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INDIAN CENTRE FOR CSR
403, 3rd floor, Orchid Road Mall,
Wing B, Royal Palm, Aarey Milk Colony,
Goregaon East, Mumbai-400 065
Ph: 9930139352, Email: support @ iccsr.org

India must turn the El Niño warning into resilience



Rajesh Tiwari
Publisher
rt@iccsr.org

El Niño may be cyclical, but the risks are unfolding on a warmer baseline. As one climate scientist noted in the report, higher background temperatures can intensify its impacts, including heat and water stress.

India cannot afford to treat another deficient monsoon as simply another bad year for agriculture. The 2026 southwest monsoon ended with a 13% shortfall, the weakest in a decade, while rainfall increasingly arrived in intense spells rather than being distributed evenly. The consequences are already spilling into the next crop cycle through lower soil moisture, depleted groundwater and stressed reservoirs.

The warning is particularly serious for a country where water security, food security and rural livelihoods remain closely intertwined. Five states have announced droughts, while Maharashtra has declared drought across 75% of its tehsils. Rice, sugarcane and cotton acreage has declined, even as farmers appear to be shifting towards pulses and oilseeds that require less water.

The implications go beyond the farm. Prolonged dry spells and rising temperatures can increase pressure on drinking water supplies, rural employment, power generation and household incomes. A poor monsoon can therefore become an economic shock, particularly for vulnerable communities that have limited capacity to absorb repeated crop losses. The fact that heavy rainfall events can coexist with an overall seasonal deficit also makes conventional water planning increasingly inadequate. India needs to capture more rain when it arrives and conserve it for the increasingly long dry periods that follow.

This is where India's corporate sector must look beyond conventional Corporate Social Responsibility. CSR cannot be reduced to occasional relief once a drought strikes. It can play a far more strategic role in building resilience — restoring water bodies, improving groundwater recharge, promoting soil conservation, supporting climate-resilient agriculture and helping farmers diversify crops.

India's CSR framework already recognises environmental sustainability, conservation of natural resources, soil and water protection and rural development among permissible activities. The challenge is to connect this spending with India's most vulnerable regions and its long-term climate needs.

Companies operating in or drawing resources from water-stressed regions have a particular responsibility. Their CSR programmes should be guided by local water budgets, scientific assessments and measurable outcomes rather than visibility-driven projects. Partnerships with panchayats, agricultural institutions, civil-society groups and communities can make such interventions more effective.

CSR can also help bridge the gap between technology and the last mile. Investments in weather advisories, efficient irrigation, soil-moisture monitoring, water harvesting, seed resilience and farmer training could help communities prepare before a crisis becomes unavoidable. Such programmes would also give companies a clearer measure of social impact than one-time distribution of relief material.

El Niño may be cyclical, but the risks are unfolding on a warmer baseline. As one climate scientist noted in the report, higher background temperatures can intensify its impacts, including heat and water stress.

For India, the choice is clear: respond to each drought as a crisis, or use every warning to build resilience. CSR can help make the latter possible — provided companies treat it not as an obligation to spend, but as an opportunity to invest in communities, ecosystems and India's climate security.

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Chief Consulting Editor: Kingshuk Nag
Consulting Editor: Mrityunjay Bose
Executive Editor: Devasia P. Devasia

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CSR Today
403, 3rd floor, Orchid Road Mall, Wing B, Royal Palm, Aarey Milk Colony, Goregaon East, Mumbai-400 065
Email: support @ iccsr.org,
Website: www.iccsr.org

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Editor: Rajesh Tiwari

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Vedanta Delhi Half Marathon Surpasses 2 Crore 70 Lakh Meals through #RunForZeroHunger in 5 Years

The streets of the national capital came alive with energy, determination and an inspiring spirit of solidarity as the Vedanta Delhi Half Marathon (VDHM) 2026 brought together more than 40,000 runners, turning their collective passion into meaningful action through #RunForZeroHunger.

With every kilometre clocked contributing one meal for a child or an animal in need through the Anil Agarwal Foundation's (AAF) Nand Ghar and TACO initiatives, the movement is driving tangible impact in the fight against hunger. In the 2026 edition, participants contributed 50 lakh meals, taking the cumulative impact of #RunForZeroHunger to over 22 crore 70 lakh meals across five editions, marking five years of Vedanta's association with the Delhi Half Marathon.

The movement was further amplified by celebrated sporting icons, including Mary Kom, Pramod Bhagat and Mahesh Bhupathi, who joined in celebrating the spirit of fitness, solidarity and social impact.

For the Anil Agarwal Foundation, #RunForZeroHunger represents its larger commitment to transforming lives and creating lasting social impact. At the forefront of this effort is Nand Ghar, AAF's flagship initiative, which operates a network of over 16,000 modernised anganwadis across 18 states. Through an integrated approach to nutrition, healthcare, early childhood education and women's empowerment, Nand Ghar is working towards building healthier children, stronger women and more resilient communities.

The Foundation's commitment to compassion extends to animals through The Animal Care Organisation (TACO), its animal welfare initiative. By extending #RunForZeroHunger to animals in need, AAF reinforces its belief that every life deserves care and dignity, bringing together the well-being of people and animals through its One Health approach.



Senior leadership from Kia India, along with officials from FADA, ASDC and Don Bosco ITI

Kia India Strengthens Commitment to Building a Future-Ready Automotive Workforce

Kia India, one of the country's leading mass-premium automakers, in partnership with the Automotive Skills Development Council (ASDC), inaugurated an automotive skill development centre at Don Bosco Industrial Training Institute (ITI), Kurla, Mumbai. The inauguration marks the first under a four-centre skill development initiative aimed at training 360 candidates across Faridabad, Mumbai, Bengaluru and Kolkata. Supported under Kia India's Corporate Social Responsibility (CSR) programme, the initiative seeks to strengthen youth employability and contribute to the development of a skilled, industry-ready workforce for India's evolving automotive ecosystem.

The initiative includes Kia India-exclusive centres in Mumbai and Faridabad while the centres in Kolkata and Bengaluru will also accommodate other automotive manufacturers. Implemented as a pilot, the programme aims to establish a scalable skilling framework that can potentially be extended to additional locations.

The Mumbai centre, in partnership with Don Bosco ITI, will train 150 candidates across three job roles: Four-Wheeler Service Technician, Automotive Service Advisor and Automotive Sales Executive. The programme targets 150 candidates each in Faridabad and Mumbai, and 30 each in Bengaluru and Kolkata. The training programme will be offered free to participating candidates, combining classroom instruction, hands-on practical learning and on-the-job exposure.

Commenting on the initiative, Atul Sood, Senior Vice-President, Sales & Marketing, Kia India, said, "At Kia India, we view skill development as an important enabler of inclusive growth and long-term industry advancement. Our partnership with ASDC is aimed at creating meaningful pathways for young people by providing access to structured, industry-relevant training without any financial burden. By integrating classroom instruction with practical learning and workplace exposure, the programme will help candidates develop capabilities aligned with the evolving needs of the automotive sector. The initiative reflects our commitment to creating sustainable value for communities while contributing to a stronger and future-ready mobility ecosystem."

The three training pathways will equip candidates with capabilities spanning vehicle maintenance,

diagnostics and repair, customer advisory, engagement and automotive sales. The programme seeks to address the automotive industry's evolving workforce requirements amid changing vehicle technologies, digitalisation and customer expectations.

Vinkesh Gulati, Chairperson, ASDC, said, "India's automotive industry is witnessing significant growth and transformation, resulting in an increasing requirement for skilled professionals across technical and customer-facing functions. Through this partnership with Kia India, we aim to bridge the prevailing skills gap by delivering industry-relevant training closer to aspiring professionals. The programme will prepare candidates for practical workplace requirements while supporting the sector's transition towards a more technology-led and customer-centric ecosystem."

Amar Sheth, Vice President, FADA, said, "The continued growth of the automotive retail sector requires a reliable pipeline of skilled professionals who understand both technical operations and evolving customer expectations. The Kia India–ASDC initiative represents an important step towards aligning workforce capabilities with dealership requirements. By equipping young people with practical skills across vehicle servicing, customer advisory and automotive sales, the programme can enhance employability while supporting the industry's long-term growth."

India's CSR Spending Reaches Rs 40,794 Crore In FY25, Funding Remains Unevenly Distributed Against Need: Sattva Consulting Report

India's corporate social responsibility (CSR) spending reached Rs 40,794 crore in FY 2024–25, growing at a compound annual growth rate (CAGR) of 15% over the past decade. However, a new analysis by Sattva Consulting and India Data Insights finds that CSR funding remains concentrated in established sectors and better-funded geographies, even as several development indicators show limited progress or deteriorating outcomes.

The eighth edition of Sattva Consulting's annual State of CSR in India report examines CSR spending against India's development indicators to assess how closely funding aligns with areas of greatest need. The analysis comes against a backdrop of uneven progress towards the 2030 Sustainable Development Goals (SDGs): just 33.3 per cent of indicators are on track, while 42.7 per cent show limited progress and 24 per cent are worsening. These findings point to the need to move beyond broad sector-level allocations towards specific development challenges and their underlying drivers.

Education, healthcare, livelihoods and skilling, environment, and rural development together account for over 80 per cent of CSR funding. While these sectors represent core development needs, a deeper analysis reveals that funding is concentrated within specific sub-sectors. This creates an opportunity to direct CSR capital towards unmet needs and emerging development priorities within these sectors.

Geographic disparities further illustrate the challenge. The five states with the highest multidimensional poverty receive just Rs 94 in CSR funding per capita, compared with Rs 455 in the five lowest-need states. Bihar's Multidimensional Poverty Index (MPI) is nearly five times that of Maharashtra. Yet, Maharashtra receives nearly 19 times more CSR funding per capita. Between FY2021–22 and FY2024–25, Maharashtra received an additional Rs 3,381.9 crore in CSR funding, compared with Rs 292.5 crore in Bihar.

While CSR funding in higher-need states and districts is beginning to grow, the increase is yet to translate into funding commensurate with the scale of development challenges. The report identifies significant headroom to deepen this shift: redirecting an additional 5% of FY2024–25 CSR funding to high-need districts would triple the funding they receive today.

"CSR has brought scale and predictability to funding, but addressing India's persistent challenges requires greater agility in how this capital is deployed. Corporate philanthropy cannot remain static in its approach. It must continuously reassess where it can make the greatest difference, directing capital towards critical gaps where regions have been unable to break inertia and other forms of capital are less likely to flow," said Srikrishna Sridhar Murthy, Co-founder and CEO, Sattva Consulting.

The report recommends that companies use partnerships, innovation and technology to make CSR a multiplier of impact, unlocking outcomes that extend beyond what funding alone can achieve.



SEIL Energy Inaugurates 10 KM Raw Water Pumping Project in Andhra Pradesh, Bringing Hope to Thousands

The CSR initiative to improve access to safe drinking water for nearly 10,000 people across five villages in West Godavari district

SEIL Energy India Limited, one of the largest independent power producers (IPP) in India, today announced the development of a 10-kilometre Raw Water Pumping Project at Juvvalapalem village in Undi Constituency, West Godavari district, Andhra Pradesh, as part of its Corporate Social Responsibility (CSR) initiatives.

The project was formally inaugurated by Kanumuru Raghu Rama Krishna Raju, Deputy Speaker and MLA, Undi Constituency, Government of Andhra Pradesh, in the august presence of Bhupathiraju Srinivasa Varma , Minister of State for Steel and Heavy Industries, Government of India, and Member of Parliament, Narsapuram, and Mantena Rama Raju , Chairman, Andhra Pradesh Industrial Infrastructure Corporation (APIIC).

The project has been developed with a CSR contribution of ₹1.56 crore from SEIL Energy India Limited to address the longstanding challenge of access to potable water faced by communities in five villages (Kalavapudi, Pallipalem, Prathella Meraka, Modi, SC Bose Colony) in the region. For decades, residents have struggled with drinking water scarcity due to salinity in the surrounding areas, affecting access to safe and suitable drinking water for daily needs.

With the commissioning of this project, approximately 10,000 people across five villages are expected to benefit from improved access to drinking water, offering relief to local communities and contributing to better public health, well-being and quality of life.

Speaking on the occasion, Janmejaya Mahapatra, CEO - SEIL Energy India Limited, said: "Access to safe drinking water is fundamental to human dignity, health and well-being. At SEIL Energy, we believe that our responsibility extends beyond generating reliable power to creating a meaningful and lasting impact on the communities around us. Through this CSR initiative, we are addressing a long-standing challenge faced by local residents and helping bring a vital resource closer to their homes. The 10-kilometre Raw Water Pumping Project is a testament to our commitment to community development and our belief that sustainable progress begins with meeting the essential needs of people. We are grateful for the support and encouragement of the Hon'ble dignitaries and local administration in making this initiative a reality." The initiative reflects SEIL Energy's continued commitment to inclusive growth, sustainable community development and improving the quality of life in communities surrounding its operations. By investing in essential infrastructure, the company seeks to create long-term social value and contribute to a healthier, more resilient future for local communities.

KEF, SCERT signs MoU

SCERT Uttarakhand and Kotak Education Foundation (KEF) have signed an MoU to equip teachers across Uttarakhand with AI literacy and digital teaching skills, bringing AI and emerging digital pedagogies into mainstream teacher professional development.

As part of the partnership, the two organisations will develop online courses focused on AI literacy, digital pedagogies and technology-enabled teaching, to be delivered through platforms including DIKSHA, UK e-Srijan and Mission Karmayogi.

A key aspect of the initiative is its focus on practical AI adoption in classrooms, helping teachers use AI for lesson planning, assessment and differentiated instruction, while strengthening their overall digital readiness.

The programme also builds on KEF's experience in Maharashtra, where its 'AI Saathi for Educators' course, developed in partnership with SCERT Maharashtra, has reached over 7.5 lakh teachers on DIKSHA.

With AI increasingly becoming part of India's education ecosystem, the partnership offers an interesting perspective on how teacher capacity-building can play a critical role in enabling meaningful and responsible AI adoption in classrooms.





NABARD Supports 21-Day Livelihood and Enterprise Development Programme for 60 SHG Women in Delhi



NABARD in collaboration with Anmol Sahara, has launched its 21-day Livelihood and Enterprise Development Programme (LEDP) for women members of Self-Help Groups (SHGs) in North Delhi and Outer North Delhi. The programme commenced on October 12, 2026, and is being conducted simultaneously at two training centres in Azadpur and Tikri.

