



# Sustainable Cooling for All

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Why cooling is an equity issue

June 2022

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# In a warming world, cooling cannot be a luxury

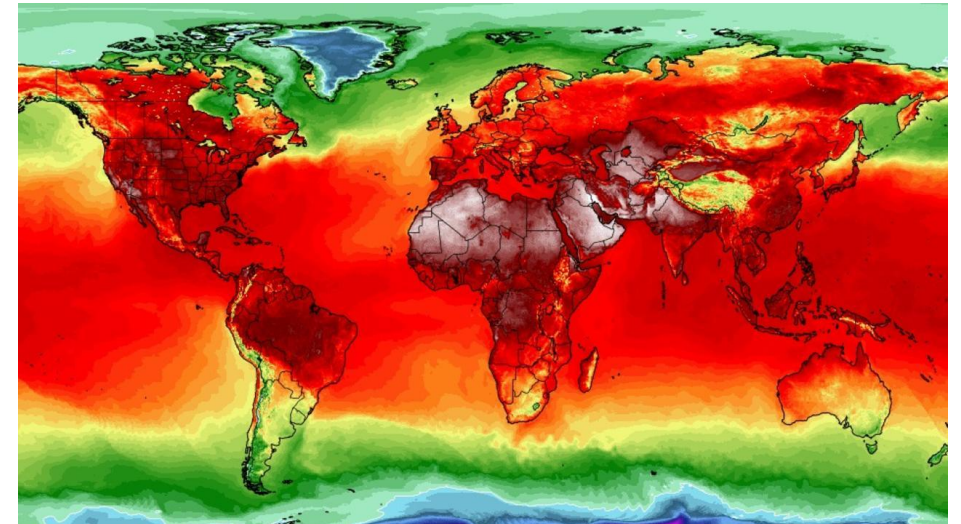
**We need cooling to keep children healthy, vaccines stable, food nutritious, energy supply stable, economies productive, and our environment clean.**

**Today, lack of effective refrigeration results in losses of 13% of total food production.**

**By 2030, heat stress will reduce the world's GDP by \$2.4 trillion.**

**By 2070, 3.5 billion people will be heavily affected by heat, 1.6 billion of whom will live in urban areas.**

**By 2100, cities across the world could warm up to 4.4°C on average.**



**Women and girls experience the greatest climate impacts. This amplifies existing gender inequalities and poses unique threats to their livelihoods, health, and safety.**

# Extreme heat impacts are not « gender neutral »

## Women and girls tend to be more exposed to heat risks...

- more likely to live in poverty, less access to basic human rights
- face systematic violence that escalates during periods of instability
- responsible for household chores carried out regardless of weather
- in some occupations, women sit for hours in unventilated structures
- pregnant women are at greater risk of miscarriage and stillbirth



## ...and have more limited adaptive capacity

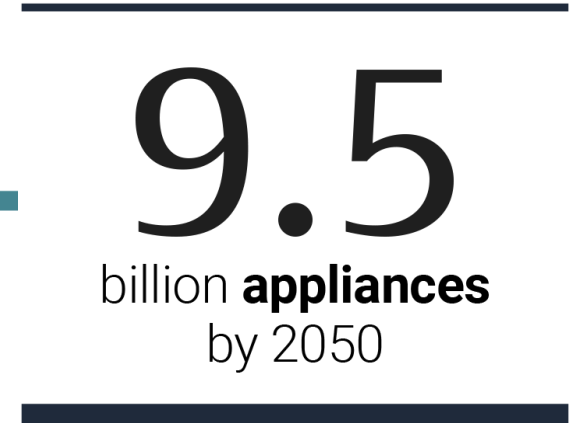
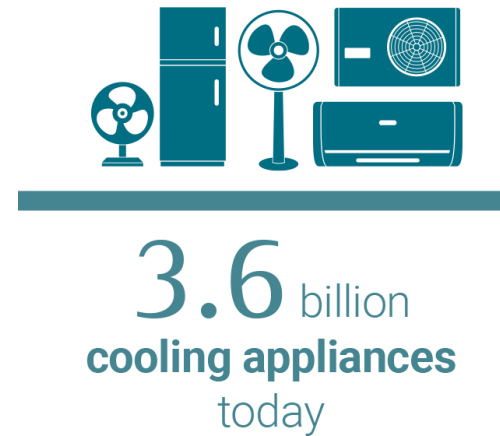
- lack of access to important tools for heat awareness and protection
- greater challenges in gaining access to electricity and appliances
- lack of representation in decision-making structures



# But the more we cool, the more we heat the planet

If left unchecked, emissions from cooling are expected to double by 2030 and triple by 2100.

By 2050, space cooling alone will consume as much electricity as China and India today.



- Space cooling is the fastest-growing use of energy in buildings in Southeast Asia
- 15% of households in Southeast Asia have an air conditioner, indicating significant potential for further growth in these markets
- Number of AC units in 2040 could rise from 40 million in 2017 to 300 million in 2040, half of which will be in Indonesia.

# Women are actors of change



**We cannot only rely on appliances to face the heat crisis.  
We need to think comprehensively, and with gender lenses on.**

To understand the challenge and craft the right solutions, more research on extreme heat impacts on women is needed.

