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SIES Indian Institute of Environment Management
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ESG & CLIMATE ACTION: ROLE OF INNOVATION AND ENTREPRENEURSHIP

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About Us

Founded in 1999, the SIES Indian Institute of Environment Management (SIES IIEM) is a premier academic and research institution committed to advancing sustainable practices through innovative research, comprehensive education, and impactful training programs. Recognized by the Department of Scientific and Industrial Research (DSIR), Government of India, the institute is ISO 9001:2015 certified to provide Environment Education, Research & Development and Laboratory Testing Services.

Some of our major activities include Academics, Research & Development, Industrial Consultancy, Environmental & Green Audits, Laboratory Testing and Outreach Activities. The institute also offers a range of academic programs, including Ph.D. program in Environmental Sciences, affiliated to University of Mumbai; M.Sc. in Sustainable Development and Environment Management, affiliated to Garware Institute of Career Education & Development (GICED); and, an online Post Graduate Diploma in Sustainable Environment Management (PGDSEM) for working professionals.

Since its inception, SIES IIEM has established strong collaborations with government and non-government agencies, industries, academia and environmental consultancies. The institute is equipped with state-of-the-art laboratories and is at the forefront of pioneering solutions for sustainable environmental management. Institute's core Research Areas on Environment and Energy include, Management of Natural Resources, Water Resources, Air Quality, Solid Waste, and Radioactive Waste; , Energy Transitions, Conservation, and Management; and Global Issues of Climate Change & Global Warming; Ozone Depletion; Trade and Environmental Linkages; Forest and Biodiversity, etc.

The institute specializes in conducting comprehensive Green Audits and offering specialized environmental consultancy services. Our green audit services assist organizations in assessing their environmental impact, identifying areas for improvement, and developing strategies to reduce their ecological footprint. We help organizations achieve sustainability goals while ensuring compliance with the environmental regulations. At SIES IIEM, we continue to lead the way in sustainability education and environmental research, driving positive change and fostering a sustainable future for all.

MISSION

To harness the power of Science, Technology and Innovation in pollution control, management of natural resources and excellence in academics to promote environmental, social and institutional sustainability.

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Editorial

As the global momentum for climate action accelerates, Environmental, Social, and Governance (ESG) frameworks have emerged as powerful drivers of sustainable and ethical organizational behaviour. What was once a compliance-led approach to sustainability has evolved into an opportunity-driven transformation. At the forefront of this shift are entrepreneurs and innovators who are redefining business models through circular economy practices, clean technologies, enhanced resource efficiency, and data-driven climate solutions. Their work is reshaping how organizations build long-term resilience and respond to pressing environmental challenges.

Corporate and institutional stakeholders are now reassessing their strategies in response to evolving regulatory requirements and heightened investor scrutiny. With increasing emphasis on ESG disclosures and Business Responsibility and Sustainability Reporting (BRSR), industries are actively seeking collaborations with academia and innovation partners for technical expertise, analytical support, and capacity building. While such partnerships are expanding the scope of climate-positive solutions and accelerating the implementation of innovative ideas, their success depends on the presence of a strong enabling ecosystem. Climate action becomes truly impactful and inclusive when entrepreneurial ambition is reinforced by institutional commitment, supportive policies, and adequate access to resources.

Sustained progress demands more than isolated initiatives. Knowledge-sharing platforms, incubation and mentoring support, skill development programs, access to green finance, and meaningful collaborations that link academia, government, and industry together form the backbone of a successful sustainability ecosystem. Collectively, these elements ensure that promising ideas are not only developed but also scaled, sustained, and translated into measurable impact.

At SIES IIEM, we remain deeply committed to accelerating the transition toward a sustainable, equitable, and low-carbon future. Through research, specialized training programs, capacity-building initiatives, and strategic industry collaborations, we support organizations in aligning with national sustainability priorities and global best practices.

As we present this edition on *"ESG and Climate Actions: Role of Innovations and Entrepreneurship,"* we celebrate the thinkers, doers, and change-makers who are shaping India's sustainability journey. Their efforts remind us that every action taken today contributes to a more resilient tomorrow and that meaningful progress emerges when innovation is driven by purpose.

