

Outlook

Read • Think • Understand



Prof (Dr) Anup Kumar Gupta



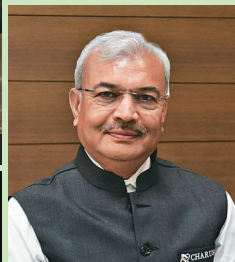
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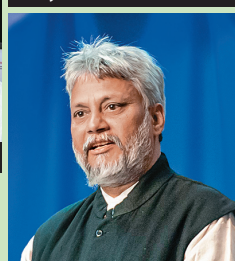
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World

ENVIRONMENT
DAY 2026



Tomio SHICHIRI (七里富雄)
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Building an Architecture for Human Mind-Set Impulse

Tomio SHICHIRI shares an expert perspective on climate priorities, biodiversity leadership, and circular economy transitions with *The Outlook* in conversation with Aditi Chakraborty

Q How is the WED 2026 awareness campaign influencing the practical phase of rebuilding our systems?

The World Environment Day (WED) frequently highlights climate change and global environmental change, such as air pollution (2019), plastic pollution (2025/2023/2018), ecosystem restoration (2021) and land restoration, desertification and drought resilience (2024). As the host for UN World Environment Day 2026, building on its COP29 presidency, Azerbaijan is focusing on climate action under the slogan "Inspired by Nature. For Climate. For Our Future." It emphasises the vital connection between urbanisation

and climate change by investing in renewable energy, reducing plastic pollution, advancing zero-waste initiatives and fostering resilient, sustainable cities. Given 2026 WED's watershed moment for the conservation of the global environment, the 2026 United Nations Framework Convention on Climate Change (UNFCCC) COP 31st session will be held in Antalya, Turkey (November 9–20) to negotiate actions to combat climate change.

UN Sustainable Development Goals, especially SDG-13: Climate Action, are foundational to the 2030 Agenda, with their implementation

influencing over 80% of all SDG targets. It has strong positive synergies with SDG 7 (Affordable and Clean Energy), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production - Global Alliance on Circular Economy and Resource Efficiency - GACERE) and SDGs 14/15 (Life Below Water/On Land). Effective climate action is essential to combat threats to food security and sustainable food systems (SDG 2), poverty reduction (SDG 1), and health and well-being (SDG 3). Ongoing increasingly dynamic geopolitical environments and global security challenges are inextricably linked to energy, food, and economic security, which are fundamental pillars of national security.

Q What is the relationship between the nature-positive economy and circular economy and resource efficiency framework on the post-2030 framework?

"Circular Economy" provides the industrial and technical toolkit to reduce humanity's footprint, while "Nature Economy" creates the space and conditions necessary for a nature-positive world to take root. They operate in tandem: one emphasises the "How" (resource efficiency flows), while the other emphasises the "What" (the state of ecosystems). Herewith, I must refer to "The Economics of Biodiversity: The Dasgupta Review", as it is believed this Economics of Biodiversity carries significant weight in exploring the fundamental underlying nature-positive initiative. A nature-positive economy operationalises by shifting from "extracting" natural capital to "investing" in it. Essentially, Professor Partha Dasgupta provided the economic logic and mathematical framework (the "Why"), while Nature Positive Economy served as the global

operational policy and business strategy (the "How").

Nature has three properties that make the economics of biodiversity markedly different from the economics of the character of produced capital. In Indian philosophy, the three properties of nature, known as the Gunas, are Sattva (goodness/harmony), Rajas (passion/movement), and Tamas (inertia/darkness).

Introducing natural capital into national accounting systems would be a critical step towards making inclusive wealth our measure of progress. Frameworks for natural capital accounting and assessment are at different stages of development, and while significant problems of design and measurement remain, this should not deter governments and businesses from supporting and embracing them. Nature's supply is affected by the 'stock' of natural assets and its ability to regenerate, so humanity is not 'external' to nature. Transitioning to a nature-positive economy has led to the development of frameworks by the Taskforce on Nature-related Financial Disclosures (TNFD), which helps businesses and governments measure.

Q What is the focus of the second Global Nature Positive Summit, 2026, in Japan?

Japan is focusing on integrating nature-positive goals into business, finance, and circular economy strategies to halt biodiversity loss by 2030. Towards building a "Nature Positive Economy" and circular economy, the initiatives highlight biodiversity, resource efficiency, and urban sustainability. Japan is hosting the second Global Nature Positive Summit in Kumamoto from July 14 to 16, 2026, co-hosted by the Ministry of Environment, to accelerate Global Biodiversity Framework (GBF) implementation,

building on the success of the inaugural Global Nature Positive Summit in Sydney, Australia, in October 2024. The 2026 summit will help focus attention on how to chart a course to a nature-positive future in business, finance and governance.

Japan is leveraging its "Nature-Positive Portal" for policy and data exchange, with 2026 trends focusing on linking financial returns to ecosystem restoration projects. Policies in 2026 are tightening to encourage waste management, circular design, and biodiversity credits. The strategy centres on treating natural capital as material risk or opportunity, encouraging businesses to adopt nature-positive management. This effort supports the Kunming-Montreal Global Biodiversity Framework (GBF), committing to 30% conservation by 2030.

By 2030, Japan aims to transform into a "Society 5.0 leader", a human-centred society that balances economic advancement with social problem-solving through key focus areas including artificial intelligence, advanced manufacturing, and developing "Decarbonisation Leading Areas" to achieve nature-positive outcomes. Despite demographic challenges, Japan is positioning itself as a key strategic ally in the Indo-Pacific.

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Q What preparation should be done in connection with the development of the framework of TNFD?

Based on the vital connection between urbanisation and climate change, I have addressed how multi-layered challenges can be distilled into actionable models. Examining the urban waste crisis in India or anywhere else, it is striking how waste management and energy security manifest as two sides of the same coin within the same urban framework.

Urban waste, including plastic waste, is processed through "subcritical water treatment" technology, which uses controlled heat and pressure to decompose the waste into stable solid pellet fuel. Although the process requires energy input, the resulting pellets can be supplied to coal-fired power plants as a renewable supplementary fuel, reducing dependence on conventional coal while creating value from municipal waste streams. A key component of this circular system is the utilisation of surplus or otherwise unused electricity generated by the power plant at low cost. This excess electricity is directed toward carbon capture and fuel synthesis processes, where CO₂ emissions from the plant are captured and converted into synthetic diesel, or e-fuel. The produced alternative fuel can then replace conventional diesel in industrial machinery, construction equipment, and small-scale generators. By integrating waste treatment, renewable fuel production, carbon capture, and synthetic fuel generation into a single loop, the system creates a circular industrial ecosystem that simultaneously addresses urban waste management challenges and significantly reduces reliance on fossil-based diesel consumption.



Sundeep Nayak

Professor of Practice & Chair, Mission LiFE Centre, IIT Goa

Sundeep Nayak

World Environment Day 2026 is not a symbolic reminder—it is a warning. Climate change is no longer a distant risk; it is already reshaping livelihoods across India. The question is no longer whether to act, but who can act at scale, with trust, and from the ground up.

India's answer lies in its 8 lakh cooperatives. Spanning dairy, agriculture, fisheries, sugar, housing, energy, credit, and urban services, Indian cooperatives collectively constitute one of the most expansive grassroots networks in the world. Their reach into both rural and urban India makes them uniquely powerful vehicles for climate action — far more so than government schemes operating alone.

A national cooperative conference on “Prosperity through Cooperation – Role of Cooperatives in Sustainable Agriculture”, addressed by Union Minister Shri Amit Shah, placed climate action at the heart of cooperative strategy. Exchange of agricultural knowledge, affordable credit, modern technology adoption,

Cooperatives as Climate Champions

A “call to action” on World Environment Day 2026 to protect nature while securing the future of humanity through collective initiatives towards a greener and more sustainable India for generations to come

and delivery of organic and climate-resilient practices through the cooperative framework were identified as core priorities.

The domains for cooperative-led climate action are both wide and practical. In renewable energy, village-level dairy cooperatives can operate biogas plants, install rooftop solar, and manage community solar microgrids. Sugar cooperatives can convert press mud into biogas and organic fertiliser, creating zero-waste energy loops. Fishing cooperatives can transition boat fleets to solar-hybrid engines and establish solar-powered cold storage at harbours.

On zero waste, every Primary Agricultural Credit Society (PACS) should establish a village-level compost unit converting crop residue and animal waste into organic fertiliser. Urban housing cooperatives can integrate waste-picker networks into municipal contracts and eliminate single-use plastics across cooperative-managed supply chains. Fisheries cooperatives can convert fish offal into fishmeal and transition to biodegradable fishing gear.

For ecological restoration, Sikkim's complete transition to organic farming — driven significantly by farmer-producer cooperatives — offers a replicable model for every state. Agroforestry cooperatives can pool land for collective tree planting and generate carbon credits. Fisher cooperatives can lead mangrove

restoration and govern community marine protected areas.

Governance must match ambition. Every cooperative should designate a “Green Secretary” responsible for tracking carbon footprint and sustainability performance.

Cooperative federations must access India's upcoming Carbon Credit Trading Scheme for verified ecological actions. Eco-labelling and green cooperative branding, steered by NCEL and NCDC, can command premium prices in urban and export markets.

The Mission LiFE Centre at IIT Goa promotes awareness of the urgency of addressing climate action and lifestyles for the environment. A framework integrating crop diversification, organic farming, agroforestry, permaculture, and conservation tillage — recently presented at the IIT Goa Sustainability Conclave — reinforces the policy direction: targeted subsidies, climate-resilient seeds, improved rural infrastructure, and gender-sensitive interventions are essential enablers.

If climate action must be local, inclusive, and scalable, India's cooperatives are not just participants—they are the backbone of the solution.

