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Financing a Sustainable Future

Aligning Capital with Climate, Equity, and Growth

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Network India

FINANCING A SUSTAINABLE FUTURE: ALIGNING CAPITAL WITH CLIMATE, EQUITY, AND GROWTH

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This compendium is the result of collective wisdom, collaboration, and a shared commitment to advancing sustainable finance and responsible business practices in India. We hope it serves as a valuable resource for all stakeholders working toward meaningful and transformative change.

FOREWORD

As we enter the last month of 2025, it is impossible to ignore that we have truly witnessed a milestone year, which was turbulent yet transformational. 2025 was not only the year of increased geopolitical instability but the year of accelerated AI revolution, changing labour market and systems, with countries recalibrating economic dependencies. We witnessed tariff wars reshaping alliances, disruptions across global supply chains and an evident climate crisis.

From the sustainability lens, the view was equally complex with ESG facing backlash, especially in the US with echo felt in other regions. However, even through this uncertainty, the energy transition story gained momentum with clean energy investments hitting USD 2 trillion and renewables accounting for 92.5% of the new electricity capacity additions globally in 2024.

When we look at climate finance, the narrative was mixed and lacked scale, with climate finance falling far short of what the world needs, particularly in the emerging markets and developing economies. While the developing nations stood at the frontlines of the climate crisis, they received only 14% of the USD 2.4 trillion needed every year by 2030. From the statistics it is clear that what has been delivered is dramatically less than the requirements.

Over the years, India as a nation has not only advocated for more financing but for fair, equitable and accessible financing, which was visible in the intentions and commitments made at the Leader's Summit of UNFCCC COP30 in Belem. Building on this urgency, the theme of our 20th National Convention "Financing a Sustainable Future" is both timely and critical. India alone requires USD 160 billion to USD 188 billion annually up to 2030 to meet its climate and developmental goals. It is time we focus on financing our future, climate, equity and our growth models through long-term, patient, and risk tolerant capital, further adopting a mix of blended finance mechanisms, sovereign guarantees, green bonds, catalytic philanthropy and private sector investment.

In this context, I am thrilled to present this compendium which not only highlights innovative financing pathways - from blended finance and transition bonds, to carbon markets, adaptation finance, and the role of digital public infrastructure in strengthening sustainability reporting; to further focusing on how India can drive global progress through South–South cooperation, strategic technology partnerships; to the development of high-integrity climate finance ecosystems that catalyze the achievement of the SDGs.

A significant component of this year's Compendium is the Sustainable Finance Readiness Survey, that goes way beyond mere numbers, showcasing the narrative behind the findings, leaders demonstrating intent, teams expressing a desire for capability-building, and organizations candidly acknowledging uncertainties around taxonomies, instruments, and frameworks.

Each case study in the compendium is a testament to our approach and echo the spirit of a just & equitable transition, showcasing the work of diverse practitioners and organizations who are not just speaking about sustainable finance, but implementing it every day.

I hope the insights provided in the compendium add value to the readers, guide them in their transition journey, and help them reimagine the role of finance in shaping tomorrow.

As we move ahead, let's ensure finance is the future engine of both climate ambition and social equity.

Vaishali Nigam Sinha
President, UN GCNI
Co-founder, ReNew & Chairperson Sustainability

SPECIAL ADDRESS

The 20th National Convention of the UN Global Compact Network India is not only a milestone but also a testament to how far we have come and how much further we must collectively go. As we gather for this landmark edition, hosted in partnership with Balmer Lawrie, we recognise that the call for sustainable transformation has been neither louder nor more urgent. Across the world, systems are shifting, expectations are evolving, and the responsibility on businesses and institutions to respond with clarity and conviction is greater than ever.

Over the course of my professional journey, one fundamental truth has emerged consistently: sustainability is no longer an adjunct to business — it is its defining centre. Climate resilience, equitable growth, transparent governance, technology-driven innovation and sustainable finance are not optional frameworks; they are the conditions for long-term relevance and leadership.

This year's theme, "Financing a Sustainable Future: Aligning Capital with Climate, Equity and Growth," sharpens this focus. Finance today is the bridge between intention and impact. It shapes markets, accelerates innovation, supports communities and signals the values we prioritise as a nation. The way India mobilises capital in the coming years will determine our role not just in national progress, but in the global sustainability landscape.

As part of the world's largest corporate sustainability initiative, the UN Global Compact's mission — connect locally, collaborate globally and scale nationally — is reflected deeply in this Convention. Our work is increasingly global in perspective, national in ambition and local in implementation. The Compendium embodies exactly this spirit: a curated body of insights that spans ESG-linked finance, nature-positive approaches, digital public infrastructure, climate innovation, inclusive entrepreneurship and transition pathways across industries.

What inspires me most is the intent and integrity with which organisations across India are engaging in this journey. They are improving internal systems, enhancing disclosures, adopting new frameworks and investing in capacity-building. The Sustainable Finance Readiness Survey, along with the expert contributions featured in this Compendium, offer not just information but direction. They illuminate gaps honestly, present solutions practically and reflect a collective readiness to accelerate transformation.

For Balmer Lawrie, with more than a century of service to India's development, participating in this pivotal moment reinforces our belief that responsible growth is the true engine of national progress. Sustainability strengthens trust, builds resilience and ensures that our work leaves a positive imprint on the generations to come.

As we stand at the 20th edition of this Convention, I urge every leader, institution and partner to embrace one central message: India's sustainable transition depends on global collaboration, purposeful local action and bold financial innovation.

With deep gratitude to our contributors, Governing Council members, experts and the UN GCNI team — and with immense pride in our shared progress — I present this Compendium as both a reflection of our evolving journey and a roadmap for the future we are determined to shape together.

Adhip Nath Palchaudhuri
Convenor – 20th National Convention
Vice-President (Eastern Region), UN GCNI
Chairman & Managing Director, Balmer Lawrie & Co. Ltd.

SUSTAINABLE FINANCE READINESS IN INDIA:

INSIGHTS FROM THE 2025 BUSINESS SURVEY

EXECUTIVE SUMMARY

India's sustainable finance landscape is undergoing a decisive shift from awareness to institutionalisation. This Sustainable Finance Readiness Survey provides one of the first multi-sector, maturity-segmented assessments of how Indian enterprises, ranging from large corporates to MSMEs, are integrating sustainability into governance, operations, risk systems, and financial decision-making.

The findings indicate that nearly 70% of surveyed enterprises have moved beyond basic ESG awareness, demonstrating partial to full integration of sustainability into business and financial processes. A leadership cohort is now aligning capital allocation, risk management, and long-term strategy with sustainability objectives, supported by board oversight, assured disclosures, and access to structured sustainable finance instruments such as green bonds, sustainability-linked loans, blended finance, and transition finance.

However, the data also reveals an emerging two-speed transition. While advanced enterprises are rapidly mobilising sustainability-linked capital, MSMEs and early-stage organisations face binding constraints—limited ESG data systems, weak disclosure readiness, high compliance costs, and restricted access to appropriately designed financial products. As a result, sustainable finance flows remain concentrated among large corporations, with the MSME base at risk of systemic exclusion.

Disclosure maturity emerges as a defining gatekeeper of sustainable finance access. Organisations with assured or integrated reporting demonstrate significantly higher investor confidence, visibility, and eligibility for sustainability-linked instruments. In contrast, enterprises with fragmented or no disclosure remain largely invisible to sustainable finance markets.

Across sectors, services and manufacturing dominate adoption, while energy and infrastructure respondents underline the growing relevance of transition finance and climate-aligned investment. A substantial share of respondents also operate globally, facing mounting expectations from international supply chains, investors, and regulatory frameworks.

The survey further highlights strong forward-looking investment appetite, with a majority of mid- and high-maturity organisations indicating a likely or very likely increase in sustainability-linked investments over the next 2–3 years. This positions India as an emerging demand centre for sustainable finance—provided systemic frictions are addressed.

Collectively, the findings signal that India's sustainable finance ecosystem has entered a phase of substantive institutionalisation. The next leap, however, depends on building inclusive, MSME-appropriate pathways, strengthening disclosure infrastructure, designing proportional regulation, and enhancing ecosystem-wide capacity to translate sustainability ambition into bankable, scalable outcomes.

INTRODUCTION

India's sustainable finance ecosystem has witnessed significant momentum in recent years, driven by the country's long-term climate commitments, regulatory reforms, and growing investor focus on environmental, social, and governance (ESG) performance. At the global platform of COP26, the Government of India announced its ambition to achieve net-zero emissions by 2070[1], signalling a strong policy direction towards a low-carbon and resilient economy. In parallel, domestic regulators have taken decisive steps to mainstream sustainability into financial and corporate systems. The Securities and Exchange Board of India (SEBI) has significantly strengthened ESG disclosure requirements through the Business Responsibility and Sustainability Reporting (BRSR) framework for listed companies[2], while the Reserve Bank of India (RBI) has introduced climate risk and sustainable finance guidance for regulated financial institutions.[3]

Further strengthening the policy foundation, the Ministry of Finance (Department of Economic Affairs) has initiated the development of India's Climate Finance Taxonomy, aimed at creating a uniform and credible classification system for climate-aligned economic activities.[4] These regulatory and policy developments signal India's clear intent to integrate sustainability considerations into financial decision-making and capital allocation.

At the same time, India faces a substantial financing gap to meet its sustainability and climate goals. Bridging this gap requires not only large-scale capital mobilisation but also strong institutional preparedness across corporates, MSMEs, and financial institutions. The ability of enterprises to understand, access, and effectively deploy sustainable finance instruments, while embedding ESG considerations into governance, risk management, and strategy will determine the pace and credibility of India's sustainable transition.

On the market side, India's sustainable finance instruments, particularly green, social, sustainability, and sustainability-linked bonds, have expanded steadily. According to the Climate Bonds Initiative, India's cumulative sustainable debt market has shown robust growth in recent years[5], reflecting increasing participation from both public and private sector issuers. Complementing this, the Climate Policy Initiative highlights the growing role of banks, development finance institutions, and blended

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1 Government of India. (2021). India's statement at the 26th Conference of the Parties (COP26), Glasgow: Net zero emissions by 2070. United Nations Framework Convention on Climate Change. COP26

2 Securities and Exchange Board of India. (2023). *Business responsibility and sustainability reporting (BRSR) framework for listed entities.* SEBI.

3 Reserve Bank of India. (2022). *Discussion paper on climate risk and sustainable finance.* RBI.

4 Ministry of Finance (Department of Economic Affairs) – Draft Framework for India's Climate Finance Taxonomy.

5 Climate Bonds Initiative. (2024). *India sustainable debt: State of the market 2024.* CBI.

finance mechanisms in accelerating green investments across renewable energy, infrastructure, and climate-resilient sectors[6]. However, enterprise-level access to these instruments remains uneven, with advanced firms actively using sustainability-linked loans, green bonds, and blended finance structures, while many MSMEs and early-stage organizations report limited or no exposure to such products.

Despite this progress, India faces a substantial sustainable finance and climate investment gap. The World Bank[7] and the International Energy Agency (IEA) estimate that India will require several trillions of dollars in cumulative investment over the coming decades to meet its climate mitigation, adaptation, and energy transition goals[8]. Private sector participation, supported by innovative financial instruments and risk-sharing mechanisms, will therefore be essential. This imperative is also echoed in industry assessments such as EY's analysis on bridging India's sustainable finance gap[9].

Against this evolving national landscape, the preparedness of enterprises to understand, access, and integrate sustainable finance into their core business strategies becomes critically important. It is within this context that the Sustainable Finance Readiness Survey was undertaken to assess the current level of awareness, preparedness, and practical integration of sustainable finance practices among enterprises. The survey received responses, capturing insights from organisations across different sectors and maturity levels.

The survey framework was structured around two key dimensions, readiness (covering awareness, intent, governance, and institutional capacity) and integration (focusing on the application of sustainable finance in operations, risk frameworks, disclosures, and financing decisions). This report presents an analysis of the findings, highlighting prevailing trends, key gaps, and emerging capacity needs within India's sustainable finance ecosystem. The insights are intended to support policymakers, financial institutions, industry bodies, and enterprises in designing targeted interventions and strengthening sustainable finance adoption across the country.

Purpose of the Sustainable Finance Readiness Survey

The Sustainable Finance Readiness Survey was undertaken to build a clear, evidence-based understanding of how Indian enterprises are positioned within the country's rapidly evolving sustainable finance landscape. As India strengthens its regulatory frameworks, expands its sustainable finance instruments, and advances its national climate commitments, the readiness of businesses to navigate this transition

6 Climate Policy Initiative. (2023). Landscape of green finance in India. CPI.

7 World Bank. (2022). *India climate and development report: From vulnerability to resilience.* World Bank.

8 International Energy Agency. (2023). *India energy outlook 2023.* IEA.

9 EY. (2024). *Bridging India's sustainable finance gap.* EY India.

becomes a critical determinant of success. The survey therefore aims to move beyond high-level ESG perceptions and examine the underlying systems, structures, and capabilities that shape an organisation's ability to adopt, operationalise, and scale sustainable finance practices.

The study seeks to capture the real-world conditions that influence enterprise engagement—ranging from governance arrangements and internal decision-making processes to data availability, disclosure maturity, and familiarity with sustainability-linked financial products. By assessing these foundational elements, the survey provides insights into both the strengths and the systemic gaps within Indian enterprises, highlighting where readiness is emerging, where it remains uneven, and where targeted interventions may be required.

This diagnostic approach enables the survey to serve multiple purposes: it establishes a baseline of current enterprise preparedness; it identifies variations across sectors, organisational sizes, and maturity levels; and it generates practical insights to support policy direction, market design, capacity-building efforts, and industry dialogue. Ultimately, the study aims to inform a more coordinated approach to strengthening India's sustainable finance ecosystem, ensuring that enterprises across the value chain are equipped to align financing decisions with national sustainability, climate, and development priorities.

Alignment with the UN GCNI's 20th National Convention Theme

The 20th National Convention of UN Global Compact Network India is anchored on the theme "Financing a Sustainable Future: Aligning Capital with Climate, Equity and Growth." This theme aligns closely with the objectives, scope, and outcomes of the Sustainable Finance Readiness Survey, which seeks to assess how Indian enterprises are preparing to mobilise and deploy capital in support of sustainable development priorities.

The findings from the Sustainable Finance Readiness Survey serve as a robust evidence base to:

- Shape informed dialogue among corporates, policymakers, financial institutions, and development partners.
- Identify priority sectors and themes for transition finance, including clean energy, MSME decarbonisation, infrastructure, and climate adaptation.
- Inform the design of future capacity-building programmes, tailored to enterprise maturity and sectoral needs.
- Facilitate public–private partnerships that can unlock capital, technical expertise, and implementation support.
- Support credible and inclusive transition pathways for MSMEs, suppliers, and value-chain partners under a Just Transition framework.

How the Study Supports Ecosystem Partnerships and Policy Dialogues

The survey results are intended to serve not only as a diagnostic output but as a strategic enabler for ecosystem action, influencing dialogues, partnerships, and policy direction.

Dialogues

The findings will inform:

- Industry-specific consultations on ESG integration across sectors such as manufacturing, infrastructure, energy, and MSMEs.
- Cross-sector alignment workshops on climate finance, transition planning, and sustainability-linked investments.
- Corporate–bank engagement platforms to facilitate matchmaking for green and transition finance.
- Multi-stakeholder dialogues on national taxonomies, disclosure harmonisation, and impact measurement frameworks.

Partnerships

The survey will help catalyse:

- Partnerships with DFIs for blended finance, risk-sharing mechanisms, and catalytic capital deployment.
- Structured bank–corporate engagement to expand sustainable lending portfolios.
- Collaborations for MSME-focused sustainability programmes, addressing both capacity building and access to finance.

Policy Direction

The evidence generated through the survey highlights implementation-level gaps that can inform:

- The evolution of India's national sustainable finance taxonomy.
- Enhancement pathways for BRSR and value-chain disclosures.
- Sector-specific transition finance frameworks for high-emission and climate-exposed industries.
- The design of financial incentives and risk mitigation mechanisms for green investments.
- The development of standardised tools, templates, and institutional capacity-building resources.

Together, these applications position the survey as a strategic instrument for enabling coordinated action across policy, finance, and industry ecosystems.

METHODOLOGY OF THE STUDY

The Sustainable Finance Readiness Survey adopts a structured, diagnostic-oriented methodology to understand how Indian enterprises are positioned to integrate sustainability into financial and operational systems. Recognising that organisations differ widely in maturity, the methodology is grounded in three principles:

1. Maturity sensitivity – acknowledging differences between early-stage and advanced organisations.
2. Holistic assessment – examining readiness across governance, risk, finance, operations, and disclosure.
3. Systemic insight generation – identifying ecosystem-level conditions required to strengthen adoption.

This ensures that findings reflect both enterprise-level realities and broader systemic gaps.

Objectives of the Study

The survey was designed as a diagnostic tool to assess how Indian enterprises are positioning themselves within the rapidly evolving sustainable finance ecosystem. The study seeks to move beyond surface-level awareness and examine the depth of institutional readiness, strategic intent, and operational integration of sustainability within business and finance functions.

Specifically, the study aimed to:

- Evaluate the level of understanding of ESG principles and their integration into corporate strategy and governance structures.
- Assess the preparedness of finance functions, including treasury, risk, and investment teams, to integrate sustainability into capital allocation, lending, and financial decision-making.
- Gauge enterprise appetite for sustainable finance instruments, including green bonds, sustainability-linked loans, and transition finance.
- Identify key barriers faced by corporates and MSMEs, such as data limitations, internal capacity gaps, cost considerations, and lack of clarity on incentives.
- Map the demand for capacity building, technical assistance, and policy support required to accelerate adoption.
- Provide evidence-based inputs into national-level dialogues on sustainable finance, transition pathways, and regulatory evolution.

Together, the findings establish a foundational understanding of where Indian businesses stand today, while also signalling the strategic direction required to align enterprise financing practices with national priorities and global sustainable finance agendas.

Survey Design and Distribution

The Sustainable Finance Readiness Survey was conducted anonymously using a structured online questionnaire aimed at assessing enterprise-level preparedness for integrating sustainability into financial and operational decision-making. The survey leveraged the UN GCNI network to reach enterprises across sectors, and was further disseminated through social media channels to broaden participation.

A stratified and convenience sampling approach was adopted: stratification ensured coverage across organizational size, sector, and geography, while convenience sampling enabled responses from networked enterprises and social media audiences.

The survey was structured to capture a progressive understanding of sustainable finance readiness, covering the following dimensions:

1. Awareness of ESG principles and sustainable finance concepts
2. Integration of sustainability into strategy and operations
3. Governance frameworks supporting ESG and sustainable finance
4. Use and interest in sustainable finance instruments
5. Disclosure and reporting practices
6. Challenges and barriers to adoption
7. Support needs, including capacity building and policy guidance

Questionnaire Structure and Thematic Focus

The questionnaire was organised into thematic clusters, each reflecting a core dimension of sustainable finance readiness:

1. Foundational Readiness – awareness, intent, early-stage motivations
2. Governance & Institutional Systems – roles, policies, committees, oversight
3. Finance Integration – use and interest in sustainable finance instruments
4. Social & Operational Integration – inclusion, gender equity, MSME engagement
5. Risk Management – climate, transition, and environmental risk processes
6. Measurement & Disclosure – metrics, tracking, reporting systems
7. Barriers to Adoption – capacity, data, financial constraints
8. Support Needs & Future Outlook – technical, policy, and partnership needs

This structure allows a multi-dimensional assessment of both readiness and operational practice.

Maturity Segmentation: Track A and Track B

A distinctive feature of the methodology is the maturity-based segmentation:

Track A: Early-Stage Respondents

For organisations reporting:

- No engagement with ESG, or
- Early awareness without integration

Track A focused on motivations, initial barriers, and foundational support needs.

Track B: Integrating and Advanced Respondents

For organisations reporting:

- Partial, broad, or full integration

Track B assessed governance maturity, use of instruments, measurement capacity, disclosure quality, and risk systems.

This segmentation enables nuanced interpretation of readiness across different organisational types.

Relevance to Indian Corporations and Financial Institutions

The relevance of sustainable finance for Indian enterprises has intensified in recent years due to the rapid globalisation of ESG and sustainability-linked financing norms. Indian corporations are increasingly exposed to:

- International investor expectations around ESG performance, risk governance, and climate disclosure.
- Regulatory disclosure requirements under BRSR and BRSR Core, driving structured ESG reporting and assurance.
- Global supply-chain sustainability standards, particularly for export-oriented sectors linked to Europe and North America.
- Emerging transition finance frameworks, focused on hard-to-abate sectors such as steel, cement, energy, and transport.
- Green credit mechanisms, climate adaptation finance, and resilience-linked investment opportunities.

For financial institutions, the transformation is equally significant.

- Banks are integrating ESG and climate risks into credit appraisal, portfolio risk management, and sectoral exposure strategies.

- Development Finance Institutions (DFIs) are increasingly deploying blended finance instruments and prioritising climate-resilient and low-carbon investments.
- Institutional investors are actively screening for strong ESG fundamentals as a core input into risk-adjusted returns.
- Regulators are moving steadily toward national taxonomies, climate risk disclosure frameworks, and system-wide stress testing.
- In this evolving context, Indian corporates must demonstrate credible readiness, not only to remain competitive and investment-ready, but also to remain regulatorily compliant, supply-chain resilient, and strategically aligned with India's long-term transition goals.

Data Integrity and Analysis

Responses were analysed using descriptive statistics and cross-tabulation to highlight:

- Readiness patterns across maturity segments
- Differences across organisational types and sectors
- Systemic themes across governance, risk, disclosure, and finance
- Barriers and support needs across enterprise sizes

Given the exploratory nature of the study, the analysis focuses on directional insights, not statistical inference.

Observation

The survey respondent profile reflects a diverse and strategically positioned set of organizations that are well-placed to drive sustainable finance adoption in India. Nearly half of the respondents are large corporations, complemented by a significant presence of MSMEs, NGOs/social sector organizations, and policy/advisory entities, ensuring representation across enterprise size, sectoral focus, and functional roles. The sectoral distribution is dominated by services and manufacturing, with additional participation from energy, infrastructure, finance, and social-impact sectors, indicating that respondents operate across both operationally intensive and market-facing areas. This pattern aligns with global evidence that the manufacturing sector demonstrates relatively higher ESG integration, largely driven by regulatory requirements and investor pressure[10].

While MSMEs form a smaller proportion of respondents, their inclusion remains particularly significant, as national assessments highlight that MSMEs often lag in ESG disclosures and formal sustainability systems but exhibit a high willingness to build capacity and adopt sustainable practices when provided

[10] International Finance Corporation. (2022). *ESG integration in manufacturing: Global trends and emerging market insights.* World Bank Group.

with appropriate institutional and financial support[11]. Participation from infrastructure and energy players, though smaller in absolute numbers, is strategically important, as global literature indicates that infrastructure companies are among the leading adopters of sustainability-linked financing, owing to the suitability of project-based funding structures for green and transition investments[12].

Geographically, a majority of respondents have a national footprint, while a substantial portion operate globally, exposing them to international ESG expectations, supply-chain standards, and investor scrutiny. Many organizations also operate across multiple sectors, reflecting the cross-cutting nature of sustainability integration and the need for finance solutions that accommodate multi-sector engagement. Collectively, these characteristics suggest that the surveyed organizations are not only aware of sustainable finance imperatives but are also positioned at varying stages of readiness to implement and scale ESG-linked financial practices, making them important contributors to India's transition toward a resilient, low-carbon, and inclusive economy.

Survey Limitations

- The survey was voluntary and self-reported, which may introduce subjectivity or overestimation of readiness.
- Respondent representation was skewed toward corporates and MSMEs, with limited participation from financial institutions and public-sector enterprises.
- Distribution through social media and professional networks may bias the sample toward enterprises already engaged with sustainability.

Findings are indicative rather than statistically representative, but provide actionable insights into trends, gaps, and enterprise support needs.

[11] Small Industries Development Bank of India. (2023). *MSME sustainability and ESG adoption in India: Opportunities, challenges, and financing needs.* SIDBI.

[12] Organisation for Economic Co-operation and Development. (2021). *Infrastructure and sustainability-linked finance: Policy perspectives and market trends.* OECD Publishing.

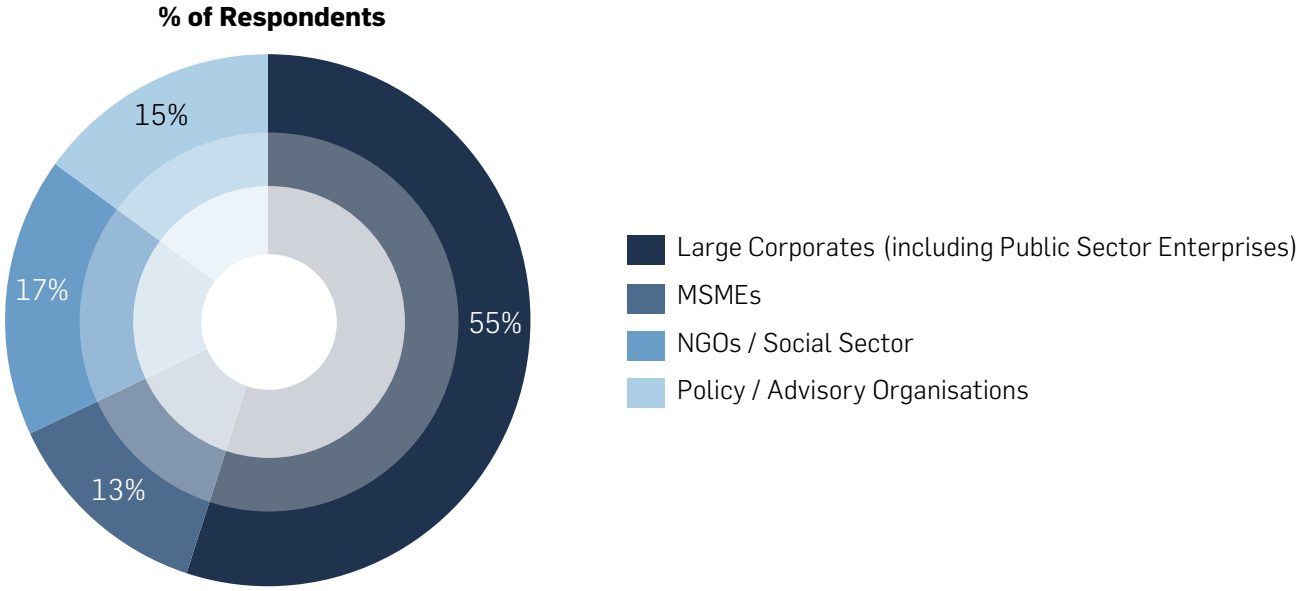
RESPONDENT PROFILE

This chapter presents an analysis of the organizations that participated in the Sustainable Finance Readiness Survey. It highlights the diversity of organizational types, sectoral distribution, and geographic footprint, providing insight into the enterprises positioned to adopt and scale sustainable finance practices in India.

