

SEPTEMBER 2025

NEWSLETTER

THE LATEST NEWS AND UPDATES FROM MEER

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Greetings from the MEER team

In this September edition, we share the latest developments from our global research initiatives, with updates from project sites in Africa, India, and beyond. You'll hear directly from our scientific leadership, who are pioneering advances in climate adaptation and mitigation technologies. Each story highlights the progress, challenges, and innovations driving our mission to deliver sustainable, scalable solutions for a warming world. Thank you for being part of this journey—and for supporting the work that makes a tangible difference for communities and the planet.

NEWS FROM AFRICA

Exploring a Potential Collaboration with Gambia Rising: Enhancing Education Through Cooling Solutions



At MEER, we are constantly looking for new ways to address the pressing issues faced by communities worldwide, particularly in regions that are vulnerable to the impacts of climate change. One such opportunity is our ongoing discussions with Gambia Rising, an inspiring nonprofit organization dedicated to improving education in rural Gambia. Gambia Rising has been working on constructing schools and teachers' housing in underserved areas, where access to quality education is limited, and we believe there may be an opportunity for collaboration that could significantly improve learning environments.



The Challenge: Extreme Heat in Gambia's Classrooms

In The Gambia, classrooms are often constructed with corrugated metal roofs, which absorb and trap heat, making the learning environment uncomfortable and even unbearable during the hottest months. This issue not only affects the concentration of students but also places a strain on teachers, who struggle to deliver lessons in sweltering conditions. With these challenges in mind, Gambia Rising has been exploring various solutions, including tree planting and drop ceilings, to reduce heat in classrooms. However, there is still a need for more scalable, long-term solutions.



A Potential Solution: MEER's Cooling Engineering

At MEER, we have been developing engineering solutions that use high-albedo materials designed to reflect sunlight and reduce heat absorption. These materials can be applied to the roofs of existing school buildings, providing a cost-effective and sustainable solution to help lower indoor temperatures and create more comfortable learning spaces.

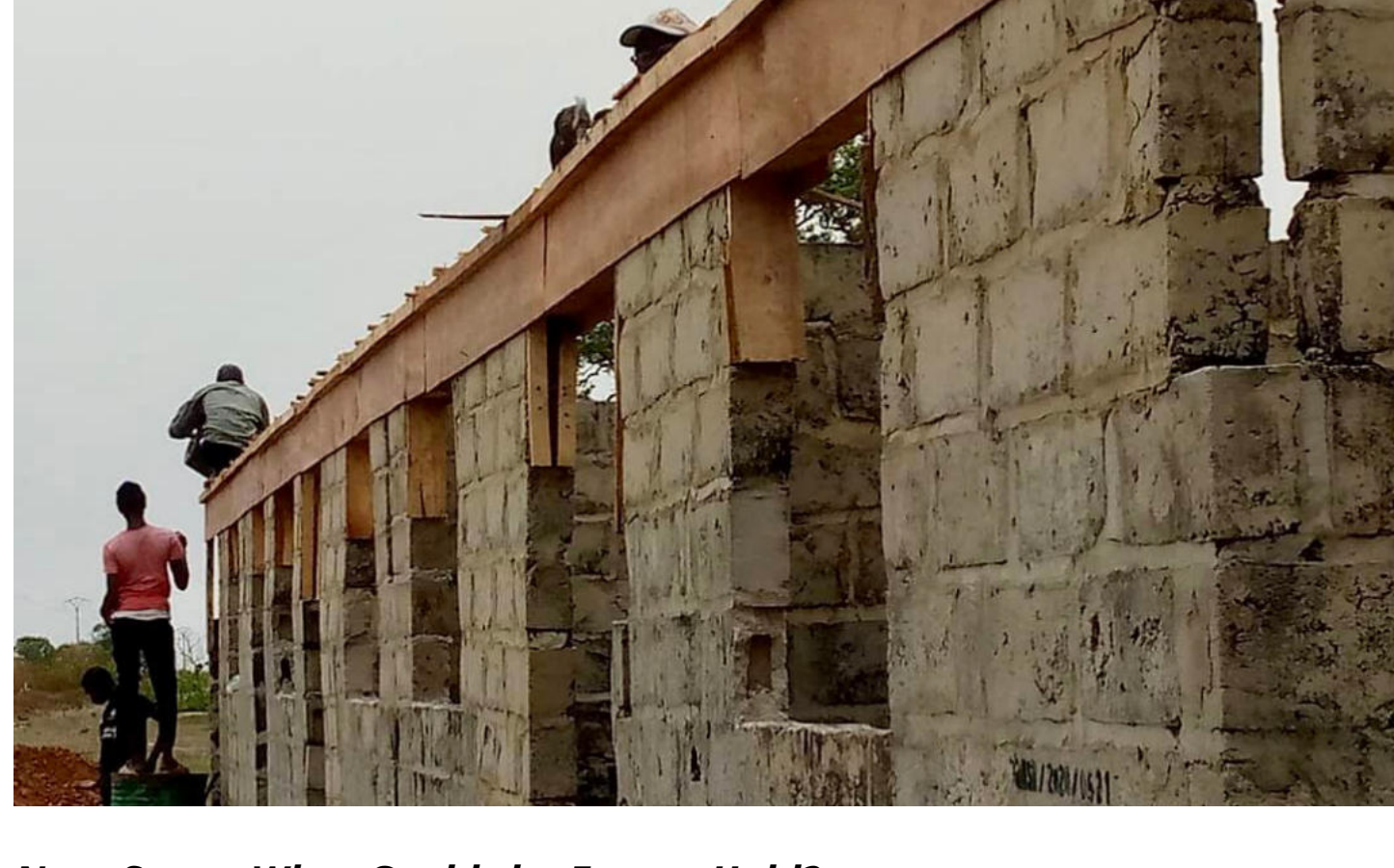
Our engineering approach utilizes reflective coatings and films, which have been tailored to specific applications such as classrooms in hot climates. While the materials themselves are not proprietary to MEER, we are engineering them for maximum impact in addressing heat in buildings like those in Gambia.



