

JULY 2026

NEWSLETTER

THE LATEST NEWS AND UPDATES FROM MEER

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Welcome to the July 2026 edition of the MEER Newsletter

Welcome to the July 2026 edition of the MEER Newsletter. This month, we share updates from our expanding heat-health monitoring work in Freetown, hands-on climate adaptation learning in India, and growing international conversations around practical cooling solutions.

As extreme heat continues to affect communities around the world, MEER's work is focused on turning observation into evidence, and evidence into scalable interventions that can protect people, buildings, and communities in a warming world.

A MESSAGE FROM DR. YE TAO

From Observation to Evidence: Advancing Cooling Systems and Heat-Health Research

Dear Friends and Supporters,

As I write this month's briefing, much of the world is once again experiencing extraordinary heat. Heatwaves are becoming more frequent, lasting longer, and affecting more people than ever before. This reality reinforces why MEER's work has never been more important.

Over the past several months, our team in Sierra Leone has been conducting one of the most ambitious heat-health monitoring programs in MEER's history. Working in extremely challenging conditions, often under intense heat, our researchers have been collecting detailed physiological and environmental data to better understand how heat affects people in their daily lives. Collecting high-quality scientific data under these conditions requires commitment, patience, and a shared belief that understanding heat is essential if we are to protect communities in a warming world.

Heat exposure is far more complex than simply measuring air temperature. The duration of exposure, timing of exposure, recovery periods, humidity, and the characteristics of the surrounding environment all appear to influence how the body responds.

To support this work, MEER has developed its own advanced heat-monitoring systems, environmental sensing platforms, and data collection technologies specifically designed for deployment in challenging real-world conditions. Rather than relying solely on conventional weather measurements, these systems allow us to simultaneously monitor environmental conditions and human physiological responses, providing a far more detailed picture of how heat affects people in their daily lives.



Our sensor platforms are capable of capturing high-resolution information on temperature, humidity, heat exposure, cardiovascular responses, activity levels, and other key indicators. By combining cutting-edge monitoring technologies with community-based field research, we are building what I believe will become one of the most valuable datasets yet assembled on heat exposure, human health, and adaptation in vulnerable communities. Through this work, MEER is helping to build the scientific foundation for more effective and evidence-based heat adaptation strategies around the world.

The next two months will also be busy on the international front. In July, I will travel to Xi'an, China, to participate in the Second International Symposium on Solar Radiation Modification. The symposium will bring together scientists, engineers, universities, research institutes, industrial partners, policymakers, and international organisations to discuss advances in climate intervention research, surface radiation approaches, renewable energy applications, governance frameworks, and international cooperation. MEER has been invited as a proposed co-organiser alongside a number of leading Chinese research institutions and partners.

Following the symposium, I will travel to India to participate in a high-level climate gathering organised through Climate Hub and Dr. Soumitra Das. This invitation-only event is expected to bring together scientists, senior government officials, policymakers, philanthropic organizations, and climate leaders from across the region and beyond.

I have been invited to speak specifically about passive cooling technologies and climate adaptation. To me, this reflects the growing international interest in practical solutions that can help communities respond to increasing heat exposure today, not decades from now. For many years, climate discussions have focused largely on emissions. Increasingly, however, there is recognition that we must also focus on protecting people from the impacts that are already occurring. Heat is one of those impacts. Developing affordable and scalable cooling solutions may prove to be one of the most important challenges of the coming decades.

Around the world, I see researchers, engineers, community leaders, and policymakers beginning to engage seriously with the challenge of heat adaptation. Most importantly, I see opportunities for science and innovation to make a meaningful difference in people's lives.

Thank you, as always, for your support of MEER and our work.

Warm regards,

Dr. Ye Tao

Founder and Chief Scientist

MEER – Mirrors for Earth's Energy Rebalancing

NEWS FROM AFRICA

Heat-Health Monitoring Program Continues to Expand in Freetown

MEER's heat-health monitoring program continued throughout June and July, with our research teams collecting data from community participants across Freetown as part of our ongoing effort to better understand the impacts of extreme heat on human health.