Organizational Type

The survey captured responses from a diverse set of organizations, with some consolidation for clarity:

Figure: Organisational Profile



Large corporations make up nearly half of all respondents, indicating that around 55 percent of participating enterprises are already deeply engaged in sustainability discussions and are likely to shape the direction and scale of sustainable finance adoption in India. MSMEs account for about 13 percent of the sample, while NGOs and social-sector organisations represent roughly 17 percent, together bringing important perspectives from smaller and impact-oriented entities that often face structural capacity constraints but remain central to achieving inclusive and broad-based transition outcomes. Policy and advisory organisations constitute close to 15 percent of respondents, underscoring the strong involvement of institutions that contribute regulatory insight, technical expertise, and sectoral guidance.

Collectively, this distribution suggests that while sustainable finance leadership is currently concentrated among larger corporates, there is a meaningful and growing engagement from smaller enterprises and ecosystem-support organisations, an encouraging indicator of India's progress toward a more inclusive and system-aligned sustainable finance landscape.

Sectoral Representation

Respondents operate across multiple sectors, reflecting the cross-cutting relevance of sustainable finance. Since many organizations operate in more than one sector, percentages may sum to more than 100%. Respondents span energy, manufacturing, infrastructure, finance, services, and social sectors, with geographic operations ranging from state-level to global footprints, enabling comparative insights across value-chain depth and market exposure.

Table: Sector of Operation

Sector	% of Respondents
Services	50%
Manufacturing	38%
Energy	19%
Infrastructure	5%
Finance	7%
Health / ESG / Social / Community Development	14%

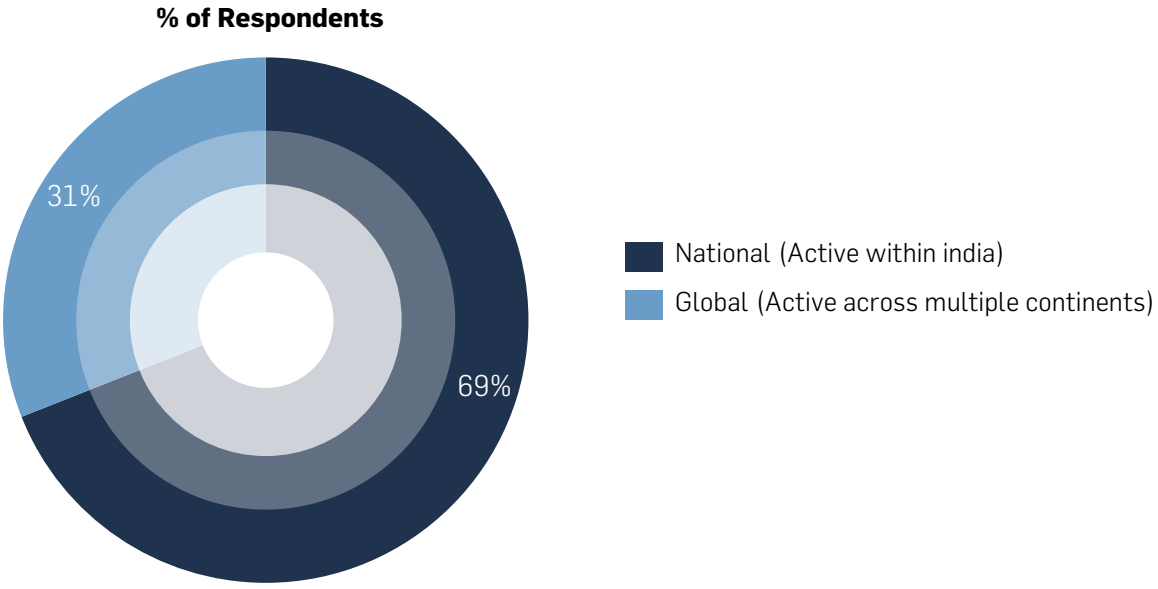
**Percentages reflect the proportion of respondents selecting each sector; respondents could select multiple sectors.*

Services and manufacturing together account for nearly 88 percent of all respondents, indicating that sustainable finance conversations are gaining significant traction in sectors that form the backbone of India's economic activity and value-chain networks. Participation from the energy sector, representing about 19 percent of respondents, and from infrastructure organisations, though smaller in share, underscores the strategic importance of sustainable finance in enabling low-carbon transitions, clean energy deployment, and resilience-focused capital investments. Additionally, the presence of respondents from the social sector, health, and ESG advisory domains, collectively forming a meaningful portion of the sample, highlights the growing role of governance, social equity, and technical expertise in shaping effective sustainability integration. Taken together, this sectoral distribution suggests that while the momentum is strongest in services and manufacturing, critical transition sectors and ecosystem enablers are increasingly engaged, signalling a broadening foundation for sustainable finance adoption across India's economy.

Geographic Footprint

Respondents have operations spanning domestic, regional, and global markets:

Figure: Geographic Presence



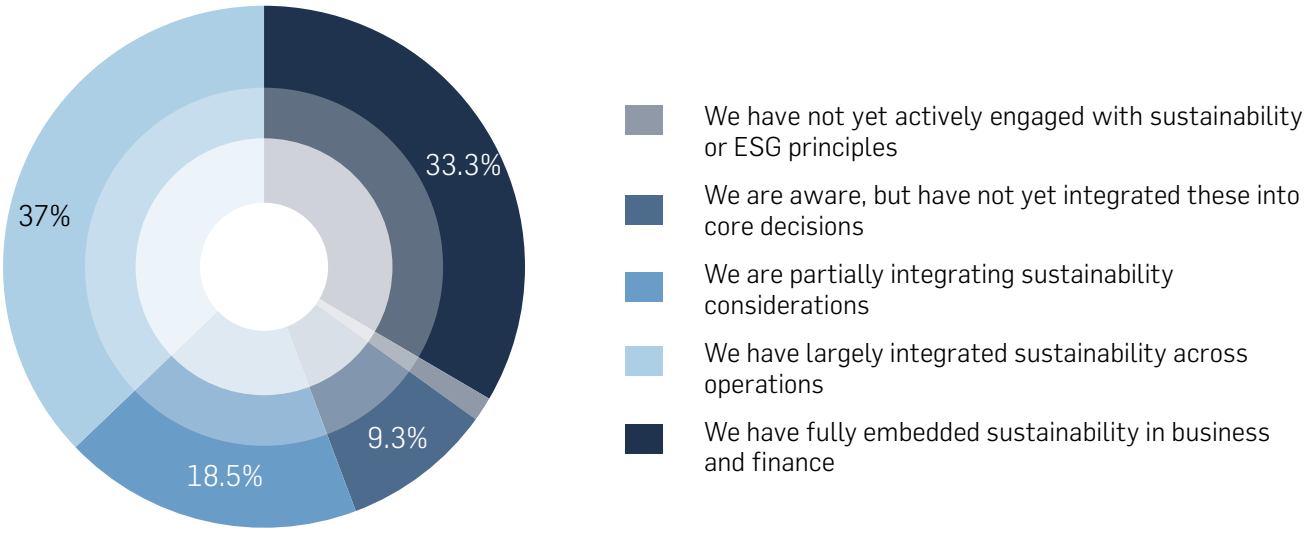
The geographic distribution of respondents shows that a majority, about 69 percent, operate at a national scale, indicating strong representation from organisations with extensive domestic operations and broad exposure to India's regulatory landscape. Nearly 31 percent of respondents have a global footprint, suggesting that a substantial share of enterprises are actively interfacing with international ESG expectations, supply-chain requirements, and investor scrutiny. Meanwhile, around 14 percent operate primarily at the state level, capturing the perspectives of regionally anchored businesses with distinct contextual challenges and opportunities. A smaller segment, close to 2 percent, serves regional markets across South Asia or the Asia-Pacific. This distribution demonstrates that most participating organisations are well-positioned to align domestic sustainability compliance requirements with global standards, an important enabler for scaling sustainable finance adoption and improving competitiveness in international markets.

ESG AWARENESS, GOVERNANCE & STRATEGIC READINESS

The level of ESG awareness, governance integration, and strategic maturity among Indian enterprises based on how effectively sustainability considerations are embedded into overall business and financial decision-making. The study design intentionally bifurcated respondents into early-stage organizations (those not yet engaged or only aware) and advanced-stage organizations (those partially, largely, or fully integrating ESG). This framework enables a clear interpretation of India's current ESG institutional readiness. The survey findings indicate that a significant proportion of 88 percent respondents, have progressed beyond basic ESG awareness into integration of sustainability within their core decision systems, reflecting a notable shift from intent to institutional practice.

ESG Integration Maturity: Distribution Across Enterprises

Figure: How effectively does your organization integrate sustainability or ESG considerations into its overall business and financial decision-making?



The results reflect a strong consolidation of ESG adoption at advanced levels of integration. As per the pie-chart distribution:

- 33.3% of organizations report that sustainability is fully embedded within business and finance, indicating mature governance structures, strategic alignment, and institutional ownership of ESG.
- 37% indicate that sustainability is largely integrated across operations.

Together, this suggests that nearly 70% of participating organizations demonstrate high ESG integration maturity, where sustainability is no longer peripheral but embedded into core governance, risk management, and strategic processes.

At the same time:

- 18.5% of organizations report partial integration, reflecting a transitional phase where sustainability considerations are being introduced but are not yet deeply institutionalised across finance, risk, and operations.
- 9.3% of organizations indicate that they are aware of ESG but have not yet integrated it into core decision-making.
- Only a very small fraction (just over 1–2%) remains at a stage of no active ESG engagement.

This maturity-based distribution clearly positions Indian enterprises within a phase of active ESG institutionalization rather than early awareness.

Governance Integration and Institutional Readiness

Organizations falling within the high integration category (~70%) typically reflect:

- Established ESG strategies,
- Board or senior-management oversight,
- ESG-linked enterprise risk management systems,
- Alignment between sustainability performance, financial planning, and disclosures.

This aligns with international evidence indicating that firms with higher ESG maturity demonstrate stronger risk governance, capital efficiency, and long-term financial resilience (UNEP FI, 2023).[13]. This cohort is also better positioned to comply with evolving Indian regulatory expectations such as SEBI's BRSR and BRSR Core requirements, while responding to international investor scrutiny and value-chain sustainability pressures.

The medium integration group (18.5%) represents enterprises transitioning from compliance-oriented sustainability to strategy-driven ESG adoption. These organizations typically face challenges in:

- Operationalising ESG across departments,
- Embedding sustainability into financial planning and capital allocation,
- Establishing unified ESG data systems.

[13] United Nations Environment Programme Finance Initiative (UNEP FI). (2023). *Global progress on sustainable finance and ESG integration.* UNEP FI.

This pattern closely reflects the early institutionalisation stage of the IFC Sustainability Maturity Model, where governance frameworks exist but system-wide execution remains uneven (IFC, 2022)[14].

The low or awareness-only segment (□9–11%) largely reflects MSMEs and early-stage organizations facing:

- Resource and capability constraints,
- Limited technical ESG expertise,
- Weak linkages between sustainability and commercial value creation.

However, national studies consistently show that while MSMEs lag on ESG disclosures, they exhibit a high willingness to build sustainability capacity when supported through finance and technical assistance (SIDBI, 2023)[15].

Strategic Readiness and Business Alignment

Organizations demonstrating advanced ESG integration increasingly treat sustainability as a strategic business driver rather than a compliance obligation or CSR activity. ESG is now being actively linked to:

- Long-term value creation,
- Access to sustainable finance,
- Supply-chain resilience,
- Market competitiveness and investor confidence.

Sectoral trends observed within the respondent base also align with global evidence. Manufacturing firms, which constitute a substantial share of the sample, consistently display stronger ESG systems due to higher regulatory exposure and investor pressure (IFC, 2022)[16]. Infrastructure-oriented firms, meanwhile, are more advanced in sustainability-linked financing adoption, driven by project-based funding models and blended-finance suitability (OECD, 2021)[17].

Nevertheless, organizations in the partial and awareness stages continue to face persistent strategic barriers, including:

- Weak integration between ESG and financial performance metrics,
- Fragmented governance responsibilities,

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[14] International Finance Corporation (IFC). (2022). *Sustainability maturity and ESG integration in emerging markets.* World Bank Group.

[15] Small Industries Development Bank of India (SIDBI). (2023). *MSME sustainability readiness and green finance access in India.* SIDBI.

[16] Ibid 14

[17] Organisation for Economic Co-operation and Development (OECD). (2021). *Transition finance and infrastructure investment pathways.* OECD Publishing.

- Absence of internal sustainability data infrastructure,
- Limited executive bandwidth for sustainability leadership.

This underscores the need to strengthen ESG-linked financial intelligence, impact measurement systems, and leadership-level integration frameworks to move from symbolic adoption to full operational alignment. Survey responses further indicate that while advanced organizations increasingly anchor ESG at the board and senior management levels, early-stage enterprises often rely on informal or fragmented ownership through functional teams, reflecting a clear governance maturity gradient.

Methodological Implications of the Maturity-Based Distribution

From a methodological standpoint, this maturity distribution directly informed the bifurcation of the survey instrument.

- Organizations at the early stage (awareness and partial integration) were administered a foundational question set focused on:
  - ESG understanding,
  - Initial governance exposure,
  - Readiness constraints,
  - Capacity-building needs.
- Organizations reporting large to full ESG integration were routed through an advanced module addressing:
  - Strategic ESG integration mechanisms,
  - Governance systems,
  - Sustainable finance instruments,
  - Disclosure practices,
  - Climate and ESG risk alignment.

This design ensured that responses were context-sensitive, maturity-aligned, and analytically robust, allowing for accurate interpretation across different levels of institutional readiness.

The survey findings clearly indicate that a significant proportion of Indian enterprises have progressed beyond basic ESG awareness into active integration of sustainability within business and financial decision-making. Nearly two-thirds of participating organizations (approximately 68–70%) report that sustainability is either largely integrated across operations or fully embedded within core business and finance functions. Within this, about 37% indicate full embedding of sustainability, reflecting mature governance structures, strong strategic alignment, and institutional ownership of ESG across decision systems. This firmly positions Indian enterprises within a phase of active ESG institutionalisation, moving

decisively beyond peripheral or compliance-led approaches into structured governance and strategic business alignment.

At the same time, around one-quarter of organizations (approximately 18–26%) report partial integration, representing a critical transitional phase where sustainability considerations are being introduced but are not yet deeply institutionalised across finance, risk, and operations. In addition, a smaller but important awareness-only segment (approximately 5–10%) remains where ESG is recognised conceptually but has not yet been translated into core business or financial decisions. This segment predominantly highlights the continued vulnerability of early-stage firms and MSMEs, reinforcing the importance of targeted capacity building, accessible finance, and enabling policy support.

From a methodological standpoint, this maturity-based distribution directly informed the bifurcation of the survey instrument. Organizations at the early stages of awareness and partial integration were administered a foundational set of questions focusing on ESG understanding, initial governance exposure, and readiness constraints. In contrast, organizations reporting large to full ESG integration were routed through an advanced module covering strategic integration, governance mechanisms, sustainable finance instruments, disclosures, and risk alignment. This ensured that responses were context-sensitive, maturity-aligned, and analytically robust.

Taken together, the distribution reinforces India's current sustainable finance narrative: a solid leadership group of enterprises is already embedding ESG into core financial and operational decision systems, while a meaningful transitional cohort represents the system's immediate scale-up opportunity. However, the pace and credibility of the next phase of India's sustainable transition will depend not only on corporate intent, which is clearly established, but on execution depth, financial integration, institutional capacity, and ecosystem-level enablers that convert sustainability ambition into full operationalisation.

SUSTAINABLE FINANCE INSTRUMENTS & DEPLOYMENT

This chapter examines how organizational ESG maturity translates into real-world financial behaviour and capital deployment. Drawing on survey findings and supported by existing literature, it highlights a clear stratification in access to, and use of, sustainable finance instruments between advanced organizations and early or transitional enterprises. While a segment of Indian corporates is actively leveraging sophisticated sustainability-linked financial products, a much larger base, particularly MSMEs, remains dependent on conventional finance. This uneven deployment poses critical implications for the scale, speed, and inclusivity of India's sustainable finance transition. The constraints observed in sustainable finance access are mirrored by respondents' expressed support needs, particularly in capacity building, simplified access to instruments, improved measurement tools, and clearer policy guidance, indicating a strong execution gap rather than lack of intent.

Sustainable Finance Deployment Among Advanced Organizations

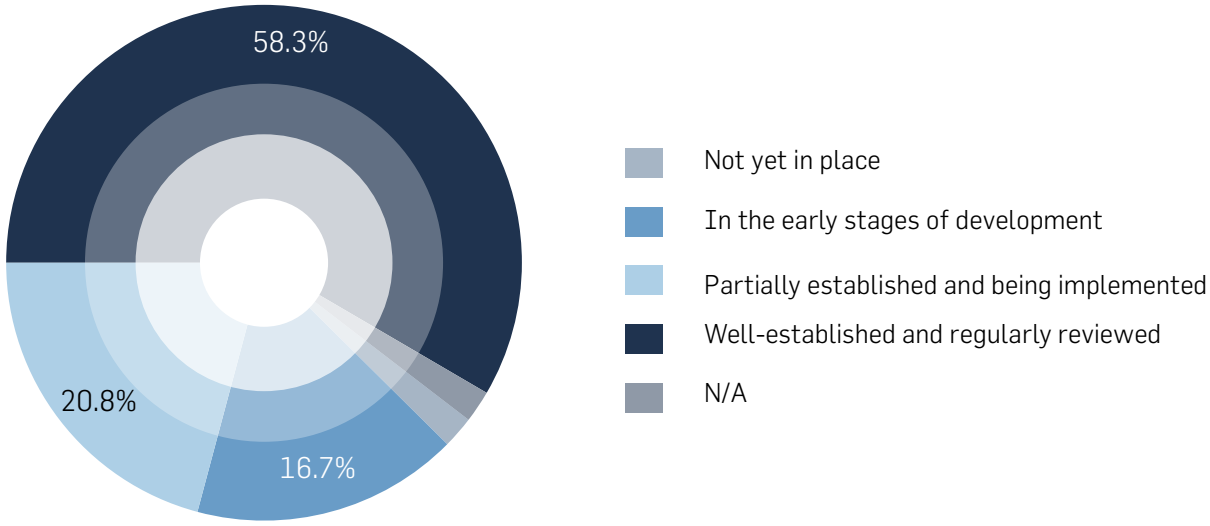
Survey responses from organizations with high or fully integrated ESG maturity reveal a strong and growing reliance on structured sustainable finance instruments. These organizations are no longer treating sustainability as a peripheral activity; rather, sustainable finance has become an integral component of their capital planning, investment strategy, and long-term risk management. Forward-looking investment intent is strongly concentrated among advanced organizations, while early-stage enterprises remain cautious and incremental, reinforcing the self-reinforcing nature of the sustainable finance access gap.

Respondents from this category reported active use of green bonds, sustainability-linked loans, blended finance mechanisms, concessional funding, and, in some cases, impact investment partnerships. Capital mobilisation is closely tied to strategic sustainability objectives such as renewable energy deployment, energy efficiency upgrades, circular economy solutions, water stewardship, and climate risk mitigation. Several organizations indicated large-scale capital investments, including triple-digit crore allocations for decarbonisation, waste reduction, and clean energy transitions, supported directly by sustainability-linked financial instruments.

Governance structures within these organizations further reinforce financial integration. Survey data reflects:

- Board-level oversight of ESG-linked financial decisions
- Formal integration of sustainability risks into enterprise risk management frameworks
- Alignment of sustainability goals with capital allocation and budgeting processes

Figure: To what extent does your organization have internal policies or frameworks linking sustainability goals with capital allocation, budgeting, or investment decisions?



These firms typically maintain robust ESG disclosure systems, often backed by third-party assurance, enabling them to meet investor expectations and access capital market instruments. This empirical finding aligns with global evidence from the UNEP Finance Initiative, which observes that higher ESG maturity significantly enhances investor confidence and reduces the cost of capital. Similarly, the International Finance Corporation reports that firms with strong governance and data systems dominate access to green and transition finance.

Evidence shows that for advanced organizations, sustainable finance has moved beyond experimentation. It now functions as a strategic financial lever, enabling long-term competitiveness, resilience against climate risks, regulatory preparedness, and stronger positioning in global value chains. However, the type of ESG disclosure system in place acts as a primary gatekeeper for sustainable finance access. Organizations with integrated or assured disclosures directly qualify for capital market instruments, whereas those limited to CSR-style reporting or internal tracking remain confined to conventional finance.

Financing Realities of Early & Transitional Organizations

A contrasting picture emerges from organizations at early or partial stages of ESG integration. Survey responses indicate that these firms remain overwhelmingly dependent on traditional financing channels, including standard bank loans, internal accruals, CSR-linked support, and sporadic grant-based funding. Access to formal ESG-linked financial products is limited and largely incidental.

Most organizations in this category reported that:

- They have not yet accessed sustainable finance instruments

- Sustainability investments are undertaken selectively and episodically
- ESG considerations are not systematically embedded in financial decision-making
- There is limited internal capacity to structure sustainability-linked financial proposals or engage with green lenders

Although intent and awareness around sustainability are steadily growing, respondents repeatedly highlighted competing business priorities, constrained cash flows, and limited technical expertise as key deterrents to sustainable finance adoption. In several cases, sustainability was described as an "emerging priority" rather than a financial strategy.

These findings resonate closely with national assessments by the Small Industries Development Bank of India, which note that while MSMEs demonstrate increasing interest in ESG adoption, their access to sustainable finance remains restricted due to weak disclosure systems, limited credit depth, and high compliance costs.

This suggests that for early and transitional organizations, sustainable finance remains largely aspirational rather than operational. While awareness is expanding, financial integration is constrained by structural, institutional, and capacity-related limitations. Moreover, Advanced organizations conducting regular E&S impact assessments are structurally better positioned to access sustainability-linked finance due to verifiable impact baselines, whereas early-stage firms conducting no or ad-hoc assessments remain excluded from outcome-linked financing.

The Structural Divide: Comparative Gaps in Access to Sustainable Finance

When advanced and early-stage organizations are examined together, a pronounced structural divide in sustainable finance access becomes evident. While large enterprises are increasingly mobilizing sustainability-linked capital, the survey indicates that structured MSME-linked sustainable finance within value chains remains limited, weakening downstream diffusion of green finance benefits.

Advanced organizations routinely mobilize:

- Capital market instruments (green bonds, sustainability-linked bonds and loans)
- Blended and concessional finance
- Impact-linked equity and debt structures
- Long-tenure transition finance for decarbonisation and circularity

In contrast, MSMEs and transitional firms largely remain excluded from:

- Affordable ESG-linked credit
- Risk-sharing or first-loss capital structures
- Transition finance products suited to smaller enterprises
- Cost-effective ESG certification and assurance mechanisms

The responses from the survey highlights multiple root causes behind this divide. Ticket sizes of most sustainable finance products are aligned with large borrowers, leaving MSMEs structurally mismatched. Disclosure requirements remain onerous for smaller firms, while transaction and assurance costs significantly reduce economic viability. Banks and financial institutions continue to apply conservative risk pricing to MSMEs, particularly for climate-linked investments where cash flow predictability is perceived to be lower.

These structural mismatches are well documented in international literature as well. The Organisation for Economic Co-operation and Development has consistently observed that global sustainable finance flows remain concentrated among infrastructure projects and large corporates, with MSMEs facing persistent access barriers due to data gaps, scale inefficiencies, and limited aggregation mechanisms.

Thus, India's sustainable finance ecosystem presently reflects a "top-heavy" architecture, deep and sophisticated at the corporate apex, yet thin and fragmented at the enterprise base.

Why Sustainable Finance Penetration Remains Uneven

The survey results, viewed alongside existing policy and market evidence, point to four systemic forces driving uneven sustainable finance penetration in India.

1. **Risk Perception and Bankability:** Advanced organizations benefit from diversified revenue streams, stronger balance sheets, and predictable cash flows, which significantly reduces their perceived credit risk. MSMEs, by contrast, face higher transition risk, greater vulnerability to market shocks, and limited hedging capacity factors that elevate the cost of capital and deter lenders from offering sustainability-linked products.
2. **Disclosure and Data Asymmetry:** While advanced firms operate structured ESG data systems with assured disclosures, MSMEs typically rely on manual tracking and fragmented reporting. This data asymmetry directly weakens lender confidence and restricts eligibility for green and sustainability-linked financing. The financing divide also mirrors differences in internal measurement and tracking capability, with advanced firms scoring significantly higher on ESG performance tracking, a prerequisite for accessing outcome-linked instruments such as sustainability-linked loans and transition finance.
3. **Policy and Market Design Bias:** Many existing sustainable finance products in India are designed for large-scale renewable energy, infrastructure, and industrial decarbonisation. Few instruments are tailored to the financing needs, cash-flow cycles, or compliance capacities of MSMEs or early-stage ESG adopters.
4. **Institutional and Technical Capacity Constraints:** Smaller firms often lack the specialized expertise required for climate risk modelling, sustainability-linked financial structuring, and ESG performance tracking. Advanced firms, meanwhile, now grapple with complex regulatory convergence, multi-framework reporting demands, and large-scale transition finance structuring, challenges of a different order.

