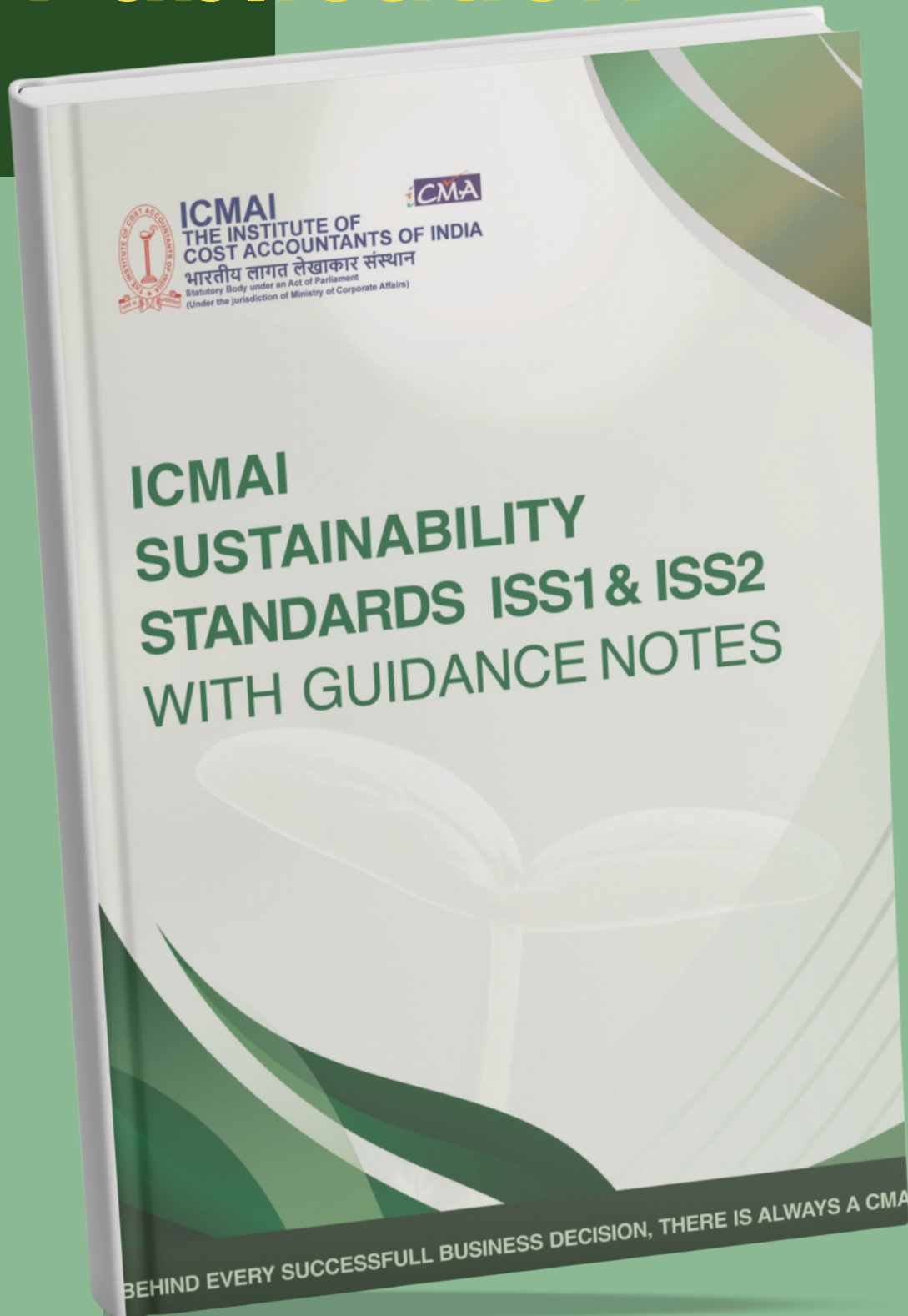




॥ सुखिनो भवन्तु ॥



SSB Publication





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Message

from the Chairman



"Look deep into nature, and then you will understand everything better." — Albert Einstein

As the new financial year unfolds, it brings with it a renewed sense of purpose and possibility. This moment of transition is not merely a change in the calendar, but an invitation to envision progress with clarity and conviction. It is hoped that the months ahead will usher in bright and meaningful developments—ones that the Sustainability Standards Board can thoughtfully nurture and bring to fruition.

Every year on Earth Day (22 April), the global community pauses to reflect on its relationship with nature. In India, this reflection carries a distinctive depth—rooted not only in contemporary environmental challenges but also in an ancient civilizational ethos that reveres the Earth as “*Prithvi Mata*” (Mother Earth). Indian traditions have long emphasized ecological harmony. Concepts such as “*Vasudhaiva Kutumbakam*”—the world as one family—embed sustainability into moral consciousness. Sacred groves, river worship, and agrarian rituals demonstrate that environmental stewardship is not new to India; it is intrinsic. Ancient texts like the Vedas advocate restraint in consumption and respect for natural resources, echoing modern principles of sustainable development. There is an urgent need of the urgent need to reconcile economic growth with ecological preservation. India’s journey toward sustainability will define not only its own future but also contribute significantly to global environmental outcomes.

We are delighted to share that the 7th batch admissions for the Certificate Course on ESG has started. We encourage all members and stakeholders to enrol in this unique course, designed to provide comprehensive insights into the diverse dimensions of sustainability and its evolving relevance. The Board has also taken a significant step forward by deciding to finalize the Assurance Standards, which will shortly be placed in the public domain for comments. We earnestly invite all stakeholders to contribute their valuable inputs and perspectives to strengthen the robustness and applicability of these standards. We are pleased to announce that the application process for the 2nd edition of the ICMAI Green Awards has begun. We invite Companies across sectors to participate and showcase their commitment to sustainable and responsible practices through this prestigious platform, the ceremony for which is being planned soon. Further, the much-anticipated publication on Carbon Accounting is in its final stages and will soon be made available to members and other stakeholders, offering practical guidance in this critical area. We are also happy to inform that the printed version of the ICMAI ISS 1 and ISS 2, along with their comprehensive Guidance Notes, have been finalized. Those interested in obtaining a copy may now place their orders online and procure the publication for their professional benefit. We look forward to active participation and continued support from all in advancing the sustainability agenda.

As the summer months set in and temperatures continue to rise, we urge everyone to take due care of their health and well-being. In this period of intense heat, it is advisable to remain indoors during peak hours, stay adequately hydrated, and maintain a balanced intake of fluids to prevent heat-related ailments. At the same time, let us be mindful of our responsibility toward the environment. By adopting simple yet effective sustainable practices—such as conserving water, reducing energy consumption, and nurturing green surroundings—we can collectively contribute to keeping our environment cooler and more pleasant. Let this season be a reminder not only to care for ourselves, but also to extend that care to our families, peers, and the larger community, fostering a culture of responsibility, resilience, and sustainability.

Warm regards,

CMA (Dr.) Ashish P. Thatte
Chairman
Sustainability Standards Board, ICMAI
April 25, 2026

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This Month Cover Page Picture Courtesy

Name-Miss Samaaya Sen Sarma

Class- KG

Place- Columbus, USA

14th April 1891 - 6th December 1956

Father of India's
Constitution,
social reformer, and
polymath.

Salute to Dr. B. R. Ambedkar

A Pioneer of Inclusive Sustainability

When we speak of sustainability today, the focus is often on environment and climate. However, true sustainability goes beyond nature—it includes social justice, economic balance, and strong governance. In this broader sense, Dr. B. R. Ambedkar emerges as a visionary whose work laid the foundation for sustainable development in India.

Dr. Ambedkar firmly believed that a society cannot sustain itself if it is unequal. His lifelong efforts to eliminate social discrimination were not just reforms, but steps toward building a stable and inclusive system. A divided society weakens progress, whereas inclusion strengthens long-term development. His leadership in movements like access to public water highlighted that natural resources must be available to all, making him an early advocate of equitable resource distribution.

His contribution to water and power policy further reflects his sustainability-oriented thinking. He recognised water as a critical national resource and supported structured irrigation and hydroelectric development. His approach was practical—efficient use of resources to support agriculture, industry, and economic growth while ensuring long-term availability.

Dr. Ambedkar also focused on human sustainability through labour welfare. He introduced progressive measures such as fair wages, regulated working hours, and social security. These reforms ensured that economic growth did not come at the cost of human dignity. A healthy and secure workforce, as he emphasised, is essential for sustainable progress.

One of his most enduring contributions is the constitutional framework of India. By embedding justice, equality, and accountability into governance, he created institutions that support sustainable development. Strong governance ensures that growth is inclusive, balanced, and long-lasting.

He also saw education as a powerful tool for sustainability. By promoting learning and awareness, he aimed to empower individuals to break free from inequality and contribute meaningfully to society. Education, in his vision, was the foundation of a self-reliant and progressive nation.

In today's terms, his work aligns closely with ESG principles—Environmental responsibility through resource management, social equity through justice and welfare, and governance through strong institutions.

Dr. B. R. Ambedkar's vision reminds us that sustainability is not only about preserving the environment, but about creating a fair, inclusive, and resilient society. His ideas continue to guide us in building a future where growth and justice go hand in hand.



Sustainability -Global Context

MONTHLY NEWS

1. UK Strengthens Clean Energy Strategy

The United Kingdom is accelerating clean energy investments to reduce reliance on volatile fossil fuel markets. The government aims to stabilise energy prices through renewables and pricing reforms.

[READ MORE](#)

6. Bangladesh Faces Low ESG Ratings

Bangladesh continues to rank low on ESG metrics despite showing early signs of improvement. Key challenges include governance gaps and environmental risks.

[READ MORE](#)

2. UK Plans to Scrap Carbon Tax on Power

The UK will remove its carbon tax on electricity generation by 2028 following the complete phase-out of coal. This marks a shift toward simplifying carbon pricing mechanisms.

[READ MORE](#)

7. Germany Announces Fuel Relief Package

Germany has approved a €1.9 billion fuel relief package to support industries and households amid energy price volatility, reflecting a balance between economic stability and sustainability goals.

[READ MORE](#)

3. Vietnam Extends EV Tax Incentives

Vietnam plans to extend tax cuts on electric vehicles until 2030 to accelerate clean mobility and reduce emissions. EV adoption has surged significantly due to these incentives.

[READ MORE](#)

8. ESG Disclosure Debate in New Zealand

Debate has emerged in New Zealand regarding ESG disclosures, with regulators emphasizing clarity and substance over excessive or ambiguous reporting language.

[READ MORE](#)

4. Push for Global Nature Disclosure Standards

Global sustainability leaders are urging the International Sustainability Standards Board to introduce mandatory nature-related disclosures, expanding ESG reporting beyond climate metrics.

[READ MORE](#)

9. Rising Focus on ESG Communication Quality

The same New Zealand case reflects a broader global trend—stakeholders are increasingly demanding meaningful, consistent, and transparent ESG reporting rather than superficial disclosures.

[READ MORE](#)

5. Sri Lanka Solar Project Raises Biodiversity Concerns

A proposed solar park in Sri Lanka has triggered environmental concerns due to its location within elephant habitats, raising questions about balancing renewable energy expansion with wildlife protection.

[READ MORE](#)

10. US Pushes World Bank Toward Critical Minerals

The United States has urged the World Bank to prioritise investments in critical minerals essential for clean energy technologies, signalling a strategic shift in global sustainability financing.

[READ MORE](#)

Sustainability - Indian Context



MONTHLY NEWS

1. ESG Data Influencing Credit Decisions

The Reserve Bank of India is encouraging financial institutions to integrate ESG parameters into lending decisions. Borrowers, especially MSMEs, may now be assessed not just on financial strength but also on environmental compliance and governance practices.

Impact: Companies with better sustainability practices may gain easier access to credit and lower borrowing costs.

[READ MORE](#)

2. UDAN Scheme and Sustainable Regional Connectivity

The government's UDAN scheme, aimed at improving regional air connectivity, is under review for financial viability. While it promotes inclusive development, concerns are emerging about subsidy efficiency and environmental implications of expanding air travel.

Impact: Future policy may balance connectivity goals with sustainability considerations such as carbon emissions.

[READ MORE](#)

3. Biodiversity Focus: Bat Conservation & Ecology Awareness

Recent discussions on biodiversity have highlighted the ecological importance of bats in pest control and pollination. Conservation efforts are gaining policy attention as part of broader environmental sustainability.

Impact: Strengthening biodiversity protection aligns with India's commitments to ecological balance and sustainable agriculture.

[READ MORE](#)

4. Strengthening ESG Disclosures for Listed Companies

The Securities and Exchange Board of India has indicated a review of ESG disclosure requirements for listed entities. The aim is to improve transparency, comparability, and reliability of sustainability reporting.

Impact: Companies will need to adopt more structured and verifiable ESG reporting frameworks.

[READ MORE](#)

5. Improvement in Ganga Water Quality

Government data indicates that water quality in the Ganga is showing improvement, with several stretches meeting bathing standards. This reflects progress in pollution control and river rejuvenation programs.

Impact: Demonstrates that long-term environmental initiatives can yield measurable outcomes when consistently implemented.

[READ MORE](#)

6. Air Pollution Declared a Serious Health Hazard

The National Green Tribunal (NGT) has taken a strong stance on worsening air pollution, describing even breathing as a health risk in certain regions. Notices have been issued to authorities to take urgent corrective action.

Impact: Signals stricter enforcement and potential policy tightening on emissions and urban pollution.

[READ MORE](#)

7. Role of Large Corporates in MSME Sustainability

Large corporations are increasingly expected to support MSMEs in adopting sustainable practices. This includes technology transfer, green financing, and supply chain integration.

Impact: Sustainability is becoming a value-chain responsibility rather than an isolated corporate initiative.

[READ MORE](#)

8. Need for Clarity in ESG Ratings

There is growing concern over inconsistencies in ESG ratings across agencies. Lack of standardisation can create confusion among investors and companies alike.

Impact: Calls for harmonised frameworks and transparent methodologies to build trust in ESG assessments.

[READ MORE](#)

9. Steel Sector Targets Emission Reduction

India plans to reduce emissions intensity in the steel sector by 25% while expanding production capacity significantly by 2035. This reflects a dual strategy of growth and decarbonisation.

Impact: Adoption of cleaner technologies like green hydrogen and energy-efficient processes will become critical.

[READ MORE](#)

10. Monsoon Variability and Climate Risk Awareness

Concerns about below-normal monsoons highlight increasing climate unpredictability. This has implications for agriculture, water security, and rural livelihoods.

Impact: Reinforces the need for climate-resilient infrastructure and sustainable resource management.

[READ MORE](#)



A delegation from Sustainability Standards Board, ICAI headed by CMA (Dr.) Ashish P. Thatte, Chairman, SSB, ICAI visited IFSCA, Gift City on 06.04.2026. During the meeting with Shri Pradeep Ramakrishnan, Executive Director, IFSCA they discussed professional opportunities for CMAs and IFSCA and possible collaborations.

Continent-Wise Corporate Sustainability Reporting Frameworks: Mapping SDGs & Evaluating Diversities with ASEAN Focus



CMA (Dr.) Aditi Dasgupta
 Joint Director
 The Institute of Cost Accountants of India
 Kolkata

Abstract

Corporate sustainability reporting has transitioned from a voluntary disclosure practice to a strategic and regulatory imperative aligned with the United Nations Sustainable Development Goals (SDGs). This article examines continent-wise sustainability reporting frameworks, with a focused analysis of Southeast Asia’s ASEAN-driven momentum. It maps key frameworks such as GRI, TCFD, ISSB, and regional regulations to SDGs, evaluates cross-continental diversities, and highlights the pivotal role of Cost and Management Accountants (CMAs) in integrating financial discipline with sustainability performance. The study finds that while Europe and developed markets lead in regulatory harmonization, Southeast Asia demonstrates a unique blend of structured mandates and adaptive inclusivity, especially for SMEs. The article underscores the need for global convergence while recognizing contextual flexibility in achieving SDG-linked sustainability outcomes.

Introduction and Global Context

Corporate sustainability reporting has evolved into a globally interconnected system shaped by investor expectations, regulatory mandates, and climate urgency. Frameworks such as the Global Reporting Initiative (GRI), Task Force on Climate-related Financial Disclosures (TCFD), and standards issued by the International Sustainability Standards Board (ISSB) increasingly align disclosures with SDGs, particularly climate action, responsible consumption, and inclusive growth. However, adoption varies significantly across continents due to differences in economic maturity, institutional capacity, and regulatory priorities.

Europe has taken a regulatory leadership position through comprehensive mandates, while the Americas combine regulatory oversight with market-driven disclosures. Africa and South Asia reflect emerging and hybrid approaches. Within this global mosaic, Southeast Asia stands out as a rapidly evolving region where sustainability reporting is being shaped by regional cooperation, capital market reforms, and supply chain pressures.

Comparative Overview of Sustainability Reporting Across Continents

Continent	Key Frameworks / Regulations	Nature of Adoption	SDG Focus Areas	Distinctive Features
Europe	CSRD, ESRS	Mandatory, highly structured	SDG 13, 12, 8	Strong regulatory enforcement and assurance
Americas	SEC Climate Rules, GRI, SASB	Mixed (mandatory + voluntary)	SDG 7, 13, 9	Investor-driven disclosures
Africa	King IV, GRI	Emerging, principles-based	SDG 8, 16	Governance-focused frameworks
South Asia	BRSR (India), GRI	Hybrid	SDG 5, 8, 13	Regulatory leadership in India
Southeast Asia	ISSB, TCFD, NSRF, OJK 51/2017	Mixed, rapidly evolving	SDG 13, 12, 8	ASEAN-driven harmonization with diversity

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

Southeast Asia: ASEAN Sustainability Momentum

Southeast Asia represents one of the most dynamic sustainability reporting landscapes, driven by export-oriented economies, global value chain integration, and increasing ESG scrutiny. The region reflects a balance between regulatory enforcement and voluntary adoption, with significant variation across countries.

SUSTAIN THE SUSTAINABILITY



Source: Conceptualised & designed by the author using AI tools

Singapore has emerged as the regional leader through stock exchange-driven mandates. The Singapore Exchange (SGX) requires sustainability reporting for listed companies and is transitioning from TCFD-aligned disclosures to ISSB-based standards (IFRS S1 and S2). This positions climate risk, financial materiality, and governance disclosures at the core of corporate reporting, strongly aligned with SDGs 13, 9, and 12.

Malaysia follows a comprehensive and inclusive model through its National Sustainability Reporting Framework (NSRF), which integrates GRI, TCFD, and ISSB principles. Its distinctive contribution lies in the Simplified ESG Disclosure Guide (SEDG), designed to extend sustainability reporting to SMEs, thereby aligning broader economic participation with SDGs 8 and 12.

Indonesia adopts a regulatory-driven approach through OJK Regulation No. 51/POJK.03/2017, mandating sustainability disclosures for financial institutions and listed entities. This framework emphasizes environmental governance and sustainable finance, contributing to SDGs 13, 16, and 12, while allowing flexibility in reporting formats.

In contrast, Thailand, Vietnam, and the Philippines rely primarily on voluntary adoption of GRI and TCFD frameworks. While regulatory encouragement exists, the absence of fully mandatory requirements leads to variability in disclosure quality. Nonetheless, increasing investor pressure and regional integration are accelerating convergence toward global standards.

Evaluation of Regional Diversities

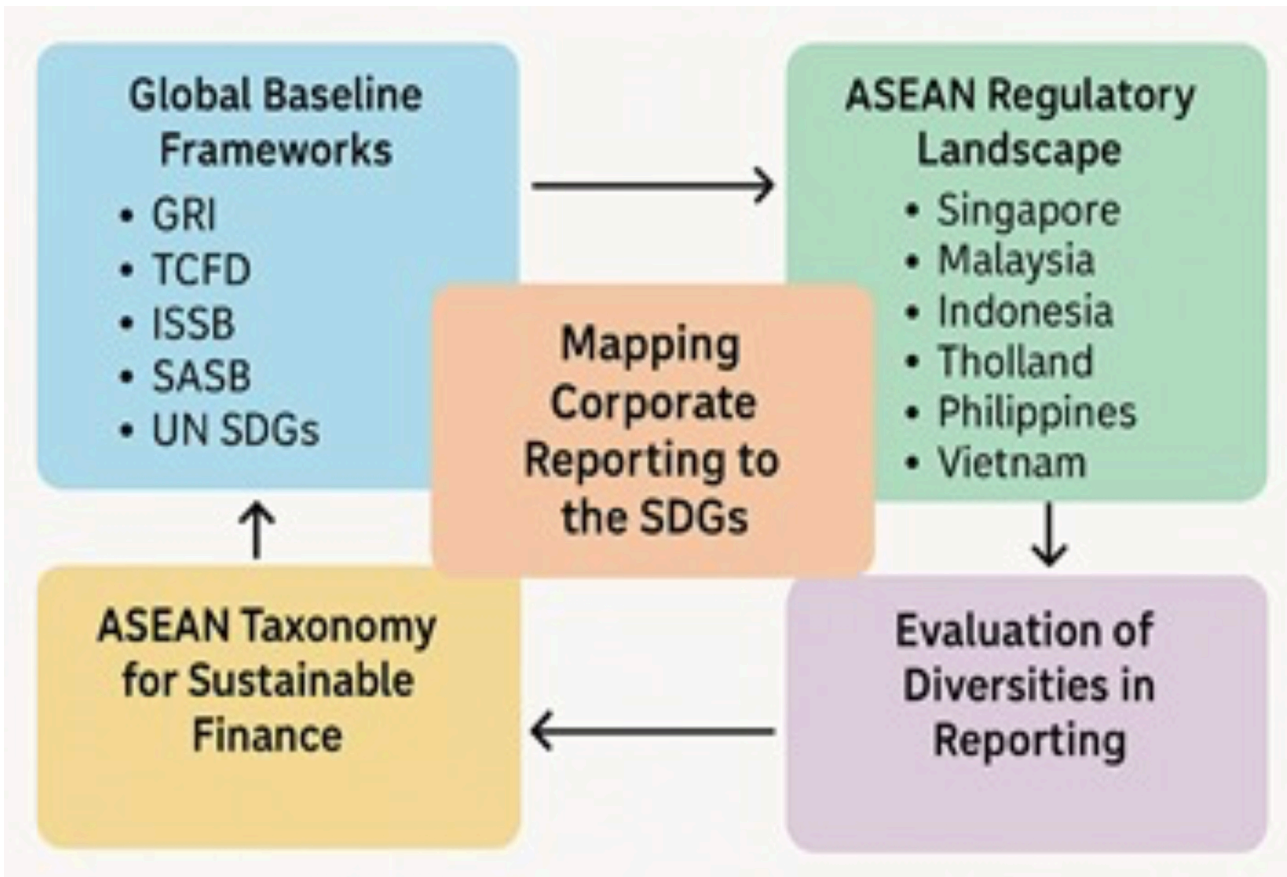
The diversity within Southeast Asia reflects varying levels of regulatory maturity and institutional readiness. Singapore and Malaysia demonstrate structured, ISSB-aligned pathways that enhance comparability and investor confidence. Indonesia ensures baseline compliance through regulatory mandates, while other ASEAN economies emphasize flexibility and capacity building.

