SUSTAINABLE ENERGY FOR ALL

CHILLING PROSPECTS

2025

# CHILLING PROSPECTS

## Tracking Sustainable Cooling for All

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Austrian Development Agency

Clean Cooling COLLABORATIVE

# ACCESS TO COOLING POPULATIONS AT RISK

## RURAL POOR

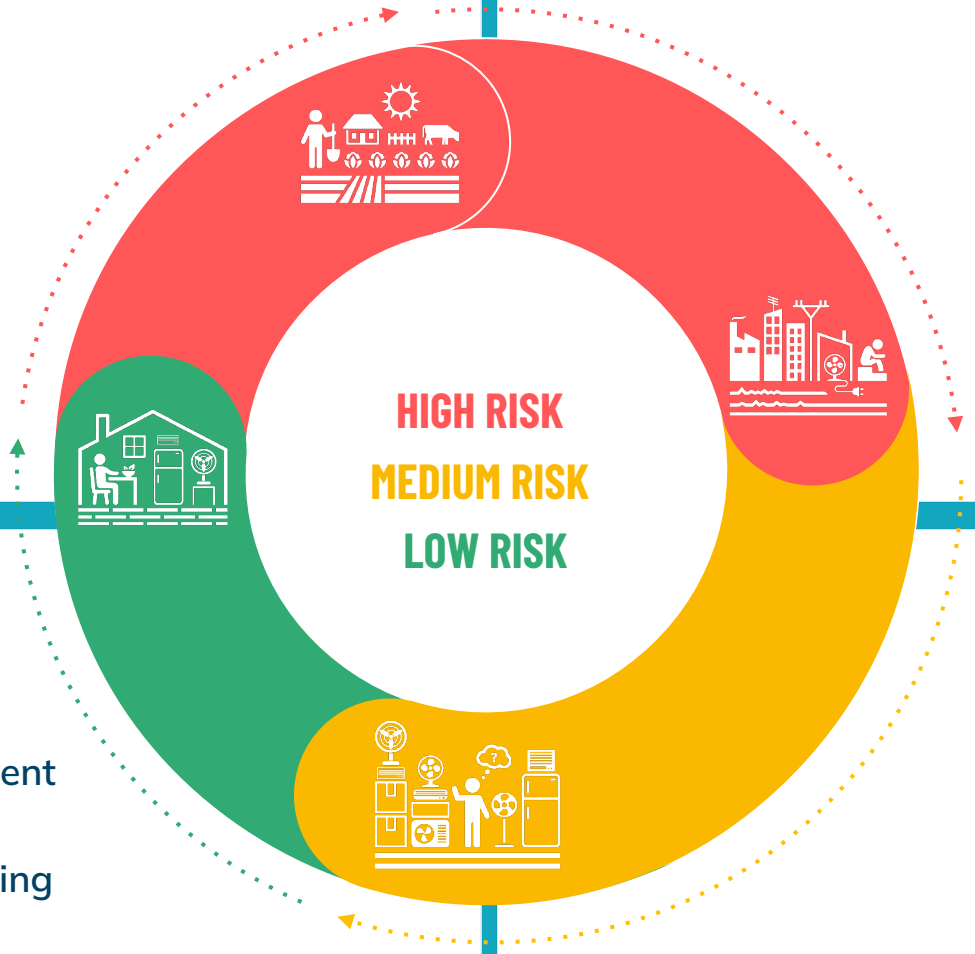
Likely to be subsistence farmers without access to an intact cold chain;

may lack access to electricity and properly stored vaccines.

## URBAN POOR

May have some access to electricity, but live in housing of poor quality;

may have a refrigerator, but food often spoils due to intermittent power.