India's sustainable finance ecosystem has achieved functional maturity for leading corporations, but remains structurally exclusionary for MSMEs and transitional enterprises. Without targeted risk-sharing mechanisms, simplified disclosure frameworks, and MSME-appropriate financial products, sustainable finance diffusion will continue to lag behind policy ambition.

This chapter establishes that sustainable finance in India is no longer at a nascent stage, yet it remains unevenly distributed across the enterprise ecosystem. Advanced organizations are actively mobilizing sustainability-linked capital at scale and increasingly embedding ESG considerations within core financial strategy, investment planning, and risk management frameworks. This trend is consistent with global evidence which shows that firms with higher ESG maturity demonstrate stronger risk-adjusted financial performance and superior capital access[18].

In contrast, early-stage and transitional enterprises continue to face binding constraints arising from elevated risk perception, limited disclosure readiness, inadequate product customization, and institutional capacity shortfalls. Existing literature confirms that MSMEs remain structurally disadvantaged in accessing sustainable finance due to high compliance costs, weak ESG data systems, and absence of tailored financial instruments[19]

If left unaddressed, these structural asymmetries risk entrenching a two-speed green transition, wherein large corporates advance rapidly toward net-zero and transition-aligned finance, while MSMEs remain financially, technically, and institutionally excluded from the sustainable finance ecosystem. Bridging this divide is therefore not only a matter of equity, but a strategic necessity for ensuring that India's sustainable finance architecture is both scalable and systemically inclusive.[20]

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[18] **International Finance Corporation.** (2022). *ESG and sustainable finance in emerging markets: Market maturity and investment implications.* Washington, DC: World Bank Group; **UNEP Finance Initiative.** (2023). *Global sustainable finance state of the market report.* Nairobi: United Nations Environment Programme.

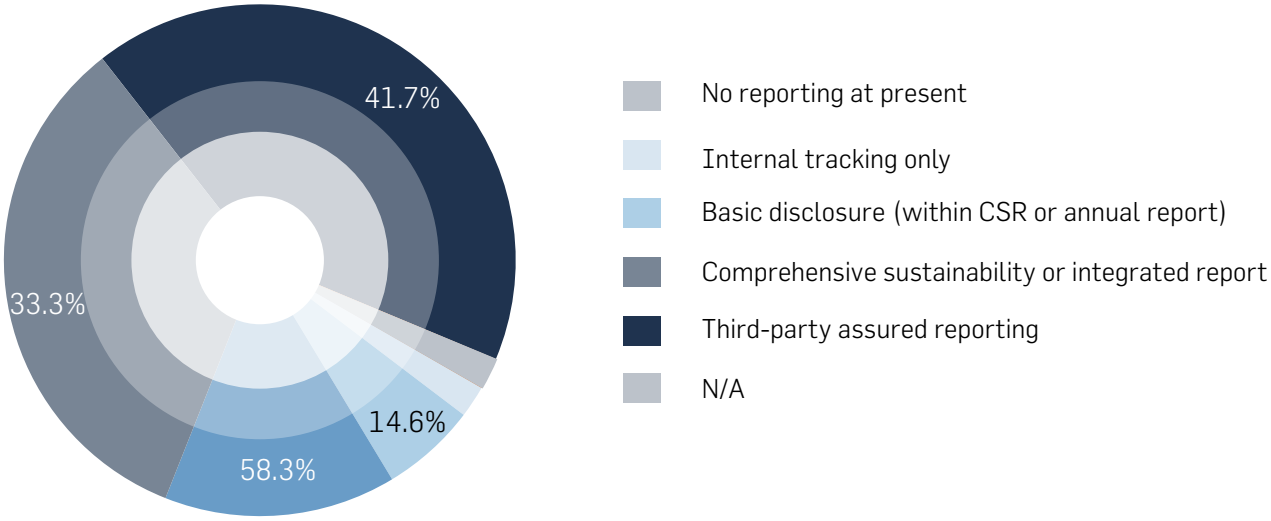
[19] World Bank. (2022). *Scaling Sustainable Finance in Emerging Markets.*

[20] OECD. (2022). *Bridging the Sustainable Finance Gap for Small Enterprises.*

ESG DISCLOSURE, REPORTING & DATA READINESS

This chapter assesses the disclosure maturity, reporting practices, and underlying data readiness of surveyed organizations, viewed through the lens of ESG integration levels. The findings clearly establish that disclosure capability in India is no longer a peripheral compliance function but a central determinant of access to sustainable finance, investor confidence, and governance credibility. At the same time, the chapter reveals deep structural asymmetries between advanced firms and MSMEs, reinforcing disclosure as a key transmission channel through which sustainable finance inclusion is either enabled or constrained.

Figure: How does your organization communicate or disclose its sustainability and ESG performance?



Disclosure Maturity by ESG Integration Level

Survey results reveal a strong positive correlation between ESG integration depth and disclosure maturity. Organizations reporting fully embedded sustainability integration overwhelmingly fall into the advanced disclosure category, characterized by:

- Third-party assured sustainability or integrated reporting
- Board-level oversight of ESG disclosures
- Formalized ESG performance communication to investors and stakeholders

These firms simultaneously demonstrate access to green bonds, sustainability-linked loans, and blended finance instruments, reinforcing the global observation that capital markets increasingly treat disclosure credibility as a proxy for ESG risk governance.

By contrast, partially integrated (transitional) organizations primarily rely on:

- CSR-based disclosures within annual reports
- Selective or project-based sustainability communication
- Internal monitoring without public assurance

While these firms demonstrate rising awareness and emerging governance intent, their disclosures remain non-standardized, non-comparable, and weakly linked to financial decision-making, limiting investor usability.

At the lower end of the maturity spectrum, early-stage organizations report:

- No formal ESG or sustainability disclosure
- N/A reporting status
- Absence of structured performance tracking systems

This cohort, dominated by MSMEs and small service providers, remains effectively invisible to sustainable finance markets, reinforcing a structural exclusion pathway where lack of disclosure prevents capital access, which in turn prevents investment in improved disclosure capacity.

BRSR-Aligned vs Voluntary Disclosure Practices

While the survey does not explicitly ask for Business Responsibility and Sustainability Reporting (BRSR) adoption, disclosure patterns allow a robust inference of alignment. Organizations exhibiting:

- Third-party assured reporting
- Integrated sustainability-financial disclosures
- Board-level ESG oversight

Closely map onto SEBI-mandated BRSR-type reporting maturity among listed companies. These disclosures demonstrate higher comparability, sector benchmarking potential, and stronger alignment with investor due-diligence frameworks

In contrast, MSMEs and unlisted firms largely operate within the voluntary disclosure space, characterized by:

- CSR activity reporting
- Internal emission or energy tracking
- Website-level sustainability narratives without standardized metrics

This bifurcation confirms that India's disclosure ecosystem is currently operating on a dual-track system, formalized regulatory reporting for large firms and voluntary, fragmented disclosure for the rest of the enterprise universe. International evidence consistently shows that such dual systems delay capital diffusion to smaller firms unless simplified proportional disclosure regimes are introduced.The survey further suggests that while large enterprises increasingly disclose social and supply-chain sustainability performance, structured MSME inclusion metrics within ESG disclosures remain limited, constraining downstream visibility of value-chain transition impacts.

Data Systems, Assurance & Reporting Frequency

Underlying disclosure quality is fundamentally shaped by data systems and measurement capacity. Survey responses on sustainability performance tracking reveal three distinct data readiness tiers:

High Data Maturity (Scores 4–5)

Advanced organizations demonstrate:

- Digitized data capture systems
- Regular ESG risk and performance reviews
- External assurance processes
- Alignment with emissions, energy, and social metrics

These firms support investor-grade ESG disclosures, enabling structured pricing of ESG risk into cost of capital. Survey responses further indicate that firms with high data maturity also demonstrate formal climate and sustainability risk integration within enterprise risk management systems, reinforcing the tight coupling between internal risk governance, disclosure accuracy, and financing credibility.

Medium Data Maturity (Score 3)

Transitional firms operate with:

- Partial data systems
- Inconsistent monitoring frequency
- Limited supply-chain data integration

While ESG is measured, it lacks systemic institutionalization, resulting in disclosure volatility and weak longitudinal comparability.

Low Data Maturity (Score 2)

Early-stage and MSME firms exhibit:

- Manual or ad-hoc data capture
- No verification mechanisms
- Limited understanding of ESG metrics

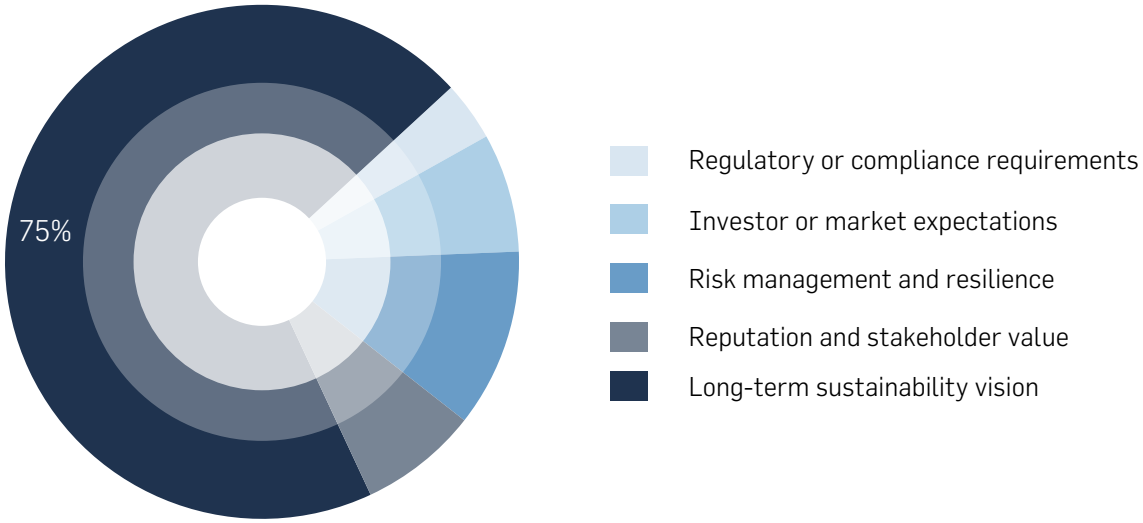
Such firms remain locked out of sustainable finance instruments that require transparent MRV (Measurement, Reporting, and Verification) systems as a precondition. This data readiness divide is further reinforced by the frequency of environmental and social impact assessments reported in the survey, with advanced organizations conducting regular E&S reviews, while early-stage firms largely operate without structured impact assessments directly weakening their disclosure credibility and finance eligibility.

Table: Interpretation of ESG Maturity Scores Used in the Survey

Score	Interpretation
1	Very early stage – minimal ESG systems, largely ad-hoc
2	Emerging – awareness present, limited formal processes
3	Transitional – partial systems and periodic integration
4	Advanced – structured systems, regular integration
5	Mature – fully embedded, institutionally governed ESG

Figure: What primarily motivates your organization to engage in sustainable finance or ESG-aligned practices?

MSME-Specific Disclosure Bottlenecks



The disclosure gap among MSMEs is not driven by unwillingness but by structural and economic barriers emerging clearly from survey responses. The most frequently cited disclosure-related challenges include:

- Data and reporting complexity
- Limited internal technical capacity
- Cost implications and ROI uncertainty
- Rapidly evolving sustainability standards

These constraints mirror global findings that compliance-oriented disclosure frameworks impose disproportionate transaction costs on smaller enterprises, especially in emerging markets. As a result, MSMEs face a double bind: they require better disclosure to access green finance, yet lack the financial and technical resources that such disclosure demands. These structural disclosure barriers are directly reflected in the support needs expressed by MSME respondents, particularly the demand for simplified measurement tools, affordable assurance mechanisms, targeted capacity-building, and clearer policy guidance to reduce compliance friction.

Investor Relevance of Weak Disclosure

The survey reveals a direct functional linkage between weak disclosure and constrained access to sustainable finance. Organizations reporting:

- Poor data systems
- Limited disclosure capacity
- Absence of third-party assurance

Simultaneously report:

- Difficulty accessing suitable ESG-linked financial products
- Limited engagement from impact investors
- Higher financing costs due to perceived ESG risk opacity

Conversely, advanced disclosures are the only category consistently accessing structured sustainable finance products, validating the global investor position that disclosure quality directly reduces information asymmetry and lowers ESG risk premiums.

This establishes disclosure not as a reputational tool but as a hard financial infrastructure requirement within India's sustainable finance architecture.

Taken together, the evidence confirms that India's ESG disclosure ecosystem has reached a phase of regulatory consolidation at the large-enterprise level but remains structurally under-penetrated among MSMEs. Advanced organizations now operate in alignment with global disclosure norms, supported by external assurance, board oversight, and integrated ESG-financial reporting. These firms are well positioned to attract transition finance, innovation capital, and sustainability-linked instruments.

This disclosure asymmetry also mirrors forward-looking investment intent captured in the survey, where organizations with advanced disclosure systems report significantly higher likelihood of increasing sustainability-linked investments over the next 2–3 years than firms operating with weak or voluntary disclosure.

However, the persistence of voluntary, fragmented, and low-capacity disclosure among early-stage

enterprises introduces a systemic inclusion risk. Without targeted policy support, simplified proportional reporting standards, and low-cost MRV infrastructure, MSMEs will remain excluded from the core flow of India's sustainable finance transition.

From a market perspective, this creates a two-tier credibility structure in which capital flows concentrate around already-disclosed firms, while the broader economic base remains trapped in disclosure immaturity. International experience demonstrates that such asymmetry undermines the macro-effectiveness of transition finance by limiting its diffusion into real-economy decarbonization and social upgrading.

Concludingly, India's ESG disclosure landscape is no longer embryonic, it is formally institutionalized for large enterprises but functionally inaccessible for a majority of smaller firms. Disclosure has become a decisive gatekeeper for sustainable finance access, investor trust, and risk pricing. The next phase of India's ESG transition therefore hinges not on expanding regulatory ambition, but on democratizing disclosure capacity across enterprise sizes, particularly through MSME-focused tools, assurance subsidies, and simplified reporting architecture.

BARRIERS TO ESG & SUSTAINABLE FINANCE ADOPTION

Despite growing momentum around ESG integration and sustainable finance in India, the survey reveals that systemic, institutional, and market-level barriers continue to constrain both the depth and equity of adoption. These barriers manifest differently across the enterprise maturity spectrum while early-stage and transitional organizations struggle with entry-level constraints, even advanced organizations face scale-related structural frictions.

Taken together, the findings suggest that India's sustainable finance ecosystem is not constrained by intent, but by execution capacity, financial product design, disclosure infrastructure, and institutional coordination.

Financial Barriers

Financial constraints emerge as the most consistently reported barrier across all enterprise types, though the nature of constraint differs by maturity level.

For early-stage and transitional organizations, the primary financial barriers include:

- Cost implications and ROI uncertainty, particularly around capital expenditure for clean technologies, monitoring systems, and certification.
- Limited access to suitable sustainable finance instruments, especially for MSMEs lacking balance sheet strength, credit history, or formal ESG disclosures.
- Blended, concessional, and transition finance remaining difficult to access, despite high expressed willingness to invest in sustainability.

For advanced organizations, financial barriers are not rooted in access alone, but in structural scalability challenges, including:

- Mismatch between available financial products and transition-scale capital needs
- Pricing of sustainability-linked instruments
- Uncertainty around long-term policy signals affecting investment risk premiums

This indicates that finance availability exists at both ends of the maturity spectrum, but product-market alignment remains weak, especially for MSMEs and mid-sized enterprises.

Technical & Capacity Barriers

Capacity constraints form the second major friction point, particularly around measurement, reporting, and technical execution.

Among early-stage organizations, the dominant constraints include:

- Limited internal technical expertise on ESG frameworks
- Data and reporting challenges, especially related to emissions measurement, supply-chain tracking, and impact indicators
- Dependence on external consultants without in-house operational anchoring

These capacity gaps result in fragmented ESG adoption, where sustainability projects exist but remain decoupled from financial and risk systems.

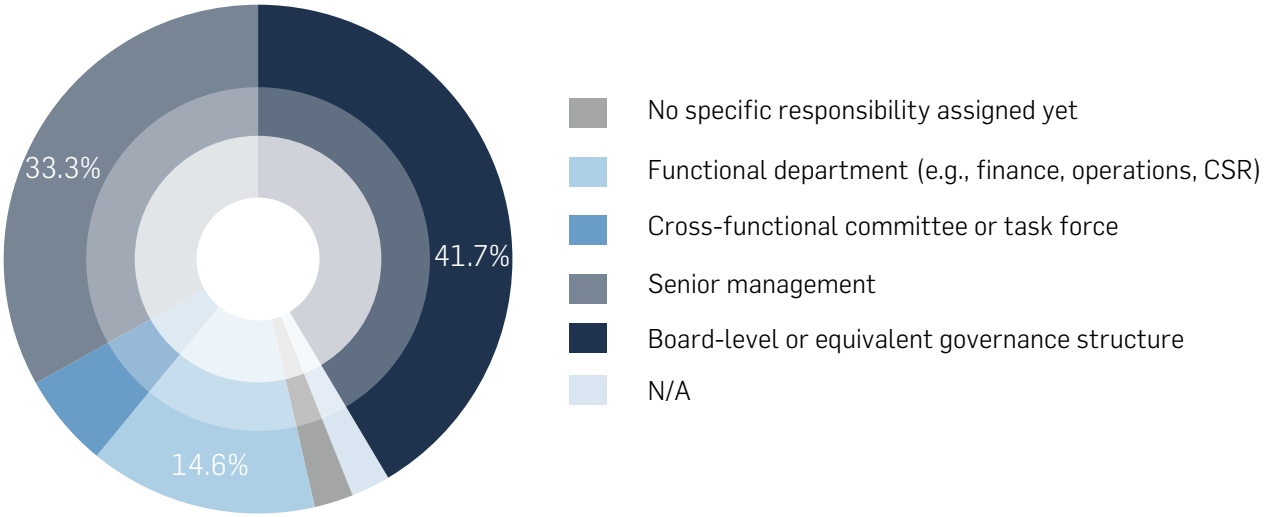
Among advanced organizations, capacity barriers are more nuanced:

- Complexity of managing multi-site, multi-supply-chain ESG data
- Assurance, verification, and audit-readiness challenges
- Integration of climate risk analytics into enterprise risk management platforms

This suggests a shift from basic knowledge gaps at early stages to data engineering and system-integration challenges at advanced stages.The survey further indicates that irregular frequency of Environmental and Social (E&S) impact assessments constitutes a hidden but critical execution barrier. While advanced organizations conduct periodic or continuous E&S reviews, early-stage and transitional firms primarily rely on ad-hoc or compliance-triggered assessments. This weakens feedback loops between ESG risk identification and financial planning, resulting in reactive rather than anticipatory sustainability decision-making. In the absence of routine E&S assessment cycles, sustainability risks remain operationally invisible to both lenders and internal risk committees.

Governance & Leadership Barriers

Figure: Who within your organization is primarily responsible for sustainability-linked financial decisions? (For designer: Redesign Pie Chart)



Governance barriers reflect the institutional maturity divide within the ecosystem.

At early stages, the survey indicates:

- Absence of clearly assigned sustainability responsibility
- ESG decisions being handled informally or through isolated functional teams
- Weak integration between sustainability goals and financial planning systems

This leads to project-based sustainability activity without long-term institutional anchoring.

At the advanced end, governance challenges persist in different forms:

- Coordination challenges among departments
- Alignment issues between sustainability, finance, procurement, and operations
- Strain between short-term commercial targets and long-term transition goals

Thus, while board-level governance has improved significantly among mature organizations, cross-functional execution remains an organisational stress point. A further governance-level constraint emerging from the dataset is the weak policy linkage between sustainability objectives and capital allocation frameworks, particularly among transitional firms. While sustainability intent is visible at the narrative level, it is often not formally embedded into budgeting, project appraisal, or investment approval processes. This disconnect limits the ability of firms to translate ESG ambitions into bankable capital expenditure pipelines, thereby reinforcing dependence on conventional financing logic.

Market & Investor-Side Barriers

External ecosystem friction also plays a decisive role.

For early-stage firms, key market-side barriers include:

- Weak investor readiness for MSME-oriented sustainable finance
- Low visibility and discoverability of ESG-aligned products
- High transaction costs in accessing speciality instruments

For advanced firms, the constraints shift toward:

- Evolving sustainability standards and shifting disclosure expectations
- Fragmented taxonomies and classification uncertainty
- Investor scrutiny without harmonized measurement frameworks

This creates a paradox where advanced organizations are under increasing ESG pressure, while early-stage firms remain under-incentivized and under-financed. The survey also reveals a critical instrument-access mismatch, wherein several organizations report having *explored* sustainable finance instruments such as green bonds, sustainability-linked loans, blended or concessional finance but failed to translate

these into actual financial closures. This reflects not a lack of interest, but structural frictions related to eligibility thresholds, documentation intensity, risk-sharing expectations, and disclosure readiness. The resulting pipeline drop-off weakens market confidence in the scalability of India's sustainable finance deal flow beyond large corporations.

Comparative Barrier Profile: Early-Stage vs Advanced Organizations

The survey reveals a clear two-track barrier structure:

- Early-stage and transitional organizations are primarily constrained by:
  - Entry-level finance access
  - Technical knowledge and tools
  - Weak governance anchoring
  - High perceived cost-risk ratio
- Advanced organizations, by contrast, are constrained by:
  - Scalability of sustainable finance instruments
  - Data system integration and assurance costs
  - Policy uncertainty and evolving regulatory expectations
  - Inter-departmental execution complexity

This confirms that India does not have a single ESG adoption problem, but multiple maturity-stage-specific bottlenecks.

Table: Comparative Barrier Profile – Early-Stage vs Advanced Organizations

Barrier Category	Early-Stage Organizations (Awareness / Partial Integration)	Advanced Organizations (Largely / Fully Integrated)
Financial Barriers	• Limited access to sustainable finance products • High cost of capital • ROI uncertainty on ESG investments • Dependence on traditional debt and internal accruals	• Pricing and structuring complexity of sustainability-linked instruments • Scale limitations for transition finance • Risk-sharing constraints for innovation-heavy projects
Technical & Capacity Barriers	• Weak ESG measurement systems • Limited internal technical expertise • Poor data availability and quality • Low familiarity with taxonomies and disclosure standards	• Advanced data integration challenges • Assurance and verification costs • Managing multi-location and value-chain ESG data

Barrier Category	Early-Stage Organizations (Awareness / Partial Integration)	Advanced Organizations (Largely / Fully Integrated)
Governance & Leadership Barriers	• No dedicated ESG ownership • ESG treated as CSR/compliance function • Limited board or senior management engagement	• Cross-functional coordination challenges • Aligning sustainability goals with core financial performance metrics • Embedding ESG into capital allocation frameworks
Market & Investor-Side Barriers	• Low visibility among ESG-focused investors • Limited access to blended finance and impact capital • Weak market signals for sustainable products	• Regulatory and taxonomy uncertainty • Evolving investor expectations • Limited domestic depth for transition finance markets
Disclosure & Reporting Barriers	• Basic or no ESG reporting • Limited understanding of BRSR and global standards • High effort perception for reporting	• Assurance costs • Reporting harmonisation across multiple frameworks • Managing increasing depth of investor ESG scrutiny
MSME-Specific Constraints	• Severe capacity and resource limitations • High compliance fatigue • Weak banking access for ESG-linked finance	• Managing MSME supply-chain ESG compliance • Limited availability of de-risking instruments for MSME transition
Climate & Risk Management Barriers	• Absence of formal climate risk assessment • ESG risks not integrated into enterprise risk registers • Limited awareness of physical vs transition risk	• Integration of climate risk into ERM still under refinement • Scenario modelling challenges • Limited stress-testing alignment with lenders

The barrier landscape confirms that India's sustainable finance ecosystem is structurally active but institutionally uneven. While early-stage enterprises struggle with access, affordability, and technical grounding, advanced firms face the limits of scale, consistency, and regulatory alignment.

Most critically, the survey indicates that without targeted interventions for MSMEs and transitional firms, sustainable finance risks becoming concentrated among large corporations alone. This would weaken the credibility, inclusiveness, and real-economy impact of India's green transition.

Accordingly, the barrier profile reinforces the need for:

- Differentiated financial instruments by enterprise maturity
- Massive capacity-building at the MSME and mid-market level
- Regulatory coherence across disclosure, taxonomy, and transition finance
- Investor frameworks that reward both early transition and advanced performance

Crucially, the barrier landscape also reflects an execution deficit in risk institutionalization and MSME inclusion within value chains. While large enterprises are increasingly subjected to investor-side ESG scrutiny, corresponding de-risking and financing support for MSME suppliers remains limited. This creates a structural contradiction in which MSMEs face rising compliance expectations without parallel access to capital, insurance, or transition-ready credit instruments, thereby amplifying systemic exclusion risks within green supply chains.

This chapter therefore establishes the policy logic for targeted ecosystem intervention, which is carried forward into the next chapter on Support Needs & Ecosystem Expectations.

SUPPORT NEEDS & ECOSYSTEM EXPECTATIONS

This chapter synthesizes what enterprises say they need to convert sustainability intent into bankable action, and what the broader ecosystem must deliver to enable a just, inclusive, and scalable transition. Survey responses point to overlapping demands, capacity-building, clearer policy signals, easier access to suitable financial products, and practical measurement & disclosure tools, but the emphasis differs by enterprise maturity. The chapter therefore outlines differentiated support for MSMEs and large firms, and specifies the roles banks & DFIs, regulators, industry bodies and platforms like UN GCNI should play.

