



THE COOL COALITION: JOINTLY FACING THE CHALLENGE OF A WARMING WORLD

OVERVIEW AND ACHIEVEMENTS TO DATE

JUNE 2022

COOLING IS A HUMAN RIGHT

In a warming world, **access to cooling is not a luxury**. Cooling underpins the ability of our societies to function effectively - it reduces loss and wastage by keeping food, medicines and vaccines at the right temperature. It also enhances people's productivity and comfort at home, school and work environments in hot and humid climates or during periods of intense summer heat. In addition, it helps us stay connected online by cooling data centers.

Today, almost 3.5 billion people cope with **cooling access challenges**. For instance, of the 2.8 billion people living in the hottest parts of the world – most of which are exposed to life-threatening temperatures for at least 20 days a year - only 8% have access to space cooling.

One billion people even face immediate risks from lack of access to cooling, the vast majority in Asia, Latin America and Africa, often living in informal settlements. Moreover, a lack of effective refrigeration and seamless cold-chain results in major food losses amounting to at least 13% of the world's food production. Tens of millions of jobs are also at stake due to heat stress, leading to major economic losses.



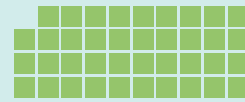
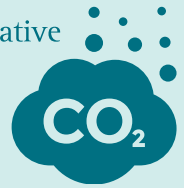
9.5
billion **appliances**
by 2050



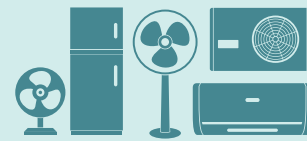
3.6 billion
cooling appliances
today

Moving to best available cooling technologies would reduce cumulative emissions by:

38 GtCO₂e
by 2030



130 GtCO₂e
by 2050

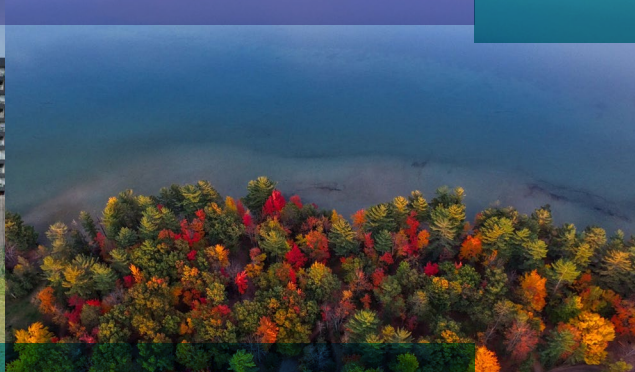


COOLING IS A MAJOR CLIMATE CONCERN

Cooling, particularly in the form of air conditioning, already **accounts for 20 per cent of the total electricity used in buildings globally**. Left unchecked, emissions from cooling are expected to double by 2030 and triple by 2100 driven by heat waves, population growth, urbanization, and a growing middle-income level class.

Whereas phasing out the consumption and production of hydrofluorocarbons (HFCs) – frequently used as refrigerants in cooling appliances such as air conditioners – in accordance with the provisions of the Kigali Amendment to the Montreal Protocol, can avoid up to 0.4°C of global warming by 2100, improvements in energy efficiency in refrigeration and air-conditioner equipment could double these climate benefits. Cumulatively, these GHG emissions amount to 4-8 years of total annual GHG emissions at 2018 levels.





HOW THE COOL COALITION EFFECTS CHANGE

The Cool Coalition supports governments and private sector in taking, or firmly committing to taking, action to meet demands for cooling in a comprehensive manner, in line with the Paris Agreement, SDG7, and the Kigali Amendment. It does this through its 3 key pillars (knowledge exchange, action, and advocacy), supported by a steering committee, which acts as an advisory body to the Coalition, as well by the Cool Hub, the UN hosted secretariat which helps coordinate partnerships and support actions across its pillars.