Globally, parallels can be observed. Europe's CSRD mirrors Singapore's structured approach, while Africa's governance-led frameworks resemble Malaysia's SME-focused inclusivity. The Americas exhibit a hybrid model combining regulation and market forces. However, Southeast Asia's distinctiveness lies in its integration of biodiversity concerns, supply chain vulnerabilities, and SME participation into sustainability reporting.

Role of Cost and Management Accountants (CMAAs)

Cost and Management Accountants play a transformative role in bridging sustainability disclosures with financial performance. Their expertise enables organizations to move beyond narrative reporting toward quantifiable and decision-useful insights.

CMAAs integrate ESG metrics into budgeting, forecasting, and performance management systems, ensuring alignment with SDG targets. They support climate risk analysis under ISSB and TCFD frameworks by translating environmental impacts



Source: Conceptualised & designed by the author using AI tools

into financial implications such as carbon pricing and cost structures. Their role extends to lifecycle costing, resource efficiency analysis, and circular economy optimization.

In emerging ASEAN markets, CMAs are particularly critical in developing internal systems for ESG data measurement, ensuring reliability and audit readiness. They also facilitate SME adoption of simplified frameworks such as SEDG, enhancing inclusivity and supply chain transparency. By linking sustainability metrics with enterprise value, CMAs strengthen both regulatory compliance and strategic decision-making.

Conclusion

Corporate sustainability reporting is progressing toward global convergence, yet remains shaped by regional diversities. Southeast Asia exemplifies a region in transition, where regulatory innovation, market forces, and institutional capacity intersect to create a dynamic reporting ecosystem. While countries like Singapore and Malaysia lead with structured and inclusive frameworks, others are steadily advancing through voluntary adoption and capacity building.

The challenge ahead lies in achieving harmonization without compromising contextual relevance. In this journey, Cost and Management Accountants will

remain central to ensuring that sustainability reporting evolves from compliance to strategic value creation. By embedding SDG-linked metrics into financial systems, they enable organizations to deliver transparent, comparable, and impactful sustainability outcomes. **SB**

References:

1. United Nations – Sustainable Development Goals (SDGs) Framework
2. International Sustainability Standards Board (ISSB) – IFRS S1 and IFRS S2
3. Global Reporting Initiative (GRI) Standards
4. Task Force on Climate-related Financial Disclosures (TCFD) Recommendations
5. Singapore Exchange (SGX) Sustainability Reporting Guidelines
6. Securities Commission Malaysia – National Sustainability Reporting Framework (NSRF)
7. Simplified ESG Disclosure Guide (SEDG) for SMEs, Malaysia
8. Otoritas Jasa Keuangan (OJK) Regulation No. 51/POJK.03/2017, Indonesia
9. European Union – Corporate Sustainability Reporting Directive (CSRD)
10. Securities and Exchange Commission (SEC), USA – Climate Disclosure Rules

Green Bonds and their Regulatory Framework

PART
III

Usha Ganapathy Subramanian
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Chennai

Abstract

Green bonds are emerging as a popular mode of raising debt funding for environmentally-beneficial projects. In India, SEBI's green-bond regulatory regime enhances credibility through its robust disclosure and compliance framework complete with mandatory external reviews, and other safeguards against greenwashing.

A Recap of the Sustainable Finance Landscape

In the previous edition of this series, we discussed the overall landscape of sustainable finance, and dived into debt funding in particular. Before we proceed to discussing green bonds in some depth in this article, let us recall the major aspects from the previous edition.

Sustainable finance includes both climate finance, and finance aimed at achieving other sustainability-related aspects. Financing could be in the form of institutional or government loans or grants, equity or debt funding, market-rate or low-cost debt, balance-sheet-level funding or project-level funding.

We are taking up debt funding in particular, and this is where issuances of green bonds come into the picture. In India, the regulatory system uses the term 'ESG Debt Securities' to refer to green bonds, sustainability bonds, sustainability-linked bonds or social bonds. In international parlance, these are often called GSS+ bonds.

We now have updated statistics on the GSS+ issuances. The size of the GSS+ bond universe globally in terms of cumulative issuances is about USD 6.8 trillion as at the end of 2025 with green-labelled issuances accounting for roughly two-thirds of the total.¹ In India the figure by the end of 2024 is USD 55.9 billion (Climate Bonds Initiative, 2025).²

The Philosophy and Frameworks

The core aspect behind these sustainability bonds is that the proceeds go towards a sustainability-related end use. To ensure this, international bodies and regulators around the world have come up with frameworks. Among these, a popular framework

adopted by the market participants and regulators is the Green Bond Principles (GBP) issued by The International Capital Market Association (ICMA),³ which are voluntary guidelines for issuers of green bonds aimed at enhancing transparency and credibility. ICMA has also issued green project mapping as a way to evaluate whether the projects achieve the intended environmental objectives. Guidelines for external reviews have also been issued, although under the framework appointment of external reviewers is only recommendatory.⁴

How SEBI regulates Green Debt Securities

India's journey towards regulating ESG debt securities specifically began with SEBI's 2017 circular laying out the disclosure requirements for issuance and listing of green debt securities.⁵ This provided a framework of initial and continuous disclosures, including utilization of proceeds, and compliance requirements. This framework underwent phases of updates and at present these are issued under the SEBI (Issue and Listing of Non-Convertible Securities) Regulations, 2021 ("NCS Regulations"),⁶ which is now the primary framework. Detailed requirements are given by way of circulars instead of being embedded in the text of the regulations. This could be due to the need for greater flexibility given the evolving landscape of sustainable debt funding. The circulars are consolidated in the form of a master circular for ease of reference.⁷

In short, raising debt via green bonds attracts not only the usual compliance and disclosure requirements applicable to plain vanilla debt instruments but also additional requirements to ensure the labels are not misused.

³ <https://www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Green-Bond-Principles-GBP-June-2025.pdf>

⁴ <https://www.icmagroup.org/sustainable-finance/external-reviews/>

⁵ <https://www.icmagroup.org/sustainable-finance/external-reviews/>

⁶ <https://www.sebi.gov.in/legal/regulations/jan-2026/securities-and-exchange-board-of-india-issue-and-listing-of-non-convertible-securities-regulations-2021-amended-as-on-january-21-2026-99288.html>

⁷ https://www.sebi.gov.in/legal/master-circulars/oct-2025/master-circular-for-issue-and-listing-of-non-convertible-securities-secured-debt-instruments-security-receipts-municipal-debt-securities-and-commercial-paper_97343.html

¹ <https://www.climatebonds.net/news-events/press-room/press-releases/sustainable-debt-market-nears-usd7-trillion-aligned-issuance-demonstrating-strong-global-momentum>

² <https://www.climatebonds.net/data-insights/publications/india-sustainable-debt-state-market-2024>

Let us explore the specific aspects of the regulatory framework that are aimed at preventing greenwashing.

Definitions to establish uniform terminologies:

The NCS Regulations besides containing the overall framework for non-convertible securities issuance and listing, lay down a basic taxonomy by defining terms like ESG debt securities and green debt securities. This is not only to ensure regulatory consistency but also to ensure that the terms are not misused to mobilise funding for activities that may not have environmental objectives. The proceeds must be used for projects/assets falling under any of the objectives given in the definition; these range from renewable energy, clean transportation, sustainable waste management, biodiversity conservation, circular economy, to blue bonds (sustainable water management), yellow bonds (solar energy) and transition bonds.

Initial disclosure requirements:

When an entity issues green debt, they must make several disclosures in the offer document. They must state the big goal – what environmental objectives they hope to achieve with the proceeds. They must clearly explain how the company decides which projects are eligible to receive the funds. If any Indian or global taxonomies or standards are referenced, their details and alignment of projects with them must be disclosed; in case of transition bonds, how they contribute to India's Nationally Determined Contributions (NDCs) (emission reductions) must be disclosed. This ensures that issuers cannot merely cite international taxonomies or alignment with NDCs for branding purposes and get away with misutilisation.

Other disclosures include:

a breakdown of how much proceeds will go towards starting new projects versus paying for existing ones (refinancing), the exact procedures the company will use to track the funds to ensure it is actually spent on the promised green projects, where the proceeds would be parked while awaiting deployment, and mitigation plan for perceived environmental and social risks.

Continuous disclosures in half-yearly results and annual reports: Issuers must disclose how the proceeds are being used based on their internal tracking system. A report from an external auditor is required to verify the internal tracking method and the actual allocation of funds to specific projects. The annual reports must include granular data on the list of projects funded, project-by-project impact reporting, disclosure of taxonomies or standards followed, major elements of disclosure under the Business Responsibility and Sustainability Reporting (that is otherwise only applicable to the Top 1,000 listed entities by market capitalization).

Mandatory external review:

This seems to be the most crucial requirement. Earlier prescribed on a “comply or explain” basis in 2023 for

a period of two years, now it has become a mandatory requirement to appoint the independent third-party reviewer/certifier (“independent reviewer”). SEBI issued a circular in February 2026⁸ to harmonise the requirement with the broader ESG debt securities framework, especially to align with the requirements applicable for social bonds/sustainability bonds issued in 2025.

At the offer document stage, issuers must appoint an independent reviewer to ascertain that the issuance is in accordance with the definition of green debt securities, and the project evaluation and selection criteria. In the post-issue phase also, appointment of an independent reviewer is mandated for post-issue management of the use of proceeds, verification of internal tracking and impact reporting.

More importantly, the criteria for such appointments are mandated. Independent reviewers must have expertise in ESG debt securities; should be independent from the issuer, directors, senior management and key management personnel; their remuneration shall not present any conflict of interest (for example, not linked to the issuer's financial results). Acceptable formats of the review/certification may include the forms recommended by the ICMA: second-party opinion, verification, certification, or rating/scoring. The reviewer's details and the scope of the review must be disclosed in the offer document. This directly addresses greenwashing by ensuring credible external validation.

Continuing Requirements:

The issuers must ensure that the projects being funded meet the eligibility criteria and stated goals on a continuous basis. They must also comply with SEBI's 2023 “Dos and Don'ts” guidance⁹ further that prohibits cherry-picking data, hiding trade-offs, or unsubstantiated claims. It requires issuers to quantify negative externalities as well.

Conclusion

While India is still a developing market when it comes to green bonds, recent changes like mandating independent third-party reviews in both pre-and post-issue stages, shows that India is gearing up to meet global standards. The present framework offers a robust platform that provides both flexibility to issuers and reassurance to stakeholders.

In the future editions of this column, we may explore the regulatory environment for green bonds in the EU, which has the largest share of cumulative GSS+ bonds issuances. The developments in EU, being a mature ESG market, offer guidance on expectations for the future course that domestic regulations could take in other parts of the world, including India. **SB**

Reproduced with suitable modifications from the personal writings and posts of Ms. Usha Ganapathy Subramanian.

⁸ https://www.sebi.gov.in/legal/circulars/feb-2026/revise-norms-for-appointment-of-an-independent-third-party-reviewer-certifier-for-green-debt-security_100043.html
⁹ https://www.sebi.gov.in/legal/circulars/feb-2023/dos-and-don-ts-relating-to-green-debt-securities-to-avoid-occurrences-of-greenwashing_67828.html

Electric Wallpaper: A Smart Heating Solution Powered by Solar Energy



CMA Arunabha Saha
Practicing Cost Accountant
Thane

Abstract

Electric wallpaper is an innovative technology that combines interior design with heating functionality. Unlike traditional heating systems, it uses thin conductive materials embedded within wallpaper to generate heat through electricity. This article explores the concept, working mechanism, advantages, and practical usability of electric wallpaper, with a special focus on how integrating solar energy can make it cost-effective and sustainable. The discussion highlights how this technology, when combined with proper insulation, smart usage, and renewable energy, can become a powerful solution for modern homes. The article also provides simple techniques and practical approaches for effective implementation.

Introduction

In today's world, the demand for energy-efficient, space-saving, and sustainable solutions is increasing rapidly. Traditional heating systems such as radiators, heaters, and air conditioning units are often bulky, energy-intensive, and not always efficient.

Electric wallpaper emerges as a modern alternative, offering a unique combination of:

- Heating
- Aesthetic design
- Smart technology

It represents a shift from visible heating systems to invisible heating solutions. However, while the concept is innovative, its real value lies in how effectively it is used, especially when combined with solar energy.

What is Electric Wallpaper?

Electric wallpaper is a thin wall covering embedded with heating elements that generate heat when electricity passes through them.

Simple Understanding:

- Looks like normal wallpaper
- Works like a heater

Inside the wallpaper:

- Conductive materials such as carbon, copper, or graphene are used

- When electricity flows, these materials heat up to around 40–45°C, which is safe to touch

Unlike traditional heaters:

- It produces infrared heat (like sunlight)
- It heats people and objects directly, not just the air
- This creates a more natural and comfortable heating experience

How Electric Wallpaper Works

The working principle is based on electrical resistance heating and infrared radiation.

Step-by-Step Process:

- Electricity flows through conductive layers
- Resistance generates heat
- Heat is emitted as infrared radiation
- Objects and people absorb heat directly

Key Result:

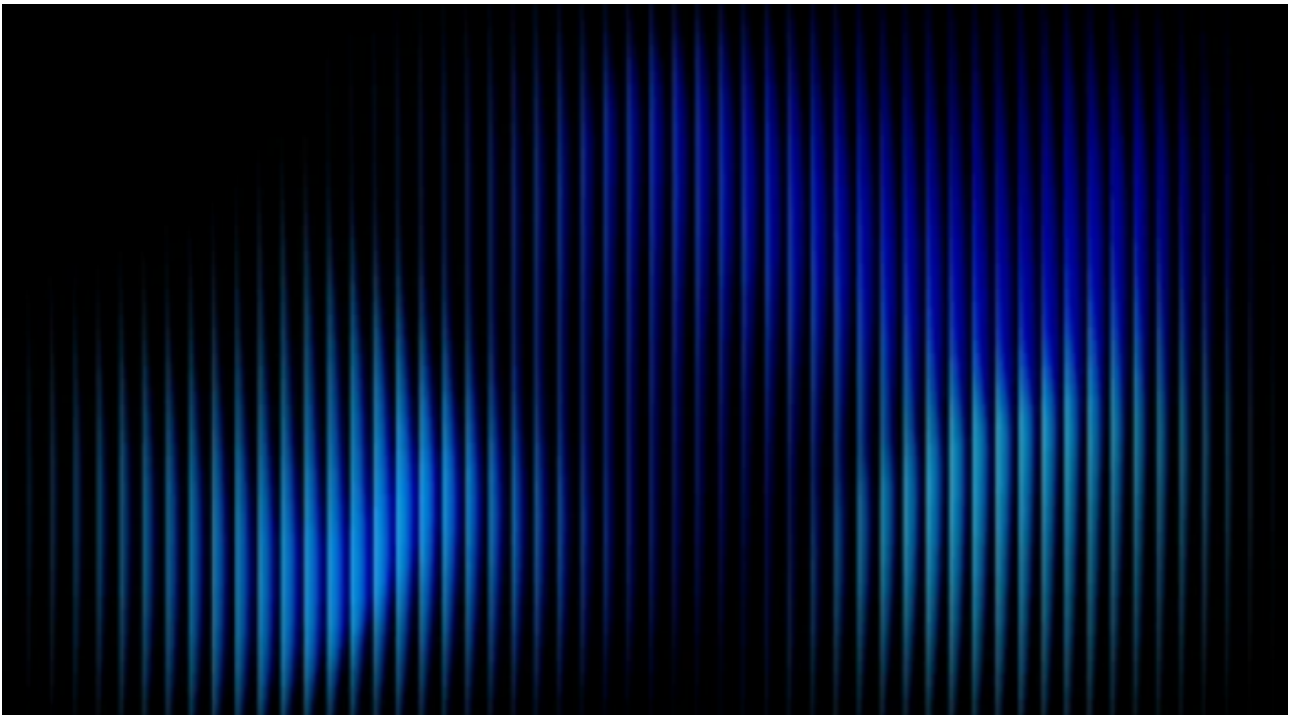
- Faster comfort
- Less heat loss
- Even temperature distribution

Types of Electric Wallpaper

Electric wallpaper is available in different forms:

1. Heating Wallpaper

- Used for room heating



Electric Wallpaper

- Can replace or support traditional systems

2. LED Wallpaper

- Decorative with lighting effects

3. Smart Wallpaper

- Integrated with sensors and automation

Advantages of Electric Wallpaper

Electric wallpaper offers several practical benefits:

1. Comfortable Heating

- No cold spots
- Natural warmth like sunlight

2. Space Saving

- Extremely thin (~0.4 mm)
- No need for radiators

3. Silent Operation

- No noise
- Ideal for bedrooms and offices

4. Low Maintenance

- No moving parts
- Minimal servicing

5. Smart Control

- Can be automated
- Controlled via mobile or thermostat

6. Eco-Friendly Potential

- No direct emissions
- Can run on renewable energy

7. Flexible Installation

- Can be installed on walls or ceilings

- Suitable for modern interiors

8. Safety

- Operates at safe temperatures
- Lower risk compared to heaters

Limitations and Challenges

Despite its advantages, there are some limitations:

1. High Electricity Cost

- Major concern
- Electric heating is generally expensive

2. Not Suitable for Entire House

- Requires large coverage
- High installation cost

3. New Technology

- Limited availability
- Limited-service support

4. No Hot Water Function

- Only provides room heating

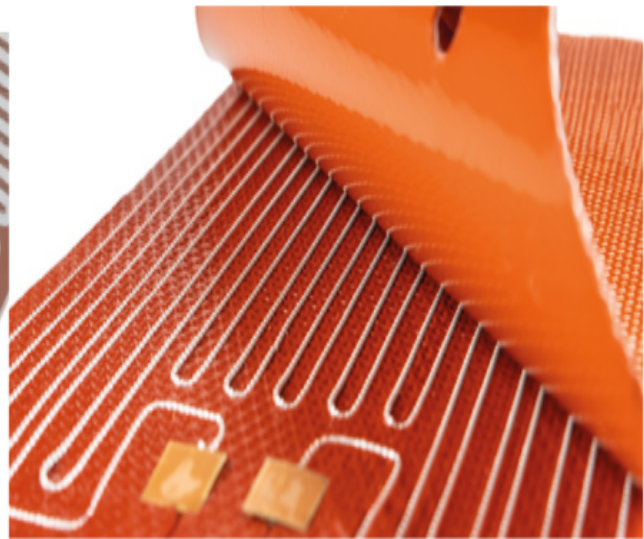
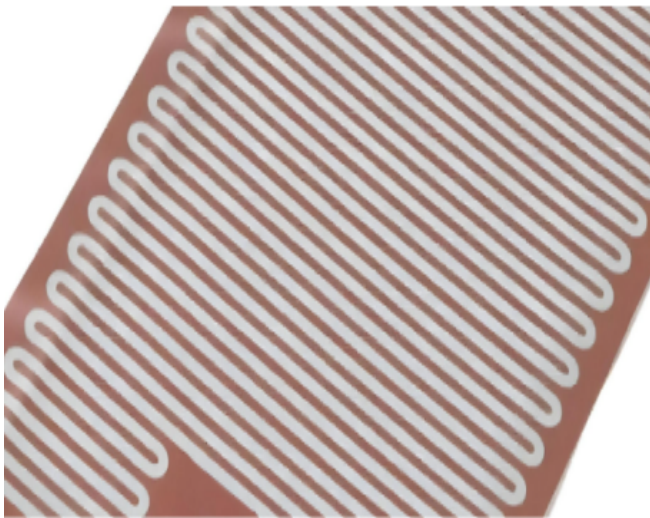
Therefore, it is best used as supplementary heating, not primary

7. Practical Use in Homes

Electric wallpaper is practical in specific conditions:

Suitable for:

- Small rooms
- Smart homes
- Well-insulated houses



Heating Mats

Not suitable for:

- Whole-house heating
- Poorly insulated buildings

It works best when used selectively and intelligently

Why Solar Energy is the Best Partner?

