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ECOINSIGHTS

A Quarterly E-Magazine on Environment & Sustainable Development

CURRENT ISSUE: 'ROAD MAP TO A SUSTAINABLE FUTURE'



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 for its Research & Development and laboratory testing services.

Our major activities include Academics, Research & Development, Industrial Consultancy, Environmental & Green Audits, Laboratory Testing and Outreach Activities. We offer 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, for working professionals, we offer an online Post Graduate Diploma in Sustainable Environment Management (PGDSEM).

Since its inception, SIES IIEM has established strong collaborations with government agencies, industry leaders, and private environmental consultancies. The institute is equipped with state-of-the-art laboratories and is at the forefront of pioneering solutions for sustainable environmental management. Our core Research Areas include: Management of Natural Resources, Water Resources Management, Air Quality, Solid Waste, Radioactive Waste and Global Issues such as 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



This year marks a significant milestone for SIES IEM as we celebrate 25 years of excellence in sustainability education and research. Reaching this landmark is a testament to the unwavering dedication of our management, faculty, staff, alumni, and invaluable partners who have supported us throughout our journey. As we near the end of another transformative year, we are both inspired and humbled by the progress we have made in advancing environmental stewardship.

Our commitment to promoting sustainable practices and safeguarding the environment remains steadfast. Throughout the year, we have continued to fulfill our mission of conducting impactful research, providing quality education, and facilitating training programs that empower individuals and organizations to implement effective environmental management strategies.

As the environmental challenges are increasing at an alarming rate, a proactive approach to sustainability becomes the need of the hour. Climate crisis, increased levels of pollution, loss of biodiversity, and depletion of our natural resources are interlinked issues and require innovative, holistic solutions from all stakeholders such as., scientists, policymakers, business leaders, and citizens.

At SIES IEM, we are not merely theorizing about solutions, we are actively taking steps to address these challenges. Our flagship initiative, ‘Nurturing Climate Ambassadors,’ introduced in October 2023, has garnered enthusiastic participation from students, educators, and industry professionals, highlighting the vital role education plays as a catalyst for meaningful change.

This edition of our E-Magazine “EcoInsights,” which was earlier known as “The Environment Management,” highlights our recent achievements and ongoing initiatives aimed at fostering a generation of environmentally conscious citizens. While we are proud of the progress we have made, we acknowledge that our work is far from complete. The challenges ahead are substantial, but so too is our determination to overcome them. Moving forward, we remain resolute in our commitment to promoting sustainable practices and striving for a cleaner, greener future.

Together, we can build a world where caring for the environment is not just an aspiration, but also a way of life. We look forward to the coming year with renewed determination and purpose. Every action, no matter how small, contributes to the collective well-being of our shared planet.

Dr. Sangeeta Sharma
Director (I/C), SIES IEM

Lifestyle for Environment (LiFE)

Dr. S.V. Viswanathan
Director & CEO 3VConsultants



LiFE was introduced by PM Narendra Modi at COP26 at Glasgow on 1st November 2021, calling upon the global community as Pro Planet People, to drive it as an international mass movement, for individuals, communities, and countries to adopt simple, climate-friendly behaviours in their daily routine lifestyles and act that will help the environment from "mindless and destructive consumption to mindful and deliberate utilisation that will protect, practice, and preserve environment with environment-friendly actions.

India updated its Nationally Determined Contributions submitted to UNFCCC in 2022 for a measurable impact. Mission LiFE is designed to mobilize at least one billion Indians, and global citizens to take appropriate actions for protecting and conserving the environment for the next five years. At least 80% of all villages and urban local bodies in India will be made environment-friendly by 2028.

Mission LiFE globally envisages three core shifts in a phased manner as a collective approach towards sustainability: Changes in demand, supply, and policy, practicing environment-friendly actions in daily routine life, avoiding wastes by customized supplies and procurement; and having industrial and government policies that will sustain consumption and production. In India, LiFE mission is initiated by NITI Aayog and implemented by MoEF&CC. With more than 143 crore population, any change done in India will impact the whole world.

SDGs can be classified as for focused on sustainable cities and communities, responsible production & consumption, Climate Change, Life on Land, Life Underwater, Decent Work & Economic Growth, more efficient management resources etc. Last year NITI Aayog, MOEFCC, in partnership with the United Nations and others had invited ideas from across the world for one of the following, or related, areas in:

- Behaviour-change solutions aimed at individuals, households, and communities to drive climate-friendly behaviours in sectors, including, but not limited to Water, Transport, Food, Electricity, Waste Management, Sustainability, Recycle, and Re-use.
- Innovative solutions that promote wider adoption of traditional, climate-friendly, sustainable practices and/or create livelihood options for communities that may lose their jobs with a shift towards climate-friendly production.
- International, national and/or local best practices that can be feasibly scaled-up for driving behaviour change related to climate action.
- UNEP looks at sustainable lifestyles and how decision-making can be better harnessed for sustainability, understanding how our lifestyle choices impact the world.
- Sustainable living and lifestyles now appear in the Sustainable Development Goals. UN Environment Programme looks into what sustainable lifestyles are & how decision-making can be better harnessed, how can governments and business better support and measure change?