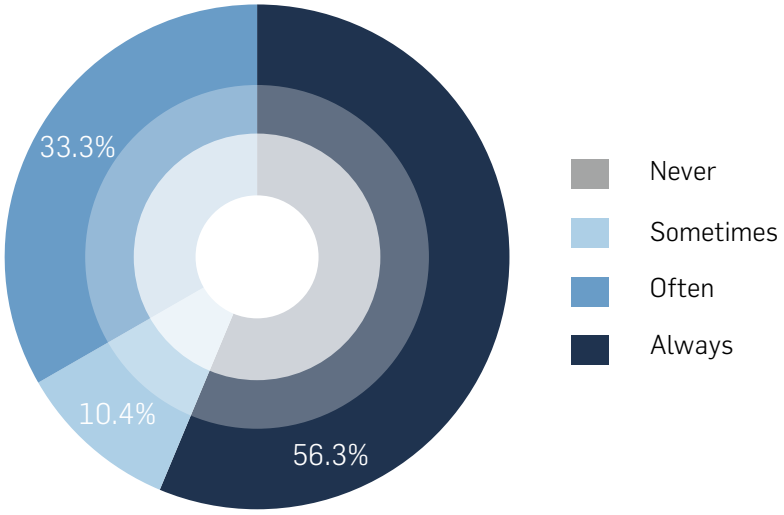
What MSMEs Want

MSMEs consistently express three priority needs:

1. **Practical, short-format capacity building and toolkits:** Respondents favour concise learning formats, short workshops, ready-to-use toolkits, and sector-specific templates that translate ESG concepts into immediate actions (e.g., how to measure energy use, basic GHG accounting templates, simple supplier-screening checklists). Several MSME responses explicitly requested "practical toolkits or guides explaining sustainable finance basics" and short management-level webinars.
2. **Affordable and tailored finance (concessional / blended instruments):** MSMEs flag lack of access to green or sustainability-linked finance, noting that traditional bank lending and internal accruals remain the default. They ask for smaller-ticket ESG products, concessional windows, blended finance that absorbs first-loss risk, and aggregation mechanisms that allow multiple MSMEs to qualify for a single institutional facility.
3. **Low-cost MRV and simplified disclosure mechanisms:** High reporting and assurance costs are repeatedly cited as a deterrent. MSMEs want proportionate, low-cost measurement, reporting and verification (MRV) systems , e.g., sectoral templates, shared verification, or subsidized assurance, so they can demonstrate credibility without excessive upfront spend.

The survey also reveals that most MSMEs conduct environmental and social impact assessments either irregularly or only on an ad-hoc basis, largely linked to client or lender requirements rather than as a systematic management practice. This low assessment frequency severely limits their ability to demonstrate outcome credibility to financiers. Respondents therefore implicitly seek not just tools, but routine assessment frameworks that embed ESG review into quarterly or annual business cycles, without which bankability remains episodic.

Figure: When your organization evaluates new projects or investments, how often does it assess environmental and social impacts alongside financial returns?



Operationally, MSMEs also requested dedicated MSME–corporate matchmaking (to integrate suppliers into sustainability roadmaps), hands-on technical assistance for project-level investments, and time-limited piloting funds that convert pilot projects into bankable propositions.

What Large Firms Want

Large and ESG-mature firms outlined support needs that reflect scale, standardization, and market depth:

1. **Taxonomy clarity and regulatory consistency**

   Responses show a clear demand for stronger policy and regulatory guidance, and large firms see the emerging Green Taxonomy as central to this need. While the draft Climate Finance Taxonomy released in May 2025 provides an important foundation, firms emphasised that they still require sharper sector-level criteria and clearer definitions of green and transition activities to use it effectively. Such clarity would help them structure credible sustainability-linked finance, set measurable KPIs, and reduce uncertainty when engaging with investors. For mature enterprises, finalisation and operational detailing of the taxonomy is therefore a key enabler for scaling sustainable and transition finance.

Table: Overview of India's Draft Climate Finance Taxonomy (May 2025)[21]

Category	Details
Issuing Authority	Department of Economic Affairs, Ministry of Finance, Government of India
Purpose	To establish a national classification framework for climate-aligned economic activities and guide sustainable finance flows across mitigation, adaptation, and transition priorities.
Status	Draft framework released for public consultation in May 2025; sector-specific annexures to follow.
Coverage Areas	Mitigation-supportive activities: Renewables, energy efficiency, low-carbon technologies. Adaptation & resilience-supportive activities: Climate-resilient infrastructure, water/resource management, ecosystem protection. Transition-supportive activities: Industrial retrofits, hard-to-abate sector pathways, emissions-intensity reduction.
Design Principles	Aligns with India's Net-Zero 2070 target; structured as a living framework; emphasises development context, affordability, energy access, and just transition; aims to prevent greenwashing through clear, evidence-based criteria.
Intended Market Impact	Provides common standards for structuring green and transition finance instruments (green bonds, SLLs, blended finance); improves comparability and investor confidence; reduces interpretive risk; enhances interoperability with global taxonomies.
Relevance for Industry	Enables clearer KPI-setting for sustainability-linked finance; supports planning of long-term decarbonisation projects; strengthens eligibility assessment for financial instruments; improves access to international capital.

2. **Transition finance and blended structures at scale:** Large firms are looking for long-tenor transition finance, structured blended products, and DFIs-led anchor investments that can de-risk private capital for systemic projects (e.g., industrial decarbonisation, green hydrogen, heavy-industry retrofits). They also seek standardized templates for SLL covenants and KPIs that are both credible and practical to monitor.
3. **Investor platforms and capital-market depth:** Corporates request investors–firm matchmaking platforms, stronger domestic capital market instruments for green debt, and clarity on assurance and eligibility standards so that bonds, SLLs, and asset-backed green structures can scale efficiently.

Large firms also flagged coordination costs (aligning procurement, finance, and operations across geographies) and sought technical support for supply-chain transition, particularly for integrating and financing MSME supplier upgrades at scale. Survey evidence further indicates that support effectiveness is strongly mediated by decision-making location within firms. Organizations where ESG and sustainable finance decisions are anchored at the Board, CFO, or integrated finance–strategy level show far stronger

[21] Press Information Bureau, Government of India. (2025, May 8). *Draft framework of India's Climate Finance Taxonomy released for public comments.* Retrieved from https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2127562

readiness to absorb transition finance and complex sustainability-linked instruments. By contrast, firms where ESG remains located within CSR, EHS, or isolated functional units report weaker capital allocation linkages. This implies that ecosystem support cannot be targeted only at sustainability teams; it must explicitly engage finance leaders, risk heads, and board-level governance structures to unlock real balance-sheet integration.

Role of Banks & DFIs

Banks and DFIs are central to bridging demand and supply for sustainable finance. Based on survey signals, their core roles include:

- Product innovation and tailoring. Create MSME-sized green credit products, shorter approval cycles, and simplified documentation; design SLLs with stepwise KPIs for smaller firms.
- Risk-sharing and first-loss facilities. Provide blended finance or guarantee mechanisms to absorb early-stage project risks and thus crowd-in commercial capital, especially for MSME clusters and sectoral transition needs.
- Aggregation and on-lending channels. Develop aggregator models (via NBFCs/SME financiers) that pool MSME credit needs into investible ticket sizes for banks and capital market investors.
- Technical assistance linked to financing. Couple finance with advisory support (e.g., energy audits, MRV set-up) so funds are deployed effectively and risks mitigated.

DFIs should play catalytic roles , anchoring large transition projects, offering concessionary tranches where required, and providing capacity grants for scaling disclosure and MRV infrastructure across MSME ecosystems.

Role of Regulators

Regulators' actions were frequently cited among the top support needs. Survey respondents want:

- Clear, stable taxonomy and disclosure guidance: A national climate/sustainable finance taxonomy that is fit-for-purpose, reduces investor confusion, and aligns with BRSR expectations.
- Proportional reporting requirements: Scaled disclosure mandates (lighter-touch for micro & small firms; full BRSR for listed entities) to avoid overwhelming MSMEs.
- Incentive structures: Time-bound fiscal or regulatory incentives (e.g., tax credits, priority lending quotas, or concessional refinancing windows) to lower the effective cost of green investments and accelerate MSME uptake.
- Climate and sustainability risk integration guidance: Survey responses indicate that while advanced firms are beginning to integrate climate risks into enterprise risk management, most MSMEs and transitional firms lack any formal risk modelling capability. Regulators can play a critical role by issuing standardized climate risk integration guidance for lenders and borrowers, enabling proportional adoption without imposing large analytical burdens on smaller firms.

Regulatory clarity will also reduce uncertainty for large firms structuring long-term transition finance and help standardize KPI/assurance expectations for sustainability-linked instruments.

Role of Industry Bodies & Platforms like UN GCNI

Industry associations and platforms are uniquely positioned to operationalize many support needs:

- Capacity scaling and knowledge diffusion: Run sector-specific training modules, curate toolkits, and deliver peer learning forums that reduce duplication and accelerate MSME readiness.
- Standardization & template creation: Develop sectoral KPI templates, simplified reporting modules, and SLL covenant exemplars to reduce transaction costs.
- Matchmaking & coalition-building. Facilitate bank–corporate–MSME matchmaking, assemble blended finance consortia, and convene dialogues that align stakeholders around transition roadmaps.
- Supply-chain social and MSME inclusion alignment: Survey data shows uneven integration of social and MSME inclusion considerations within ESG strategies. Industry platforms can translate inclusion intent into operable models by linking anchor corporates with MSME suppliers through financed upgrade programs, shared ESG compliance pathways, and buyer-backed credit enhancements that combine social equity with climate transition objectives.
- Piloting and proof-of-concept delivery: Host pilot programmes (e.g., MSME aggregator pilots, shared MRV platforms) with data collection to demonstrate bankability and attract investment.

UN GCNI and similar platforms can act as neutral convenors, brokering partnerships between corporates, banks, DFIs and regulators, and scaling lessons across sectors.

From Support Needs to Systemic Enablement

Importantly, the survey indicates that forward-looking sustainability investment intent remains high across enterprise categories, with a majority of respondents indicating they are either “very likely” or “likely” to increase sustainability-linked investments over the next cycle, provided enabling conditions improve. This confirms that the present bottleneck is not weak demand for transition finance, but restricted conversion of intent into execution due to ecosystem-level frictions. The survey evidence consolidates a critical insight for India’s sustainable finance transition: the challenge before the ecosystem is no longer one of intent, but one of orchestration[22]. Across enterprises of all sizes, willingness to engage, invest, and transition is visible. Yet this intent is unevenly matched by the availability of tailored financial instruments, scalable technical capacity, coherent regulatory architecture, and coordinated institutional support.

[22] World Bank. (2023). Scaling sustainable finance in emerging markets: From intent to implementation.

The result is an ecosystem in which leadership firms are able to mobilise capital and institutionalise ESG within core strategy, while a large base of MSMEs remains constrained by entry barriers that are structural rather than motivational[23].

For MSMEs, the transition bottleneck is not ambition but feasibility[24]. High transaction costs, complex disclosure requirements, limited assurance capacity, and weak access to suitably structured financial products continue to inhibit first-time participation in sustainable finance. Even where concessional instruments exist, they remain difficult to access without embedded technical assistance. The survey's strong emphasis on demand for capacity-building, simplified tools, and investor–partner platforms reflects a need for handholding rather than only capital. Without such foundational enablers, India risks perpetuating a transition pathway that is technically advanced but socially and economically exclusionary[25].

In contrast, large enterprises face a different constraint set. Their challenge is not access to capital per se, but access to transition-grade capital at the speed and scale required by net-zero pathways[26]. Survey responses indicate that even highly mature firms continue to struggle with taxonomy ambiguity, KPI standardisation in sustainability-linked instruments, the availability of blended and concessional capital for hard-to-abate sectors, and the complexity of aligning disclosure, risk management, and financial performance measurement. This is precisely where Development Finance Institutions, long-term institutional investors, and regulators must work in concert to convert intention into industrial-scale transition finance[27].

Between these two ends of the enterprise spectrum lies the market infrastructure gap. The survey consistently signals that the absence of standardised sustainability taxonomies, interoperable data systems, and transparent project pipelines constrains both borrowers and lenders. Without regulatory proportionality for MSMEs and credible transition definitions for large firms, capital will continue to concentrate in low-risk, highly visible projects while bypassing the deeper transformation required across value chains. This infrastructure deficit also amplifies greenwashing risks, undermines investor confidence, and weakens the credibility of India's sustainable finance narrative in global markets[28].

What the findings ultimately reveal is a coordination challenge rather than a capability deficit. Banks, regulators, DFIs, corporates, MSMEs, and ecosystem platforms are all acting,but largely in parallel. The survey underscores the absence of strong pilot-to-scale pathways, limited institutional feedback loops between enterprises and policymakers, and insufficient convergence between capacity-building

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[23] International Finance Corporation. (2023). MSME finance gap 2023.

[24] Small Industries Development Bank of India. (2023). MSME sustainability readiness in India.

[25] United Nations Development Programme. (2022). Financing a just transition in emerging economies.

[26] United Nations Environment Programme Finance Initiative. (2021). Financing a just transition to a net-zero econ*omy*.

[27] Organisation for Economic Co-operation and Development. (2022). Blended finance for sustainable development: Progress and priorities.

[28] CFA Institute. (2023). ESG disclosure standards and investor confidence.

programs and financial deployment. In such an environment, promising innovations remain trapped in demonstration mode rather than becoming system-wide solutions[29].

If these asymmetries persist, India risks institutionalising a two-speed green economy: one in which large corporations accelerate toward net zero through sophisticated instruments, while MSMEs remain technologically and financially locked out of the transition. Such an outcome would undermine India's just transition objectives, dilute supply-chain decarbonisation, and weaken the long-term integrity of corporate ESG claims.

Yet the survey also signals a powerful counterpoint: demand for support is not abstract, it is precise, actionable, and aligned with systemic solutions. Enterprises are asking for embedded technical assistance, blended finance structures, taxonomy clarity, proportional disclosure systems, and credible investor–enterprise collaboration platforms. This creates a rare moment of alignment between market demand and policy opportunity.

If India responds with a coordinated national support architecture, one that integrates MSME entry mechanisms, large-scale transition finance facilities, market infrastructure reform, and institutional coordination, sustainable finance can evolve from a collection of instruments into a true economic transformation engine. The next phase, therefore, is no longer about expanding awareness or piloting innovation. It is about engineering scale, ensuring inclusion, and institutionalising credibility across the entire financial ecosystem.

[29] World Economic Forum. (2022). Public–private collaboration for scaling sustainable finance ecosystems.

COMPARATIVE ESG–SUSTAINABLE FINANCE MATURITY PATHWAY IN INDIAN ENTERPRISES

This chapter synthesizes the full survey evidence into a structured comparative maturity pathway that maps how Indian enterprises progress from early ESG awareness to fully institutionalised sustainable finance integration. Rather than treating ESG adoption as a binary condition, the findings reveal a three-tier maturity ladder, Early Stage, Transitional, and Advanced, with clearly differentiated governance structures, financial access, disclosure behavior, and risk integration depth.

This pathway is not merely diagnostic. It is action-guiding: it clarifies where different enterprise segments are positioned, what constraints they face, and what type of financial, regulatory, and institutional interventions are required at each stage to accelerate India's sustainable finance transition.

Comparative ESG–Sustainable Finance Maturity Matrix

Dimension	Early Stage Organizations	Transitional Organizations	Advanced Organizations
ESG Governance	Informal leadership-driven responsibility; no formal ESG structures	Internal ESG policies emerging; cross-functional committees formed	Board-level ESG oversight; sustainability embedded in corporate governance
Primary ESG Decision Authority	Founder / Owner / CSR head	CXO-level, Sustainability, Finance jointly	Board, CFO, Risk & Investment Committees
Finance Access	Traditional debt, internal accruals, CSR funding	Pilot ESG-linked loans, concessional or blended instruments	Green bonds, sustainability-linked loans (SLBs), large-scale blended finance
Disclosure & Reporting	No reporting or basic CSR disclosure	Selective sustainability reporting; partial integration	Integrated reporting; BRSR-aligned disclosure; third-party assurance
Risk Integration	ESG risks largely absent from decision-making	ESG risks monitored on an ad-hoc or project basis	Full institutionalisation of climate, transition, and ESG risks in enterprise risk management
Measurement & Data Systems	Limited or no sustainability data systems	Fragmented tracking systems; partial metrics	Formal measurement frameworks; audited ESG data

Dimension	Early Stage Organizations	Transitional Organizations	Advanced Organizations
Investor Engagement	Minimal or compliance-driven	Periodic ESG engagement; early investor scrutiny	Continuous ESG dialogue with lenders, investors, and rating agencies
MSME & Value-Chain Integration	Informal inclusion efforts	Selective MSME engagement for sustainability projects	Structured supply-chain decarbonisation and just transition integration

The Early Stage: ESG as Awareness, Not Yet as Strategy

Early-stage organizations, predominantly MSMEs and smaller enterprises,remain positioned at the conceptual edge of sustainability adoption. ESG at this level is driven primarily by regulatory awareness, stakeholder signaling, or leadership intent rather than by formalised strategy or institutional systems. Governance remains informal, responsibility is not clearly assigned, and sustainability is rarely embedded in budgeting, risk management, or capital allocation.

Access to finance is largely confined to traditional bank lending, internal accruals, or CSR-linked funding, with little exposure to ESG-linked instruments. Disclosure, where present, is limited to basic CSR narratives without standardized metrics or performance verification. ESG risks, climate, supply chain disruption, social liability are rarely integrated into formal enterprise risk management.

At this stage, capital alone cannot unlock transition. These firms require:

- Simplified ESG entry frameworks
- Embedded technical assistance
- Low-cost measurement tools
- Regulatory proportionality.

Without these enablers, even concessional finance remains inaccessible. Survey patterns further indicate that early-stage organizations conduct environmental and social impact assessments infrequently, if at all. Where assessments occur, they are largely reactive, triggered by client audits or financing requirements, rather than embedded within routine management cycles. This absence of periodic impact review prevents ESG from functioning as a learning or capital-planning tool at this stage.

The Transitional Stage: ESG in Motion, But Not Yet Institutionalised

Transitional organizations represent the system's most powerful leverage point. These enterprises have moved beyond basic awareness and have begun institutionalising ESG through

internal policies, cross-functional committees, periodic disclosures, and pilot use of ESG-linked financial products.

Governance structures at this stage are policy-driven rather than board-driven. ESG considerations increasingly influence project-level decisions, and some sustainability risks are monitored often on an ad-hoc basis. These firms experiment with pilot sustainability-linked loans, blended instruments, and selective impact partnerships, yet full financial integration remains incomplete.

Disclosure practices are selective and often fragmented, and third-party assurance remains limited. Risk systems are emerging but not yet synchronized with core financial planning.

This segment requires:

- Taxonomy clarity
- KPI standardisation for ESG-linked finance
- Affordable third-party assurance
- Scalable blended finance platforms

This is the segment where policy intervention yields the highest marginal impact. Transitional firms typically conduct sustainability and impact assessments on a periodic but inconsistent basis often annually or at the project level rather than enterprise-wide. While this marks a significant step beyond early-stage practices, the absence of standardized assessment frequency limits comparability, weakens investor confidence, and constrains the rapid scaling of ESG-linked financial instruments.

The Advanced Stage: ESG as Core Financial and Strategic Infrastructure

Advanced organizations demonstrate full institutionalisation of ESG into governance, finance, disclosure, and risk systems. Sustainability oversight is anchored at the board or equivalent governance level. Financial teams actively structure and deploy green bonds, sustainability-linked loans, blended finance, and impact partnerships at scale.

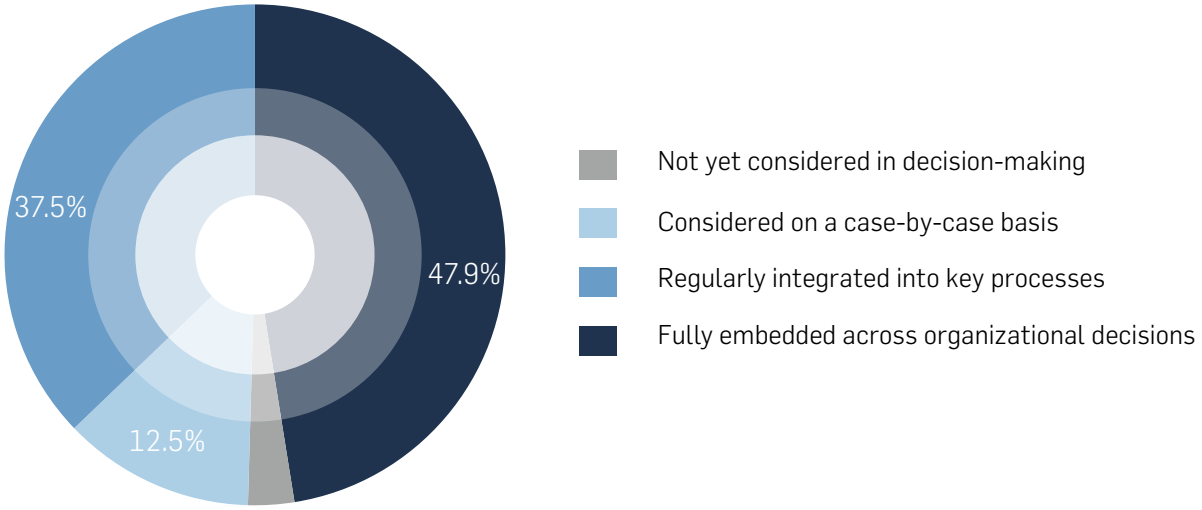
Advanced organizations distinguish themselves not only through capital access, but through institutionalized ESG assessment and climate-risk integration. Survey responses indicate that these firms conduct structured E&S and climate-risk reviews at defined frequencies,often quarterly or annually and integrate outputs directly into enterprise risk management, capital allocation, and investment committee processes. This routinization is a core enabler of large-scale sustainable finance deployment.

Disclosure is aligned with BRSR, integrated reporting frameworks, and often supported by third-party assurance. Climate, transition, and ESG risks are fully embedded into enterprise-wide risk management systems and long-term capital planning.

These firms also actively extend ESG integration across value chains by:

- Partnering with MSMEs
- Supporting supplier decarbonisation
- Embedding inclusion, gender equity, and community development into procurement and financing decisions

Figure: How does your organization incorporate social and equity aspects such as inclusion, gender equity, or community development into financial or operational decisions?



Beyond MSME integration, advanced firms also demonstrate higher levels of institutionalized social and equity integration, embedding workforce well-being, gender inclusion, and community impact metrics into ESG strategies and financing decisions. By contrast, early and transitional firms tend to approach social dimensions through discretionary CSR activity rather than through financed operational transformation. The constraint here is not intent or governance, it is scale, speed, and capital structure sophistication. These firms require:

- Transition-grade finance for hard-to-abate sectors
- Advanced blended finance facilities
- Long-duration patient capital
- Stable regulatory taxonomies and disclosure harmonisation

Strategic Significance of the Maturity Pathway

This maturity pathway clarifies that India's ESG and sustainable finance ecosystem is no longer operating on a single plane. Instead, it is structurally segmented across three institutional realities:

- Early stage firms face feasibility barriers
- Transitional firms face scaling barriers
- Advanced firms face acceleration barriers

Without differentiated intervention strategies, India risks:

- Over-funding already mature players
- Under-enabling MSMEs
- Weakening supply-chain-level decarbonisation and just transition objectives

Implications for Banks, Regulators, DFIs & Donors

Stakeholder	What This Chapter Enables Them To Do
Banks & NBFCs	Segment loan products by maturity level; design MSME entry products vs transition-grade instruments
Regulators	Apply proportional disclosure rules for MSMEs and stricter transition definitions for large firms
DFIs & Donors	Target concessional capital precisely to transition-stage firms; layer grants with finance
Industry Bodies & Platforms	Design tiered capacity-building programs aligned to maturity level
Large Corporates	Align supplier transition programs with MSME early-stage needs

India's ESG Ladder Is Built-Now It Must Be Scaled

Crucially, the survey's forward-looking signals indicate that investment appetite rises sharply with ESG maturity. While early-stage firms predominantly express conditional or tentative investment intent, transitional firms show the highest responsiveness to enabling support, and advanced firms consistently report being "very likely" to expand sustainability-linked investments over the next cycle. This confirms that the maturity ladder is not only diagnostic, it is predictive of near-term capital mobilisation. The survey evidence confirms that India has already built the structural ladder for ESG and sustainable finance maturity. The missing link is not vision, but velocity and coordination. Early-stage firms need simplified entry ramps. Transitional firms need scalable financial and disclosure infrastructure. Advanced firms need deep, patient, transition-grade capital.

If these maturity tiers are financed, regulated, and enabled as a single integrated system, India can avoid a fractured two-speed transition and instead build a credible, inclusive, and investment-grade sustainable finance ecosystem.

INDIA'S SUSTAINABLE FINANCE ECOSYSTEM

The survey findings carry far-reaching implications for how India's sustainable finance ecosystem must now evolve. The evidence clearly shows that the country has moved beyond the foundational question of whether enterprises *intend* to engage with ESG and sustainable finance. Across maturity levels: advanced, transitional, and early-stage, there is widespread acknowledgment of climate risk, long-term sustainability value, regulatory relevance, and investor expectations. The strategic challenge now lies in how different parts of India's financial and regulatory ecosystem respond to the sharply differentiated needs that emerge across this maturity spectrum.