Exploring a Partnership with Gambia Rising

In the spirit of collaboration, we have been in touch with Gambia Rising to discuss the possibility of testing our engineered cooling solutions in schools across rural Gambia. The idea is still in the exploratory phase, and there is no formal pilot project planned at this time. A potential partnership would depend on several factors, including securing resources, funding, and training from both MEER and Gambia Rising.

Gambia Rising's extensive local network, deep community connections, and commitment to education and development make them an ideal partner for this initiative. However, the success of such a project would require mutual cooperation, resources for materials, and the provision of training to local teams on how to effectively implement and maintain the cooling systems.



Next Steps: What Could the Future Hold?

Although we are still in the early stages of this discussion, we believe that with the right support, a collaboration with Gambia Rising could offer significant benefits to schools across The Gambia. If this collaboration progresses, it could serve as a model for other regions experiencing similar challenges, potentially leading to more widespread deployment of cooling solutions in educational institutions worldwide.

Dr. Tao is scheduled to visit The Gambia soon, and we are looking forward to meeting with Gambia Rising to explore this opportunity further. During his visit, we hope to discuss how we can work together to bring MEER's cooling solutions to schools in need and what resources would be required on both sides to make it a reality.



A Vision for the Future

While no formal pilot project is yet in place, we are excited by the potential of this partnership and the opportunity to make a positive impact on education in The Gambia. By addressing the issue of extreme heat, we could improve the learning conditions for thousands of children, helping them to better engage with their studies in a more comfortable environment.

We will continue to explore the possibilities and keep you updated on any developments as we work with Gambia Rising to assess the feasibility of this potential collaboration. Together, we believe we can contribute to creating more sustainable, resilient communities and improve educational outcomes in the face of climate challenges.

NEWS FROM INDIA

Rains, Rooftops and Resilience: Sustaining MEER's mission in Pune



It's the heart of monsoon season in Pune. The persistent rains add complexity to daily logistics, but MEER's fieldwork continues steadily. Over the past several months, local team members Bunny and Samiksha have been maintaining and advancing our experimental work in the region—bridging past efforts with future planning.