Dr. Sangeeta Sharma

Director (I/C), SIES IIEM

How New Ideas, New Enterprises and New Models will Shape a Climate-Resilient Future for India and the World

Dr Aditi V. Mishal, *Lead,*
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ESG, Welspun Enterprises



Introduction

As climate change intensifies - bringing extreme weather, biodiversity loss, and socio-economic stress - the need for sustainable business practices has never been greater. The concept of ESG (Environmental, Social, and Governance) has moved from corporate social responsibility (CSR) checkboxes to a core lens for long-term business survival and global climate action. What's becoming clear: innovation and entrepreneurship are not just helpful, but **essential** to drive meaningful ESG and climate outcomes.

In the Indian context - a rapidly growing economy facing acute climate vulnerabilities - entrepreneurial solutions can bridge gaps left by traditional policy and industry. This article explores how start-ups and innovation-led enterprises, supported by ESG frameworks, are turning climate challenges into opportunities.

Why Innovation + Entrepreneurship Matters for ESG?

- *Scalability & Agility:* Startups often operate lean and adapt quickly - vital for experimenting with new low-carbon technologies or business models.
- *Localized Solutions:* Many global "green" tech solutions don't translate well to Indian realities (climate, infrastructure, affordability). Home-grown innovation can tailor answers to local needs.
- *Mobilizing Capital:* With growing ESG awareness among investors, climate-tech ventures can attract funding - creating a virtuous cycle of impact + growth.

According to one recent ecosystem report, India has over 800 operational climate-tech startups, which between 2014–2024 have raised about USD 3.6 billion, spanning sectors like renewable energy, waste management, agriculture and industrial decarbonization.

But the same report flags a challenge: while early-stage funding is relatively robust, less than 3% of startups have reached Series B or beyond - highlighting a funding and scaling bottleneck.

Global Case Studies: What the world is doing and why it matters to India?

These case studies illustrate how countries are using innovation to drive climate action, offering learnings directly applicable to India's transition.

Case Study 1: Denmark's Energy Transformation[4]

Innovation: Wind energy scale-up, public–private collaboration, green financing.

Impact

- Denmark reduced its fossil fuel dependence dramatically.
- Over 50% of its electricity comes from renewable energy.
- The country built a strong green technology export market.

Relevance for India

India is already the world's 4th largest renewable energy market, and Denmark's model shows how consistent policy, grid innovation, and industry partnerships can accelerate India's clean energy goals - especially offshore wind.

Case Study 2: Rwanda's E-Mobility Revolution5

Innovation: Battery-swapping, EV motorbike startups, urban green mobility.

Impact

- Rwanda has become a model African nation for low-carbon urban transport.
- Affordable EV solutions increased adoption among delivery and taxi drivers.

Relevance for India

Battery-swapping and EV two-wheelers can dramatically reduce India's urban pollution and oil import costs, especially for last-mile delivery ecosystems.

Case Study 3: Netherlands - Circular Economy Leadership6

Innovation: Industrial symbiosis, recycling-based manufacturing, food waste innovation.

Impact

- Netherlands aims to be 100% circular by 2050.
- Waste is transformed into feedstock for new industries.

Relevance for India

India generates over 62 million tonnes of waste annually. Circular innovation can reduce landfill reliance, create jobs, and support ESG compliance in manufacturing supply chains.

Case Study 4: Singapore - Urban Sustainability & Water Innovation7

Innovation: NEWater recycling, smart water systems, climate-resilient urban planning.

Impact

- Singapore meets up to 40% of its water demand through recycled water technologies.
- It has become a global hub for water-tech startups.

Relevance for India

With rising water scarcity across Indian cities, Singapore's approach demonstrates how policy, innovation, and public adoption combine to manage resources sustainably.

How do These Global Models Strengthen the Indian Context?

India can leverage global learnings to build a unique, locally relevant climate-innovation ecosystem:

- *Clean energy integration:* Offshore wind and hybrid solar–wind systems can drastically cut India's fossil dependence.
- *Circular economy and waste-tech potential:* India can turn its waste challenge into green manufacturing opportunities, creating millions of jobs.
- *Digital innovation to support small farmers:* Climate-smart agriculture, precision irrigation, crop advisories, and regenerative farming models can reduce climate risks in a sector employing 45% of the population.
- *Urban innovation for future-ready cities:* EV adoption, smart water systems, sustainable construction materials, and green buildings can help India accommodate rapid urban growth.
- *Green finance & ESG-compliant investment:* If India structures ESG-friendly capital mechanisms - green bonds, blended finance, tax incentives - climate entrepreneurship can scale significantly.