For banks and financial institutions, the data signals a decisive market shift. Advanced enterprises are already using sustainability-linked loans, green bonds, blended and concessional finance, and impact partnerships, while transitional firms are actively seeking these products but face access barriers related to disclosures, ticket size, and internal readiness. This implies that banks must now operate a dual-track sustainable finance strategy: one track for large borrowers requiring scale, transition finance, and KPI-linked structures; and another track for MSMEs requiring simplified instruments, embedded technical assistance, and lower transaction complexity. Without this bifurcation, banks risk concentrating sustainable finance in a narrow corporate segment, thereby weakening the depth and inclusiveness of India's green transition.

The survey further indicates that ESG and sustainable finance decisions are predominantly driven by board and CXO-level leadership among advanced firms, while MSMEs rely largely on owners, founders, or operational heads. This implies that banks must design differentiated engagement strategies,not only differentiated products. For large firms, engagement must be anchored at the board, CFO, and risk committee level. For MSMEs, outreach must be founder-facing, operationally simple, and bundled with execution support.

For MSMEs, the implications are more structural. The survey confirms that MSMEs are not disengaged due to lack of interest; rather, they are constrained by high transaction costs, weak measurement systems, limited reporting capacity, and lack of access to appropriately structured financial products. MSMEs express strong demand for basic toolkits, short-format learning, and concessional or risk-sharing financial mechanisms. If these structural barriers are not addressed, MSMEs risk becoming the largest blind spot in India's climate and sustainability transition, despite forming the backbone of its employment and supply-chain economy.This exclusion is reinforced by the survey's self-assessed measurement scores, where MSMEs cluster at the lower end of ESG tracking maturity (scores 2–3), while advanced firms dominate the upper range (scores 4–5). This measurement gap directly explains why MSMEs remain structurally locked out of most sustainability-linked finance products, irrespective of their intent.

For regulators, the implications are twofold. First, transitional and advanced firms consistently cite evolving standards, regulatory uncertainty, and disclosure complexity as central scaling barriers. Second, early-stage firms report that compliance burden itself is a deterrent to entry. This clearly points to the need for regulatory proportionality, a system where disclosure, assurance, and governance expectations are

calibrated to enterprise size and maturity, while still maintaining market integrity and guardrails against greenwashing. The data shows that one-size-fits-all regulation risks slowing both MSME onboarding and advanced transition finance simultaneously.The survey also reveals wide divergence in the frequency of environmental and social risk assessments. Advanced firms typically undertake structured, periodic climate and ESG reviews, while early-stage firms largely operate without any routine impact assessment cycles. This makes proportional regulation not only desirable but technically necessary, as a uniform supervisory framework would fail to reflect actual risk-management capacity across enterprise tiers.

For stock exchanges and capital market institutions, the implications are directly linked to the widening disclosure gradient observed in the dataset. Advanced firms largely operate within comprehensive, assured, or integrated reporting systems, while transitional firms span internal tracking to partial disclosure, and MSMEs often remain at basic or no reporting. This suggests that capital markets must increasingly function not only as platforms for compliance, but also as capacity accelerators, through simplified SME disclosure frameworks, ESG data infrastructure, transition taxonomy guidance, and investor education on proportional risk assessment.

For development finance institutions (DFIs), the strategic implication is particularly critical. The dataset repeatedly shows that even advanced firms face constraints in accessing transition-grade capital for hard-to-abate sectors, circular economy investments, and long-horizon decarbonisation. At the same time, transitional firms struggle with risk perception and early-stage de-risking, while MSMEs require concessional blending and first-loss protection. This positions DFIs as the keystone institutions for bridging commercial finance and systemic transition, by absorbing early risk, anchoring blended structures, and crowding in private capital across maturity tiers.

At the level of India's global ESG positioning, the findings offer both reassurance and caution. On one hand, a large share of Indian enterprises now operate with board-level ESG governance, formal sustainability-linked capital strategies, third-party assured disclosures, and integrated risk management. This signals growing international credibility. On the other hand, the fragmented inclusion of MSMEs, uneven data credibility at the mid-market level, and limited transition finance depth expose vulnerabilities that global investors increasingly scrutinize. India's long-term ESG competitiveness will depend not only on flagship corporate leadership but on system-wide transition depth. The forward-looking investment signals further strengthen India's global ESG narrative. A strong proportion of advanced and transitional firms report being "likely" or "very likely" to expand sustainability-linked investments in the near term. This positions India not only as a disclosure-aligned market, but as an emerging large-scale demand center for transition and sustainability capital, provided ecosystem frictions are resolved.

Finally, the survey points to a structural risk that MSMEs may advance more slowly than larger enterprises in the sustainability transition. MSMEs consistently report high interest in ESG learning and strong willingness to invest in sustainability if supported, but lack the institutional scaffolding to participate effectively. If MSME inclusion remains peripheral to sustainable finance strategy, India risks creating a dual economy of green leaders and brown laggards, undermining supply-chain decarbonisation, just transition objectives, and long-term climate credibility. Importantly, MSMEs,despite high expressed willingness to invest, largely fall within the "possible" rather than "likely" investment category in the near term, reflecting that intent is being systematically dampened by structural barriers rather than by weak sustainability motivation.

POLICY & MARKET RECOMMENDATIONS

The survey evidence points unambiguously to the need for differentiated, stakeholder-specific interventions rather than uniform policy prescriptions. Sustainable finance in India is no longer constrained by awareness, it is constrained by alignment between regulation, financial products, institutional capacity, and enterprise maturity.

For government and regulators, the most urgent recommendation is the establishment of a proportional ESG regulatory architecture. This includes tiered disclosure systems for MSMEs, simplified sustainability taxonomies for early adopters, and harmonisation of India's reporting frameworks with global disclosure standards. Regulators must also institutionalise transition finance guidance, particularly for hard-to-abate sectors, to move beyond pure green finance and enable economy-wide decarbonisation. Equally critical is the integration of sustainability risks formally into prudential supervision frameworks to ensure that climate and transition risks are treated as systemic financial risks. Survey-based measurement maturity scores further suggest that regulatory sequencing must align with actual enterprise capacity: firms at score levels 2–3 require enablement and guidance as a first priority, while firms at levels 4–5 are institutionally ready for stricter disclosure, assurance, and transition-aligned supervision.

For banks and financial institutions, the survey implies a shift from generic ESG lending to modular sustainable finance products. Forward-looking investment intent captured in the survey provides a practical product-trigger mechanism for banks: advanced firms reporting "very likely" investment readiness should be targeted with immediate transition and refinancing products, while transitional firms in the "likely" segment require blended structures and technical assistance to convert intent into bankable pipelines. MSMEs require small-ticket, low-documentation instruments with embedded technical assistance, while large firms require KPI-linked sustainability loans, blended capital for transition infrastructure, and refinancing tools for decarbonisation CAPEX. Banks must also invest in internal ESG underwriting capacity, transition risk assessment tools, and project pipeline aggregation mechanisms to move from cautious experimentation to scaled deployment.

For large corporates, the responsibility now shifts decisively from internal ESG optimisation to value-chain transformation. The dataset shows growing engagement of large firms in MSME capacity-building, women- and youth-led enterprise support, circular economy models, and inclusive supply chains. This momentum must be institutionalised through supplier finance programmes, ESG-linked procurement incentives, shared disclosure platforms, and collaborative transition finance structures, so that sustainability performance cascades across entire industrial ecosystems. Given that advanced firms already operate with periodic climate-risk assessment and assured disclosure systems, large corporations are uniquely positioned to transfer not only capital but also risk management discipline and disclosure infrastructure to MSME suppliers through funded transition programmes.

For MSMEs, the pathway forward must prioritise feasibility over formality. The survey's disclosure

typology also implies that MSME policy must sharply distinguish between firms with no reporting, basic CSR disclosure, and internal tracking. A single MSME framework will not work; each disclosure tier requires a different entry instrument, reporting template, and financing product. MSMEs require entry-level guidance on ESG basics, simplified measurement tools, affordable audit and assurance pathways, and concessional finance structures that reduce first-mover risk. Cluster-based ESG capacity programmes, sector-specific sustainability toolkits, and digitally enabled reporting templates can dramatically lower the threshold for meaningful participation.

For ecosystem enablers platforms, networks, consultants, and industry bodies, the survey highlights a pivotal coordination role. These actors are best positioned to integrate policy guidance, enterprise demand, and financial product design into coherent pilot-to-scale pathways. Their role is no longer limited to awareness creation; it must now extend to market aggregation, investor matchmaking, MSME onboarding, and system-level feedback loops to policymakers and financial institutions. Survey evidence on ESG decision authority further implies that ecosystem platforms must design programmes that are owner- and operations-facing for MSMEs, but board- and CFO-facing for advanced firms; without this targeting, even the best-designed programmes will fail to convert institutional intent into financial execution.

CONCLUSION

The Sustainable Finance Readiness Survey provides timely and compelling evidence of a financial ecosystem in transition, one that is marked by rising ambition, early institutionalisation, and growing recognition of sustainability as a strategic and financial imperative for Indian enterprises. The findings confirm that India has entered a decisive phase in its sustainable finance journey: awareness is no longer the primary barrier; instead, enterprises are increasingly exploring and embedding sustainability into governance systems, operational practices, disclosure frameworks, and investment decisions.

A key insight from the study is the emergence of a clear maturity gradient. Large corporates, global-facing enterprises, and advisory-led institutions have begun to institutionalise ESG governance, develop internal policies linking sustainability with capital allocation, and explore a range of sustainable finance instruments, including green bonds, sustainability-linked loans, blended finance, and impact partnerships. This segment exhibits growing confidence, deeper integration of climate and social considerations into risk management, and a strong forward-looking appetite for sustainability-linked investments over the next two to three years. Their progress is shaping market expectations, influencing value chains, and contributing to a maturing sustainable finance architecture in India.

However, the survey also reveals structural asymmetries that could shape the trajectory of India's sustainable transition. MSMEs and early-stage organisations, despite acknowledging the relevance of sustainability, remain constrained by limited awareness of sustainable finance instruments, inadequate internal capacity, fragmented ESG data systems, and the absence of formalised governance or disclosure frameworks. Without targeted interventions, these barriers risk creating a bifurcated landscape in which leading enterprises continue to advance rapidly while smaller and resource-constrained organisations lag behind. Such a dual-speed transition would not only restrict the flow of sustainable capital but also jeopardise the inclusiveness and resilience of India's broader developmental ambitions.

Disclosure maturity emerges as one of the most decisive differentiators in enterprise readiness. Organisations with integrated, assured, or sustainability-linked disclosures demonstrate significantly higher credibility in capital markets and greater eligibility for sustainable finance instruments. Conversely, enterprises with minimal or no reporting remain largely invisible to investors and lenders. Strengthening disclosure systems—within a proportional, capacity-sensitive framework, will therefore be critical to enabling broad-based participation in sustainable finance.

The sectoral composition of the respondent base underscores India's transition priorities. Strong representation from services and manufacturing reflects the mainstreaming of ESG practices in high-employment, supply-chain-intensive sectors, while participation from energy and infrastructure highlights the strategic role of transition finance in decarbonising hard-to-abate sectors and financing climate-resilient infrastructure. The engagement of NGOs, social-sector organisations, and technical advisories reinforces the need for a sustainability ecosystem that integrates equity, community development, transparency, and governance oversight.

Looking ahead, the survey findings point to five strategic imperatives that will shape India's ability to unlock sustainable finance at scale:

1. Build capacity across enterprises, especially MSMEs, through targeted skilling, awareness programmes, sector-specific guidance, and affordable tools for data and reporting.
2. Strengthen disclosure infrastructure through proportional, simplified, and digitally enabled systems that allow smaller enterprises to participate without disproportionate compliance burdens.
3. Expand access to fit-for-purpose financial instruments, including blended finance, credit enhancement, guarantee mechanisms, and sustainability-linked products tailored to MSME realities.
4. Enhance coordination across regulators, financial institutions, industry bodies, and supply-chain anchors to create clear market signals and harmonised expectations.
5. Promote transition finance frameworks that support decarbonisation pathways for high-emission sectors, ensuring that India's climate goals remain both ambitious and achievable.

Ultimately, India's sustainable finance readiness will determine the credibility of its climate commitments, the acceleration of its energy transition, and the inclusiveness of its economic growth. A sustainable finance ecosystem that is accessible, transparent, and aligned with enterprise capacities will strengthen India's competitiveness, attract international capital, and enable innovation across sectors.

This report underscores a fundamental truth: sustainable finance is no longer an optional agenda, it is a national economic priority. By investing in institutional readiness, strengthening capacities across value chains, and fostering an enabling environment for capital mobilisation, India can unlock a transition that is not only green, but also equitable, resilient, and globally competitive.

Aligned with the UN Global Compact's Forward Faster initiative, these findings reinforce the urgency of accelerating business action on climate, finance, and equity. Forward Faster calls on companies worldwide to adopt ambitious, measurable commitments that move beyond incremental change. The insights from this survey directly support this agenda by identifying the institutional gaps that must be bridged for Indian enterprises—large and small—to meaningfully contribute to global sustainability goals, enhance transparency, and integrate sustainability into their financial and strategic decision-making.

Building on this momentum, UN Global Compact Network India (UNGCNI) will take forward the survey findings through a sustained programme of work on sustainable finance. This includes convening cross-sector dialogues, deepening engagement with financial institutions, developing targeted MSME capacity-building pathways, and supporting enterprises in implementing credible transition and disclosure practices. As part of the thematic focus of our 20th National Convention—*"Financing a Sustainable Future: Aligning Capital with Climate, Equity, and Growth"*, UNGCN India will work to strengthen the ecosystem for sustainable and transition finance, promote standardisation, and foster partnerships that unlock capital for climate and social priorities. The Network will continue to catalyse collaboration among policymakers, corporates, investors, and development partners to ensure that sustainable finance becomes a mainstream enabler of India's development trajectory.

As India enters a decisive decade of climate action, the insights from this survey offer a roadmap for policymakers, financial institutions, and enterprises to advance a shared vision of sustainable development—one where capital flows are aligned with climate goals, social inclusion, and long-term economic prosperity.

SPECIAL FEATURE

Impact in Practice: Real Actions from Enterprises

The following examples are reproduced directly from survey responses and reflect how Indian enterprises are already aligning capital, operations, and inclusion with sustainability outcomes. All examples are anonymised and reproduced from direct survey submissions to protect participant confidentiality.

Example 1 | Large-Scale Capital Aligned with Decarbonisation

> CAPEX amount of INR 108 Cr invested in energy conservation initiatives in 2024–25 and CAPEX of INR 110 Cr invested in GHG emission reduction initiatives. Budget allocated for sustainable goals/projects.

Impact Signal: Transition financing is already moving from pilot to balance-sheet scale.

Example 2 | Sustainability-Linked Finance in Action

> We have closed two of our SLLs and currently have two new SLLs linked to SBTi targets.

Impact Signal: ESG-linked finance is now being embedded into core treasury strategy.

Example 3 | Inclusive Agricultural Finance

> Organisation X enables smallholder farmers to access timely and affordable credit against their stored produce. By linking finance directly to verified on-warehouse commodities, farmers retain ownership of their goods while unlocking working capital. This approach reduces distress sales, improves liquidity, and supports income stability.

Impact Signal: Sustainable finance is actively strengthening rural livelihoods and income security.

Example 4 | Circular Economy & Clean Energy in Manufacturing

> We are aligning our operations with sustainability and inclusive growth goals by investing in circular packaging and renewable energy. We have implemented Zero Waste to Landfill initiatives at our India sites, expanded the use of post-consumer recycled materials, and deployed renewable energy across key plants, reducing emissions while creating green skill opportunities for local communities.

Impact Signal: Industrial sustainability is combining decarbonisation with green job creation.

Example 5 | Women-Centred Waste & Circular Economy Model

> We align our operations with sustainability through the management of non-biodegradable waste. We convert waste into Refuse-Derived Fuel (RDF), recyclable materials, and plastic granules. We partner with Local Self Governments and bulk waste generators. We employ over 260 marginalized women in safe, dignified workplaces and indirectly engage with more than 9,000 women sanitation workers.

Impact Signal: Environmental solutions are being built on a foundation of gender inclusion and dignified work.

Example 6 | MSME, SHG & Supply-Chain ESG Enablement

> Working with SHGs, FPOs, MSMEs and corporations for sustainability strategy, reporting, implementation of net zero and impact assessment. Working on mine closure frameworks and implementation. Projects are finalized keeping in view ESG impact and long-term sustainability of the organization.

Impact Signal: ESG is being operationalised across value chains, not just at corporate headquarters.

Example 7 | Nutrition, Women & Community Climate Resilience

> We successfully delivered a project named Poshan Vatika in Bihar & Jharkhand setting up Nutrition Kitchen Gardens for 5,000+ women in villages.

Impact Signal: Sustainability is integrating climate resilience, nutrition, and women's livelihoods.

Example 8 | ESG Assurance & Market Credibility

> SGS aligns its operations with sustainability goals by reducing emissions, promoting inclusion, and supporting clients through ESG assurance and certification services.

Impact Signal: Credibility infrastructure for sustainable finance is scaling alongside capital flows.

EXPERT VOICES & STRATEGIC PERSPECTIVES

This section features insights from leading experts who were invited to share forward-looking perspectives on the evolving landscape of sustainable finance and climate action. Their articles connect global developments, such as COP30 outcomes, with India's regulatory and financial shifts, offering clear pathways for strengthening climate resilience, scaling innovative finance, and advancing ESG integration. Together, these contributions enrich the Compendium with high-level thought leadership that supports India's transition toward a more sustainable and inclusive economy.

	Articles by	Articles on
1	Alok Vijayvergiya, Hinduja Group Limited	RBI's Climate Risk and Finance Guidelines: Transforming Sustainable Finance in India
2	Dr Aditi V Mishal, Welspun Enterprises	From Policy to Pavement: Leveraging ESG Global Frameworks for Climate-Resilient and Finance-Ready Infrastructure
3	Gagan Pattnaik, Refex Group	RBI's Climate Risk & Sustainable Finance Guidelines: A Turning Point for India's Financial Future
4	Nuvreet Parmar, Brillio	Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance
5	Dr. Nitin Dumasia, Growlity, Inc.	Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance
6	Nishtha Gupta, Suzlon Group	COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance
7	Mritiunjoy Mohanty & Runa Sarkar, IIM Calcutta	COP30: New Paths, New Beginnings
8	Prabodha Acharya, JSW Group	Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance

RBI's Climate Risk and Finance Guidelines: Transforming Sustainable Finance in India

By Alok Vijayvergiya, Hinduja Group Limited, Mumbai

As climate change redraws the world around us, leadership must step forward with purpose and resolve……

When finance moves with wisdom and vision, it transforms every risk into a future we can evolve.

India's financial ecosystem is entering a decisive moment. As climate risks intensify and global expectations around sustainability sharpen, the Reserve Bank of India's (RBI) Climate Risk and Sustainable Finance Guidelines mark one of the most significant regulatory shifts in the country's financial sector. More than a compliance framework, these guidelines signal a structural transformation, one that pushes financial institutions, corporates, and sustainability professionals to embed climate considerations deep into business strategy and governance.

For a country as diverse and complex as India, the implications are profound. With the financial sector serving as the backbone of economic growth, the RBI's directive acts as a catalyst to reinforce climate resilience and usher in a more responsible system of capital allocation.

A Shift from Awareness to Action

The release of the guidelines demonstrates a clear message: climate resilience is no longer aspirational; it is essential. For years, sustainability has often been viewed through the lens of voluntary commitments. Now, with the regulator stepping in, sustainable finance has firmly moved into the domain of mandated governance and risk management.

This shift reflects global momentum, where central banks and financial regulators are increasingly acknowledging climate risks as systemic risks. India is now aligned with leading economies that recognise climate stability as foundational to long-term financial stability.

Core Expectations Under RBI's Climate Framework

1. Governance and Board Accountability

Banks and financial institutions must establish board-level oversight for climate-related risks. This ensures that climate considerations are not treated as peripheral assessments but integrated into decision-making at the highest level.

Boards are expected to:

- approve climate risk management frameworks,
- monitor progress regularly,
- and ensure appropriate expertise is built within leadership teams.

This elevates sustainability from a functional discipline to a strategic priority.

2. Risk Management Integration

The guidelines mandate institutions to identify, assess, monitor, and mitigate climate-related risks, particularly physical risks (like extreme weather events) and transition risks (like regulatory shifts, carbon pricing, or technological disruption).

This means climate risk must now be embedded into:

- credit risk assessments,
- operational risk frameworks,
- stress testing, and
- scenario planning.

For India's lenders, this represents a significant transformation in how portfolios are evaluated and priced.

3. Data, Metrics, and Disclosure

Transparency sits at the heart of the RBI framework. Banks and regulated entities must publish clear disclosures on:

- climate governance,
- risk exposures,
- mitigation strategies,
- and progress toward climate targets.

This aligns closely with global disclosure standards like the TCFD. For corporates, especially large borrowers, the implication is immediate: superior climate data, greater transparency, and stronger sustainability reporting will now influence access to capital and cost of borrowing.

4. Transition Planning and Strategic Alignment

Institutions are expected to develop transition strategies aligned with India's national climate goals. This pushes banks to:

- support low-carbon pathways,
- finance climate-resilient infrastructure,
- and phase down exposure to high-emitting sectors.

The guidelines actively encourage financial innovation, green bonds, sustainability-linked loans, blended finance, and just-transition financing models.

Implications for Industry Stakeholders

For Sustainable Finance Professionals

The guidelines significantly expand the scope of work for sustainability leaders. Expertise in climate scenario modelling, ESG data systems, green taxonomies, and low-carbon strategy will be increasingly

in demand. This marks a golden era for sustainability professionals to shape policy, risk frameworks, and financial innovation.

For Lenders and Financial Institutions

Banks must rethink portfolio strategies. Stress testing for climate events, integrating ESG risks, and building credible transition plans will become central to operational resilience. Those who act early will achieve competitive advantage through de-risked lending, improved asset quality, and enhanced investor confidence.

For Corporates Borrowing from Financial Institutions

Borrowers can expect increased scrutiny of sustainability performance. Climate governance, emissions disclosure, energy transition plans, and sectoral alignment with India's climate commitments will influence creditworthiness. Companies that invest early in climate strategy will attract capital more efficiently and at more favourable terms.

A Pivotal Moment for India's Financial Landscape

With these guidelines, India is not just responding to climate challenges but proactively shaping a future-ready financial system. This is a pivotal moment, where policy, finance, and sustainability converge to support national ambitions of climate resilience and inclusive growth.

The responsibility ahead is collective. Regulators can set the direction, but the journey demands consistent action by banks, corporates, investors, and sustainability leaders.

In the UNGC Compendium, we share ideas for a better, safer world ahead.....

RBI's new guidelines show the way to manage climate risks with steady steps.

With clearer rules and stronger action, India moves forward with confidence.... Sustainable finance becomes our guide, helping every choice make sense

Together, we build a future where strength and fairness truly grow.....

A greener tomorrow for people, for the planet, and for all we hope to know.

From Policy to Pavement: Leveraging ESG Global Frameworks for Climate-Resilient and Finance-Ready Infrastructure

By Dr Aditi V Mishal, Welspun Enterprises

Turning Climate Commitments into Resilient Infrastructure Outcomes

As the world advances toward COP30, adaptation finance remains a critical test of global climate justice and resilience. According to the Climate Policy Initiative (2024), total global climate finance flows reached approximately USD 1.46 trillion in 2022; however, the majority of this financing was directed toward mitigation, with adaptation receiving only a modest share of the total. The United Nations Environment Programme (2025) highlights the magnitude of this imbalance, noting that developing countries will require USD 310–365 billion annually by 2035 to meet adaptation needs, yet international public flows for adaptation amounted to only USD 26 billion in 2023. This shortfall, often termed the adaptation finance gap, underscores a persistent structural inequity, with needs outstripping available funding by roughly a factor of twelve to fourteen (UNEP, 2025).

Within this context of under-financing, sustainable infrastructure emerges as a strategic conduit for adaptation rather than a conventional development objective. When designed in line with environmental, social, and governance (ESG) principles, infrastructure projects can translate climate finance commitments into measurable resilience outcomes. Integrating frameworks such as the IFC Performance Standards ensures that investments deliver long-term adaptive capacity for communities, ecosystems, and economies, turning climate policy aspirations into tangible, climate-resilient development outcomes (CPI, 2024; UNEP, 2025).

IFC Performance Standards: The Global Blueprint for Resilient Infrastructure

The International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability provide a globally recognized framework for integrating sustainability into infrastructure development. These standards guide project sponsors and investors in identifying, assessing, and managing environmental and social risks throughout the project lifecycle, thereby ensuring that infrastructure projects deliver outcomes that are economically viable, environmentally sound, and socially equitable (IFC, 2012).

The eight interlinked standards encompass assessment and management of risks (PS1); labour and working conditions (PS2); resource efficiency and pollution prevention (PS3); community health, safety, and security (PS4); land acquisition and resettlement (PS5); biodiversity conservation and sustainable management of living natural resources (PS6); indigenous peoples (PS7); and cultural heritage (PS8) (IFC, 2012). Among these, PS3 and PS4 hold particular significance for climate adaptation and resilience. They promote efficient resource use, pollution prevention, and safeguards for communities against climate-induced risks, core pillars for adaptation finance mechanisms and sustainable infrastructure delivery.

This alignment reinforces the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) and several Sustainable Development Goals (SDGs), specifically Goal 6 (Clean Water and

Sanitation), Goal 9 (Industry, Innovation, and Infrastructure), and Goal 13 (Climate Action), which collectively emphasize the importance of resilient infrastructure in advancing sustainable development (UNFCCC, 2023). Integrating IFC Performance Standards into infrastructure development enhances accountability, transparency, and impact measurement, strengthening the connection between adaptation finance and ESG-compliant implementation (World Bank, 2023).