- UNEP has a Vision to harness individual decision-making for sustainability and integrate sustainable lifestyle principles across society, so that sustainable living, in line with SDGs, becomes the norm, enabling Sustainable Lifestyles in a Climate Emergency, Lifestyles, a Fair Consumption Space for all, Strategies with an option for reducing carbon footprints; how disruptions in environment, health, politics, and technology will affect lifestyles in 2050 to see what actions people can take now. SDGs are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace, and justice. SDG 17 Goals are all interconnected, and are targeted for completion by 2030.

The following are the main 17 SDGs:

1. No Poverty: Donate what you do not use to people who need it more.
2. Zero Hunger: Waste less food and support local farmers
3. Good Health and Wellbeing: Vaccinate your family; e.g., 80% drop in measles deaths between 2000 and 2017.
4. Quality Education: Help educate the children in the community to reach better heights
5. Gender Equality: Empower Women & Girls and ensure their equal rights
6. Clean Water and Sanitation: Avoid wasting water. Water scarcity affects more than 40% of world population. Better water use, rain harvesting & reusable of water
7. Affordable and Clean Energy: Use only energy efficient appliances and light bulbs
8. Decent work and economic growth: Create Job Opportunities for youth. One fifth of young people are not in education employment or training
9. Industry, Innovation, and Infrastructure: Fund projects that provide basic infrastructure: Roads, water, sanitation, and electricity remain scarce in many developing countries
10. Reduced Inequalities: Support the marginalized and disadvantaged; the poorest 40% of the population earn less than 25% of global income
11. Sustainable Cities and Communities: Bike, walk or use public transportation; 9 out of 10 urban residents breathe polluted air.
12. Responsible Consumption and Production: Recycle paper, plastic, glass and aluminum. By 2050, the equivalent of almost three planets could be required to sustain current lifestyles
13. Climate Action: Act now to stop global warming: Global emissions of carbon dioxide CO₂ have increased by almost 50% since 1990.
14. Life below Water: Avoid plastic bags to keep oceans clean: Over 3 billion people depend on marine and coastal biodiversity for their livelihoods
15. Life on Land: Plant a tree and help protect the environment
16. Peace, Justice & Strong institutions: Stand up for human rights: In 2018 the number of people fleeing war, persecution and conflict exceeded 70 million.
17. Partnerships for the Goals: Lobby government to boost development financing. Achieving the SDGs could mean US\$12 trillion of market opportunities and 380 million new jobs by 2030.

The unsustainable use of resources has triggered critical scarcities and caused climate change and widespread environmental degradation – all of which have negative impacts on the well-being of the planet and its people. Ten per cent of the world population continues to live in extreme poverty, unable to meet even their most basic needs. Responding to this dual challenge will require innovative policies, redirected investment, environmentally sound technologies, international cooperation, & capacity development to support countries to transition to inclusive green economies. Producers will need to change how they design, source, manufacture, & market their products. Consumers will need to incorporate environmental & social concerns into their consumption decisions and adopt sustainable lifestyles.

UN work focuses on the following areas:

- Engaging with governments in their transition to inclusive green economies;
- Fostering partnerships with business and industry for cleaner production and green investments;
- Influencing consumer information and choice for sustainable lifestyles; and
- Strengthening and communicating the knowledge and scientific base for resource efficiency and sustainable consumption and production.

Sustainable consumption and production (SCP) is a key focus of UN for promoting resource and energy efficiency while providing access to basic services, green and decent jobs and a better quality of life for all. The implementation of SCP as an integrated approach helps to achieve overall development plans; lower economic, environmental, and social costs; strengthen economic competitiveness; and reduce poverty. The 10-Year Framework of Programmes will impact through multi-stakeholder programmes and partnerships, develop, replicate, and scale up SCP policies and initiatives at all levels such as:

- Cities to integrate the urban dimension of global environmental issues.
- The International Resource Panel was launched by UN Environment Programme in 2007 to build and share the knowledge needed to improve our use of resources worldwide
- The Life Cycle Initiative is a public-private, multi-stakeholder partnership enabling the global use of credible life cycle knowledge
- Responsible industry to make their operations more sustainable and resource efficient
- Partnership of consumption and production policies is about doing more and better with less
- Sustainable circular textile value chain

India's achievements in conserving the environment:

- India's forest cover has increased substantially
- Flora and fauna have increased steadily
- Initiation of lifestyle changes that inculcate long-term environment-friendly habits
- Many corporates have introduced Miyawaki forests in all their industries/ plots
- Action on Green Economy with other UN agencies have been initiated in developing, adopting, and implementing green economy policies and strategies