## MIDDLE INCOME

May be able to afford a more efficient air conditioner or minimize its use;

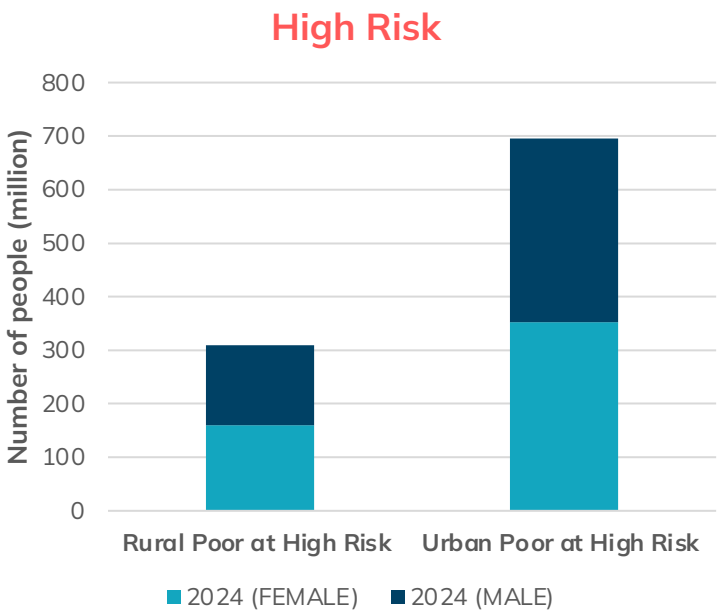
may move to energy efficient housing and working environments.

## LOWER-MIDDLE INCOME

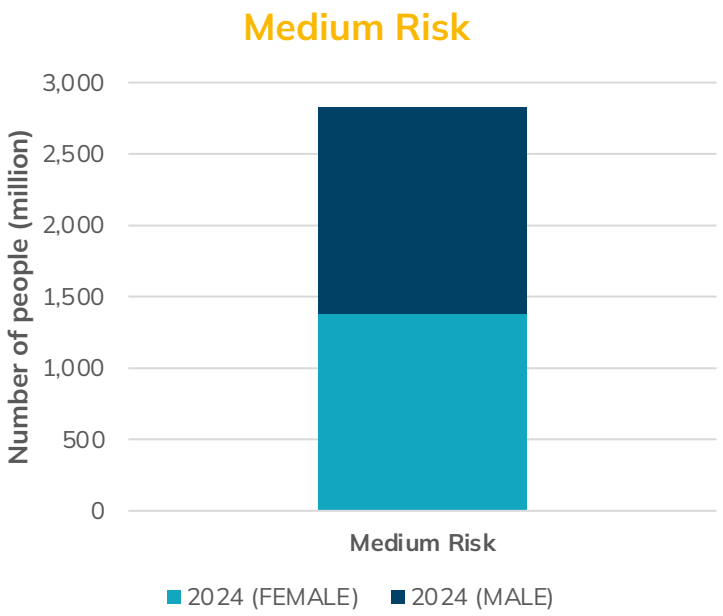
May purchase an affordable thus likely inefficient air conditioner or refrigerator that raises energy consumption and GHG emissions.

# COOLING ACCESS RISKS KEY FINDINGS 2025

**In 2024, over 1 billion people are at high risk due to a lack of access to cooling, including 309 million rural poor and 695 million urban poor.**