The biggest drawback of electric wallpaper is high electricity cost.

Solution: Solar Energy Integration

Using solar energy can transform electric wallpaper from:

“Costly technology” → “Cost-effective solution”

How Solar + Electric Wallpaper Works?

Basic Concept:

- Solar panels generate electricity
- Electricity powers wallpaper
- Excess energy is stored or exported

Why Solar Makes It Most Effective?

1. Reduces Running Cost

- Solar energy is free after installation
- Can reduce electricity bills by 40–70%

2. Improves Sustainability

- No carbon emissions
- Supports green buildings

3. Ideal Daytime Heating

- Solar generates power during the day
- Matches heating requirement in cold regions

4. Long-Term Investment

- Initial cost is high
- Long-term savings are significant

Techniques to Make It Cost-Effective

To maximize benefits, the following techniques should be adopted:

1. Use Solar Power

- stall rooftop solar panels
- Use net metering

2. Improve Insulation

- Insulated walls
- Double-glazed windows
- Thick curtains
- Less heat loss = lower cost

3. Zonal Heating

- Heat only required rooms
- Avoid whole-house heating

4. Smart Controls

- Use timers and thermostats
- Avoid continuous running

5. Hybrid Approach

Combine with:

- AC
- Heaters
- Use wallpaper for comfort, not full heating

6. Strategic Installation

- Install on selected walls
- Focus on occupied areas

7. Use Off-Peak Electricity

(Tariffs for electricity that vary based on the time of day are known as Time of Use (TOU) or Time of Day (ToD) tariffs. This billing method moves away from a flat rate to a structure that charges more when electricity demand is high (peak hours) and less when demand is low (off-peak hours)

- Run during cheaper tariff periods

8. Cost Planning

Calculate:

- Electricity rate
- Usage hours
- Room size

Applications in Real Life

Electric wallpaper can be used in:

Residential:

- Bedrooms
- Living rooms
- Home offices

Commercial:

- Offices
- Hotels
- Smart buildings

Special Use:

- Renovation projects
- Luxury homes

Relevance in Indian Context

In India:

Suitable for:

- Premium apartments
- Cold regions (with solar)

Not required for:

- Cities like Mumbai, Pune (moderate climate)
- Best use: Selective luxury or smart application

Future Scope

Electric wallpaper has strong future potential:

- Integration with smart homes
- Use of advanced materials like graphene
- Increased adoption in green buildings

As renewable energy adoption increases, its practicality will also improve.

A Step Towards Sustainable and Energy-Efficient Living

Electric wallpaper strongly supports sustainability by enabling efficient, low-emission heating when used intelligently. Unlike traditional systems that waste energy by heating air, it delivers direct infrared warmth, reducing overall energy consumption. When combined with solar power, it can operate on clean, renewable energy, significantly lowering carbon footprint. Its zonal heating capability ensures that only occupied spaces are heated, avoiding

unnecessary energy use, while its long life and minimal maintenance reduce material waste. Thus, electric wallpaper aligns well with green building principles, promoting energy efficiency, resource conservation, and environmentally responsible living.



Conclusion

Electric wallpaper is a revolutionary concept in modern heating systems, offering comfort, aesthetics, and smart functionality. However, its true effectiveness depends on how it is implemented.

On its own, it may not be cost-efficient. But when combined with:

- Solar energy
- Proper insulation
- Smart usage

it becomes a powerful, sustainable, and practical solution.

The key idea is:

“Use it smartly, not extensively.”

Electric wallpaper is not just a heating system—it is a step toward future-ready, energy-efficient living.

Final Insight

The most effective model can be summarized as:

Electric Wallpaper Efficiency = Solar Power + Insulation + Smart Usage^{SB}

Corporate Governance and CSR: Twin Pillars of Sustainable Business



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Abstract

In the contemporary business environment, sustainability has emerged as a strategic imperative driven by environmental challenges, stakeholder expectations, and regulatory reforms. This paper examines the evolving role of Corporate Governance (CG) and Corporate Social Responsibility (CSR) in promoting sustainable business practices. It highlights the transition of governance from a compliance-based approach to a value-driven framework integrating ESG principles, ethical leadership, and stakeholder accountability. Further, it also emphasizes the growing significance of CSR under the Companies Act, 2013, and the strategic role in strengthening governance, transparency, and sustainability.

Introduction

In today's rapidly evolving global economy, sustainability has emerged as a strategic necessity rather than a voluntary corporate initiative. Businesses are operating in an environment characterized by climate change, resource scarcity, social inequality, regulatory pressure, and heightened stakeholder awareness. Against this context, adopting sustainable business practices is essential for ensuring long-term growth, resilience, and societal relevance. However, sustainable business refers to operating in a manner that balances economic performance with environmental protection and social responsibility. Traditional profit-driven models are increasingly proving inadequate in addressing modern challenges such as environmental degradation, ethical lapses, and social disparities. Stakeholders including investors, consumers, employees, regulators, and communities now expect organizations to act responsibly, transparently, and ethically.

One of the key drivers behind the growing importance of sustainable business is environmental concern. Climate change, depletion of natural resources, and pollution have compelled businesses to adopt eco-friendly practices, reduce carbon footprints, and embrace renewable energy solutions. Sustainable operations not only mitigate environmental risks but also enhance operational

efficiency and cost savings in the long run. Further, from an economic perspective, sustainability strengthens business resilience and competitiveness. Companies that integrate Environmental, Social, and Governance (ESG) principles into their strategies tend to attract responsible investors, enjoy better access to capital, and build stronger brand reputations. Moreover, sustainable practices encourage innovation, improve risk management, and ensure long-term value creation. Again, social responsibility is another critical dimension of sustainability. Modern businesses are expected to contribute to inclusive growth by promoting employee welfare, ethical supply chains, gender equality, and community development. A socially responsible enterprise builds trust, improves stakeholder relationships, and enhances corporate credibility. In addition, regulatory frameworks worldwide, including mandatory CSR provisions and sustainability reporting norms, have further reinforced the need for responsible business conduct. Non-compliance can lead to legal penalties, reputational damage, and loss of investor confidence. Hence, sustainability is no longer optional but an integral part of corporate governance.

The above facts bring the point to the fore that, sustainable business is vital in the present era as it aligns profitability with purpose. It enables organizations to address global challenges, meet



stakeholder expectations, and ensure long-term survival in a competitive and conscious marketplace. Businesses that embrace sustainability today are better positioned to lead tomorrow's economy while contributing positively to society and the environment.

Corporate Governance: Past, Present and Future

Corporate Governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It plays a vital role in ensuring transparency, accountability, ethical conduct, and long-term sustainability of organizations. Anyhow, understanding this evolutionary developments are desirable for contextualizing contemporary reforms or initiatives.

In the early stages of corporate development, corporate governance was largely informal and promoter-driven. The focus was primarily on profit maximization with limited concern for transparency, minority shareholders, or social responsibility. Regulatory frameworks were minimal, and corporate decisions were often concentrated in the hands of a few individuals. Issues such as lack of disclosure, weak board oversight, and poor accountability were common, leading to corporate failures and financial scandals.

In the present era, corporate governance has evolved into a well-defined and regulated framework. Global corporate failures and financial crises have led to the introduction of stringent laws, codes, and best practices. In India, the Companies Act, 2013, SEBI (LODR) Regulations, and mandatory disclosures have strengthened governance

mechanisms. Independent directors, audit committees, secretarial audits, and enhanced stakeholder protection have become integral to corporate functioning. The current focus is on transparency, ethical leadership, risk management, and stakeholder value creation.

The future of corporate governance is expected to be shaped by digital transformation, artificial intelligence, ESG (Environmental, Social, and Governance) principles, and stakeholder capitalism. Governance models will increasingly emphasize sustainability, accountability, data-driven decision-making, and social impact. Technology-enabled compliance, real-time reporting, and integrated governance frameworks will become standard practices. The role of professionals such as Company Secretaries will expand further as strategic governance advisors ensuring ethical, legal, and sustainable business conduct. In this regard, corporate governance has evolved from a basic control mechanism to a comprehensive framework supporting ethical, transparent, and sustainable business operations. As businesses face complex global challenges, effective corporate governance will remain a cornerstone for trust, stability, and long-term success.

Understanding Corporate Social Responsibility (CSR) and its Relevance

Corporate Social Responsibility (CSR) refers to the ethical obligation of businesses to contribute to economic development while improving the quality of life of employees, local communities, and society at large. It represents a shift from the traditional profit-centric approach to a more inclusive and responsible model of business, where organizations

recognize their role as corporate citizens with social and environmental responsibilities. However, in India, CSR gained formal recognition with the enactment of the Companies Act, 2013, making it one of the first countries to mandate CSR spending through legislation. As per Section 135 of the Act, eligible companies are required to spend at least 2% of their average net profits of the preceding three years on approved CSR activities. This landmark provision has transformed CSR from a voluntary initiative into a strategic and accountable business function. Further, CSR activities under the Act primarily focus on key social development areas such as education and skill development, healthcare and sanitation, environmental sustainability, rural development, and women empowerment. Investment in education enhances employability and human capital, while healthcare initiatives improve public well-being and productivity. Environmental sustainability efforts help in combating climate change, conserving resources, and promoting green practices. Rural development and women empowerment contribute to inclusive growth by reducing regional and gender disparities.

The Corporate Social Responsibility (CSR) framework in India, institutionalized under the Companies Act, 2013, represents a landmark initiative mandating eligible companies to contribute toward social welfare and sustainable development. In the financial year 2023–24, 27,188 companies collectively spent Rs. 34,908.75 crore across 59,633 projects covering 40 States and UTs and 14 development sectors. Major focus areas include health and sanitation, rural development, Swachh Bharat, PMNRF, and environmental initiatives such as the Clean Ganga Fund. Maharashtra, Gujarat, and Karnataka emerged as leading recipients of CSR expenditure, while top contributors included major public and private sector enterprises. Notably, 86% of CSR spending was undertaken by non-PSU companies, demonstrating strong private sector participation. However, India's CSR regime reinforces public-private partnership, strengthens compliance culture, and significantly advances the nation's Sustainable Development Goals (SDGs).



Moreover, the relevance of CSR in the present business environment has increased significantly due to rising stakeholder expectations, regulatory

scrutiny, and global sustainability challenges. CSR enables companies to build strong relationships with stakeholders, enhance brand reputation, and improve long-term business sustainability. It also promotes ethical business conduct and strengthens corporate governance by ensuring transparency and accountability in social spending. Furthermore, CSR plays a vital role in aligning corporate strategies with national priorities and global commitments such as the Sustainable Development Goals (SDGs). By integrating CSR with core business objectives, organizations can contribute to poverty reduction, quality education, gender equality, environmental protection, and inclusive economic growth.

In the view of the above, Corporate Social Responsibility is no longer a philanthropic activity but a strategic necessity for modern businesses. It acts as a bridge between corporate growth and social welfare, ensuring that economic progress goes hand in hand with social and environmental development. Besides, effective implementation of CSR not only benefits society but also enhances corporate credibility, sustainability, and long-term value creation.

Table 1: Corporate Governance and CSR (an Integrated Approach)

Corporate Governance	Corporate Social Responsibility
Focuses on accountability and compliance	Focuses on social and environmental impact
Ensures ethical management	Ensures ethical contribution to society
Protects stakeholder interests	Enhances stakeholder engagement
Driven by laws and regulations	Driven by ethical commitment

Source: Author's Development

Policy Recommendations for Future-Ready Sustainable Business

Corporate Governance (CG) and Corporate Social Responsibility (CSR) play a decisive role in shaping sustainable business practices. Their combined influence extends beyond compliance and profitability, contributing significantly to long-term economic, social, and environmental sustainability. The following policy recommendations are designed to help governance professionals become future-ready towards sustainable business practices.

Strong corporate governance ensures transparency in decision-making, financial reporting, and disclosures. When combined with responsible CSR practices, it builds stakeholder trust and enhances organizational credibility. Transparent governance reduces the risk of fraud, mismanagement, and unethical practices.

Sustainable business focuses on long-term growth rather than short-term profits. Effective governance frameworks and well-planned CSR initiatives help organizations create enduring value by improving operational efficiency, risk management, and brand reputation.

CSR initiatives addressing education, healthcare, environmental protection, and social welfare improve relationships with stakeholders such as investors, employees, customers, and communities. Good governance ensures these initiatives are implemented responsibly, fostering stakeholder loyalty and confidence.

Corporate governance mechanisms help identify, assess, and mitigate financial, operational, and reputational risks. CSR further supports risk reduction by promoting ethical conduct, environmental responsibility, and social harmony. Together, they help organizations navigate regulatory and market uncertainties effectively.

Companies practicing strong governance and meaningful CSR gain a competitive edge. Responsible business conduct enhances brand value, attracts socially responsible investors, and improves customer perception in an increasingly sustainability-conscious market.

CSR initiatives aligned with national priorities and global SDGs enable businesses to contribute to inclusive growth, environmental conservation, and social development. Governance frameworks ensure these efforts are structured, monitored, and impactful.

By integrating governance and CSR into business strategy, organizations become more resilient to economic, social, and environmental challenges. This holistic approach prepares businesses for future regulatory changes and evolving stakeholder expectations.

Conclusion

The study clearly establishes that sustainable business has become an indispensable requirement in the contemporary corporate environment, driven by rising environmental concerns, stakeholder expectations, and evolving regulatory frameworks. Corporate Governance and Corporate Social Responsibility together form the foundation of sustainable and responsible business practices. While corporate governance ensures transparency, accountability, and ethical decision-making, CSR extends corporate responsibility beyond profit maximization to social welfare and environmental protection. The evolution of governance from a compliance-based approach to a strategic, value-driven framework reflects the growing emphasis on ESG principles and stakeholder inclusivity.

Moreover, the proactive role in ensuring compliance, guiding boards, strengthening disclosures, and integrating sustainability into corporate strategy has become crucial in this transformation. Effective alignment of governance, CSR, and sustainability not only enhances organizational resilience and credibility but also contributes to long-term value creation and inclusive growth. Therefore, businesses that embed sustainability into their core strategy are better positioned to achieve enduring success while contributing meaningfully to society and the environment. **SB**

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Attaining Manufacturing Excellence through ESG Compliance for developing economies: A Management Perspective

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Abstract

Earlier manufacturing excellence was cornerstone about cost, quality, schedule and operational efficiency in the developing economies like India, but with global competitions, increasing pressure from stakeholders, enforcement agencies and regulators and to sustain and achieve the organizational goals, most organizations are complying to the ESG principles. The Environmental, Social Governance mechanism is based on the Triple Bottom line approach that focuses majorly on the people, planet and profit for continuing the business operations. This conceptual article highlights on the ESG integration with manufacturing operation to enhance operational efficiency, resilience, stakeholder trust and workplace safety.

Introduction to Manufacturing excellence and its pillars

With increased industrialization and globalization, manufacturing organizations specially in the developing economies are under constant pressure from stakeholders, enforcement regulators and communities to opt for sustainable use of the resources and to tackle down the growing concerns related to environmental pollution, social inequalities and economic instabilities. Manufacturing excellence is a way forward to achieve the intended organizational goals of sustainability along the United Nations Sustainable Development Goals. Manufacturing excellence is a systematic and enterprise-wide approach to achieving world-class operational performance and extends beyond the traditional workplace methodologies to encompass leadership behavior, capability development, and a deep culture of continuous improvement through the proven methodologies of Lean principles, quality systems, digital tools, and people empowerment converge to unlock sustainable benefits. In today's complex and ever dynamic manufacturing sector, complying with regulatory requirements, ensuring the social securities and workplace safety and protecting the environment through green initiatives and waste reduction paves the way for integrating the Environmental Social Governance (ESG) principles with the traditional manufacturing operations.

Earlier manufacturing organizations focused only on the economic aspect of the business, and production efficiency, thus neglecting the social and environmental aspects but with growing global perspective and to sustain the organizational strategic goals, manufacturing excellence now a days are focusing on major four pillars-

Safety: Workplace safety is of paramount importance for any organization to sustain and creating apposite impact on society. Having positive safety culture inculcates a sense of motivation and employee engagement and workers are empowered to do safe practices which not only saves lives but also enhances productivity and product quality.

Quality: The second pillar is the product quality, which focusses mainly on the process and standard operating procedures because an organization cannot survive, without meeting customer expectations and producing consistent quality products and thus reduces waste generation, energy consumption, carbon footprints and economic losses from product recalls and compensation claims.

Yield: Maximizing the production efficiency is the primary aim of business maintaining safety and quality and thus focuses on waste reduction, rework on minimizing abnormalities and technological innovation for improving process capability and positively enriching energy savings.

Productivity: It refers to the ways of increasing product throughput and economic benefit for the organization without compromising the other three pillars, utilizing the available resources and achieving the organization strategic goals. A fully effective productivity system is maxing out production to the previously set company standards and continuing to set new goals for production.



Fig 1- Pillars of manufacturing excellence

Benefits of manufacturing excellence

As discussed in earlier section, organizations implementing the business excellence models often gains competitive advantage over the other organizations is a number of ways

- Continuous Improvement and Lean Thinking
- Operational Efficiency and Waste Elimination
- Built-in Quality and Defect Prevention
- Workplace safety
- People-Centric Operations
- Integrated Supply Chain Collaboration
- Social inclusiveness
- Better governance and regulatory compliances
- Economic incentives and green financing
- Technological innovations and sustainability

ESG and the manufacturing sector in India

With industrialization and globalization all around the world, developing economies like India are trying to keep pace with the developed economies in terms of environmental, social and governance mechanism for ease of doing business and to adopt successfully manufacturing excellence framework. Because of the stakeholder’s requirements, meeting the regulatory compliances and enhancing the economic benefits, most organizations specially in

developing economies are looking forward to adopt the ESG principles for attaining the manufacturing sustainability and to sustain in the global competition.

Environmental Social Governance-ESG as a subset of the 17 UNSDG’s that had its inception in “The Brundtland Commission”, established by the UN in 1983 where the term Sustainability emerged for first time for ethically using the natural resources by present generation without compromising the needs of the future generation.

With increasing urban development and population growth, the need for catering the daily requirement of the communities skyrocketed since last few decades thus putting pressure on the natural resources and its over exploitation and is the process damaging the ecosystem and natural habitat of various species, causing environmental pollution through release of Sox, Nox and other greenhouse gases, unattended waste disposal posing threat for land and water contamination, vehicular emissions and local incineration causing health hazards and causing irreversible environmental damages. In developing economies like India, though there is an increased literacy rate, still most small and medium sized organization are practicing unethical labor practices, indulging in forced or child labor, poor pay scales, gender or caste based inequalities, providing unhygienic and unsafe workplaces thus causing various forms of social inequalities. In most organization specially in small and medium sized companies lack of proper governance policies like POSH, Gender equality, ethical conduct, equal pay policies thus exploiting the workforce.

In order to attain the manufacturing excellence and to sustain the organizational strategic goals it is the need of the time to look into the loopholes and to comply with the basic ESG mechanisms. The SEBI enacted the BRSR guidelines for the top 250 organizations as per market capitalization, but in India the count of the manufacturing industries is far more and thus it is the responsibility of each organization to voluntarily adopt the ESG guidelines for achieving the UNSDG’s.

Key ESG Metrics & KPIs for manufacturing excellence

Environmental, Social, Governance (ESG) now days is not just about compliance only in today’s manufacturing environment but is a growth enhancer that supports businesses grow and prosper ensuring that the practices are sustainable and towards for a better future.

1. Key trends in manufacturing excellence

With globalization and industrialization at its zenith ESG metrics are ever evolving and dynamic. There



are some key trends that identify how the ESG principles are guiding the sustainable business practices and turns any weakness and threats into opportunities and competitive advantage.

Shift from reactive compliance towards proactive ESG strategy where most organizations are including the ESG indicators in their operations and practicing ethical principles.

Focus on reducing carbon footprint and energy usage where organizations are moving towards renewable energy sources and modern technologies, process optimization and green products and light weight components for reducing energy usages.

Implementing circular economy and reverse logistics where organization are focused on 4R's- reduce, reuse, repair and recycle thus changing from waste disposal ideology towards utilizing the waste in any form of raw material. Reverse logistics focus mainly on product stewardship where the producers are taking back the discarded components and reuse them thereby reducing landfill and environmental degradation.

Digital reporting and real time monitoring where utilizing modern technologies like IIOT, AI ML, blockchain, and data analytics organizations are well aware of the potential hazards, predicting machine breakdowns, enhancing workplace safety and complying with environmental standards through real time alerts.

Supply chain transparency and ethical sourcing where organizations are expecting that the other stakeholder and suppliers to follow the sustainable

and ethical practices in terms of labor welfare, workplace hygiene and safety, natural resource exploitation, etc.

Green financing and green initiatives where organizations are focusing and investing more on renewable energy projects, water saving projects and bio based products as raw materials in their supply chain and manufacturing process for attaining sustainability.

2. Key KPIs and ESG metrics for Manufacturing excellence

Manufacturing key performance indicators (KPIs) transforms the organization strategic sustainability commitments into trackable performance metrics which helps the organization in identifying gaps, meeting regulatory compliances and exhibiting continual improvement to the stakeholders, investors, regulators and customers. Some of the key manufacturing metrics and KPIs are discussed here-

Energy and water usage ratio (WUR/EUR) which measures the amount of resource like energy /water used for each unit of production and helps to manage costs, reducing environmental impact, and increasing operational efficiency. It also has a direct effect on carbon footprint and regulatory compliances.