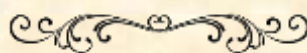
- Keeping rooms at 25 degree Centigrade to save on energy
- Use of unconventional resources such as solar power, windmill
- Vertical gardening
- Reduction in open defecation to use of toilets by building toilets
- Practice of Yoga in schools, colleges, and corporates as means to building the immunity

Some Challenges:

- Energy consumption; reducing the volume of carbon emissions per unit of GDP
- Cutting down use of fossil fuels to generate electricity
- Mindless consumption without paying regards to environment
- Pollution both air and water apart from infrastructure in fragile areas
- Rapid growth through infrastructure and development projects creating environmental issues
- Ever increasing plastic wastes and recycling of the same
- Mass movement to influence lifestyle changes
- Focus on structural change in the energy, transportation and agricultural systems"
- Creating more private participation
- Inculcate long-term environment-friendly habits
- A "healthy and sustainable way of living based on traditions and values of conservation and moderation, including through mass movement"
- Disruptions in environment, health, politics, and technology

Conclusion:

- LiFE is the need of the hour.
- Use and throw need to be replaced by re-duce, reuse and recycle.
- Behaviour changes need to be done and well sustained across the world.
- World is witnessing major climate changes such as storms, draught, landslides, pollution, and migration and these are challenges that need immediate redressal with long-term solutions.
- Individuals should temper their lifestyles in sync with the resources available on the planet.
- Bold environmental action could create as many as 65 million jobs by 2030 and better quality of life.



Circular Economy and Solid Waste Management: A Sustainable Path for India's Urban Future



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Introduction

Urbanization in India is reaching unprecedented levels, with a projected 70% of the population re-siding in cities by 2050. This rapid urban expansion has given rise to new mega-cities, escalating population growth (accounting for 1/6th of the global population), and a substantial increase in consumption. Unfortunately, this surge in urban development has also led to a corresponding rise in the generation of solid waste. Cities globally contribute to 70% of CO2 emissions and produce 50% of the world's waste (Circular Innovation City Challenge), making effective solid waste management (SWM) crucial for the well-being of both urban residents and the environment.

Current Challenges in Solid Waste Management

In the current context, inadequate solid waste management (SWM) practices have significant repercussions, adversely affecting the quality of life, causing pollution, contributing to climate change, and impacting the economy. Solid waste management is responsible for 5% of Global Greenhouse Gas (GHG) emissions (Kaza et al., 2018), and marine ecosystems suffer annual financial losses of US\$13 billion due to plastic trash (UNEP, 2014; World Bank, 2022). Moreover, persistent issues such as lack of clean drinking water (affecting 5% of the population), limited access to electricity (impacting 20% of the population), and inadequate sanitation facilities (affecting 50% of the population) underscore the necessity for a comprehensive approach to address both waste and resource management.

Circular Economy as a Solution

The prospect of implementing Circular Economy (CE) offers a hopeful resolution to the issues presented by prevailing waste management methods. According to the Ellen MacArthur Foundation (2016), the annual benefits of ₹40 lakh crore (\$624 billion) can be achieved by 2050 through the incorporation of circular economy principles. Further, embracing CE in municipal solid waste (MSW) management has the potential to generate revenue as summarized in Table 1.

Table 1: CE Potential to generate revenue through Solid Waste Management

Sr.No.	Waste Category	Revenue (INR Cr./yr.)
1	Dry Waste Recycling	11,836/-
2	Wet Waste Recycling	365/-
3	Wet Waste Bio CNG	1,679/-
4	Construction & Demolition Waste	416/-

Source: MoHUA, 2021, Circular Economy in Municipal Solid and Liquid Waste

The adoption of CE can not only contribute to a 44% reduction in greenhouse gas (GHG) emissions by 2050 (Mc Arthur, 2016), but it can also deliver diverse global and local benefits encompassing environmental, health, social, and economic aspects. CE has the capacity to create jobs, enhance land value, bolster resilience, and increase biodiversity, food, and water security.

The goal of the circular economy is to establish a regenerative system that minimizes resource input, waste emission, and energy leakage by promoting circular processes, which involve slowing down the closing and narrowing of material and energy loops. This concept is encapsulated in the "10 Rs" of the circular economy, including Refuse, Re-think, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, and Recover (Kirchherr et al., 2017).

Circular Economy Models for Solid Waste Management

Circular economy models for solid waste management encompass various approaches such as circular supply chain models, recovery and recycling models, product-life extension models, sharing platform models, and product-as-a-service models (MoHUA, 2021). These models seek to eliminate different types of waste, including resources, capacities, lifecycles, and embedded values. By aligning with CE principles of avoiding waste creation and pollution, saving energy and materials, and protecting renewable resources (Ellen MacArthur Foundation, 2016), these models contribute to sustainable urban development.