The Impact of ESG-Aligned Innovation: Practical Benefits for India

Even without naming specific startups, the impact categories speak for themselves:

- *Reduced carbon emissions:* Clean energy devices, low-carbon materials, and green mobility reduce pollution and support India's net-zero pathway.
- *Livelihood generation & social inclusion:* Grassroots innovation creates new roles in recycling, mobility, agriculture, and clean energy - especially for women and youth.
- *Resource efficiency & cost savings:* Innovations in water recycling, waste valorization, and renewable energy improve productivity and reduce long-term costs.
- *Responsible and transparent governance:* ESG-aligned enterprises build trust with investors, partners, and customers.
- *Strengthened climate resilience:* Technologies that address heat stress, water scarcity, crop failures, or waste accumulation directly buffer communities from climate shocks.

Beyond Startups: Social Innovation & Inclusive Climate Action

Not all impactful climate-ESG work comes from "tech unicorns." Grassroots and social entrepreneurship also play a vital role - especially in rural or underserved communities.

One compelling example is Swayam Shikshan Prayog (SSP) - a Pune-based NGO that supports women-led rural entrepreneurship focused on clean energy, sustainable agriculture, water conservation and more. Through its "Women-led Climate Resilient Farming" (WCRF) model, SSP has enabled marginal farmers to diversify livelihoods, adopt climate-appropriate cropping and conserve resources - improving resilience without depending on large corporations or expensive tech.

Such grassroots models highlight how "entrepreneurship" in ESG is not always about high tech - sometimes it is community-led, resource-aware, and deeply contextual.

Futuristic Vision: What the Next 10–20 Years Could Look Like

India stands on the brink of becoming a global leader in climate innovation. Here is what the future could hold:

Climate-Smart Cities Powered by Green Tech: Cities with EV-first mobility, green buildings, smart waste systems, and low-carbon construction materials will define India's urban future.

Decentralized Clean Energy Villages: Rooftop solar, bioenergy, micro-grids, and energy-storage could make rural India energy-sufficient and climate-resilient.

Circular Economy Hubs Across States: Imagine industrial clusters where plastic becomes furniture, crop residue becomes building material, and waste becomes fuel - closing the loop across sectors.

AI and Data-Driven Climate Solutions: Predictive climate models, energy management AI, and agricultural analytics will help manage natural resources more efficiently.

Green Entrepreneurship Becoming Mainstream: Climate innovation will no longer be a niche sector. It will be the foundation of manufacturing, mobility, textiles, agriculture, and infrastructure.

ESG Integration at Every Level: From micro enterprises to large corporations, ESG will evolve into a strategic driver - not a reporting exercise. Companies that embed ESG deeply into operations will lead global markets.

India as a Global Exporter of Climate Solutions: Affordable, locally designed innovations - in biofuels, agriculture, e-mobility, circular materials - can position India as a global green-technology powerhouse.

How This Helps India - Practical & Realistic Benefits

1. *Addressing India's Climate Vulnerability:* India ranks among the most climate-vulnerable nations globally. Innovation-driven climate entrepreneurship - across energy, waste, and agriculture - can build resilience and mitigate risks.
2.

3. *Employment + Inclusive Growth:* Climate startups and social enterprises create new green jobs - from waste-management to circular economy, clean energy to sustainable agriculture - offering livelihoods especially to youth, rural women, and marginalized communities.
4. *Cost-Effective & Scalable Solutions:* Many home-grown innovations (e.g. retrofit emission filters, biofuels, circular-economy recycling) are cost-effective, use local resources/waste, and are scalable - more viable than expensive imports of "Western" green tech.
5. *ESG-Aligned Investment & Capital Flow:* As ESG becomes part of global investment norms, Indian climate-entrepreneurship can attract both domestic and international capital - helping close the funding gap for scale-up. The USD 3.6B raised by climate-tech startups (2014–2024) is just the beginning.
6. *Holistic Sustainability - Environment + Social + Governance:* By combining environmental impact (pollution reduction, low-carbon materials, clean energy) with social goals (livelihoods, inclusion, rural upliftment), these initiatives embed sustainability across business and social frameworks.