Carbon emissions (Scope 1, 2, 3) which monitors direct emissions, emissions from energy purchased, and total emissions for the entire supply chain and is important for regulatory compliance and measuring progress against carbon neutrality, net-zero targets, and tracking total climate impact.

Waste recycling including Water Replenishment (WRR) and Plastic Recycle Rate (PRR) where organization focusses majorly on the water used in the process against water taken out of stream and means of treating waste water for reuse and aims to achieve ZLD (Zero liquid discharge). Same for plastics waste where the focus is on replenishing the plastics for reuse and reducing consumption of virgin plastics like using rPET bottles for beverages or pharma industry, using FRP pallets instead to wooden pallets, etc.

Production efficiency where operating units focus primarily on product throughput against the raw materials used and thus looks at quality checks, reducing rejections, assuring timely attending equipment breakdowns and achieving energy and raw material optimization.

Consumer Concern is of prime importance of manufacturing business as any nonconformity not only erodes customer trust but it may also lead to legal actions and penalties thus affecting production delays, business loss and maligning brand reputation.

Quality assurance and system certification focus on the product quality and ensures that the compliances of legal standards and other certification body are met and continued though annual audits and inspections.

Overall GMP Score- Good manufacturing practices though 5S and Lean principles focus on housekeeping, waste disposal, breakdown attention though CLTI, KAIZEN for improving efficiency through process optimization or process modification and supports for manufacturing sustainability.

LTIR/Incident rate- Workplace accidents, nearmiss cases and serious non compliances erodes stakeholders trust and pose threat to brand image and regulatory actions that need to be proactively acted upon to prevent any unforeseen accidents.

Safety leading indicators like safety training, inspection, safety audits, PPE compliances, work permits, etc. proactively looks into identifying potential hazards and enhances workplace hygiene and safety and thus ensuring social sustainability.

Corporate social responsibility focus specifically on social dimension of the business and how organization supports community engagements polices through employment opportunities, raising local community awareness, providing basic livelihood needs etc.

Employee grievances, rewards and recognition, equal job opportunity, POSH policies, anti-corruption and anti-bribery policies, whistle blower

policy, ethical labor practices, shift timings and other employee welfare focuses on the governance mechanism and thus focuses on social inclusiveness.

Supply chain sustainability where organizations focuses on clear requirements on labor standards, emissions, waste, human rights, ethics, and responsible sourcing for the supply chain partners and use pre-qualification screening using questionnaires and disclosures to filter suppliers before onboarding.



Fig 2- Venn diagram for ESG pillars

3. ESG assessments and frameworks for manufacturing excellence

Manufacturing organization need to assess the ESG practices that suits their business operation and thus need to follow some assessment and framework mechanisms like

Materiality assessments where organizations try to identify highly material risks, like emissions, waste, labor conditions or governance gaps, and implementing appropriate resourcing to tackle those risk and avoiding generic checklists.

Stakeholder engagement where organization engaging employees, suppliers, communities, regulators, and investors communicate about the strategic goals and expectations from them and supports by providing requisite infrastructure and technological resources.

Organization shall engage in independent ESG audits to verify regulatory compliance and disclosures, while exposing gaps in environmental performance, safety standards, human rights, and governance and take necessary corrective or preventive actions.

ESG benchmarking identifies and compares performance scores to industry standards or peers

where organizations align ESG goals with their business strategy, embedding targets like emissions, resource efficiency, safety, quality, and ethical sourcing in their operations.

Some well-known ESG frameworks common in the manufacturing industry that standardize reporting, strengthen a business's credibility, and align with investor expectations are-

Global Reporting Initiative (GRI) which provides standards for reporting on environmental, social and governance impacts and used by various multinational organizations to disclose emissions, waste, labor practices, and related supply chain impacts with global comparability.

Sustainability Accounting Standards Board (SASB) which provides industry-specific metrics for investors and focus on material issues such as energy usage, work hazards, product safety, and supply chain risks.

Task Force on Climate-related Financial Disclosures (TCFD) supports organizations on climate risks, transition plans, emissions and associated financial impacts and provides framework for climate risk resources while fulfilling global expected investor needs.

Environmental Management System (ISO 14001) an international certification which provides requirements for environmental management systems to establish methodologies for managing emissions, waste, compliance events, and environmental performance.

Safety Management System (ISO 45001) an international certification for managing health and safety at workplace across any organization.

Apart from the above major frameworks there are numerous other certification and accreditation which provides ESG and sustainability compliances for organizations.

4. Technological innovation for ESG integration with manufacturing excellence

As manufacturing excellence now days goes beyond productivity, quality, and cost competitiveness integrating technological innovations allows organization to embed sustainability, safety, transparency, and ethical governance in their core operations. Some major leaps are-

- Digital energy management system where IIOT and AI based sensors are tracking the real-time energy and water consumption along with exhaust and effluent monitoring to state pollution control board through online portal thus enhancing improved resource efficiency and reducing carbon footprint while complying regulatory norms.

- Digital Twins and Simulation provide virtual duplicates of machines and production lines for enhance training and trouble shooting and waste minimization.
- Advanced manufacturing like robotics, additive manufacturing, Nano composites and bio composites provides precision and light weight component for use enhancing energy saving and boosting green technologies thus minimizing environmental concerns.
- Smart wearables and AI based detection system and LMS portals allows organization to track worker's safety, identifying potential hazards and providing alerts on real time and allowing workers training for skill development and social benefits.
- Collaborative robots- Cobots and automated guided vehicles are used at high hazard areas for enhanced worker safety, ergonomics, and inclusiveness where AI based systems are performing the job but is human controlled.
- Blockchain for supply chain management ensures traceability of raw materials and supplies thus building trust with suppliers, vendors and business partners.
- Thus Industry 5.0 acts as a strategic enabler of ethical, human-centric, and resilient manufacturing systems for achieving organizational sustainability goals.

Challenges for manufacturing excellence

Most organizations operating in developing economies like India faces significant challenges for implementing the organizational strategies effectively because of certain factors of which some are briefly discussed here includes-

- Unclear organizational strategic vision and goals for sustainability.
- Lack of Leadership and management commitment towards ESG implementation.
- Low Employee Engagement and resistance to change for new technologies.
- Budgetary constraints for small and medium sized organization for ESG strategies.
- Lack of innovations and technology transfer from developed nations
- Lack of strict enforcement and regulatory mechanism, bribery and corruption.
- Lack of waste management system and community awareness.
- Lack of market demand and stakeholder's response.
- Lack of available ecofriendly and cost effective resources and technologies.

- Social inequalities and shortage of skilled manpower and quality education.

Future trends and implication of ESG in manufacturing excellence

With technological advancements and globalizations manufacturing sector specially in the developing economies, organizations will look forward for AI based ESG solutions for anticipating and predicting the future outcomes based on the pattern recognition and complex algorithms thus enhancing workplace safety, potential supply-chain risks and hazardous emissions. ESG integrated products will also accelerate as manufacturers design low-carbon materials and modular components for promoting green economy and also focus on circularity models for waste management and abetting environmental degradation. Cost effective IIOT and AI/ML based solution for energy management is forerunner and through complex automations organizations can tackle waste reduction, enhance product quality, improve efficiency and throughput and reduce consumer complaints.

Organizations, regulators, NGO's and policymakers shall work together for social inclusiveness, abolishing child or forced labor, providing equal opportunity, ensuring safe and hygienic workplace for all and support education and technology sharing with the community for social benefits. AI driven financial transactions supports organization for advanced decision making, preventing fraudulent activities and enhances cyber security.

Conclusion

To conclude integrating Environmental, Social, and Governance (ESG) principles into manufacturing operations marks an important shift from compliance-driven process to value-driven manufacturing excellence by embedding environmental stewardship, social responsibility, and robust governance into its core production systems and thus enhance operational efficiency, risk resilience, and long-term competitiveness. ESG compliance becomes more efficient once aligned with lean manufacturing, 5S and safety management, digitalization, and continual improvement and enables organizations to reduce resource intensity, improve workforce well-being and safety, strengthen ethical decision-making, and ensure regulatory and stakeholder trust—thereby creating shared value for businesses and society. **SB**

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How GIFT-IFSC is emerging as a preferred destination for BFSI GCCs in India



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Abstract

India's Global Capability Centres (GCCs) have evolved from cost-driven offshore units to strategic global enterprise hubs, driving innovation, leadership, and high-value functions. Rooted in historical institutional models like Shrenis, this transformation reflects India's strong talent base, policy support, and digital infrastructure. GIFT-IFSC emerges as a specialized financial hub, offering regulatory clarity, global connectivity, and advanced infrastructure for BFSI GCCs. Together, GCCs and GIFT-IFSC are pivotal in advancing India's vision of *Viksit Bharat @2047* by generating employment, fostering innovation, and positioning India as a global decision-making centre.

Introduction

For centuries, India has played the role of a global services delivery hub, serving markets far beyond its borders. India's economic resilience has grown from a diversified system of institutions spread across regions and sectors. These institutions shared responsibilities in governance, trade, finance, and knowledge. A strong example of this is the Shrenis, ancient merchant and craft guilds in Ancient India. They were independent, rule-based organisations that managed production, finance, risk-sharing, and long-distance trade. Although they operated autonomously, they functioned within a supportive framework provided by the state. This approach of decentralised execution with central strategic direction closely mirrors the modern Global Capability Centre (GCC) model. In today's global economy, GCCs act as distributed centres of expertise and control. While located away from corporate headquarters, they influence decisions and outcomes across the entire enterprise much like the Shrenis did in ancient India.

This continuity of institutional logic assumes renewed relevance as India advances towards the vision of *Viksit Bharat @2047*, aiming to become a developed nation with a projected 34.7 trillion economy, Global Capability Centers are emerging as a cornerstone of this transformation. Once viewed as cost-saving offshore units, GCCs are now strategic innovation powerhouses that serve as

"digital twins" of their global headquarters. At the heart of this evolution is the India's maiden International Financial Services Centre (IFSC) in Gujarat International Finance Tec-City (GIFT City). In this article, let's see how GIFT-IFSC is emerging as a preferred destination for BFSI GCCs in India.

The role of GCCs (often referred to as Global In-house Centres or GICs in the financial context) is pivotal in achieving India's employment targets, which is one of the critical pillars of *Viksit Bharat @2047*. India's GCC sector currently employs over 2.16 million professionals. Projections indicate that direct employment could rise to 4.5 million by 2030, with a total economic employment impact (including indirect and induced jobs) reaching approximately 20 to 25 million individuals.¹

Today, India is producing approximately over 2.1 to 2.5 million STEM graduates annually. This ensures a continuous pipeline for high-value roles in AI, machine learning, and data science, which are essential for the "agentic enterprise" models of the future. India is no longer just executing tasks; it is becoming a global leadership hub. By 2030, it is projected that 20,000 to 30,000 global leadership roles will be based out of India based GCCs as they transition from "doers" to "thinkers" and "influencers".²

¹"How India is gearing up for a US\$110b GCC industry by 2030", EY
²Zinnov 5-Year GCC Landscape Report (2025)

Evolution of GCCs in India

The evolution of GCCs in India is generally categorized into four distinct phases:

i. The Foundational Phase (1990s – 2005): Captives and Cost Arbitrage

Initially established as "captives," these centres were primarily offshore units focused on leveraging India's cost advantages and large talent pool. Their primary mandate was the efficient execution of transactional tasks, such as accounting, payroll, and basic IT support. During this period, these captive centres operated in silos with limited integration into the parent company's core business strategy.

ii. The Expansion Phase (2005 – 2015): Multi-Functional Centre

As confidence in Indian delivery capabilities grew, GCCs expanded beyond IT to manage complex cross-functional operations,

including finance, HR, and procurement. This phase marked the transition from single-capability units to multi-capability hubs focused on process standardization and delivering excellence rather than just cost savings.

iii. The Innovation Phase (2015 – 2022): GCC as Strategic Hubs

The period post-2015 saw these centres become integral to global research and development (R&D) and digital transformation. They transitioned from "solution enablers" to "solution owners," spearheading initiatives in AI, machine learning, and cloud engineering. High-value roles like product managers and architects became common, and centres began taking ownership of intellectual property (IP). For example, the Indian R&D centre for a German software firm now produces nearly 40% of its total R&D output and one-quarter of its annual patents.

iv. The Transformation Phase (2022 onwards): GCCs as Global Enterprise Hubs

Today, the ecosystem has entered the next phase, where the GCC is effectively viewed as the enterprise itself. These centres function as "digital twins" or "extended headquarters," hosting global leadership roles and managing end-to-end business functions.

India at the Centre of Global GCC Expansion

The expansion of Fortune Global 500 Global Capability Centres in India is led overwhelmingly by the Banking, Financial Services, and Insurance (BFSI) sector, which accounts for approximately 22 per cent of these GCCs. This is followed by Retail

and Consumer Packaged Goods (CPG) at 14 per cent and Healthcare and Life Sciences at 13 per cent. The Automotive sector represents around 11 per cent of GCCs, with US-headquartered firms accounting for nearly half of all automotive GCCs operating in India, while technology-focused GCCs constitute approximately 7 per cent of the overall footprint.³ This sectoral distribution underscores India's growing role as a preferred destination for complex, high-value enterprise functions across industries.

Beyond these core sectors, Engineering and Research & Development (ER&D) has emerged as the fastest-growing segment within the GCC ecosystem, recording a compound annual growth rate of around 13 per cent over the past three years. Nearly 90 per cent of GCCs in India now incorporate an ER&D component within their service portfolios, reflecting a clear shift towards innovation-led mandates. Furthermore, close to 67 per cent of newly established GCCs are focused on advanced domains such as artificial intelligence and machine learning, automation, and engineering R&D, highlighting India's transition from execution-oriented centres to innovation and product ownership hubs.⁴

This sectoral breadth and increasing sophistication are underpinned by a unique convergence of structural advantages. India's emergence as the world's leading GCC hub is driven by the availability of a large and future-ready talent pool, a favourable macroeconomic and cost environment, proactive and coordinated government policy support, and a rapidly maturing innovation ecosystem. The other significant factors which drive GCC ecosystem in India includes:

- i. The primary catalyst for India's dominance is its vast, future-ready talent pool, which currently employs over 2.16 million professionals. India produces over 2.1 to 2.5 million STEM graduates annually, representing approximately 31% of global output. India ranks first globally in relative AI skill penetration and boasts the world's second-largest IT talent pool, with over 5.8 million tech professionals. With a median age of ~28, India offers a young, culturally curious, and digitally native workforce that provides fresh perspectives and future-ready skills.⁵
- ii. India continues to offer a significant cost advantage that remains a fundamental driver for MNCs. Operating a GCC in India typically results in 40–70% cost savings compared to developed markets. Commercial rentals in major Indian cities are nearly 60% lower than those in Eastern European hubs and 70–75% cheaper than in cities like Singapore, Tokyo, or Hong Kong. To further optimize costs, GCCs are adopting a "Hub Plus One" strategy, expanding into Tier-2

³ Fortune Global 500 GCCs in India Landscape Report 2025

⁴ Fortune Global 500 GCCs in India Landscape Report 2025

⁵ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs

and Tier-3 cities, where operational expenses lower than in Tier-1 metros.⁶

- iii. The Government of India has transformed itself into a key enabler through multi-tiered policy interventions. Flagship programs like Digital India, Skill India, and the IndiaAI mission have strengthened digital infrastructure and promoted digital literacy. The Central Government allows 100% Foreign Direct Investment via automatic route in sectors like IT and R&D.
- iv. India's physical and digital infrastructure has matured to support high-performance global operations. Platforms like Aadhaar, UPI, and the National Broadband Mission enable secure, real-time digital interactions at scale. Rapid 5G rollout in 99% of districts and the presence of over 250 live data centers support low-latency, cloud-native development. GCCs now occupy more than one-third of India's Grade A commercial office stock, reflecting long-term confidence in the quality of the infrastructure.⁷
- v. The GCCs have evolved from "captives" into "Global Enterprise Hubs" or "Digital Twins" of their headquarters. India's status as the third-largest startup ecosystem (over 119 unicorns) allows GCCs to co-create solutions and leverage the "disruptive energy" of local ventures. Over 200 Indian GCCs now host dedicated AI Centre of Excellence leading enterprise-scale adoption of emerging technologies.⁸

Beyond these, the Union Budget 2025 recently introduced a National Framework for GCCs, specifically designed to facilitate the growth of these centres in Tier-2 and Tier-3 cities by enhancing infrastructure and streamlining regulatory approvals.

From Cost Arbitrage to Capability Alignment: GCC Location Criteria

The decision to establish a GCC is typically based on a comprehensive evaluation of multiple factors, including the overall business environment, cost efficiency, infrastructure readiness, availability and quality of human resources, and the broader social ecosystem.

Other key considerations include ease of doing business, regulatory certainty, stability of operations, cost elements such as office rentals, utilities, employee compensation and inflation trends, as well as resilience indicators like disaster risk and operational continuity. Equally important are infrastructure parameters such as telecom penetration, transport connectivity, international air access, urban mobility, and quality-of-life indicators. From a talent perspective, organisations assess the size and depth of the workforce, academic output,

skill levels, attrition trends, and the presence of innovation and incubation ecosystems that support long-term capability building.

From Metros to New Frontiers: India's Tier-2 and Tier-3 Cities as GCC Growth Engines

Global Capability Centres are increasingly establishing operations in Tier-2 and Tier-3. Primarily to counter rising operational costs and talent saturation in major Tier-1 metros, these emerging hubs, such as Jaipur, Coimbatore, Nagpur, Bhubaneswar, and Vadodara, offer a compelling cost advantage, with overall operational expenses up to 40% lower and commercial real estate rentals nearly 50% lower than in established metros. Furthermore, the cost of living in these cities is estimated to be 25-35% lower, which enhances employee affordability and organizational productivity.⁹

Beyond financial incentives, the shift is driven by the various factors. Over 60% of India's graduate now emerge from non-metro locations. While many traditionally migrated to Tier-1 cities, GCCs are now moving closer to these sources to capture a large, digitally fluent workforce that is often skilled in emerging domains. One of the most significant advantages of Tier-2 cities is lower attrition. Employees in these regions often demonstrate stronger loyalty and higher satisfaction due to proximity to their hometowns, shorter commutes, and a better overall work-life balance. Many mature GCCs are adopting a model where their primary operations remain in a metro hub while they establish "spokes" in emerging cities to tap into specialized talent pools and cost-efficient ecosystems for scaling.

State Governments are actively attracting GCCs through dedicated policies, such as Karnataka's "Beyond Bengaluru" initiative, which offers rental subsidies, skilling reimbursements, and innovation lab funding. Other states like Uttar Pradesh and Gujarat provide similar incentives, including stamp duty exemptions and payroll subsidies.

From Emerging Cities to Specialised Financial Hubs: How GIFT IFSC Completes India's GCC Strategy

While Tier-2 and Tier-3 cities are reshaping India's GCC geography by offering cost efficiency, talent proximity, and scalable operating models, the requirements of financial sector GCCs are materially more complex. Beyond cost and talent considerations, BFSI GCCs demand regulatory

⁶ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs

⁷ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs

⁸ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs

⁹ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs



Image Source: <https://candourlegal.com/gift-city-a-legal-perspective/>

certainty, global currency operations, specialised supervision, and an ecosystem capable of supporting high-value financial decision-making. Against these elevated benchmarks, GIFT IFSC presents a strong and differentiated value proposition as India's dedicated hub for financial sector GCCs.

GIFT City in Gandhinagar, Gujarat is India's first operational smart city and home to the country's maiden IFSC, conceived as a strategic gateway for global capital and international financial services. Developed as an integrated multi-service Special Economic Zone (SEZ) housing the IFSC alongside a Domestic Tariff Area (DTA), GIFT City spans an initial land area of 886 acres and is planned as a compact, high-density vertical city to optimise land use and enable sustainable urban development. With a planned built-up area of approximately 62 million square feet encompassing commercial, residential, and social infrastructure.

At the core of GIFT City's value proposition for Global Capability Centres is its city scale infrastructure, developed for the first time in India to support uninterrupted, high value financial and technology operations. The city operates fully integrated utility systems covering water sourcing, treatment and recycling, sewage, solid waste management, power, drainage, and telecom networks, anchored by the Underground Utility Tunnel that houses all major utilities and enables a "digging-free city."

This physical backbone is complemented by a centralised District Cooling Plant, an Automated Waste Collection System, dedicated power substations, fire and emergency services, and a Unified City Command and Control Centre providing real-time monitoring, surveillance, and incident management. In parallel, GIFT City offers a well-developed social, residential, and connectivity

ecosystem, including metro and bus connectivity to Ahmedabad and Gandhinagar.

Further, marquee hospitality facilities including hotels such as the Radisson GIFT City Club and Grand Mercure, educational facilities like Jamnabai Narsee School, International Branch Campuses of Deakin University, University of Wollongong, Coventry University, Queen's University, and University of Surrey offers world-class education for Indian students. Further, GIFT City Club offers sports and wellness facilities, over 40 organised food and retail outlets, Central Park with jogging and cycling tracks and event lawns, are major attractive for young talents. With over 1,000 residential units already operational and more than 7,000 under development, the city provides adequate living space to support a growing GCC workforce while delivering international standards of working and living. Upcoming state of the art facilities, such as Hyatt Hotel, Lilavati Hospital and riverfront development will enhance standard of living in GIFT City.