The programme aims to empower SHG women by enhancing their skills, promoting entrepreneurship and creating sustainable livelihood opportunities. It will train 60 women in making cow dung-based products, candles and festive handicrafts, equipping them with practical skills to establish and manage viable micro-enterprises.

In addition to product-making, participants will receive training in packaging, pricing, digital marketing and sales techniques. The programme will also facilitate linkages with markets, exhibitions and corporate buyers to expand market access and improve sales opportunities. These interventions are expected to help participants start or expand their livelihood activities, generate additional income, particularly during the festive season, and achieve greater financial independence.

The programme aims to empower SHG women by enhancing their skills, promoting entrepreneurship and creating sustainable livelihood opportunities.

Speaking on the occasion, a NABARD official said, “NABARD remains committed to promoting sustainable livelihood opportunities and strengthening women’s economic empowerment through skill development initiatives. This LEDP is designed to equip SHG members with practical skills, entrepreneurial capabilities, and market-oriented knowledge, enabling them to establish viable enterprises and enhance their incomes. While appreciating NABARDs support, representatives from Anmol Sahara said, “Our mission is to empower SHG women to become economically independent. With NABARD’s valuable support, this 21-day LEDP will not only provide skills but also create sustainable livelihood opportunities for women in Azadpur and Tikri.”

NABARD has been supporting livelihood promotion, skill development and enterprise creation to strengthen the Self-Help Group movement and promote inclusive development. Through initiatives such as LEDP, NABARD seeks to enable SHG members to develop sustainable income-generating activities and establish women-led enterprises.

The programme represents a collaborative effort to promote grassroots entrepreneurship and economic self-reliance among women in Delhi. By combining skill development with market linkages and enterprise support, the initiative is expected to enhance livelihood prospects and expand economic opportunities for participating SHG women.



Zeta inaugurates Hyderabad skilling centre to help underprivileged youth prepare for employment and entrepreneurship

Zeta, a next-generation banking technology company, has inaugurated a skilling centre in Hyderabad to help underprivileged youth develop the skills and confidence needed for jobs and entrepreneurship. Funded by Zeta and delivered in partnership with the Head Held High Foundation, a non-profit that works to transform the lives of marginalised youth through skilling, the initiative combines literacy, communication and workplace skills.

Zeta is funding programme delivery across three centres in Hyderabad, Bengaluru and Mumbai, including curriculum, training centre set-up and trainer fees. Each centre will run a three-month programme for 2 batches of 60 participants. Training has begun at the Hyderabad centre, with 10th October marking its formal inauguration. Operations at the Bengaluru and Mumbai centres have also commenced, with formal inaugurations planned in the coming months.

The initiative falls under the Employability pillar of Zeta CARES, the company's CSR programme, which spans Education, Employability, Entrepreneurship, and Ecology.

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Mumbai-400 065. Tel: +91 9930139352

FUJIFILM India Supports AIIMS Research Department for Clinical Research study on AI assisted Early Detection of Upper Gastrointestinal Cancers



FUJIFILM India has announced its support, through its Corporate Social Responsibility (CSR) initiative, for a landmark clinical research study led by the All India Institute of Medical Sciences (AIIMS), New Delhi. The study aims to evaluate the effectiveness of artificial intelligence (AI)-assisted endoscopy in improving the early detection of upper gastrointestinal (UGI) malignancies, an area where timely diagnosis remains critical to improving patient outcomes. Upper gastrointestinal cancers continue to contribute significantly to cancer-related morbidity and mortality in India. While early detection can substantially improve survival outcomes, many early-stage lesions remain difficult to identify during routine examinations owing to their subtle appearance and variability in detection. Emerging evidence indicates that AI-assisted endoscopy has the potential to enhance real-time lesion detection by supporting clinicians in identifying abnormalities that may otherwise be overlooked.

This collaborative research seeks to generate robust clinical evidence in the Indian healthcare setting and contribute to the advancement of evidence-based endoscopic practices.

Commenting on the initiative, Dr Radhika Tandon, Dean Research, AIIMS Delhi said, "Early diagnosis remains one of the most important determinants of survival in upper gastrointestinal cancers. As artificial intelligence continues to evolve within clinical practice, generating high-quality evidence through research is essential for understanding its real-world impact. This study aims to establish robust clinical evidence on the effectiveness of AI-assisted endoscopy within the Indian healthcare setting while contributing to future advancements in endoscopic diagnosis."

Through its CSR initiative, FUJIFILM India will support clinical research study evaluating the effectiveness of AI-assistance in improving early detection of upper gastrointestinal malignancies.

Reinforcing FUJIFILM India's long-term commitment to advancing healthcare innovation, strengthening clinical capabilities and improving patient outcomes through technology-enabled diagnostics.

Adding on this, Koji Wada, Managing Director, FUJIFILM India Private Limited, said, "At FUJIFILM India, we believe advancing healthcare extends beyond delivering innovative technologies, it also involves supporting scientific research that strengthens clinical practice. This collaboration reflects our commitment to fostering partnerships that enable meaningful progress in early disease detection and improve access to high-quality diagnostics. As we continue to deepen our endoscopy ecosystem in India, we remain focused on contributing towards a future where technology empowers clinicians and delivers better outcomes for patients."

The collaboration also reflects FUJIFILM India's broader vision of advancing the endoscopy ecosystem in India through technology, clinical research and long-term healthcare partnerships. By supporting evidence generation alongside innovation, the company continues to contribute towards strengthening diagnostic capabilities and enabling more informed clinical decision-making across the healthcare ecosystem.

Shriram Group awards scholarships to class 10 toppers from govt school across Telangana constituencies

The Shriram Group has awarded scholarships to 10th class toppers from government schools across 119 assembly constituencies in Telangana for the academic year 2025-26. As part of the scholarship initiative, under Chaduvuko Telangana programme, each constituency topper will be awarded ₹1 lakh, district topper ₹2 lakh, state runner-up ₹3 lakh, and state topper ₹5 lakh.

The scholarships are expected to partly fund the students' expenses in their intermediate course.

This was the second edition of 'Mission 10th Class,' wherein meritorious students from across Telangana were felicitated for their outstanding performance in the Class 10 examinations. A total of 632 students have been selected for scholarships under the programme.

One state topper, one state runner-up, 37 district toppers and 95 assembly constituency toppers, together comprising 134 students, were awarded scholarships at the event.

As part of the eligibility criteria, only government-run state board schools are covered. The list of students has been provided by the Department of School Education, Government of Telangana.





"Today's achievement is a reflection of your dedication, perseverance and determination. This is a great initiative to recognise and encourage young achievers, because you are the future of our nation. Life will bring many challenges your way, and whenever you face one, remember this day and the journey that brought you here. Let this moment inspire you to believe in yourself, overcome every obstacle and continue striving towards your dreams," Hon'ble Governor of Telangana, Shri Shiv Pratap Shukla, said, after distributing scholarships to the students.

"Education is one of the most powerful enablers of opportunity. The achievements of the students are a reflection of their hard work, determination, and the support of their families and teachers. The initiative aligns with the Shriram Group's longstanding philosophy of putting people first and supporting the progress of society," said Casparus J.H. Kromhout, MD and CEO, Shriram Life Insurance.

Additionally, 498 mandal toppers will be felicitated in their respective mandals while state, district, and constituency toppers received them from the Governor.



InterGlobe Foundation and IndiGoReach Organise 'My City My Heritage' Walk in Mysuru, Celebrating Its Rich Cultural Heritage

InterGlobe Foundation, the philanthropic arm of InterGlobe Enterprises, and IndiGoReach, the CSR arm of IndiGo, India's preferred airline and one of the fastest-growing carriers in the world, jointly hosted an immersive heritage walk in Mysuru. This specially curated experience was part of the 'My City My Heritage' campaign, designed to celebrate and promote the rich cultural heritage of Indian cities. By reconnecting citizens with their roots, the campaign fosters shared pride and a long-term commitment to cultural preservation. The walk, themed 'Markets, Museums and Mysuru', was held in collaboration with Sahapedia and India Foundation for the Arts (IFA). It offered participants a unique opportunity to explore the city beyond its palaces and engage with the civic, commercial, and cultural landscape of Mysuru. Led by Aishwarya Kirit and facilitated by Raghuram SK, the 2.8-km walk moved through nine historic sites in Mysuru's civic and commercial core, including Jaganmohan Palace, Lansdowne Building, K.R. Circle, Devaraja Market, K.R. Hospital, Cauvery Emporium, Makkaji Chowk, Sri Subramanyeshwara Temple and Town Hall.

Drawing on archival material from the Star of Mysore, the walk brought together newspaper reports, photographs, reader opinions, and letters to reveal how generations of Mysureans experienced, documented, and remembered these spaces. The experience also offered participants an opportunity to engage with Mysuru's cultural traditions and intangible heritage at the historic



Jayalakshmi Vilas Mansion. A traditional string puppetry performance by S.N. Srikanta, a fifth-generation puppeteer, highlighted Karnataka's rich storytelling traditions and craftsmanship. The event drew enthusiastic participation from the local community, government officials, and senior leadership of InterGlobe Foundation and IndiGo.

'My City My Heritage' is an ongoing initiative dedicated to raising awareness about India's diverse cultural and historical legacy. Through engaging dialogues and meaningful partnerships, the campaign aims to preserve and promote both tangible and intangible heritage, encouraging citizens to rediscover and take pride in the stories that shape their communities. Similar walks have been held in twelve cities: Prayagraj, Bhubaneswar, Shillong, Nashik, Hyderabad, Kozhikode, Lucknow, Chhatrapati Sambhajinagar, Ahmedabad, Puducherry, Gwalior, and Patiala, with each offering a unique experience. Mysuru marked the 13th city in this series.

Speaking on the occasion, Rohini Bhatia, Chairperson, InterGlobe Foundation, said, "India's history is a living legacy, and through the 'My City My Heritage' campaign, we are committed to promoting the unique cultural identity of our cities. Mysuru, with its remarkable civic heritage, rich cultural institutions and living traditions, marked another significant chapter in our journey. By bringing together archival histories, historic urban spaces, and traditional art forms, this experience highlighted the many layers that shape the city. By engaging local citizens and heritage enthusiasts, we hope to inspire a sense of pride and collective responsibility, ensuring that our heritage remains a vibrant and cherished part of our future."



Willie Walsh, Chief Executive Officer, IndiGo, said, "India's cultural richness is reflected in the distinct identities of its cities, each contributing to the country's diverse heritage landscape. Through 'My City My Heritage', our endeavor is to create experiences that encourage people to rediscover these unique cultural narratives. Mysuru's remarkable heritage ecosystem, from its historic institutions and architectural landmarks to its vibrant artistic traditions, offered a compelling example of how culture continues to shape the future of our cities while preserving their unique character. At IndiGo, beyond connecting destinations, we are committed to enriching the communities we operate in."



ASHAs help co-design AI-enabled training platform for cervical cancer screening in rural Assam

Around 100 ASHAs help shape an AI-enabled training platform and voice chatbot to support cervical cancer screening in rural Assam



The George Institute for Global Health India, in collaboration with Cachar Cancer Hospital and Research Centre (CCHRC), Assam, held a co-design workshop with Accredited Social Health Activists (ASHAs) to help shape an AI-enabled training platform and multilingual voice chatbot designed to strengthen cervical cancer screening and community counselling in rural Assam.

Around 100 ASHAs joined the session, along with trainers, doctors, program coordinators, researchers, and technologists. Through interactive discussions and exercises, ASHAs shared their experiences of supporting women with cervical cancer screening, discussed the day-to-day challenges they face, what kind of support would actually help





them, and how technology could make their community visits and counseling work easier.

The workshop is part of a three-year pilot study called Leveraging Artificial Intelligence for Strengthening Cervical Cancer Screening Through Capacity Building, funded by the Indian Council of Medical Research (ICMR). Running from November 2025 to November 2028, the project aims to build and test an AI-based learning platform for ASHAs, along with a chatbot that can answer questions by voice in multiple languages. During the workshop, ASHAs reviewed 155 common questions people ask about cervical cancer and screening. They used a simple bindi-based voting system to identify which questions came up most frequently in the field, raised by women, husbands, family members and others in their communities.

The exercise highlighted that the questions ASHAs face most often in the field are not always the same as those considered clinically important. These insights will inform the development of a chatbot knowledge base that addresses both priority health information needs and the practical concerns ASHAs encounter during their work.



The workshop also explored ASHAs' comfort and confidence with digital technology. Younger and middle-aged ASHAs said they regularly use mobile phones for reporting, communication and accessing information. ASHAs in older age groups said they find digital tools and language more challenging but expressed a strong willingness to learn and become more confident in using them.

ASHAs also mapped out their own career path, including training, staying sharp on what they have learned, counselling women on pregnancy or childbirth concerns, walking people through test results, and making the right referrals. Through this process, many ASHAs recognised their own knowledge gaps and talked about using tools like flipcharts to brush up when needed.

ASHAs also highlighted the value of voice-based interactions in Bangla, simple-language content and search functions that reflect the way ASHAs naturally ask questions. They also suggested features such as short audio-visual lessons, frequently asked questions, reminders, quizzes and progress tracking.

Tata Chemicals Mithapur Launches 'Suraksha Gurukul' Safety Training Centre

Tata Chemicals Mithapur has launched 'Suraksha Gurukul', a Safety Training Centre for employees, contractors, visitors and drivers. The centre was inaugurated by Vikrant Deoras, Site & Manufacturing Head, Tata Chemicals Mithapur, in the presence of senior leadership, department heads and employees.

Developed over two years, the centre brings together Tata Chemicals' Golden Safety Rules, digital learning, simulation-based training, practical demonstrations and competency assessments.

A key feature of the centre is its vehicle driving simulators, which allow drivers to practise different driving scenarios before entering operational areas. The training focuses on driver competency, hazard perception and defensive driving.

The centre also offers VR-based modules on areas such as working at height, fire safety and emergency preparedness. Plant locations and operational activities at Tata Chemicals Mithapur have also been digitally recreated to provide site-specific learning.