Success Stories and Examples

Several companies and organizations in India have already embraced the principles of the circular economy. For example, Tata Salt has replaced multilayer plastic with easily recyclable materials (Tata Sustainability), Tata Nirman and Aggreto utilize slag in road construction, fly ash brick, and clinker making (Tata Sustainability Group). FrutosNature specializes in producing biodegradable tableware to effectively manage agro waste (frutosnature.com), while MuddleArt addresses pre-consumer textile waste, creating livelihoods and reducing greenhouse gas emissions. Hindustan Unilever's Project Prithvi (Unilever, 2023) focuses on diverting plastic waste from landfills, creating employment opportunities, and linking communities to welfare schemes. Municipal corporations, exemplified by initiatives like Ambikapur, are actively working to clear landfills, reclaiming the land, and creating green jobs (Pandey, 2023). These endeavours exemplify the potential of circular economy practices in transforming waste into valuable resources.

Overcoming Barriers to Circular Product Adoption

To ensure widespread adoption of circular products, it is essential to address the three Cs: Cost, Convenience, and Consciousness (Kalaari, 2022). Recognizing that Indian consumers are generally cost-conscious, circular economy solutions need to compete with non-circular alternatives in terms of cost. Convenience and consciousness also play crucial roles in bridging the gap between awareness and eco-conscious buying decisions.

Government Initiatives and Enablers

The Indian government, through Niti Aayog, is actively promoting the adoption of circular economy principles, focusing on areas such as municipal solid waste, scrap metal, electronic waste, lithium-ion batteries, solar panels, gypsum, toxic and hazardous industrial waste, used oil waste, agriculture waste, tyre and rubber recycling, and end-of-life vehicles.

NITI Aayog is spearheading endeavours to establish a conducive policy environment and offer financial backing for initiatives related to the circular economy. Eleven committees, led by relevant ministries and comprising experts, academics, and industry representatives, have been established to formulate action plans and implement strategies for a circular economy.

NITI Aayog and the EU have collaborated on status papers and sectoral strategy papers, outlining recommendations and priority actions for resource efficiency and circular economy. Key initiatives include the formation of a Circular Economy Cell in NITI Aayog, finalization of sectoral action plans, coordination with ministries for implementation, and efforts to operationalize the Vehicle Scrapping program.

The government's enablers for circular economy initiatives include the Swachh Bharat Mission, Smart Cities Mission, Zero-Effect-Zero-Defect Scheme, BIS standards, and Waste Management Rules. G20 achievements, such as the commitment of global corporate giants to use renewable energy and adopt the 3Rs for resources, contribute to the strong momentum toward circular economy practices.

Conclusion

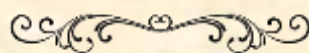
The circular economy emerges not merely as a theoretical concept but as a practical and imperative solution to confront the challenges arising from rapid urbanization and escalating waste generation. Demonstrated by success stories and government initiatives, there is a growing awareness of the substantial benefits inherent in circular economy practices. Positioned as a requisite strategy for constructing a sustainable and resilient urban future, the circular economy stands out prominently as India endeavours to meet waste management targets, National Determined Contributions (NDCs), and Sustainable Development Goals (SDGs). The trajectory forward necessitates a holistic approach, encompassing collaborative efforts, innovative funding models, and robust policy frameworks.

Initiatives range from enhancing data collection for a profound understanding of resource usage to promoting sustainable product initiatives that foster longer lifespans and diminished environmental impact. The implementation of Extended Producer Responsibility (EPR) ensures manufacturers are accountable for the entirety of product lifecycles, while improvements in recycling processes enhance material recovery from waste streams. The establishment of robust waste prevention policies and exploration of waste-to-energy initiatives address waste disposal challenges and offer alternative energy sources. Additionally, the introduction of a right-to-repair initiative for various products contributes to product longevity, aligning with the principles of the circular economy. This multifaceted and comprehensive strategy lays the groundwork for a sustainable shift towards circular economy practices in India.

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Sustainability Reporting in the Indian Context

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The transformation of the global energy system is proceeding throughout the globe. Energy and climate policies now become key steps in domestic and international affairs success. Climate change and environmental degradation issues play a key role in discussions among global communities and brainstorming for approaches to managing them. The Conference of Parties (CoP27, in Egypt in 2022) emphasized the reaffirmations by countries on their commitments to effectively combat climate change with a focus on sustainability in a way it has never been before. On the other hand, the central demand of the current era is development for survival and growth. Hence, the fight against climate change is not possible without considering the industrial and corporate sectors.

That is how sustainability reporting arises as a requisite for companies so that they can contribute to the global plan of climate change mitigation.