Using a combination of physiological measurements, environmental monitoring, and advanced wearable sensor technologies, MEER researchers are gathering detailed information on how people respond to heat exposure in real-world conditions. Participants are being monitored for indicators including heart rate, blood pressure, oxygen saturation, activity levels, and thermal exposure, while environmental conditions such as temperature and humidity are recorded alongside health data.



This work is helping MEER build one of the most detailed field datasets yet assembled on heat exposure and health in vulnerable urban communities. By moving beyond simple weather measurements and examining how the body responds to heat over time, we hope to improve understanding of heat stress, recovery patterns, and the factors that influence individual vulnerability during periods of extreme heat.

A central objective of the program is to evaluate whether practical cooling interventions can deliver measurable health benefits. As MEER's passive cooling technologies are deployed and monitored, the research team is assessing whether reductions in heat exposure lead to improvements in physiological indicators and overall wellbeing. The findings will help strengthen the evidence base for low-cost heat adaptation measures that can be implemented in communities facing increasing heat risks.



The program is also building local scientific and technical capacity. Sierra Leonean researchers and field staff continue to receive training in environmental monitoring, data collection, sensor deployment, equipment management, and community engagement, creating skills and experience that will support future climate adaptation research in the region.

As data collection continues, MEER expects the program to generate valuable insights into the relationship between heat exposure, health outcomes, and cooling interventions. These findings will help inform the development of practical, affordable solutions that improve resilience to rising temperatures while contributing to the growing global understanding of heat-health impacts in vulnerable communities.

Through this work, MEER continues to advance its mission of developing, testing, and evaluating scalable cooling solutions that protect both people and communities in an increasingly warming world.



NEWS FROM INDIA

Hands-On Climate Adaptation Learning at MEER India

MEER India recently hosted a five-day student workshop designed to introduce participants to the science, engineering, and community dimensions of climate adaptation. The program aimed to provide students with practical experience in understanding extreme heat challenges, passive cooling technologies, field research methods, and the role that local interventions can play in building climate resilience.

Throughout the workshop, students were introduced to the principles behind surface cooling, urban heat reduction, reflective materials, and community-based adaptation strategies. Sessions combined technical discussions with practical activities, allowing participants to explore how scientific concepts can be translated into real-world solutions for vulnerable communities.