Suraksha Gurukul includes a Safety Exhibition Gallery with safety equipment models, demonstrations, learning displays and best practices. The training journey covers classroom and digital learning, practical sessions, simulator and VR training, assessment and certification.









Commenting on the launch, Vikrant Deoras, Site & Manufacturing Head, Tata Chemicals Mithapur, said: "Safety is a core part of how we operate at Tata Chemicals. Suraksha Gurukul brings together technology, practical training and site-specific learning to strengthen safety competence among our employees and partners. As we continue our journey towards Zero Harm, the centre will support a stronger and more proactive safety culture at the Mithapur site."

The centre was developed with support from the Safety, Civil, Electrical and Plant teams at Mithapur.

India's wind energy poised for 8 GW installations in FY26-27

India's wind energy sector is poised for a new phase of accelerated growth, with annual installations expected to reach 8 GW in FY26-27 and scale progressively to 13.2 GW by FY30-31, taking cumulative installed wind capacity to around 107 GW. With 59.2 GW already installed and another 43 GW under construction, India has visibility of 102.2 GW of wind capacity, providing a strong foundation for the next phase of expansion. The growth trajectory is further supported by the Rs 1.86 lakh crore Green Energy Corridor Phase-III, which will strengthen transmission infrastructure and enable the integration of growing renewable capacity, supporting India's ambition of 900 GW of installed non-fossil fuel capacity by 2035.

The announcement was made at Windergy India 2026, the Indian Wind Turbine Manufacturers Association's (IWTMA) annual flagship event, being held from 7–9 October 2026. Windergy India is the leading global epicentre for the wind energy sector, bringing together around 400 global exhibitors from over 20 countries along with 500 delegates, further elevated by dedicated pavilions from Denmark, Germany and Spain.

Union Minister for New & Renewable Energy, Consumer Affairs, Food & Public Distribution Pralhad Joshi, said: "India's wind sector has demonstrated strong momentum, with the highest-ever annual installation of 6.05 GW achieved in FY26. We are confident that annual wind installations will surpass this record in FY27, marking another important milestone in India's wind energy journey. This continued growth will strengthen the foundation for achieving our national ambition of 100 GW of installed wind capacity by 2030 and further accelerate the development of India's wind sector. With a strong project pipeline and a supportive policy framework, India is well placed to build on this momentum and achieve the scale required for the next phase of wind energy growth."

Girish Tanti, Chairman, Indian Wind Turbine Manufacturers Association (IWTMA), said, "India's wind sector is entering a new phase of sustained growth. With 59.2 GW installed and 43 GW under implementation, India is on track to cross 100 GW of wind capacity by 2030, creating a strong foundation for global leadership in wind manufacturing and exports. India has built over 24 GW of annual wind manufacturing capacity, up from around 12 GW in FY23, supported by a strong component ecosystem. With exports reaching ₹12,800 crore in FY2025-26, nearly 50% higher YoY, India can significantly expand its global footprint. Our ambition should be to raise India's share of global wind turbine exports from ~2% today to 10% by 2030, establishing India as a global hub for wind turbines, components, technology and engineering."

Aditya Pyasi, CEO, Indian Wind Turbine Manufacturers Association(IWTMA), said: "India's next phase of wind growth must be supported by a resilient and globally competitive domestic manufacturing ecosystem. As the industry transitions towards higher-rated turbines, we need to accelerate indigenisation across critical components while simultaneously building the manufacturing capacity required to meet growing demand. This will require coordinated efforts across OEMs, component manufacturers, technology providers and government, with a focus on strengthening supply chains, developing domestic capabilities and enabling scale. Windergy India 2026 provides an excellent platform to bring the ecosystem together."

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Bisleri International Partners with National Book Trust at Gomti Book Festival 2026 to Promote Plastic Recycling

Bisleri International, under its Bottles for Change initiative, is bringing together literacy and environmental awareness at the Gomti Book Festival 2026 in collaboration with the National Book Trust, India (NBT), Ministry of Education, Government of India.

As part of the initiative, the comic book "Chhota Bheem & Vidya – Big Green Mission" will be distributed among children attending the festival. The book aims to encourage reading and helping children understand the importance of responsible plastic waste management and adopt more sustainable everyday practices, promoting circular economy and recycling. Bisleri set up a Bottles for Change stall at the venue, showcasing a range of products made from recycled plastic. Through simple, interactive displays, students will discover how used plastic bottles can be collected, recycled and upcycled into a variety of everyday products, highlighting the many innovative ways plastic can be given a new life.



Bisleri Bottles for Change engages students at the Gomti Book Festival, promoting plastic recycling and responsible waste management



Bisleri's Bottles for Change stall at the Gomti Book Festival showcases products made from recycled plastic

On the occasion, K. Ganesh, Director – Sustainability & Corporate Affairs, Bisleri International, said, "Our collaboration with the National Book Trust at the Gomti Book Festival reflects our belief that environmental awareness should start at an early age. Through 'Chhota Bheem & Vidya – Big Green Mission', we are using storytelling to make responsible plastic waste management simple, engaging and relatable for children. We hope this initiative encourages young readers to understand the importance of responsible post-consumer plastic disposal and embrace simple everyday actions that can contribute to a greener and more sustainable future." Yuvraj Malik, Director, National Book Trust, India, said, "We are delighted to continue our collaboration with Bisleri on plastic awareness. Books have the power to shape how children understand the world around them. Through the Gomti Book Festival and the distribution of 'Chhota Bheem & Vidya – Big Green Mission', we hope to make environmental responsibility engaging for children and encourage them to adopt simple practices like plastic segregation and recycling."

The nine-day Gomti Book Festival showcase a diverse selection of books across genres and age groups, with more than 120 publishers from across India presenting their publications across over 200 book stalls. Visitors will also have an opportunity to explore the Rashtriya e-Pustakalaya, India's national digital library, which offers free access to more than 3,000 e-books across genres and Indian languages. Besides books, the festival offers a range of literary and cultural experiences, including interactions with authors, panel discussions, book launches, cultural programmes and activities for children.

Wockhardt Foundation's Mobile Medical Unit Brings Diabetes Care to the Doorstep of Rural Chhattisgarh

With more than half of people with diabetes in India estimated to be unaware of their condition, the challenge is not only treating the disease but finding people who may never undergo routine screening. For 50-year-old Bhagwati Tarak of Biroda in Khorpa, Chhattisgarh, a Mobile Medical Unit (MMU) reaching her village led to the detection of persistently high blood sugar after she had been living with weakness, frequent urination, tiredness and body pain for nearly five months.

The need for such community-level screening is particularly relevant in Chhattisgarh, where more than 38.6 lakh people have been screened for diabetes and 6.88 lakh people identified with the condition have been receiving treatment, counselling and regular follow-up, according to data from the National NCD Portal. For people like Bhagwati, however, access to screening often depends on healthcare services reaching closer to their communities. She approached the MMU team when it visited her village, where a clinical assessment found her blood sugar to be significantly elevated, prompting repeated testing and medical follow-up.

Her blood sugar was 299 mg/dL on March 6, 2026, followed by 275 mg/dL on March 20 and 229 mg/dL on April 3. On July 6, it rose sharply to 461 mg/dL. Following medical intervention and continued monitoring through the MMU, it fell to 250 mg/dL by August 17. The repeated elevated readings and clinical assessment led to a diagnosis of Diabetes Mellitus, a condition in which blood sugar remains too high. She was prescribed Metformin 500 mg and Glimepiride 2 mg to help control blood sugar, along with Aceclofenac and Paracetamol for body pain. She was also advised dietary precautions, regular medication and periodic check-ups through the MMU.

The case is significant because diabetes care does not end with identifying high blood sugar. India's national NCD programme calls for screening at the community level followed by diagnosis, treatment, referral and follow-up.

Bhagwati Tarak had been living with weakness, frequent urination and fatigue for five months before a Mobile Medical Unit brought screening and continued care to her village

Bhagwati's experience mirrors that continuum at the village level, with repeated readings allowing the healthcare team to track a condition that changed considerably over several months.

Dr Huzaifa Khorakiwala, Trustee & CEO, Wockhardt Foundation, said, "For people living in underserved communities, timely access to basic screening, diagnosis and follow-up can make a meaningful difference in managing chronic health conditions. Bhagwati's case highlights how regular community-level healthcare can help identify persistently high blood sugar levels and connect individuals with the care and guidance they need. Through our Mobile Medical Units, we remain committed to taking essential healthcare services closer to communities and encouraging people to seek timely medical attention rather than ignore recurring symptoms."

Denis Varghese, Programme Head – Mobile1000, Wockhardt Foundation, said, "Diabetes often requires consistent monitoring and long-term management, making continuity of care particularly important. Bhagwati's journey demonstrates the value of repeated health checks at the community level, where patients can be monitored over time and receive medical advice based on their changing health needs. Our Mobile Medical Units are designed to bridge gaps in access by bringing screening, consultation, medicines and follow-up closer to people in underserved areas."

Bhagwati expressed her gratitude for bringing healthcare services to her village and supporting her through regular consultations and treatment. For her, the MMU's role went beyond the initial blood sugar test. As her readings changed over the following months, the same healthcare team continued to provide consultations, treatment and medical guidance closer to her community.

PwC India Launches 'Aspiring Women Leaders Scholarship' to Empower Women in Technology

PwC India has announced the launch of the Aspiring Women Leaders Scholarship, an initiative aimed at empowering the next generation of women leaders in technology. With women continuing to be underrepresented in the technology workforce, the scholarship is a deliberate step towards addressing this gender gap and ensuring more equitable access to opportunities in the sector. The initiative reflects PwC India's Vision 2030, a commitment to building a Viksit Bharat by enabling the youth of the country and supporting the development of a skilled, future-ready workforce.

The initiative will support deserving female students from India's premier institutes, creating pathways for them to pursue their aspirations of becoming future leaders in technology #SapnoKiNayiUdaan

The Aspiring Women Leaders Scholarship is designed to provide targeted support for female students, from India's prestigious academic institutions – Indian Institute of Technology Bombay, Indian Institute of Technology Kharagpur, National Institute of Technology, Tiruchirappalli, Birla Institute of Technology and Science, Pilani, Kalinga Institute of Industrial Technology, and other empanelled institutes. The scholarship will initially be open to eligible students entering their second year of Bachelor of Technology (BTech)/ Bachelor of Engineering (BE) programmes at the participating institutions, which will continue for the remainder of their course. In subsequent years, the programme will expand to include first-year students, extending the opportunity to support promising young women from earlier in their academic journey. The scholarship also aims to support women from modest economic backgrounds, ensuring that opportunity remains inclusive and reaches students from diverse contexts.

"India's future depends on giving every young person the opportunity to realise their potential. We believe that creating more equitable pathways for women in technology is an important part of that future. Through the Aspiring Women Leaders Scholarship, we are doing our part to open doors for women by supporting their education, skills and career journeys. Our hope is that these opportunities will help nurture a generation of talented women leaders who will shape India's growth and create a more inclusive future," said Sanjeev Krishan, Chairperson, PwC in India.

Candidates are selected through a structured, multi-stage process designed to ensure both merit and fairness. This includes an eligibility screening, an online assessment, and panel interviews conducted by a committee comprising PwC India leaders and external experts. Final selections are made in consultation with the respective institutes.

The scholarship will cover entire academic fees for selected students, provide state-of-the-art laptops, and offer continued mentorship opportunities, technical workshops, voluntary internships, and pre-placement opportunities with PwC India where eligible. Through this combination of financial empowerment and opportunities for learning and professional exposure, the initiative aims to help students take confident steps towards their careers.

Vivek Prasad, Chief People Officer, PwC India, added, "We believe empowering women in technology is key to driving innovation and growth in India's digital future. This scholarship exemplifies our 'skills-first' approach to talent development and our commitment to building a strong pipeline of women leaders."

PwC India is committed to driving inclusive growth and empowering the next generation of women leaders to shape a brighter, more equitable future. More details can be found on pwc.in.

Dr Kasturirangan Trust Launched to Support Young Researchers in India

The Trust will work across space and technology, education, sustainability and public policy. Its first initiative, the Dr Kasturirangan 2027 Fellowship, opens for nominations on October 2



L-R: Anurag Behar, Dr. Sanjay Rangan, Dr Mukund Kasursrinivas Rao, Trustees of the Dr Kasturirangan Trust

The Dr Kasturirangan Trust was launched at an inaugural event in Bengaluru on October 25 to carry forward the legacy of Dr. Krishnaswamy Kasturirangan, whose contributions over six decades helped shape India's progress in space, science and technology, and education.

The Trust aims to support research, encourage new ideas and find practical solutions to the problems society faces. Its work will focus on four areas: space and technology, education, sustainability, and public policy.

The Trust will support researchers through fellowships, scholarships and grants. It will also organise conferences, support book-writing and scientific curation, and work with institutions in India and abroad to promote research and improve public policy.

In the long term, the Trust aims to build an institution dedicated to future-oriented thought, research and problem-solving for India.

Dr. Sanjay Rangan, Trustee of the Dr Kasturirangan Trust, said, "Dr. Kasturirangan believed in the power of knowledge and research to address the challenges facing our country. Through this Trust, we hope to carry forward his vision by bringing people and institutions together to find solutions that benefit society and support future leaders."

The Trust is guided by Dr. Kasturirangan's values of responsible research, compassion, excellence and respect for nature. It is a non-profit, non-political public charitable trust, governed by a Board of Trustees, an Advisory Board and an Executive Council.

FIRST INITIATIVE: DR KASTURIRANGAN 2027 FELLOWSHIP

The Trust's first initiative, the Dr Kasturirangan 2027 Fellowship, will support six PhD and post-doctoral researchers whose work spans more than one of the Trust's four focus areas and has real-world application. Each fellow will receive a one-time award of Rs. 4 lakh towards research costs, along with mentorship, two workshops a year to present their work, and a place in a growing peer community.

The fellowship is open to candidates who submitted their PhD thesis between January 1, 2025 and December 31, 2026. In its first year, candidates must be nominated, either by a group of eminent individuals who knew Dr. Kasturirangan or by leading universities; an open call for applications is planned for later years. Nominations open on October 27, 2026 and close on December 31, 2026, and the first cohort of fellows will be announced on April 25, 2027.