About the Author:

Sundeep Nayak, Former IAS is passionate about coordinated global efforts to advance climate action. He is currently Professor of Practice & Chair, Mission LiFE Centre, IIT Goa

Shaping Responsible Global Citizens

GLA University is building a greener future through sustainable campus practices, education, innovation and student-led environmental stewardship

GLA University is committed to providing quality education, fostering innovation, and shaping empowered global citizens. A holistic approach in learning at the institution includes environmental stewardship and sustainability as key pillars.

The 110-acre campus showcases an eco-friendly environment, with a push for long-term sustainable eco-friendly infrastructure and a circular economy. The architecture of the new buildings embeds in the design the play of natural light and air for less consumption of electricity and natural cooling systems in student hostels. The campus utilises smart sustainability measures, including energy-efficient LED lighting; water conservation practices, focusing on green campus operations; waste reduction; and self-sustainability through automated systems (GLAMS).

The institution promotes plantation of around 6000 trees annually by the students to develop eco-consciousness and a sense of ownership among the youth. Leading the way in sustainable campus innovation has earned the institution a top-35 national ranking for sustainability by Higher Education Research & Analytics (HERA).

Sustainable Research & Academics

GLA University has implemented sustainable research in academics. The curriculum includes circular economy and green technology practices in its degree programmes to foster responsible leadership.

The Civil Engineering department develops green technologies and runs a Sustainable Environmental and

Agriculture Research lab, which focuses on pilot-scale vermicomposting production, studies soil health and promotes organic farming alternatives. The university offers an MTech in Energy Systems covering renewable energy, energy policy, and power grids. For Green Skill Development, GLA encourages students to pursue innovations in green technology, renewable energy, and semiconductors. GLA regularly hosts events like the International Conference on Futuristic and Sustainable Aspects in Engineering and Technology (FSAET).

Student-Led Conservation Drives

Since 2015, students have played a pivotal role in advancing environmental stewardship through initiatives such as Ujjwal Braj and the campus-based Prakriti Club. Under Ujjwal Braj, students regularly organise clean-ups and beautification drives around the sacred Goverdhan Parikrama Marg, helping preserve the ecological and cultural significance of the pilgrimage landscape. Complementing these efforts, the Prakriti Club actively engages students in tree-plantation campaigns, recycling awareness programmes, and campus sustainability initiatives. Signature activities such as “Upcycle Utsav” encourage creative reuse of waste materials, fostering environmental consciousness and responsible practices among students while strengthening community participation in conservation efforts.

The Biotech Club at GLA University promotes environmental awareness, sustainability, and social responsibility through plantation



Prof (Dr) Anup Kumar Gupta
Vice-Chancellor, GLA University

“THROUGH CONSERVATION, HYGIENE, AND SUSTAINABLE PRACTICES, STUDENTS BECOME RESPONSIBLE LEADERS SHAPING A CLEANER, GREENER, AND HEALTHIER FUTURE”

drives, cleanliness campaigns, waste management initiatives, and community outreach.

Community Outreach Programme

Through its community outreach programmes, GLA University actively engages students and faculty in environmental awareness campaigns and tree-plantation drives across nearby villages and schools. These initiatives aim to address growing concerns such as pollution, deforestation, and the unsustainable exploitation of natural resources in an increasingly consumer-driven world. Guided by Mahatma Gandhi's timeless belief that “the world has enough for everybody's need, but not for everybody's greed”, the programmes encourage responsible use of water, electricity, and other resources. By leading through action rather than words, students inspire younger generations and local communities to adopt sustainable practices, proving that meaningful environmental change begins with awareness, participation, and collective responsibility.



A Forest on the Fifth Floor

Yet perhaps the hospital's most striking feature is not technological. It is botanical.

Near the recreational spaces on the fifth floor of the atrium stands one of Chennai's most remarkable green spaces — a vast living green wall beneath natural skylight. Through the day, sunlight moves gently across the foliage. After dark, subtle illumination keeps the wall alive with colour and presence.

Patients walk beside it. Families exhausted by long hours of anxiety pause there briefly for relief.

has gradually shaped the broader culture of the MGM Healthcare network. At MGM Cancer Institute in Chennai, MGM Malar Hospital in Adyar and MGM Seven Hills in Visakhapatnam, similar principles guide everyday operations.

LED lighting systems, energy-efficient infrastructure, renewable energy integration and resource-conscious planning have increasingly become part of the institution's expansion model. Importantly, these measures are being incorporated from the design stage itself rather than added later as retrofits.

Such forests create layered habitats where sparrows, butterflies and pollinators can gradually return.

This Earth Day, additional flowering and fruit-bearing trees were planted within the hospital campus itself, quietly expanding habitats for birds, bees and urban biodiversity.

The Return

Across global healthcare systems, a new understanding is steadily emerging — public health and planetary health cannot remain separate conversations. Hospitals are increasingly being measured not

Healing Lives, Healing Mother Earth

From solar power to urban forests, MGM Healthcare in South India is redefining how hospitals can fight climate change to protect the planet while healing people compassionately

We do not inherit the earth from our ancestors; we borrow it from our children.

That single inversion — inheritance transformed into responsibility — perhaps offers the clearest understanding of environmental stewardship. Quietly and steadily, it is also the philosophy shaping what MGM Healthcare has been building in Chennai in Tamil Nadu over the years.

Walk through the atrium of its flagship hospital on Nelson Manickam Road and the atmosphere feels unlike what one usually associates with a quaternary care institution. There is light. There is green. There is, unexpectedly, calm. None of it is accidental. It reflects deliberate choices made patiently over time about what a modern hospital should represent and what responsibility it owes to the world around it.

The Gold Standard

The journey toward what MGM Healthcare represents today did not emerge from a single dramatic decision. Alongside handling some of India's most complex cases in cardiology, cardiothoracic surgery, neurosurgery and orthopedics, MGM is home to Asia's largest heart and lung transplant programme and India's only multi visceral transplant programme. Yet beyond clinical excellence came another ambition — to build healthcare infrastructure that gives back more than it consumes.

That ambition evolved through thousands of everyday decisions: how energy should be used, how water could be conserved and how sustainability could become part of routine functioning rather than symbolic branding.

When these efforts were measured against the standards of the U.S. Green Building Council,



MGM Healthcare emerged as the first hospital in India to receive LEED Platinum Certification.

The distinction rests on practical foundations. The hospital draws power from a 2 MW solar installation and has reduced energy costs by 45.5 per cent through intelligent infrastructure systems operating quietly in the background. Water consumption has been reduced by 74.4 per cent, while every drop of wastewater generated on campus is treated and reused. Rainwater harvesting and groundwater recharge systems further reduce pressure on urban resources.

The philosophy remains uncomplicated: take less, conserve more, return responsibly.

Doctors and healthcare workers step away from clinical intensity into a space that feels restorative.

Scientific evidence increasingly confirms what greenery can do to the human mind and body. Exposure to plants lowers stress hormones, slows the heart rate and eases psychological fatigue. Long before biophilic healing became part of mainstream hospital conversations, MGM Healthcare had already begun integrating nature into patient spaces.

The green wall today functions not merely as architecture, but as part of the healing environment itself.

The Company It Keeps

The LEED-certified flagship hospital

What began on one road in Chennai is gradually evolving into the environmental posture of an entire healthcare network across South India.

Trees for Sparrows

The hospital's environmental engagement has also moved beyond its buildings.

At Mayor Chittibabu Bridge Park in Kolathur, 300 native trees were planted using the Miyawaki afforestation method — a Japanese technique that creates dense, self-sustaining urban forests growing far faster than conventional plantations.

only by clinical outcomes, but also by how responsibly they exist within fragile ecosystems.

MGM Healthcare appears to have understood this long before it became a global healthcare imperative. Its approach has relied not on grand declarations, but on sustained choices repeated over time — tree by tree, kilowatt by kilowatt, one green wall at a time.

The trees planted today may still take years to offer their fullest shade. Yet the direction is already unmistakably clear.

The elders planted. The shade is already arriving.

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Cities, Villages, Climate, and the People

World Environment Day 2026 calls for action, and India is rising to meet it by advancing towards its 2070 net-zero goal

Kyawt Yin Min Thein
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Kyawt Yin Min Thein

India advances climate action through renewable energy, zero-waste initiatives, and ecosystem restoration, ensuring inclusive growth while empowering communities and protecting natural resources. Every year on 5 June, World Environment Day is observed to reflect on the planet's health and push for action. In 2026, Azerbaijan, as the host country, is focusing on urgent climate action and sustainable solutions. The theme highlights that climate action is not just about reducing emissions but transforming economic systems and restoring our relationship with nature. For India, with 1.4 billion people reliant on natural resources, this is both a responsibility and a major opportunity.

The City and the Climate

India is urbanising fast. By 2030, nearly 600 million Indians will live in cities — engines of innovation and, increasingly, green ambition. From

solar-powered metro lines to waste-to-energy plants, Indian cities are reimagining themselves. Three goals frame the 2026 agenda: promoting renewable energy, advancing zero-waste initiatives, and restoring ecosystems. India is already moving on all three fronts.

Renewable Energy: A Democratic Transition

India's renewable energy story is among the most inspiring in the world. Having crossed 52 per cent non-fossil fuel capacity ahead of schedule, the country now targets 60 per cent by 2035. PM Surya Ghar is bringing rooftop solar to homes across income groups, while PM-KUSUM powers farm pumps with sunshine instead of diesel. The goal is to ensure the street vendor, the small shop owner, and the home-based worker all join India's clean energy revolution.

Zero Waste: Recognising Every Contributor

India's zero-waste movement is gathering momentum. With 96 per cent of urban local bodies now practising waste segregation, the foundation is strong. The vital next step is formalising the contributions of millions of waste pickers who have always kept our cities clean. Cooperatives and self-help groups are showing the way of turning waste into livelihoods and livelihoods into dignity.