GIFT City's attractiveness for Global Capability Centres (GCCs) is further reinforced by its access to a deep, diverse, and continuously replenished talent ecosystem. It is strategically located within a strong knowledge corridor anchored by premier institutions such as IIT Gandhinagar, Gujarat National Law University, Pandit Deendhayal Energy University, Indian Institute of Foreign Trade, GIFT International FinTech Institute, Gujarat Biotechnology University, School of Ultimate Leadership and Foreign Universities campuses. In addition, the wider Ahmedabad-Gandhinagar region contributes a steady stream of graduates from nationally reputed institutions including the Indian Institute of Management Ahmedabad, National Institute of Design, CEPT University, Nirma University, Karnavati University for Design, and DAICT.

This robust academic ecosystem supplies GCC-relevant talent across management, finance, law, design, engineering, data science, and advanced digital domains. With over 100,000 engineering graduates produced annually, a sizeable IT/ITeS workforce, and a rapidly expanding pool of AI and analytics professionals, Gujarat offers GCCs a scalable and future-ready talent base. Further, the state's proximity to talent-rich regions such as Maharashtra and Rajasthan enhances workforce mobility, enabling GCCs at GIFT City to efficiently meet evolving global requirements across BFSI, technology, and analytics domains with confidence.

Conceived as a greenfield smart city, it offers world-class physical and digital infrastructure, closely connected with robust rail, road, and air connectivity, and a well-planned urban environment that enhances operational efficiency and workforce retention. This is reinforced by regulatory clarity and fiscal competitiveness, including a 20-years of tax holiday and complementary capital and operational incentives under Gujarat's GCC policy. The proposition is further strengthened by India's large and continuously replenished talent pool, a strong higher education base, and the inherent cost advantage arising from foreign currency revenues combined with domestic cost structures.

These structural advantages have translated into tangible ecosystem outcomes, positioning Global In-House Centres (GICs) as a foundational pillar of GIFT IFSC's growth strategy. Today, GIFT IFSC hosts a growing number of GICs spanning banking and capital markets, and provides a range of specialised services, including risk management, financial operations, technology, and data analytics, collectively emerging as a significant source of high-quality employment. The ecosystem currently engages around 2,500 professionals. The leading GICs present in GIFT-IFSC are Bank of America, State Street, DWM Solutions and Abans Global Limited.

Underpinning this growth is a dedicated and coherent regulatory architecture. The revamped IFSCA (Global In-House Centres) Regulations, 2025 provide a clear and enabling framework to operationalise GICs as a recognised financial service, offering regulatory certainty, defined eligibility and permissible activities, and a principles-based supervisory approach. This regulatory foundation, combined with fiscal incentives and infrastructure readiness, creates a stable and scalable environment for financial sector GCCs to operate as long-term strategic extensions of their global enterprises.

Several factors explain below as to how GIFT-IFSC is uniquely positioned to become the BFSI GCC capital of India from regulatory perspective:

1. GIFT-IFSC offers a "light-touch" regulatory framework governed by the unified regulatory authority i.e IFSCA. These regulations are specifically designed to bring back India-centric financial transactions that are currently carried out in offshore financial centres like Singapore or London. These regulations provide for operationalizing Global In-House Centres (GICs) as a recognized financial service. It superseded the previous IFSCA(GIC) Regulations, 2020 to provide a more robust structure.
2. Eligibility: An entity must exclusively belong to a Financial Institution Group to apply as a "GIC Unit". This includes groups involved in banking, NBFC, insurance, investment banking, brokerage, and other similar financial activities.
3. Permissible Services: GIC Units must provide services related to financial products and financial services to their group entities of its financial institution group.
4. The revamped IFSCA(GIC) Regulations, 2025 aligned with the global best practices and enables GCCs to operate under various models to cater to their parent organization's strategic needs, ranging from total ownership to collaborative partnerships. These models, such as Captive, Build-Operate-Transfer (BOT), Joint Venture (JV), and Hybrid are explicitly recognized as permissible operating models under the IFSCA (Global In-House Centres) Regulations, 2025.
 - i. **Captive Centre Model**
The Captive model, often structured as a Wholly-Owned Subsidiary (WOS) or Branch of Parent Company, is the most common and preferred choice for global enterprises. The parent company maintains 100% ownership and exercise complete control over operations, strategic alignment, decision-making, and Intellectual Property (IP). It functions as an integrated strategic platform, serving as an extension of the global headquarters to build differentiating business capabilities.
 - ii. **Shared Services Centre Model(SSC)**
In order to provide uniformed services to all units of its Group, the parent company set ups GIC under SSC model.
 - iii. **Build-Operate-Transfer (BOT)**
The BOT model acts as a balanced pathway for companies to enter the Indian market while mitigating initial risks. A third-party service provider is engaged to build and operate the offshore unit for a specified period. After the agreed-upon duration, the entire operation, including infrastructure and personnel is transferred to the Group entity of Parent Company. It allows organizations to leverage local expertise and seasoned operators, reduces initial capital expenditure, and provides

a "turnkey" solution before taking full control.

iv. Joint Venture (JV)

A Joint Venture involves a collaborative arrangement between two or more entities. It is defined by relationships under accounting standards (such as Ind-AS 28/AS 27) where entities come together for mutual benefit. It is a recognized relationship for "Financial Institution Groups" to establish units within specialized zones like GIFT City.

v. Hybrid Models

The Hybrid model is a strategic approach that combines the strengths of in-house operations with third-party intervention to optimize efficiency and innovation. The GCC maintains a core captive centre but outsources low-value, non-core, or routine tasks to third-party partners. In some cases, the GCC hires specialized manpower resources through a third party to leverage niche domain expertise without adding the individual to the permanent payroll.

5. Operational Requirements:

Business must be conducted in Specified Foreign Currencies, and the unit must maintain its balance sheet in such currencies, preferably USD. Units are required to appoint or designate a Principal Officer (for overall activities) and a Compliance Officer (for regulatory adherence), both of whom must be full-time employees based out of IFSC Unit. Services are primarily for non-resident entities within the group, although a GIC may provide up to 10% of its total revenue in services to its group entities in India. The IFSCA acts as a single point of contact, streamlining approvals through its Single Window IT System (SWIT).

GIFT City is not merely an office cluster but a purpose-built ecosystem. It features state-of-the-art digital infrastructure, International Branch Campuses of Foreign Universities, data centres, and partnerships with institutions to ensure a specialized workforce. This synergy allows BFSI GCCs to operate as Global Centre of Excellence (CoEs), driving cross-border innovation while maintaining high compliance standards.

Reinforcing this ecosystem at the State level, Gujarat's GCC Policy (2025–30) complements the regulatory initiatives undertaken by IFSCA by creating a strong fiscal and institutional support framework for GCC expansion. The policy aims to position Gujarat as a premier global destination for high value GCC investments, It sets out clear targets to attract at least 250 new GCC units, generate over 50,000 high-skilled jobs, and mobilise investments of INR 10,000 crore by 2030. To achieve these

objectives, the policy offers a comprehensive incentive package through a dual CAPEX and OPEX support model, including reimbursement of up to 20 per cent of construction costs (subject to a ceiling of INR 200 crore) and 15 per cent of annual operating expenses (up to INR 50 crore). These are supplemented by targeted measures such as one-time employment generation incentives of up to INR 60,000 per female employee, interest subsidies, and a 100 per cent exemption from electricity duty for five years. The policy also emphasises decentralised growth by extending dedicated financial support for skilling local talent beyond the established hubs of Ahmedabad and Vadodara, thereby strengthening the overall GCC ecosystem anchored around GIFT City

Conclusion

GIFT-IFSC is a key platform that connects India's talent, innovation, and financial potential with the world. **The Hon'ble Prime Minister Shri Narendra Modi first envisioned GIFT City in 2007 to create a world-class business environment in India. As he said, "GIFT City connects India with global opportunities and global investors with Indian opportunities. If you connect with GIFT City, you connect with the world."**

GIFT-IFSC is central to India's goal of **Viksit Bharat @2047**. It helps India move from providing back-office services to hosting the high-value financial and digital operations of global companies. With its modern rules, regulations, and tax framework, GIFT-IFSC makes India a safe and attractive place for global businesses while building a strong, future-ready economy.

Global Capability Centres (GCCs) within India are transforming into **Global Enterprise Hubs**, creating millions of quality jobs and turning India's demographic advantage into global leadership. By 2030, these centres could provide 20–25 million jobs¹⁰[National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs], giving citizens opportunities to "earn well and live well."

BFSI Global Capability Centres in GIFT-IFSC are helping India become a hub for high-value financial decision-making, not just financial support services. **As the Hon'ble Prime Minister has said, "India's rise as the GCC capital is no coincidence but the result of a carefully planned strategy."** GIFT-IFSC is a key part of this strategy strengthening jobs, innovation, global competitiveness, and India's journey toward becoming a developed nation by 2047. **SB**

¹⁰ National Framework on GCCs – Unlocking Potential as the Preferred Destination for GCCs



VK Webinar Series of the Sustainability Standards Board

54th Webinar

Independent Women Director & Sustainability

Friday | March 27, 2026 | 4pm- 5:15pm



CMA Dibbendu Roy



CMA Pradnya Chandorkar



CMA (Dr.) Aditi Dasgupta

The Sustainability Standards Board (SSB), ICAI organized the 54th edition of the *Vasudhaiva Kutumbakam* Series on March 27, 2026, from 4:00 p.m. to 5:15 p.m., on the theme “Independent Women Director and Sustainability.” The distinguished speaker for the session was CMA Pradnya Chandorkar, Practising Cost Accountant. The session commenced with the opening remarks by CMA (Dr.) Aditi Dasgupta, Joint Director, ICAI, who introduced the theme and the speaker, setting the context for the deliberations.

The speaker delivered the presentation focusing on the role of women as Independent Directors in boardrooms, particularly in advancing sustainability and governance practices. She elaborated on the relevance of the ICAI ISS 1 and ISS 2 Standards and highlighted their significance in strengthening ESG compliance frameworks. She emphasized that the presence of women on boards contributes to improved governance standards and enhanced ESG performance. However, she also noted that the representation of women directors in boardrooms remains below the global average, underscoring the need for greater gender diversity. She articulated that women directors play a crucial role as torchbearers of ethical governance, bringing a strong sense of accountability and an inherent ability to ask pertinent questions that uphold integrity in decision-making processes. The speaker further explored the integration of sustainability into boardroom strategies, including key considerations such as carbon costs, supply chain risks, and resource efficiency. She discussed the application of advanced tools such as Artificial Intelligence and Business Intelligence dashboards in enabling data-driven decision-making at the board level. Highlighting the evolving paradigm from governance to value creation, she explained how sustainability is no longer merely a compliance requirement but a strategic driver of long-term profitability and organizational resilience. She also touched upon scenario modelling, target setting, and the integration of sustainability into financial architecture as essential components of modern corporate strategy. An interactive polling session was conducted during the webinar to capture participants’ perspectives and enhance engagement. The speaker concluded by emphasizing that women directors act as catalysts for sustainable transformation, driving meaningful change in boardroom dynamics and decision-making.

The session witnessed question-and-answer segment, wherein participants gained valuable insights from the speaker’s responses. The webinar concluded with a vote of thanks delivered by CMA Dibbendu Roy, Additional Director and Secretary of the Sustainability Standards Board, ICAI.



VK Webinar Series of the Sustainability Standards Board

55th Webinar

Anomalies in BRSR Reporting

Friday | April 10, 2026 | 4pm- 5:15pm



Shri Kamal Garg



CMA Dibbendu Roy

The Sustainability Standards Board (SSB), ICAI organized the 55th edition of the *Vasudhaiva Kutumbakam* Series on April 10, 2026, from 4:00 p.m. to 5:15 p.m., on the theme “Anomalies in BRSR Reporting.” The distinguished speaker for the session was Shri Kamal Garg, Practising Chartered Accountant. The session commenced with the introduction of the speaker.

The speaker delivered an insightful and comprehensive presentation on the evolution of BRSR reporting and its applicability under the Companies Act for the financial year 2025–26. He highlighted several material misstatements commonly observed in BRSR submissions by Companies, including incorrect units of measurement, factual inaccuracies, inconsistencies in reported data, and lack of reconciliation between BRSR disclosures and financial statements such as the balance sheet. Through relevant case studies, he illustrated instances where companies have misinterpreted reporting requirements, particularly in the classification and presentation of expenses. He also elaborated on the glide path for implementation of BRSR Core and its extension to value chain partners, emphasizing the phased approach towards enhanced disclosures. Further, he discussed the evolving framework for assessment and assurance of BRSR reporting, underlining its growing importance in ensuring reliability and credibility. The session included an in-depth analysis of the nine principles of the National Guidelines on Responsible Business Conduct (NGRBC), namely: integrity, transparency and accountability; employee well-being; stakeholder engagement; human rights; environmental responsibility; public policy advocacy; inclusive growth; and consumer engagement. Each principle was explained with practical case studies, highlighting key reporting requirements alongside common anomalies observed in practice. The speaker effectively demonstrated how gaps between regulatory expectations and actual disclosures can arise, providing valuable insights into improving the quality and accuracy of BRSR reporting.

The session witnessed an engaging question-and-answer segment, wherein participants gained valuable insights from the speaker’s responses. The webinar concluded with a vote of thanks offered by CMA Dibbendu Roy, Additional Director and Secretary of the Sustainability Standards Board, ICAI.



VK Webinar Series of the Sustainability Standards Board

56th Webinar

Achieving Sustainability through Carbon Management

Friday | April 24, 2026 | 4pm- 5:15pm



CMA Dibbendu Roy



CMA Arunabha Saha



Dr. Manoj Kumar Jhariya



CMA (Dr.) Aditi Dasgupta

The Sustainability Standards Board (SSB), ICAI organized the 56th edition of the *Vasudhaiva Kutumbakam* Series on April 24, 2026, from 4:00 p.m. to 5:15 p.m., on the theme “Achieving Sustainability through Carbon Management”. The distinguished speaker for the session was Dr. Manoj Kumar Jhariya, Assistant Professor and HoD Department of Farm Forestry,

Sant Gahira Guru Vishwavidyalaya. CMA Arunabha Saha, Coordinator rendered the opening remarks and set the pretext of the event. Thereafter, CMA (Dr.) Aditi Dasgupta, Joint Director, ICAI introduced the speaker and provided the topic and provided a ring side about the topic. The session commenced with the introduction of the speaker.

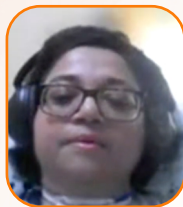
The speaker commenced his presentation by outlining the key objectives and presenting compelling statistics on the growing challenge of global food scarcity, with climate change identified as a critical driving factor. He emphasized that land degradation remains a significant concern, affecting nearly one-third of the world’s population. He elaborated on essential mitigation measures, highlighting the importance of scientific soil management, promotion of agroforestry, and adoption of environmentally sustainable cultivation practices. Drawing attention to the broader environmental context, he noted with concern that India ranks third in greenhouse gas (GHG) emissions, largely driven by increasing human demands, thereby posing a serious challenge to the overarching goals of sustainability. The speaker underscored the urgent need for effective implementation of sustainability initiatives to achieve meaningful outcomes. He further explained that carbon emissions can be substantially reduced through scientifically informed approaches, including climate adaptation and mitigation strategies. In addition, he presented a range of nature-based solutions to combat climate change, such as enhancing forest cover, restoring coastal wetlands, and promoting regenerative agricultural practices to improve biodiversity. The benefits of agroforestry were also comprehensively discussed, followed by a region-wise economic analysis of selected agroforestry models prevalent across India.

The session witnessed an engaging question-and-answer segment, wherein participants gained valuable insights from the speaker’s responses. The webinar concluded with a vote of thanks rendered by CMA (Dr.) Aditi Dasgupta, Joint Director.

6th *Parinayati* Webinar

ESG and Sustainability Reporting in Nigeria

Thursday | April 23, 2026 | 4pm- 5:30pm



CMA (Dr.) Aditi Dasgupta



CMA Arunabha Saha



Dr. Ranjith Krishnan



CMA Dibbendu Roy

The Sustainability Standards Board (SSB) of Institute of Cost Accountants of India, in association with the International Affairs Committee, successfully organized the 6th edition of the *Parinayati* Webinar Series on April 23, 2026, from 4:00 p.m. to 5:30 p.m. The webinar theme was “ESG and Sustainability Reporting in Nigeria.” The session commenced with opening remarks by Dr. Ranjith Krishnan, Sustainability Consultant and Member of the SSB. He eloquently outlined the objectives of the *Parinayati* series and articulated the rationale behind selecting Nigeria as the focus country, emphasizing its growing relevance in global sustainability practices. CMA Arunabha Saha, a Practising Cost Accountant with professional experience in Nigeria, initiated the technical discourse. Drawing from his firsthand exposure, he presented a nuanced perspective on the country, highlighting the paradox often associated with Nigeria—where perceptions of crime and law-and-order challenges coexist with immense natural wealth. He underscored Nigeria’s vast reserves of oil, power resources, and other natural assets, while also examining the nation’s progress in achieving the United Nations Sustainable Development Goals. He emphasized that despite existing challenges, Nigeria possesses significant untapped potential that can be realized through robust governance, strategic vision, and effective leadership.

The technical deliberation was delivered by CMA (Dr.) Aditi Dasgupta, Joint Director, ICAI, who presented an analysis on the ESG imperative in emerging economies. She examined the environmental challenges and governance-related issues shaping Nigeria’s economic trajectory, while also discussing the country’s regulatory framework, social pillars, and evolving ESG architecture. She provided a comprehensive comparative analysis between India’s Business Responsibility and Sustainability Reporting framework and Nigeria’s current sustainability reporting practices, juxtaposed against an ideal ESG model. She identified critical gaps, including inadequate integration of ESG principles into governance structures, absence of independent verification mechanisms, and limited maturity in sustainability disclosures. Further, she presented a structured gap analysis, outlining five strategic intervention areas, particularly emphasizing deficiencies in reporting practices, absence of climate transition strategies, lack of outcome-based social initiatives and insufficient data assurance mechanisms. She also highlighted the evolving role of Cost and Management Accountants (CMAs) in addressing these gaps and their strategic positioning in driving ESG transformation. Concluding her address she articulated a forward-looking roadmap, advocating for enhanced technology integration, strengthened global alignment, and the formulation of both short-term and long-term sustainability goals. She emphasized that Nigeria’s ESG maturity can be significantly accelerated through the induction of professionals with cross-border expertise and the implementation of structured disclosure policies by the government. Such measures, she noted, would bring clarity, purpose, and momentum to the country’s sustainability transition, ultimately enabling strategic value creation.

The session concluded with a question-and-answer segment, followed by a vote of thanks offered by Dibbendu Roy, Additional Director and Secretary of the Sustainability Standards Board, ICAI.

Forthcoming VASUDHAIVA KUTUMBAKAM Series

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57th
V.K. Webinar Series of the Sustainability Standards Board

CAPITAL MARKET AND SUSTAINABILITY IN KENYA

Organised by
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Resource Person

Mr. Edwin Ongera
Manager- Issuer Governance
Capital Markets Authority, Kenya

CMA TCA Srinivasa Prasad
President, ICMAI

CMA Neeraj D. Joshi
Vice President, ICMAI

CMA (Dr.) Ashish P. Thatte
Chairman, SSB, ICMAI

CMA Arunabha Saha
Coordinator

Behind every successful business decision, there is always a **CMA**.