ABOUT DR. K. KASTURIRANGAN

Dr. K. Kasturirangan (1940–2025) was a space scientist who led India's space programme as Chairman of the Indian Space Research Organisation (ISRO) from 1994 to 2003, and went on to shape national science and education policy as a Member of Parliament (Rajya Sabha), a Member of the Planning Commission and Chairman of the committee that drafted the National Education Policy 2020. He was awarded the Padma Vibhushan in 2000.

CSR INDIA UNITED

JK Tyre Honoured with 'Mahatma Award 2026' for Outstanding Community Initiatives

Recognition acknowledges the Company's sustained commitment to community development, social welfare and creating meaningful impact across communities

JK Tyre & Industries Ltd., one of India's leading tyre manufacturers and pioneers of technological innovation, has been conferred with the prestigious 'Mahatma Award for Community Initiatives 2026', recognising the Company's sustained efforts towards community development and social welfare. This marks the fourth consecutive year that JK Tyre has been honoured with a Mahatma Award, reaffirming its continued commitment to creating meaningful and sustainable impact across communities. The award was received by B. S. Dagar, Vice President – IR, EHS & CSR, JK Tyre, during a distinguished ceremony graced by eminent dignitaries including Dr. Santrupt Mishra, Hon'ble Member of Rajya Sabha; Santosh Kumar Jha, CMD, Konkan Railways; and Amit Sachdeva, CSR Man of India, who presented the award to the Company.



Commenting on the achievement, Anshuman Singhania, Managing Director, JK Tyre & Industries, said, "At JK Tyre, our commitment to the communities we operate in is an integral part of our journey towards responsible and sustainable growth. Receiving the Mahatma Award for the fourth consecutive year is a matter of great pride and reinforces our belief in creating impact that is meaningful, inclusive and enduring. This recognition belongs to our CSR teams, implementation partners and the communities who have been an integral part of these initiatives. We remain committed to deepening our efforts and contributing towards building stronger and more empowered communities."

The Company's CSR programmes are primarily focused on communities around its manufacturing locations and are designed to address local needs while enabling long-term socio-economic development.

Under its Sarthi initiatives, JK Tyre undertakes programmes across livelihood, education, healthcare, water conservation and rural development. During FY2025-26, these programmes benefited over 1.3 lakh people, taking their cumulative reach to more than 1.5 million lives. The Company's community interventions include Shiksha Sarthi, focused on education; Arogya Sarthi, focused on healthcare; Ajivika Sarthi, supporting sustainable livelihoods through skill development and livelihood enhancement; Jal-Vayu Sarthi, addressing water conservation and environmental priorities and Vikas Sarthi focused on Rural Development.



Anandana – The Coca-Cola India Foundation and Lakshya Drive Responsible Waste Management During Tirupati Brahmotsavam

Part of Maidaan Saaf campaign, initiative implemented at Tirumala to encourage visitors to collect and responsibly dispose of packaging waste

Anandana – The Coca-Cola India Foundation, in partnership with Lakshya - A Society for Social and Environmental Development and in collaboration with the Tirumala Tirupati Devasthanams (TTD), implemented a waste management initiative during the Tirupati Brahmotsavam 2026 at Tirumala. The first such initiative undertaken during the festival, the programme focused on encouraging responsible waste management practices and supporting cleaner surroundings across key high-footfall areas.

As part of the intervention, reusable collection bags were also distributed among visitors, providing them with a simple way to collect packaging waste generated during their visit and carry it for responsible disposal.

As part of the intervention, reusable collection bags were also distributed among visitors, providing them with a simple way to collect packaging waste generated during their visit and carry it for responsible disposal. The approach encouraged people to actively participate in managing the waste generated while supporting cleaner surroundings during the large-scale celebrations.

Dr. Sumant Shekhar, Lakshya NGO, “Working closely with pilgrims on-ground showed us that when people are provided with the right means and encouraged to participate, responsible waste management can become an integral part of the festival experience. We are glad to partner with Anandana - The Coca-Cola India Foundation to implement this effort on-ground. The initiative received strong visibility among pilgrims and visitors throughout the festival and was appreciated by officials of the Tirumala Tirupati Devasthanams.”

According to Devyani R L Rana, Vice President- Public Affairs, Communications & Sustainability, Coca-Cola India and Southwest Asia, “At Anandana - The Coca-Cola India Foundation, we have been working with communities and partners at grassroots to integrate responsible and structured waste management at some of India’s most visited cultural destinations. As part of our ongoing Maidaan Saaf campaign, we are bringing this effort to Tirupati Brahmotsavam for the first time this year. By working closely with pilgrims, local communities and partners on-ground, we hope to make waste disposal more visible and participative part of the pilgrimage experience.” The Tirupati initiative extends Maidaan Saaf’s focus on community participation to another high-footfall religious destination, demonstrating how simple, practical interventions can inspire awareness and long term behaviour change towards waste management.



Brother India Continues Its Education Support Program for 400 Children in Belagavi

True to its philosophy of "At Your Side", Brother India renews its third-year partnership with Mahesh Foundation

Brother International India, a leading provider of printing and imaging solutions, has renewed its CSR partnership with Mahesh Foundation, Belagavi, for FY 2026-27. The initiative will support the education of 400 underprivileged children, ensuring access to quality learning opportunities, healthcare, and holistic development.

The renewal was marked by a ceremony at Mahesh Foundation, Belagavi, on September 7, 2026. Now in its third year, the partnership continues to back the Foundation's work with HIV-positive and underprivileged children. For the past 18 years, Mahesh Foundation has helped these children lead independent and dignified lives. Its Care Home provides shelter, nutrition, healthcare, and education, directly benefiting over 4,900 children. Its Community Support program has reached 90,000 socially disadvantaged families affected by HIV, and the Foundation has supported the education of 72,000 underprivileged children.

Alok Nigam, Managing Director, Brother International (India) Private Limited, said, "It is always inspiring to see the meaningful work being done by Mahesh Foundation under the leadership of Mahesh Ji, with the dedicated efforts of the teachers and team. We are happy to continue supporting this noble cause and contribute towards providing greater opportunities to children in need. We are also impressed by the Mobile Computer Lab initiative, a valuable concept that brings computer education to children who may not have access to it in their schools."

Mahesh Jadhav, Founder, Mahesh Foundation, said, "This is our third year of partnership with Brother International, and it is a very special one for us because the support directly benefits the children. Over these three years, the Brother India team has seen the improvements, achievements, and impact of its support first-hand. It gives us great happiness to welcome them every year and show them something new. One of our biggest achievements is that last academic year, Utkarsha School's first SSLC batch achieved a 100% result. Thank you, Brother, for standing with us and supporting us."

By partnering with Mahesh Foundation, Brother India is reinforcing its commitment to sustainable community development. The initiative supports UN SDG 4: Quality Education by ensuring that children from disadvantaged backgrounds have access to equal learning opportunities and the resources they need to grow.

Vedanta's Girl-Focused Programmes Benefit Over 10 Lakh Girls in FY26

Marking International Day of the Girl Child, Vedanta Group, one of the world's leading natural resources companies with businesses across metals, oil & gas, critical minerals, power and technology, announced that its girl-focused programmes have benefited over 10 lakh girls in FY26. The impact of these programmes spans over 13 Indian states, as well as international operational geographies including South Africa and Zambia. The International Day of the Girl Child highlights the rights, opportunities and challenges faced by girls and calls for greater investment in their development and empowerment. Aligned with this objective, Vedanta's girl-focused programmes are mindfully designed to support them at different stages of their journey, empowering the girl child holistically through access to education and skill development, healthcare, sports and livelihood opportunities.



Vedanta creating pathways for girls through sports



Vedanta supporting girl child Nand Ghar

These contribute to the UN Sustainable Development Goals, including SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

Vedanta is supporting children in their formative years through its Nand Ghars, reaching over 5 lakh children and helping provide the girl child with a healthier foundation in her early years. Vedanta is also facilitating greater access to learning through functional STEM labs and digital classrooms, helping create career pathways for girls in these areas. Beyond the classroom, Vedanta's vocational programmes provide training that can help them pursue employment and earn a livelihood.

The Group's efforts extend to addressing critical health needs among adolescents, including anaemia, menstrual hygiene and cervical cancer awareness. At the community level, Vedanta has reached over 2 lakh people, encouraging open conversations around adolescence, prevention of child marriage and women's legal rights.

Sports are also emerging as an important avenue for girls to build confidence and pursue their potential. Vedanta is expanding opportunities across football, karate and martial arts, including residential girls' football academies in Rajasthan and Goa, while martial arts programmes have extended to Odisha and Visakhapatnam. The football programme is also seeing girls progress to competitive levels, including India Under-16 and Under-17 trials and state-level representation, reflecting the growing opportunities for girls to participate and compete in sport.

Together, these initiatives reflect Vedanta's continued focus on enabling girls to learn, stay healthy, build skills, participate and pursue livelihoods, while creating opportunities that can strengthen their agency and participation in the social and economic development of their communities.

Beyond community initiatives, Vedanta Group has raised its ambition to achieve 35% women representation across all levels of the organisation. This comes against a stark industry backdrop. According to the Annual Survey of Industries in India, women accounted for around 18% of direct employment across industries in 2023–24, while in core sectors such as mining and metals, their share remains only about 6%.



BEYOND EXTREME HEAT

UNDERSTANDING ASIA'S CLIMATE-HEALTH FUTURE

From toxic haze and extreme heat to flooding and shifting disease patterns, climate-related risks are placing growing pressure on public health systems across Asia. Experts say stronger prevention, better data and deeper cross-border cooperation will be critical to building resilience. **Rhick Lars Albay** presents an analysis:

ast month, asthma cases in Malaysia rose by 259 per cent amid haze affecting several parts of the country, according to the country's health minister, while hundreds of schools in its Sarawak state were forced to close as air quality reached unhealthy levels.

Meanwhile, Singapore's environment agency warned that occasional haze may also affect the city-state, as forest fires fuelled by a strong El Niño have continued to burn across neighbouring Indonesia's Sumatra and Kalimantan.

These episodes illustrate only one dimension of Asia's growing climate-health challenge. Experts say extreme heat, flooding, shifting patterns of vector-borne disease and mounting pressure on healthcare systems are also placing communities across the region at greater risk.

"Understanding the influence of environmental factors on health outcomes is becoming increasingly urgent, both from a protection perspective and in helping people and communities build resilience," Mitch New, Group General Counsel, AIA and Chairman of AIA's ESG Committee, told Eco-Business.

"[Climate] risks interact with broader trends shaping Asia, including ageing populations, rapid urbanisation, pressure on healthcare systems and other key infrastructure," he added, citing findings by *Climate and Health in Asia, a report by Forum for the Future,* commissioned by AIA, examining the health impacts of climate change across Asia and how insurers can strengthen resilience.

The report cited the World Health Organization (WHO) showing that 99 per cent of Southeast Asian cities are breathing air above safe levels. It said climate change, "once primarily an environmental concern," is now recognised as a global health threat, with implications for how health and life insurers assess risk, design products and make investment decisions.

"Climate-health is becoming one of the defining development challenges for the region," highlighted Dr Sally Uren, Executive Director and Chief Acceleration Officer at Forum for the Future.

Anil Soni, Chief Executive Officer of the WHO Foundation, shares a similar view.



Stronger prevention, early-warning systems and resilient healthcare infrastructure will be critical as climate-related health risks place increasing demands on communities across Asia.
Image: ILO Asia-Pacific, CC BY-SA 3.0, via Flickr.

"Climate change is no longer a distant environmental concern," Soni wrote in the *Climate and Health in Asia* report foreword, adding that rising temperatures, extreme weather events, air pollution and changing patterns of disease are placing growing pressure on individuals, communities and health systems alike.

"As these impacts intensify, they are reshaping health outcomes across the world, affecting how people live, work and stay well."

WEB OF RISKS

For Adrita Bhattacharya-Craven, Director of Population Health Trends at the insurance think tank The Geneva Association, understanding those connections is more important than simply cataloguing individual hazards.

"Heat gets [the most] headlines because it's visible and immediate," said Bhattacharya-Craven, also one of the report's foresight resource contributors, but the health risks extend far beyond heat.

The Asia-Pacific region is particularly exposed: around 75 per cent of its workers are already exposed to excessive heat, higher than the global average of 71 per cent, according to the International Labour Organization (ILO). The ILO also estimates that heat stress could result in the loss of the equivalent of 13 million jobs across Asean economies by 2030.

"It's exactly why [*the Climate and Health in Asia*] report differentiated between acute and slow-changing effects, because if you focus only on the dramatic, sudden risks, you miss the long tail that climate change is quietly leaving behind," Bhattacharya-Craven added.

She explained that one of those longer-term risks is the changing environment for vector-borne diseases.

"Vector-borne disease is becoming genuinely worrying," said Bhattacharya-Craven. "A hotter climate and increasingly erratic rainfall are extending the breeding and transmission season for dengue-carrying mosquitoes, and we're now seeing outbreaks land at times of year that are unexpected."

The implications are particularly significant in Asia, which accounts for about 70 per cent of global dengue cases, according to WHO.

Dengue infections in Malaysia have surged 56.2 per cent this year, while key cities in the Philippines have declared dengue epidemics amid a sharp rise in cases this monsoon season.

"Flooding brings waterborne disease and displacement; rainfall deficits bring water scarcity, poor hygiene, diarrhoeal disease, dehydration and kidney disease," said Bhattacharya-Craven.

An estimated 2.9 million additional people in Asian metropolitan areas could be exposed to dengue over the next decade as changing rainfall patterns expand the disease's geographic range and transmission window.

"The effects of climate change will continue to appear over time, and many will emerge in parts of our lives not currently seen as directly connected," the report highlighted.

Extreme heat adds another layer, exacerbating cardiovascular and respiratory illnesses, according to Bhattacharya-Craven, who said those effects can become more severe when extreme heat coincides with poor air quality.

Professor Steve Yim, Founding Director of the Centre for Climate Change and Environmental Health at Nanyang Technological University (NTU), said these compound hazards remain poorly captured because most warning systems continue to assess climate threats separately rather than integrating their health effects.

"Most existing warning systems evaluate hazards in isolation and seldom integrate health metrics, leaving the amplified risks of these combined events largely overlooked," he told Eco-Business.

Yim noted that the health impacts can be particularly severe when hazards overlap.