Farmers and Fishers: Building Resilience

The author's research on India's marginal farmers finds that they are being supported through programmes such as crop insurance, soil health programmes, and watershed restoration. Along the coast, the MISHTI programme is restoring mangroves, protecting fishing communities while sequestering carbon. Stronger early warning systems and renewed coastal ecosystems are giving India's 4 million fishing households a more secure future.

Action That Lifts Everyone

India's climate journey proves that growth and sustainability can walk together. By ensuring the benefits of renewable energy, zero-waste systems, and ecological restoration reach the waste picker, the marginal farmer, and the coastal fisher, India is showing the world what truly inclusive climate action looks like. This World Environment Day, the message is clear: India is not waiting. India is building.

About the Author:

Kyawt Yin Min Thein is a researcher from Myanmar, specialising in natural resource management and the adoption of climate-smart agricultural practices to help rural communities of Myanmar and India

Exams Go Digital, Trees Survive

By eliminating paper-based examinations, Gujarat's Charotar University of Science and Technology (CHARUSAT) is saving hundreds of trees annually while reducing carbon emissions significantly



In a remarkable example of ecological responsibility amid growing climate change concerns, Charotar University of Science and Technology, popularly known as CHARUSAT in Gujarat has been saving nearly 650 trees every year through its fully paperless examination system.

The initiative, aligned with Prime Minister Narendra Modi's vision under the Digital India Mission, has also helped prevent nearly 25,000 kgs of carbon dioxide emissions annually. At a time when educational institutions continue to grapple with consuming enormous quantities of paper for examinations, CHARUSAT's transition from conventional written tests to digital assessments has emerged as a significant model of environmentally conscious academic reform.

The advantages are enormous. By adopting a fully digital examination process, the university now saves nearly 24 million sheets of paper every year while at the same time substantially reducing the ecological burden associated with printing, transportation, storage and disposal of examination material. The initiative also demonstrates how technology can support sustainability while improving institutional efficiency.

The university is among the first higher educational institutions in Gujarat to implement large-scale digital examinations. Again, while

many universities across India continue to rely heavily on printed question papers and handwritten answer sheets, the CHARUSAT has embraced a smarter, faster and more transparent system of evaluation.

The green transition began way back in 2019 when the university inked a pact with Littlemore Innovation Labs, a Singapore-based organisation specialising in digital examination solutions. Through this collaboration, CHARUSAT introduced an advanced examination platform designed to eliminate dependence on paper-based systems.

Initially, the digital system was introduced for first-year students to evaluate its practicality and effectiveness. Following the successful pilot phase, the initiative was gradually expanded across departments. From the academic year 2022-23 onwards, all internal and external examinations at the university have been conducted digitally.

The transformation has also



improved the overall examination experience for students and faculty members. Secure cloud-based and encrypted delivery of question papers has strengthened examination security and minimised risks of paper leaks and unauthorised access.

Students answer both objective and descriptive questions using tablets provided by the university, creating a more organised and streamlined examination environment. Faculty members evaluate answer scripts digitally, reducing assessment time while improving transparency and accuracy.

Several advanced features have further strengthened the system, including multimedia-based questions, automated report generation, section-wise marking and automatic answer saving during technical interruptions. Dedicated tablets equipped with battery backup and technical support ensure smooth and uninterrupted examinations.

As sustainability becomes central to institutional planning across the world, CHARUSAT's transition from paper to pixels offers a compelling model for educational institutions seeking to combine academic innovation with environmental responsibility. The initiative stands as a reminder that meaningful climate action can begin even inside examination halls.

Towards Sustainability and Climate Literacy: The Defining Mission of Our Generation

SRM University-AP, empowering a sustainable future with green infrastructure, research excellence and climate-conscious education

Climate change is not merely a crisis - it is the defining battle of our existence, and it is happening even more quickly than we feared. Earth's temperature has been rising at a clear and measurable pace, with an approximately 1.1°C rise over the past decade (2015-2025) being the hottest period in recorded history.

No corner of the world is immune to the devastating consequences of climate change. Temperatures have spiked in many countries in Southeast Asia, with India witnessing an intense heatwave as temperatures reportedly touched 50°C in parts of Uttar Pradesh and Rajasthan, raising concerns over extreme weather conditions. The India Meteorological Department (IMD) have

issued a red alert for northwest and central India due to the persistence of severe heatwave conditions in several regions.

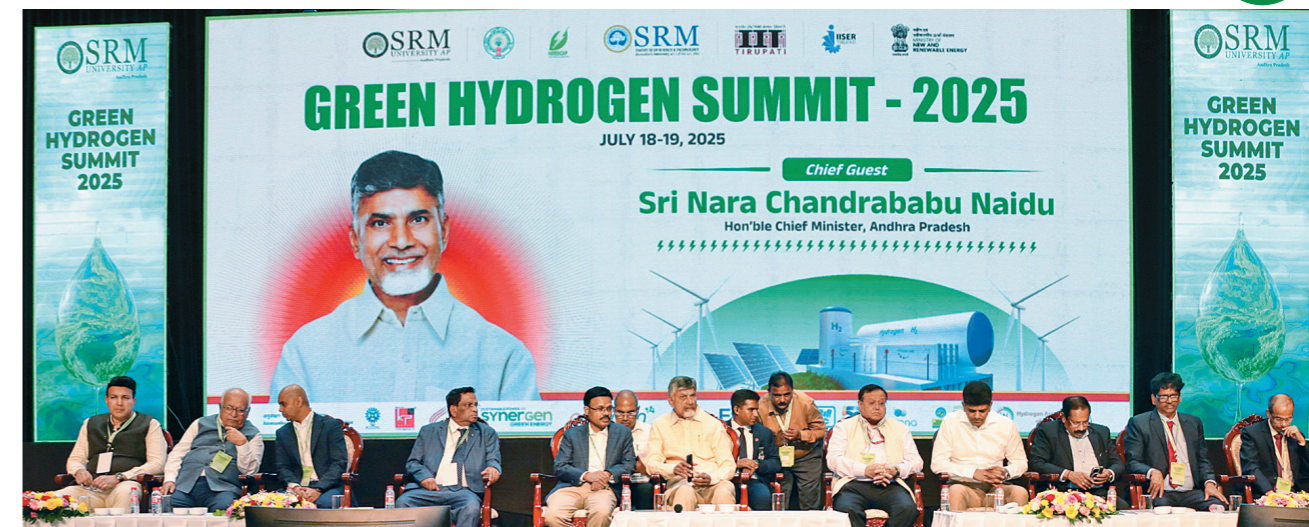
These rising temperatures catalyse environmental degradation, natural disasters, weather extremes, food and water insecurity, economic disruption and conflict. Sea levels are rising, the Arctic is melting, coral reefs are dying, oceans are acidifying, and forests are burning. As the intense cost of the climate crisis reaches irreversible highs, now is the time for bold collective action.

In humanity's own David and Goliath struggle, a civilisation armed with little more than solar panels, wind turbines, and sheer collective

will stands against the towering, seemingly unstoppable giant of the climate crisis — and, unlike the biblical tale, this time victory is far from guaranteed, but not impossible.

As the UN Secretary-General António Guterres pointed out in his speech at the Climate Action Summit, "the climate emergency is a race we are losing, but it is a race we can win".

With this year's World Environment Day heavily focusing on the theme "Inspired by Nature. For Climate. For Our Future", the world is ready to steer towards climate action. Today, sustainability is no longer a term confined to environmental discourse - it is an urgent, collective responsibility that falls on society, from



governments and corporations to communities and individuals alike. How we respond to this moment will not only determine the resilience of our ecosystems, but the very future of the generations to come.

Education is a key driver for combating climate change and fostering sustainability. Under the UN Framework Convention on Climate Change (UNFCCC) and UNESCO, climate change education is recognised as a foundational tool to foster awareness, encourage behavioural change, and equip future generations with the skills necessary to develop sustainable solutions.

When young people understand the devastating realities of global warming, they don't just adapt; they mobilise and take action. Classrooms become the launching pad that transforms students into informed advocates who carry the urgency of the climate crisis far beyond school walls and into the heart of society.

Universities and institutes of higher education advance sustainable development through education, research, and community engagement. From developing 'miniature cities' and 'living laboratories' that test cutting-edge eco-technologies, to driving sustainability research, influencing public policy, and engaging with local communities to implement practical



solutions, these academic institutes become the vital engines that offer awareness in urban sustainability and the circular economy.

Here is where SRM University-AP stands out as a living laboratory, promoting sustainability and environmental responsibility as a core institutional value among students and faculty. Its commitment to nurture a sustainable and eco-friendly campus is reflected in the green infrastructure, waste management, and renewable energy to reduce its ecological footprint while fostering a healthy, sustainable culture.

With its sustainability-embedded academic curricula and multidisciplinary academic programmes that incorporate principles from environmental science, engineering, biology, chemistry, and mathematics, such as the B.Tech. in Energy Engineering, M.Sc. in Environmental Science and M.Tech. in Environmental and Sustainable Engineering, the university equips young minds with knowledge and skills

for environmental innovation practices.

Emphasising global sustainability priorities, the university has undertaken pioneering initiatives in AI Education, Quantum Computing, Green Hydrogen and Emerging Technologies. From establishing India's first Quantum Reference Facility and quantum secure communications test bed to introducing programmes in Defence Systems, Energy, Health, and Semiconductor Engineering, SRM AP is driving a transformative shift in education.

At SRM University-AP, students, faculty members, and staff participate in eco-conscious practices to create a more sustainable environment. The university's core institutional value aligns with the global call for climate responsibility and environmental consciousness.

The university aims to educate and motivate the next generation of environmentally conscious leaders in developing innovative solutions that significantly reduce the global carbon footprint for a greener and more resilient future. With an established roadmap built through strategic planning, sustainable infrastructure, research, and community engagement, SRM AP envisions a greener, cleaner, and more resilient future for all.