CPE Credit: 1 Hour
For queries, email to ssb@icmai.in

4 PM - 5:15 PM
Friday | May 8, 2026

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58th
V.K. Webinar Series of the Sustainability Standards Board

CARBON ACCOUNTING - ROLE OF CMA

Organised by
SUSTAINABILITY STANDARDS BOARD

Resource Person

CMA Rakesh S. Ravisankar
Faculty Member, Department of Commerce
Dwaraka Doss Goverdhan Doss Vaishnav College
Chennai

CMA TCA Srinivasa Prasad
President, ICMAI

CMA Neeraj D. Joshi
Vice President, ICMAI

CMA (Dr.) Ashish P. Thatte
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CMA Arunabha Saha
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59th
V.K. Webinar Series of the Sustainability Standards Board

CARBON FOOTPRINTS - GLOBAL, ECONOMIC & SOCIAL IMPACT

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SUSTAINABILITY STANDARDS BOARD

Resource Person

Dr. Ayushi Modi
Environmental Economist & Sustainability Consultant

CMA TCA Srinivasa Prasad
President, ICMAI

CMA Neeraj D. Joshi
Vice President, ICMAI

CMA (Dr.) Ashish P. Thatte
Chairman, SSB, ICMAI

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FORTHCOMING WEBINARS

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60th
VASUDHAIVA KUTUMBAKAM
60th Webinar Series of the Sustainability Standards Board

CIRCULAR ECONOMY

- FROM GRASS ROOTS TO HILL TOPS

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SUSTAINABILITY STANDARDS BOARD

Resource Person

Dr. Kunal Mandwale
Deputy Chief Accounts & Finance Officer
Pune Municipal Corporation

CMA TCA Srinivasa Prasad
President, ICMAI

CMA Neeraj D. Joshi
Vice President, ICMAI

CMA (Dr.) Ashish P. Thatte
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CMA

61st
VASUDHAIVA KUTUMBAKAM
61st Webinar Series of the Sustainability Standards Board

SOCIAL STOCK EXCHANGE

- IMPACT REPORTING

Organised by
SUSTAINABILITY STANDARDS BOARD

Resource Person

Ms. Harsha Ramnani
Chartered Accountant

CMA TCA Srinivasa Prasad
President, ICMAI

CMA Neeraj D. Joshi
Vice President, ICMAI

CMA (Dr.) Ashish P. Thatte
Chairman, SSB, ICMAI

CMA Arunabha Saha
Coordinator

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Friday | July 10, 2026

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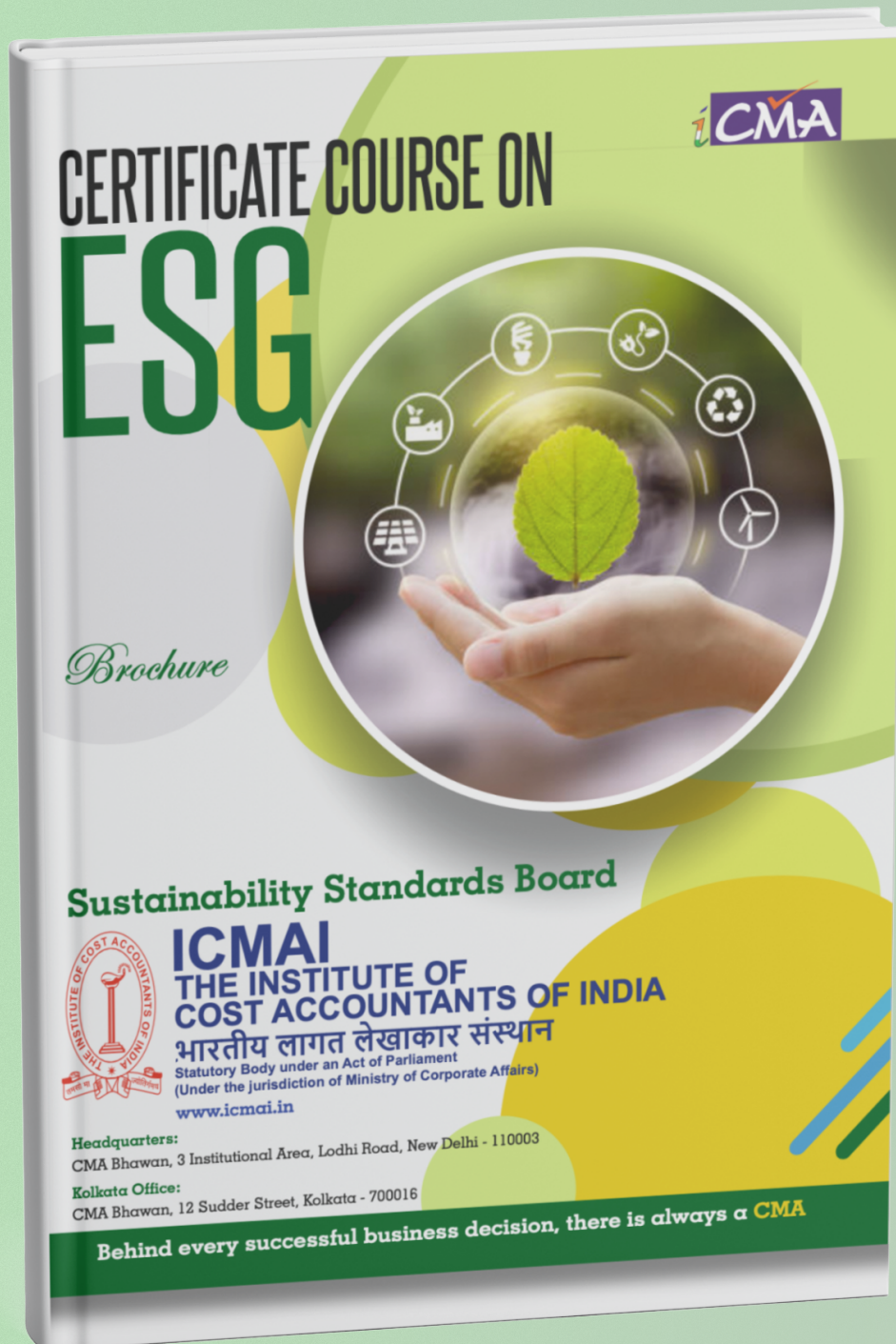
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The Economics of a Fallen Leaf: A Lesson in Sustainability



CMA Arunabha Saha
Practicing Cost Accountant
Thane

Abstract

In nature, nothing is wasted. A fallen leaf, often ignored or swept away, plays a silent yet powerful role in maintaining ecological balance. This article explores the “economics” behind a fallen leaf—not in monetary terms, but through its contribution to soil health, nutrient cycling, biodiversity, and sustainability. By understanding how nature manages resources efficiently, we can draw valuable lessons for building sustainable economic and industrial systems. The fallen leaf becomes a symbol of circularity, reminding us that waste is often a resource in disguise.

Introduction

Every day, countless leaves fall from trees. In cities, they are seen as litter—something to be cleaned, collected, and disposed of. In forests, however, the story is very different. There, a fallen leaf is not waste; it is the beginning of a new cycle.

Modern economies often follow a linear path: produce, use, and discard. This approach has created serious environmental challenges, including waste accumulation, resource depletion, and pollution. In contrast, nature follows a circular model, where every output becomes an input for another process.

The idea of “The Economics of a Fallen Leaf” encourages us to look beyond conventional thinking. It invites us to observe how nature manages resources with zero waste and maximum efficiency—and to reflect on how we might apply similar principles in our own systems.

The Natural Lifecycle of a Leaf

A leaf begins its life as part of a tree, contributing to photosynthesis and helping produce energy. When it falls, its role does not end. Instead, it enters the soil and begins to decompose.

Microorganisms such as bacteria and fungi break down the leaf into simpler organic matter. This process releases nutrients like nitrogen, phosphorus, and potassium back into the soil.

These nutrients are then absorbed by plants, continuing the cycle.

At the same time, the layer of fallen leaves protects the soil. It helps retain moisture, reduces erosion, and regulates temperature. In forests, this natural layer—often called leaf litter—is essential for maintaining a healthy ecosystem.

In simple terms, the leaf never becomes “waste.” It only changes form and purpose.

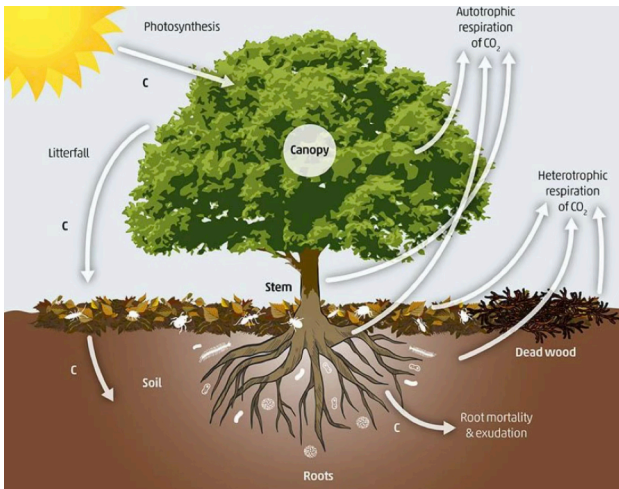
Economic Interpretation: Value Beyond Price

If we were to assign a monetary value to the services provided by a fallen leaf, the numbers would be significant. Consider the following:

- **Natural fertilization:** Leaves enrich the soil without the need for chemical fertilizers.
- **Water conservation:** The leaf layer reduces evaporation and improves water retention.
- **Soil protection:** It prevents erosion, reducing the cost of land degradation.
- **Carbon storage:** Decomposing leaves contribute to carbon sequestration in soil.

Despite these benefits, such contributions are rarely included in traditional economic measurements like GDP. This highlights a major limitation of our current systems—we tend to value only what can be directly priced.

The fallen leaf teaches us that real value often lies beyond immediate financial returns. Sustainability requires us to recognize and account for these hidden benefits.



Circular Economy: Nature as the Perfect Model

The concept of a circular economy is widely discussed today. It focuses on reducing waste, reusing materials, and recycling resources. Interestingly, nature has been practicing this model for millions of years.

A fallen leaf is a perfect example of circularity:

- It is produced naturally.
- It serves a purpose during its life.
- After falling, it decomposes and becomes a resource again.

There is no landfill, no pollution, and no loss of value.

Industries can learn from this model. Instead of treating by-products as waste, they can be reimagined as inputs for other processes. For example, agricultural waste can be converted into compost or bioenergy. Construction debris can be recycled into new materials. Even wastewater can be treated and reused.

The lesson is simple: sustainability is not about eliminating waste entirely, but about redefining it.

Lessons for Businesses and Policy Makers

The fallen leaf offers practical insights for decision-makers:

- Think long-term: Nature does not rush; it builds systems that last. Businesses should focus on long-term value rather than short-term gains.
- Design for reuse: Products and processes should be created with their end-of-life in mind.
- Measure hidden value: Environmental benefits and ecosystem services should be included in cost and performance evaluations.

- Reduce dependency on external inputs: Just as forests sustain themselves, organizations can aim for self-sustaining models.

For policymakers, this means encouraging practices like composting, organic farming, and sustainable land management. It also involves creating frameworks that recognize and reward ecological contributions.

Urban Perspective: Changing Our Mindset

In urban areas, fallen leaves are often treated as waste. They are collected and sometimes burned, leading to air pollution and loss of valuable organic matter.

A shift in perspective can make a big difference. Instead of disposal, leaves can be composted and used to enrich soil in gardens and public spaces. This reduces waste management costs and supports urban greenery.

Simple actions—like community composting or using leaf mulch in parks—can create meaningful environmental benefits. It is not always about large investments; sometimes, small changes in thinking are enough.

Sustainability Reflection: A Deeper Message

The story of a fallen leaf is not just about ecology or economics—it is also philosophical. It reminds us that:

- Every end is a new beginning.
- Value does not disappear; it transforms.
- Sustainability is about balance, not excess.

In a world driven by consumption and speed, the quiet journey of a leaf offers a different perspective. It shows that efficiency does not always require complexity. Sometimes, the simplest systems are the most effective.

Conclusion

The fallen leaf, though small and often unnoticed, carries a powerful message. It represents a system where nothing is wasted, where every element has a role, and where balance is maintained naturally.

As we face growing environmental challenges, there is much to learn from such simple examples. By adopting the principles of circularity, resource efficiency, and long-term thinking, we can move towards a more sustainable future.

In the end, the economics of a fallen leaf is not about numbers—it is about understanding value in its truest sense. And perhaps, it begins with something as simple as choosing not to see a leaf as waste. **SB**

Boardroom Stewardship — ESG Oversight in India and Abroad



CMA (Dr.) Aditi Dasgupta
Joint Director
The Institute of Cost Accountants of India
Kolkata

Abstract

As Environmental, Social, and Governance (ESG) considerations reshape enterprise value, corporate boards are emerging as central stewards of long-term sustainability. As the second article in the series, this piece bridges the transition from inner governance to institutional governance. It shifts the discourse from why ESG matters to how boards govern ESG, positioning the boardroom as the decisive arena where sustainability commitments translate into strategic action. This article analyses how boards operationalise ESG oversight in India within the regulatory framework of the Securities and Exchange Board of India, and compares it with governance models in the United Kingdom, United States, and European Union. It highlights the evolving fiduciary expectation that directors proactively manage climate, social, and governance risks—signaling a shift from compliance-driven governance to strategic stewardship.

Conceptual Foundation: From Ethics to Institutional Stewardship

Boardroom stewardship represents the transition from individual ethical intent to institutional accountability. ESG expands fiduciary duty beyond financial oversight to encompass systemic risks such as climate change, social inequities, and governance failures.

This shift resonates with the trusteeship philosophy embedded in Kautilya’s Arthashastra, where leadership was viewed as a balance between economic prosperity and societal welfare. In the modern context, this translates into boards anticipating ESG risks and embedding sustainability into long-term strategy.

Globally, ESG is no longer peripheral. It is integral to value creation, requiring boards not merely to disclose risks but to foresee and govern them.

Indian Regulatory & Institutional Context

India’s ESG governance framework is anchored in the SEBI (Listing Obligations and Disclosure Requirements) Regulations, which increasingly places responsibility on boards.

Key elements include:

- Board Responsibility Statements: Directors affirm the existence of robust systems for compliance, risk management, and internal controls—implicitly covering ESG risks.
- Business Responsibility and Sustainability Reporting (BRSR): Mandatory for top listed entities, requiring board approval and enhancing accountability for ESG disclosures.
- Committee Architecture:
 - CSR Committees (Companies Act, 2013)
 - Risk Management Committees (strengthened under SEBI LODR)

Indian boards are moving toward ESG integration, but oversight often remains fragmented across committees. While leading firms are creating dedicated sustainability structures, a uniform board-level ESG governance model is still evolving.

Global Comparative Perspective

United Kingdom

Under the UK Corporate Governance Code, boards are explicitly accountable for long-term sustainability. ESG is embedded in purpose, culture, and risk oversight, with an emphasis on “apply and explain” rather than strict prescription.

ESG STEWARDSHIP & BOARDROOM GOVERNANCE

FROM ETHICS TO INSTITUTIONAL STEWARDSHIP

Ethical Intent → Institutional Accountability → Sustainable Value Creation

ENVIRONMENT

SOCIAL

GOVERNANCE

CONCEPTUAL FOUNDATION

Boardroom stewardship represents the transition from individual ethical financial to institutional accountability. ESG expands fiduciary duty beyond financial oversight to encompass systemic risks such as climate change, social inequities, and governance failures.

Rooted in **Kautilya's Arthashastra**, leadership balances economic prosperity with societal welfare. Today, boards must anticipate ESG risks and embed sustainability into long-term strategy.

Globally, ESG is no longer peripheral. It is integral to value creation—boards must not merely disclose risks but foresee and govern them.

INDIAN REGULATORY & INSTITUTIONAL CONTEXT

India's ESG governance framework is anchored in the SEBI (LODR) Regulations, which increasingly places responsibility on boards.

- BOARD RESPONSIBILITY STATEMENTS**
Directors affirm the existence of robust systems for compliance, risk management, and internal controls—implicitly covering ESG risks.
- BUSINESS RESPONSIBILITY & SUSTAINABILITY REPORTING (BRSR)**
Mandatory for top listed entities, requiring board approval and enhancing accountability for ESG disclosures.
- COMMITTEE ARCHITECTURE**
 - CSR Committees (Companies Act, 2013)
 - Risk Management Committees (strengthened under SEBI LODR)

GLOBAL COMPARATIVE PERSPECTIVE

UNITED KINGDOM

Under the UK Corporate Governance Code, boards are explicitly accountable for long-term sustainability. ESG is embedded in purpose, culture, and risk oversight, with an emphasis on "apply and explain" rather than strict prescription.

UNITED STATES

Driven by regulatory signals from the U.S. Securities and Exchange Commission and investor pressure, ESG oversight in the U.S. is market-led. Boards increasingly assign ESG responsibilities to specific committees and integrate climate and social risks into ERM.

EUROPEAN UNION

The EU leads with prescriptive frameworks such as the Corporate Sustainability Reporting Directive (CSRD) and the EU Taxonomy Regulation. These introduce the concept of double materiality and impose explicit board accountability for sustainability outcomes.

COMPARATIVE INSIGHT

India's model remains disclosure-driven, whereas the EU is moving toward accountability-driven governance, where ESG lapses can directly implicate boards.

Indian boards are moving toward ESG integration, but oversight often remains fragmented across committees. While leading firms are creating dedicated sustainability structures, a uniform board-level ESG governance model is still evolving.

ASPECT	INDIA (SEBI LODR/BRSR)	UK (CORPORATE GOVERNANCE CODE 2024)	US (TRENDS)
BOARD OVERSIGHT	Mandatory BRSR disclosures; board approval	"Comply or explain" on ESG purpose; board evaluates culture	Voluntary; 70% S&P 500 boards oversee climate via committees (Deloitte 2025)
COMMITTEES	CSR/Risk Mgmt integration	Audit/Nominations handle ESG	Standalone ESG committees rising (e.g., BlackRock)
FIDUCIARY DUTY	Emerging climate risk linkage	Explicit viability/climate statements	SEC climate disclosure rules (2024)
ENFORCEMENT	SEBI fines (e.g., ₹10cr+ cases)	FRC oversight	Shareholder lawsuits (e.g., Exxon)

WAY FORWARD: FROM OVERSIGHT TO STEWARDSHIP

The trajectory of governance is clear: boards must evolve from passive oversight bodies to active ESG stewards.

Establish dedicated ESG or sustainability committees

Build director capacity in climate and sustainability governance

Integrate ESG into strategy, risk, and performance evaluation

Link executive compensation to ESG outcomes

Align with global frameworks while retaining Indian contextual relevance

IMPLICATIONS FOR CMA PROFESSIONALS

The rise of ESG stewardship significantly expands the role of Cost and Management Accountants.

STRATEGIC ADVISORY
Integrating ESG into capital allocation and business strategy

MEASUREMENT & ANALYTICS
Developing ESG KPIs aligned with BRSR and global standards

RISK INTEGRATION
Embedding climate and social risks into ERM frameworks

BOARD REPORTING
Enhancing the credibility and coherence of integrated disclosures

COMMITTEE SUPPORT
Providing data-driven insights to audit, risk, and CSR committees

CMA's act as critical translators—converting ESG from narrative commitments into measurable, decision-useful intelligence for boards.

“Good governance is no longer about avoiding risk—it is about building a sustainable future.”

STRONG BOARDS. SOUND OVERSIGHT. SUSTAINABLE TOMORROW.

Source: Conceptualised & designed by the author using AI tools

United States

Driven by regulatory signals from the U.S. Securities and Exchange Commission and investor pressure, ESG oversight in the U.S. is market-led. Boards increasingly assign ESG responsibilities to specific committees and integrate climate and social risks into enterprise risk management.

European Union

The EU leads with prescriptive frameworks such as the Corporate Sustainability Reporting Directive and the EU Taxonomy Regulation. These introduce the concept of double materiality and impose explicit board accountability for sustainability outcomes.

Aspect	India (SEBI LODR/BRSR)	UK (Corporate Governance Code 2024)	US (Trends)	EU (CSRD Directive 2023)
Board Oversight	Mandatory BRSR disclosures; board approval	"Comply or explain" on ESG purpose; board evaluates culture	Voluntary; 70% S&P 500 boards oversee climate via committees (Deloitte 2025)	"Double materiality"; boards ensure CSRD compliance
Committees	CSR/Risk Mgmt integration	Audit/Nominations handle ESG	Standalone ESG committees rising (e.g., BlackRock)	Sustainability committees required for large firms
Fiduciary Duty	Emerging climate risk linkage	Explicit viability/climate statements	SEC climate disclosure rules (2024)	Directors liable for greenwashing
Enforcement	SEBI fines (e.g., ₹10cr+ cases)	FRC oversight	Shareholder lawsuits (e.g., Exxon)	ECJ penalties up to 10M euros

"All tables have been conceptualised and developed by the author and represent the author's analytical perspectives."

Comparative Insight:

India's model remains disclosure-driven, whereas the EU is moving toward accountability-driven

governance, where ESG lapses can directly implicate boards.

Implications for CMA Professionals

The rise of ESG stewardship significantly expands the role of Cost and Management Accountants:

- **Strategic Advisory:** Integrating ESG into capital allocation and business strategy
- **Measurement & Analytics:** Developing ESG KPIs aligned with BRSR and global standards
- **Risk Integration:** Embedding climate and social risks into ERM frameworks
- **Board Reporting:** Enhancing the credibility and coherence of integrated disclosures
- **Committee Support:** Providing data-driven insights to audit, risk, and CSR committees

CMA's act as critical translators—converting ESG from narrative commitments into measurable, decision-useful intelligence for boards.

Way Forward: From Oversight to Stewardship

The trajectory of governance is clear: boards must evolve from passive oversight bodies to active ESG stewards.

Key priorities include:



- Establishing dedicated ESG or sustainability committees
 - Building director capacity in climate and sustainability governance
 - Integrating ESG into strategy, risk, and performance evaluation
 - Linking executive compensation to ESG outcomes
 - Aligning with global frameworks while retaining Indian contextual relevance^{SB}
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Redefining Corporate Success with Long-Term Sustainability Outcomes



Part
III

Usha Ganapathy Subramanian
Practicing Company Secretary
Chennai

Abstract

Measurement of corporate success must evolve beyond short-term financial metrics to include long-term sustainability outcomes that reflect the interests of all stakeholders, including employees, suppliers, society, and the environment. ESG reporting and, more importantly, linking board and executive remuneration to sustainability performance, can drive meaningful progress towards truly stakeholder-centric governance.

In the previous editions of this column, we delved on the importance of governance, and the journey conversations on sustainability in the corporate board rooms.

In this edition, we shall explore why and how we need to redefine how corporate success looks like.

How is success perceived and measured now?

In the corporate world, no matter how much we discuss moving away from shareholder-centric governance to stakeholder-centric models, much of reporting and conversations are aimed at investors. Investors and lenders, the providers of capital, are seen as the major stakeholder-group, or sometimes, even as the only stakeholder-group who has any influence on the governance and management. Other stakeholders, however significant in terms of their contributions, are generally relegated to the background. Agreed that finance is the life blood of any business, but that is not the only part of the anatomy that keeps the organism of business running. There are several other organs necessary to keep a business running: most importantly, the employees, suppliers, customers, environment and the society in general.

Even when many regulators, international bodies and even the stated corporate vision and mission seem to emphasize the role of all stakeholders, the way corporate success continues to be defined tells a different story. Money is the language in which investors speak, understandably so, and it has become the language for measurement of success too. Investors look at turnover, net profit margins, EBITDA margins, return on capital employed as measures of success. While an entity that reports sustained profits mainly as a result of layoffs may seem neutral or even desirable to the investors, in the larger context, it is not a neutral event. Hence, financial performance must not be the only measure of success for the businesses or their boards.