"Asia is home to more than half of the global population and is highly exposed to climate-related risks, including extreme heat, flooding, air pollution and climate-sensitive infectious diseases, placing it at the frontline of this challenge," said WHO



From construction sites to farms and city streets, outdoor workers are among those most exposed as extreme heat becomes more frequent and intense across Asia.
Image: Icaro Cooke Vieira / CIFOR, CC BY-SA 3.0, viaFlickr.

Foundation's Soni. "Rapid urbanisation, population ageing and existing health inequities further increase vulnerability. In many parts of Asia, the health impacts of climate change are already visible, even when they are not always recognised or recorded as climate-related."

Around 2.2 billion people already live in Asian urban areas, and another 1.2 billion are expected to move to cities over the next 25 years. As cities grow denser, limited green space and the urban heat-island effect can increase exposure to heat and air pollution, while rapid urbanisation puts additional pressure on infrastructure and healthcare services.

"For Asia specifically, the physical signal is clear," Bhattacharya-Craven said, as Asia is warming twice as fast as the rest of the world.

An ageing population adds another layer of vulnerability. One in four people in Asia will be over 60 by 2050, while 44.1 million people in the Asia-Pacific region live below one metre of elevation, leaving many communities exposed to rising seas and flooding.

Forum for the Future's Uren underscored that those facing the greatest exposure are often those with the least capacity to adapt, including older people, residents of dense urban and delta communities, and outdoor and informal workers.

"There is a clear equity, or lack of it, issue associated with climate impacts on health," she explained.

BUILDING HEALTH SYSTEMS THAT CAN WITHSTAND CHANGE

An assessment of 10,117 hospitals across Southeast Asia found rising risks of climate-related damage under a high-emissions scenario, with 696 hospitals in Indonesia and 550 in the Philippines classified as high risk to floods and other extreme weather events. Public health spending in Asia's lower-income countries averages just 4.5 per cent of GDP, compared with 9.7 per cent in OECD countries.

For AIA's New, the ability of healthcare systems to keep operating as these pressures evolve is becoming increasingly important.

"A key priority must be ensuring healthcare systems remain resilient and are able to continue delivering accessible, affordable and quality care," he said.

"Alleviating these systemic pressures will require greater emphasis on prevention, investment in resilient healthcare infrastructure and stronger collaboration across the healthcare ecosystem," New continued.

"At the same time, reducing emissions and accelerating the transition to a lower-carbon future remain essential, as mitigation helps reduce the long-term health risks that healthcare systems and communities will increasingly face."

Yim said the challenge becomes more acute when multiple hazards strike at once, exposing weaknesses in systems designed around individual threats.

"Most health and disaster risk management systems in Asia operate in linear, single-hazard silos," he said.

"When a compound event occurs, such as a flood disrupting healthcare supply chains and power grids precisely during a severe heatwave and dengue surge, the result is system failure. Emergency rooms become overwhelmed while public health infrastructure loses cooling and clean water capacity," Yim continued.

Uren similarly warned that the combination of ageing populations, rapid urbanisation and Asia's large disaster protection gap could steadily weaken health-system capacity at a time when demand is increasing.

Preparedness, however, remains uneven. Bhattacharya-Craven said climate-related health risks are increasingly recognised by policymakers, but health systems still face constraints in turning that awareness into readiness.

A 2024 Geneva Association study found that insurers expect long-term effects on the insurability and affordability of health and life insurance to become more pronounced if global warming surpasses 1.5°C.

Health systems globally could face an additional US$1.1 trillion burden from climate change, driven by floods, droughts, heatwaves and infectious disease, according to the World Economic Forum. Existing



Outdoor workers face some of the most direct health risks from rising temperatures, with prolonged heat exposure increasing the threat of heat stress, dehydration and other illnesses.
Image: ILO Asia-Pacific, CC BY-SA 3.0, via Flickr.

pressures on healthcare demand and costs can make it harder for systems to adapt quickly.

That puts prevention and adaptation at the centre of the response. Bhattacharya-Craven identifies health-focused early-warning systems as one practical opportunity, particularly systems that can translate climate information into decisions about hospital capacity, medicine supplies and support for vulnerable groups.

The economic burden is also likely to fall disproportionately on people and systems least able to absorb it. Uren noted heat exposure caused an estimated US$1.09 trillion in lost labour income globally in 2024, while Asia's disaster protection gap of 88 to 90 per cent means much of the cost of recovery falls on households and health systems.

Yim said such systems should move beyond basic weather alerts by combining meteorological monitoring with disease surveillance. This could allow cities to activate cooling centres, pre-position medical supplies and issue targeted warnings to vulnerable groups before compound hazards peak.

PREVENTION BEFORE PROTECTION

Prevention can reduce pressure on healthcare systems before climate-related hazards translate into illness or disrupt services, according to New.

For communities, this can mean better access to primary care, the promotion of healthier lifestyles, timely warnings and targeted support for vulnerable groups. For healthcare providers, it may be in the form of stronger disease surveillance, resilient facilities, reliable energy and water supplies, emergency preparedness and digital tools that can keep care running when physical access is disrupted.

"Climate-health challenges highlight the importance of supporting people before adverse events occur," New said. "As health risks evolve, there is an opportunity to complement protection with approaches that encourage prevention, preparedness and resilience. This aligns with AIA's purpose of helping people live Healthier, Longer, Better Lives."

New highlighted AIA Vitality, a health and wellbeing programme that uses education and behavioural incentives to encourage healthier lifestyles and preventive care. The *Climate and Health in Asia* report cited that among participating members at clinical risk thresholds, 23 per cent achieved healthier body mass index (BMI) ranges, 66 per cent reached healthy blood glucose levels and 35 per cent returned to healthy cholesterol levels, through incentivised physical exercise, sleep tracking and health assessments.

New also points to the role of awareness and earlier intervention in reducing vulnerability and improving long-term health outcomes.

"Insurers can contribute in several ways beyond traditional coverage," said New. For AIA, that includes preventive health programmes like AIA Vitality, the AIA Healthiest Schools Programme, healthcare partnerships and research. The AIA Healthiest Schools Programme provides teachers across Asia-Pacific with educational resources on health and wellbeing.

Uren said the wider shift towards prevention could be critical to building resilience, as health systems increasingly need to reduce vulnerability before people require acute care.

"Across the world we are seeing health systems shift towards prevention rather than cure," she said. "This broader reframe of how we view the function of our health systems is critical to building resilience."

"One of the biggest barriers today is that climate change and health have often been treated as separate conversations," New said. "While awareness is growing, important gaps remain in data, research and understanding, particularly around how climate-related risks affect different populations and healthcare systems across Asia."

Those gaps matter beyond the insurance industry. Better evidence is needed by governments and healthcare providers to identify vulnerable populations, plan services



Healthcare systems across Asia are being tested by overlapping climate hazards, including heatwaves, toxic air, flooding and shifting patterns of infectious disease.
Image: ILO Asia-Pacific, CC BY-SA 3.0, via Flickr.

and prepare for emerging risks. For insurers, it can also inform how new risks are assessed and products are developed.

Yim said the problem is particularly acute in Asia, where health data remains fragmented and there is no centralised regional system for coordinated collection and standardised quality control.

"Asia is not one climate risk profile, it's dozens," Uren said, adding that much of the available data does not capture variation at the district or city level. Fragmented health records between public and private providers also make it difficult to link illness to climate exposure, particularly for slower-onset impacts such as chronic disease.

That makes collaboration central to building resilience.

"Governments, healthcare providers, researchers, businesses, communities, and insurers all have important roles to play," New said. "The greatest value will come from collaboration that helps reduce climate-related health risks and strengthen the resilience of communities and healthcare systems."

Climate-related health impacts also include mental health. Around 67 per cent of people affected by floods experienced anxiety symptoms and 60 per cent experienced depression.

Yim said the mental health burden of climate change remains under-researched, with displacement, chronic environmental degradation and slow-onset hazards such as sea-level rise contributing to psychological stress and other longer-term impacts.

Digital healthcare and telemedicine could help maintain continuity of care when climate events disrupt physical infrastructure, Uren said.

In Singapore, AIA has partnered with digital health provider WhiteCoat on the Think Well programme, which aims to make mental health support more accessible by giving workers covered under participating corporate outpatient plans access to mental health self-assessments, text-based sessions with professionals and video and in-person consultations.



People lie on the grass under trees during a sunny heatwave in Hong Kong.
Image: Hong Kong Free Press, CC BY-SA 3.0, via Wikimedia.

These initiatives form part of AIA One Billion, the company's goal of reaching one billion people with health and wellbeing initiatives by 2030.

PREPARING FOR WHAT COMES NEXT

New believes that recognising the connection between climate change and health will be critical to strengthening resilience.

"The more effectively we connect climate and health, the better positioned we will be to strengthen prevention, improve preparedness, and build healthier, more resilient communities for the future," New said.

The report similarly notes that climate risks require systems capable of anticipating and adapting to change: "Escalating climate risks will not resolve on their own and require coordinated interventions and systems that are prepared to respond. It will take time to build, but it is achievable."

Uren said there are reasons for optimism as the response begins to move beyond individual projects towards more coordinated, system-level approaches. Asia also has significant strengths to build on, including high smartphone penetration, a young and increasingly health-literate population and a growing pool of climate-risk expertise, she said.

"The task now is coordination and collaboration rather than invention, and that's a solvable problem," Uren said.

For insurers, that means contributing to prevention, health engagement, access to care, research and partnerships alongside their traditional role in protection. More broadly, climate-health resilience cannot be achieved by any single actor. Governments, healthcare providers, researchers, investors, and civil society all have important roles in strengthening the resilience of healthcare systems across Asia.

Asia's climate-health future will depend on how effectively those pieces come together, and how early the region acts.

(Source: https://www.eco-business.com/news/beyond-extreme-heat-understanding-asias-climate-health-future/)



Under the new law, data centre operators can be held to the green energy targets they promised in their tender bids. *Photo: VENUS MAJOR on Unsplash.*

SINGAPORE SETS SOUTHEAST ASIA'S FIRST BINDING DATA CENTRE RULES, BUILDING DEMAND FOR CLEAN ENERGY

After a 2019 pause and two rounds of limited tenders, Singapore joins China, Germany and Japan in regulating data centre efficiency by law, while making operators' clean energy pledges binding, writes **Kelvin Yap**

Singapore has become the first country in Southeast Asia to pass a law setting binding efficiency standards and clean energy requirements for data centres, as demand for computing power from artificial intelligence (AI) puts pressure on its land, power and water.

The Digital Infrastructure Bill, passed by Parliament on 7 October, requires every data centre with a critical IT load of at least 3 megawatts (MW), existing and new, to be licensed by the Singapore Ministry of Digital Development and Information's Infocomm Media Development Authority (IMDA) and meet efficiency standards the regulator can adjust over time. Operators that promised green energy can now be held to those promises.

Data centres consumed about 6.5 terawatt-hour (TWh) of electricity in 2024, slightly more than a tenth of Singapore's total and up from about 7 per cent in 2020. That rise came even as new capacity was rationed.

Singapore paused new data centre developments in 2019 to review its strategy, and since reopening in 2022 has allocated about 280 MW through two competitive tenders, a fraction of the 1.6 gigawatts (GW) it already hosts, with further capacity granted case by case to strategic investors. Each award came with efficiency and green energy conditions.

The new law makes those conditions enforceable and extends binding efficiency standards to every commercial-scale facility, turning green energy pledges into firm demand for clean power, before the supply to meet it exists.

"We are not seeking to attract every megawatt of [data centre] capacity we can," Senior Minister of State for Digital Development and Information Tan Kiat How said during the debate, adding that this did not mean "simply imposing an arbitrary cap on this growth". The law was passed after members of Parliament raised questions on its cost to Singapore's competitiveness, support for operators upgrading older facilities and the effect of data centre demand on electricity prices.

FROM PAUSE TO LICENCE

2019:
Singapore pauses new data centre developments and the release of land for them to review its strategy.

2022:
The pause is lifted. A pilot tender offers up to 60MW to facilities with a PUE of 1.3 or better.

2023:
About 80MW is awarded to four operators from more than 20 proposals.

2024:
The Green Data Centre Roadmap sets out at least 300MW of further capacity for green data centres.

2026:
A second tender awards 200MW to four operators on Jurong Island, requiring a PUE of 1.25 or better and at least 50 per cent green energy. In October, the Digital Infrastructure Bill passes.

Data centres consumed about 6.5 terawatt-hour (TWh) of electricity in 2024, slightly more than a tenth of Singapore's total and up from about 7 per cent in 2020.

ENERGY AND WATER EFFICIENCY NOW MANDATED BY LAW

Singapore's approach to data centres has tightened in stages since the 2019 pause, with each tender setting stricter conditions than the last. The law enshrines these tender conditions into rules for the whole sector.

Licensed operators will first have to meet energy efficiency requirements measured by power usage effectiveness (PUE), the ratio of a facility's total energy use to that of its IT equipment. The rules cover cloud, co-location and enterprise data centres alike, across Singapore's roughly 70 facilities. The largest, those of 10 MW and above, will also need a separate licence covering security and resilience.

Water is next in line. Data centres using more than 60,000 cubic metres of water a year must already follow mandatory efficiency practices set by Singapore's national water agency PUB, the national water agency, for all large water users. The new law goes further, allowing IMDA to set water efficiency requirements for existing and new data centres.

The law does not set a PUE target or a deadline. Those will come in regulations that IMDA is drafting, and until

then, the roadmap's goal of bringing every facility to a PUE of 1.3 or better remains an aspiration. Once the law takes effect, existing operators will have six months to apply for a licence. The Government has said the standards will be raised over time, at a pace that takes into account operators' investment and depreciation cycles.

AMONG ASIA'S STRICTEST STANDARDS, WITH DEADLINES STILL TO COME

China has required new, rebuilt and expanded data centres to achieve a PUE of 1.5 or better since November 2022, under a mandatory national standard now being tightened. Germany's Energy Efficiency Act requires existing data centres to reach a PUE of 1.5 by 2027 and 1.3 by 2030, and all data centres to run on renewable electricity from 2027. Japan expects large operators to reach 1.4 by the 2030 financial year.

