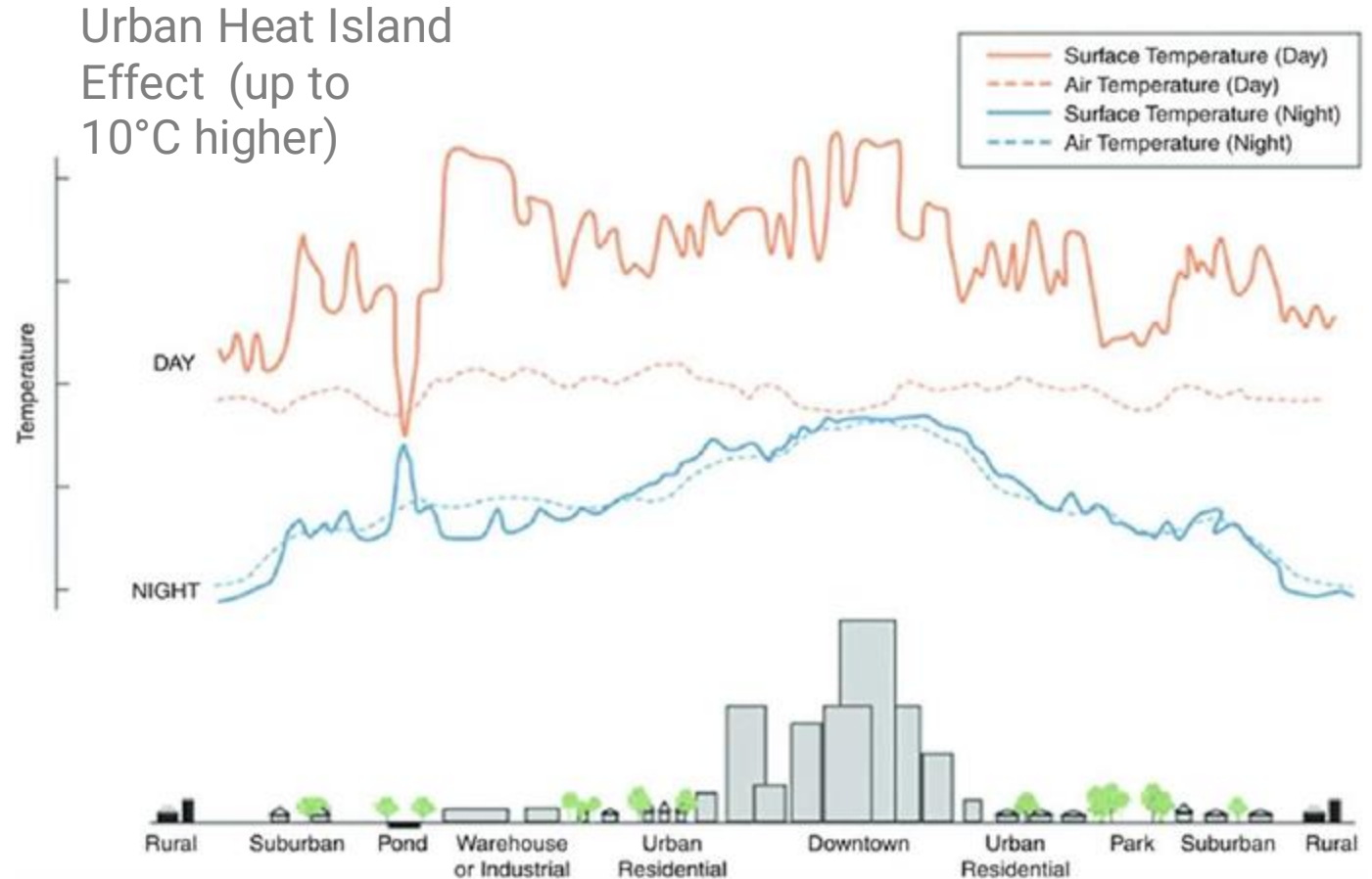
# Extreme Heat & Urban Hot Spots

According to the UN S-G's Call to Action

The world's cities are heating up at twice the global average rate due to rapid urbanization and the urban heat island effect.