Their work began with a full audit of MEER's Pune operations. Much of the original experimental setup at Site A—led by a technical team with a focus on physics and instrumentation—was carried out in early 2024. That team has since wrapped up their involvement, leaving behind a mix of equipment, partial documentation, and loose ends. The task at hand was to assess what remained and rebuild the project's continuity.



Sorting the Signal from the Noise

The audit quickly revealed several challenges. While Site A had been thoughtfully planned, many goals weren't fully realized. Data-logging sensors, meant to run for a year, had been removed prematurely, and several are currently unaccounted for. With most of the technical documentation held by the previous team, much of the site's performance data remains inaccessible.

Site B, in contrast, offered a more stable starting point. This location—designed with experimental and communication goals—remained active, with MEER reflective sheets still installed on three rooftops and six interior/exterior sensors in place. Two of the three households involved in the study remain cooperative, allowing Bunny and Samiksha to resume monitoring and data collection with more structure.



Navigating the Monsoon

Working through the monsoon has required careful timing. Frequent rains mean rooftop inspections and equipment handling must be scheduled precisely. However, the rainfall has also helped keep MEER's reflective sheets clean—an additional advantage for maintaining surface reflectivity.

The team has carried out regular sensor checks, equipment assessments, and resident interviews. Alongside this, they've been building a digital documentation system to consolidate records and guide MEER's future work in the region.



Bridging Past and Future

Although they weren't involved in the original installations, Bunny and Samiksha are now central to MEER's operations in Pune. Their work blends field implementation with strategic coordination—mapping sensor placements, identifying data gaps, cataloguing materials, and organizing findings for international review.

Looking ahead, their goals include finalizing household interviews, completing visual documentation, and closing the loop on inventories and materials left behind. With these foundations in place, MEER's broader team can make clearer decisions about the next phase of deployment and experimentation in India.



This past year has been one of transition—but not of pause. With patient effort and strong field coordination, the Pune project is moving forward, adapting to the realities on the ground, and keeping MEER's cooling mission alive in one of the most climate-vulnerable regions of the world.

Floating Cool: A Waterfront Vision for Climate-Resilient Leisure



Imagine stepping onto a floating cooling centre—a restaurant that drifts like a barge on the water, offering both comfort and innovation. This unique concept uses a glass-topped structure coated with a special reflective, protective layer that keeps the interior naturally cool, even under the blazing sun. Combining passive cooling technology with a serene waterfront setting, it showcases how future public spaces could blend climate adaptation with everyday leisure.

A MESSAGE FROM DR. YE TAO

Reflections on a Promising Field Site in Yongren County, China

I recently had the opportunity to visit **Yongren County**, a region nestled in the hills southwest of Panzhihua, in southern Sichuan Province. What I found there may very well become a cornerstone for MEER's next major phase of field experimentation.



The site is remarkable—not just for its **natural climate conditions**, but for how well it aligns with MEER's key research goals. With **extremely high annual evaporation (~3,500 mm)** and **relatively low rainfall (~600 mm)**, the environment provides an ideal testbed for evaluating **reflective floating mirror systems**, which aim to suppress water loss, reduce surface temperatures, and potentially limit algae growth in open water bodies.



Equally important is the **existing infrastructure and local expertise**. Yongren County is home to a dedicated team of nine engineers and scientists who maintain a robust network of weather stations and eddy covariance towers. These professionals, many of them in their early careers, are not only technically capable but genuinely excited by the possibility of collaborating with MEER. During my visit, we discussed practical next steps for designing and implementing multi-year experiments that could produce publishable, impactful data on the performance of our technologies.



I also met with a local professor conducting research in **water pollution remediation**, who expressed strong interest in collaborating on studies around **algae suppression** through passive cooling. Together, we began exploring how MEER's systems could be integrated into their ongoing ecological work.



The physical characteristics of the site are equally promising: **numerous small reservoirs, irrigation ponds, and macro-tunnel greenhouses** make it possible to test our designs across a range of water body types and microclimates. Its location—only a 30-minute drive from a town served by China's high-speed rail network—ensures easy access for MEER team members and visiting collaborators.