In the Indian context, such integration has become central to bridging the adaptation finance gap. Infrastructure projects aligned with IFC Performance Standards are more likely to attract concessional and blended finance from multilateral development banks, green bonds, and climate funds, as they demonstrate measurable risk mitigation and long-term climate resilience (CPI, 2024; UNEP, 2025). Thus, IFC's framework provides not only an operational roadmap but also a governance mechanism that enhances investor confidence while ensuring that infrastructure assets contribute to both national growth and global climate goals.

WEL's ESG Strategy: True North toward Climate-Resilient Infrastructure

Welspun Enterprises Ltd. (WEL) stands at the forefront of India's transition toward sustainable, circular, and climate-resilient infrastructure, demonstrating how an enterprise can integrate ESG leadership with national priorities such as Viksit Bharat 2040 and Net Zero India 2070. Guided by its True North ESG Strategy, WEL embeds sustainability into the strategic, operational, and cultural fabric of the organisation, ensuring that environmental performance, social value creation, and governance integrity move in unison (Welspun Enterprises Ltd., 2024).

Strategic Governance and Institutional Oversight

Sustainability at WEL is led from the top. The Board-level ESG & CSR Committee, chaired by Dr. Aruna Sharma (Independent Director), provides overarching direction, approves ESG-linked KPIs, and reviews quarterly progress against the company's ESG Roadmap. These priorities, water stewardship, climate strategy, governance, safety, and circular design, are fully integrated into business planning and leadership appraisals (GRI, 2021).

Complementing Board oversight, the Executive Sustainability Strategy Lab (ESSL) is WEL's leadership-driven strategic design-thinking initiative. It convenes CXOs, project heads, and functional leaders to co-create ESG Goals and Targets, translate them into a company-wide ESG Roadmap, and embed sustainability accountabilities across finance, operations, procurement, engineering, and HR. Through this mechanism, sustainability becomes a unifying performance agenda rather than a parallel program. The ESSL also nurtures inter-departmental innovation and ensures that ESG decision-making aligns with BRSR, GRI 2021 Standards, UNSGD's and continues journey towards IFC Performance Standards (IFC, 2012).

Circular Infrastructure Models and Climate Adaptation

WEL's circular construction framework integrates water stewardship into mainstream infrastructure delivery, as well as resource efficiency through alternate material use, and waste reuse & recovery

- **Urban Water Circularity:** In partnership with Brihanmumbai Municipal Corporation, WEL is creating Mumbai's closed-loop water network through its project Bhandup WTP (2,000 MLD), Asia's first 4 storey Dharavi STP (418 MLD), and Ghatkopar–Bhandup Tunnel interlinking.

- **Rural Water Security:** Under the UP Jal Jeevan Mission, 2,500 + villages receive safe, solar-powered drinking water with 3.11 lakh KL rainwater harvesting each year.
- **Sustainable Roads:** Collaborating with National Highway Authority of India, WEL has mainstreamed 18,189 MT of Fly ash-replacing cement, 1.1 Mn MT of pond ash based embankments, admixtures saving 12, and geo-composite designs, achieving 76 % waste reuse and reductions in embodied carbon.

These initiatives operationalise IFC PS 3 and PS 4, while advancing SDG 6 (Clean Water), SDG 9 (Infrastructure), and SDG 13 (Climate Action), demonstrating how circular infrastructure underpins national adaptation and mitigation pathways.

IFC Connection and Alignment with Global Standards

WEL's ESG architecture is evolving through a structured and robust journey toward alignment with the International Finance Corporation (IFC) Performance Standards (2012), the global benchmark for sustainable infrastructure finance, governance, and risk management. This alignment roadmap is being embedded progressively across project lifecycles, design reviews, and value-chain systems, ensuring that sustainability principles are institutionalised rather than applied in isolation.

- **PS 1 – Assessment and Management of Environmental and Social Risks:**
  WEL has strengthened its ESG governance through comprehensive project-level environmental and social impact assessments, quarterly ESG performance reviews, and stakeholder engagement protocols , fostering transparency, accountability, and proactive risk management.
- **PS 2 – Labour and Working Conditions:**
  The company's safety and workforce programmes integrate IFC-aligned principles of inclusion and wellbeing. Over 21K+ training hours and structured ESG inductions across offices, sites and contractors have advanced a culture of ESG, safety, respect, and fair labour practices.
- **PS 3 – Resource Efficiency and Pollution Prevention:**
  Circular-material substitution , including 1.29 million MT pond ash, 18,189 MT fly ash, GGBS, has avoided 42K+ MT of cement in turn with Solar has avoided 50,700 tCO_2e and conserved 17,163 KL of construction water in FY 25. WEL has sustainably recycled – reused 146 MT of C&D waste demonstrating tangible movement toward IFC PS3 criteria on resource efficiency and pollution reduction.
- **PS 4 – Community Health, Safety, and Security:**
  Through broader CSR programmes, WEL reached over 6 lakh beneficiaries in FY 2024–25, strengthening community safety, health, and awareness around infrastructure projects.
- **PS 6 – Biodiversity Conservation and Ecosystem Services:**
  WEL is developing its Green WELth biodiversity initiative , a planned, GIS-based ecological-restoration and plantation programme, to integrate biodiversity management into future projects, aligning with PS6's principles of ecosystem stewardship.

These IFC standards are being progressively integrated into procurement guidelines, contractor ESG trainings, and the Supplier Code of Conduct, forming the backbone of WEL's ESG due-diligence system. While full IFC alignment is an ongoing journey, WEL's strengthened Digital ESG governance, data discipline, and leadership commitment have already established a strong foundation for future adaptation finance eligibility and sustainability-linked investment readiness, bridging Indian infrastructure with global ESG expectations.

Towards a Resilient, Responsible, and Future-Ready Enterprise

WEL's sustainability journey demonstrates that finance and responsibility are not competing priorities but converging pathways toward resilient growth. By embedding ESG principles across leadership, governance, and culture, the company is transforming infrastructure into an investment-ready model for adaptation and sustainability. Its alignment with global frameworks such as IFC Performance Standards, GRI 2021, and BRSR ensures that environmental and social accountability directly strengthen financial credibility and stakeholder trust.

The company's ESG Townhall and Executive Sustainability Strategy Lab (ESSL) have further advanced this integration, turning leadership intent into cross-functional action and fostering a shared sense of purpose. As WEL continues to refine its ESG goals and roadmap, its focus remains on readiness for climate-aligned finance, enhancing circular value creation, and contributing to national transitions under Viksit Bharat 2040 and Net Zero 2070. In doing so, WEL is not only building sustainable infrastructure but also a resilient, responsible, and future-ready enterprise, where sustainability and finance coalesce to drive long-term value for people, planet, and prosperity.

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RBI's Climate Risk & Sustainable Finance Guidelines: A Turning Point for India's Financial Future

By: Gagan Pattnaik, Refex Group

Not long ago, climate change felt like a distant issue, something happening to polar bears, melting glaciers, or faraway islands. Today, it feels much closer. Floods disrupt our cities, heatwaves slow down industries, and crop failures impact markets. Whether you're a farmer, a startup founder, a homeowner, or a banker, climate change has quietly slipped into your life.

What once seemed like an environmental discussion has now become a headline financial concern. Across the globe, central banks, financial institutions, and corporate boardrooms are grappling with a fundamental truth: climate risk is financial risk. As climate events intensify, they threaten supply chains, business continuity, asset values, and ultimately, economic stability.

For a country like India, one of the world's fastest-growing economies and soon to be a $5-trillion powerhouse, the economic implications of climate volatility cannot be ignored. Recognising this urgency, the Reserve Bank of India (RBI) has taken a decisive step forward. Its latest guidelines on Climate Risk and Sustainable Finance mark a watershed moment, aligning India's financial system with global climate commitments and preparing institutions for a greener, more resilient future.

Understanding Climate Risk: A Global Economic Disruptor

Climate risk refers to the potential negative financial and economic consequences of climate change. These risks typically fall into three categories:

- **Physical risks:** damage from floods, droughts, cyclones, heatwaves
- **Transition risks:** economic changes triggered by the shift to a low-carbon economy
- **Liability risks:** legal challenges for failing to address climate impacts

For decades, governments and industries underestimated these risks. But the last ten years have exposed their severity. Extreme weather events have caused billions in losses, disrupted global supply chains, and strained infrastructure. Farmers face unpredictable rainfall patterns; manufacturing hubs face water shortages; insurers face mounting claims.

Climate change is no longer just a scientific issue. It is now one of the biggest economic disruptors of our time.

Why Sustainable Finance Is Now Indispensable

Given the scale of climate impacts, tackling climate change requires money, not just government funding but vast private capital. This is where sustainable finance becomes crucial.

Sustainable finance integrates environmental, social, and governance (ESG) considerations into financial decision-making. It ensures that investments flow towards activities that are climate-resilient, socially responsible, and aligned with long-term sustainability goals.

Why is it essential?

- Climate risks affect the creditworthiness of borrowers.
- Investors demand transparency on emissions and climate vulnerabilities.
- Green technologies need financing to scale.
- Without sustainability considerations, financial systems can become unstable.

Sustainable finance does more than support eco-friendly projects, it corrects financial blind spots, protects investors, and builds a resilient economy.

The Global Push for Climate Regulation in Finance

The need for regulating climate risk became clear after the Paris Agreement (2015). For the world to reach its climate goals, financial institutions had to be part of the solution. Yet banks, insurers, and investors lacked frameworks to assess and disclose climate-related risks.

This gap prompted global regulators to act.

In 2017, the Financial Stability Board created the Task Force on Climate-related Financial Disclosures (TCFD), shaping global norms for reporting climate risks and opportunities. Several nations began integrating climate considerations into financial supervision, demanding better governance and transparency from financial institutions.

Climate change had officially entered the rulebooks of finance.

The Early Movers: Pioneers Who Shaped Global Frameworks

Around the world, a few institutions led the way in setting standards:

Bank of England: One of the earliest champions, it warned that climate change could destabilize financial systems. It introduced climate stress testing, urging banks to assess long-term risks.

Network for Greening the Financial System (NGFS): A coalition of central banks and supervisors formed in 2017, NGFS became the world's leading authority on integrating climate considerations into financial regulation. Its scenarios and guidance are now used globally.

European Central Bank and EU Regulators: The EU launched one of the world's most ambitious sustainable finance frameworks, including mandatory ESG disclosures and a taxonomy defining green activities.

These pioneering steps created a strong global foundation that countries like India could adapt to their economic and regulatory context.

The Role of the World Bank, IFC, and OECD

Global development institutions have played an important role in shaping sustainable finance by providing guidance, research, and capital.

World Bank

Supports countries in assessing climate vulnerabilities, building climate-resilient financial systems, and mobilizing capital for climate projects.

International Finance Corporation (IFC)

Developed the globally adopted ESG Performance Standards, Green Bond Principles, and climate risk tools that guide banks, investors, and corporates worldwide.

OECD

Provides policy frameworks for sustainable investment, blended finance, and climate governance that influence both regulators and financial markets.

Their collective work prepared the global landscape that now informs India's regulatory journey.

India's Regulatory Shift: RBI's Journey Toward Climate Finance

India, with its vast geography and climate-sensitive economy, faces unique vulnerabilities. Recognizing these, the RBI began integrating climate considerations into financial regulation over the past few years.

April 2021: RBI joined the NGFS, signaling a major commitment to climate-aligned financial oversight.

July 2022: Released a discussion paper on Climate Risk and Sustainable Finance outlining expectations for governance, risk management, and disclosures.

April 2023: Set supervisory expectations for banks and NBFCs, urging them to begin integrating climate risks into decision-making.

September 2024: Issued the comprehensive Climate Risk and Sustainable Finance Guidelines, detailing requirements for:

- Board governance
- Internal controls and risk processes
- Climate scenario analysis
- Comprehensive climate-related disclosures
- Phased implementation between 2025–2027

This is India's most ambitious step yet in preparing its financial system for climate-related risks and opportunities.

Key Takeaways: What the New RBI Guidelines Mean for India

RBI's guidelines will significantly influence the behavior of lenders, corporates, and sustainability professionals.

1. **Stronger Governance**
   Boards must own climate strategy. Senior management must build internal capacity and ensure climate considerations are integrated across operations.

2. **Climate-Aligned Risk Management**
   Banks and NBFCs must embed climate factors into credit decisions, provisioning, portfolio management, and stress testing.

3. **Transparent Disclosures**
   Institutions must disclose climate governance, risk strategies, metrics, and targets using global frameworks like TCFD and ISSB.

4. **Sector-Level Impacts**
   High-emission or climate-vulnerable industries, such as power, metals, cement, MSMEs, real estate, and agriculture, will face increased scrutiny and differential borrowing costs.

5. **Boost to Green Finance**
   More capital will flow into renewable energy, electric mobility, sustainable infrastructure, green hydrogen, climate-smart agriculture, and circular economy solutions.

6. **New Opportunities for Professionals**
   Demand will rise for experts in climate data analytics, carbon accounting, ESG reporting, climate modeling, and transition planning.

Conclusion: A New Era for India's Financial Future

RBI's Climate Risk and Sustainable Finance Guidelines are more than a regulatory update, they represent a major shift in how India prepares for the future. As the world confronts a climate-altered reality, India is choosing to act decisively, ensuring its financial system is resilient, transparent, and aligned with global standards.

By recognizing that climate risk is financial risk, India is safeguarding its growth story and opening new pathways for sustainable development. In a country where every monsoon, heatwave, or flood can impact millions, this move is not only timely, it is essential.

Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance

By Nuvreet Parmar, Brillio

The UN Climate Change Conference in Belém (COP30) arrived at a moment when the world is running out of time. Climate impacts are accelerating, extreme weather events are becoming more frequent, and global emissions continue to rise despite decades of warnings. Yet COP30 also reflected something else: a renewed global appetite for climate action, stronger finance pledges, and clearer expectations for emerging economies shaping the future of global growth.

For India, the conference signalled both opportunity and urgency. As one of the world's fastest growing economies and a critical voice in the Global South, India must decarbonize at a pace that aligns with its development needs. COP30 made it clear that climate mitigation cannot advance unless the world unlocks finance at a scale that matches ambition, and unless that finance is designed for the realities of countries like ours.

A Turning Point for Climate Finance

One of the most significant outcomes of COP30 was the global agreement to mobilize at least US$ 1.3 trillion per year in climate finance by 2035 under the "Baku to Belém Roadmap." This roadmap does not create a new fund; instead it aligns existing institutions, multilateral development banks, climate funds, and private investors, to channel larger and more affordable finance flows to developing countries.

COP30 also delivered a critical boost for adaptation: nations committed to tripling adaptation finance by 2035. This matters deeply for countries like India, where climate shocks such as floods, heatwaves, and cyclones are already threatening lives, livelihoods, and economic growth.

Yet the promise of money is only half the story. The impact depends on how funds reach actors on the ground, state and city governments, small businesses, community innovators, and frontline communities. Without this, global pledges risk staying on paper.

The Imperative for New Models of Climate Finance

India's transition to a low-carbon future requires investment at a scale few economies have ever attempted. Estimates suggest India needs several hundred billion dollars annually in clean energy investments across solar, wind, green hydrogen, storage, transmission infrastructure, and electric mobility.

Traditional finance models are not enough. Many climate technologies are still emerging, and perceived risks deter private capital. High interest rates and currency risks add further barriers for developing economies. COP30 recognized that climate finance must innovate to match the scale and complexity of the challenge.

Three Mechanisms That Can Unlock Impact in India

1. **Blended finance at scale**
   Blended finance uses concessional or public capital to absorb early risks and attract private investment. COP30 emphasized the central role of such instruments, guarantees, first-loss capital, concessional loans, in mobilizing private capital at scale.[4] In India, these instruments can accelerate sectors like green hydrogen, battery storage, circular economy models, and climate-resilient agriculture.

2. **Transition finance for hard-to-abate sectors**
   Industries such as steel, cement, and chemicals account for a large share of emissions in India. Transition finance, through sustainability-linked loans, concessional debt, or performance based grants, can help these sectors decarbonize while protecting competitiveness and jobs.

3. **Digital-first finance mechanisms**
   India's digital infrastructure presents a unique opportunity to build automated MRV systems, transparent carbon accounting tools, and traceable climate-finance flows. The COP30 initiative **Global Implementation Accelerator** was designed precisely to connect national ambitions with technical partners and financial institutions, reducing delays and ensuring real project delivery.[5]

Policy Shifts That Can Make or Break Success

Policy clarity is essential for turning finance into meaningful outcomes. Without robust frameworks, even the most innovative financial instruments remain underutilized.

COP30's roadmap encourages reforms that lower financing costs for developing nations, including local-currency lending, risk-sharing guarantees, and tripling disbursements from global climate funds by 2030.[6] It also recommends debt-swap mechanisms and restructured debt instruments to ease the burden on vulnerable countries.[7]

The launch of a Just Global Transition mechanism further underscores a growing recognition that climate transitions must be equitable and inclusive. For India, this could support investments in workforce reskilling, technology transfer, community resilience, and social protection as industries shift to low-carbon pathways.

Partnerships: The Multiplier for Mitigation Finance

Climate finance is not only about capital; it is about confidence and collaboration.

India's strength lies in its multi-stakeholder ecosystem: government agencies, corporates, financial institutions, civil society, and its fast-growing innovation sector. This collaborative approach must scale to turn finance commitments into real-world transformation.

- Governments can create enabling policy frameworks and incentives.
- Corporates can invest in green infrastructure and adopt science-based targets.

- Financial institutions must design climate-aligned products; green bonds, sustainability-linked loans, blended instruments.
- Civil society can ensure equity, inclusion, and community-led solutions.

India has already shown what is possible through large-scale solar parks, EV policies, and MSME green-finance programs. These models can now expand into areas like offshore wind, green hydrogen, and climate-resilient agriculture.

The Challenges Ahead , and India's Opportunity

Despite progress, major challenges remain.

First, predictability and accessibility of climate finance must improve. COP30 did not fully resolve long-standing issues around Article 9.1 of the Paris Agreement, which concerns developed countries' obligations for climate finance.

Second, debt vulnerability is growing across the Global South. The roadmap highlights the need for debt-resilient instruments, such as debt-for-climate swaps, but widespread adoption is still limited.

Third, implementation capacity remains uneven. Mobilizing finance is only the first step; efficient deployment, transparent monitoring, and strong institutional capacity are equally critical.

Yet the opportunity for India is enormous. The COP30 roadmap estimates that developing countries could require US$ 3.2 trillion annually by 2035 for climate and nature-related investments, including energy, adaptation, nature restoration, and just transition. [0] If mobilized, these resources could help India demonstrate a new model: climate-aligned development at scale.

Conclusion: India's Decade , From Promise to Leadership

COP30 may not have delivered every ambition, such as a binding fossil-fuel phase-out, but it created a realistic and actionable foundation for climate finance. The US$ 1.3 trillion finance roadmap, the tripling of adaptation finance, and the Global Implementation Accelerator represent more than ambition; they represent architecture.

This is India's moment to lead. The coming decade offers a historic opportunity to show how a large developing economy can align growth, innovation, inclusion, and decarbonization. But success will depend on India's ability to convert political momentum into investable projects, design finance that fits its development realities, and build strong partnerships that ensure climate finance reaches those who need it most.

The real legacy of COP30 will be measured not in pledges, but in implementation. With the right financial systems and collaborative action, India can transform this decade into one of climate leadership, where development and decarbonization move forward together.

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Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance

By Dr. Nitin Dumasia, Gowlity Inc.

The global climate discourse stands at a pivotal moment following the deliberations and outcomes of COP30. Held at a time when the world confronts unprecedented environmental tipping points, COP30 reaffirmed that climate mitigation is no longer an aspirational pathway but an urgent economic and geopolitical imperative. With global emissions still rising and climate impacts intensifying across continents, the world requires a systemic transformation of how capital is mobilized, deployed, and governed. The central message emerging from COP30 was unequivocal: to meet global mitigation targets aligned with the 1.5°C trajectory, climate finance must be dramatically scaled, diversified, and restructured to support low-carbon transitions in an equitable and efficient manner.

For emerging economies such as India, COP30 presented both a challenge and an extraordinary opportunity. As a rapidly growing nation with rising energy needs, a young workforce, and ambitious development aspirations, India stands at the crossroads of global climate leadership. The nation's ability to attract, deploy, and innovate climate finance will determine not only its domestic transition trajectory but also its role in shaping global climate advancement.

The Evolving Climate Finance Landscape Post-COP30

COP30 advanced several global frameworks that underline the urgent need to scale climate finance for mitigation. These include:

1. **Enhanced Global Finance Goal (EGFG) Framework**
   COP30 reinforced earlier commitments by advancing the EGFG, emphasizing trillions, not billions, as the future scale of climate finance. The framework aims to redirect international capital flows toward clean energy systems, net-zero technologies, nature based solutions, and sustainable infrastructure.

2. **Strengthened Article 6 Mechanisms**
   Article 6 of the Paris Agreement, focusing on carbon markets, received detailed operational guidance. More robust safeguards and transparency standards were introduced to ensure market integrity and enable cross-border carbon trading. This opens new avenues for developing countries to monetize mitigation actions and attract international investments.

3. **Global Methane Pledge 2.0**
   COP30 accelerated commitments around methane reduction, identifying it as the single most cost-efficient mitigation opportunity. This highlights the need for new blended finance models for methane abatement, especially in agriculture, waste management, and oil and gas sectors.

4. **Climate-Aligned Financial Regulation**
   Central banks and financial regulators globally including developing nations agreed on a shared commitment to integrate climate risk into governance, lending guidelines, and disclosure frameworks.

This regulatory alignment improves investor confidence and directs capital toward low-carbon pathways.

5. **A Strong Push for Nature-Positive Investments**
   COP30's outcomes underscored the interlinkages between mitigation and nature restoration. Nature-based solutions (NbS) received unprecedented global attention, encouraging greater financing flows into restoration, reforestation, regenerative agriculture, and blue carbon ecosystems.

   Collectively, these outcomes build a compelling case for nations to enhance domestic and international mechanisms of climate finance to bridge the growing gap between ambition and action.

Why Scaling Climate Finance Is the Defining Imperative of Our Time

While climate risks are intensifying, financial flows for mitigation remain significantly inadequate. According to global assessments, the world currently requires more than USD 5 trillion annually in climate-aligned investments to remain on a 1.5°C pathway. Yet actual flows are less than half of this need. The gap is particularly stark in developing economies, which face multiple barriers:

- high cost of capital,
- limited access to concessional finance,
- underdeveloped low-carbon markets,
- technology transfer challenges, and
- inadequate risk-mitigation instruments.

COP30 recognized that without transforming the financial architecture, public and private, the world will be unable to bend the emissions curve. Climate mitigation, therefore, is not merely a technological or policy challenge; it is fundamentally a finance challenge.

India's Central Role in the Post-COP30 Mitigation Finance Landscape

India's climate commitments, including achieving 50% cumulative electric power capacity from non-fossil sources by 2030 and attaining net-zero emissions by 2070, are ambitious and transformative. However, achieving these goals requires deep financial innovation and global collaboration.

India will need an estimated USD 10 trillion in cumulative climate investments by 2070. COP30 strengthened the international environment for India to secure diversified climate finance from multiple channels.

1. **Renewable Energy Expansion**
   India's progress in solar, wind, and hybrid energy systems is globally recognized. COP30 has unlocked new opportunities in:
   - green hydrogen production,
   - Offshore wind development,
   - grid modernization, and
   - energy storage ecosystems.

These sectors require blended finance structures to attract long-term private capital at scale.

2. **Industrial Decarbonization**
   India's hard-to-abate sectors, cement, steel, chemicals, and heavy manufacturing, are poised to benefit from COP30's emphasis on technology partnerships and concessional finance for low-carbon industrial transformation.

3. **Carbon Markets and Article 6 Compliance**
   India is well-positioned to lead global south participation in Article 6 markets. COP30's strengthened carbon market architecture opens avenues for India to generate high integrity credits through:
   - forestry and land restoration,
   - renewable energy expansion beyond business-as-usual,
   - methane reduction initiatives, and
   - industrial emissions reduction.

4. **Nature-Based Solutions and Climate-Adaptive Agriculture**
   As a climate-vulnerable nation with significant biodiversity, India can attract global finance into restoration, regenerative farming, and watershed management programs.

Financing Mitigation: Key Mechanisms Reinforced by COP30

For India and other emerging economies to capitalize on COP30 outcomes, the following innovative finance mechanisms will be instrumental:

1. **Blended Finance Platforms**
   Blended finance, where public or concessional capital is used to de-risk private investments, remains one of the most effective tools to mobilize large-scale climate investment. Innovative structures include:
   - fir st-loss guarantees,
   - concessional long-term debt,
   - anchor investments by development finance institutions (DFIs), and
   - credit enhancement mechanisms.

   India can scale these models across green hydrogen, storage technologies, and EV ecosystems.

2. **Transition Finance Instruments**
   Sectors with unavoidable emissions require transition financing rather than binary green classifications. COP30 provided clarity on transition pathways, encouraging:
   - sustainability-linked loans (SLLs),
   - transition bonds, and
   - performance-based incentives tied to emissions reduction targets.

3. **Domestic Taxonomies and Reporting Standards**
   A key global trend amplified at COP30 is the harmonization of sustainable finance taxonomies. India's emerging taxonomy, aligned with global best practices, will provide clarity to investors, reduce greenwashing risks, and channel capital toward credible low carbon projects.

4. **Carbon Markets and Results-Based Finance**
   Strengthened at COP30, Article 6 mechanisms will catalyze investments in sectors such as forestry, waste, energy, transportation, and industrial eLiciency. With improved transparency and MRV standards, high-integrity carbon credits will become a new asset class for Indian developers.

5. **Technology-Linked Financial Partnerships**
   COP30 highlighted the critical role of technology transfer in mitigation. India can leverage this momentum by strengthening trilateral partnerships between:
   - government,
   - private sector, and
   - global climate finance institutions.