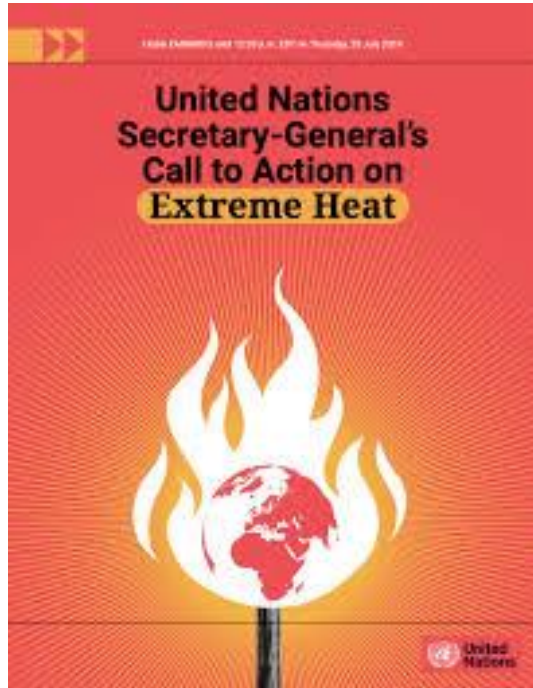
Heatwaves present an acute danger to urban centers. At 1.5°C of warming, 67 cities will experience 150 or more days a year of temperatures exceeding 35°C. Under 3°C of warming, it rises to 197 cities

**UHI Assessments** identify hot spots to Prioritize Locations for Passive Cooling & Heat Resilience Interventions



Urban heat island effect diagram (Source: U.S. Environmental Protection Agency, 2021)

# UN SG's Call to Action on Extreme Heat



Calls for action in 22 sub-areas across 4 thematic areas. UNEP active in more than half.

1. Care for the vulnerable;
2. Protect workers;
3. Boost the resilience of our economies and societies using data and science, and
4. Limit temperature rise to 1.5°C

**Cooling is a core message -- to “redesign”** our cities, buildings, energy infrastructure to be cool and heat resilient in the long term while breaking the viscous cycle of cooling (typically AC) – leading to energy – and emissions – leading to heat.

*Extreme heat amplifies inequality, inflames food insecurity, and pushes people further into poverty.*

*We must respond by massively increasing access to low-carbon cooling, expand passive cooling and clean up cooling technologies while boosting their efficiency."*

*Antonio Guterres, UN Secretary General, July 25 2024*



# Global Cooling Pledge

- Launched on December 5, 2023, at COP28 in Dubai, **70 plus countries** - G7 /G20 countries
- Raising ambition for countries to work together to **reduce global cooling-related emissions by 68% by 2050** with significant progress and **expansion of access** to sustainable cooling by 2030.
- **Over 60** private sector, financial institutions, and IGOs



- *Commit to establish national model building energy codes that incorporate market appropriate measures such as passive cooling and energy efficiency strategies at the latest by 2030 for new and refurbished buildings as appropriate for those countries with jurisdiction of national building codes, or for those countries that do not have such jurisdiction, support adoption of building energy codes at the sub-national level*



- *Commit to support existing international cooling emission reduction and cooling access initiatives, such as those of the United Nations Environment Programme-led Cool Coalition, to advance global cooperation and domestic actions*



- **Commit to** energy efficiency of air conditioners sold to be at least 50% better than the current installed efficiency by 2030 in all markets



- *Call on subnational governments and non-state actors including the private sector, financial institutions, and philanthropies to help support the implementation of the Global Cooling Pledge;*

# Global Cooling Watch 2023



UNEP-led first-of-its kind assessment for cooling, based on 192 UN Member States policy ecosystem

## Scientific backbone of the Global Cooling Pledge

Identifies **integrated whole-of-government approaches** to minimize climate impact of cooling, while increasing adaptation and resilience potential