Prof. Chetan Singh Solanki, Founder, Energy Swaraj Foundation, Brand Ambassador, Solar Energy, Govt of MP

Harnessing the Sun to Illuminate a Greener India

Prof. Chetan Singh Solanki, known as the “Solar Man of India,” is pioneering sustainable energy solutions through his nationwide solar initiatives and grassroots activism.

As the world grapples with the growing menace of climate change, the need for sustainable energy solutions has never been more pressing. In this context, India stands out with its ambitious renewable energy targets, driven by visionaries like Prof. Chetan Singh Solanki.

Known as the “Solar Man of India” and “Solar Gandhi,” Solanki is on a mission to make clean energy accessible and lead India towards a greener future.

Prof. Chetan Singh Solanki’s journey from a small village in Khargone District, Madhya Pradesh, to becoming a global advocate for solar energy is nothing short of inspiring. Growing up in a village with

limited access to electricity, Solanki understood the challenges faced by rural India.

Despite these obstacles, he pursued higher education, earning an M.Tech in microelectronics and later a Ph.D. in solar energy from Europe.

After completing his education, Solanki chose to return to India, driven by a desire to contribute to his homeland’s development. He joined IIT Bombay as a professor, where he played a pivotal role in setting up the National Centre for Photovoltaic Research and Education (NCPRE).

This center has become a hub for cutting-edge research and innovation in solar energy, contributing significantly to India’s renewable energy

landscape.

Recognizing the need for localized energy solutions, Solanki founded the Energy Swaraj Foundation. Drawing inspiration from Mahatma Gandhi’s philosophy of self-reliance, the foundation aims to empower communities through decentralized solar energy solutions.

The Energy Swaraj Yatra, a nationwide movement initiated by Solanki, involves traveling across the country in a solar-powered bus to raise awareness about clean energy. His commitment is so profound that he has pledged not to return home for 11 years, living instead in his solar bus until 2030 to spread his message.

This initiative has reached over 650 institutions, spreading the message of sustainable energy far and wide.

One of Solanki’s most impactful projects was the Solar Urja through Localization for Sustainability (SoULS) initiative. This project focuses on empowering rural communities to assemble, repair, and maintain solar lamps, thereby creating jobs and ensuring sustainable energy access.

Through SoULS, nearly 10,000 rural women have been trained, and 7.5 million families have benefited from clean lighting solutions.

Prof. Chetan Singh Solanki’s work exemplifies how individual dedication can drive national and global progress in sustainable energy. His initiatives not only address the immediate energy needs of rural communities but also contribute to mitigating climate change.

As India commits to becoming net zero in emissions by 2070, the efforts of leaders like Solanki are crucial in steering the nation towards a sustainable and greener future.

Cultivating a Sustainable Future

Natural Remedies ensures responsible healthcare through carbon footprint reduction, ethical cultivation, and business practices towards a healthier planet

Anurag Agarwal

For centuries, nature has been the planet’s first pharmacy. In today’s world, as we stand at an important crossroads of “how to scale natural healthcare”, it is imperative that we take cognisance of the linkage and inter-dependency of the health of humans, animals, plants, and the wider environment, including ecosystems.

Purpose Driving Growth

Our vision at Natural Remedies, “We harness nature, apply science for health and happiness sustainably”, inspires our journey every day. We believe that true progress is measured not only by business growth, but by the positive impact we create on human lives, communities, and the planet we all share.

As food safety and sustainability become increasingly critical global priorities, we remain committed to creating solutions that protect both people and the ecosystems that sustain life.

Awards & Accolades for sustainability initiatives:

- ▶ The OHS Award 2024 for safety compliance.
- ▶ Confederation of Indian Industry (CII) Award for domain excellence in environment management 2025.
- ▶ India CSR Award 2025 for carbon footprint reduction.
- ▶ Indian Green Building Council (IGBC) Award 2025 for adopting sustainable building, and operational practices.
- ▶ United States Pharmacopeia (USP) Award 2025 for setting quality standards and improving global public health.
- ▶ “Happiest Place to Work” recognised three times.

By combining the wisdom of nature with the power of science, we strive to create meaningful and sustainable change that contributes to healthier societies and a better quality of life for future generations.

Nature at the Core of Sustainability

Every ingredient we source, every formulation we develop, and every process we follow is guided by a commitment to protecting natural ecosystems while creating meaningful value for society.

Our proprietary HerbSecure™ program reflects this commitment by ensuring full traceability and quality assurance from source to shelf through robust Good Agricultural, Collection, Manufacturing, Laboratory, and Quality Practices.

We actively collaborate with farmers, local communities, research institutions, regulatory bodies and customers to promote sustainable cultivation methods, including soil conservation, rainwater harvesting, efficient water management, drip irrigation and reduced chemical usage. Our HerbSecure™ program allows us to source herbs sustainably, giving us optimal control over our quality and supply chain.

Through stringent quality practices, water stewardship, and sustainable sourcing, Natural Remedies continues to create long-term ecological, social and economic value for a healthier and more sustainable future.

Adaptation and Resilience

With “Climate Action” as the theme for World Environment Day, our efforts remain aligned with the United Nations Sustainable Development Goals 6, 7,



Anurag Agarwal

Managing Director, Natural Remedies

12, and 13, reinforcing our commitment to creating a healthier, more resilient world for future generations.

Sustainability is deeply embedded in the way we design, operate and innovate. Today, 51% of our electricity consumption is powered through renewable energy sources, supported by onsite solar panels and offsite wind mill installations. Our Zero Liquid Discharge (ZLD) system at the Anniyalam facility enables the reuse of nearly 400,000 litres of water every month, strengthening water stewardship and climate resilience.

Our infrastructure reflects our long-term commitment to environmental responsibility. The Anniyalam facility has been developed using eco-conscious practices, renewable energy, and energy-efficient technologies to reduce environmental impact and create healthier workspaces. Regular audits and targeted strategies support carbon footprint reduction and energy conservation efforts, as we progress towards our goal of becoming a carbon-neutral company by 2030.

About the Author:

Anurag Agarwal has been instrumental in transforming the organisation into a globally recognised leader in phyto-genetics and natural healthcare solutions. Under his leadership, the company has strengthened its presence across human and animal health by combining the power of nature with science to deliver sustainable solutions.



Padma Shri Dr Rajagopalan Vasudevan
Indian scientist & Professor, Thiagarajar College of Engineering

The Plastic Man of India

Paving India's roads with old plastic, Dr Rajagopalan Vasudevan pioneered a ground-breaking innovation that leads the way for a cleaner, greener India

India's plastic problem is colossal, with approximately 3.5 million tonnes of plastic waste generated annually. Rajagopalan Vasudevan, a chemistry professor from Madurai in Tamil Nadu, offers a win-win solution by using plastic waste to construct roads.

Dr Vasudevan's work aligns perfectly with global efforts to combat climate change and promote sustainability as he contributes towards reducing India's plastic footprint while building a more robust infrastructure. These plastic roads have proven to withstand harsh weather conditions, making them a sustainable alternative to conventional asphalt roads. Today, over 60,000 kilometres of cost-effective roads across India have been constructed using Dr Vasudevan's method. Cities like Chennai, Pune, and Delhi have adopted this technology, creating

smoother roads while addressing the issue of waste management.

Known as the Plastic Man of India, Dr Vasudevan's contributions to recycling and sustainability have inspired millions. "Plastic isn't the problem," explains the acclaimed scientist. "We are. Plastic wouldn't clog our oceans or our landfills if we didn't throw it there in the first place. And there is so much we can do with it instead." His journey from a passionate chemist to a global environmental crusader is nothing short of extraordinary.

The idea germinated in his workshop at the Thiagarajar College of Engineering as far back as 2001. Disturbed by calls to ban plastic, which he believed was important to poor people, he wanted to find a solution to the growing environmental challenges it raised. "Ban plastic and it can severely affect the quality of life

for a low-income family," he says. "But if you burn it or bury it, it's bound to affect the environment."

Disturbed by the pervasive problem of plastic waste choking the environment, he envisioned a novel solution that would not only address the issue of plastic pollution but also improve infrastructure. And so, he began a series of experiments in his workshop to discover effective disposal techniques. In a molten condition, he found that plastic had the property of an excellent binder. Acting on the principle of 'like attracts like', Dr Vasudevan looked at another chemical of similar nature: bitumen, a black tarry substance that was being combined with gravel to lay roads. His pioneering method, patented in 2006, has since become a beacon of hope in India's fight against plastic pollution.

What makes the innovation particularly significant is its simplicity and scalability. The technology does not require expensive machinery and can be integrated into existing road-laying processes with minimal modification.

Engineers have observed that roads built using waste plastic are more resistant to water damage, potholes and temperature fluctuations, thereby reducing maintenance costs. The model has also generated livelihood opportunities for waste collectors and small recyclers engaged in segregating discarded plastic.

In fact, the innovation has also encouraged several municipal bodies to rethink waste as a resource rather than merely an urban disposal challenge.

Dr Vasudevan's contributions have not gone unnoticed. In 2018, Dr Vasudevan was honoured with one of India's highest civilian awards, the Padma Shri, for his groundbreaking research on reusing waste plastic – in a very unusual way.

Cosmic Call for Sustainability

On World Environment Day 2026, the cosmos echoes nature's urgent call for balance

World Environment Day, celebrated on 5th June, holds deep symbolic meaning not only from an ecological standpoint but also through the lens of astrology. In 2026, the cosmic alignments around this time reflect a powerful message about humanity's relationship with nature, responsibility, and collective karma.

The Sun will be in Gemini, the air sign ruled by Mercury, at the beginning of June 2026, according to astrology. Communication, self-awareness, and the sharing of ideas are all governed by Gemini. This indicates that the goal of World Environment Day 2026 goes beyond simply taking action; it also aims to educate the public, spark discussions, and create awareness about the need to conserve the environment. As a result, the influence of news, social media, and academic debate on environmentally conscious actions is growing.