What success could also look like?

The boards must consider a 360-degree view of their entity's operations and direction. They must consider the priorities of other stakeholders as well. For example, for the employees, 'success' could look more like fair pay, better roles and job satisfaction, great working environment, and a reasonable certainty of where their career and job are going. To the suppliers, it could look like timely payments, a reasonable certainty of business relationship and even a meaningful contribution to product design. If the environment had a voice to speak, success to it may be like satisfactory restoration of resources utilised, greener operations that nurture the environment than harm it. And so on and so forth.

Now, are these voices loud enough to be heard by the boards? That would be a million-dollar question. Perhaps, quite literally, as some of these considerations do alter the course of cash flows. How success is perceived in general by the society, economy, and the boards largely depends on whose voice is the loudest and how they perceive success. The market forces have operated in a way that investors' voice is the most audible, and hence, success continues to be mostly defined in terms of how investors perceive success, which means any change must come from the investors.

What gets reported is changing and that's good

Thanks to global awareness on the need for sustainable development and push from the United Nations in the form of Paris Agreement, the Sustainable Development Goals, G20/OECD Principles of Corporate Governance and other efforts, today, investors, at least the institutional ones, have woken up to the crude reality of global warming, raising inequalities, and governance failures. Market initiatives and stewardship codes implemented by various regulators also urge

institutional investors to engage with their investees on sustainability matters.¹ They have begun to understand that sustainability does have an impact on the expectations of future returns from their investments, ergo the need for sustainability reporting.

Regulators the world over are prescribing or mandating sustainability reporting in one form or the other. For example, in India, it has taken the form of BRSR – Business Responsibility and Sustainability Reporting mandated by SEBI on the Top 1,000 listed entities by market capitalisation. BRSR is required to be part of the annual report circulated to the shareholders before the annual general meetings.

The hope is that the stakeholders get to see financial performance and ESG performance in the same place. As far as BRSR goes, apart from qualitative or descriptive inputs, it requires granular disclosures on a lot of quantitative metrics – to name a few: GHG emissions, water footprint, energy consumption, circularity of business, and even quantifiable aspects of employee well-being and inclusive development like percentage of cost incurred on employee's well-being to total revenue, or input materials sourced from MSMEs as a percentage of total purchases. And under the BRSR Core framework, the core parameters including the above, are subject to third-party assessment or assurance.

Where the gap lies then

Despite the quantitative ESG metrics being published and subject to independent assessments, corporate success still is largely defined by financial performance. Stock prices seem to respond more to reduced net profit margins, than to increasing emissions; more to improved operating cash flows, than to decreasing carbon foot print or employee satisfaction. And since the boards are pressured in a way to look at things from the perspective of the securities markets, executive compensation and directors' remuneration are also largely tied to net profits or any other measure of financial performance.

Further, while sustainability reporting is mandated in many jurisdictions, whether market regulators can do something about the poor ESG performance (if any) reflected in the reporting mostly begets an answer in the negative. And this is justified as market regulators cannot be and should not be expected to play the role of environmental or labour regulators. And as of now, in many jurisdictions except perhaps the European Union (EU), sustainability assurance/assessment cannot be said to be entirely regulated with the same rigour applicable to statutory audits (audits of financial statements), though broad guidance on how to conduct such exercise is available from international and domestic auditing and accounting bodies. This unfortunately dilutes the impact of the exercise.

If the boards that make the decisions and the executives who run the business do not have anything to lose from the poor ESG choices they make, and

everything to lose if net profit margins decline, we can hardly expect the decisions taken by them to reflect their accountability to 'all stakeholders.' Though the business strategy may state alignment with sustainability, it would remain on paper, if the day-to-day focus is only on improving the financial bottom line.

The shift that is required

On the other hand, if the board and executive pay is at least in part tied to ESG parameters – at least the reported ones, say the GHG emission reductions on a year-on-year level, or the reduction in water consumption intensity, or waste generated in relation to turnover, or if we wanted to be more bold, percentage of spending on employee wellbeing as a percentage of turnover, percentage of sourcing from MSMEs, it would be a win-win for both the business and the environment and society. And as a by-product, a higher ESG rating may command better terms of funding. Some large corporates have taken up on themselves to lead the change. As per a recent KPMG International report, 78% of the 375 listed companies from 15 countries tied executive pay to ESG goals, mainly to GHG emissions and their employees' wellbeing.² While this is a great development, what is not surprising here is that countries in the European Union (EU) seem to be more in alignment with the concept than those outside EU. EU has the Corporate Sustainability Reporting Directive (CSRD) in place that requires extensive disclosures and compliance in respect of sustainability for large undertakings and certain other entities. One of the important disclosures required is specifically, "information about the existence of incentive schemes linked to sustainability matters which are offered to members of the administrative, management and supervisory bodies." A few instances of such practices are reportedly observed in India as well.³ The development, indeed, is laudable.

Conclusion

More corporates must join the bandwagon to make sustainability as normal a measure of corporate success as net profits.

Similarly, one can hope that sustainable development and not just economic growth is seen as a primary measure of a nation's success, and sustainable and peaceful living and not just monetary wealth is seen as a measure of individual success. Only this can bring about sustainable development for the humanity as a whole.

In the future editions of this column, we may delve into other aspects of governance and ethical leadership like the board diversity, board processes, corporate policies and other aspects that go into ensuring a sustainable future. **SB**

Reproduced with suitable modifications from the personal writings and posts of Ms. Usha Ganapathy Subramanian.

¹ https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/12/institutional-investor-engagement-and-stewardship_16fa4a8d/4a902cee-en.pdf

² <https://kpmg.com/xx/en/media/press-releases/2025/03/kpmg-international-report-finds-growing-link-between-sustainability-and-executive-pay.html>

³ <https://economictimes.indiatimes.com/news/company/corporate-trends/performance-on-sustainability-targets-shapes-top-execs-pay/articleshow/112327367.cms?from=mdr>

Earth Day: Caring for Our Only Home



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Abstract

Earth Day is a global reminder that the planet we live on is our only home and its protection is our shared responsibility. This article highlights the origin and growth of Earth Day from a small environmental movement in 1970 to a worldwide initiative involving billions of people. It explains the increasing environmental challenges such as climate change, pollution, and loss of biodiversity, and emphasises the urgent need for sustainable living. The article also reflects on how cultural values and traditions across the world promote respect for nature and encourage responsible behaviour. Further, it outlines simple, yet impactful actions individuals can take in their daily lives to protect the environment. Overall, the article conveys a clear message — collective efforts, even through small steps, can lead to meaningful change and help preserve the Earth for future generations.

How Earth Day Began

The first Earth Day was celebrated in 1970 in the United States. At that time, pollution was increasing rapidly. Factories were releasing smoke into the air, rivers were getting polluted, and there were very few laws to protect the environment.

A US Senator, Gaylord Nelson, decided to take action. He wanted people to become aware of the damage being done to nature. On April 22, 1970, around 20 million people came out on the streets to raise their voice against pollution.

This was the beginning of a powerful movement. Over time, Earth Day grew from a national event into a global one. Today, more than 1 billion people across over 190 countries participate in Earth Day activities every year. It is now considered the largest civic observance in the world.

Why Earth Day Is Important Today

When Earth Day started, the main concerns were air and water pollution. Today, the challenges are much bigger. Climate change, global warming, plastic pollution, and loss of biodiversity are serious threats.

The Earth is home to billions of people and millions of species of plants and animals. But human activities are putting a lot of pressure on natural systems. Forests are being cut down, oceans are getting polluted, and temperatures are rising.

Earth Day reminds us that if we do not act now, the damage may become irreversible. At the same time, it

also gives us hope. It shows that when people come together, change is possible.

The Purpose of Earth Day

The main goal of Earth Day is to encourage people to protect the environment. It focuses on:

- Fighting climate change
- Reducing pollution
- Promoting sustainable living
- Protecting wildlife and biodiversity
- Encouraging the use of renewable energy

Every year, a theme is chosen to guide the activities. Recent themes have focused on restoring the Earth, reducing plastic pollution, and encouraging clean energy.

The message is clear — the future of the planet depends on our actions today.

What Happens on Earth Day

People celebrate Earth Day in many ways across the world. Schools, colleges, organizations, and communities organize different activities.

Some common activities include:

- Tree plantation drives
- Clean-up campaigns in parks, streets, and beaches
- Awareness programs and workshops
- Recycling initiatives

▪ Educational sessions for students

These activities may look small, but they create awareness and inspire people to change their habits.

Earth Day is not about doing something big once a year. It is about starting small habits that continue every day.

Faith, Tradition, and the Earth: A Shared Responsibility

Across the world, different religions, cultures, and traditions share one simple message — respect for the Earth. It is well known that many holy teachings remind us that nature is not just a resource, but something sacred. They guide us to live in balance, care for the environment, and act responsibly towards all living beings.

Our traditions and stories also reflect this deep connection, showing the Earth as nurturing, patient, and life-giving. They remind us that humans are not owners of nature, but caretakers who must protect and preserve it.

Even in today's modern world, everything we depend on comes from the Earth — water that sustains life, fuels like coal and petroleum, minerals that build our cities, and rare elements that power modern technology. Our homes, industries, and daily lives are completely dependent on these natural resources.

No matter how advanced we become, the foundation of our existence remains the Earth. This reminds us of a simple truth — the Earth is not just a resource; it is our only mother. Caring for it is not only an environmental need, but also a moral responsibility passed down through generations.

What Can We Do? (Our Role in Protecting the Earth)

Many people feel that environmental protection is the responsibility of governments or big organizations. But the truth is, every individual has a role to play. Even small actions, when done by millions of people, can create a big impact. Here are some simple things that we can do in our daily life:

1. Reduce Plastic Usage

Avoid single-use plastic items like bags, bottles, and straws. Carry your own reusable items whenever possible.

2. Save Electricity

Switch off lights, fans, and electronic devices when not in use. Using less electricity reduces pollution and saves energy.

3. Save Water

Water is a precious resource. Do not waste it. Fix leaking taps and use water carefully.

4. Plant Trees and Take Care of Plants

Trees give us oxygen and help in maintaining balance in nature. Even a small garden at home can make a difference.

5. Follow the 3Rs — Reduce, Reuse, Recycle

Think before throwing things away. Many items can be reused or recycled.

6. Use Public Transport or Walk

Using less fuel reduces air pollution. Walking and cycling are also good for health.

7. Avoid Food Waste

Take only as much food as you need. Wasting food also wastes the resources used to produce it.

8. Spread Awareness

Talk to your family and friends about environmental issues. Awareness leads to action.

The Power of Collective Action

One person alone may not be able to change the world, but when millions of people act together, the impact is huge. Earth Day is a perfect example of this. From a small protest in 1970, it has become a global movement. It has influenced policies, created awareness, and encouraged people to adopt sustainable practices. It also reminds us that change does not always need big investments. Sometimes, it only needs a change in attitude.

A Message for the Future

There is a very meaningful thought often associated with Earth Day:

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

This reminds us that we are responsible not only for ourselves but also for future generations. The choices we make today will affect the lives of those who come after us.

If we continue to harm the environment, future generations will face serious challenges. But if we act wisely, we can leave behind a healthier and greener planet.

Conclusion

Earth Day is not just a celebration. It is a call for action. It tells us that protecting the environment is not a one-day activity. It is a continuous effort that should become a part of our daily life. We may feel that our contribution is small, but it is important to remember that every small step counts. When millions of people take small steps, it leads to big change.

Let us use Earth Day as a starting point.

Let us make simple changes in our habits.

Let us take responsibility for our actions.

Because in the end, the Earth does not belong to us — we belong to the Earth. **SB**

From Dharma to Disclosure: Mapping Ancient Indian Ethical Thought to Modern CSR Frameworks (GRI, BRSR, ISSB)

Through Illustrative References from the *Ramayana* and *Manusmriti*

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Abstract

This article explores the philosophical continuity between ancient Indian ethical frameworks—particularly Dharma as articulated in the *Ramayana* and *Manusmriti*—and modern corporate sustainability regimes. It argues that contemporary Corporate Social Responsibility (CSR) and ESG disclosure frameworks such as GRI, BRSR, and ISSB are not novel constructs, but structured, procedural manifestations of long-standing ethical obligations embedded in Indian civilizational thought. By mapping Dharmic principles to modern disclosure systems, the article positions sustainability as an ethical imperative that predates regulation.

Introduction: Reclaiming India's Ethical Roots in ESG



Source: conceptualized and designed by the author using AI tool.

Modern CSR and ESG disclosures are often perceived as compliance-driven, audit-oriented frameworks designed to satisfy regulators and investors. However, Indian civilizational thought embedded responsibility, accountability, and sustainability into governance long before formal reporting mechanisms emerged.

Ancient texts such as the *Ramayana* and *Manusmriti* articulate a *Dharma-centric* model of governance,

where ethical conduct was validated not through disclosure, but through societal legitimacy and moral consequence. In this sense, modern sustainability reporting may be understood as a procedural evolution of what was once an internalized ethical duty. The central proposition is clear: Disclosure did not create responsibility; responsibility demanded disclosure.

Dharma as a Foundational Sustainability Paradigm

Dharma represents a system-level ethic governing individual conduct, institutional responsibility, and societal harmony. Unlike modern compliance frameworks, which rely on external enforcement, Dharma is intrinsically self-regulating.

Aspect	Ancient Indian Thought	Modern ESG
Core Driver	Dharma (moral duty)	Regulation & standards
Accountability	Social + cosmic	Legal + market
Enforcement	Conscience, reputation	Audits, penalties
Orientation	Long-term order	Enterprise value & risk

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

This distinction reveals a fundamental shift—from internal ethics to external reporting. Yet, the underlying objectives remain aligned: sustaining order, minimizing harm, and ensuring accountability.

Ramayana: Applied Ethics and Stakeholder Governance

The Ramayana offers a narrative model of governance where ethical dilemmas are resolved through Dharma rather than expediency. It is particularly relevant to modern ESG because it demonstrates **decision-making under uncertainty**, a core concern of sustainability governance.

Rama's acceptance of exile in the *Ayodhya Kanda* exemplifies ethical leadership. By upholding his father's word at the cost of kingship, he reinforces institutional credibility over personal gain—mirroring modern governance expectations under GRI 2, BRSR Principle 1, and ISSB's governance disclosures.

Equally significant is his refusal to vilify *Kaikeyi*, which reflects conduct risk management and leadership maturity. This aligns with contemporary expectations of ethical culture and tone at the top.

Stakeholder engagement is vividly illustrated in Rama's interactions with Guha, the Nishada king, and the Vanara Sena. These episodes demonstrate inclusion across social hierarchies, recognition of indigenous leadership, and participatory governance—principles now formalized under GRI 413 and BRSR Principle 4.

The Shabari episode further reinforces inclusion and dignity in value chains, while Hanuman's rise reflects meritocracy—aligning with modern human capital disclosures (GRI 404, 406).

Environmental ethics also emerge strongly. During exile, Rama adopts a lifestyle of restraint, minimizing ecological disruption. The construction of the Setu to Lanka reflects early notions of environmental assessment, collective responsibility, and respect for natural forces—ideas echoed in ISSB S2 and environmental reporting standards.

Even in warfare, Rama adheres to proportionality and ethical conduct, refusing to harm unarmed adversaries. This parallels modern corporate risk frameworks and codes of conduct.

Manusmriti: Codified Governance and Accountability

While the *Ramayana* illustrates applied ethics, the *Manusmriti* provides a structured governance framework. It addresses fiduciary responsibility, economic ethics, and accountability mechanisms in a manner analogous to modern corporate governance systems.

The doctrine of *Rajdharma* establishes that rulers are custodians, not owners of power. Authority is exercised as a trust—a principle directly aligned with board fiduciary duties and ESG oversight under GRI and ISSB.

Economic activity is similarly regulated. The *Manusmriti* condemns fraudulent practices, exploitation, and coercion, emphasizing ethical wealth creation. This aligns with GRI 201 and BRSR Principle 3 on responsible economic contribution.

Accountability is proportionate to power—higher authority entails stricter penalties. This notion of differential accountability finds resonance in modern governance structures, anti-corruption disclosures (GRI 205), and assurance mechanisms.

Environmental restraint is also emphasized, not through explicit conservation mandates but through moderation and responsible consumption—highlighting sustainability as a function of restraint rather than expansion.

Integrated Mapping: Ancient Texts to Modern Frameworks

Ethical Dimension	Ramayana	Manusmriti	GRI	BRSR	ISSB
Ethical Governance	Rama's exile	Rajdharma	GRI 2	P1	S1
Stakeholder Welfare	Lokasangraha	Welfare state	413	P4	S1
Inclusion	Tribal respect	Social duty	404, 406	P5	S1
Economic Ethics	Sacrifice over wealth	Ethical earning	201	P3	S1
Accountability	Moral sanction	Legal sanction	205	P7	S1
Environmental Restraint	Harmony with nature	Moderation	303, 305	P6	S2

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

Sample Illustrative Table: From Scripture to Framework

Dharma based idea (from Ramayana/Manusmriti)	Ethical essence	Corresponding CSR/ESG logic
Rama's oath keeping and transparency with citizens.	Integrity as duty (rajadharma).	BRSR Principle 1 (integrity, fairness) and GRI's transparency and grievance handling standards.
Manusmriti's rules on fair marketplace conduct.	Non fraud, honest trade.	BRSR Principle 2 (fair business practices) and GRI's anti corruption and fair competition disclosures.
Ramayana's concern for welfare of poor, exiles, and elders.	Sarvalokhitam (welfare of all).	BRSR Principle 8-9 (human rights, community development) and GRI's vulnerable groups and community impact standards.
Manusmriti's emphasis on restraint in resource use and protection of nature.	Ahimsa and ecological restraint.	GRI environmental standards and ISSB aligned climate risk and resource dependency disclosures.
The idea that karma brings consequences, good or bad.	Moral accountability for actions.	GRI's adverse impact and remediation reporting; ISSB's emphasis on risk based accountability.

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

ISSB and Financial Materiality: Dharma as Stewardship

ISSB's focus on financial materiality—risks and opportunities affecting enterprise value—may appear distinct from ethical philosophy. However, the *Dharmic* framework bridges this gap through the concept of stewardship.

Ancient texts consistently treat wealth, land, and power as entrusted resources. Misuse leads not only to moral decline but systemic instability—akin to modern ESG risks affecting valuation.

Thus:

- Climate risks → Failure of environmental Dharma

- Governance failures → Violation of *Rajdharmā*
- Social unrest → Breakdown of *Lokasangraha*

ISSB disclosures, therefore, operationalize Dharma in financial terms—translating ethical lapses into measurable risks.

Expanded Ramayana Mapping: Governance in Action

Ramayana Episode	Ethical Theme	Modern CSR / ESG Link
Exile acceptance	Integrity	GRI 2 / BRSR P1
Guha & Shabari	Inclusion	GRI 413 / P5
Vanara Sena	Human capital	GRI 404
Forest living	Sustainability	GRI 303 / ISSB S2
Setu construction	Environmental governance	BRSR P6
Vibhishana	Whistleblowing	GRI 205
Just war rules	Risk ethics	ISSB S1
Public accountability	Reputation & trust	GRI 2

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

This mapping demonstrates that the *Ramayana* transforms ethical philosophy into operational governance practice—precisely what modern ESG frameworks attempt through structured disclosures.

From Moral Accountability to Mandatory Disclosure

Ancient Model	Modern CSR / ESG
Internalised ethics	External reporting
Narrative accountability	Metric-based disclosure
Social legitimacy	Regulatory legitimacy
Dharma-based control	Audit-based assurance

"All tables have been conceptualized and developed by the author and represent the author's analytical perspectives."

The transition is not a shift in values, but in mechanism. Where ancient systems relied on moral enforcement, modern systems rely on institutional verification.

Conclusion: Sustainability as India's Civilisational Ethos

India was never new to the concept of sustainability. These practices, ideologies, and ethical frameworks have always been embedded at the core of Indian civilization. The principles now articulated through ESG, CSR, GRI, BRSR, and ISSB are, in essence, structured expressions of a much older moral philosophy rooted in Dharma.

In previous editions under the theme of ancient scriptures and sustainability, an effort has been made to trace the roots of modern sustainability concepts across civilizations and religious traditions. With this article—From Dharma to Disclosure, drawing insights from the *Ramayana* and *Manusmṛiti*—this series reaches its conclusion.

It is hoped that this exploration has not only reaffirmed the indigenous foundations of sustainability but also opened pathways for future inquiry. The next series will aim to build on this

foundation by attempting a more direct and practical transition from philosophical insight to contemporary application—bridging not just thought and disclosure, but ethics and execution. **SB**

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Mangroves and Marine Life Nurseries



The Hidden Bond That Sustains Life on Earth

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Abstract

Mangrove ecosystems represent a powerful yet often overlooked connection between terrestrial and marine environments. Acting as nurseries for marine species, they support biodiversity, fisheries, and coastal livelihoods. This article highlights the “hidden bond” created by mangroves—linking ecosystems, species, and human survival. The degradation of mangroves disrupts this delicate balance, affecting seafood availability, environmental stability, and economic security. Recognising and protecting this hidden bond is essential for sustainable development and ecological harmony.

Introduction

There is a quiet and often unnoticed connection that sustains life on Earth—a hidden bond that links land, water, air, and living beings. Mangrove forests are one of the strongest examples of this invisible relationship. Located where rivers meet the sea, these forests act as a bridge between two worlds, silently supporting both marine life and human life.

