INTRODUCTION
Globally, 840 million people lack access to electricity necessary to power a lightbulb.

If no actions are taken, emissions from cooling are expected to double by 2030 and triple by 2100.
Each year, food loss and waste costs US$1 trillion and account for 8-10% of annual GHG emissions.

Unreliable medical cold chains threaten the effectiveness of vaccines and medical supplies.

Women and girls are often disproportionately impacted by a lack of access to sustainable cooling, notably women in agriculture.

Annual productivity losses due to heat could be as high as US$2 trillion by 2030.

At 2°C of warming and in the absence of cooling adaptation measures, hot cities could experience annual deadly heat waves.
FAST ACTION ON ACCESS TO COOLING
FAST ACTION ON ACCESS TO COOLING: DEFINING TARGETS FOR THE CRITICAL NINE

LEADERSHIP IN RWANDA
The Rwanda National Cooling Strategy outlines a holistic approach to sustainable cooling and calls for a long term cold chain strategy.

INDIA COOLING ACTION PLAN (ICAP)
- Reduce cooling demand by 20-25%
- Reduce refrigerant demand by 25-30%
- Reduce cooling energy requirements 25-40%

CHINA’S GREEN EFFICIENT COOLING ACTION PLAN
- Increase the energy efficiency of household and public building cooling by 30%
- Increase the market share of green, efficient cooling by 20% by 2022
- Increase the market share of green, efficient cooling and refrigeration by 40%
FAST ACTION ON ACCESS TO COOLING: COOLER AGRICULTURE

- 10 companies received an innovation award in 2018 for CLASP’s Global Leap Off-grid Cold Chain Challenge

- ColdHubs Nigeria: ‘Pay-as-you-store’ to extend shelf lives of perishable foods by up to 19 days

COOLER CITIES

- Continued leadership in Ahmedabad, the first city in South Asia to develop a Heat Action Plan
FAST ACTION ON ACCESS TO COOLING: BRINGING INDUSTRY TO THE FORE

• The Rocky Mountain Institute’s Global Cooling Prize for a residential cooling solution with a 5X lower climate impact at no more than 2X the cost.

• PPPs: WWF and M-PAYG mobile pay-as-you-go business model to provide small-scale fishers with off-grid solar cooling solutions in Kenya.

CAPACITY BUILDING

• India Cooling Action Plan goal of training and certifying 100,000 service sector technicians by 2023.

• UN Environment’s OzonAction and U4E twinning events and GIZ Proklima training promoting natural refrigerants and energy efficiency.

RAISING AWARENESS

• The Cool Coalition is a global, multi-stakeholder network to achieve a rapid transition to efficient and climate-friendly cooling.
TRENDS IN COOLING ACCESS
POPULATIONS IDENTIFIED IN CHILLING PROSPECTS

**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.

**LOWER-MIDDLE INCOME**
- May purchase an affordable thus likely inefficient air conditioner or refrigerator that raises energy consumption and GHG emissions.

**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.
RURAL POOR: APPROXIMATELY 365 MILLION

Likely to be subsistence farmers without access to an intact cold chain; may lack access to electricity and properly stored vaccines.

RISK INDICATORS

- Lack of access to energy
- Proportion of rural population living in poverty

FINDINGS AND TRENDS

Significant increase in rural energy access that would enable cooling, notably in India

TRENDS IN COOLING ACCESS | POPULATIONS AT RISK

2018: 470 million
2019: 365 million

105 million

HIGH RISK
**URBAN POOR: APPROXIMATELY 680 MILLION**

- 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.

**RISK INDICATORS**

- Lack of access to energy
- Proportion of urban population living in poverty

**FINDINGS AND TRENDS**

- Continued urbanization and fast-growing cities in Africa and Asia

**TRENDS IN COOLING ACCESS**

- **2018**: 630 million
- **2019**: 680 million
PROPORTION OF POPULATION LIVING ON LESS THAN USD 10.01 PER DAY OUTSIDE OF RURAL OR URBAN POVERTY

LOWER-MIDDLE INCOME: APPROXIMATELY 2.2 BILLION

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

RISK INDICATORS

- Proportion of population living on less than USD 10.01 per day outside of rural or urban poverty

FINDINGS AND TRENDS

- Purchase of cooling devices associated with income growth and associated with lower prices for entry-level units

TRENDS IN COOLING ACCESS | POPULATIONS AT RISK

2018

2.3 billion

2019

2.2 billion

100 million
12 countries, Angola, Benin, Burkina Faso, Djibuti, Guinea-Bissau, Liberia, Malawi, Mali, Mozambique, Nigeria, South Sudan and Togo, all located in Africa, have over 60% of their populations at high risk (Rural and Urban Poor).
TRENDS IN COOLING ACCESS

COUNTRIES WITH POPULATIONS AT HIGH RISK

China and India have already developed National Cooling Plans.

Bangladesh, Brazil and Nigeria are currently developing National Cooling Plans.

High risk

- India
- China
- Indonesia
- Pakistan
- Bangladesh
- Nigeria
- Mozambique
- Sudan
- Brazil

Critical 9
THE COOLING FOR ALL NEEDS ASSESSMENT
To date, discussions and solutions focus on projections for equipment sales, GDP and population without considering the full diversity of cooling needs that are necessary to provide access to sustainable cooling for all.
THE COOLING FOR ALL NEEDS ASSESSMENT is a tool recommended for governments, development institutions, and NGOs to:

- Establish a baseline for access to cooling
- Measure the full scope of cooling need and demand
- Aggregate policy, technology, and finance options
A DEEPER DIVE ACROSS 3 AREAS OF NEED
- Human comfort and safety
- Food, nutrition security and agriculture
- Health services

INDICATORS ON HOW TO TRACK PROGRESS
- Using SDGs to benchmarks progress

A TOOL TO:
- Establish a baseline for access to cooling
- Measure the full scope of cooling demand
- Aggregate policy, technology and finance options
RECOMMENDATIONS AND NEXT STEPS
RECOMMENDATIONS AND NEXT STEPS:

FOR GOVERNMENT POLICYMAKERS

• Initiate a National Cooling Plan
• Conduct a Cooling for All Needs Assessment
• Set targets and aggregate policy and technology options

FOR CITIES AND LOCAL AUTHORITIES

• Develop heat action plans and expand passive cooling in the form of green spaces and white roofs
• Use the Cooling for All Needs Assessment to identify priority actions to protect vulnerable populations
RECOMMENDATIONS AND NEXT STEPS:

FOR INDUSTRY AND BUSINESS

• Sustained technological innovation that delivers efficiency and affordability at the base of the pyramid

• Expand technician training, skills development and maintenance opportunities

FOR DONORS, DEVELOPMENT PRACTITIONERS AND FINANCIERS

• Prioritize interventions that support the needs of the most vulnerable

• Harness a diverse set of financing tools to deliver cooling for all, including PPPs
RECOMMENDATIONS AND NEXT STEPS:

TO RAISE AWARENESS AND GENERATE KNOWLEDGE ACROSS SECTORS

• Better data on agricultural cold chains
• Improved collaboration between energy and health communities
• A gender-based analysis of improved access to cooling

TO BUILD CAPACITY

• Establish training capacity and centers in vulnerable countries, either at the country or regional level

TO BENCHMARK PROGRESS AND TRACK FINANCE

• Track financial flows directed towards access to cooling for vulnerable populations
Join us in KIGALI, RWANDA at our next global Forum
26-28 May 2020

THE SUSTAINABLE ENERGY FOR ALL FORUM
#SEforALLforum
Thank you!