A STEERING COMMITTEE TO PAVE THE WAY

The Steering Committee of the Cool Coalition is an advisory body formed by over 40 country representatives, international organizations, industry leaders and global experts. It provides strategic guidance to the activities and workstreams of the Coalition, and shapes prioritization of collective action by Coalition members, who represent the majority of the global cooling sector.

THE COOL HUB: FACILITATING TRANSFORMATION

Hosted by UNEP, the Secretariat coordinates the Coalition collective outreach and advocacy efforts, assists the establishment and operation of Working Groups, and oversees efforts to develop products and initiate activities to delivering on the Coalition's Theory of Change.

KNOWLEDGE EXCHANGE:

Building an active learning community that breaks down silos and promotes cross-cutting approaches

ACTION:

Supporting governments & industry take, or firmly commit to taking, action to meet cooling demands in a comprehensive, efficient, climate-friendly manner, while connecting to global policy processes

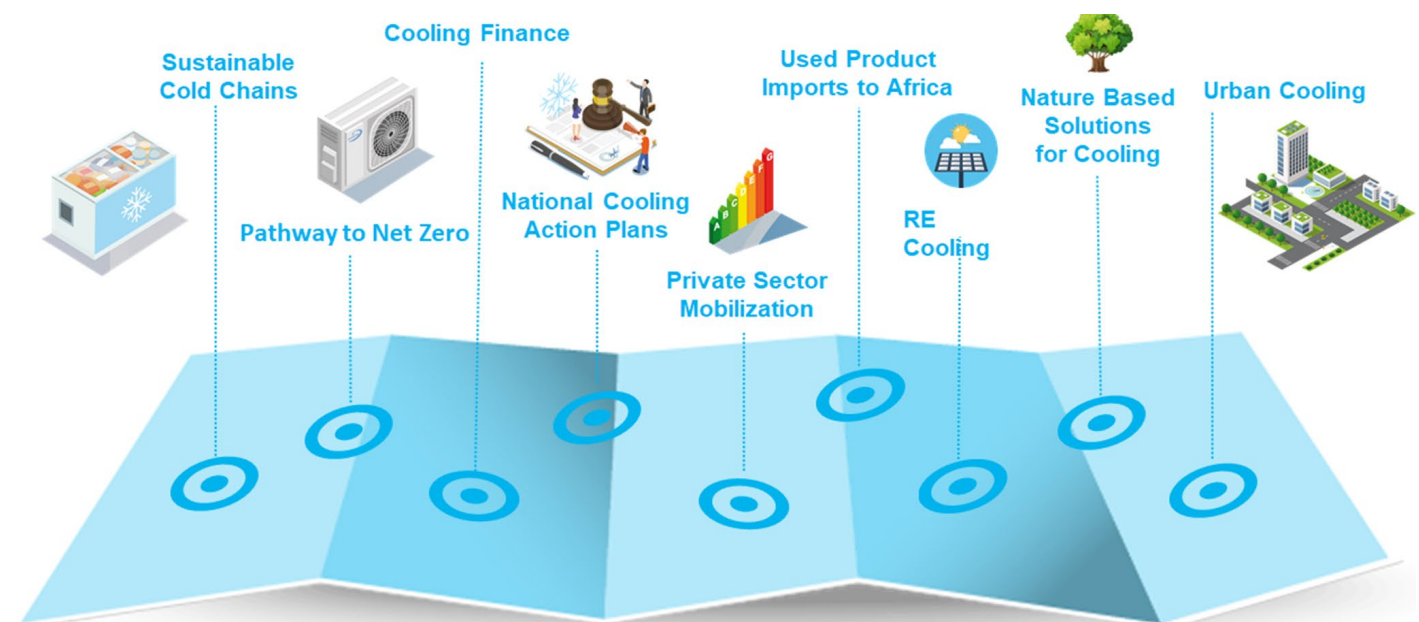
ADVOCACY:

Highlighting benefits and opportunities of efficient, climate friendly cooling

COOL COALITION'S WORKING GROUPS

Coalition members drive action through [working groups](#) in priority intervention areas:

- **National Cooling Action Plans:** experts supporting countries in developing NCAPs. Develops comprehensive methodologies, templates and tools. Supports country development, training and implementation.
- **Pathway to Net Zero:** climate action pathway for net-zero for cooling by 2050. Develops associated reports, action plans, tools and tracking. Lead advocacy and partner engagement for Race to Zero, including mobilising cooling suppliers to join the race.
- **Sustainable Cold-Chains:** global experts collaborating to accelerate sustainable cold-chains while increasing access, through creation of new knowledge, tools, trainings and high-level advocacy. Co-developed report on Sustainable Food Cold Chain Report: Opportunities, Challenges and the Way Forward and led coordinated mobilisation to put cold chain on the international agenda, including at the UN Food Systems Summit and the Meeting of the Parties of the Montreal Protocol.
- **Used Product Imports to Africa:** officials and representatives from industry and civil society taking action to fight the illegal import of used product imports to Africa, through advocacy, policy support, awareness raising.
- **Private Sector Mobilization:** coordinates private sector engagement, provides inputs and in-kind support for activities and review of deliverables, creates tools to support companies decarbonization, advocates for accelerated efforts.
- **Cooling Finance:** supports a continued exchange among MDBs and FIs on knowledge and enhanced strategic understanding of cooling within lending operations, develops guidance to help countries access finance to cooling, creates knowledge on funding facilities and proposal preparation processes.
- **Extreme Heat and Urban Cooling:** supports cities in taking comprehensive action to combat extreme heat, develops guidance and tools including [Beating the Heat: A Sustainable Cooling Handbook for Cities](#) and the [Heat Action Platform](#) and leads advocacy, training, demonstration efforts.
- **Nature Based Solutions for Cooling:** this community of practice collects case studies, best practices and raise awareness on key benefits of NbS for cooling, as well as develop guidance on financing nature to help cool cities.
- **Renewable Energy Cooling:** seeks to accelerate the shift to renewable-energy driven cooling solutions by raising awareness, increase knowledge, exchange best practices to expand this market.



COOL ACHIEVEMENT HIGHLIGHTS — KNOWLEDGE EXCHANGE PILLAR



The Cool Coalition has to date (co)produced over 30 reports, policy briefs, methodologies and toolkits spanning across sectors and intervention areas.

These products are crucial in expanding key stakeholders' actionable knowledge on efficient and climate-friendly cooling and help them make the case for (more) ambitious action.

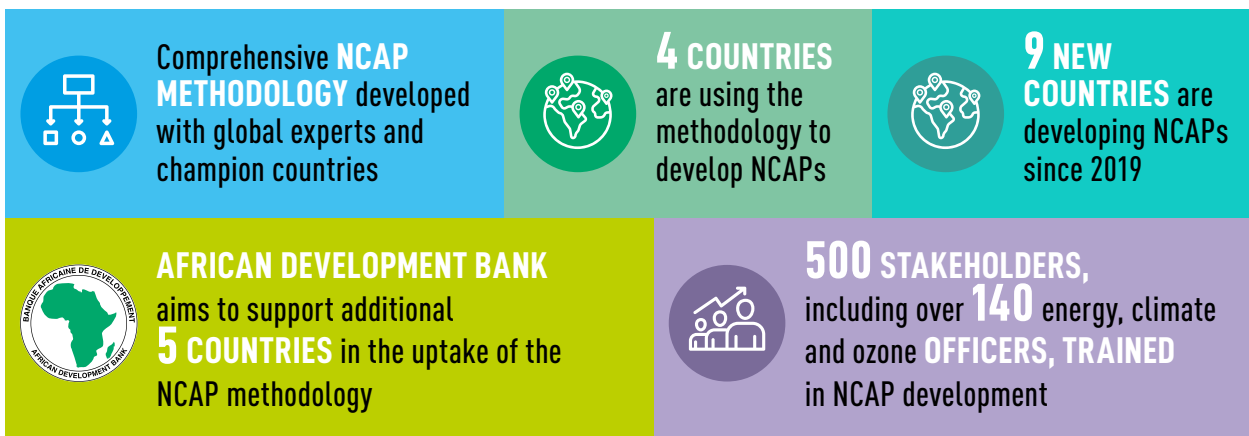
In addition, the Coalition's publications help ensure that governments, industry and civil society stakeholders have greater capacity and motivation to act on sustainable cooling opportunities.