We are now working with our partners in the region to outline a three-year experimental program. This will allow us to rigorously test the engineering durability, environmental impacts, and large-scale deployment potential of our cooling systems. If successful, Yongren County may become MEER's primary research hub in China, supporting not only technology development, but regional adaptation efforts and scientific exchange.



The team and I are energized by the possibilities ahead. I look forward to sharing more updates as the collaboration progresses and we begin preparations for field deployment in 2026.

Dr. Ye Tao
Principal Investigator, MEER

CLIMATE NEWS

Rising Heat Deaths in European Cities — and How Reflective UrbanDesign Could Help

New research underscores the urgency for high-albedo cooling strategies like MEER's to protect lives.

A major new study in *Nature Medicine* has delivered a stark warning: without rapid climate action and adaptation, heat-related deaths in Europe's cities will rise sharply over the coming decades — even as winters become milder. Analysing 854 cities across Europe from 2015 to 2099 under multiple climate, demographic, and adaptation scenarios, researchers found that in every case, the number of deaths caused by extreme heat outweighed the decline in cold-related deaths. Under the worst-case scenario (SSP3-7.0), the net mortality burden from climate change would increase by nearly 50%, leading to an estimated 2.3 million additional temperature-related deaths.



Why heat is winning the balance

While cold has historically caused more deaths in Europe, the curve is shifting. Urban heat island effects — caused by heat-absorbing materials like asphalt, concrete, and dark rooftops — are amplifying temperature extremes. The researchers found that even if heat-related mortality risk was reduced by 50% through adaptation, deaths still rose in the high-emissions, low-mitigation pathway.



Where MEER's work fits in

The study's findings highlight a critical opportunity: increasing urban albedo — the reflectivity of surfaces — can directly counteract heat absorption, lowering both surface and air temperatures. MEER's engineered high-albedo strategies, already being trialled in different climates, are designed to:

- Reflect more sunlight away from streets, rooftops, and open spaces.
- Reduce the intensity of the urban heat island effect.
- Lower ambient temperatures in the areas where people live, work, and move.
- Complement other cooling strategies like green infrastructure and ventilation corridors.

By integrating reflective materials into rooftops, pavements, and public spaces, cities could gain a passive, energy-free cooling layer that works alongside nature-based solutions. Unlike mechanical cooling, this approach does not add more heat to the environment or increase energy demand — a crucial advantage in preventing grid overload during heatwaves.

The urgency

The Nature Medicine team found that Mediterranean and Eastern European cities are likely to be the most vulnerable, but almost all urban centres will see a net mortality increase without strong mitigation. As population ageing increases vulnerability and summers grow hotter, the case for scalable, surface-based cooling interventions has never been stronger.

MEER's mission — to deploy reflective, high-albedo engineering at scale — directly addresses the conditions driving these projections. With targeted urban deployments, such measures could become a vital part of the toolkit to save lives, protect public health, and keep cities liveable in a warming Europe.

[READ MORE](#)

DON'T MISS THIS MONTH'S MEERTALK!

MΞR talk

Confessions of a Climate Activist:

Clean Energy Alone Can No Longer Save Us. We Need to Study Sunlight Reflection



SUNDAY
SEPT 7, 2025



2:00pm EDT
7:00pm BST

MIKE TIDWELL

Author of *The Lost Trees of Willow Avenue* and
founder of CCAN



FEEDBACK CORNER

Thank you for continuing on this journey with us. Our MEER newsletter is created for you—our community of supporters, readers, and changemakers—and we're deeply grateful for the time you take to stay connected with our work. Each edition is our way of sharing progress, ideas, and opportunities to act together on climate solutions.

We want this space to truly serve you, so if you have any thoughts on how we can make it more useful, engaging, or inspiring, please don't hesitate to reach out. Your feedback helps us grow and ensures we're bringing you the updates that matter most. You can share your suggestions anytime by emailing us at info@meer.org—we'd love to hear from you.



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