Challenges & What's Needed - A Reality Check

- *Funding & Scale-up Gap:* As noted, < 3% of climate-tech startups have reached later-stage funding. Without sufficient capital, many promising ideas remain pilot-scaled.
- *Regulatory & Policy Support:* While ESG awareness is rising, consistent policy support, incentives - especially for small innovators - is essential to scale solutions.
- *Market & Customer Readiness:* In India, affordability and awareness remain barriers. For example, waste-recycling services, green building materials, or biofuels need demand and price competitiveness to succeed broadly.
- *Adaptation to Local Contexts:* Imported "green" technologies may not suit Indian climates or infrastructure; local innovators must tailor solutions to Indian conditions.
- Recommendations - Building a Strong ESG & Climate-Entrepreneurship Ecosystem
- *Encourage Blended Finance & Green Funds:* Public and private investors (impact funds, development finance institutions) should offer blended financing - seed grants + ESG-linked debt/equity - to help startups scale. The idea has been explored for rural energy, water, sanitation, etc.
- *Support Incubators and Rural/ Grassroots Programs:* Initiatives like incubators, social-entrepreneurship platforms, rural-entrepreneurship support (e.g. woman-led
- small-town innovations) can democratize climate action - as shown by SSP's model.

- *Promote Circular-Economy Policies:* Legislation and incentives for waste recycling, material reuse, and emission reduction can help startups like Recykal, Chakr Innovation, and GreenJams scale rapidly.
- *Enhance ESG Disclosure & Transparency:* Corporations integrating ESG must commit to transparent reporting (leveraging digital tools). This drives investor confidence, and channels capital to genuine impact ventures - not "greenwashing."
- *Encourage Collaboration - Corporates + Startups + Communities:* Large companies (especially those under ESG pressure) can partner with startups or grassroots innovators to adopt sustainable technologies - blending capital, reach, and agility.

Summary and Conclusion

As climate change accelerates, ESG (Environmental, Social, and Governance) has become a strategic necessity for businesses and economies. Innovation and entrepreneurship are emerging as powerful drivers of climate action by creating agile, scalable and context-specific solutions. In India-one of the world's most climate-vulnerable yet economically dynamic nations forces are particularly critical.

Climate-tech startups, social enterprises, and grassroots innovators are developing solutions across clean energy, mobility, waste Management, sustainable agriculture, water systems, and circular economy models. These innovations are delivering practical benefits: reducing emissions, improving resource efficiency, creating green jobs, and strengthening resilience in vulnerable communities. With over 800 climate-tech startups raising USD 3.6 billion over the last decade, India's innovation ecosystem is growing rapidly-yet scale-up challenges and funding gaps still persist.

Global case studies-from Denmark's renewable energy transformation to Singapore's water innovation, Rwanda's e-mobility push, and the Netherlands' circular economy model-offer insights that can accelerate India's transition. These examples highlight the importance of policy consistency, public-private collaboration, digitalization, and community-centric approaches, all of which are essential for India to build climate-smart cities, decentralized clean-energy networks, circular-material hubs, and AI-enabled climate solutions.

To unlock full potential, India needs stronger ESG-aligned investments, blended finance, supportive regulation, corporate-startup partnerships, and transparent ESG reporting. Equally important is social innovation-women-led rural enterprises and community-based models show that climate action must be inclusive, affordable, and locally grounded.

Innovation and entrepreneurship, therefore, sit at the heart of India's climate strategy. By integrating ESG principles, fostering green businesses, and scaling local solutions, India can build a resilient, low-carbon future-and inspire global climate leadership for the decades ahead.

From high-tech recyclers and clean-energy startups to grassroots rural enterprises, a diverse ecosystem is already emerging - but to truly deliver, it needs capital, policy support, and a commitment to long-term impact over short-term profit. If governments, investors, corporates, and citizens act in concert, India's climate-entrepreneurship story can become a powerful model - not just for the country, but for a climate-vulnerable world.