Sustainability Reporting

A sustainability report is the disclosure of a company's environmental, social, and governance (ESG) goals and communicating the company's progress and efforts to reach those goals. As part of environmental, social and governance programs, companies can use ESG reporting frameworks to disclose information on the sustainability and ethical performance of their business operations. These frameworks offer a structured approach to evaluating a company's practices and ESG-related business risks and opportunities, including its impact on the environment and society.

The overall goal of the reporting frameworks is to give internal and external stakeholders -- investors, employees, customers, government officials and more -- a comprehensive view of the state of ESG initiatives while creating transparency and accountability for companies. International Sustainability Standards Board (ISSB) defines sustainability as "the ability of a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium, and long term."

ESG Reporting

ESG reporting is the process of publicly disclosing an organization's progress toward meeting its goals and commitments on environmental sustainability, social issues and corporate governance. The reports, generally annual, include details on different ESG metrics used to measure performance in those three areas in both quantitative and qualitative ways. They often also list the long-term objectives of ESG strategies and provide updates on key milestones.

The practice is already widespread globally, among large companies. A November 2022 research report by business sustainability and ESG consulting firm Governance & Accountability Institute Inc. said 96% of companies in the S&P 500 and 81% of businesses in the broader Russell 1000 Index published sustainability reports in 2021. Voluntary ESG reporting has been the primary means of documenting corporate initiatives and activities to date. ESG reporting frameworks and standards are in something of a state of flux. There is no single standard for ESG reporting, however, several standards bodies have come up with their frameworks. Below is a list of some prominent ESG frameworks:

IFRS Sustainability Disclosure Standards, developed by the International Sustainability Standards Board (ISSB), which was set up in 2021 by the International Financial Reporting Standards (IFRS) Foundation.

Sustainability Accounting Standards Board (SASB) Standards, released in 2018, contain specifications on disclosing financial material sustainability information across 77 industries. The framework lists subsets of relevant ESG issues for each industry, including markets for different IT products and services. It was the most popular choice for evaluating the ESG programs of IT suppliers among 400 IT professionals surveyed in 2022 by TechTarget's Enterprise Strategy Group division -- cited by 66% of the respondents as a relevant framework for their organization. In 2021, SASB was consolidated into the Value Reporting Foundation, which then was absorbed by the IFRS Foundation in 2022.

Climate Disclosure Standards Board (CDSB) Framework was developed by to support the inclusion of ESG reporting in mainstream corporate reports, such as annual reports.

Global Reporting Initiative (GRI) standards enable any organization, large or small, private or public, to understand and report on their impacts on the economy, environment and people comparably and credibly, thereby increasing transparency on their contribution to sustainable development."

Carbon Disclosure Project (CDP), founded in 2000, operates a namesake environmental disclosure system that companies can use to report on their business risks and opportunities related to climate change, water security and deforestation through separate questionnaires on those topics.

Task Force on Climate-related Financial Disclosures (TCFD) is the 31-member task force created in 2015 by the Financial Stability Board, which monitors the global financial system and recommends actions to strengthen it.

United Nations Global Compact, formed in 2000, it bills itself as the "world's largest corporate sustainability initiative," with an emphasis on aligning business strategies and operations with a set of 10 principles on human rights, labour practices, the environment and anti-corruption measures.

Workforce Disclosure Initiative (WDI), as created in 2016 by ShareAction, is a charity that supports responsible investment practices with an ESG focus, the WDI offers a platform for reporting data on workforce practices and management.

Sustainability Reporting in India

Considering the ever-increasing global challenges referring to environmental, social and governance dimensions, Indian leaders have also reoriented their corporate focus from mere wealth generation to the broader scale in which stakeholder concerns were the significant key of the businesses. India has its sustainability framework, Business Responsibility and Sustainability Reporting (BRSR), which was introduced by SEBI in 2021 as a mandatory reporting requirement for the top 1,000 listed companies in India. BRSR aims to enhance transparency and foster responsible and sustainable business practices. This BRSR is a comprehensive framework including all three components, E, S and R, of sustainability requirements. Stakeholders' consideration is a crucial factor in sustainability-related actions.

BRSR evolved from the Business Responsibility Report (BRR) framework, which SEBI introduced in 2012 as a voluntary reporting framework. However, the BRR was not widely adopted by companies and lacked clarity in reporting requirements. Through the BRSR, investors are provided with standardized information on a company's ESG parameters, thereby facilitating the identification and assessment of sustainability-related risks and opportunities for the enterprise and enabling better-informed investment decisions.