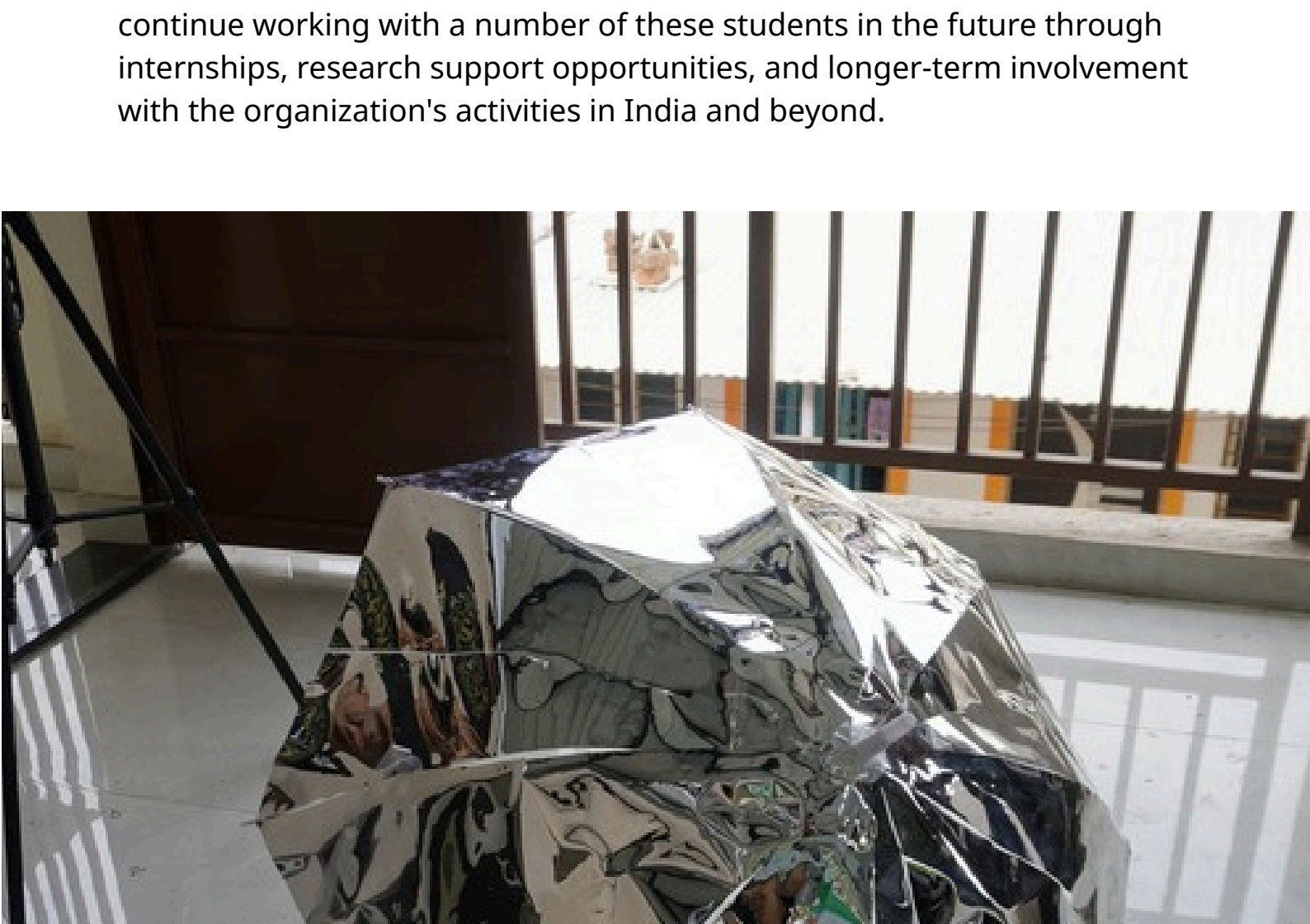
A key focus of the program was helping students understand the growing challenge of heat stress and the importance of low-cost, scalable adaptation measures. Participants learned about the environmental, social, and public health impacts of extreme heat, while also gaining insight into how organizations such as MEER develop, test, and evaluate cooling interventions in different settings around the world.

The workshop also emphasized field observation and community engagement. Students were encouraged to consider how climate impacts are experienced at a local level and how adaptation measures must be designed around the needs of the people they are intended to serve. Through discussions and site visits, participants explored the relationship between scientific research, engineering design, and community implementation.