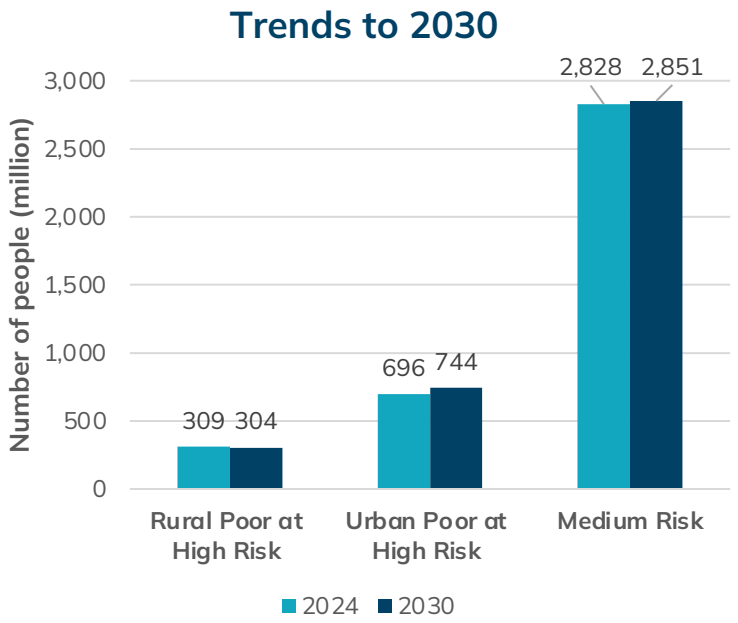



**An additional 2.83 billion people are at medium risk, facing affordability and sustainability challenges in accessing cooling solutions.**

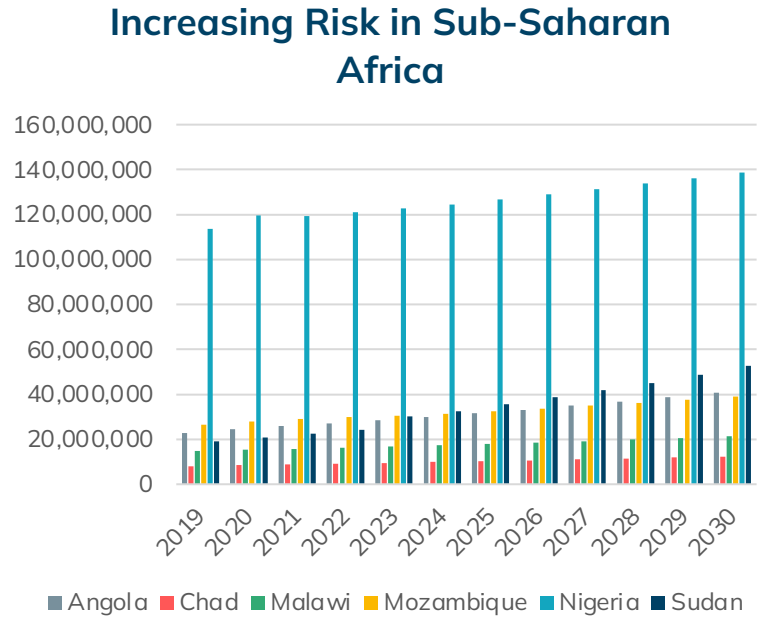


# COOLING ACCESS RISKS TRENDS TO 2030

**By 2030, the global high-risk population is projected to rise by 43.3 million to 1.05 billion, driven primarily by a 7% increase in the urban poor (an additional 48.5 million), while the rural poor decline slightly to 304.1 million — signaling a shift in vulnerability toward urban areas.**