While they may appear as simple coastal vegetation, mangroves actually hold together a complex network of ecological relationships. This hidden bond ensures that fish populations grow, coastlines remain stable, and communities continue to survive. Understanding this connection helps us realise that when mangroves are damaged, the impact is not isolated—it spreads across ecosystems and economies.

The Hidden Bond: Nature’s Invisible Network

Mangroves are not just trees; they are connectors. They create a living link between land and sea, forming a continuous cycle of life.

1. Link Between Land and Ocean

Mangroves trap sediments flowing from rivers and

prevent them from entering the ocean in excess. At the same time, they filter pollutants, improving water quality. This ensures a healthy environment for marine species.

2. Link Within the Food Chain

Leaves falling from mangrove trees break down into nutrients. These nutrients feed microorganisms, which in turn support small fish and crustaceans. Larger fish depend on these smaller species. Thus, a simple leaf becomes part of a global seafood chain.

3. Link Across Ecosystems

Mangroves connect with seagrass beds and coral reefs. Many marine species begin life in mangroves, migrate to seagrass areas, and later move to coral reefs. This journey shows how different ecosystems depend on each other.

4. Link Between Nature and Humans

The fish that grow in mangroves eventually reach our markets and dining tables. Coastal communities depend on these ecosystems for food, income, and protection from natural disasters.

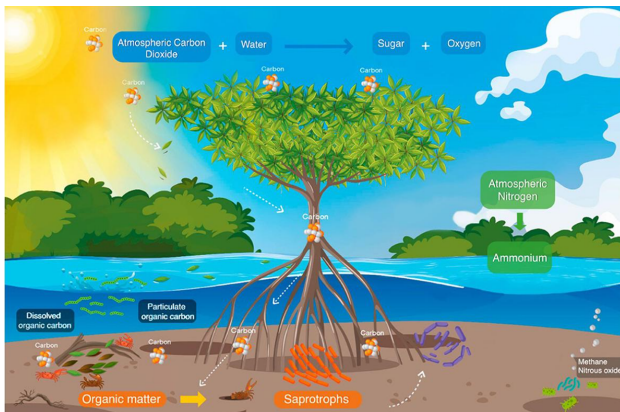
This entire system works quietly, without visibility, yet it supports life on a global scale.

Mangroves as Nurseries of Life

Mangroves are widely known as the “nurseries of the sea,” and this role strengthens the hidden bond of life.

- The dense root systems provide protection from predators.
- Nutrient-rich waters offer continuous food supply.
- Calm and shallow waters create ideal growth conditions.

Because of this, nearly 75–80% of commercially important fish species depend on mangroves at some stage. Without these nurseries, marine populations would struggle to survive.



The Human Connection: Livelihoods and Survival

The hidden bond extends beyond ecology—it directly connects to human life.

- **Food Security:** Fish and shellfish from mangrove ecosystems feed millions.
- **Economic Support:** Fisheries, tourism, and forest products generate income.
- **Protection:** Mangroves act as shields against cyclones, storms, and coastal erosion.

For many coastal families, especially in regions like India and Southeast Asia, mangroves are not just natural resources—they are lifelines.

What Happens When the Bond Breaks?

When mangroves are destroyed, the hidden bond begins to weaken.

- Fish breeding grounds disappear, reducing fish populations.
- Coastal erosion increases, putting lives and property at risk.
- Pollution spreads more easily into oceans.
- Livelihoods of fishermen and local communities are affected.

Key Ecological Importance:

- Mangroves act as natural nurseries for marine life.
- Nearly 75–80% of commercial fish species depend on mangroves at some stage.
- Dense root systems provide protection from predators.
- Rich organic matter creates a strong food chain base.
- Calm, nutrient-rich waters support early growth of

This shows that the loss of mangroves is not a local issue—it has global consequences, including reduced seafood supply and ecological imbalance.

Strengthening the Hidden Bond: The Way Forward

To protect this invisible yet powerful connection, we must act responsibly:

- **Restore Mangroves:** Plant and protect native species in degraded areas.
- **Adopt Sustainable Practices:** Balance development with environmental care.
- **Community Involvement:** Empower local communities as guardians of mangroves.
- **Policy and Awareness:** Strong laws and public understanding are essential.

Every small effort contributes to preserving this bond.

Conclusion

Mangroves remind us that nature works through connections, not isolation. The hidden bond they create links rivers to oceans, small organisms to large species, and nature to human life. It is a silent system that supports food chains, protects coastlines, and sustains livelihoods.

If this bond is respected and protected, it will continue to nurture life across the planet. But if ignored, the consequences will be far-reaching and difficult to reverse.

In understanding mangroves, we understand a deeper truth—everything on Earth is connected, and preserving these connections is the key to our shared future. **SB**

Going back to basics of Mandalas



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 Certified Mandala Therapist

What Is a Mandala?

The word mandala comes from Sanskrit and means “sacred circle” or “center.” A mandala usually begins from a central point and expands outward in balanced patterns. These patterns are not random; they follow principles of sacred geometry, which is the study of geometric patterns that appear in nature and the universe.

For example, we can see sacred geometry in:

- The structure of a sunflower
- The spiral of a shell
- The symmetry of snowflakes
- The patterns in flowers and leaves

These patterns are believed to reflect the natural order of the universe. When humans create or observe such patterns, our mind and body tend to move toward balance and harmony.

Mandalas in the Vedic and Hindu Tradition

In Hindu and Vedic traditions, mandalas have been used for thousands of years in temples, rituals, and meditation practices. Ancient sages understood that certain shapes and patterns influence human consciousness and energy.

One of the most powerful examples is the Sri Yantra, a sacred geometric diagram used in spiritual practices. It consists of interlocking triangles arranged in a precise pattern. According to Vedic knowledge, this symbol represents the connection between the human mind and cosmic energy.

Similarly, temple architecture in India often follows mandala patterns. When devotees enter a temple, they move from the outer area toward the central sanctum. This journey symbolically represents moving from the external world toward the inner self.

Our ancestors believed that geometry, sound, and intention together create energetic balance.

Energy Centers in the Human Body

In yogic philosophy, the human body has energy centers called chakras. There are seven major chakras aligned along the spine. Each chakra is associated with specific emotions, organs, and psychological states.

For example:

- Root Chakra – stability, safety, grounding
- Sacral Chakra – creativity and emotions
- Solar Plexus Chakra – confidence and personal power
- Heart Chakra – love and compassion
- Throat Chakra – communication
- Third Eye Chakra – intuition and clarity
- Crown Chakra – spiritual connection

When life stress, emotional trauma, or negative thinking disturb these energy centers, people may feel anxiety, confusion, low confidence, or emotional imbalance.

Ancient traditions believed that certain geometric patterns could help bring these energies back into balance.

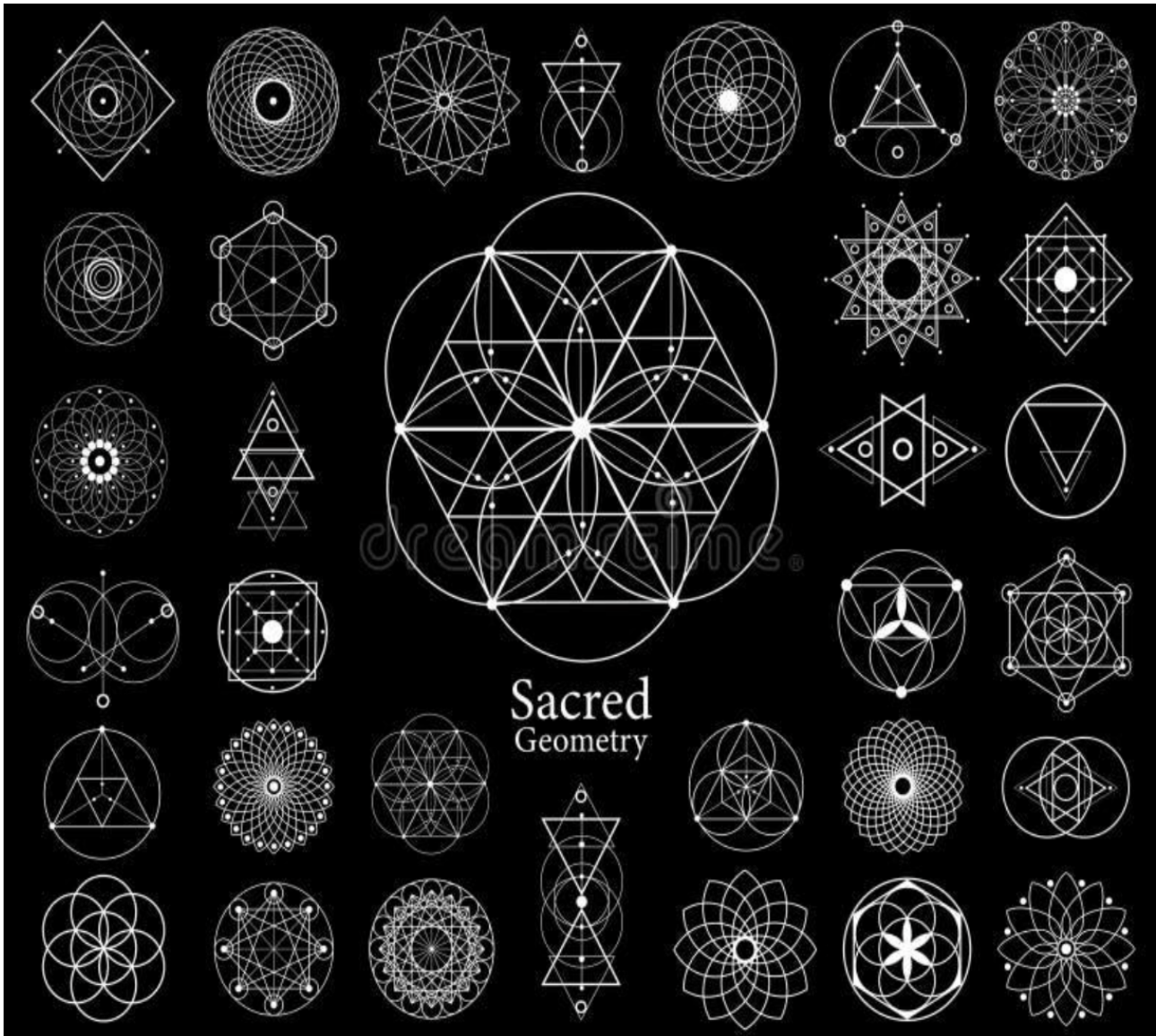
How Mandalas Help Balance Energy

Creating or coloring mandalas is not just an art activity; it can become a form of meditation. When a person focuses on drawing repetitive patterns around a center, the mind gradually becomes calm and concentrated.

This process helps in three ways:

1. Restoring Inner Order

Mandalas move from the center outward in balanced



patterns. When we create them, our brain begins to organize thoughts in a similar structured way. This helps reduce mental chaos.

2. Emotional Release

Many people unknowingly store emotions such as stress, fear, or sadness in the body. Mandala art allows these emotions to flow out in a safe and creative form.

3. Activating Energy Awareness

Different shapes and colors can influence different emotional states. For example:

- Circular shapes promote calmness and unity.
- Triangles represent transformation and energy movement.
- Floral patterns often connect with growth and healing.

Over time, regular mandala practice can help people feel more centered and balanced.

The Neuroscience Behind Mandalas

Modern neuroscience is beginning to support what ancient traditions already understood.

When a person creates or observes symmetrical patterns like mandalas, several positive changes occur in the brain:

1. Activation of the Prefrontal Cortex

This part of the brain is responsible for attention and decision-making. Focusing on detailed patterns strengthens concentration and mindfulness.

2. Reduction in Amygdala Activity

The amygdala is the brain's fear center. Repetitive artistic activities such as mandala drawing help calm this area, reducing stress and anxiety.

3. Brain Wave Relaxation

Research shows that slow, repetitive creative work can move the brain toward alpha brain waves, which are associated with relaxation, creativity, and emotional stability.

This is similar to what happens during meditation

Because of this, many psychologists and therapists now use mandala art in art therapy for stress management, trauma healing, and emotional regulation.

How to Recognize Disturbed Energy Centers

Sometimes people wonder how they can know whether their energy centers are imbalanced. Some common signs include:

- Constant stress or anxiety
- Lack of focus
- Feeling emotionally overwhelmed
- Low motivation or fatigue
- Difficulty expressing feelings
- Feeling disconnected from oneself

These experiences do not always mean a serious problem, but they may indicate that the mind and energy system need balance.

Mindful practices such as yoga, breathing exercises, meditation, and mandala art can help restore this balance.

Mandalas and Sustainable Living

At first glance, mandalas and sustainability may seem unrelated. However, they are deeply connected through the concept of inner balance leading to outer harmony.

When people feel calm, aware, and emotionally balanced, they tend to make more conscious choices in life. They become more connected with nature and more respectful toward the environment.

Ancient Vedic philosophy often emphasized living in harmony with nature. The idea of “*Vasudhaiva Kutumbakam*” means the whole world is one family. This philosophy naturally supports sustainable living.

Mandalas help cultivate awareness and mindfulness. A mindful person is more likely to:

- Reduce unnecessary consumption
- Appreciate natural beauty
- Care for the environment
- Live with gratitude and simplicity

In this way, inner sustainability leads to outer sustainability.

A Bridge Between Ancient Wisdom and Modern Science

What is fascinating about mandalas is that they bring together ancient spiritual wisdom and modern scientific understanding.



Thousands of years ago, Vedic sages used geometric patterns for meditation and energy alignment. Today, neuroscience confirms that symmetrical patterns and creative activities can calm the brain and improve emotional health.

This shows that our ancestors had a deep intuitive understanding of the human mind and the universe.

Mandalas are much more than decorative art. They are powerful tools for self-awareness, emotional healing, and inner balance. Through sacred geometry, they reflect the natural order of the universe. Through focused creation, they calm the mind and restore harmony within the body's energy system.

Both Vedic wisdom and modern neuroscience suggest that when we engage with balanced patterns, our mind naturally moves toward stability and clarity.

In a world filled with constant stimulation and stress, mandalas remind us of something simple yet profound: when we reconnect with our inner center, balance begins to flow naturally into every aspect of life.

And from that inner balance, a more mindful, compassionate, and sustainable way of living can emerge. **SB**

Hasta Nakshatra



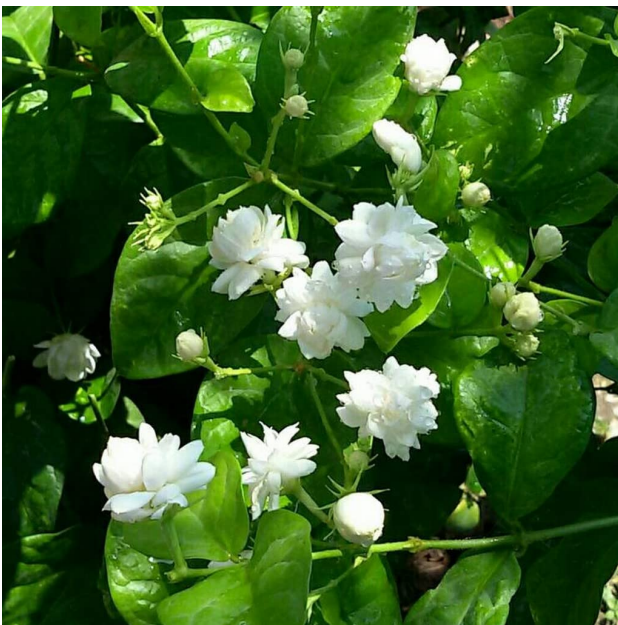
Purvi Dalal
Industrial Designer

People belonging to this nakshatra are adept at using their hands very artistically. Hasta means hands and people born under this nakshatra will be successful at professions which demand the

use of hands, for example making of Jewellery, or Masseuse, Healing, Gardening, magician or even pickpocket :D etc.

Hasta nakshatra personalities are shy, timid, introverted and rarely want to confront or fight injustice.

They also love routines and doing the same work over and over again. Daily chores do not bore them.



Hasta 1st Pada: 10 - 13'20*

When Virgo belongs to Aries Navamsa whose lord is Mars. A combination of qualities of Mercury and Mars indicates such a person will have abundant

energy and can be good at communication too. They will be adept at military or surgical activities and at the same time can have a good network of friends or clients. If Mars and Sun are well placed in this horoscope, it can make a successful life.

Hasta 2nd Pada: 13'20* - 16'40*

When Virgo belongs in Taurus Navamsa whose lord is Venus. Reflects the qualities of Mercury and Venus. A person in the 2nd Pada will be romantic at heart and will prefer harmonious communications at all times. No indulgence in controversies. Can succeed in Design or Art Professions or Investments. A well placed Mercury, Venus and Saturn can help in success.

Hasta 3rd Pada: 16'40* - 20'00*

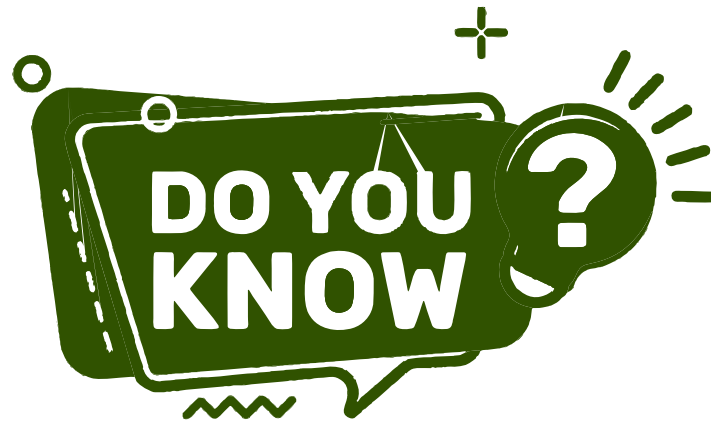
When Virgo belongs to Gemini Navamsa whose lord is Mercury. These have slightly different qualities than the 2nd Pada. These people are very talented in communications, business, networking and a well placed Mercury can make these individuals very intelligent and use their talents successfully in life.

Hasta 4th Pada: 20'00* - 23'20*

belongs to Cancer Navamsa whose lord is Moon. The characteristics of the 4th Pada is that they are very family oriented and opt for harmony everywhere. Moon and Mercury are at play in the 4th pada and a well placed Jupiter can help these individuals.

Hasta nakshatra people are quiet people but very creative and get energised by their nakshatra shrub or plant of Jasmine or Mogra.

Have many Mogra plants, it will keep you balanced and energised. You can give mogra plants to as many as you can to spread your good luck. **SB**



Source: Conceptualised & designed by the author using AI tools

Your Old Jeans Can Clean the Air

It may sound surprising, but discarded denim jeans can actually be used to improve air quality. Researchers have found that cotton fibres from old jeans can be transformed into special filters that capture harmful pollutants from the air.

These recycled denim filters are highly effective in removing nitrogen oxides (NOx), which are major contributors to air pollution and respiratory problems. Instead of ending up in landfills, old clothing can be repurposed into eco-friendly air purification systems.

This simple idea connects fashion waste with environmental protection—turning something we throw away into something that protects the air we breathe.

Sustainability Insight:

Waste is not always waste. With the right thinking, it becomes a resource.

We are in pursuit of improvement and are keen to know your views.
Please write to us at ssb.newsletters@icmai.in

5 Questions on Sustainability

1. Private Clean energy investments in UK are estimated to be in the region of ____ pounds
2. EBA (European Banking Authority) has introduced lighter _____ requirements for smaller and non-complex banks
3. _____ establishes a new framework which emphasizes measurable outcomes, linking environmental management systems directly to emissions reductions and operational efficiency
4. India's textile waste recycling could unlock _____ in annual value if the country fixes weak collection, sorting and recovery systems, according to a report by FICCI
5. The European Union's carbon market emissions fell ____ percent in 2025, extending a long-term decline, according to verified EU ETS emissions 2025 data.

The names of first 5 participants giving correct responses will be declared in the ensuing newsletter. The responses may be sent to ssb.newsletters@icmai.in



CORRECT ANSWERS OF FEBRUARY QUIZ

1	Over \$ 44 trillion
2	60%
3	costs and emissions
4	75%
5	70%40%



LAST MONTH WINNERS

CMA Kamal Nath Thakur
CMA Arjya Priya Sinha

Call for articles

Sukhinobhavantu is inviting articles on the theme ESG/ Sustainability or related themes for publishing in May 2026 edition. The articles should be relevant and original. The article should clearly cover/depict the scope, opportunity and potential for cost accountants. It should not exceed 2200 words and references/ sources are to be given wherever required. It should reach us latest by May 14, 2026, by email to ssb.newsletters@icmai.in. The right for selection of articles vests with SSB. Decision of SSB will be final and binding.

Your talent our pride!

GREAT NEWS FOR CHILDREN!

Your Drawing Can Be Featured in
Sukhinobhavantu

Hello Little Artists! We are happy to invite **children aged 6 to 12 years** to share their creativity for the Newsletter **Sukhinobhavantu**.

What Can You Draw?

Children may create drawings based on **any** of the following ideas:

- Nature
- Kindness
- Family
- Peace
- Love
- Harmony
- Patriotism
- Friendship
- Anything that makes the world a joyful place

Drawing Instructions (Very Important)

- Use an A4 size page
- Keep a 20 mm header & 20 mm footer
- Stay within the central area
- Do **NOT** draw in the header or footer

Review & Decision:

The artwork will be reviewed collectively, and the decision of the Reviewing Authority shall be final and binding.

Please feel free to contact
Aditi Didi
✉ ssb.newsletters@icmai.in

Pick up your colours, pencils, and crayons, and
Let your **imagination** bring joy to the world!



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