   Such partnerships can accelerate deployment of frontier technologies like green hydrogen, carbon capture and storage (CCS), and digital energy systems.

The Call for Private Sector Leadership

Public finance alone cannot bridge the climate finance gap. COP30 placed substantial emphasis on mobilizing private capital through:

- corporate net-zero commitments,
- climate risk disclosures,
- internal carbon pricing,
- sustainable procurement mandates, and
- ESG integration into financial decision-making.

India's private sector, one of the most dynamic globally, has the potential to unlock unprecedented levels of innovation and investment. Corporates that align climate action with core business strategy will be the frontrunners of the next decade.

Towards a Future-Ready Climate Finance Architecture for India

India's journey post-COP30 needs to focus on building a climate finance ecosystem that is transparent, scalable, and innovation-driven. Key priorities include:

1. **Deepening Green Capital Markets**
   India's green bond market has already crossed significant milestones. The next phase should strengthen:

- green securitization,
- municipal green bonds,
- sustainability-linked instruments, and
- retail green investment products.

2. **Regulatory Alignment**
   The RBI, SEBI, and other regulators will play a transformative role in:
   - climate risk supervision,
   - taxonomy development,
   - disclosure standardization, and
   - mandating transition plans for financial institutions.

3. **Financing MSME Decarbonization**
   MSMEs account for a significant portion of India's industrial emissions but lack access to climate finance. Digital financing platforms and risk-sharing models can help bridge this gap.

4. **Building Local Green Innovation Ecosystems**
   Startups focused on sustainability, clean tech, and digital solutions are reshaping India's climate economy. Targeted risk capital and concessional funding mechanisms can further accelerate their impact.

Conclusion: A Decisive Decade Shaped by Finance, Innovation, and Collective Leadership

COP30 has provided a renewed global mandate for urgent, scaled, and innovative climate mitigation finance. For India, this is a transformative moment, an opportunity to lead the global south, accelerate its own energy transition, and build a resilient and equitable economic future.

The next decade will be defined by the choices we make today:

- the capital we mobilize,
- the innovations we nurture,
- the partnerships we forge, and
- the systems we reform.

India has the vision, talent, and institutional maturity to emerge as a global leader in climate mitigation finance. By aligning national ambition with global financial momentum, India can contribute meaningfully to the world's 1.5°C pathway while securing long-term prosperity for its people.

Climate mitigation is not only a planetary necessity, it is a generational opportunity. The outcomes of COP30 provide both the blueprint and the momentum. What remains now is **collective action,** bold leadership, and an unwavering commitment to a sustainable future.

COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance

By Nishtha Gupta, Suzlon Group

The 30th UN Climate Change Conference (COP30), held in Belém, Brazil, marked a pivotal moment in global climate negotiations. Countries agreed to mobilize $1.3 trillion annually by 2035 for climate action, alongside commitments to double adaptation finance by 2025 and triple it by 2035. The summit also operationalized the Loss and Damage Fund, ensuring replenishment cycles to support vulnerable nations. COP30 outcomes for India highlight a dual narrative i.e. strong advocacy for scaled climate finance and equity but cautious steps on mitigation and fossil fuel transition. It sets India on a path where finance is the linchpin. The next decade will be defined by how effectively India channels scaled and innovative finance into energy, agriculture, infrastructure, and industry, accelerating climate mitigation while ensuring equity and resilience.

As emerging economies are central to climate mitigation, these regions face the dual challenge of development and decarbonization. The COP30 launched initiatives such as the Global Implementation Accelerator and the Belém Mission to 1.5°C, designed to drive practical action and calls for innovation in finance and technology. This includes green bonds, carbon markets, and digital platforms that enhance transparency. Policy shifts, such as stronger disclosure requirements and incentives for low-carbon investments, are essential to align markets with climate goals.

Finance is the most critical lever for climate transformation. COP30's emphasis on mobilizing trillions in climate finance underscores that public finance must expand to support adaptation and resilience; drive innovation in renewable energy and green infrastructure. Also, blended finance must de-risk investments in emerging markets, enabling large-scale deployment of clean technologies. The outcomes of COP 30 directly shape how renewable energy projects are funded, scaled, and delivered.

1. Renewable Energy Sector Perspective

- The renewable energy sector views COP30 as a turning point as scaled deployment of renewable energy is expected rapidly to replace fossil fuels. Renewables (solar, wind, hydro) will expand aggressively, supported by concessional finance and green bonds.
- Diversified Finance tools will emerge wherein Public, private, and blended finance are essential to unlock projects at scale, especially in emerging markets. International climate finance will support grid modernization and storage infrastructure.
- Innovation through Green bonds, carbon markets, and digital platforms can accelerate investment flows.
- Policy Shifts and incentivization schemes of government through renewable adoption by supportive regulations, subsidies, and carbon pricing is expected.
- Collaboration across customers, suppliers, financiers, and policymakers shall ensure that renewable projects deliver both climate and economic benefits.

2. Infrastructure Sector and Urban Development Perspective

- Climate-resilient infrastructure is a major adaptation priority.
- Smart cities, resilient housing, and sustainable transport systems will dominate urban planning.
- COP30 adaptation finance will support flood-resilient housing, coastal embankments, and climate-proof transport.
- Urban transportation is expected to scale up Metro expansion, EV charging infrastructure, and green mobility corridors
- COP30's emphasis on adaptation finance benefits India's urban flood management and coastal protection.
- Public-private partnerships (PPPs) with ESG-linked financing will emerge
- Sovereign climate funds and concessional loans will create demand for resilient infrastructure.

3. Agricultural and Rural Development Perspective

- COP30's Global Goal on Adaptation (GGA) directly supports India's food security.
- Climate-smart farming, water-efficient irrigation, and crop diversification will be scaled.
- Climate-Smart Agriculture by scaling drought-resistant crops, precision farming, and water-efficient irrigation is expected
- Climate risk insurance, concessional rural credit, and blended finance for agri-tech startups; microfinance and concessional credit for rural adaptation projects and blended finance for agri-tech innovations will emerge
- Adaptation funds will support food security and farmer resilience. Climate risk insurance for farmers shall be a significant driver.

4. Financial Services Perspective

- India will push for predictable, scaled climate finance flows.
- Domestic banks and NBFCs will integrate climate risk into lending.
- ESG compliance becomes mainstream in capital markets.
- Innovative Instruments like Catastrophe bonds, sustainability-linked loans, carbon markets will be significant drivers
- Domestic Integration is expected to rise with Banks and NBFCs embedding climate risk into lending and investment portfolios.
- Innovative instruments driving the push shall include sustainability-linked loans, catastrophe bonds, carbon credits.
- It will lead to expansion of India's sovereign green bond program

5. Industry and Manufacturing Perspective

- Push for decarbonization in heavy industries (steel, cement, chemicals) is expected
- COP30 allows flexibility, so India will pursue gradual decarbonization with technology transfer.

- Concessional finance for clean tech adoption and Carbon pricing pilots and industrial efficiency programs is anticipated
- Carbon Pricing and sectoral carbon markets will emerge
- India will leverage COP30 commitments for industrial decarbonization

Innovation and Circularity in Value Chains

There is an urgent need that finance must fuel innovation and beyond traditional funding, climate finance should support the following objectives:

- Circular supply chains where customers and suppliers collaborate to reduce waste and emissions.
- Technology breakthroughs in wind energy, storage, and digital monitoring.
- Policy shifts that incentivize low-carbon investments and transparent reporting.

By embedding circularity into customer-supplier relationships, we can ensure alignment across every partnership, and every project contributing to Net Zero.

Emerging Markets: The Frontline of Action

COP30 rightly emphasized that scaled finance must prioritize renewable energy deployment in emerging markets. Also, partnerships across governments, corporates, and communities are essential to bridge the gap between ambition and action. We need innovative financing models, such as blended funds and green bonds, that can unlock projects that deliver both growth and emissions reductions. The blended finance, combining concessional public funds with private capital, can de-risk renewable investments and accelerate deployment in regions like India, Africa, and Latin America.

By aligning global ambition with national action, and by fostering circular partnerships across customers and suppliers, driving ambitious emissions reduction targets through scaled deployment of clean energy solutions well supported by innovative financing models; Net Zero goals can be met. The commitment backed by actions is required for leading this transformation, ensuring that renewable energy is not just a solution, but the foundation of a sustainable, Net Zero future.

India positioned itself as a champion of energy security for vulnerable nations, linking renewables to resilience. It is expected to scale up and build partnerships with small island states and Global South peers to co-develop renewable solutions.

India resisted binding fossil fuel phase-out language at COP30, stressing adaptation and development priorities. It will pursue a “phase-down” strategy, gradually reducing coal while scaling renewables, ensuring just transition for workers.

India’s preparedness and outlook hinge on balancing development needs with global climate expectations, positioning itself as both a renewable powerhouse and a voice for climate justice. The short-term goals till 2030 can be catered with aggressive solar and wind expansion, hydrogen pilots, sovereign green bonds. The medium-term plan from 2030-2035 will include Grid modernization, large-scale hydrogen hubs, and regional energy trade. The long-term vision beyond 2035 shall witness Renewables dominating India’s power mix, coal phased down wherein India will emerge as a renewable energy leader shaping global energy markets.

COP30: New Paths, New Beginnings

By Mritiunjoy Mohanty and Runa Sarkar, IIM Calcutta

Much has been written about the successes and failures of the Belem COP30 including how climate adaptation got the attention long-denied. Equally worthy of discussion, however, are the circumstances that led to this outcome, and whether enough progress has been made to bring adaptation to the centre stage of climate action.

COP 30 took place under the shadow of the USA pulling out of the Paris Agreement again, not participating in the Belem summit and unabashedly promoting the extraction and use of fossil fuels both through internal policies and international agreements backed by credible threats of punitive tariffs. The rest of the global north, especially the EU, has been preoccupied with the energy crisis due to the war in Ukraine, limited fiscal space due to the aftereffects of excessive spending from COVID, unexpectedly slow growth, burgeoning proportions of an elderly population and a volatile global trade order due to the Trump-tariffs. The EU has been pushed to lower its ambitions and dilute its climate actions as a result of sustained corporate pressures, in the face of slow growth and heightened competition. Canada just announced a similar rollback in climate rules to boost investment in oil and gas.

At the same time, this year has seen a record number of extreme climate events across the earth with the global south being affected disproportionately. And all available evidence suggests that the number of such events is very likely to increase in the future, resulting in huge losses unless immediate measures for climate resilience are taken. However, the fiscal space for the countries of the global south is even more constrained as compared to their northern counterparts, not just because of their developmental priorities but also because of very high levels of indebtedness and often unjustified cost of that debt.

It was in this challenging backdrop that COP30 commenced deliberations in the spirit of multilateralism and *mutirao*.

Little wonder then, with recent climate events bringing to the forefront the urgency of protecting human life and property, adapting to climate change and building resilience to climate impacts took centre stage, with COP30 securing a new target to triple finance for climate adaptation. Mitigation, which has been a focus area for most of the previous COPs, receded to the background as the global north was loath to make serious commitments while the global south clamoured for attention to the immediate needs of adaptation and loss and damage. However, even on fossil fuels, a last minute compromise through a carefully worded text (reference to “the UAE consensus”) kept the COP 28 commitment to transition away from fossil fuels alive.

In terms of resilience, the operationalisation of the Loss and Damage Fund was of critical importance. COP30 operationalised loss and damage around the three following pillars: the Warsaw International Mechanism (WIM) with its focus on implementation; the Santiago Network with its focus on vulnerable communities and local participation; and the new Fund for Responding to Loss and Damage (FRLD), guided by the Barbados Implementation Modalities and with an initial funding of $250 million.

The voice of the global south was amplified when negotiators agreed, for the first time, to discuss the role of trade policies for climate action. The focus on action was clear: two new initiatives, a Global Implementation Accelerator and the "Belem Mission to 1.5" to enhance and speed the implementation of countries' NDCs and national adaptation plans (NAPs) were launched. The adoption of a process to develop a "just transition mechanism" was also a first in acknowledging workers' and communities' rights. The spirit of knowledge sharing and recommendations to provide technical assistance and capacity-building to share knowledge, and support equitable, inclusive transitions to low-carbon economies shone through.

While not a binding commitment, by indicating a clear need to scale up adaptation finance threefold by 2035 (pushed back from 2030), a major political signal was sent about the expectations to scale up resource flows over the next decade. In more concrete terms, one could expect that of the $300 billion in climate finance that should flow to developing countries by 2035, $120 billion or so should go toward adapting and building resilience to climate change impacts.

Progress was made on the Global Goal on Adaptation (GGA), by agreeing on indicators to track progress. After fraught negotiations, negotiators adopted a set of 59 indicators across seven sectors: water, agriculture, health, and adaptation policy planning process including finance, capacity building and technology transfer, even as dissatisfaction remained about the practicality of some of the indicators. Gender and human rights were also included. Having a preliminary set of indicators gives countries a common framework to assess whether adaptation eUorts are on track.

Another noteworthy change of emphasis at COP 30 was the focus on agro-ecology. With smallholder farming dominating rural livelihoods, climate impacts increasingly threatening food security and the importance of agriculture for economic growth for the global south, agricultural transition toward ecological and climate-resilient pathways is critical. Moreover, investments in agriculture and nature based solutions bridge climate adaptation, mitigation, food security, and rural livelihood resilience within a single integrated framework, and yield positive financial returns. That sustainable food systems must be rooted in ecological principles, community engagement, traditional knowledge, and diversified production systems was acknowledged and emphasized.

Capping the new approach of creating coalitions of the willing, COP30 announced plans to create two roadmaps: one to halt and reverse deforestation symbolised by announcement of Tropical Forest Forever Facility (TFFF) with commitments of $5.5 billion as well as the TFFF country access platform; and another to transition away from fossil fuels in a just, orderly and equitable manner, mobilizing resources for these purposes in a "just and planned manner." As Louise Hutchins of the 'Make Polluters Pay' coalition said, "There is no turning back on that. The political space is open. Now we must turn it into a real fire escape to a safer world."

COP30's signal success and departure was in putting people, indigenous communities, and women impacted by climate change at the heart of its discussions. And allowing for the fact countries, regions and communities will take diUerent paths to dealing and adapting to climate change. Acknowledging the challenges on the ground, reinforcing the global nature of the problem and its solution and pledging to work together in the spirit of multilateralism and mutirao is path-breaking. Baby steps perhaps, but very concrete nonetheless - new beginnings have been made.

Linking COP30 Outcomes: Accelerating Climate Mitigation Through Scaled and Innovative Finance

By Prabodha Acharya, JSW Group

The task of financing a sustainable future has never been more urgent, more complex, or more deeply intertwined with global development priorities. As the world faces intensifying climate risks, widening socio-economic disparities, and rising economic volatility, it has become increasingly clear that aligning capital with climate action, social equity, and inclusive growth is central to long-term stability. For emerging economies like India, this alignment is more than a climate commitment; it is a strategic growth opportunity that can unlock resilience, stimulate technological innovation, and enhance global competitiveness.

Over the last decade, sustainability has moved decisively from the margins to the mainstream. It now shapes public policy, private investment, corporate strategies, and national development plans. The global financial system is undergoing a profound transformation where risk, return, and responsibility are deeply interconnected. Climate-informed finance is no longer just a funding mechanism, it has become a powerful catalyst guiding economies toward low-carbon, resilient, and nature-positive pathways.

This global shift was strongly reinforced at COP30, held at a critical juncture for climate governance. Leaders met to assess progress, strengthen commitments, and reinforce the financial architecture needed for global climate action. The message emerging from the negotiations was unmistakable: while ambition has grown, the scale and speed of climate finance remain far from adequate. COP30 placed unprecedented emphasis on expanding and diversifying climate finance to meet the urgency of mitigation particularly in developing and emerging economies, where the investment gap is most acute.

A central takeaway was that global mitigation efforts will only succeed if climate finance becomes predictable, accessible, and aligned with national transition pathways. COP30 highlighted the widening gap between global emission-reduction targets and the financial flows required to meet them, urging countries to directly connect sectoral climate goals with clear investment roadmaps.

Delegates also called for a shift toward diversified financing solutions moving beyond traditional public funding to mobilise private capital, blended finance structures, and innovative instruments. As the energy transition accelerates across clean power, sustainable industries, mobility, urban infrastructure, and climate-smart agriculture, trillions of dollars in investment will be required. COP30 underscored the crucial role of de-risking mechanisms and catalytic finance in scaling emerging technologies such as green hydrogen, energy storage, green mobility, bioenergy, circular manufacturing, and carbon capture solutions.

Importantly, COP30 reinforced that climate finance must advance both environmental and social goals. A just, inclusive transition one that safeguards livelihoods, protects vulnerable communities, and integrates gender-responsive development was central to the discussions. Finance must therefore function not only as a climate tool but also as a driver of equitable growth.

India's leadership featured prominently during ministerial sessions. Shri Bhupender Yadav, Union Minister for Environment, Forest and Climate Change, emphasised that under Prime Minister Narendra Modi's leadership, India has shown that rapid development and environmental stewardship can move hand in hand. India has already reduced its emission intensity by more than 36% compared to 2005 levels and now has more than half its installed power capacity from non-fossil sources achievements reached ahead of schedule. India will

soon submit revised NDCs for 2035 and its first Biennial Transparency Report.[30] Global initiatives such as the International Solar Alliance, Global Biofuel Alliance, and advances under the Nuclear and Green Hydrogen Missions further reinforce India's climate leadership. The Minister also highlighted that over two billion saplings have been planted in sixteen months, a powerful symbol of collective environmental commitment.

The COP30 Declaration echoed these themes, calling for urgency, ambition, and shared responsibility. It reaffirmed the 1.5°C goal, urged deep decarbonisation across major sectors, and called for significant scaling of accessible and predictable climate finance, particularly for vulnerable nations. The declaration emphasised just transitions, innovation in technologies like CCUS and green hydrogen, robust carbon markets, and adaptation priorities such as resilient infrastructure, water security, early-warning systems, and ecosystem restoration. Above all, it underscored that global unity must translate into tangible, well-funded, and inclusive action.

Against this global backdrop, the theme "Accelerating Climate Mitigation Through Scaled and Innovative Finance" is particularly relevant for India. The country faces the dual challenge of sustaining high economic growth while rapidly decarbonising hard-to-abate sectors such as steel, cement, power, and transport. COP30's finance-oriented outcomes offer India a pivotal opportunity to mobilise large-scale capital, strengthen domestic financial markets, and deploy cutting-edge technologies at speed.

India stands at a crucial crossroads. It is among the world's fastest-growing economies, yet also one of the most climate-vulnerable. Estimates indicate that India will need over USD 170 billion annually until 2030[31] to meet its climate goals a reflection of both the scale of the challenge and the magnitude of the opportunity. To close this gap, India is leveraging a diverse portfolio of financing:

- government-led programmes such as the National Green Hydrogen Mission, FAME for EV adoption, Production Linked Incentives, solar parks, bioenergy initiatives, and energy efficiency schemes;
- private-sector efforts including green bonds, SLBs, transition finance instruments, and corporate decarbonisation commitments;
- international climate finance through the Green Climate Fund, MDBs, bilateral partnerships, and blended finance facilities.

In addition, India is developing a Climate Finance Taxonomy, a crucial step toward defining what qualifies as "green" or "transition" finance. A clear taxonomy reduces greenwashing, aligns domestic finance with global standards, and enhances investor confidence making it easier to attract international capital and channel domestic resources toward genuinely climate-positive activities.

India's issuance of sovereign green bonds further reinforces its commitment to building a robust sustainable finance ecosystem[32]. These issues are helping expand renewable energy capacity and accelerate low-carbon infrastructure across states.

India's policy framework continues to gain strength. Updated NDCs, a commitment to reduce emissions intensity by 45% by 2030, the Net Zero 2070 target, and ambitious clean energy goals provide a strong backbone.[33] Initiatives such as the Carbon Credit Trading Scheme, the Green Credit Programme, ESG

[30] Union Environment Minister, Shri Bhupender Yadav delivers India's National Statement at UNFCCC CoP30 High-Level Segment, at Belém, Brazil

[31] WSDS 2025 Thematic Tracks - Climate Finance: Accelerating India's Decarbonisation Journey

[32] India incorporates green bonds into its climate finance strategy

[33] Transforming India's Climate Finance through Sector-Specific Financial Institutions Part 1

disclosure frameworks like BRSR Core, and state-level climate action plans are creating an enabling ecosystem for climate-aligned investments. India is also advancing blended finance, climate-smart agriculture financing, green banks, transition finance for hard-to-abate sectors, local climate funds, and corporate-led decarbonisation initiatives.

As India moves steadily toward a cleaner and more resilient future, the central question is no longer why climate finance is needed, but how quickly it can be mobilised and deployed. One important bridge in this journey is the Viability Gap Fund (VGF). VGF helps climate-positive projects such as EV charging networks, energy storage, green hydrogen facilities, or bioenergy units become financially viable by sharing early risks and supporting initial capital requirements.

Yet challenges persist. Capital costs remain high, early-stage climate technologies struggle to attract financing, and several promising innovations remain too expensive to scale rapidly. This is where climate technology and financial innovation must converge. India's growing strength in solar, green hydrogen, batteries, e-mobility, digital climate tools, and circular technologies needs patient capital, policy certainty, and targeted incentives.[34]

The Way Forward

To sustain momentum and accelerate climate action, India must:

- Expand VGF support to emerging climate-critical sectors such as hydrogen, offshore wind, and industrial decarbonisation.
- Use blended finance and concessional capital to draw in private investment for early-stage climate technologies.
- Finalise a simple and transparent national Climate Finance Taxonomy to guide investors and prevent greenwashing.
- Strengthen R&D and domestic manufacturing to reduce technology costs and fast-track local innovation.
- Enhance climate-risk disclosures and expand access to green credit for industries and MSMEs.

JSW Steel became the first steel company globally to issue a USD-denominated Sustainability-Linked Bond, linking financing directly to its carbon intensity targets. The SLB received strong investor response, reflecting confidence in the company's transparent and ambitious climate commitments. JSW Steel continues to advance its transition through innovative financing, technological adoption, and exploration of blended finance solutions positioning itself at the forefront of the global green steel movement.[35]

India stands at a defining moment. By aligning finance with climate action and inclusive growth and by harnessing partnerships, policy strength, and industrial capability the nation has the potential to emerge as a global leader in sustainable development. The decisions made today by policymakers, financial actors, and corporate leaders will shape not only India's trajectory, but also the global pathway toward a climate-resilient and equitable future.

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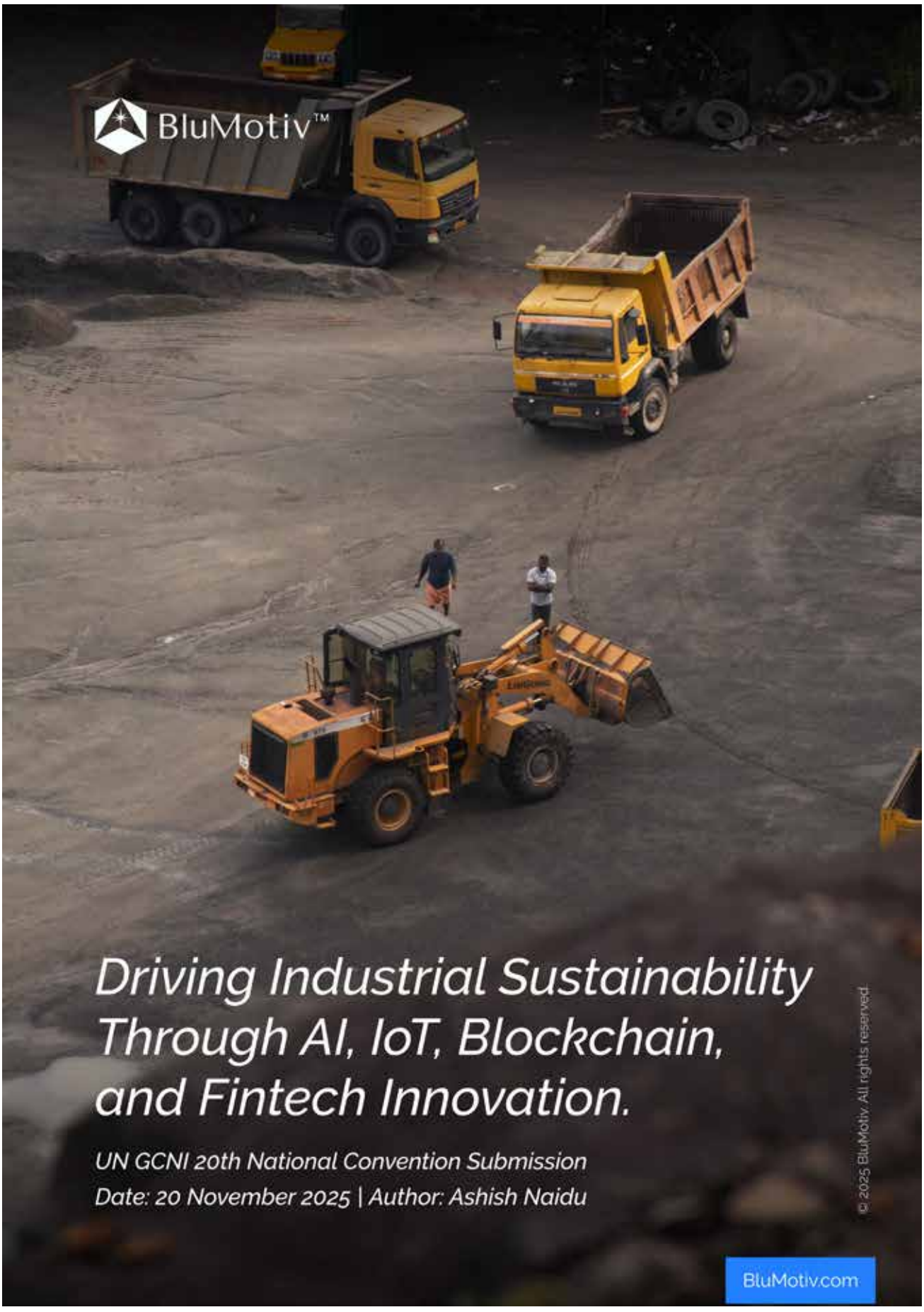
[34] Financial and Policy Catalysts for Climate Tech Expansion in India: Insights from the 'Green Innovation and Investment Dialogue'

[35] India Sustainable Debt State of the Market 2024 Climate Bonds Initiative

SUSTAINABILITY IN MOTION:

SCALING CLEAN INDUSTRIAL TRANSITIONS


BluMotiv™
Driving Industrial Sustainability Through AI, IoT, Blockchain, and Fintech Innovation.
UN GCNI 20th National Convention Submission
Date: 20 November 2025 | Author: Ashish Naidu
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Executive Summary

India's industrial economy depends on millions of off-highway vehicles (OHVs) operating across construction, mining, logistics, and infrastructure. These vehicles also represent some of the country's largest sources of diesel consumption, emissions, and operational inefficiency.