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Green Innovation and ESG Performance: Evidence from Emerging Economies

Dr. Namrata Kislay, *Assistant Professor, SIES IIEM*

Introduction

Globally, environmental, social, and governance (ESG) factors have shifted from the outer edges to the heart of business strategy. Although companies in developed economies have occupied ESG discourse, emerging economies are now playing a critical role in shaping the global sustainability agenda. For achieving rapid economic growth, the major challenges are environmental degradation, social inequality and governance aspects. In this context, green innovation, i.e., the development and execution of eco-friendly goods, practices and business models, has become a tool to encourage ESG performances.

Recently, green innovation has been increasingly seen as a strategic instrument that enables corporate competitiveness and long-term value generation, in addition to a compliance-driven response to environmental legislation. This article examines the association between green innovation and ESG performance in emerging economies, with a focus on sectoral trends, empirical data and policy implications.

Conceptual Link Between Green Innovation and ESG Performance

Green innovation refers to innovations that reduce environmental impact, enhance resource efficiency and promote sustainable development. This is broadly classified into 3 major segments:

1. ***Product innovation*** (say, energy-efficient products, eco-friendly materials)
2. ***Process innovation*** (say, waste minimization, cleaner production technologies)
3. ***Business model innovation*** (say, circular economy models, green supply chains)

On the other hand, ESG performance also evaluates how efficiently companies manage the following:

- ***Environmental (E)*** (say, emissions, water and waste management)
- ***Social (S)*** (say, labour practices, occupational health safety, community engagement)
- ***Governance (G)*** (say, board effectiveness, ethical conduct, regulatory compliance)

So, Green innovation helps improve environmental performance (by reducing carbon intensity, pollution, resource consumption), indirectly strengthens social outcomes (through safer workplaces, improved public health and inclusive green jobs) and adopt better governance practices (through enhanced disclosure, stakeholder engagement, and long-term strategic planning).

Why Emerging Economies Matter

The worldwide environmental and sustainability equation revolves around emerging economies such as India, China, South Africa, Brazil, Indonesia and others. They are mostly responsible for population growth, natural resource consumption and pollutant emissions. They also have fast-growing industrial bases and vibrant startup ecosystems. But these emerging economies face various challenges like limited resources, changing regulatory frameworks, limited availability of green technologies and support funds. Despite all these obstacles, these economies offer unique opportunities, where firms bypass inefficient legacy technologies and adopt cleaner, digital and low-carbon solutions. Thus, Green innovation becomes both a necessity and an opportunity to enhance ESG performance.

Empirical Evidence from Emerging Economies

1. Environmental Performance

Environmental performance is one of the quantifiable dimensions of ESG. According to Empirical studies, there is a positive correlation between green innovation and environmental metrics in emerging markets. The following are the examples:

- In India, textile and chemical manufacturing industries have adopted green innovations by using energy-efficient boilers and zero-liquid-discharge (ZLD) systems. These innovations led to reduced coal consumption, lower wastewater discharge and improved environmental compliance. Thereby, enhancing firms' environmental ESG ratings
- Brazilian agribusiness firms have introduced bio-based inputs, precision agriculture technologies and waste-to-energy solutions. Sugarcane processing companies, for instance, use bagasse (agricultural waste) to generate bioenergy, reducing reliance on fossil fuels and minimizing waste. These process innovations significantly improve environmental metrics such as energy efficiency, waste recycling rates and land-use efficiency
- Mining companies in South Africa have introduced water-efficient processing technologies and tailings management systems to reduce water consumption and contamination. These innovations led to improved environmental performance through reduced acid mine drainage and better ecosystem protection
- Chinese manufacturing firms that invested in green patents, such as energy-efficient machinery and low-carbon production processes, showed a significant decline in CO_2 emissions per unit of output
- Similarly, Latin American firms investing in sustainable agriculture and water-efficient processes have shown improvements in environmental disclosure and performance ratings.

2. Social Performance

Green innovation also contributes to improved social outcomes. Clean technologies reduce occupational hazards, improve air & water quality and support healthier communities. In emerging economies, where environmental degradation often disproportionately affects vulnerable populations, these social benefits are particularly significant.

Evidence suggests that firms engaged in green innovation tend to create skilled green jobs, improve worker safety & training and strengthen community relationships through sustainable practices. For instance, renewable energy start-ups in India and Africa have not only reduced carbon emissions but also expanded energy access in underserved rural areas, directly enhancing social ESG indicators.