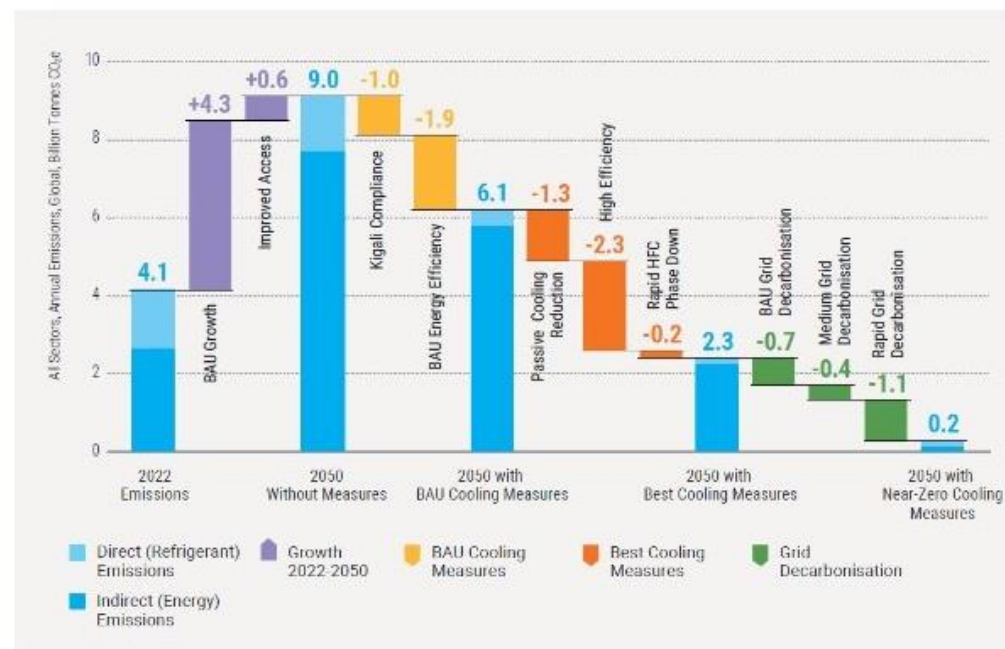
24% reductions in emissions possible as a result of increased **passive cooling measures**

Demonstrates potential and pathways to achieve near-zero emissions from cooling, and

Enhance - cooling access for 3.5 billion people

Reduce - electricity bills for end users by US\$17 trillion cumulatively (2022 – 2050] and peak power requirement by between 1.5 and 2 terawatts (TW)

Avoid - power generation investments in the order of US\$4 to US\$5 trillion



# Subnational Global Cooling Pledge





# Subnational Pledge



Commit to **incorporate cooling in an existing strategy or action plan or develop a Heat Action Plan by 2026**, to mitigate and adapt to urban heat through sustainable cooling solutions;



Commit to significantly **increase the area and quality of green and blue spaces in urban areas for cooling by 2030** in line with the Paris Agreement goals and Target 12 of the Kunming-Montreal Global Biodiversity Framework;



Commit to **pursue public procurement of low-global warming potential and high efficiency cooling technologies** focused on the lowest lifecycle cost in **government buildings by 2030**.