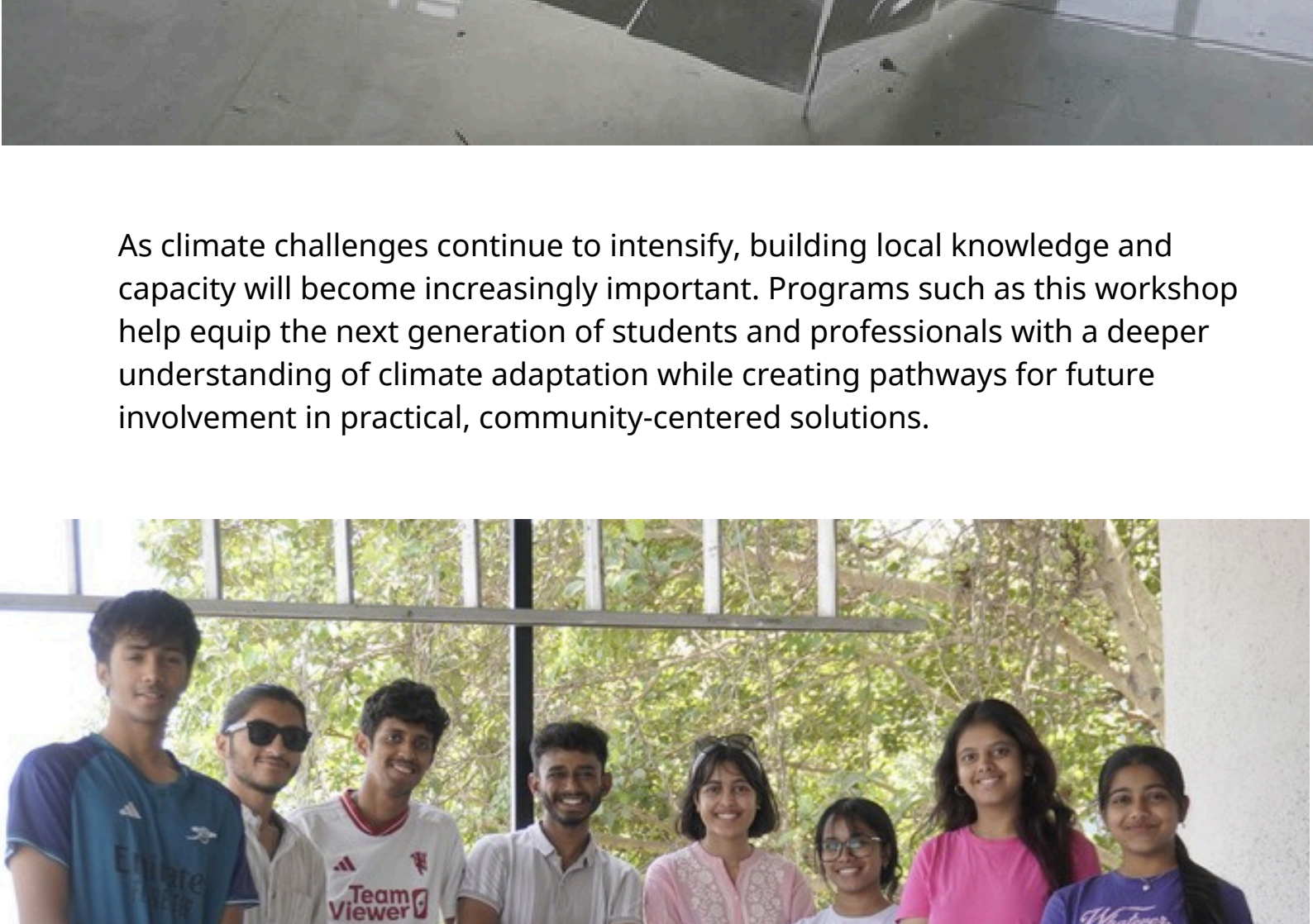


In addition to climate adaptation concepts, students were introduced to elements of project development, monitoring, documentation, teamwork, and problem-solving. They worked together throughout the program, developing practical skills while gaining exposure to the day-to-day activities involved in climate-focused field projects.