3. Governance Performance

Although governance impacts are less direct, green innovation is increasingly associated with stronger governance practices. Firms pursuing sustainability-oriented innovation often adopt greater transparency in ESG reporting, long-term strategic planning and stronger stakeholder engagement.

Studies indicate that firms with green patents or sustainability-focused R&D investments are more likely to disclose ESG information and align with international standards such as

GRI, SASB, or TCFD. This governance alignment enhances investor confidence and access to global capital markets.

Sectoral Insights

The impact of green innovation on ESG performance varies across sectors:

- *Manufacturing:* Cleaner production technologies and energy efficiency initiatives significantly improve environmental and governance scores
- *Energy and Utilities:* Renewable energy innovation strongly influences environmental and social dimensions, especially through emissions reduction and energy access
- *Agriculture and Food Systems:* Sustainable farming practices, bio-based inputs and water-efficient technologies improve environmental resilience and social well-being
- *Technology and Services:* Digital solutions, including AI-powered energy management and ESG analytics, enhance governance and reporting quality

These sectoral differences highlight the need for tailored innovation strategies rather than a "one - size - fits – all" approach.

Role of Entrepreneurship and SMEs

Small and medium enterprises (SMEs) and start-ups play a critical role in driving green innovation in emerging economies. Entrepreneurial firms are often more agile and willing to experiment with novel technologies and business models, such as circular economy solutions, climate fintech platforms and decentralized renewable energy systems. However, SMEs face barriers including limited financing, lack of technical expertise and regulatory uncertainty. Addressing these challenges through supportive policies and innovation ecosystems is essential to scale green innovation and its ESG impact.

Policy and Managerial Implications

1. Policy Implications

Well-designed policies can reduce risk and encourage firms to invest in long-term sustainable innovation. Governments in emerging economies can amplify the ESG benefits of green innovation by:

- Providing incentives for green R&D and clean technology adoption
- Strengthening ESG disclosure frameworks
- Facilitating access to green finance and climate funds
- Supporting start-up ecosystems and public-private partnerships

2. Managerial Implications

Managers must align innovation strategy with ESG goals and embed sustainability into decision-making structures. For business leaders, green innovation should be viewed as a strategic investment rather than a cost. Integrating sustainability into core innovation and governance processes can:

- Improve ESG performance and investor attractiveness
- Enhance resilience to climate and regulatory risks
- Strengthen brand reputation and stakeholder trust

Conclusion

Evidence from emerging economies clearly demonstrates that green innovation is a powerful driver of ESG performance. By improving environmental outcomes and strengthening governance practices, green innovation enables firms to reconcile economic growth with sustainability objectives.

As emerging economies continue to industrialize and urbanize, the role of green innovation will become even more critical. Firms that proactively invest in sustainable innovation are likely to gain a competitive advantage, attract ESG-oriented capital and contribute meaningfully to global climate action. Ultimately, fostering green innovation in emerging economies is not only a corporate imperative but also a cornerstone of inclusive and sustainable development.

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Faculty Development/Workshops/Mentoring

1. Dr. Namrata Kislay attended an online workshop on Patent Database Search and Patent Mapping organized by SIES School of Pharmaceutical Sciences at 10th October 2025.

2. Dr Sangeeta Sharma and Dr Namrata Kislay attended workshop on "Green Climate Fund (GCF) Training of Trainers and Dialogue on Strengthening Climate Finance Capacities: Insights from GCF Readiness III" at Hotel Novotel, Mumbai on 3rd November 2025, organized by MoEFCC, IIFM, Bhopal and the UNDP.

3. Dr. Sangeeta Sharma delivered an Invited Talk on "Education for Sustainable Development and Climate Action" as part of the Atomic Energy Education Society's Teachers' Conclave on "Transforming Education for the Future: Empowering Teachers to Lead in a Changing World", held on 22nd Oct, 2025, at Dept. of Atomic Energy Convention Centre, Anushaktinagar, Trombay.

4. A Climate Science Literacy Session was conducted by Dr. Sangeeta Sharma at Model English High School, Chembur, on 24th November 2025. With the enthusiastic participation of over seventy five students, teachers and staff, the session focused on building awareness about climate change and connecting it with the larger framework of UNESCO's Sustainable Development Goals (SDGs). The interactive discussions not only highlighted the importance of climate action but also encouraged young minds to think critically about sustainability and their role in shaping a greener future. Together, let's continue empowering the next generation with knowledge and awareness to create meaningful change.