# Why Subnational Pledge

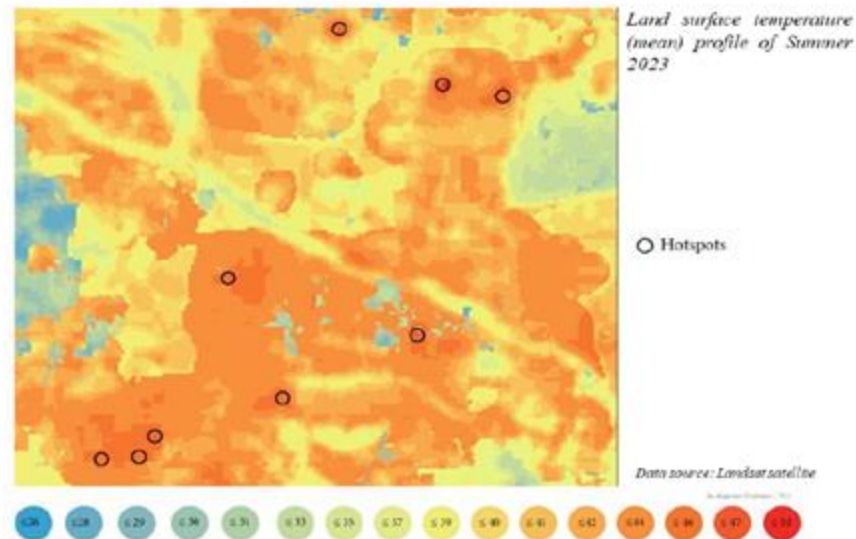


- Cities have the Power to make the change through revisions in city master plan & on ground implementation.
- Developing cooling/heat action plans cities can connect priorities on resilience and heat adaptation, biodiversity, air pollution, health while also deliver on NDCs and NAPs at the national level, aligning to CHAMP pledge
- Healthy & Livable cities with reduced air pollution, health risks. Integrate cooling to protect the most vulnerable urban populations.
- Motivate local players, developers to invest in and take the path of sustainable cooling in committed cities
- Match making between 60 + non state actors, 200 + cool coalition members

# Heat Action Plan by 2026



Satellite image showing the coverage of hotspots across the urban core of Madurai