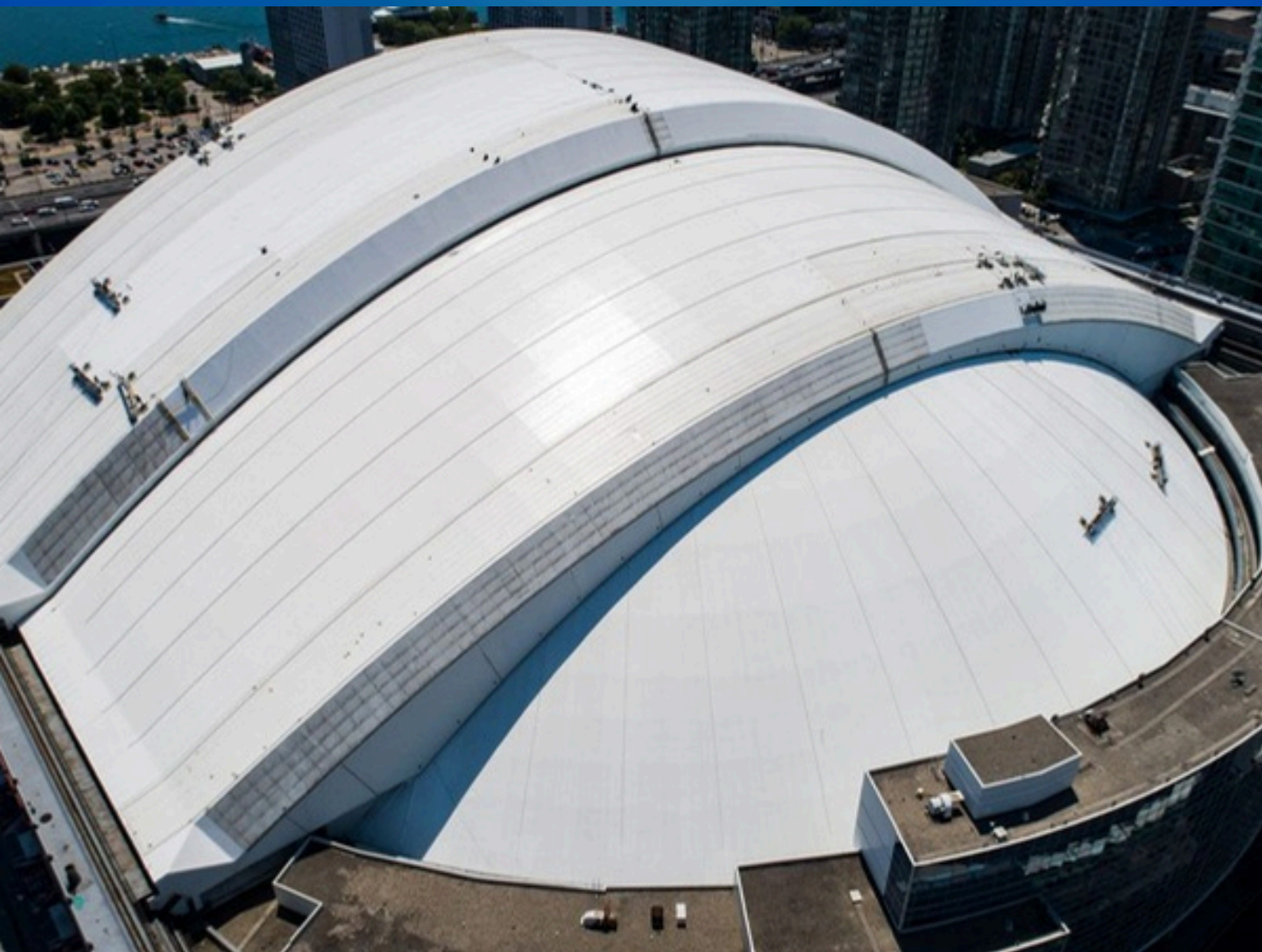
One of the most encouraging outcomes of the workshop was the identification of several highly motivated participants who demonstrated strong analytical, organizational, and communication skills. MEER hopes to continue working with a number of these students in the future through internships, research support opportunities, and longer-term involvement with the organization's activities in India and beyond.



As climate challenges continue to intensify, building local knowledge and capacity will become increasingly important. Programs such as this workshop help equip the next generation of students and professionals with a deeper understanding of climate adaptation while creating pathways for future involvement in practical, community-centered solutions.



New Reflective Roof at Toronto's Rogers Centre



When workers installed a new white roof on Toronto's iconic Rogers Centre in 2018, they were doing more than just replacing a roof—they were helping cool the city.

White and highly reflective roofs can reflect a significant portion of incoming sunlight back into the atmosphere rather than absorbing it as heat. This helps keep buildings cooler, reducing the need for air conditioning and lowering energy costs. Research has also shown that widespread adoption of cool roofs can help reduce temperatures in surrounding urban areas, mitigating the urban heat island effect that makes cities significantly warmer than their rural surroundings.