**Key to ensure women participation in the development and implementation of cooling solutions:**

- target women for research, outreach and education
- incorporate concerns and insights of women in solution development and implementation
- ensure that climate responses reverse gender inequalities





# Sustainable and inclusive cooling solutions exist

## Here's what we need to do to beat the heat:

- Weave heat resilience into our city planning
- Rejuvenate, enhance, increase green and blue spaces
- Resurface our cities to shed heat, not absorb it
- Make our buildings more energy efficient
- Replace air conditioners with superefficient, climate-friendly ones
- Develop options of last resort for poorest residents and vulnerable people



Cool roofs can reject 90% of the heat energy that lands on them, reducing the need for ACs.



In Seoul, a waterfront corridor decreased temperatures 3.3-5.9°C compared to parallel roads.



In Guangzhou, temperature was reduced by 2-3°C thanks to district cooling and green spaces.



Ahmedabad's Heat Action Plan has incorporated awareness on how climate change can uniquely impact women.

## Who We Are

The Cool Coalition is a global network connecting over 120 partners to **facilitate knowledge exchange, advocacy and joint action towards a rapid transition to efficient and climate-friendly cooling** using a comprehensive approach.

## Our Vision

**Comprehensive action** is required to *reduce* the need for mechanical cooling, *shift* to cooling with lower emissions including by using renewable energy, *improve* cooling efficiency, and *protect* those most vulnerable from a lack of cooling, including women.

The aim is to raise climate ambition in the context of the SDGs, the Kigali Amendment to the Montreal Protocol, and the Paris Climate Agreement.


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# We support countries and cities in beating the heat

We support countries and industry in taking a comprehensive action to tackle growing cooling demand, while providing thermal comfort to those who need it.

At COP26 last year, we released a comprehensive guide to help cities address the challenge. **16 cities** have already committed to use it to take action.

At the World Economic Forum in Davos, we launched the **Heat Action Platform** with the Arsht-Rock Resilience Center, Mission Innovation, GCOM and RMI.

A circular icon containing a white line drawing of a pencil and a ruler.

**Standardized guidelines and tools help cities develop coherent strategies for action on extreme heat and urban cooling**

A circular icon containing a white line drawing of a city skyline with several buildings.

**16 cities in 5 different countries** are already using the Handbook and the recently launched Heat Action Platform to take action





# We Support Countries and Cities in Beating the Heat

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Indian cities face **rising urban temperatures** impacting human health. This is exacerbated by urban design, lack of quality housing and green space.

Fast-growing **cooling demand** is concentrated in cities as millions seek improved living and working conditions. This has significant impacts on urban power system, urban heat island, refrigerant and CO2 emissions.

Municipalities lack the **resources** and **capacity** to comprehensively address extreme heat and cooling demand.

National support to cities on cooling and energy is limited.



**To help bridge existing gaps, we are working with RMI and the Ministry of Housing and Urban Affairs to establish a national program to help cities identify and implement large- and small-scale cooling solutions.**

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# We Support Countries and Cities in Beating the Heat

The project will support **100 cities** to undertake extreme heat planning, integrate cooling into urban planning, develop green infrastructure, more efficient buildings and passive cooling, and establishing cooling centers.

- Immediate implementation support for no-regret, quick-to-deploy solutions
- Support in planning and development of strategies to address extreme heat and cooling
- Longer-term support for priority cooling projects
- Increasing central support on extreme heat and cooling



# We Support Countries and Cities in Beating the Heat

In Viet Nam, we are mapping extreme heat in two cities to identify hotspots, drivers, social, gender impacts and identifying how to scale solutions to deliver sustainable cooling to those that need it the most.

## Urban Cooling

- Extreme heat action planning and cooling demand mapping, zonal & city-wide assessment of locally relevant and innovative solutions for cooling efficiency in pilot cities
- Capacity building of cities to adopt urban cooling recommendations in city policies including masterplans

## National Cooling Fund

- Develop project pipeline based on actions identified under city assessment, perform market assessment, feasibility of projects
- Dedicated 'cooling' fund designed to fund investments and upstream project development on urban cooling

## Integration of cooling in National Policy Framework

- Support the Ministry of Environment in increasing inter-ministry dialogue on cooling and integrate sustainable urban cooling into relevant central strategies, plans, decrees



# Tackling cold chain and food loss in India

Over 60% of Indian population directly or indirectly in agrarian economy.

Each year, 30% of food is lost or wasted despite India having highest population globally living in hunger, one-third of all malnourished children.

Rural cold chain logistics are critically underdeveloped in India

Packhouses need to increase from 500 to 110,000 by 2037.

At the same time, the COVID-19 pandemic requires very rapid expansion and redesign of the vaccine delivery logistics chain.



**Women comprise 50% of the agricultural workforce in developing countries in East and Southeast Asia, yet produce 20-30% fewer yields than male farmers.**

**Ending gender-based inequality could increase the total agricultural output in developing countries by 2.5 to 4%.**

# A comprehensive cold chain program in India

It is critical to spur sustainable, integrated cold chain development and “leave no one behind” to increase farmers’ incomes, increase food security, reduce hunger, increase access to vaccines for children and rural communities.

UNEP and the Cool Coalition are embarking on a new program with funding from Clean Cooling Collaborative, DANIDA, Tabreed.



What the programme will deliver:

- Integrated demonstration projects of packhouses
- National policy support
- State-level policy and cold chain plans
- Benefits, food loss and GHG analysis
- Investment program to drive \$50m investment
- Capacity building and awareness raising
- Knowledge management





# Thank you!

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## Contacts

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