Mercury emphasises analytical thinking and practical solutions during this time. Discussing climate change, sustainability, and green technology policy is ideal now. Governments, academics, and environmental activists may be pushed to propose data-driven, logical solutions.

Another significant influence comes from Venus, the planet associated with beauty, harmony, and love. If Venus forms supportive aspects during this time—as is likely in mid-2026—it enhances our emotional connection to Earth. This energy



Dr Sohini Sastri, 2-times President Award winner and world-renowned KP astrologer

encourages people to appreciate nature not just as a resource but as something sacred and nurturing. It promotes activities like tree planting, beautification drives, and conservation efforts rooted in love rather than fear.

Saturn—the planet of karma and responsibility—is crucial. Saturn's wider passage in 2026 reminds humanity of the implications of environmental neglect. Its impact on World Environment Day emphasises that sustainability is a karmic obligation. Saturn demands discipline, long-term planning, and accountability to address our environmental challenges.

Cosmic energies on World Environment Day 2026 inspire awareness, responsibility, and a deeper emotional connection with nature and sustainability.

The subtle influence of Neptune, the planet linked with oceans and spiritual consciousness, highlights issues related to water bodies, pollution, and climate imbalance. Neptune's energy urges a more spiritual connection with the planet, encouraging people to move beyond materialism and adopt a more compassionate, holistic lifestyle.

From an astrological perspective, World Environment Day 2026 serves as a celestial reminder of interdependence. The conjunction of air (Gemini), water (Neptune), and karmic influences (Saturn) indicates that restoring the Earth requires both cognitive understanding and emotional atonement, supported by accountable action.

In essence, this day is not just a global observance—it is a call from the cosmos. It urges humanity to rethink its habits, respect natural cycles, and restore balance. The stars indicate that even small, conscious efforts made around this time can create a ripple effect, contributing to a more sustainable and harmonious future for the planet.



Dr Atulya Misra
IAS, Additional Chief Secretary, Tamil Nadu Government

From Concrete Jungles to Human-Centred Cities

Why walkways, green cover, water conservation and citizen action must shape the future of urban India

Dr Atulya Misra

As our cities grow hotter, disaster-prone and more congested with each passing year, I believe it is time we seriously rethink how we plan and live in our urban spaces. We have become so obsessed with concrete that we have forgotten the simple things that make a city liveable.

To begin with, we must encourage people to walk again. Pedestrians have rights too, yet our footpaths are broken, encroached upon, or simply missing. Alongside this, we should make cycling safe and convenient, because a city that moves on its own two feet and two wheels is a healthier and cleaner city. This is an alternative thought to mega

metro projects being taken up even in middle India.

We also need far more greenery than we currently have. Urban gardens, vertical gardens on our buildings, and the protection of our remaining water bodies can do wonders to cool our surroundings. Many parts of our cities have quietly become micro heat zones, where the actual temperature is far higher than what is reported for the city as a whole. These heat bowls are man-made, and they can be unmade.

Water, too, must be treated with respect. Proper secondary and tertiary treatment would allow us to reuse water instead of wasting it. And our governments must be willing to subject their own policies and political manifestos to a green audit so that promises

made to the environment are actually kept.

I would also urge a citizens' tree-planting movement, where every weekend we put unused land to good use. There is plenty of land lying idle, undeveloped, or caught in litigation that could be turned green. We should bring in legislation making tree planting compulsory in all city vacant plots. It should be the primary mandate of the ward-level officials. We should de-concretise the unnecessary paving around our buildings so the earth can breathe once more.

Finally, and most importantly, we must enforce what we already promise. When major projects are granted environmental and pollution-control clearances, they come with conditions, especially regarding tree planting and green spaces. Yet these conditions are routinely ignored once approval is secured. Green areas meant for trees are concretised and turned into parking lots. There is no real authority taking due responsibility for ensuring compliance. We need dedicated officers in Pollution Boards and local administration and periodic inspections, even of already-approved projects, to make sure these green commitments are honoured.

If we act on these simple ideas, we can cool our cities, clean our air, and hand over a more breathable world to the next generation.

About the Author

Dr Atulya Misra, IAS (1988), is a seasoned administrator, environmentalist, and author. An alumnus of top global institutions, he holds a doctorate on carbon footprints. He has led key organisations and published extensively. His acclaimed books include Oxygen Manifesto, Vultures of Paradise and Testimony By Fire.

Catalysing India's Green Transition

CIPET is committed to a sustainable future by empowering industries and skilling manpower through green technologies, responsible manufacturing, and environmental stewardship

On the occasion of World Environment Day, the Central Institute of Petrochemicals Engineering and Technology (CIPET) reaffirms its commitment to supporting India's transition towards environmental sustainability, circular economy practices, responsible manufacturing, and climate-conscious industrial growth. As a premier national institution in the fields of petrochemicals, polymer engineering, and technology, CIPET plays a vital role in advancing sustainable development through education, skill development, innovation, research, and industry support.

Over the years, CIPET has evolved into a key enabler of India's green transformation by promoting waste-to-wealth initiatives, resource-efficient technologies, sustainable plastics processing, product testing, and standardization. Through its state-of-the-art laboratories, advanced infrastructure, and technology support services, CIPET assists industries, startups, and MSMEs in adopting quality-driven, energy-efficient, and environmentally responsible manufacturing practices. These efforts help reduce waste generation, improve product performance, ensure regulatory

compliance, and strengthen greener production ecosystems.

A major focus area for CIPET is the development of future-ready human resources. Through diploma, undergraduate, postgraduate, doctoral, and skill development programmes aligned with national initiatives such as Skill India, Make in India, and Atmanirbhar Bharat, CIPET is nurturing a skilled workforce capable of driving sustainable industrial growth. Its industry-oriented curriculum, practical training, and innovation-driven approach equip young professionals with the expertise required for environmental stewardship and sustainable manufacturing.

CIPET also contributes significantly to sustainable materials development and environmental testing. Its advanced testing laboratories are recognized by the Central Pollution Control Board (CPCB) for testing compostable and biodegradable materials, supporting industries in developing eco-friendly alternatives and meeting environmental standards.

Through its nationwide Skill Development initiatives, CIPET is strengthening India's sustainable plastics ecosystem by offering

specialized training in plastics recycling, biodegradable materials, circular economy practices, green processing technologies, and sustainable manufacturing. Its Plastic Waste Management Centres (PWMCs) at Varanasi, Bengaluru, and Bhagalpur play an important role in promoting plastic waste management, recycling innovation, green entrepreneurship, and community awareness.

Positioned at the intersection of economic development and environmental responsibility, CIPET is helping address the challenges of the petrochemical and plastics sectors through applied research, technology transfer, skill development, and industry collaboration. By fostering innovation, promoting eco-friendly technologies, and advancing circular economy principles, CIPET is contributing to India's vision of a self-reliant and developed nation. On World Environment Day, CIPET stands committed to building a cleaner, greener, and more sustainable Viksit Bharat through meaningful action and lasting impact.



Prof. (Dr.) Shishir Sinha, Director General - CIPET

For more information:
<https://www.cipet.gov.in/>



Rajendra Singh, Water Conservationist & Environmentalist

Reviving Rivers, Sustaining India

Known as the “Waterman of India”, Rajendra Singh transformed drought-hit landscapes into symbols of climate resilience and hope

Long before climate change became central to global policy discussions, Rajendra Singh — widely known as the “Waterman of India” had already begun restoring damaged water systems in some of Rajasthan’s driest regions through traditional knowledge, community participation and decentralised water conservation.

Today, as India grapples with droughts, heatwaves, flash floods and worsening water scarcity, his work is increasingly seen as a model for climate resilience and sustainable development.

Born in 1959 in Uttar Pradesh, Singh was trained in Ayurvedic medicine. His life changed dramatically in the mid-1980s when he travelled to the arid Alwar district of Rajasthan intending to provide healthcare services. Villagers,

however, told him that their greatest crisis was not disease, but the disappearance of water. Wells had dried up, agriculture had collapsed, rivers had vanished and migration had become inevitable for survival.

What followed transformed Singh into one of the world’s most recognised voices on water conservation. Working with local communities through the Tarun Bharat Sangh, he revived the traditional practice of constructing johads — small earthen rainwater harvesting structures designed to collect rainwater and recharge groundwater. What began in a few villages gradually evolved into one of India’s most remarkable community-led ecological restoration movements.

Over the years, thousands of johads and other water conservation structures were built across

Rajasthan. The efforts helped restore groundwater, revive forests and rejuvenate several rivers, including the Arvari, Ruparel, Sarsa, Bhagani and Jahajwali. Villages once devastated by drought witnessed the return of farming, livestock and local livelihoods.

Singh’s work drew international recognition. In 2015, he received the prestigious Stockholm Water Prize — often referred to as the “Nobel Prize for Water” — for his innovative efforts in water restoration and his contribution to improving the lives of vulnerable communities. Earlier, in 2001, he was honoured with the Ramon Magsaysay Award for pioneering community-based water management initiatives. He has also received the Jannalal Bajaj Award and several global recognitions for grassroots environmental restoration.

The international acclaimed water conservationist, Singh has consistently argued that India’s water future cannot depend solely on large dams and mega-projects. Instead, he advocates reviving traditional water systems, protecting river ecology and empowering local communities to manage natural resources.

At the same time, as climate change disrupts rainfall patterns and increases extreme weather events, Singh has also repeatedly warned that rivers cannot survive if groundwater collapses, forests disappear and traditional water bodies are neglected. He has also raised concerns over indiscriminate mining, unchecked urbanisation and river-linking projects that disturb natural water flows and ecological balance.

Amidst surge in water conflicts and climate risks across the country, Rajendra Singh’s journey serves as a reminder that some of the most effective solutions may still lie in local wisdom, collective action and community stewardship of natural resources.