The disclosures under BRSR (updated format) are made under the following sections:

- Section A: General disclosures about the listed entity
- Section B: Management and Process Disclosures
- Section C: Principle-wise Performance Disclosure

Figure: 1 Evolution of Non-financial Discloser in India



(Source: https://www.ey.com/en_in/climate-change-sustainability-services/brsr-reporting-and-the-evolving-esg-landscape-in-india)

BRSR to BRSR Core

In July 2023, SEBI added new ESG metrics for mandatory disclosure under 'BRSR Core' for listed companies in India replacing the Business Responsibility and Sustainability Report (BRSR), introduced in May 2021. While SEBI has stipulated a timeline for mandatory compliance under the BRSR Core, as of FY 2023, all the top 1000 listed companies by market cap in India must file their BRSR Report. SEBI is implementing the 'BRSR Core' for assurance by specific listed entities.

In addition, the Board has decided to introduce disclosures and assurance for the value chain of listed entities, aligning with the guidelines set out in the BRSR Core. The BRSR Core represents a subset of the comprehensive BRSR and includes a specific set of key performance indicators (KPIs) / metrics across nine ESG attributes. With a focus on the Indian / emerging market context, additional KPIs have been identified for assurance, such as job creation in small towns, business openness, and gross wages paid to women. To facilitate better global comparability, intensity ratios based on revenue adjusted for purchasing power parity (PPP) have been incorporated. The following timeline was provided by SEBI where the BRSR Core compliance will become mandatory for listed entities.

Table 1: Timeline for Compliance for listed Entities

Financial year	Applicability of BRSR Core to top listed entities (by market capitalization)
2023-24	Top 150 listed entities
2024-25	Top 250 listed entities
2025-26	Top 500 listed entities
2026-27	Top 1000 listed entities

Consequently, SEBI mandates the top 250 listed companies in India by market capitalization to provide “reasonable assurance” on Environmental, Social, and Governance (ESG) metrics starting FY 2024-25. Listed entities need to report the KPIs in the BRSR Core for their value chain as well, to the extent it is attributable to their business with that value chain partner. Such reporting may be segregated for upstream and downstream partners or reported aggregately.

Challenges and Easy Solutions

Limited supply chain visibility poses one of the biggest challenges for listed enterprises mandated to comply with BRSR Core. When partners can't report their impact, enterprises are left in jeopardy for their disclosers. Companies must adopt concrete processes with their value chain partners from the ground up.

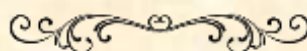
Lack of technology tools, ESG subject matter expertise, and lack of budgets are often the most significant obstacles for small and medium businesses (SMBs) to report on their ESG KPIs. Tech-enabled data automation and insightful analytics can help SMB partners gain visibility into their ESG KPIs and the extent of the impact. This, in turn, helps their large global customers improve their ESG reporting & compliance.

Conclusion

Introducing the BRSR Core is a welcome step that will strengthen stakeholders' confidence and bring more transparency and accountability to ESG disclosures. At the same time, this compels companies to be more responsible for addressing the ESG data visibility gaps within their value chains. Enterprises can no longer merely tick boxes; they must report cold, hard numbers. The need for streamlining ESG reporting has never been higher in India.

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Outreach Activities

We have focused on raising awareness among the public and future generations about critical issues such as Climate Change and Sustainability. We have collaborated with schools to create "Climate Ambassadors", fostering a generation of environmentally conscious citizens.

Climate Change Ambassador Programme (CAP)

We launched our flagship initiative, the "Climate Ambassadors Program" (CAP) in October 2023 to inspire and educate individuals to adopt eco-friendly practices that reduce environmental pollution and carbon emissions. This program focuses on the development of young minds under the guidance of SIES-IIEM. Through CAP, students and teachers receive comprehensive training in sustainability and climate change, familiarizing them with essential environmental themes, including Environmental, Social, and Governance (ESG) principles and the Sustainable Development Goals (SDGs). We encourage schools to establish green campuses and implement environmentally friendly practices, empowering Climate Ambassadors to share their knowledge and initiatives within their communities. All participants receive "Climate Ambassador" certificates as recognition of their involvement.

The various activities conducted under this programme over the last year include, a Pre-launch Briefing Session held on 5th October, 2023 at SIES High School, Matunga, followed by an Educational Visit of 240 students and teachers to Maharashtra Nature Park on 30th November, 2023. Later, an Interactive Session on "Climate Change" on 11th December, 2023, at SIES APJ Abdul Kalam High School, Ghatkopar West, Mumbai, which included a talk by Master Karnav Rastogi, a young climate champion, and a Herbarium-making Workshop. Around 265 participants (students and teachers) were taken for another educational visit to the Indian Meteorological Department (IMD) Colaba, in February, 2024. Later, in March 2024, an exhibition / competition themed "Solutions to Pollution", for the schools registered under the CAP, organized by SIES IIEM was held at the SIES Activity and Research Centre (ARC) at Juinagar followed by the prize distribution ceremony on 2nd December, 2024.



Photo Gallery - Climate Ambassadors Program



Interactive Session with the teachers and students during the pre-launch briefing.