Enhanced insight for instance in the trends and performance of companies and countries in climate friendly cooling can help inspire others to take greater action.

The Cool Coalition's knowledge pillar as such is a crucial stepping stone to enable effective action and advocacy.



NATIONAL COOLING ACTION PLANS (NCAPS) METHODOLOGY SUPPORTS COUNTRIES TO IDENTIFY PATHWAYS TO COMPREHENSIVELY ADDRESS COOLING



NCAPs are an important first step for countries to set up a framework that can help catalyze integrated and comprehensive action on cooling of buildings as well as cold chains. NCAPs can be used as a long-term strategy to achieve NDCs targets and in the development and deployment of the Kigali Implementation Plans. In addition, several countries have leveraged their NCAPs to attract greater levels of finance for implementation of cooling actions.

The NCAP methodology is a direct result of a 2019 call by the UN Secretary-General called for countries to develop NCAPs, recognizing their importance in assisting countries with identifying pathways which both reduce cooling emissions and improve cooling access.

The NCAP working group responded to this call by creating a comprehensive, modular and [*Holistic Methodology for developing a National Cooling Action Plan*](#) which launched in 2021 and covers various cooling sectors and end-uses, and both met and unmet cooling needs.

To support its launch, Cool Coalition partners organized a series of workshops between June and September 2021, capturing both best practices and lessons learned from frontrunner countries in developing NCAPs, as well as to build capacity among national policymakers and stakeholders in developing and implementing National Cooling Action Plans in various global regions.

This included training of energy, climate, and ozone officers as well as finance institutions and industry on the application of the NCAP methodology through three regional workshops for the Asia Pacific, Latin America and Caribbean, and Africa regions, establishing a global NCAP community.

Cool Coalition convened the following organizing partners to jointly deliver these trainings: UN Economic and Social Commission for Asia and the Pacific, UN Development Programme, UN Economic Commission for Latin America and the Caribbean, UNEP OzonAction, United for Efficiency, Kigali Cooling Efficiency Programme (now Clean Cooling Collaborative), Sustainable Energy for All.

At least 33 countries have committed to or are in the process of developing NCAPs. As a result of the NCAP in Cambodia, using the methodology, Cambodia was able to access climate finance to implement passive cooling solutions. This includes countries such as Viet Nam, Cambodia, Indonesia and Pakistan which are now using the NCAP methodology to develop their own NCAPs. Cambodia for instance has developed a comprehensive NCAP that explicitly includes action on passive cooling as a low-cost and high-potential albeit under-addressed area of cooling improvements and accessed climate finance. This in turn has enabled Cambodia to access climate finance to help implement passive cooling solutions at a national scale.



FROM NCAP DEVELOPMENT TO PASSIVE COOLING STRATEGIES IN CAMBODIA

Space cooling in Cambodia is set to double in the next 20 years. Extensive national government and expert consultations, including during Cambodia's NCAP development, have pointed towards passive cooling solutions as a critical pathway to help reduce cooling energy loads and provide thermal while accelerating the access to climate-friendly cooling.

UNEP and ESCAP are partnering in the context of the Cool Coalition to support the Government of Cambodia in pursuing impactful measures to reduce cooling demand in buildings and cities with a focus on Passive Cooling Solutions (PCS) and mitigation of the Urban Heat Island Effect.

The project comprises policy interventions to integrate PCS in building energy regulations; demonstrate PCS in a pilot project; as well as deliver awareness raising and capacity building for large scale replication. The revised NDC of Cambodia also includes measures to improve efficiency in buildings through pushing for effective building codes, energy efficiency requirements for appliances and equipment, and so on. Based on estimates, the project implementation would contribute cumulatively around 0.5 MtCO₂eq reduction by 2030.