Dr. Mrutyunjay Suar, DG (Industry-Institute-Innovation-Interface), KIIT University; CEO, KIIT-TBI; Chairman, Bhubaneswar City Knowledge Innovation Cluster Foundation (an initiative of O/o PSA to GoI)

Coast of Change, Climate of Hope

Sustainable Blue Economy models key to strengthening India’s Maritime climate resilience, says Dr. Mrutyunjay Suar

biodiversity and water quality. Yet, rapid urbanisation, pollution and climate stress continue to destroy these fragile ecosystems, making their protection and restoration an urgent national environmental priority.

The future lies in combining ecological restoration with innovation-driven and economically sustainable approaches. This is where startups and technology-led enterprises can create transformative impact. Across the Blue Economy sector, emerging ventures are developing affordable and scalable solutions in marine biotechnology, coastal surveillance, IoT-enabled environmental monitoring, climate-smart aquaculture, renewable ocean energy and waste-to-resource systems. Such innovations can strengthen ecosystem management while generating sustainable livelihood opportunities for coastal communities.

Integrating blue carbon credit monetisation with coastal restoration offers a major opportunity for sustainable development. Mangroves store vast amounts of carbon, making them valuable within global carbon markets. Scientifically restored coastal ecosystems can generate carbon credits, attract climate finance and create alternative livelihoods for local communities, transforming ecological conservation from a financial challenge into an economically viable and environmentally sustainable investment.

The need of the hour, therefore, is to establish dedicated Centres for Climate Resilience and Blue Economy Innovation that integrate scientific research, startup incubation, policy

support, carbon finance and community participation. Such centres can accelerate climate adaptation strategies, strengthen environmental governance and support nature-based solutions for sustainable coastal development.

Promising initiatives have already begun to demonstrate how ecological restoration and sustainable development can progress together. A notable example is the collaboration between the Bhubaneswar City Knowledge Innovation Cluster Foundation and Imperial College London, which is working on climate adaptation and coastal resilience projects in Odisha. Through the Centre for Climate Impact Adaptation (CCIMA), restoration efforts in the Bhitarkanika region combine mangrove and wetland conservation with climate-resilient agriculture, decentralised renewable energy systems and community-led adaptation strategies.

Another significant initiative is the Chilika Centre for Sustainable Livelihoods and Management of the Chilika Lake Wetland Ecosystem, aimed at strengthening both ecological protection and local livelihoods. Such integrated models offer a replicable pathway for India’s coastal regions. As climate risks intensify, safeguarding ecosystems through science-backed action, innovation and institutional commitment will remain essential for securing both environmental and economic resilience.

Because ultimately, safeguarding nature means safeguarding humanity itself.

World Environment Day on June 5 is often celebrated through campaigns, discussions and symbolic activities. Yet, beyond the observance lies a deeper message: human progress cannot continue at the cost of ecological decline. This year’s theme, “Inspired by Nature. For Climate. For Our Future”, reminds us that nature itself offers the most sustainable model for resilience, recovery and coexistence.

Ecological sustainability is now central to economic and social stability as climate-driven threats such as rising seas, cyclones, coastal erosion and biodiversity loss intensify globally. For India, with over 7,500 km of coastline, the Blue Economy offers a vital pathway towards climate resilience and sustainable growth by promoting responsible use of marine resources while protecting ecological balance and coastal communities.

Mangroves, seagrasses and salt marshes are critical coastal ecosystems because of their extraordinary ability to store blue carbon and shield coastlines from cyclones, flooding and storm surges. They also support fisheries,



Piyush Das
Country Director India & Regional GM South Asia, Haier Biomedical

Green Healthcare, Smarter Future

Haier Biomedical has combined green technology and intelligent healthcare for climate-resilient systems, says Piyush Das, Country Director India & Regional GM South Asia

As climate change increasingly reshapes healthcare priorities worldwide, Piyush Das, Haier Biomedical's Country Director India and Regional General Manager South Asia, says sustainability must become central to future healthcare infrastructure rather than remain a parallel initiative.

"Medical innovation must progress alongside ecological responsibility," he says.

According to Das, the company's sustainability strategy is built around three pillars — intelligent life-science protection, sustainable cold-chain innovation and environmentally responsible healthcare infrastructure.

Haier Biomedical has focused on technologies suited to Indian conditions. Its hydrocarbon-based refrigeration systems are designed to reduce energy consumption while

maintaining critical biomedical storage standards. The company has also developed solar-powered vaccine refrigeration systems supporting immunisation programmes in remote off-grid regions since 2004.

Through its global "LIFE" sustainability framework, the company continues investing in green factories, photovoltaic energy integration and low-carbon manufacturing systems.

One of Haier Biomedical's major interventions came through the introduction of full-line chlorofluorocarbon (CFC)-free refrigeration systems, regarded as a significant milestone in the healthcare cold-chain sector.

CFCs, historically used in refrigeration technologies, are among the most harmful ozone-depleting GHGs. By eliminating CFCs across its product range well before regulatory

mandates, the company demonstrated that advanced vaccine and biomedical storage systems could function efficiently without causing environmental harm, Das notes.

The importance of green cold-chain infrastructure has become increasingly critical for India's healthcare expansion. Citing estimates, Das says nearly 20–25 per cent of vaccines are lost during storage and transportation because of inadequate cold-chain systems.

Haier Biomedical has partnered with India's UIP Programme since 2004 and deployed over 11,000 solar-powered vaccine refrigeration units functioning entirely off-grid. These systems support nearly 10,000 healthcare facilities, particularly in remote and underserved regions.

The company has also introduced energy-efficient smart biobank systems and IoT-enabled ultra-low temperature freezers aimed at reducing energy consumption and biomedical wastage.

Das says the company follows circular economy principles across the product lifecycle — from green manufacturing and design to recycling and safe disposal practices. Non-eco-friendly refrigerants have been phased out and replaced with safer low-leakage alternatives.

According to company estimates, Haier Biomedical's solid waste resource utilisation rate reached 98 per cent in 2025, while hazardous waste disposal compliance stood at 100% through certified recycling agencies. Suppliers are also required to comply with international environmental standards including ISO 14001, RoHS and REACH norms.

Das points out that renewable-powered biomedical systems are steadily becoming central to future healthcare delivery. Developed in collaboration with organisations such as WHO and Gavi, Haier Biomedical's solar-powered refrigeration systems are helping expand healthcare access while reducing carbon emissions, he says.

Healing Healthcare, Protecting Tomorrow

As healthcare expands rapidly, Vivek Shah, CEO of Meril Group, says sustainability is emerging as an equally critical prescription for the planet's long-term survival

With climate concerns increasingly reshaping global industries, the healthcare sector too is confronting a difficult reality — safeguarding human health cannot come at the cost of environmental sustainability. Against this backdrop, Meril Group, the medical technology company based in Vapi, is placing sustainability at the centre of its long-term growth strategy. And rightly, so.

"If healthcare is about saving lives, sustainability is about ensuring those lives have a healthier future too," Vivek Shah says, reflecting a philosophy that now guides many of the company's operational decisions.

One of the company's most significant environmental investments has been in renewable energy. Meril has committed nearly Rs 1,500 million towards hybrid solar power infrastructure as part of its transition to cleaner energy sources. The move is aimed at reducing dependence on conventional power and lowering carbon emissions from manufacturing operations.

According to company data, the impact is already visible. Over the past two years, Scope 1 greenhouse gas emissions have declined by nearly 29%, falling from 1,157 tCO₂e in FY 2022-23 to 824 tCO₂e in FY 2024-25.

Water conservation has emerged as another key area of intervention.

With water scarcity becoming an increasingly serious concern across India, industries are under mounting pressure to adopt sustainable water management systems.

Shah says the company has conserved more than 50 million litres of water through rainwater harvesting and groundwater recharge initiatives. Seventeen dedicated rainwater collection pits along with rooftop harvesting systems have been developed to capture and reuse monsoon water for irrigation and utility purposes.

"Responsible water management is no longer optional for industry," Shah says. "It is essential."

The company has also attempted to rethink waste management through circular economy practices. One initiative involves replacing conventional cardboard cartons with reusable cloth-based polyester packaging bags for logistics operations. Designed for repeated usage, the system has helped reduce the consumption of corrugated packaging material.

The shift reflects a broader industrial movement towards circular models where materials are reused and retained within the system for as long as possible instead of being discarded after a single use.

Some sustainability measures may appear smaller in scale but remain equally significant. The company has reduced single-use plastics during corporate events,



Vivek Shah, Chief Executive Officer, Meril Group

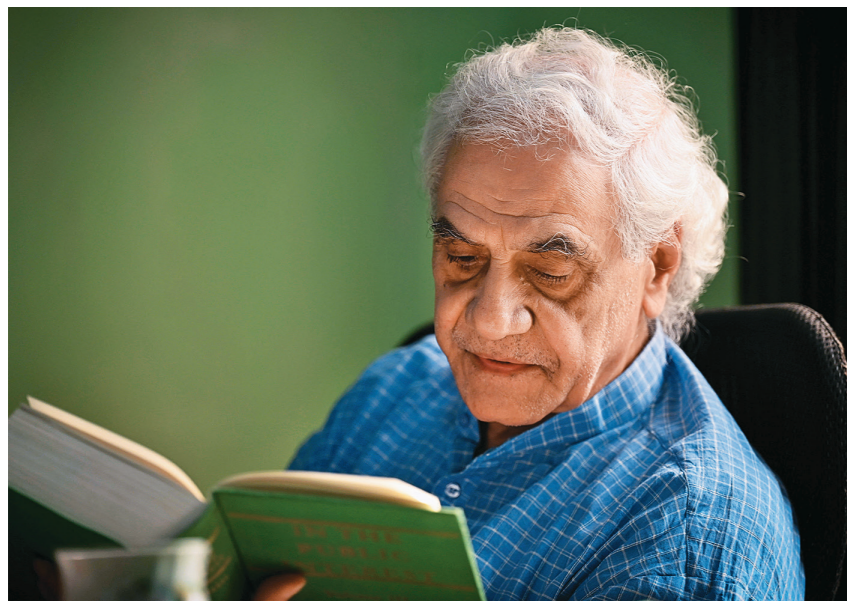
increased recyclable packaging materials and shifted much of its communication from paper-based systems to digital platforms.