Closer to home, Malaysia's efficiency guidelines for data centres are entirely voluntary, although Johor requires projects to meet a water usage effectiveness of 1.8 and to show that water supply is available before approval. Thailand is consulting on a draft bill that would require operators to be licensed. Singapore's requirement of a PUE of 1.25 for new capacity is among the strictest in Asia. Unlike Germany and Japan, however, it has yet to set a deadline for the rest of the sector, and its clean energy requirements apply only to capacity awarded through its tenders and to strategic investors.

REGULATIONS SIGNAL MORE CLEAN ENERGY GROWTH IN SINGAPORE

The law gives clean energy commitments legal force for the first time. IMDA can now write the efficiency and green energy targets operators promised in their tender bids into their licences. Breaking those conditions can cost an operator up to S$1 million (USD$780,900) or 10 per cent of its annual turnover in Singapore, whichever is higher. The green energy targets apply only to capacity awarded through the tenders and to strategic investors; other data centres face no such obligation.

Among the first to be affected are the four operators awarded 200 MW on Jurong Island in August: Digital Realty, Equinix, Keppel Data Centres and ST Telemedia Global Data Centres, with 5 0MW each. Each committed to a PUE of 1.25 or better and to sourcing at least 50 per cent of its energy from eligible green pathways. If the facilities ran at full capacity, that would mean up to about 1.1 TWh of clean power a year, Eco-Business estimates. Operators can meet the target through biomethane, low-carbon ammonia, low-carbon hydrogen, fuel cells with carbon capture, or solar panels built into their facilities, according to the Economic Development Board. Apart from solar and some biomethane from local waste, these depend largely on imported fuel; a Keppel-led consortium is studying a 55 to 65 MW power plant on Jurong Island that would run on low-carbon ammonia shipped in from abroad, though as of October 2025 it had yet to commit to building it.

The tender terms create demand for clean energy that Singapore cannot yet fully supply. JTC, which manages Jurong Island, has described the data centre park thereas a way to anchor that demand and help build the supply chains to serve it. Tan said the Government did not want to lock in technologies while low-carbon energy options were "still evolving"; the law creates the demand first and leaves room for supply to follow.

The first test of how demanding the law will be comes when IMDA publishes its draft regulations for consultation, expected within the next year.

The data centres' green energy, in other words, will come mostly from imports, whether as fuel or as electricity. Singapore already aims to import about 6GW of low-carbon electricity by 2035, around a third of its expected demand then, up from about 200MW today.

(source: https://www.eco-business.com/news/singapore-sets-southeast-asias-first-binding-data-centre-rules-building-demand-for-clean-energy/)



ISCR AND CHAKRA JOIN FORCES TO STRENGTHEN MAHARASHTRA'S CLINICAL RESEARCH ECOSYSTEM

The Indian Society for Clinical Research (ISCR) and the Centre for Health Applied Knowledge & Research Autonomy (CHAKRA) have signed a Memorandum of Understanding (MoU) to strengthen responsible, ethical and high-quality clinical research capacity across Maharashtra.

According to Built on Scale, Turning to Science, a July 2026 report by BCG and HealthKois, India's life sciences innovation ecosystem is gaining momentum, with more than 10 novel drug assets originating from India over the past decade and the innovation pipeline expanding by around 1.5x.

However, India's participation in clinical research remains relatively low compared with its population and disease burden.

The BCG–HealthKois report notes that India carries about 15% of the global disease burden but conducts around 4% of global clinical trials. Separately, ICMR INTENT reports that India accounts for 18% of the world's population but 1.4% of global clinical research. Through this MoU, ISCR and CHAKRA will work together to strengthen clinical research capabilities at the site and institutional levels. The collaboration will focus on Good Clinical Practice (GCP) and ethics training, research governance, standard operating procedures and quality frameworks, and site readiness and capability mapping across CHAKRA's hub-and-spoke network.

- **New MoU brings together ISCR and CHAKRA to strengthen clinical research capacity across Maharashtra**
- **Key focus areas include GCP and ethics training, research governance, site readiness mapping and knowledge exchange**
- **Collaboration seeks to advance responsible, high-quality research aligned with globally benchmarked practices**

The partnership will also support academic and professional development and facilitate knowledge exchange to promote globally benchmarked clinical research practices across Maharashtra.

Commenting on the partnership, Dr. Seema Pai, President, ISCR, said: "Only one in 5,000 to 10,000 molecules tested in the laboratory progresses to human studies, underscoring the importance of ensuring that the sites carrying this science forward are built on equally rigorous foundations. Our collaboration with CHAKRA brings together ISCR's expertise in training, ethics and quality with CHAKRA's network to strengthen the readiness of research sites across Maharashtra to conduct high-quality, globally benchmarked studies. We look forward to building this capacity together."

Dr. Ranjana Kumar, CEO, CHAKRA, said: "Strengthening research capacity at the grassroots is central to CHAKRA's mission. Partnering with ISCR will help our hub-and-spoke network build the skills, governance frameworks and site readiness needed to participate in ethical, high-quality clinical research. Ultimately, stronger research capabilities can benefit researchers, institutions, patients and the communities we serve."

The partnership reflects a shared commitment between ISCR and CHAKRA to build institutional capacity and promote high standards of quality and ethics in clinical research across Maharashtra.



Sodium-ion batteries could help Europe reduce its reliance on China for energy storage, but high production costs and immature supply chains remain barriers to scaling the technology. *Image: Asian Development Bank, CC BY-SA 3.0, via Flickr.*

SODIUM BATTERIES ARE COMING TO EUROPE

Abundant sodium could reduce critical-mineral vulnerabilities and support Europe's electrification, but Chinese manufacturers hold a commanding lead in the market, write By **Tom Baxter**, Dialogue Earth

In June, the world's largest battery maker, CATL launched a product to support power grids as they transition to renewables. The TENER Sodium Energy Storage System premiered not in Ningde, south-east China, where CATL is headquartered, but in Munich, Germany.

The location was symbolic. Sodium-ion battery technology is coming to Europe and could be central to its electrification. With the European Union sending clear signalson the need to accelerate electrification, the emergence onto the market of new battery storage technologies could hardly come at a more important moment.

Sodium-ion batteries offer several advantages over the lithium-ion varieties that dominate the energy storage market. Because sodium is abundant, they could potentially help Europe reduce its dependence on Chinese lithium refining. China's major battery manufacturers also recognise their importance and are developing products fast, analysts tell Dialogue Earth. For Europe to become cost-competitive with China's production may be a bridge too far.

WORTH THEIR SALT?

The first strength of sodium-ion batteries is in the abundance of their principal material, sodium – the chemical element found in table salt. Unlike other battery chemical ingredients such as lithium, nickel and phosphate, sodium is broadly distributed around the world in seawater and land-based deposits and is easy to produce.

Lithium, the core chemistry for almost all storage and electric vehicle batteries today, is produced at scale in only a handful of countries – the largest being Australia, China, Chile and Zimbabwe. Some of these producer countries are seeking to limit export, and some have experienced community pushback over polluting and disruptive mines.

> **"The dream of the west … is to establish a supply chain or ecosystem for sodium-ion technology since the lithium space is so dependent on China. [The] technology provides an opportunity for Europe to achieve technology sovereignty in order to make their own batteries, in case China restricts the export of battery technology.**
>
> **–RICHARD SCHMUCH**
> Researcher, Fraunhofer Research Institution for Battery Cell Production

As a result, prices are extremely volatile, with lithium carbonate's price more than doubling over the last year. In late 2022, its price per tonne reached CNY 597,500 (about US$88,900) before collapsing to CNY 172,500 (US$25,700) by March 2023 and falling further to just CNY 60,000 (about US$8,900) in June last year.

Processing of lithium is also highly concentrated. China accounts for an astounding 74 per cent of global lithium refining. This is seen as a key vulnerability by European and G7 governments.

Sodium is highly unlikely to ever see massive price fluctuations, says Richard Schmuch, an expert on battery materials at the Fraunhofer Research Institution for Battery Cell Production, in Münster, Germany.

CATL is evidently aware of this strength. "CATL is committed to promoting energy independence for all countries and regions, so we have the mission to introduce a new battery material with abundant resources across all continents," William Wu, director of CATL's Energy Storage Technology Center, said at the TENER battery system launch event in Munich.

There are performance advantages too. At the launch event, CATL's Amanda Xu, president of energy storage systems, Europe, claimed that their TENER batteries can operate at extreme temperatures, as low as minus 20C and as high as 45C.

Certain sodium-ion battery chemistries also offer more charging cycles compared to lithium-ion chemistries, which could bring down lifetime running costs and reduce waste, says Philipp Voss, also from the Fraunhofer institute. The sodium-ion battery has 15,000 charge cycles, Xu added, while their lithium-ion storage batteries offer a maximum of 12,000.

Lithium-ion batteries almost always contain graphite, the production of which is extremely carbon intensive, says Voss. Sodium-ion batteries use hard carbon, which can be produced from a variety of abundant materials, including trees and coconuts shells.

Hard carbon can also be made at lower temperatures and over a shorter period – just a few hours at around 1,200C, compared to up to two weeks at 3,000C – Voss tells Dialogue Earth. This can significantly reduce the embedded carbon emissions of batteries.

However, Voss cautions that these theoretical efficiencies don't always translate into practice. Sodium batteries do have a lower carbon footprint than lithium ones when compared cell for cell, but sodium cells store less energy for their size, so a fairer comparison is by kilowatt-hour of storage capacity.

On that basis, sodium's advantage narrows and the two chemistries

end up with a similar carbon footprint, or with sodium's a bit larger, he explains. This is because of the enormous scale and efficiencies of existing lithium battery production in China, compared to sodium-ion's relatively young supply chains.

For similar reasons, the production of sodium-ion batteries has not yet reached price parity with lithium-ion, says Henry Sanderson, a fellow at RUSI and the Oxford Institute for Energy Studies, two British think-tanks. According to Chinese media reports, CATL believes sodium-ion batteries will reach price parity with lithium by the end of this year, due to innovation in chemistries, optimisation of production and falling cost of inputs such as anodes.

A GAME-CHANGER FOR EUROPE?

Europe's dependence on imported fossil fuels was starkly revealed by Russia's invasion of Ukraine in 2022, which sparked a gas crisis. It has been further highlighted by the ongoing Gulf crisis, with its prolonged impacts on oil and gas prices. To increase resilience, the EU recently launched the Electrification Action Plan calling for "a radical shift towards efficient electrification of demand" to "secure Europe's resilience and security while supporting [the] EU's competitiveness".

Energy storage is closely tied to electrification. The plan sets targets of 200 gigawatts (GW) of storage by 2030 and 500 GW by 2040. Such storage is exactly the use case of CATL's TENER system targets.

"Grid storage is currently the … biggest market for sodium-ion," says Philipp Voss.

According to Sanderson, sodium-ion batteries could also offer a "safety valve" to support energy transitions in Europe and elsewhere. "You can bring out more sodium, relieve the demand pressure and therefore bring lithium-ion … costs back down. And that's really critical," he says. "What you don't want to see is a rapid increase in the cost of lithium-ion batteries because that is detrimental to the energy transition."

CATL also sees sodium-ion as a complementary battery technology, rather than something that will replace or surpass lithium.

At the launch in June, Wu described the technologies as the "two foundations of future energy storage systems." According to a CATL press release, the company will deliver its first sodium-ion battery storage systems to Chinese customers in September, and to international customers from June next year. They expect orders to reach 1 gigawatt-hours (GWh) by the end of 2026.

EUROPEAN INDUSTRIAL GOALS

Sodium-ion batteries could offer Europe the chance to release its electrification and storage ambitions from the grip of China's industrial ecosystem – and the risk of export controls that come with it. China currently accounts for 80 per cent of global battery production and data from the Bruegel Clean Tech Tracker records that 84 per cent of Europe's battery imports came from China.

"The dream of the west … is to establish a supply chain or ecosystem for sodium-ion technology since the lithium space is so dependent on China," says Schmuch, the battery materials expert. "[The] technology provides an opportunity for Europe to achieve technology sovereignty in order to make their own batteries, in case China restricts the export of battery technology."

Sodium-ion batteries are a "strategic technology" for Europe, stated an opinion published this year by the EU's European Economic and Social Committee: "Sodium batteries offer strategic advantages for the energy transition and supply chain resilience … sodium itself is abundant, inexpensive and widely available – including in Europe." The opinion called for "decisive and coordinated EU action to establish a competitive sodium battery manufacturing industry."

Thus far, support has been fragmented. In 2025, the German government launched a EUR 14 million programme to support sodium-ion battery production. In the same year, the Swedish Energy Agency provided a similar EUR 6.8 million grant.

With support from commercial investors such as Stellantis, French company Tiamat aims to open Europe's first sodium-ion gigafactory in Amiens. Production is slated to begin in mid-2027 and reach full capacity of 5 GWh by 2030. This is relatively small compared to lithium battery gigafactories, but quite substantial in the sodium-ion space, says Schmuch.

According to Chinese media reports, CATL believes sodium-ion batteries will reach price parity with lithium by the end of this year, due to innovation in chemistries, optimisation of production and falling cost of inputs such as anodes.

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(Source: https://www.eco-business.com/news/sodium-batteries-are-coming-to-europe/)



The Mt Apo geothermal complex in Kidapawan, North Cotabato in the Philippines. *Image: EDC*

ASEAN'S GEOTHERMAL PUSH MUST CONFRONT COAL RELIANCE, NOT JUST DRILLING RISKS

Coal-dependent countries such as Indonesia and the Philippines should address power systems dominated by existing coal plants, which hinder investment in new geothermal projects, said the Association of Southeast Asian Nations Centre for Energy.
Hannah Alcoseba Fernandez writes on the issue.

Financing exploratory wells may not be enough to unlock Southeast Asia's geothermal resources, an energy specialist from Association of Southeast Asian Nations (Asean) Centre for Energy warned, arguing that coal-dependent countries in the region must also confront coal-heavy power systems that weaken the investment case for geothermal development.

Exploration drilling has long been a major barrier to geothermal development as developers must commit substantial capital before confirming whether an underground resource can commercially support a power plant, with no guarantee of recovering their investment. The World Bank identified this early-stage uncertainty as a central obstacle to attracting private financing.

In Indonesia, those exploration risks are compounded by competition from existing coal-fired generation. Coal supplied 61.8 per cent of Indonesia's electricity in 2023, just below the Philippines' 61.9 per cent, according to energy think tank Ember. Both countries relied on coal for nearly two-thirds of their electricity, compared with less than half across Asean.