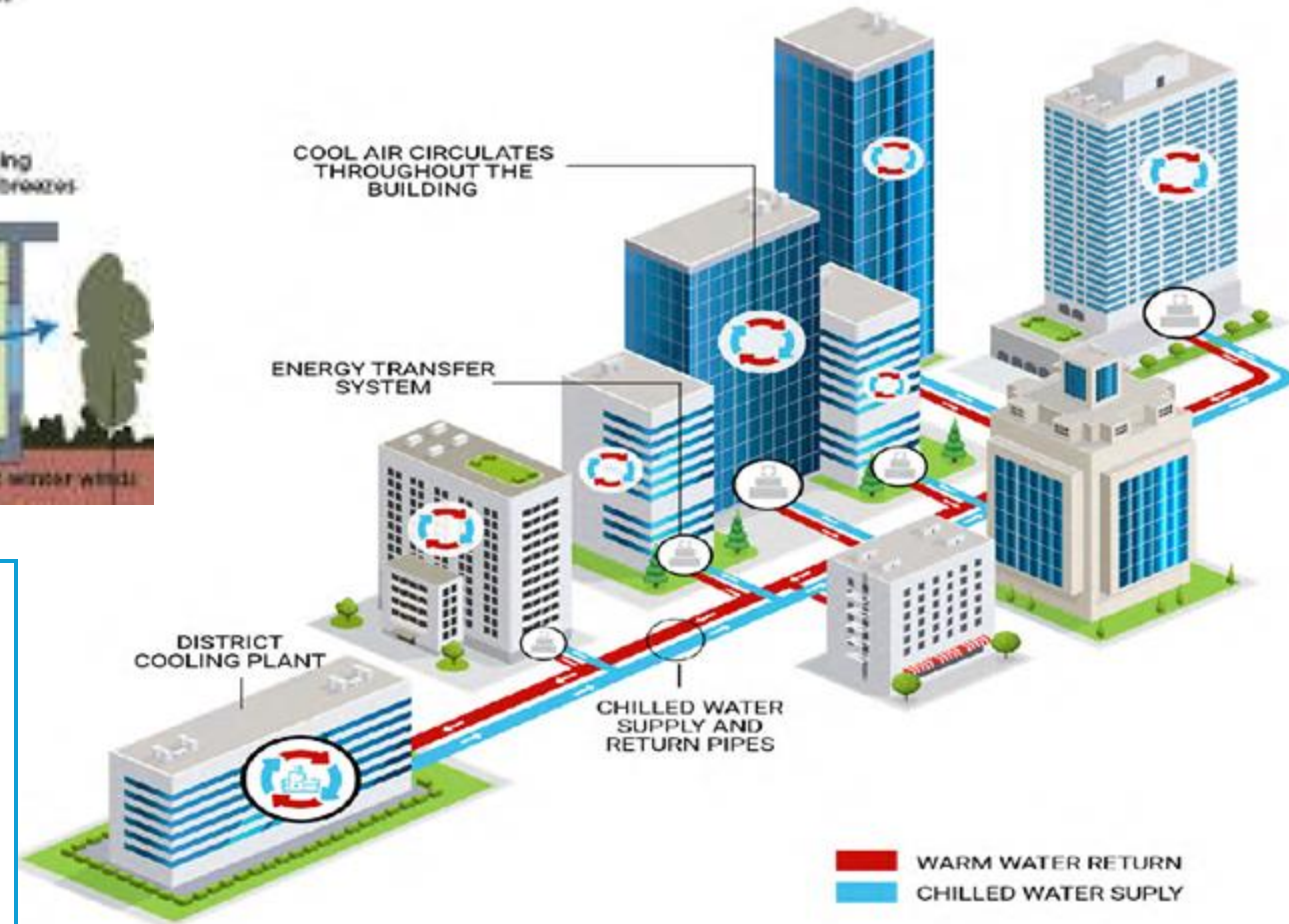
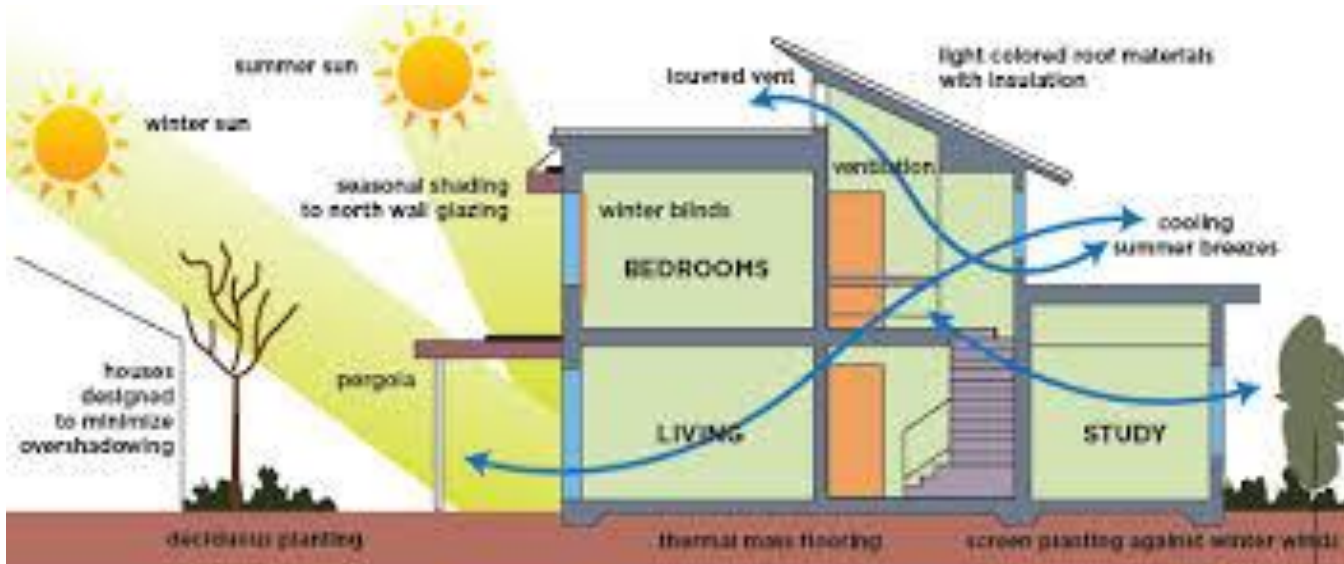
- Raise awareness on heat vulnerability exposure
- Preparedness - Identify potential heat resilient/cooling measures to protect the vulnerable during heat waves
- Redesign - your city, buildings, infrastructure & public spaces for a cooler & more resilient city