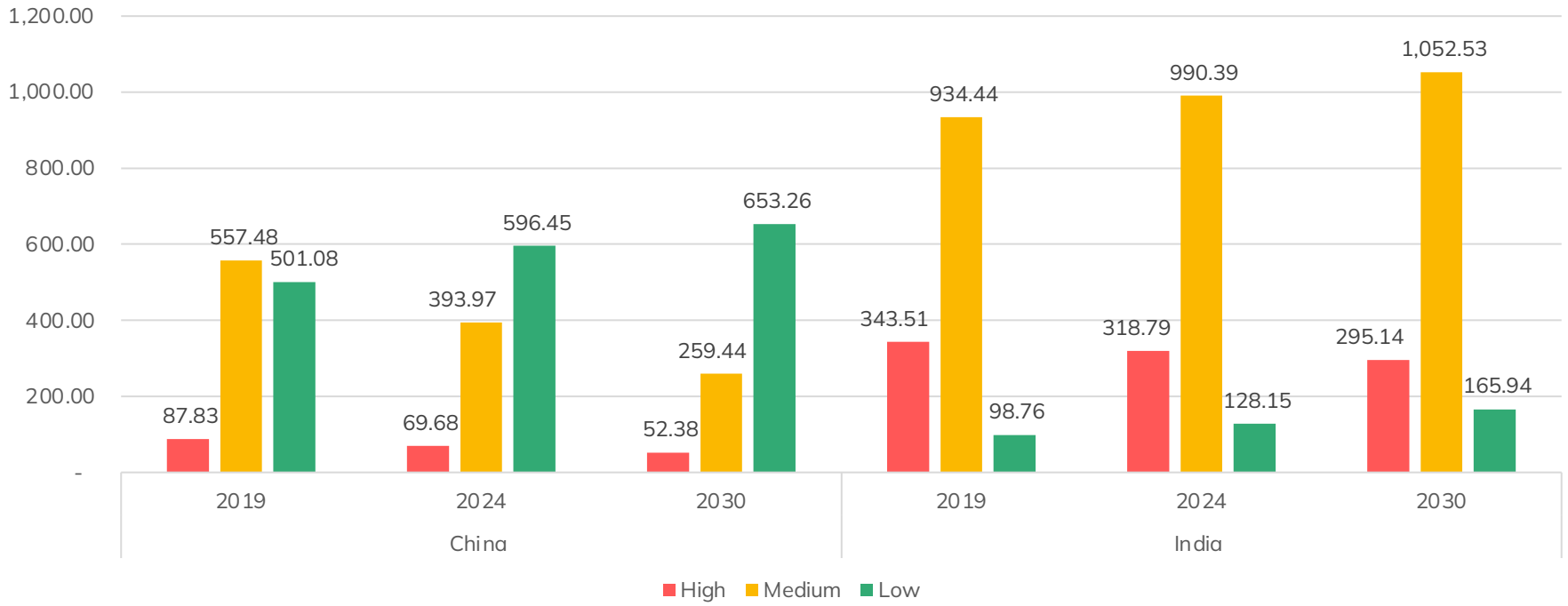

**In Sub-Saharan Africa, several countries are expected to see the highest percentage increases in high-risk populations, reflecting persistent energy access and infrastructure challenges.**



# COOLING ACCESS RISKS  SHIFTING RISKS

**Medium Risk on Rise:** **Since 2019, India's medium-risk population has grown by 55 million and is projected to surpass 1 billion by 2030 — reflecting income growth and improved energy access, but posing a major energy systems challenge under rising heat**

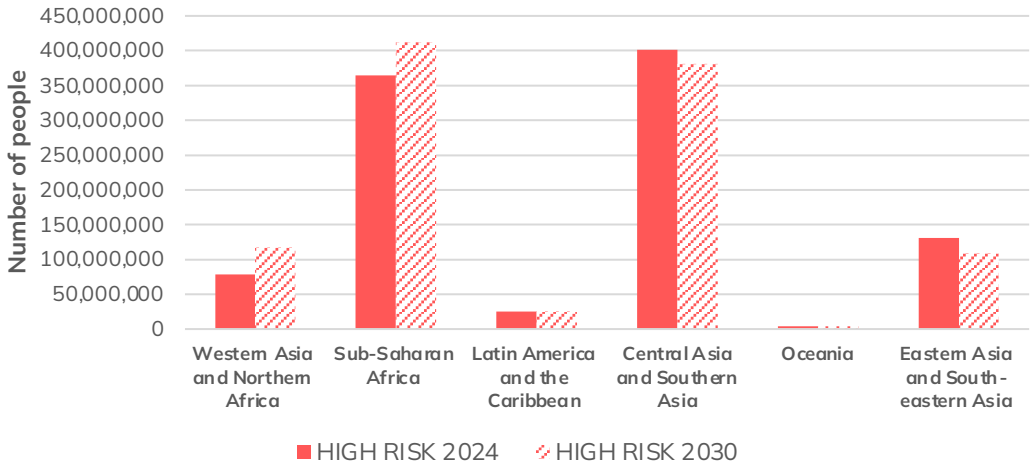
**Low Risk on Rise:** **By 2030, over 650 million people in China will be at low risk — up by 150 million since 2019 — as economic growth and urban development improve access to cooling and reduce heat stress risks.**