That reliance complicates geothermal development where existing plants already serve the market, said Yudiandra Yuwono, Lead Modeller at the Asean Centre for Energy (ACE), during the Asean Energy Business Forum in Manila.

Two-thirds of Indonesia's geothermal resources lie in its major islands Sumatra and Java, he said, yet new industrial electricity demand is emerging elsewhere. That geographical mismatch adds to the challenge of attracting the substantial upfront investment geothermal projects require, he suggested.

Developers must consider how new geothermal capacity would fit into systems already supplied largely by coal, rather than simply banking on rising electricity consumption, Yuwono said.

> **Unless something touches coal, we're gambling on how much electricity demand will increase in that area [to grow enough additional geothermal capacity].**
>
> **–YUDIANDRA YUWONO**
> Lead Modeller, Asean Centre for Energy (ACE)

"Unless something touches coal, we're gambling on how much demand will increase in that area," he said. "Unless you are having discussions on existing generations, then it is a question of why you would put money into adding capacity there."

The challenge extends to captive coal plants that supply industrial facilities directly. Many are located away from geothermal resources, Yuwono said, complicating efforts to replace their output with geothermal power.

Financing mechanisms such as Indonesia's Just Energy Transition Partnership (JETP) must account for the risks and costs of connecting clean electricity to those industrial users, he argued. Without that support, public and private investment would struggle to displace captive fossil generation.

Alongside those wider financing needs, government support remains essential to reducing geothermal exploration risks, said Joeffrey Caranto, Director of Indonesia-based joint venture geothermal development company PT Daya Mas Bumi Sentosa at the same panel.

State backing enabled the growth of geothermal industries in both the Philippines and Indonesia, he noted. The Philippine government absorbed substantial exploration costs during the 1970s and 1980s, while Indonesia developed its resources through public-private partnerships.

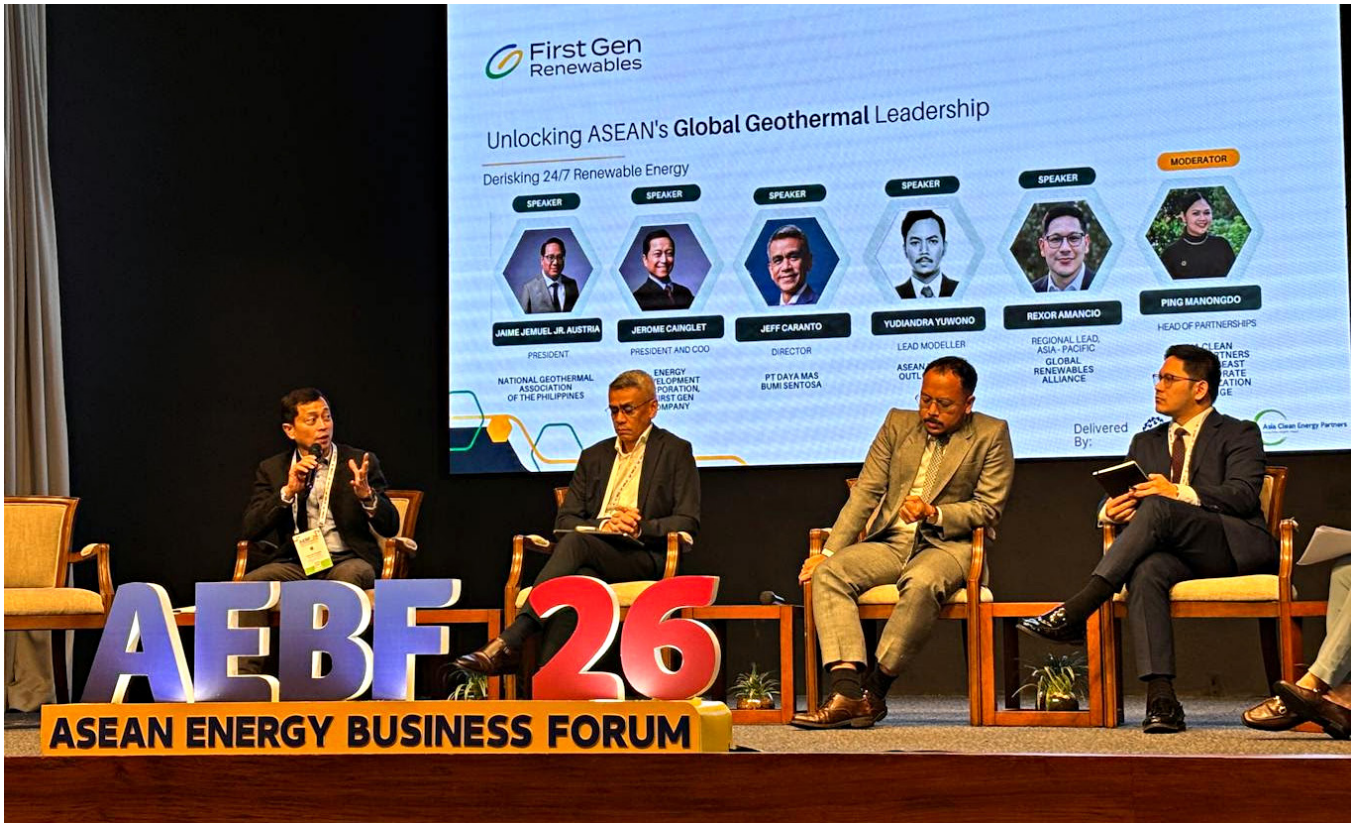
Deregulation has shifted exploration risks to private developers in the Philippines, Caranto said. Indonesia, meanwhile, continues to share those risks through government-led drilling before sites are tendered to developers. The Philippine approach instead provides financing for developer-led exploration.

The Philippine government has established a US$170 million geothermal derisking facility to support early-stage exploration. Backed by a sovereign loan from the Asian Development Bank, the Philippine Geothermal Resource De-Risking Facility is being implemented through the Department of Energy and state-owned LandBank.

Such support can help unlock resources, but replacing coal-fired generation remains a challenge. Indonesia's pursuit of net zero emissions provides an incentive to expand geothermal development and attract private investors, Caranto said, with geothermal offering a potential replacement for some ageing plants. "It provides a certain level of comfort that there are resources that can actually be developed and can replace some of these aging assets," he said.

CLEAN ENERGY COMPETITION

Efforts to make geothermal competitive should address advantages



A panel titled Unlocking Asean's Geothermal Potential: A 24/7 Foundation for a Secure Future was held at the Asean Energy Business Forum in Manila on 5 October. Speakers included, from left, Jerome Cainglet, President and Chief Operating officer of Energy Development Corporation (EDC), First Gen Group; Joeffrey Caranto, director of PT Daya Mas Bumi Sentosa; Yudiandra Yuwono, Lead Modeller at the Asean Centre for Energy (ACE); Rexor Amancio, Regional Lead, Asia-Pacific, Global Renewables Alliance. Image: EDC

enjoyed by fossil fuel generation rather than focus on competition between renewable technologies, said ACE's Yuwono.

"We're discussing mechanisms to make it easier for geothermal and renewable energy to enter the system. But we also need to stop making things easy for the opposite side – fossil thermal generation," he said.

Removing those advantages would ease the task of attracting renewable investment, Yuwono argued, noting that discussions too often pit technologies such as solar and geothermal against each other.

In Indonesian industrial regions such as Sulawesi, companies can build coal plants beside their operations, while renewable resources cannot necessarily be developed wherever electricity demand emerges, he said. Financing institutions should also reassess their perception of fossil fuel transport as relatively low-risk, given disruptions to global supply chains, he added.

Jerome Cainglet, President and Chief Operating officer of Energy Development Corporation (EDC), First Gen Group said that comparisons between geothermal and other renewables should consider more than generation costs per kilowatt-hour.

Although solar and wind generation costs are falling, he said, consumers also bear the expense of maintaining supply when those sources are unavailable.

"We need to value the total cost to consumers. Those hidden costs aren't there with geothermal because geothermal is available round the clock. You don't have to pay someone else for capacity when the sun isn't out or the wind isn't blowing," he said.

Rexor Amancio, Regional Lead, Asia-Pacific of Global Renewables Alliance, called for stronger regional cooperation on geothermal, drawing a parallel with established collaboration in petroleum. Private developers should be more closely involved in regional discussions because they bring experience delivering projects on the ground, he said.

Amancio urged deeper engagement between industry and multilateral bodies such as the Asean Centre for Energy, while calling on companies such as First Gen to take a more proactive role in championing geothermal development across the region and beyond through stronger regional partnerships.

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MORE THAN 160 MILLION PEOPLE RISK BEING TRAPPED BETWEEN CRISIS AND RECOVERY, UNDP WARNS

As crises become more prolonged and interconnected and resources come under pressure, humanitarian assistance alone cannot meet the needs of people living through prolonged crises.

More than 160 million people risk being trapped in crisis without the longer-term support needed to rebuild their lives, restore livelihoods and access essential services, the United Nations Development Programme (UNDP) said .

These people remain in humanitarian need but fall outside the 87 million prioritised for lifesaving assistance in 2026. As humanitarian partners focus resources on the most immediate and severe needs, development investment has a critical initial role to play alongside humanitarian action, helping people rebuild their lives and creating pathways to recovery.

In response, today UNDP launched the Moving Beyond Crisis Action Agenda, which calls for greater support and investment in development from the outset of a crisis. This means investing earlier and sustaining support for recovery so countries and communities can move beyond repeated cycles of crisis.

Its central proposition is simple: development should not wait for a crisis to end. By investing from day one, alongside humanitarian action, countries and communities can begin rebuilding sooner, reduce future humanitarian needs and strengthen resilience to the next shock.

UNDP's new agenda was launched at a high-level event convened by the Government of Lebanon, the European Union and UNDP during the UN General Assembly High-Level Week.

"For people hit by crisis, survival is only the first step. They also want to regain control of their lives. They want to work, send their children to school, reopen their businesses, and rely on institutions they trust. This work cannot wait until the crisis is declared over. That is why UNDP's 'Moving Beyond Crisis Action Agenda' calls for development action from day one, helping countries move from emergency response to lasting recovery. Immediate humanitarian assistance saves lives, development helps people rebuild them," said Alexander De Croo, Administrator of the UN Development Programme.

"The traditional sequence of relief, recovery and reconstruction no longer reflects the reality of today's prolonged crises. In Lebanon, we are doing all three at the same time. The end of an emergency funding cycle cannot become the beginning of a recovery financing vacuum," said H.E. Dr. Nawaf Salam, Prime Minister of Lebanon. "International support should strengthen the State's ability to act, not build parallel systems around it."

As crises become more prolonged and interconnected and resources come under pressure, humanitarian assistance alone cannot meet the needs of people living through prolonged crises.

Ms. Dubravka Šuica, European Commissioner for the Mediterranean, said: "The European Union stands firmly with Lebanon and its people. With the adoption of the second €505 million tranche of our €1 billion package, we are supporting Lebanon's recovery and reforms, strengthening its institutions and security, and helping protect the most vulnerable. A strong and sovereign Lebanon, with effective state institutions and the state exercising full control over its territory, is essential for lasting stability and prosperity. As Mediterranean partners, our futures are closely connected, and the EU will continue to support Lebanon on this path, as well as other partners in the region where we are focussing our efforts on early recovery and reconstruction."

The need for this shift is growing. There were 61 state-based conflicts across 36 countries in 2024, the highest number since the Second World War, while 117.2 million people are forcibly displaced worldwide. At the same time, official development assistance fell 23 per cent in 2025, the largest annual decline on record.

As crises become more prolonged and interconnected and resources come under pressure, humanitarian assistance alone cannot meet the needs of people living through prolonged crises. Without functioning services, livelihoods, markets and institutions, people remain vulnerable to further shocks and may need assistance for longer.

The Action Agenda also calls for development finance to be used more strategically in crisis settings. Development finance can help reduce investment risks and bring in additional public and private capital, including in places where risks are high and investment is urgently needed. UNDP has helped align and mobilise more than US$ 63 billion in public and private finance across 27 fragile and crisis contexts.

In Lebanon, EU-funded UNDP programmes are helping conflict-affected communities clear rubble and unexploded ordnance, repair critical infrastructure and restore public services. In Yemen, UNDP and the World Bank are working with local institutions to restore livelihoods and productive assets and expand access to digital payments and financial services while the crisis continues. In Ukraine, UNDP technical assistance has helped unlock US$ 1.6 billion in European Investment Bank financing for schools, hospitals and critical infrastructure.

(Source: https://www.eco-business.com/press-releases/more-than-160-million-people-risk-being-trapped-between-crisis-and-recovery-undp-warns/)



PHILANTHROPY ASIA ALLIANCE SUPPORTS SOUTHEAST ASIA HEAT HEALTH HUB TO SCALE COORDINATED ACTION ON EXTREME HEAT

The Philanthropy Asia Alliance (PAA) has announced its support for the next stage of the Global Heat Health Information Network (GHHIN) Southeast Asia Hub at the Global Heat Forum in Bangkok. This includes funding for targeted efforts in Indonesia and Thailand next year, alongside preparations for a second Southeast Asia Heat Health Forum. Tools, evidence and lessons from these efforts will be shared across the region to strengthen coordinated action on extreme heat.

Established in January 2025 as GHHIN's first regional hub, the Hub brings together governments and partners to strengthen collaboration, advance evidence and support action on extreme heat across Southeast Asia. GHHIN is a global network of policymakers, scientists and practitioners and an initiative of the World Meteorological Organization, World Health Organization (WHO) and US National Oceanic and Atmospheric Administration.

The Hub is based at the Heat Resilience & Performance Centre (HRPC), Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine), and draws on more than a decade of heat resilience research and the university's role as a neutral platform for regional convening. PAA complements this as a catalytic funder and impact partner, bringing experience in building funder collaboratives and cross-sector partnerships that direct capital towards shared outcomes.

TURNING REGIONAL COLLABORATION AND DATA INTO COUNTRY-LED ACTION

Across Southeast Asia, action on extreme heat is growing but remains

fragmented. While early warning systems and municipal heat action plans are expanding, many countries still lack a standing mechanism for robust coordination between health, labour, urban and disaster agencies. Data varies across countries and successful pilots often can lose their institutional footing once funding ends.