Mobility practices are also evolving gradually. Electric vehicles have been introduced for selected leadership transportation, while EV charging infrastructure is being expanded across campuses as part of a phased transition toward cleaner transport solutions.

According to Shah, sustainability is rarely the outcome of one dramatic intervention. "It is built through intent, consistency, and thousands of everyday decisions across the organisation," he says.

The healthcare industry's growing focus on sustainability also reflects wider public health concerns. Rising pollution, climate change, water scarcity and environmental degradation are increasingly linked to respiratory illnesses, heat-related diseases and broader impacts on community wellbeing.

"At Meril, we believe innovation and sustainability must advance hand in hand, with an unwavering commitment to protecting Mother Earth for future generations," Shah says.



emerged as a defining example of judicial intervention to protect cultural heritage from pollution.

Equally significant was his long legal battle concerning pollution in the Ganga River. Through petitions filed from the 1980s onwards, Mehta highlighted the discharge of untreated industrial waste and sewage into the river, forcing authorities to initiate pollution-control measures and sewage treatment programmes. Though the river continues to face severe ecological stress, the litigation altered the national conversation on river conservation and industrial accountability.

Another major contribution came after the Oleum gas leak in Delhi in 1985, which occurred soon after the Bhopal Gas Tragedy. Mehta's petition led the Supreme Court to evolve the doctrine of "absolute liability", holding hazardous industries fully accountable for damages caused by industrial accidents.

Over the decades, his petitions shaped judicial orders on vehicular pollution in Delhi, closure of hazardous industries, forest conservation, mining regulation, coastal ecology and preservation of urban green spaces. Legal scholars often note that Mehta democratised environmental governance by enabling ordinary citizens to seek judicial intervention on issues affecting public health and ecological safety.

For his contributions, Mehta received the Ramon Magsaysay Award, the Goldman Environmental Prize and the Padma Shri. His career remains a reminder that environmental protection is not merely an administrative challenge, but a question of constitutional morality, public health and intergenerational justice.

Born in rural Jammu and Kashmir, Mehta studied law at the Faculty of Law, Delhi University, before beginning practice in the Supreme Court. At a time when environmental litigation remained largely unexplored in India, he turned towards public interest advocacy, disturbed by the ecological damage accompanying rapid industrialisation and urban expansion.

Among his most celebrated interventions was the Taj Trapezium case, where he sought action against industries whose emissions were damaging the marble surface of the Taj Mahal. The litigation prompted the Supreme Court to direct polluting industries around Agra to either relocate or shift to cleaner fuels such as natural gas. The case

Mahesh Chandra Mehta, Indian environmental lawyer & activist

India's Green Litigation Crusader

For over four decades, environmental lawyer MC Mehta, transformed India's jurisprudence through landmark interventions targeting ecological destruction and public health harms.

Few legal figures in India have reshaped the country's environmental discourse as profoundly as Mahesh Chandra Mehta. The public interest lawyers relentless litigation transformed environmental protection from policy rhetoric into enforceable constitutional governance.

Through a series of landmark interventions, Mehta used the judiciary to confront some of India's gravest ecological crises — industrial pollution, river contamination, vehicular emissions and forest degradation. His work firmly established that a clean and healthy environment forms an integral part of the fundamental right to life under Article 21 of the Constitution.



Rashmi Sahoo
Managing Director-FarrmB, Director-Frozit, Founder-Rays Foundation

From Grains to Green Growth

Blending global expertise with local wisdom, Rashmi Sahoo is building a future of healthier lives, resilient agriculture, and responsible entrepreneurship

As conversations around sustainability increasingly move from policy tables to dining tables, Odisha-based food brand FarrmB is quietly building a model that reflects the future of responsible consumption, embodying both ecological responsibility and consumer trust. At the centre of this movement is Rashmi Sahoo—entrepreneur, food processing professional, and one of Odisha's emerging voices in sustainable nutrition-led enterprises.

Launched in 2021, FarrmB was conceived as a conscious response to the growing demand for climate-resilient crops. Its portfolio—millet flours, pulses, jaggery powder, oats—represents more than consumer choice. It is a deliberate pivot towards

grains that demand less water, enrich soil health, and align with India's sustainability agenda. While the brand champions millet-based, eco-friendly nutrition, it also ensures affordability and quality. The brand's IMS certifications (FSSC 22000, QMS, EMS) reinforce its commitment to quality and environmental stewardship. FarrmB reflects a vision

"OUR JOURNEY IS ABOUT DEDICATION, SUSTAINABILITY, AND THE TRUST OF OUR CONSUMERS. FARRMB IS NOT JUST A BRAND; IT IS A MOVEMENT TOWARDS HEALTHIER LIVES AND A GREENER PLANET"

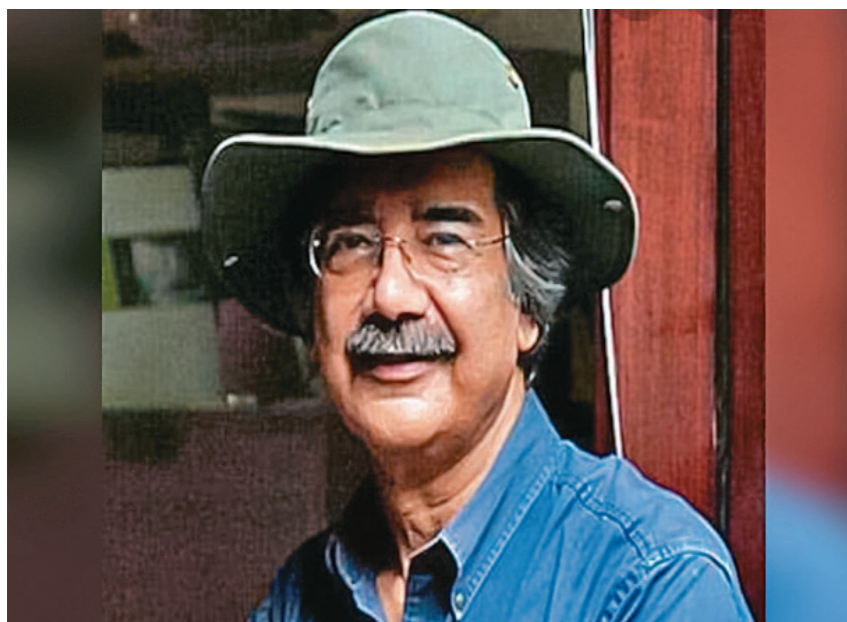
where innovation, sustainability, and community empowerment converge. On Odisha's entrepreneurial soil, FarrmB is cultivating a food revolution.

Sahoo's entrepreneurial journey is marked by global exposure and local impact. Trained in food processing in Italy and Switzerland, she returned to Odisha determined to blend international best practices with indigenous wisdom. Her leadership has earned accolades including the IWEC Best Women Entrepreneur Award (Madrid, 2022) and the Times Business Award (2022). Yet her contribution extends beyond FarrmB. As Director of Frozit, she has played a pivotal role in modernising operations, expanding product lines, and embedding innovation into a legacy enterprise. That experience laid the foundation for FarrmB's ethos—where tradition meets sustainability.

Her philosophy is rooted in responsibility as much as ambition. As she remarked at the MSME conference in Mumbai: "This recognition underscores our commitment to excellence in the food industry. FarrmB's journey is about dedication, sustainability, and the trust of our consumers."

By expanding FarrmB's reach into Western Odisha, she is creating distribution networks that empower farmers and deliver affordable nutrition to households. This dual focus—community empowerment and consumer health—has positioned FarrmB as more than a brand. It is a movement towards greener choices, healthier lives, and a future where prosperity is inseparable from sustainability.

In Odisha's entrepreneurial landscape, FarrmB stands as a beacon of responsible innovation. Guided by Rashmi Sahoo's leadership, it demonstrates that food can be both nourishment and environmental action and that the next chapter of India's growth story may well be written in grains that heal the planet.



Mike H Pandey, Indian film maker, specialising in films about wildlife and the environment

Capturing Nature's Offerings

For over half a century, Mike H Pandey has been India's go-to Wild Lensman

In India, the landscape changes every few hundred kilometers. Capturing the sheer diversity in this biodiversity is no easy task. For the past 50 years, Mike H. Pandey has taken on this herculean challenge, creating some of the most incredible visuals around Indian wildlife.

One of the country's foremost environmental filmmakers, Pandey tells stories around India's endangered species, vanishing ecosystems and the fragile threads that bind biodiversity to everyday life. In a world of Instagram reels, his approach to filmmaking stands out with frames that linger in the viewer's memory, long after the credits roll. His camera aims to

sensitise, rather than sensationalise. With over 300 awards to his name, his story is the perfect example of how filmmaking can inspire change.

Standout projects

Pandey's best-known work includes *The Last Migration* (1994), a haunting portrayal of the skirmish between villagers and wild elephants, and *Shores of Silence* (2000), which exposed the brutal killing and harvesting of whale sharks. Both films won the coveted Green Oscar (Wildscreen Panda Award). The latter also directly led the Government of India to ban the fishing of whale sharks. In 2004, his film *Vanishing Giants* got him his third Green Oscar for documenting the plight

of captured elephants.

He also anchored the popular DD National series *Earth Matters*, which aired environmental stories from across India and won several international awards. For many Indian viewers, this was their first exposure to issues like mangrove destruction, tiger conservation, water scarcity and human-wildlife conflict.