# COOLING ACCESS RISKS REGIONAL TRENDS

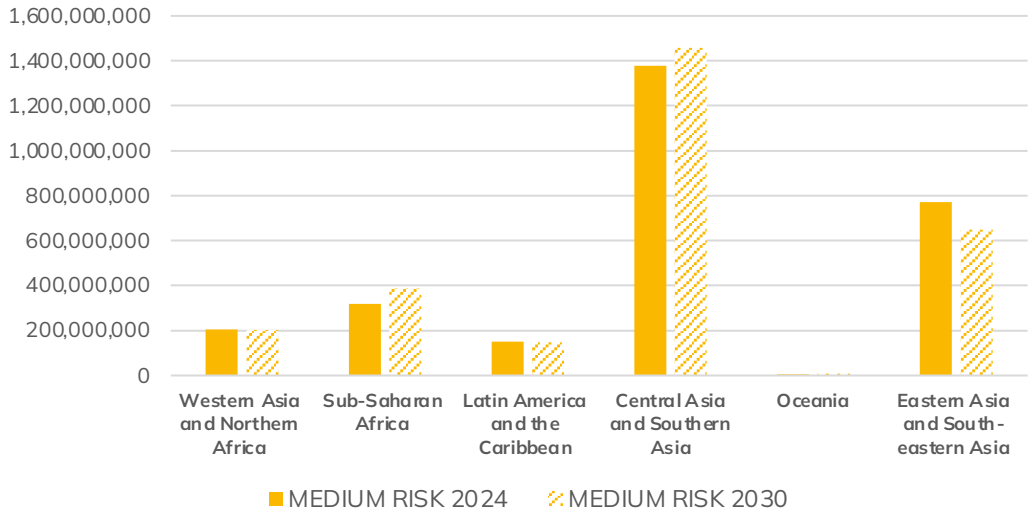
**Sub-Saharan Africa continues to have the largest number of people at high risk globally. Under current trends, both urban and rural populations face sustained vulnerability through 2030, driven by rapid population growth, persisting gaps in electricity access, and heat exposure.**

## REGIONAL TRENDS: HIGH RISK




**In Central and Southern Asia, high-risk populations are gradually declining, especially in rural areas. However, most are moving into the medium-risk group, highlighting the need for stronger action to ensure sustainable and efficient cooling access.**