29 COUNTRIES HAVE COMMITTED TO DEVELOPING NCAPS:



CLIMATE ACTION PATHWAY EQUIPS GOVERNMENTS AND INDUSTRY TO TAKE ACTION IN LINE WITH NET-ZERO EMISSIONS COOLING



NET-ZERO COOLING Pathway developed with buy-in from industry to set a north star for action with clear **2050 OBJECTIVES**



14 SUPPLIERS join the Race to Zero due to the Cool Coalition's efforts to increase industry knowledge of the **PATH TO NET ZERO COOLING**

To help mobilize commitments from industry and other critical stakeholders on net-zero cooling, the [Climate Action Pathway for Net Zero Cooling](#) was launched in late 2020 as a collaboration between K-CEP, Cool Coalition, Carbon Trust and the COP26 High-Level Champions. The Pathway outlines the longer-term vision out to 2050 and needed interventions for a 1.5-degree climate-resilient world.

The Pathway focuses on three main impact areas: passive cooling, super-efficient equipment and appliances, and ultra-low global warming potential (GWP) refrigerants and insulation foam gases, and includes short, medium and long-term goals. These actions are supported by a dedicated working group.

The Pathway is accompanied by an [Action Table](#) that details key milestones to achieve it, and a [Cool Calculator](#) - an open source Excel-based 2050 scenario tool - to run calculations on key aspects of decarbonisation, and identify solutions for particular regions and sectors.

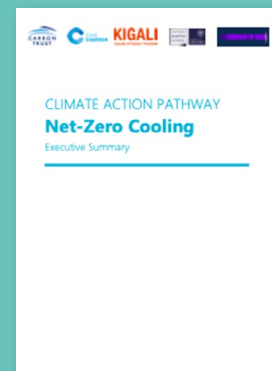
To support the pathway, the EIA published a [Pathway to Net Zero Cooling Product List](#). The product list provides a selection of products across all major cooling sectors, with a focus on natural refrigerants with ultra-low Global Warming Potential (GWP) and appliance energy efficiency to help stakeholders make sustainable cooling choices.

Leveraging this set of tools, the Cool Coalition has organised several industry roundtables and events to mobilize action. As a result, by COP26, **14 cooling suppliers, representing 28% of the residential AC market**, had joined the Race to Zero.

In 2021 the Cool Coalition also became an official accelerator to the [Race to Zero](#) alliance, which unites leading net zero initiatives. In this role it helps accelerate global efforts and commitments on sustainable cooling.

"Cooling is becoming increasingly critical to strengthen our resilience to a warming world. National, local and business commitments to reducing emissions urgently need to translate into implementation that can keep the world cool and achieve net zero in time,"

Nigel Topping, COP26 High Level Climate Champion





GLOBAL COOLING STATUS AND OPPORTUNITIES REPORT TRACKS AND GUIDES COUNTRY ACTION ON THE PATH TOWARDS NET ZERO



FIRST DEDICATED GLOBAL COOLING PROGRESS REPORT



In addition to assessing the impact of implemented cooling actions on the 2030 emission gap, the report will also serve as a beacon for governments looking to prioritize and act on readily available opportunities

Recognizing the importance of cooling in tackling climate change and achieving the SDGs, a considerable number of initiatives have been announced in recent years.

To create better insight on implemented country actions, their overall effect on GHG emissions and progress against the net zero cooling pathway, the Cool Coalition is in the process of developing a Global Cooling Status and Opportunities Report with leading experts and organizations.

The report will quantify the aggregate effect of current country cooling actions in terms of global annual GHG emissions in 2030, and how this emission level compares to net-zero cooling emission pathways by 2050.

It will also evaluate how country action and ambition can be enhanced, and implementation accelerated, to bridge the emissions gap and what is the potential mitigation contribution of these actions.

The report data can provide useful input to the UNFCCC Global Stocktake, and will contribute to the advocacy to countries on the inclusion of efficient, climate-friendly cooling activities in their future enhanced Nationally Determined Contributions and other climate related strategies.