Shaun Seow, Chief Executive Officer of the Philanthropy Asia Alliance, said: "Extreme heat sits at the intersection of climate, health and the economy, which is why responsibility for it can fall between institutions designed to address each area separately. The challenge is to connect the science with public agencies and local communities in ways that endure, so we can move from protecting hundreds of thousands of people to hundreds of millions."

PAA's support will build on the Hub's regional foundation by advancing sustained, country-led action while strengthening the evidence and shared learning available across Southeast Asia.

ADVANCING HEAT HEALTH ACTION IN INDONESIA AND THAILAND

In Indonesia, the Hub is building on the ongoing Project KATALIS-HEAT, delivered with WHO Asia-Pacific Centre for Environment and Health (ACE), WHO Indonesia, and the Ministry of Health. The work strengthens national coordination and advances city-level heat action in Makassar and two additional cities.

Efforts in Thailand are at an earlier stage, with partner consultations and a rapid stocktake laying the groundwork for longer-term action and helping stakeholders to agree on shared priorities for the next phase of work.

Lessons from both countries will flow back into the Hub's regional platform, enabling governments elsewhere in Southeast Asia to build on tested approaches rather than start afresh.

SHARING LESSONS ACROSS SOUTHEAST ASIA

Working alongside the governments, researchers, funders and implementation partners already active on heat, the Hub provides a regional home for evidence and proven pilots and helps countries adapt what has worked elsewhere.

Organised around three connected streams, the Hub helps translate science into policy through stronger evidence, coordination and heat-health data systems; strengthens community capacity by grounding action in local realities and lived experience; and builds regional learning by convening partners, turning their lessons from individual countries into shared resources others can adapt.

Since its launch, the Hub has begun laying the foundations for a coordinated regional response, starting with its first country-level engagement in Indonesia and support for emerging efforts on heat in Cambodia and the Philippines. Knowledge products have followed, among them a 2026 report documenting Singapore's multi-stakeholder approach to urban heat resilience.

Professor Jason Lee, Director of the Heat Resilience & Performance Centre, NUS Medicine, and Chair of the GHHIN Southeast Asia Hub, said: "The Hub is designed so that progress in one country can help accelerate action in another. Evidence generated with governments can be adapted elsewhere, while frontline experience helps shape the questions researchers pursue. By bringing these insights together across Southeast Asia, we can build a stronger body of practical knowledge that countries can draw on and adapt to their own contexts. This next stage aims to build on the foundation we have and support governments in developing heat-health responses that are locally relevant and sustainable over the long term."

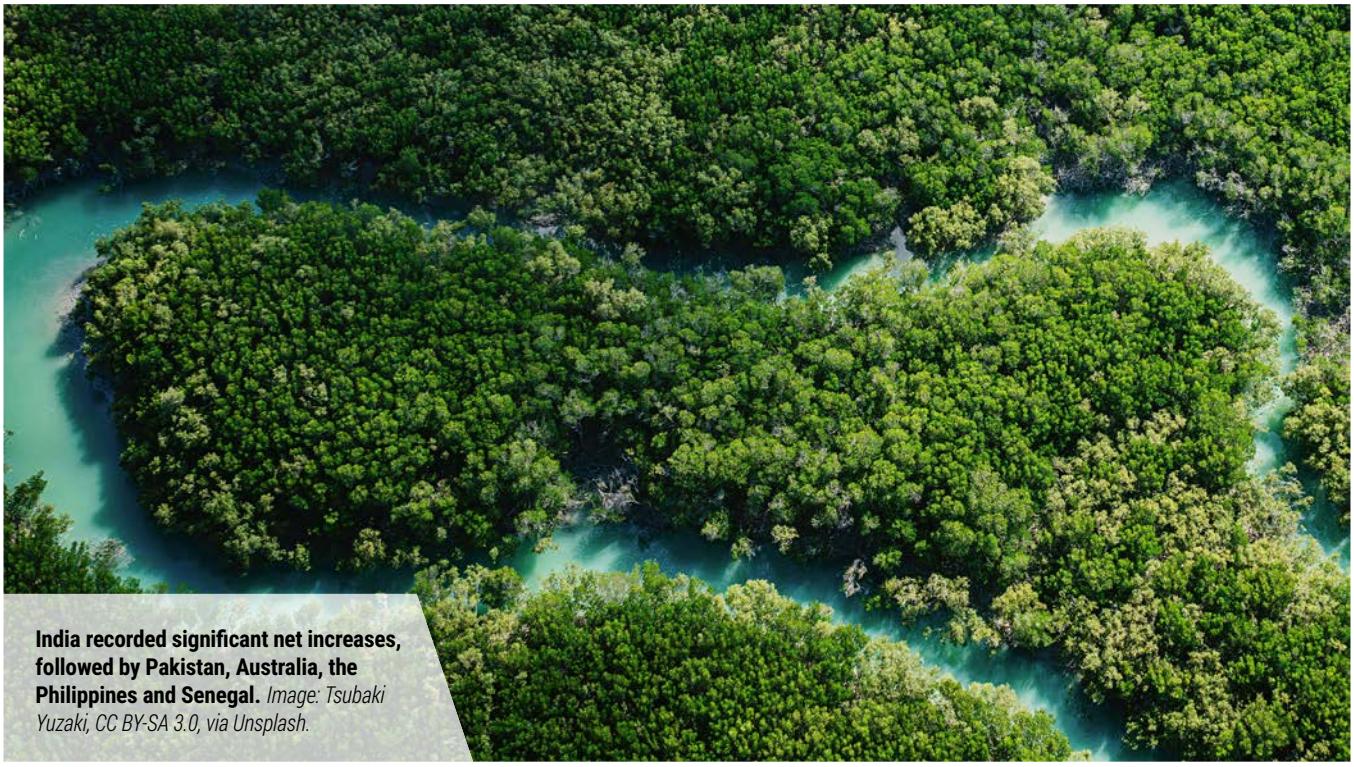
ABOUT THE PHILANTHROPY ASIA ALLIANCE

Philanthropy Asia Alliance (PAA) is a Temasek Trust initiative dedicated to catalysing collaborative philanthropy in Asia through dynamic multi-sector partnerships. By harnessing collective strengths, PAA multiplies impact, accelerates positive change, and takes urgent action to address the pressing environmental and social challenges of our time. PAA's flagship programme is the annual Philanthropy Asia Summit. For more information, visit philanthropyasiaalliance.org.

About the Heat Resilience & Performance Centre, Yong Loo Lin School of Medicine, National University of Singapore (NUS)

The Heat Resilience & Performance Centre (HRPC), based at the NUS Yong Loo Lin School of Medicine (NUS Medicine), is a globally connected first-class thermal research unit based in Asia, centred on helping humans thrive in a warming world. HRPC's mission brings together scientists and experts to create holistic and forward-looking solutions that boost human resilience to rising ambient heat, providing a platform for collaboration and innovation locally, regionally, and internationally. HRPC is honoured by its designation as the Southeast Asia Hub by the Network since COP28. Launched in Jan 2025, the Hub aims to champion and advance partnership, collaboration, and advocacy within Southeast Asia to collectively protect and prepare for the impacts of heat on human health and well-being.

(Source: https://www.eco-business.com/press-releases/philanthropy-asia-alliance-supports-southeast-asia-heat-health-hub-to-scale-coordinated-action-on-extreme-heat/)



India recorded significant net increases, followed by Pakistan, Australia, the Philippines and Senegal. *Image: Tsubaki Yuzaki, CC BY-SA 3.0, via Unsplash.*

GLOBAL MANGROVES REBOUND AFTER DECADES OF LOSS

Globally, mangrove cover has grown by 477 square kilometres (184 square miles) between 1985 and 2025, marking a turnaround from the losses that have predominated for years, but gains are uneven, writes **Samuel Ogunsona**

After decades of losses, new data show the world's mangrove forests are beginning to rebound. It marks a modest but significant turnaround for the salt-tolerant coastal trees and shrubs, which provide vital ecosystem services, including carbon storage, habitat for thousands of species and protection from storms and erosion.

Global mangrove cover increased by 477 square kilometres (184 square miles) between 1985 and 2025, according to the latest Global Mangrove Watch (GMW) data released in July. Restoration and stronger protections drove the modest net gains, which represent a 0.3 per cent increase over four decades. The new assessment follows a separate study, published in June, that reached a similar conclusion about overall growth in mangrove cover.

GMW, a mapping initiative of the NGO consortium known as the Global Mangrove Alliance, has tracked mangrove gains and losses since 2011. In this third update, researchers used 10-meter (33-foot) resolution satellite imagery and machine learning to map changes in mangrove cover across 108 countries.

It's the first of the updates to span a 39-year period, from 1985 to 2024, according to Lammert Hilarides, the GMW program lead at the Netherlands-based NGO Wetlands International. The previous version only tracked changes in the data since 1996, covering about 24 years.

"The importance of tracking changes in mangroves lies in the need to have accurate information if you want to successfully halt loss, protect and restore mangroves," Hilarides told Mongabay by email. He added that the new data show significant differences between regions, countries and the timing of gains and losses. India led the growth, adding 1,180 km² (456 mi²) of mangroves. Other countries with significant mangrove expansion over the four decades included Australia, Pakistan, Senegal and the Philippines.

> **"Restoring a forest to a healthy state requires doing more than simply putting an x number of seedlings into the ground. It requires community ownership to ensure long term sustainability as well as restoring the ecological conditions for mangroves to grow.**
>
> –LAMMERT HILARIDES
> Program Lead,
> Wetlands International

But recovery hasn't been universal. In Indonesia, Myanmar, Malaysia, Nigeria and Cuba, for example, mangroves registered net losses over the study period. The data show Indonesia, with a fifth of the world's mangroves, led with 2,043 km² (789 mi²) in losses since 1985. Myanmar came next with 1,458 km² (563 mi²); then Malaysia with 390 km² (151 mi²); Nigeria with 312 km² (120 mi²); and Cuba with 272 km² (105 mi²).

Yet despite overall losses in some countries since 1985, the GMW data highlight recent turnarounds. Since 2010, the net decline in Indonesia, for example, has slowed significantly, and since 2015, it has been among the three countries with the most growth in mangrove cover, Hilarides said.

The opposite trend occurred in the Caribbean and in Central and North America. Those regions saw significant gains between 1985 and 1995. "But in the last 5 years we are seeing a declining trend," Hilarides said, adding the regional drivers are still unknown.

MANGROVES AS CLIMATE ARMOUR

The dense roots of mangroves support healthy coral reefs and provide sheltering habitat for fish and other marine species. Their roots trap mud and filter pollution from the land, so the water reaching the reefs is clearer and cleaner, fostering the growth of corals and other species. Mangrove forests also provide vital coastal defences, protecting against erosion and reducing the power of wind and waves that cause flooding and infrastructure damage.

In countries like Indonesia and Myanmar, decades of clearing mangroves have left coastal villages more vulnerable to cyclones and storm surges. In Nigeria, the coastline along the Gulf of Guinea holds an estimated 5-7 per cent of the world's total mangrove cover. But the country has lost significant areas of mangrove, exposing some communities to worsening flooding and coastal erosion.

"When mangroves disappear, communities lose a natural barrier against erosion, flooding and rising seas," Ogunlade Olamide Martins, associate director at the Nigeria-based NGO Corporate Accountability and Public Participation Africa, told Mongabay. "This is especially serious as climate change brings

stronger coastal flooding." Climate impacts also hurt the mangroves themselves. A 2025 report found mangrove forests globally could face severe risk from climate change-intensified tropical cyclones and rising seas.

DEFORESTATION, DEVELOPMENT AND POLLUTION DRIVE LOSSES

According to a 2024 Global Mangrove Alliance report, the main global drivers of mangrove loss are land conversion for aquaculture, rice and oil palm cultivation and urban expansion; pollution; and over-harvesting of timber and charcoal.

Oil pollution and coastal erosion are major drivers of mangrove declines in Nigeria's Niger Delta, which has the biggest mangrove forest in Africa. About 260,000 barrels of crude oil have spilt into the delta annually for nearly seven decades, Nnimmo Bassey, director of the Nigeria-based Health of Mother Earth Foundation, told Mongabay. Wetland conversion through sand filling and canalisation by oil companies also harms mangroves.

"A restored mangrove forest would restore fisheries, economy and livelihoods. It would be a marker of a return of human security in the region," Bassey said.

Ogunlade said weak governance and a lack of corporate accountability in Nigeria, like elsewhere, complicate efforts to address the problem.

WHAT'S WORKING

In India, mangrove cover has expanded after decades of loss. Ramasubramanian R., a mangrove restoration scientist and senior fellow at the M.S. Swaminathan Research Foundation, told Mongabay the turnaround came through policy, engineering and community action.

"The government stopped felling and declared most wetlands as protected areas because mangroves are vital for coastal protection and fisheries," Ramasubramanian said.

Starting in the late 1980s, the Indian states of Tamil Nadu and Andhra Pradesh dug "fish-bone" canals — small channels that spread out like the bones of a fish. These canals let ocean water come in with the high tide and go out with the low tide, creating optimal soil conditions for mangroves to grow.

Livelihood programs helped, too, Ramasubramanian said, including alternatives to mangrove-derived firewood and paying communities to plant mangroves. The Indian government has scaled community-led restoration projects and sought to integrate women in mangrove protection, which "reduces pressure on forests" because "women manage both fuelwood and restoration," he said. Ramasubramanian suggested countries with declining mangrove cover assess how much communities depend on mangroves for basic necessities like firewood and food, as well as coastal protection, and provide alternatives to destructive activities like logging and charcoal production. Stopping further mangrove damage, he added, also depends on involving communities in restoration, securing sufficient conservation funding and beefing up enforcement of existing laws.

The GMW data show some mangrove gains from afforestation and restoration. Yet many mass planting projects have failed to create healthy mangrove forests. Global Mangrove Alliance calls "community-based ecological mangrove restoration" the best practice. The approach emphasises community ownership and mangrove ecology rather than achieving a quota for tree planting.

"Restoring a forest to a healthy state requires doing more than simply putting an x number of seedlings into the ground, " Hilarides said. "It requires community ownership to ensure long-term sustainability as well as restoring the ecological conditions for mangroves to grow."

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(Source: https://www.eco-business.com/news/global-mangroves-rebound-after-decades-of-loss/)



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