Summary Report

COP 28 Side Event
Passive Cooling and Nature-based Solutions for Building Comfort

5 December, 15:45-16:30 (GST)
Dubai, United Arab Emirates

1. Introduction

Description

Ensuring comfortable, cooled indoor temperatures in buildings is indispensable to our healthy dwelling. However, higher energy consumption for space cooling leads to higher GHG emissions. Since 2000, energy demand for space cooling has risen at an average of about 4% per year, and the number of residential units in the cooling operation has tripled, reaching more than 1.5 billion in 2022. To address this, passive cooling - a practice of using non-mechanical technology, design elements, and nature-based solutions to keep a space cool without using energy - is a fundamental solution. Passive cooling measures can curb the growth in demand for cooling capacity in 2050 by 24 per cent, result in capital cost savings in avoided new cooling equipment of around US$1.5 trillion to US$3 trillion (US$ 2020 value) and reduce emissions by 1.3 billion tons of CO_2e.

Being convened by the United Nations Environment Programme, UNEP-led Cool Coalition and Global Alliance for Buildings and Construction (GlobalABC), this side event aims to bring together key stakeholders to discuss current challenges and solutions of adopting passive cooling solutions for public/private building projects from the political, financial and technological perspectives with some best practices. Participants will have the opportunity to share perspectives on how we could address sustainable cooling and thermal comfort in buildings in an energy-efficient and resilient way with affordable costs.

The side event will contribute to raising awareness and create a strong momentum of collective action towards sustainable cooling for buildings by bringing together like-minded stakeholders interested in accelerating passive cooling solutions.

Agenda & Speakers

1	Welcome (**Ms.Shikha Bhasin**, Senior Advisor, UNEP/Cool Coalition)
2	Presentation - Setting the scene (**Mr.Omar Abdelaziz**: Assistant Professor at the American University in Cairo)
3	keynote (**Ms.Patricia Barandun,** Head of Section Migration and Forced Displacement, Swiss Agency for Development and Cooperation (SDC)):
4	Panel Discussion Panellists: (**Mr.Hak Mao**: Director of the Department of Climate Change, Ministry of Environment, Government of Cambodia) (**Mr.Hongpeng Liu**: Director, Energy Division, UN Economic and Social Commission for Asia and the Pacific (UN ESCAP)) (**Ms.Sunita Purushottam**: Head of Sustainability at Mahindra Lifespace Developers Ltd.) (**Ms.Michelle Farrell**: Senior Operations Officer, International Finance Corporation, IFC) Moderator: (**Ms.Shikha Bhasin,** Senior Advisor, UNEP/Cool Coalition)
5	Q&A
6	Closing (**Mr.Jonathan Duwyn**, Programme Officer, UNEP/Global Alliance for Buildings and Construction)

Key Takeaways

1. Passive cooling should reduce as much as possible the demand for mechanical cooling.

2. Passive cooling can bring thermal comfort to low-income populations who cannot afford air-conditioners.

3. As heatwave is seriously affecting vulnerable populations, providing adaptational solutions are essential. Passive cooling is demonstrated through some of the projects that it can reduce indoor temperatures and energy consumption largely compared with transitional mechanically cooled buildings. Also, more women should be active in this male-dominant sector to accelerate environment-friendly building through passive cooling solutions.

4. Due to today's urbanisation and increasing heatwaves in Cambodia, cooling demands in the cities are rapidly growing. In order to produce a productive and comfortable indoor environment with less energy, passive cooling solutions, as well as nature-based solutions, play critical roles. Cambodia government is addressing this by introducing effective national policies and financial incentives with an aim to achieve the objectives of the NDC.

5. From the regional perspective, collaborations between countries in tropical climates are important because each country has experience with its own passive cooling technologies responding to its own environment. Although we still need to rely on the hybrid solution, it is significant to reduce the dependence on mechanical solutions and accelerate passive cooling for energy efficiency and building comfort.

6. With the growth of concrete and glass buildings in cities in India, it is important to change the mind of the building sector to shift to climate-responsible design. Building orientation, shading, open ventilation, insulation, and greenery are the necessary features to provide comfortable and low-energy buildings to customers from the real estate perspective, which leads to the achievement of our net zero goal.

7. From the financial perspective, the Edge green certification system is a useful tool for financiers/developers in developing countries to assess green building projects in terms of costs and energy efficiency. The Tech Emerge is another programme to connect innovators and organisations in emerging markets to pilot green solutions. Expanding funding is a critical mission to drive this effort and to provide comfortably cooled buildings with passive solutions.

8. In a large-scale project that can involve vulnerable populations, the design of community space is a key aspect – providing green, naturally ventilated, cooled public space is an important aspect as well as producing passively designed buildings, which can generate community vibrancy in the project site. Also, financially speaking, passive design is the most cost-effective solution when we address such projects.

9. Passive cooling is not an innovative technology; rather, it is from the ancient knowledge that old people used to use to adapt to their particular climate conditions. Now let us go back to such vernacular technology.

10. The Global Alliance for Buildings and Construction (GlobalABC) and Cool Coalition have a common interest in accelerating passive cooling for buildings. This joint event has generated a great moment to expand our collaboration much further to decarbonise the building sector through passive cooling solutions.

2. Communications and pictures