In addition, the Cool Coalition intends for the report to act as a key source on cooling trends and performance to help motivate stakeholders in government, industry and finance to take greater action faster towards net-zero by 2050, and agree on common approaches to define and track their joint progress.

BEATING THE HEAT HANDBOOK HELPS CITIES STAY COOL



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



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

Cities are where the cooling challenge is felt most acutely. Urbanization in combination with population growth is adding an estimated 2.5 billion urban citizens by 2050, with close to 90% of this increase concentrated in Asia and Africa.

Currently many cities experience the so-called ‘**urban heat island effect**’. At the same time, increased urbanization and rising incomes also mean demand for cooling is rising far more rapidly in cities with direct consequences for both city residents and local electricity systems.

To tackle this challenge, the Cool Coalition launched a new handbook in 2021 at COP26 - [***Beating the Heat: A Sustainable Cooling Handbook for Cities***](#) - to support cities in developing Urban Cooling Action Plans.

The handbook provides a comprehensive overview of ways to cool cities sustainably and equitably and contains best practices and lessons learned based on over 80 case studies.

As a result of the handbook and the efforts of the Extreme Heat and Urban Cooling working group, **16 cities in 5 countries** are looking to pilot the approaches and/or integrate cooling into their city masterplans.

In addition, Cool Coalition partners that are directly working with cities such as the Global Covenant of Mayors (GCOM), the Mission Innovation (MI) Cities Mission, C40, and the Extreme Heat Resilience Alliance are now mainstreaming comprehensive cooling actions as recommended in the guide as part of their day-to-day work with cities and have the potential to reach thousands of local governments.

In doing so, the Cool Coalition through the knowledge it helps to provide and disseminate - including through capacity building workshops -, directly inspires greater action on cooling in cities.



DELIVERING CLIMATE-FRIENDLY COOLING FOR INDIAN CITIES – CREATING ENERGY AND SOCIAL RESILIENCE

Extreme heat has already hit India hard and is expected to only increase in frequency and intensity. In the coming decade, climate change could expose up to 200 million people in India to lethal heatwaves, as well as reduce its GDP by 2% and cause the loss of an estimated 34 million jobs.

To protect the health and productivity of urban dwellers, Cool Coalition partners UNEP and RMI in collaboration with the Government of Denmark, the Ministry of Housing and Urban Affairs and its National Institute of Urban Affairs (NIUA) are developing [a program to support 100 cities](#) in taking comprehensive action on extreme heat and the rapidly rising cooling demand, the latter which is projected to increase 20-fold by 2050.

By supporting these 100 cities to develop and implement climate-friendly cooling solutions, the program can deliver up to 50 million tCO₂.eq savings annually and help increase resilience to extreme heat for up to 100 million at-risk people in India.

URBAN COOLING IN VIET NAM – TURNING IDEAS INTO ACTIONS

Viet Nam's rapid urbanization and economic growth are accelerating cooling demand in cities and the urban heat island effect. As a result, the country's cooling emissions are expected to more than double by 2030. Greater municipal intervention on cooling and extreme heat in Viet Nam's cities is a crucial but missing element to provide greater albeit climate-friendly access to cooling.

Recognizing the importance of cooling, the government has now highlighted cooling in their revised NDCs. It has also teamed up with UNEP and GGGI to final stages of integrating urban cooling in its national climate change strategy and then its NDC implementation plan. This will build upon the best practices described in the [Beating the Heat](#) handbook. This includes incorporating a greater focus on urban greening to tackle extreme heat, passive cooling solutions as part of building design, energy efficiency and HFC phase-down for cooling equipment and appliances, as well as expanding cold chain infrastructure for robust supply chain.

In addition, with support from UNEP and GGGI, the Vietnamese government is supporting three [pilot cities](#) - Can Tho, Tam Ky and Dong Hoi – to develop urban cooling plans and in doing so, integrate action on cooling and extreme heat into a range of municipal plans and masterplans along with the establishment of a cooling fund for cities to unlock stable municipal budgets for cooling interventions.