Projects & Consultancy

North Mumbai Lake Rejuvenation Project: The Interim Report for the *project "Baseline Assessment and Action Plan Formulation for Five Lakes in North Mumbai"* was submitted to Project Mumbai in October 2025. The report presents a comprehensive environmental baseline assessment carried out during the monsoon season (Phase I) for each of the five lakes. Phase I involved detailed field surveys using established ecological, hydrological and environmental parameters. The assessment covered water quality analysis, biodiversity documentation, sediment and soil characterisation, and an evaluation of surrounding land use and catchment-level influences affecting each lake.

Drawing on the baseline findings, the Interim Report proposes tentative, site-specific and implementable rejuvenation strategies tailored to the unique ecological conditions of each lake. These recommendations are aimed at supporting long-term ecological restoration and sustainable lake management. Phase II of the project, which focuses on post-monsoon monitoring and assessment, is currently underway. The outcomes of this phase will further strengthen and refine the proposed action plans.

Validation of Ambient Air Quality Monitoring Systems through Colocation Studies

Dr. Suman Rani conducted the colocation studies of the HOT-CAAQMS model AirMOT-247 with the Respirable Dust Sampler (RDS), which is a National standard for monitoring of Particulate Matter (PM10 & PM2.5) in Ambient Air, to obtain the certification of validation of Colocation Data. The study was conducted for *M/s. Ashwamedh Engineers and Consultants CSL Pvt. Ltd.*, a NABL-accredited laboratory.

Greening Campuses, Empowering Communities - Miyawaki Plantations Project

As part of its commitment to environmental responsibility, BPCL, Mumbai, has supported an urban greening initiative aimed at planting nearly 5,000 saplings across 100 educational institutions. The project aligns with Mission LiFE, encouraging sustainable lifestyles through community-led climate action. By converting school campuses into green zones, the initiative creates urban carbon sinks that improve air quality, support biodiversity, and reduce localized heat stress. The focus on native species ensures ecological balance while strengthening urban resilience.

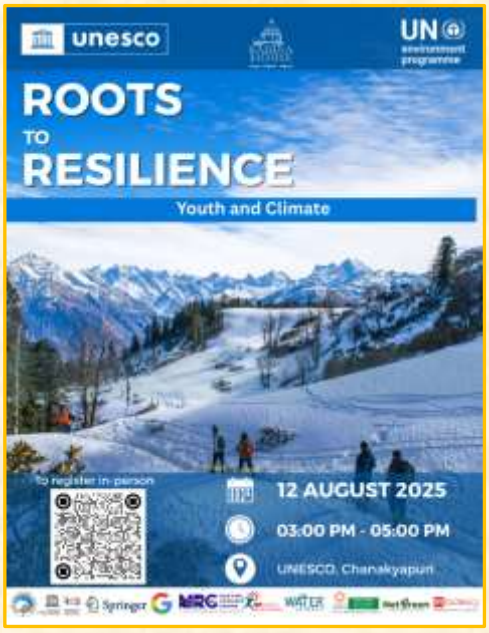
The initiative delivers measurable impact across three key areas: environmental enhancement through increased green cover and improved air quality; educational enrichment by fostering sustainability awareness among students; and community engagement through the active involvement of teachers and local residents in plantation and maintenance activities.

To ensure long-term impact, the project incorporates training workshops and the formation of Eco-Clubs, enabling students to become sustainability ambassadors within their schools and communities.

Training and Events

UNESCO Seminar Series

SIES IIEM is one of the partners for the Seminar series titled "Roots to Resilience" being organized by UNEP & UNESCO at UNESCO House in New Delhi. Bringing together leading scientists, policymakers, and members of the media, these events serve as a platform for knowledge exchange and the advancement of collective action.



This seminar covered the invaluable role biosphere reserves play in nurturing harmony between people and nature and celebrated the communities and initiatives driving sustainable change across our planet. It also explored the role of media and law in the protection of Biosphere Reserves.

IFAT India Conference 2025

Dr Sangeeta V. Sharma had the privilege to moderate the session titled "From Obligation to Ownership – Cultivating Corporate Responsibility for Sustainable Waste Practices" on 15th October at IFAT India 2025.