Large-scale installations such as the Rogers Centre demonstrate how simple surface changes can contribute to lower energy consumption, improved comfort, and cooler urban environments. What may appear to be an ordinary roof can, in fact, function as a passive climate adaptation technology operating every sunny day of the year.

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MEERTalk with **CLARE FARRELL**

**Creative Strategies
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Science, Society, Wars and
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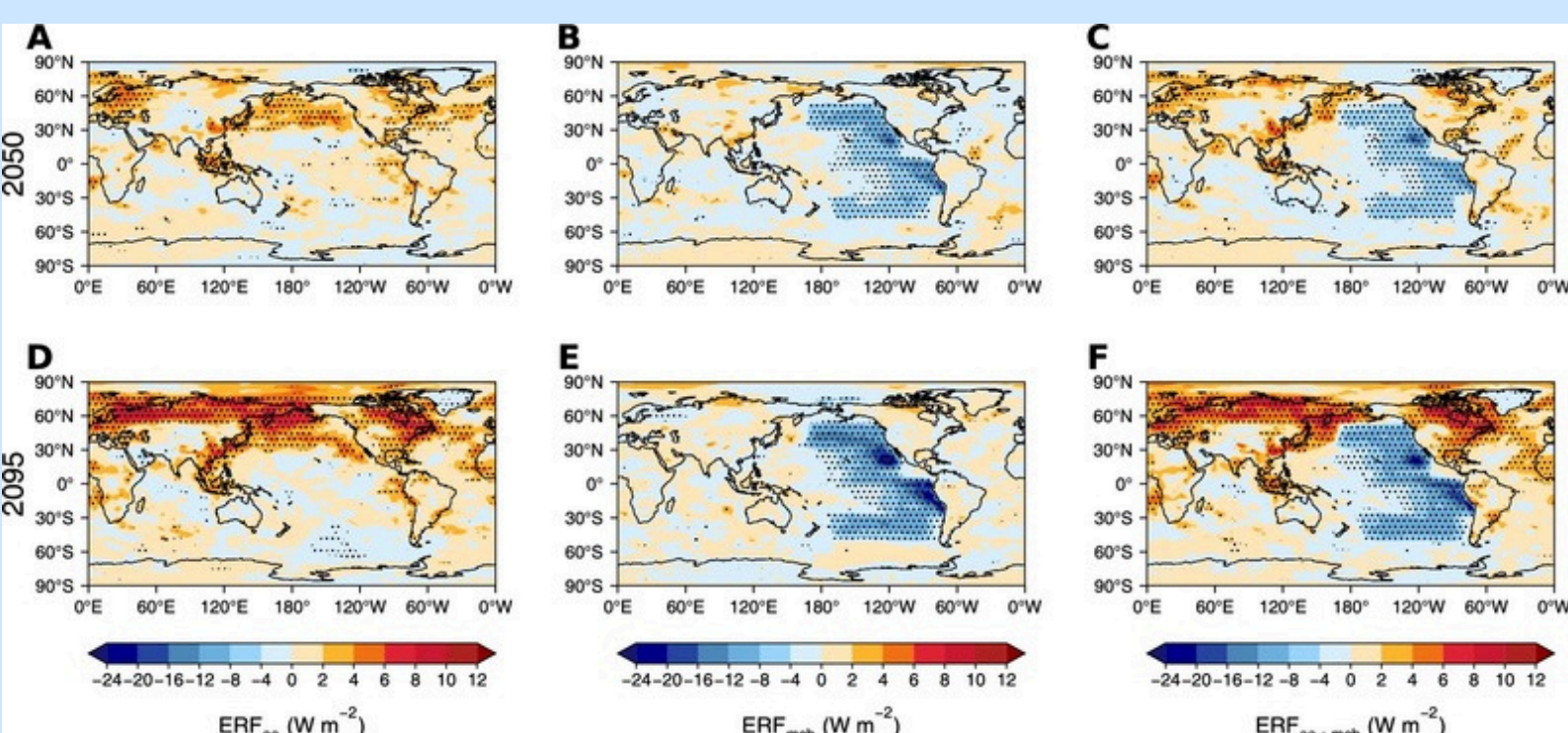
CLIMATE NEWS

MARINE CLOUD BRIGHTENING SHOWS PROMISE — BUT RAISES IMPORTANT QUESTIONS

Marine Cloud Brightening (MCB) is one of the most widely discussed forms of solar radiation management (SRM). The concept is relatively simple: tiny sea-salt particles are sprayed into low-lying marine clouds, increasing the number of cloud droplets and making the clouds more reflective. In theory, brighter clouds reflect more sunlight back into space, reducing the amount of solar energy absorbed by the Earth and producing a cooling effect.