HEAT ACTION PLATFORM: A ONE-STOP SHOP TO HELP CITIES BEAT THE HEAT

The Cool Coalition has joined forces with the [Extreme Heat Resilience Alliance](#) and partners to develop an online tool that provides an easily accessible, actionable one-stop resource for city officials on implementing solutions to strengthen heat-resilience in urban areas, based on key insights from [Beating the Heat: A Sustainable Cooling Handbook for Cities](#).

Developed with and for cities, the [Heat Action Platform](#) provides a roadmap to assess, plan, implement and evaluate different bespoke heat resilience strategies. It includes technical resources, case studies, a curated inventory of solutions, as well as guidance on monitoring and evaluation frameworks. Cities across the world are already using the tool to protect the health and livelihoods of urban communities from the effects of extreme heat, while driving down emissions from unsustainable cooling practices.

COOL ACHIEVEMENTS: LEADING THE WAY FROM ADVOCACY TO ACTION



157 million unlocked as part of
GCF – WBG Finance Facility



**Mainstreamed sustainable cold chains in
the UN Food Systems Summit Agenda**



**Strengthening Food Security
in INDIA**



**5 country-stakeholder partnerships
to drive action**

The Cool Coalition's synergetic efforts in both pursuing advocacy and driving action jointly pave the way for instilling greater confidence in actors to raise ambition in their national NDCs, adopt comprehensive cooling approaches and raise ambition in meeting the net-zero cooling challenge. Moreover, by bringing together and connecting actors across the field, stakeholders benefit from shared learning and more streamlined approaches.

DRIVING ACTION – LEADING THE FIELD

The Cool Coalition act as a **neutral broker** to help drive action, supporting governments and business to access international resources and establish partnerships with members to support implementation.

In doing so, it helps to identify and support transformative actions to overcome critical hurdles to the uptake of clean and more efficient cooling, as well as helps increase the confidence and ability of actors to raise ambition on cooling through integration in their country NDCs.

As a result of the Cool Coalition's efforts for instance, **the pool of global financial support available for cooling action has expanded considerably**. This has been supplemented by a Cooling Finance Working Group to deliver matchmaking between policymakers and MDBs and provide guidance on how to best structure cooling efforts to attract finance.

«Joining the Coalition has been one of the best decisions that the GCF has made so far: it shifted the way we look at cooling projects and energy efficiency as a whole. It helped bring the World Bank - Green Climate Fund Cooling Facility together: conversation started within the Cool Coalition and led to the development of a fully-fledged USD700 million facility. We are really looking forward to continuing this partnership going forward.» - Sabin Basnyat, Financial institutions Manager, Green Climate Fund

The Cool Coalition also works with countries to demonstrate new approaches and support them to act comprehensively in under-addressed areas, such as cold chains and urban cooling.

CONDUCTING ADVOCACY – BRINGING ALONG THE FIELD

The Cool Coalition delivers, supports and partakes in a wide range of [events](#). The Cool Coalition is thereby seen as the **primary global platform to facilitate and accelerate action** on efficient, climate friendly cooling by key stakeholders.

As part of this, the Cool Coalition also **engages in key political processes** to highlight the importance of cooling, maintain visibility for the sector and raise the level of ambition. Examples of such high-level political processes and campaigns comprise:

- G20
 - New Urban Agenda
 - Food Systems Summit
 - UN Environment Assembly
 - UNFCCC Processes including the Marrakesh Partnership for Global Climate Action
 - Race to Zero and Race to Resilience
- The Cool Coalition is an official Race to Zero Accelerator** [racetozero.unfccc.int](https://www.racetozero.unfccc.int)

These efforts have collectively triggered a narrative shift, ensuring that sustainable cooling is now high on the international agenda.

FROM ADVOCACY...