Educational Visit of the participants to Maharashtra Nature Park

Photo Gallery - Climate Ambassadors Program



Participants attending the Herbarium making Workshop (left) & Talk by Mstr. Karnav Rastogi (right)



Educational Visit of the participants to Indian Meteorological Department, Colaba



Solutions to Pollution - CAP Competition held at SIES IIEM

Photo Gallery - Climate Ambassadors Program



Solutions to Pollution - CAP Competition Prize Distribution held at SIES IEM

Human Library Program (HLP)

A Programme Called “Human Library” was launched in February, 2024, for having continuous interactions with persons from different sectors, namely, Government, Academia and Industry Sectors. The concept of Human Library was introduced in Copenhagen, Denmark, in 2000, which encourages ‘reading” a human being rather than a book so that one can directly learn from the personal and professional experiences as related by the person. Thus, it creates a safe space for interaction and dialogue where diverse topics are discussed openly between the human books and their readers. They can be diverse combinations of imparting education and awareness through lectures, academic-interactions, group discussions, personal interactions/interviews, experimental demonstrations, workshops, conferences etc.

SIES-IIEM launched the first session of Human Library on February 21, 2024 with Er. Sudheer Urdhwareshe, Promotor Director, Prayas Environmental Services Private Limited who interacted with the Staff and Students of SIES IIEM and SIES SOP giving a brief historical background of the evolution of Environmental Science and Engineering Initiatives culminating to the concept of Sustainability. Our 2nd Book in the HLP Mr. Pramod Pawar, Associate Vice President, Talent Solutions, LTI Mindtree, who delivered a talk on "Be the Change Agent in the context of Sustainability" on February 23, 2024. These HLPs were then followed by other human books such as., Ms. Suranjana Das, Alumni and Public Relations Manager, Fullbright Programme and Alumni Affairs at the Full Bright Commission, Mumbai, India; Mr. Nilakantan Govindan, Co-Founder, Blue Oceans HR Services and Ex-Vice President, HR Strategy, Reliance Retail, who held a Session on "Sustainability in a Human-Centric Organization"; Mr. Jitendra Tiwary, Senior HSSE Manager at Bharat Petroleum Corporation Limited, BPCL; Prof. V. Gedam, Assistant Professor, IIM Mumbai; Judge Priya Shetty; Prof. Andrew Johnston, Professor, University of Huddersfield, United Kingdom.



Human Library Speaker Sessions at SIES IIEM

Events

Earth Day

We celebrated World Earth Day on 22nd April, 2024. Judge Ms. Priya Shetty, Belapur Court and Adv. Bhandari and Adv. Mane were our invited guests. They spoke on the importance of sustainability and how through indigenous and traditional environment management practices can be integrated in our lives today.



World Environment Day:

We celebrated the World Environment Day on 5th June 2024, with the theme "Our Land, Our Future," in the presence of all SIES IEM & SOP students, faculty, and staff. The campaign emphasized land restoration, desertification, and drought resilience. Our Chief Guest, Smt. P.A. Shriram, the Honorable 10th Jt. Civil Judge J.D. and J.M.F.C. Belapur, along with Distinguished Guests Advocate Yogesh Mane and Advocate Hemangi Mane, provided insightful perspectives on the significant environmental challenges at large, especially concerning land-related issues such as reforms and policies.



International Yoga Day:

On 21st June, 2024, amidst the tranquil surroundings of our institute, our dedicated faculty and staff gathered to embrace the profound beauty of yoga. Guided by the wisdom and expertise of Art of Living instructors, we embarked on a journey of self-discovery and holistic well-being. The sessions encompassed a variety of yoga practices, from serene asanas that stretched and strengthened our bodies to calming breath work that centered our minds



SIES IEM Convocation – 2024

On 27th September, 2024, the Annual Convocation Ceremony was organized at our institute for PGDSEM & M.Sc. SDEM students for the batches 2022-2023 & 2024-2025. The Chief Guest: Dr. Jairaj Phatak (Director-General, All India Institute of Local Self Government) and Mr. M.V. Ramnarayan, Vice-President, SIES delivered inspiring speeches, emphasizing the importance of sustainability. Dr. Sangeeta Sharma presented a report on the Institute. PGDSEM and M.Sc. SDEM students were awarded their certificates, prizes and medals.



Faculty & Student Achievements



Ms. Saraswathy Bai was felicitated as “Meritorious Student” M.Sc. Batch 2022-2024 at the 40th Foundation Day celebration of the University of Mumbai's Garware Institute of Career Education and Development (GICED), held in Kalina Campus, Mumba, on 27th October, 2024. At the same function Dr. Keyur Nayak, Director, GICED-UM felicitated Dr. Sangeeta Sharma.

The Envirocare Green Awards is an initiative launched by Envirocare Labs, in 2018 recognize those who take meaningful steps to protect our environment by adopting or innovating sustainable practices, creating a better future for current and future generations. Dr. Sangeeta Sharma was nominated as Jury Member for Envirocare Green Awards 2024, 7th Edition.