## REGIONAL TRENDS: MEDIUM RISK

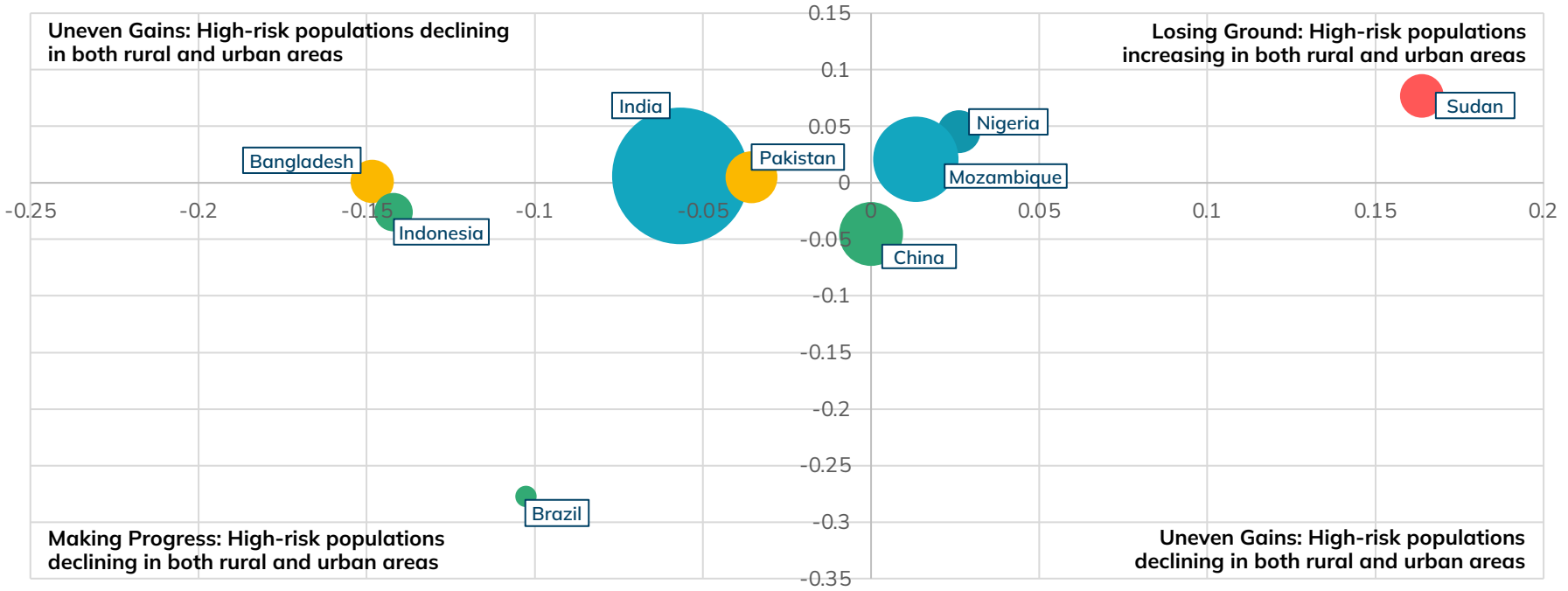


# COOLING ACCESS RISKS RISK TRAJECTORIES IN THE CRITICAL 9

**Making Progress:** China, Brazil, and Indonesia are among 9 countries reducing high-risk populations in both rural and urban areas.

**Uneven Progress:** Bangladesh and Pakistan show rural gains but rising urban risk, reflecting unbalanced progress.

**Losing Ground:** Sudan is among 26 countries with increasing high-risk populations in both rural and urban areas.



# ACCESS TO COOLING COOLING NEEDS AND SOLUTION OPTIMIZATION

## THREE COOLING FOR ALL - COOLING NEEDS

1. COMFORT & SAFETY
2. FOOD & NUTRITION
3. HEALTH & CARE

## COOLING SOLUTION APPROACH FOR OPTIMIZATION


## FOUR COOLING FOR ALL - COOLING SOLUTION PILLARS

1. TECHNOLOGY
2. SERVICES
3. POLICY
4. FINANCIAL

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# COOLING ACCESS RISKS RISK TRAJECTORIES ACROSS COUNTRIES

## 19 COUNTRIES SHOW UNEVEN GAINS

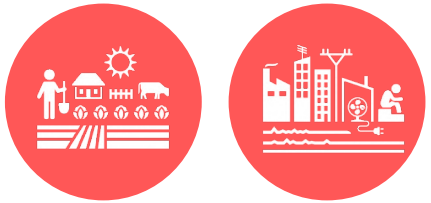
- Progress in reducing high-risk populations in either rural or urban areas, but not both.
- Examples: Bangladesh, India, Pakistan.

**Rural improvements are not enough if cities are becoming heat traps and urban progress cannot compensate for rising rural vulnerability.**

## 22 COUNTRIES ARE LOSING GROUND

- Rising high-risk populations in both rural and urban areas.
- Examples: Nigeria, Sudan, Angola.

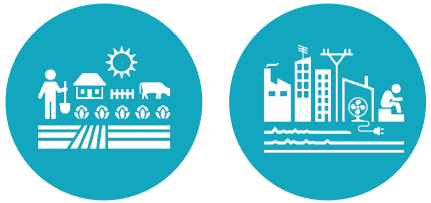
**Without urgent intervention, cooling access gaps will deepen vulnerability across both rural and urban populations.**



## 13 COUNTRIES ARE MAKING PROGRESS

- Progress in reducing high-risk populations across rural and urban areas.
- Examples: Brazil, Indonesia, China. Success reflects effective policy, electrification, and infrastructure investment.

**Progress is possible with integrated policies, investments, and technology.**



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# Thank you


## Ben Hartley

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Sustainable Energy for All



SEforALL Thanks the Funders of the Sustainable Cooling Programme

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