## Increase in Green & Blue Infrastructure by 2030

- Identify potential for Green, Blue infrastructure
- Technical Feasibility study for identified projects
- Design charrettes, support on procurement, assessments on specifications for green & blue infrastructure for cooling
- Integration in revised master plans

# Reducing Cooling Emissions – Efficient Cooling in Government Buildings by 2030



Through Specifications that encourage -

- Integration of Passive Cooling (nature-based building integrated, urban design, reflected surfaces, shading) Strategies
- Efficient Cooling Technologies
- Rapid HFC Phase down



- Detailed guidance and encyclopaedia of options to help cool cities sustainably
- 80 case studies from around the world, to help cities find an approach best suited to their unique contexts
- Launched at COP26, with 16 cities committing to action using the Handbook

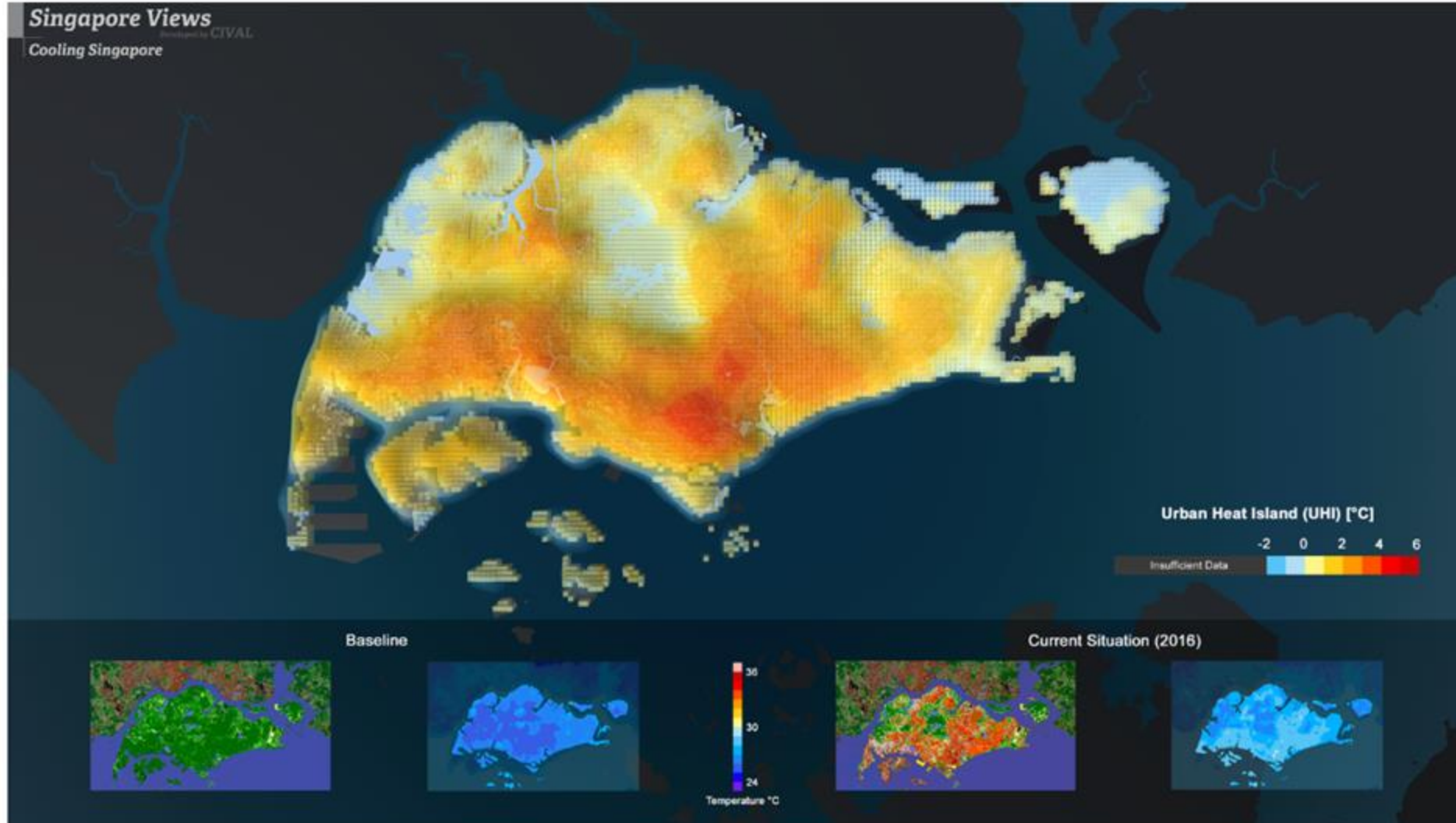


Discover the Handbook by scanning this QR code

# Beat the Heat – Case Studies

## Medellin, Colombia – Interconnected Green Corridors

- 30 green corridors interconnected – in 3 years able to reduce UHI by 2<sup>o</sup> C.
- Expected a reduction of 4 – 5<sup>o</sup> C in next 28 years.



**Urban Heat Island Studies integrated in Cooling Singapore Project**



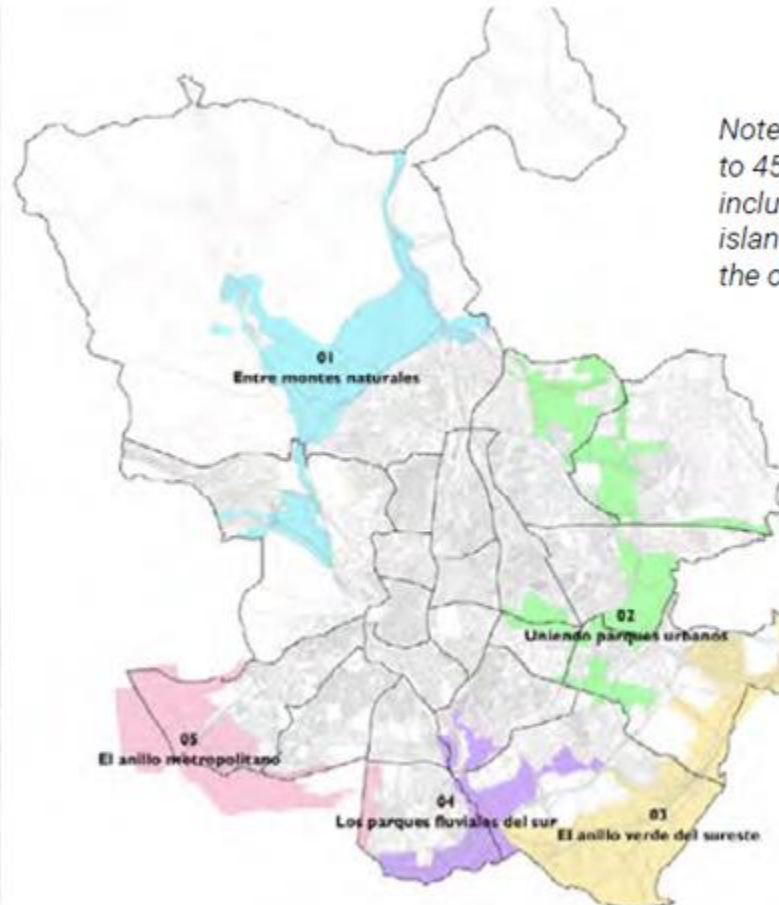
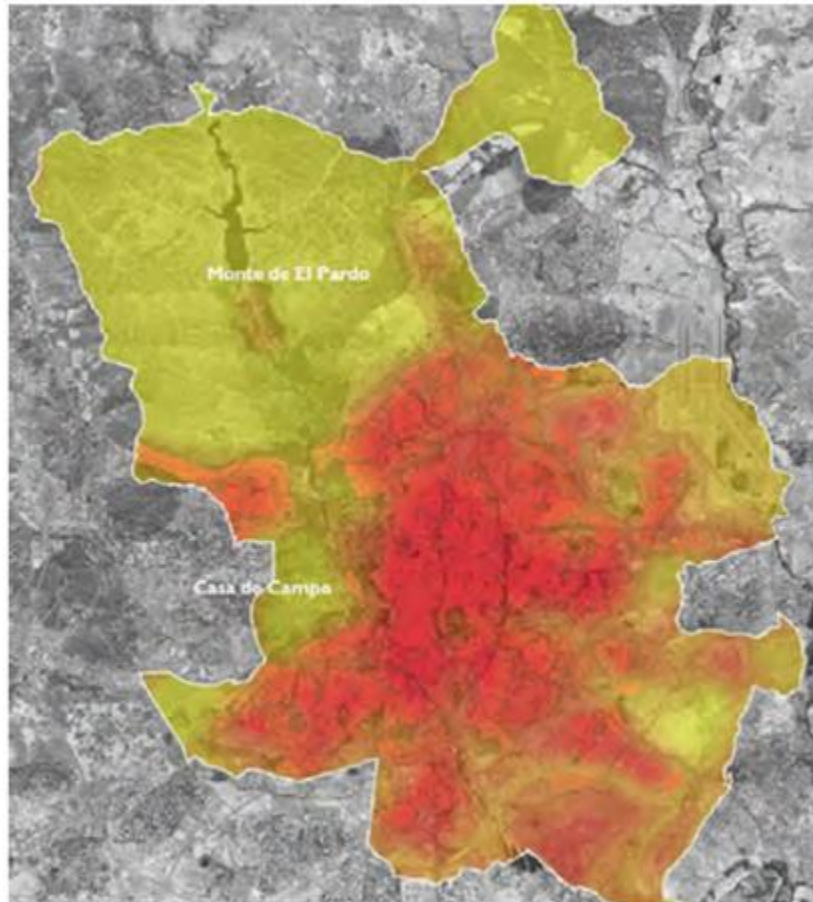
# Benefits of Green Infrastructure on UHIE