Dr. Sangeeta Sharma was invited and felicitated as the Distinguished Speaker by the Rotary Club of Millennials, Mumbai on 17th October 2024. She gave a talk on at Corporate Social & Environmental Responsibility (CSER).

Padma Shri Kartikeya Sarabhai, Founder Director of the Centre for Environment Education (CEE) felicitated Dr. Sangeeta Sharma for her contributions to cause of Sustainability Education at the Sixth International Conference on Sustainability Education, organized by the Mobius Foundation and UNESCO, at New Delhi from September 19-20, 2024.



Publications:

Rose, P.K., Kataria, N., Khoo, K.S., Narwal, N., Dhull, S.B., Kumar, R., Rani, S. and Kumar, P., 2024. Pristine and Modified Biochar for Pharmaceuticals Removal from Aquatic Systems. In *Pharmaceuticals in Aquatic Environments* (pp. 145-172). CRC Press. DOI: 10.1201/9781003436607-8

Sharma/ Sangeeta V., "India's Cross Border Electricity Trade with BIMSTEC Countries", Part of the Economics, Law, and Institutions in Asia Pacific Book Series (ELIAP), In: Phoumin, H., Nepal, R., Kimura, F., Taghizadeh-Hesary, F. (eds) *Large-Scale Development of Renewables in the ASEAN. Economics, Law, and Institutions in Asia Pacific*. Springer, Singapore. https://doi.org/10.1007/978-981-99-8239-4_10

Faculty Development Workshops / Conference Participation

- Dr. Suman Rani, Assistant Professor, attended Faculty Development Program on Teaching through Case Studies on 28th March at SIES College of Management Studies, Nerul. Dr. Neera Kumar, Vice Principal, SIES (Nerul) College of Arts, Science and Commerce facilitated the session.
- Dr. Sangeeta V. Sharma participated in the group meeting on 'Just Energy Transition in Maharashtra to Support Green Growth and Green Jobs', organized by iForest and Department of Environment and Climate Change, Government of Maharashtra, held on February 2, 2024 at Taj Mahal Palace, Mumbai.
- Mr. Ajinkya Sonar, Senior Clerk Admin, attended a program on Generative AI (Chat GPT) organized for non-teaching staff at the SIES College of Management Studies, Nerul campus, held on 12th July 2024.
- Dr. Sangeeta V. Sharma participated as Distinguished Speaker at the Sixth International Conference on Sustainability Education, organized by the Mobius Foundation and UNESCO, New Delhi, September 19-20, 2024.
- Dr. Sangeeta V. Sharma participated as Distinguished Speaker and Committee Member, Second International Conference of ISETS (Australia) organized by International Society for Energy Transition Studies (ISETS) in collaboration with Nanjing University of Aeronautics and Astronautics (NUAA)) held at Nanjing, China, Nov., 01-04, 2024.



Glimpses



Declaration on Organic Waste for the Biogas Industry in COP29

COP29 represents a defining moment in the biogas industry, with the treatment of food and organic waste as the centre of a formal COP declaration. The COP29 Declaration on Reducing Methane from Organic Waste will require that national climate policies have concrete targets to reduce methane from organic waste, aligning with the 1.5°C goal. Signatories commit to launching concrete policies and roadmaps to meet these sectoral methane targets ahead of COP30 in Brazil. 30 countries representing 47% of global methane emissions from organic waste have signed the declaration, which may prove a game-changer for sector growth and development.

The declaration, developed with the UNEP- convened Climate and Clean Air Coalition (CCAC), builds on the work of previous COPs by supporting the implementation of the 2021 Global Methane Pledge (GMP), launched at COP26. The GMP sets a global target of reducing methane emissions by at least 30% below 2020 levels by 2030.

World Biogas Association, November 2024

Exemption of Industries from Dual Approvals

The Government of India has accepted the long-standing demand of industry to remove dual compliance of Environmental Clearance (EC) and Consent to Establish (CTE) for setting up of new industries. Now, non-polluting white category industries will not be required to take CTE or Consent to Operate (CTO) at all. The industries that have taken EC will not be required to take CTE. This will not only reduce compliance burden but also prevent duplication of approvals. Ministry of Environment, Forest and Climate Change (MoEF&CC) under the Air Act and Water Act has issued notifications to this effect. The notification effectively integrates these two approvals, and a Standard of Procedure has been issued in this regard to consider the issues considered during the CTE process, in the EC itself. State Pollution Control Boards will be consulted during the EC process. Further, the CTE fee shall be required to be repaid by the industry, so that there is no loss of revenue to the States.

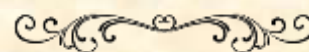
Press Information Bureau (PIB), MoEFCC, November 2024

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Articles, photos etc. are
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**Carbon Management
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