The session highlighted that meaningful impact begins when organizations move beyond regulatory compliance and take ownership by integrating sustainability into everyday decision-making, operations, and organizational culture. The discussion benefited from valuable contributions by industry experts, who shared actionable insights on promoting circularity, accountability, and environmentally responsible corporate practices. The session concluded with appreciation for **IFAT India** for providing a platform to facilitate such an important dialogue.

Training Session on BRSR Compliance & Benchmarking for BPCL Executives

SIES IIEM successfully conducted a one-day training programme on **"BRSR Compliances and Benchmarking: Insights and Best Practices"** for mid-level and senior management professionals from BPCL locations across India. The programme was held at the BPCL R&D Centre, Sewree, on 9th December 2025.

The training focused on building a strategic understanding of Business Responsibility and Sustainability Reporting (BRSR), covering key aspects such as the structure of BRSR sections, the nine principles, critical calculations, and BRSR Core requirements. The sessions aimed to strengthen participants' capabilities in sustainability reporting, compliance, and performance benchmarking.

SIES IIEM extends its gratitude to the Corporate HSSE team, including Mr. Sanjeev Raina, Mr. Arul Muthunathan (Executive Director), and Mr. Mohammed Sohail Akhtar (CGM, Net-Zero Initiatives), for their support and collaboration in making the programme successful. Special thanks are also due to Mr. Kalpesh Gada, Mr. Anjan Ghosh, and the advisory team from Climate Policy Initiative, New Delhi, whose expert insights and contributions significantly enhanced the programme's impact.

Celebrations

Dussehra Celebration

On 1st October, the faculty and staff of SIES IIEM and SIES SOP, celebrated Dussehra with great enthusiasm and devotion. The festival, symbolizing the triumph of good over evil, was observed with a traditional Dussehra Pooja performed on campus. The institute staff and students came together to participate in the rituals, fostering unity, positivity, and a sense of collective spirit throughout the celebration.

Diwali Celebration

We also celebrated the festival of Diwali on 17th October at the ARC Campus. The occasion brought together institute staff, who came together to celebrate the festival of lights with warmth and togetherness. A delightful potluck lunch added to the festive spirit, and everyone thoroughly enjoyed the day while exchanging best wishes and camaraderie.

Glimpses

Kerala Becomes First Indian State to Approve Comprehensive ESG Investment Policy

The Kerala Cabinet has approved a state-wide environmental, social, and governance (ESG) policy, making it the first Indian state to formally embed ESG principles into its investment framework. The policy is crafted after assessing the types of industries compatible with the state's ecological and social landscape. Sectors that are low in emissions and pollution are identified as most suitable, aligning with both Kerala's climate priorities and its economic ambitions.

The Policy suggested that the ESG lens will apply across new industrial projects and infrastructure proposals. That could tilt approvals and incentives toward renewable energy, green manufacturing, sustainable agriculture, and digital service industries, while placing restrictions on highly polluting sectors. By acting at a subnational level, Kerala is signalling that Indian states can build a competitive advantage through climate-aligned governance, even ahead of federal mandates.

Source https://esgnews.com/kerala-becomes-first-indian-state-to-approve-comprehensive-esg-investment-policy/

Top Innovative & Sustainable Entrepreneurships in India in 2025

Entity	Innovation/Entrepreneurship Role	ESG/Climate Impact
Desolenator (India/UK)	Solar-powered water purification	Provides clean water without fossil fuels
Loopworm (India)	Insect-based protein startup	Reduces reliance on resource-intensive livestock farming
Yulu (India)	Electric micro-mobility startup	Cuts urban air pollution and traffic emissions
Phool.co (India)	Converts temple flower waste into products	Promotes circular economy and reduces river pollution
Climes (India)	Carbon offsetting platform	Enables individuals and businesses to neutralize emissions
Oorjan (India)	Residential solar energy solutions	Democratizes access to clean energy
Neeman's (India)	Sustainable footwear brand	Uses eco-friendly materials, reducing fashion's footprint

Source: https://netzeroindia.org/top-10-sustainable-startups-in-india/#google_vignette

Share your voice and vision !

We invite articles, photographs & creative contributions for our next issue (January – March, 2026)

Theme: "Regulations to Responsibility: India's Path to Sustainability"

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