Pandey's work is even more commendable, given that he started making films on the environment when mainstream media largely ignored it. A huge chunk of contemporary dialogue around conservation can be directly attributed to him.

Last year, he was honoured with the prestigious Jackson Wild Legacy Award. The award commemorated more than 45 years of impactful filmmaking, where Pandey has continuously given a voice to the voiceless beings we share the planet with.

The man behind the films

But beyond all the accolades, Pandey's greatest achievement lies in the ripple effects his work has created. Apart from contributing towards increased legal protections and heightened public awareness, his films have inspired an entire generation of conservationists.

Due to their timeless appeal, Pandey's films continue to be screened in schools, forest departments, international summits, and even Parliament sessions. He strongly believes that people will only protect what they love, and in order to cultivate this love, one must first cultivate understanding.

Now in his 70s, he remains an active voice on conservation panels and continues to work on projects aimed at educating India's youth. His vision is to make environmental literacy as essential as any other school subject.

Turning Trash to Treasure

From landfill dependency to decentralised upcycling, Sandeep Tiwari shares how Waste Is Gold Technologies is transforming waste into sustainable opportunity through tech-led innovation and a future-forward vision

How is Waste is Gold Technologies making sustainable living easier?

Our core philosophy is rooted in principles of the circular economy and long-term ecological balance. We focus on enabling bulk waste generators, such as residential societies, institutions, and businesses, to process their organic waste directly at the source.

This decentralised approach significantly reduces the need to transport waste to landfills, cutting down on carbon emissions. Once organic waste is processed through composting or shredding, dry waste becomes easier to segregate and can be recycled or upcycled efficiently.

Our vision is to create a world without landfills, where all waste is transformed into valuable resources. We handle waste volumes ranging from 10 kg to over 10,000 kg, offering scalable solutions powered by smart technologies, data-driven insights, and continuous support.

How do you see India's progress in waste management over the next decade?

India has made a promising start by introducing laws that support decentralised waste management, something many countries have yet to fully adopt. For a country of this scale, implementation takes time, but we are moving in the right direction. With consistent efforts from municipal corporations and proper execution of policies, I believe

India can process 70–80% of its waste in the next decade or two.

Rapid urbanisation is increasing waste production. Therefore, decentralised solutions are no longer optional but essential. With limited land resources, reducing landfill dependency will play a critical role in shaping a sustainable future.

What initiatives set your organisation apart from others in this space?

Our strength lies in combining advanced technology with practical, on-ground problem-solving. We offer state-of-the-art composting systems, including AI-powered monitoring and automated Organic Waste Converter (OWC) machines.

One of our most impactful initiatives has been working with sites where previous waste management solutions failed—often due to foul odours, emissions, or inefficiencies. Instead of abandoning these efforts, we step in to upgrade or replace outdated systems and make them fully functional.

We collaborate closely with builders, residential associations, and institutions to ensure that their waste management systems not only work but also deliver long-term results. Our focus is simple: if there is intent, we provide the right technology and support to make it successful.

What are your upcoming initiatives?

We are currently working on two exciting developments. First, we are introducing portable composting



Sandeep Tiwari

Founder & Managing Director
Waste Is Gold Technologies

WASTE IS GOLD TECHNOLOGIES
#AWARDEE IN THE
"EMPOWERING UPCYCLING
& RECYCLING" CATEGORY AT
THE OUTLOOK C3 SUMMIT &
AWARDS HELD AT
TAJ MAHAL HOTEL, MANSINGH
ROAD, NEW DELHI ON
MARCH 27, 2026

machines aimed at individual households. This marks our expansion from a B2B to a B2C model, enabling people to process their own organic waste and produce fertiliser for home gardening. Thereby supporting the growing demand for organic living.

Second, we are developing a hybrid waste-to-energy solution that can generate both compost and biogas simultaneously at a decentralised level—without foul smells or harmful emissions. These initiatives are designed to make sustainable waste management more accessible, efficient, and impactful, whether at the scale of a large institution or an individual home.



Ajay Mathur, Director General of the International Solar Alliance

Steering India's Green Energy Future

Ajay Mathur, Director General of the International Solar Alliance, is shaping global clean energy transitions through sustainable solar partnerships

An engineer, policy strategist and global climate negotiator, Ajay Mathur has emerged as one of India's leading voices on clean energy transitions and sustainable development.

Currently serving as Director General of the International Solar Alliance (ISA), Mathur has spent decades shaping India's renewable energy and energy efficiency policies while helping position the country as an important player in global climate diplomacy.

At a time when nations are struggling to balance economic growth with climate commitments, his work has acquired increasing international significance.

The ISA, launched jointly by India and France during the Paris

climate negotiations, aims to expand affordable solar energy access across tropical countries, particularly in the developing world. Under Mathur's leadership, the alliance has strengthened cooperation among member countries through financing partnerships, technology transfer, capacity building and solar infrastructure development.

Before taking over the ISA, Mathur served as DG of The Energy and Resources Institute (TERI), where he expanded research and policy work on climate adaptation, green hydrogen, clean mobility, air pollution and sustainable urbanisation. His tenure at TERI reflected a broader vision that linked climate action with

development priorities and energy access.

Mathur also played a defining role in India's energy efficiency movement. As former DG of the Bureau of Energy Efficiency (BEE), he helped design several programmes that transformed industrial and household energy consumption patterns.

Among his most recognised contributions was the Perform, Achieve and Trade (PAT) scheme, a market-based mechanism aimed at improving industrial energy efficiency. He was also associated with initiatives promoting energy-efficient appliances and building standards that significantly reduced electricity consumption across sectors.

Over the years, Mathur has consistently argued that climate policy cannot succeed through emission reduction targets alone. He has repeatedly stressed the importance of affordable technologies, financial support and equitable access to clean energy for developing nations.

Beyond renewable energy, he has contributed to global discussions on sustainable cooling technologies, resilient infrastructure and climate-resilient growth pathways. He also served as a coordinating lead author for reports of the Intergovernmental Panel on Climate Change (IPCC), which shared the 2007 Nobel Peace Prize with former US Vice-President Al Gore.

Colleagues and policy experts often describe Mathur as a bridge between science, governance and diplomacy — someone capable of translating complex climate concerns into practical and scalable solutions. As India accelerates its renewable energy ambitions, his work continues to shape the country's transition towards a more sustainable and climate-resilient future.

Building a Greener Industrial Future

Fluid Controls is redefining industrial excellence by integrating indigenous innovation, advanced smart engineering, and eco-conscious manufacturing to create efficient, future-ready industrial solutions

Dr Tansen Chaudhari

With ever-increasing global concerns over environmental degradation and resource scarcity, the need for sustainable manufacturing (SM) practices has become paramount. Industry 5.0 (I5.0), the latest paradigm in the industrial revolution, emphasises the integration of advanced technologies with human capabilities to achieve sustainable and socially responsible production systems. At Fluid Controls Limited, we are proud to be at the forefront of this transformation. We have integrated sustainable manufacturing (SM) with Industry 5.0 principles by combining indigenous product development with resource-efficient, human-centric production. Our focus spans eco-friendly material usage, energy-efficient designs, and custom instrumentation that supports India's *Atmanirbhar Bharat* initiative.

Sustainable Manufacturing Practices

We create high-quality, long-lasting industrial instrumentation products that are easy to use and require less maintenance, which helps save materials and resources over time.

With a dedicated team of engineers, PhDs, and postgraduates, we develop products that meet the highest global standards, prioritising environmental, health, and safety (EHS) and circular economy principles across our operations. For example, the NABL-accredited R&D center in Pune designs "Make in India" precision connections, valves, and components. Our end-to-end offerings include products, services, and validation processes—

ensuring we meet global standards while maintaining local relevance. This directly reduces the carbon footprint associated with global supply chains.

Precision Engineering and Operational Excellence

Fluid Controls Limited has been recognised as an approved in-house R&D centre by India's Department of Scientific & Industrial Research (DSIR), reinforcing our commitment to innovation-led and process-efficient engineering practices. We have invested in an advanced eco-centric R&D facility and Industry 4.0-enabled manufacturing systems to enhance operational efficiency, process optimisation, and sustainable production capabilities.

Our business is built on strong governance frameworks, including ISO 14001:2015 Certified Operations: Manufacturing workflows are systematically governed to minimise waste, optimise resource allocation, and ensure zero-compromise environmental management across all production lines. To further strengthen operational excellence, we consolidated multiple manufacturing facilities into a modern integrated campus equipped with advanced in-house testing infrastructure, enabling improved process control, resource utilisation, and quality assurance.

We are continuously developing internationally certified products and engineered solutions that help reduce leakage, optimise energy consumption, and minimise pressure drop in fluid control applications. Our certified hardware systems help support green energy projects using advanced automatic and hydraulic technologies



Dr Tansen Chaudhari
Executive Director & CEO
Fluid Controls Limited

"ENGINEERING SMARTER FLUID SOLUTIONS THAT REDUCE WASTE AND CONSERVE ENERGY. AT FLUID CONTROLS, INNOVATION AND SUSTAINABILITY FLOW TOGETHER TO SHAPE EFFICIENT INDUSTRIES AND GREENER INFRASTRUCTURE"

in important industries like turbines Railways, and oil and gas.

In today's global economy, we believe in co-creating value with OEM partners and building long-term trust through engineering excellence. We also collaborate closely with global and local engineering institutions for talent acquisition and training, ensuring our workforce remains aligned with evolving industry expectations.

About the Author:
Instrumental for current Growth of Fluid Controls Group, Dr Tansen Chaudhari is a PhD in Mechanical Engineering from IIT Bombay and GE Certified Lean Six Sigma MBB. He started his career with General Electric (GE) Global Research Centre, USA & Consumer and Industrial as GM Sales and Supply Chain. He has published 7 global patents, 22 international journals and 2 books.