MAINSTREAMING SUSTAINABLE COLD CHAINS AT THE UN FOOD SYSTEMS SUMMIT

As a result of the Cool Coalition's advocacy work, the topic of sustainable cold chains was firmly anchored in the UN Food Systems Summit and its Pre-Summit's narrative and agenda. Cool Coalition-led mobilisation ensured the inclusion of Community Cooling Hubs as a transformative solution at the Summit.

It also **helped strengthen partnerships** with FAO, the Ozone Secretariat, and Italy resulting in several collaborations to promote action on sustainable cold chains; and in general, directly raised awareness of sustainable cold chain with UN member states.

TO ACTION...

STRENGTHENING FOOD SECURITY WITH SUSTAINABLE COLD CHAINS

In India, the lack of continuous cold chains leads to an estimated 15-20% of food loss. At the same time, farmers receive less than half the wholesale price for their produce and for perishable goods. Increasing access to sustainable and continuous cold chain infrastructure is key to tackle these challenges and is prioritized by the Indian government including through its India Cooling Action Plan (ICAP) and the Doubling Farmers Income Initiative. UNEP with partners have launched a comprehensive Cold Chain Program in India as a contribution to Cool Coalition and to support ICAP implementation. This includes innovative demonstration projects, new business models and investments with Energy Efficiency Services Limited, packhouse guidelines with Bureau of Energy Efficiency, state cold chain plans for two pilot states and capacity and technical support to national cold chain resource centres.

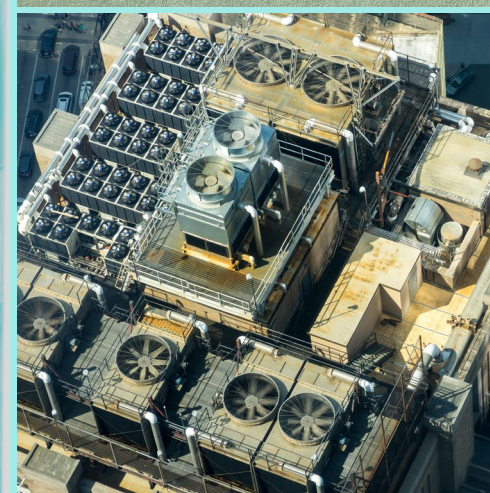
The first step in this program has been the Prana project which is developing as an integrated, market linked and localized cold chain service. The project will help reduce food loss, expand market connectivity, protect the quality and safety of food, increase farmers revenues as well as the resilience of rural communities in the Villupuram District in Tamil Nadu, India.

Under development by UNEP, Auroville and Tabreed, the Prana project will demonstrate commercial viability of an innovative packhouse model and that is highly efficient, powered by 100% renewable energy and based on circular economy principles with a Cooling as a Service model (CaaS). The packhouse will have a modular design and will expand its capacity as operations and demand increase. The project has finalized its pre-feasibility study and is now detailing its business plan and building investor interest.

ENABLING PARTNERSHIPS TO CATALYZE ACTION

The Cool Coalition supports several governments and businesses to access resources and partnerships to support implementation. Examples include:

- In **India**, supporting implementation of the India Cooling Action Plan by bringing together RMI, Alliance for Energy Efficient Economy, Energy Efficiency Services Limited, ICLEI – Local Governments for Sustainability, Power for All;
- In **Ghana**, joining forces with the national government and international experts to bring the import of illegal used cooling products to the attention of international actors;
- In **Viet Nam**, streamlining comprehensive action on cooling with GGGI, UN ESCAP, SEforALL, WBG, UNEP NDC Action;
- In **Morocco**, supporting the country's efforts to reduce emissions from the food cold chain and develop a net-zero roadmap for the agro-industry with the Energy Transition Council;
- In **Egypt**, supporting the scale up of district cooling by joining forces with UNEP OzonAction, District Energy Initiative, Copenhagen Center on Energy Efficiency, International Finance Corporation, European Bank of Reconstruction and Development.



JOIN US IN BRINGING ABOUT A COOL WORLD

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COOL COALITION 2021 HIGHLIGHTS: A "COOL" YEAR



WATCH



53 enhanced NDCs have integrated sustainable cooling