- Surface temperature of green roofs could be reduced by 15°C in comparison to nongreen roofs.
- Nearby microclimate air temperature can be reduced by 2 – 5°C.
- Reduced energy demand depending upon type of buildings.
- Temperature difference between Urban areas and big city parks is between 1.5 – 4°C.
- Green walls/ facades can reduce nearby outdoor temperature between 0.5 – 4°C





# Madrid, Spain



*Note: Madrid's plan to plant up to 450,000 native trees by 2030 includes attention to urban heat islands in the south and east of the city.*

**Tree Planting initiative in Madrid based upon UHI Assessment.**

*Images courtesy of the City of Madrid*



# Cool Coalition Support

- Capacity building & expert assistance on a global standard approach for urban heat vulnerability mapping and heat/cooling action plans.
- Guidelines for implementation of nature-based solutions for cooling
- Procurement guidelines for passive cooling, energy efficiency, HFC phase down
- Networking & learning community on urban heat best practices & tools
- Connect with cities, 60 + non state actors, 200 + Cool Coalition members to support implementation of the subnational pledge.

# Benefits from Signing the Pledge

Better preparedness for vulnerable communities, populations at risk

Helps to identify priority areas of built environment for adaptation & heat mitigation measures.

Reduced Cooling sector related energy and GHG emissions

Boost in economy due to enhanced productivity, better air quality, comfortable outdoors

Showcasing leadership – Champion cities

# Next Steps

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Confirmation support for the Pledge - through endorsement letter.



Cities that sign up - announce at COP 29



Cool Coalition support

# Thank you!

## **UNEP-LED COOL COALITION**

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