A recent study published in *Communications Earth & Environment* examined whether marine cloud brightening could offset warming expected to occur as countries reduce air pollution while pursuing carbon neutrality. Although reducing aerosol pollution delivers major health benefits, it also removes some of the cooling effect that industrial aerosols currently provide, potentially leading to additional warming in coming decades.

Using a climate model, researchers simulated the injection of sea-salt aerosols into four cloudy regions of the eastern Pacific Ocean from 2020 to 2100. The study found that the intervention was capable of substantially offsetting the warming associated with declining aerosol pollution and could help maintain global average temperatures and precipitation closer to present-day levels.



The cooling effect was primarily driven by changes in cloud properties. The injected sea-salt particles increased the number of cloud droplets, creating brighter and longer-lasting clouds that reflected more sunlight. The modelling suggested that this mechanism could produce a significant cooling influence over large areas of the planet.

However, the study also highlighted important limitations and uncertainties. Cooling was not evenly distributed across all regions. Some areas, including parts of Europe, the United States, China and nearby oceans, experienced residual warming despite the intervention. The researchers concluded that climate outcomes were highly dependent on where the cloud brightening occurred and how it was implemented.

The work also points to a broader challenge facing marine cloud brightening research. Clouds are among the most complex and difficult features of the climate system to model accurately. Small changes in cloud microphysics can have large effects on climate outcomes, making it difficult to predict precisely how large-scale interventions would perform in the real world. Researchers therefore continue to emphasise that significant uncertainties remain regarding effectiveness, regional impacts, and potential unintended consequences.



Another area receiving increasing attention is the potential interaction between large-scale cooling interventions and ocean circulation systems. Scientists have noted that changes in evaporation, rainfall patterns, and ocean surface conditions could influence regional salinity patterns, which play a critical role in driving major ocean currents such as the Atlantic Meridional Overturning Circulation (AMOC). While these effects remain the subject of ongoing research, they illustrate the complexity of modifying interconnected Earth systems at large scales.

Marine cloud brightening remains an active area of scientific investigation rather than a deployable climate solution. The latest research demonstrates that it may have the potential to reduce future warming under certain conditions, but it also reinforces the need for careful study, robust monitoring, and a deeper understanding of regional climate responses before any consideration of large-scale implementation.

As global temperatures continue to rise, research into climate cooling approaches is likely to expand. The challenge for scientists will be determining which interventions can provide meaningful cooling benefits while minimising unintended consequences and avoiding interference with critical Earth-system processes.

MEERTalk

DAVID SPRATT

Research Director at the Breakthrough
National Centre for Climate Restoration

Science and the Media:
Is Climate Risk Being
Communicated Accurately?



WEDNESDAY
JULY 8, 2026



8:00 AM EDT
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Thank You for Being Part of Our Journey

We want to extend our sincere thanks to everyone who continues to support, follow, and engage with MEER's work.

This month has highlighted the many layers of our mission — from field installations and community conversations to scientific research, documentary storytelling, and early heat-health data collection. Each step helps us better understand how extreme heat is affecting people in real conditions, and how practical cooling solutions can be designed, tested, and scaled responsibly.

Your support allows MEER to keep moving from ideas into action, and from action into measurable impact. As we continue this work across communities, schools, rooftops, and public spaces, we remain deeply grateful for the trust, encouragement, and collaboration that make this journey possible.

Thank you for being part of MEER's mission to cool the planet and protect the communities most exposed to rising heat.



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