Achieving Net Zero by 2070 requires a scalable and financially viable pathway, one that electrifies existing diesel fleets rather than relying on costly, slow, and resource-intensive full asset replacement. BluMotiv delivers this transition through a Virtual-First electrification ecosystem that integrates:

Elektrofit™ - a proprietary retrofit platform that upgrades diesel machinery into high-performance electric assets.

BluFleet AI™ - an intelligence layer powered by real-time telemetry, virtual twins, and generative AI.

Blockchain-enabled MRV - providing verifiable, finance-grade climate accounting and carbon-credit generation.

BluMotiv's Now - Near - Far computing architecture connects vehicle-level edge intelligence with cloud-scale analytics to create a continuously learning system. BluFleet AI™ delivers predictive maintenance, optimised charging, fleet-level energy orchestration, and accurate carbon forecasting, transforming sustainability outcomes into bankable climate assets.

A 10-year case study of a retrofitted 30-ton **Elektrofit™** Electric Excavator demonstrates measurable and finance-ready impact:

- ~65% reduction in energy costs vs. diesel
- ₹4.42 Cr net operational savings after mid-life costs
- ₹1.72 Cr additional revenue from verified carbon credits
- >2,000 tons CO_2 avoided over 10 years (MRV-certified)
- 15–20-month payback with ROI exceeding 200%

In typical mining operations, a diesel excavator has a 20-year lifespan. BluMotiv's intervention electrifies the machine at mid-life (after ~10 years of diesel use) unlocking ~₹6.00 Cr in combined OPEX savings and carbon-credit revenue over the remaining life. This retrofit pathway also advances the 9R principles of sustainability (reduce, reuse, refurbish, remanufacture, repurpose, recover, etc.) and directly supports ***SDGs 7, 8, 9, 11, 12, 13, and 17.***

BluMotiv transforms industrial electrification into a climate-smart business model - accelerating decarbonisation today, financing the transition tomorrow, and powering a sustainable, resilient future for India.

2. The Challenge & Market Context

India's industrial decarbonization effort faces three structural barriers that have historically slowed the transition from diesel-powered off-highway vehicles (OHVs) to clean-energy alternatives:

A. Slow, CapEx-Heavy Electrification

Off-highway machines typically operate for 10–20 years. Replacing them with new electric equipment is prohibitively expensive, operationally disruptive, and often unviable for fleet operators.

B. Inaccurate or Unverifiable Carbon Reporting

Most industrial sustainability metrics rely on manual estimates rather than continuous, machine-level data. This undermines the integrity of ESG disclosures, limits eligibility for carbon credits, and weakens confidence in emerging carbon markets.

C. Lack of Bankability

Banks and climate financiers require auditable, high-fidelity, forward-looking emissions data to underwrite sustainability-linked loans, carbon-backed financing, and large-scale transition capital. Without this, decarbonisation remains underfunded.

Core Industry Challenges

Challenge Area	Pain Point	Consequence
High Capital Cost	Replacing diesel machines with new EVs demands very high CapEx	Slows adoption; prolongs diesel dependence
Long Asset Lifecycles	Replacing diesel machines with new EVs demands very high CapEx	Carbon-intensive assets remain locked-in
Operational Downtime	Replacing diesel machines with new EVs demands very high CapEx	Reduced willingness to electrify
Limited Data Visibility	Replacing diesel machines with new EVs demands very high CapEx	Poor ESG reporting; ineligible for carbon finance
Infrastructure Gaps	Replacing diesel machines with new EVs demands very high CapEx	Electrification fails to scale beyond pilots
Unverified Sustainability Claims	Absence of robust MRV frameworks	Erodes investor trust; weakens climate markets

Together, these challenges have delayed industrial fleet decarbonization, despite this segment being critical to India's emissions-reduction trajectory.

BluMotiv's Mission

Recognizing these systemic gaps, BluMotiv was founded with a clear mission:
"To engineer trust in industrial sustainability by making emissions measurable, verifiable, financeable, and scalable."

BluMotiv's technology stack integrates:

- AI-driven analytics
- Virtual twins and IoT telemetry
- Blockchain-based MRV (Measurement, Reporting & Verification)
- Fintech-layer carbon finance

This architecture enables rapid, low-disruption electrification without fleet replacement or expensive infrastructure upgrades, addressing both the technological and financial bottlenecks.

Market Opportunity

India operates over 8 million diesel OHVs across mining, construction, logistics, ports, and infrastructure. Electrifying even 25% by 2035 would avoid 200+ million tons of CO_2e annually, directly supporting India's Net Zero 2070 goals.

With verified MRV data, BluMotiv can unlock >$10 billion in high-integrity carbon credits, turning industrial decarbonization into a new economic engine.

BluMotiv sits at the nexus of:

- Industrial transition technology
- Digital MRV for carbon integrity
- Impact-linked finance and carbon monetization

Strategic Position Statement:

BluMotiv is positioned at the intersection of AI, electrification, and carbon finance, enabling industries to measure, finance, and scale sustainability.

Its Virtual-First, retrofit-led electrification model delivers immediate emission reductions, high-integrity MRV data, and finance-ready outcomes that accelerate India's clean industrial transition.

3. BluMotiv's Virtual-First Sustainability Engine

BluMotiv brings together electrification, AI intelligence, and climate finance into a unified Virtual-First platform built for rapid, scalable industrial decarbonization.

At the core is **Elektrofit™**, a software-defined retrofit powertrain that upgrades existing diesel vehicles into high-performance electric assets, eliminating the cost, delay, and disruption of full asset replacement.

Complementing this is **BluFleet AI™** ,which uses real-time telemetry and virtual twin models to enhance energy efficiency, uptime, and fleet utilisation. When combined with BluMotiv's Now–Near–Far computing framework, the platform consistently delivers 15–20% improvements in key operational KPIs.

The Virtual-First approach, driven by digital replicas of vehicles, environments, and fleets, accelerates development, shortens deployment cycles, and reduces operational risk.

All operational data is secured through BluMotiv's blockchain-enabled MRV layer, ensuring every unit of carbon avoided is traceable, auditable, and finance-ready turning decarbonization outcomes into revenue-generating climate assets.

Together, these capabilities form a scalable sustainability engine that accelerates electrification, enhances financial transparency, and provides a replicable pathway for clean industrial transformation.

4. Business Impact: Quantifiable Results

4.1. Cost & Performance Gains (30T Excavator Example)

BluMotiv's retrofit model delivers immediate and sustained financial impact:

- 65% reduction in operating costs (diesel to electric)
- 15–20-month ROI, among the fastest in the industrial fleet category
- ₹6.19 crore lifetime savings per asset (10-year horizon)
- 20% higher uptime through predictive AI
- 10–15% lower energy consumption from optimisation
- ~40% extended asset life, avoiding premature scrappage

4.1.1. Verified Carbon Reduction

BluMotiv provides MRV-grade carbon integrity:

- 188–220 tCO_2e abatement per vehicle per year
- Fully aligned with banking, insurance, registry, and ESG compliance requirements

4.1.2. Finance & Carbon Monetisation

Verified climate outcomes convert directly into financial returns:

- ₹1.72 crore carbon-credit revenue per retrofitted vehicle (10-year basis)
- Predictive MRV enables forward carbon contracts and sustainability-linked financing

4.1.3. ESG Alignment*

BluMotiv directly advances ***SDGs 7, 8, 9, 11, 12, 13, and 17***

4.1.4. Industry 5.0 Alignment**

A human + AI operating model that enhances safety, productivity, and sustainability while modernising industrial operations.

4.1.5. 9Rs Circularity Integration***

The retrofit approach strengthens circular economy outcomes through reuse, refurbish, remanufacture, recover, and life-extension pathways.

Net Zero 2070 Contribution****

BluMotiv enables low-cost, high-scale electrification, backed by verifiable climate action, circularity, and avoidance of premature asset scrappage. Offering India a credible pathway to accelerate its Net Zero 2070 ambitions.

5. Scaling Sustainability: The Road Ahead

BluMotiv's roadmap is designed to scale industrial decarbonisation rapidly while deepening technology leadership and expanding financial impact.

Phase 1: National Scale-Up (2026–2028)

- 10,000+ OHEV retrofits across mining, construction, logistics, and ports
- 100+ smart depots enabling integrated charging and fleet optimisation

- Launch of the BCX™ carbon marketplace to monetise verified abatement

Phase 2: Global Expansion (2028–2032)

- Regional expansion across Southeast Asia, Middle East, and Africa
- Multi-OEM licensing of Elektrofit™ for broader industry adoption
- Deployment of government-integrated MRV systems to support national registries

Phase 3: Intelligent Industrial Ecosystems (2032–2035)

- Autonomous, AI-orchestrated fleet management
- Predictive MRV integrated into national emissions reporting
- Large-scale carbon-backed financing, enabling industry-wide transition

6. Strategic Stakeholder Value

BluMotiv's model creates aligned value across the industrial ecosystem:

- **Fleet Owners:** Lowest total cost of ownership, fastest ROI, higher uptime, and direct monetisation of verified carbon savings.
- **Investors & ESG Funds:** High-integrity, MRV-backed carbon credits and predictable, data-driven returns with reduced technology and transition risk.
- **OEMs & Technology Partners:** A scalable retrofit platform that supports circularity, component reuse, and next-generation electrification pathways.
- **Policymakers & Regulators:** Immediate decarbonisation impact, fully traceable MRV data, and strong alignment with national Net Zero and carbon-market frameworks.
- **Communities & Workforce:** Cleaner air, reduced noise, safer worksites, and the creation of new green, technology-enabled jobs.

BluMotiv aligns incentives across ***profit, planet, and people***, enabling a scalable pathway to sustainable industrialisation.

Elektrofit™ assets consistently deliver ***up to 65% cost reduction, 28% revenue uplift, and over 2000 tons of CO_2*** abatement, all verified through blockchain-enabled MRV, setting a new benchmark for scalable, finance-ready industrial decarbonisation.

The Way Forward: A Call to Lead India's Sustainable Industrial Transformation

India's path to Net Zero will be shaped not by distant promises, but by the choices we make today, choices that determine how we modernise our industries, empower our workforce, and channel capital toward a cleaner, more resilient future.

BluMotiv is laying the foundation for a new era of sustainable industry. By enabling the electrification of existing fleets, embedding AI-driven intelligence into operations, and building the architecture for verifiable MRV-enabled climate finance, BluMotiv is demonstrating that industrial decarbonisation can be ***affordable, scalable, and future-ready.*** This foundation transforms sustainability from a cost burden into a long-term value engine for the nation.

For ***industry leaders***, the message is clear:
The technologies required to decarbonise at scale are emerging rapidly. What's needed now is leadership that priorities speed, transparency, and innovation.

For ***aspiring engineers and technologists***, the opportunity is equally powerful:
This is your moment to design, build, and deploy the systems that will power India's sustainable industrial revolution.

The next decade will determine whether India emerges as a global leader in clean industrial transformation. Together, industry, innovators, investors, and policymakers can build a future where sustainability is not a trade-off. It becomes a competitive advantage.

The groundwork is being laid. Now is the time to accelerate, collaborate, and lead.

Appendix: Economics & Comparative Advantage

1. Operational Efficiency & ROI (10-Year, 30T Excavator)

Metric	Diesel Baseline	BluMotiv Electric	Differential/Benefit
Energy Cost	₹92.00 Lakh	₹32.00 Lakh	₹60.00 Lakh (~65%) saved
Maintenance	₹22.00 Lakh	₹12.00 Lakh	₹10.00 Lakh saved
Net OPEX	₹114.00 Lakh	₹44.00 Lakh	₹70.00 Lakh (~61%) saved
Payback	---	15–20 months	Fastest in category
ROI (10 years)	---	>200%	Sustained profitability

2.Carbon Finance

Parameter	Value
CO_2 Reduction (10 years)	~2400 tons/asset
Carbon Credit Value (EU price)	₹7000/tCO_2
Revenue (10 years)	₹1.72 Cr/asset
Verification	MRV blockchain + ISO14064

3. Return on Sustainability (RoS)

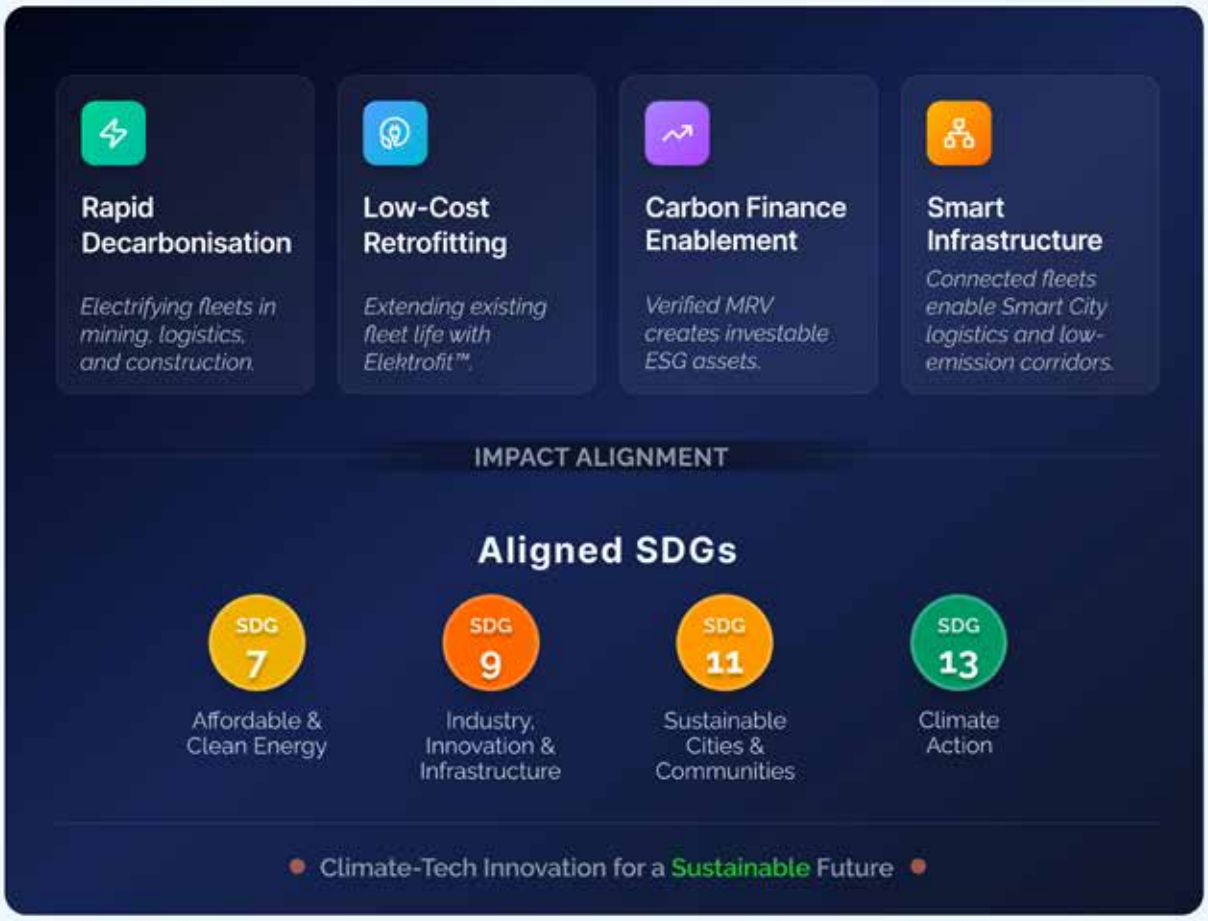
Dimension	Indicator	Verified Value
Financial ROI	Payback period	15–20 months
Economic	Net savings	₹6.19 Cr/asset
Environmental	CO_2 avoided	2400 tons/asset
Carbon Revenue	Credits	₹1.72 Cr/asset
Efficiency	Energy reduction	~65%
ESG Compliance	MRV/blockchain	100% traceable
Circularity	Lifecycle extension	40%
Social Value	Green jobs/asset	3-5

4. Comparative Model Value

Parameter	EV Replacement	Diesel Baseline	BluMotiv Elektrofit
CapEx	Very High	---	Low
Speed	Slow	---	Immediate
Cost Savings	30–40%	---	60–65%
Carbon Credits	Partial	None	Full MRV
Payback	4–6 years	---	1.5–2 years
Circularity	Limited	None	High
ESG Readiness	Basic	None	Full integration

BluMotiv compresses cost, carbon, and deployment time - enabling measurable sustainability with no disruption.

A. Supporting India's Net Zero 2070 Roadmap****



B. ESG Value Creation for Heavy Industries*

Driving sustainable transformation through environmental stewardship, social responsibility, and transparent governance

SDG 3 · SDG 8 · SDG 12

Environmental

- Zero tailpipe emissions and noise reduction
- 40% extended asset life reduces waste
- MRV-certified carbon accounting

Social

- Healthier, quieter worksites
- Skilled green-tech workforce
- Improved operator comfort and safety

Governance

- Transparent blockchain-based MRV
- Verified ESG disclosures
- Investor confidence with digital traceability

Enterprise Sustainability · Modern Tech · Industrial Innovation

c. Industry 5.0 - Human + AI + Sustainability**

Human — Expertise & Insight

AI — Intelligence & Optimization

Sustainability — Circular & Clean

BluMotiv defines Industry 5.0 by harmonizing human expertise and AI-driven decision-making.

SDG 9 · SDG 12 · SDG 13

Sustainable Productivity
Smart downtime usage for portable charging and reduced idle emissions.

Human-Centric Design
Operators receive AI insights for optimal operation.

Circular Economy
Retrofit > reuse > refurbish > recycle.

BluFleet AI™ Orchestration
Aligns moving assets (vehicles), fixed assets (chargers), and digital assets (cloud intelligence) for holistic optimization.

Operational KPI Improvement
Identifies efficiency opportunities at fleet level, from charging to route optimization.

*D. 9Rs Alignment****

Principle	BluMotiv's Contribution
Rethink	Virtual-First, Digital-Twin-based development.
Reduce	Zero-prototyping cuts resource use & emissions.
Reuse	Retrofitting existing vehicles.
Repair / Refurbish	Periodic refurbishment + OTA updates.
Remanufacture	Modular retrofit kits enable scalable remanufacture.
Repurpose	Second-life battery applications.
Recycle	End-of-life battery recovery & recycling.
Refuse	Eliminating diesel-only assets.
Recover	Capturing OPEX savings & carbon-credit value.

About

BluMotiv™ is a deep-tech company driving large-scale decarbonisation of off-highway and commercial fleets through hardware innovation and AI solutions. Its flagship **Elektrofit™** enables rapid electrification with faster development cycles, higher efficiency, and lower TCO.

Powered by proprietary AI platforms and the cloud-connected **BluFleet AI™** ecosystem, BluMotiv helps fleets boost KPIs, extend asset life, and monetise carbon credits. Partnering with global leaders like Dassault Systems, AWS, Microsoft Azure, Google Cloud, and NVIDIA, BluMotiv delivers world-class engineering to make sustainability scalable and profitable today.

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WAY FORWARD

As we mark the 20th National Convention of the UN Global Compact Network India, we stand at a defining moment for our nation, a moment when India's aspirations, responsibilities, and global expectations converge. What we are witnessing today is not merely an evolution in corporate governance or environmental consciousness; it is the emergence of a new development paradigm where climate responsibility, social equity, and economic strength are no longer separate pursuits. They are the pillars of India's next phase of nation-building.

The evidence of this transition is unmistakable. In 2024, India's sustainable-debt market crossed USD 55.9 billion, registering a 186% surge since 2021, a pace of growth that places India among the world's most dynamic sustainable-finance markets. Green instruments alone accounted for over 80% of all issuances, powering our expansion in renewable energy, green transport, and climate-resilient infrastructure. More tellingly, corporate green-loans totalled USD 5.5 billion in 2024 across 19 Indian companies, demonstrating that sustainability has moved firmly into the centre of boardroom strategy, capital allocation, and operational transformation. India's ESG investment market reached USD 1.2 billion in 2024 and is projected to grow at over 20% annually through 2030, with institutional investors prioritising transparency, climate-aligned portfolios, and inclusive value chains.

Corporate transparency is rising with equal momentum. Among India's top listed companies, over 50% voluntarily disclosed Scope 3 emissions in 2024. This is not a minor milestone, it signals a maturity of climate reporting rarely seen in emerging economies, and places India at the forefront of the Global South's climate accountability landscape. Simultaneously, our regulatory architecture has strengthened: enhanced frameworks for ESG-labelled debt, expanded BRSR adoption, state-level climate action plans, and updated guidance across ministries are shaping an ecosystem where responsible business becomes the norm, not the nuance.

This is not accidental progress. It reflects the combined force of government vision, industry readiness, financial innovation, and citizen expectation. India's ministries, from Environment, Forest & Climate Change to Corporate Affairs, Finance, Renewable Energy, Power, Skill Development and MSME, have been instrumental in creating the backbone for this transition. Their work has empowered companies to innovate, disclose, adapt, and invest. When the Government of India speaks of Atmanirbhar Bharat, Viksit Bharat, and a Green Growth strategy, it is laying out not just an economic roadmap, but a moral one, a commitment to development that is just, equitable, and sustainable.

But numbers alone do not define our national moment. What truly defines us is intent, the collective resolve to ensure that sustainability becomes India's competitive advantage. For the first time in our history, climate resilience, social equity, digital inclusion, and ethical governance are being recognised not as costs, but as catalysts of transformation. The world is watching India not as a participant, but as a potential architect of global sustainability. Our demographic strength, technological depth, entrepreneurial energy, and cultural commitment to coexistence with nature give us a unique foundation to lead.

The role of UN Global Compact Network India in this landscape is clear and urgent. We must serve as the bridge, connecting global principles to national policy, national ambition to business action, and business leadership to community well-being. We must deepen corporate preparedness for emerging ESG norms, strengthen capability for climate and nature reporting, support MSMEs to transition responsibly, and shape coalitions that accelerate action across sectors. Our responsibility is to work with ministries, industries, investors, civil society, academia, and global partners to ensure that India's sustainability commitments translate into measurable, lasting, national impact.

As we look forward, the way ahead demands courage. Transformations of this scale are not comfortable; they require businesses to rethink models, investors to rethink risk, and institutions to rethink priorities. But they are necessary, because the future we are building is not for the next quarter, but for the next century.

Let us move forward with the conviction that India's sustainable transition is not merely possible, it is inevitable, essential, and already unfolding. Let us be guided by data, inspired by purpose, and united by the belief that India can, and will, lead the world in demonstrating that growth and responsibility, prosperity and equity, climate action and economic ambition are not competing goals, but converging destinies.

This is our moment - to define not just what India becomes, but what India stands for. And in doing so, to shape the future of the world.

Ratnesh
Executive Director,
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Nuvreet Parmar is a Sustainability Manager at Brillio, where she leads the organization's Environment and Inclusion charters. With extensive experience advancing ESG programs and driving cross-functional collaboration, she focuses on embedding sustainability and equity into core business practices. Passionate about environmental stewardship and social impact, Nuvreet champions innovative, scalable solutions that align business growth with positive planetary outcomes. She believes in the power of collective action and purpose-driven leadership to accelerate global progress toward a just, low-carbon future.

Dr Nitin Dumasia

President and CEO, Growlity, Inc.

Dr. Dumasia is a purpose-driven Indian leader and the President & CEO of Growlity, Inc., a USA-based global advisory firm for ESG and Sustainability Solutions. He serves as Treasurer and Governing Council Member of the UN Global Compact Network India. A Mechanical Engineer with an Honorary PhD in ESG & Business Sustainability from Sorbon University, he brings 18+ years of multinational experience across Switzerland, the USA, Canada, and India. Recognised with honors such as 40 Under 40 ESG Leaders and Sustainability Champion, he has published extensively on ESG, SDGs, and Net Zero. He advises BIS and CRI, contributes to UNGC networks globally, mentors youth and startups, and drives impactful climate and decarbonisation initiatives across multiple countries.

Nishtha Gupta

Group Head – Sustainability & ESG, Suzlon Group

Ms. Nishtha Gupta is Sustainability Practitioner known for her Sustainability leadership and being a Changemaker working in collaboration with multiple sectors for driving Net Zero journey. She has been helping organizations for the past 16 years for Sustainability transformation, ESG journey, Product Stewardship, Biodiversity Management, Responsible Sourcing, Carbon Neutrality and Circular Economy Principles. She strongly believes

in using Sustainability as a strategic tool to focus on business excellence, risk management, benchmarking performance with peers and delivering an impact on environment, economy and society. Presently, she is working as Group Head-Sustainability and ESG at Suzlon". Previously, she has worked at Bureau Veritas, Investcorp, AECOM, TUV SUD South Asia and Reliance Power.

Her significant contributions include working as Chair-ESG Committee twice at TIC Council (based in Brussels, Belgium) and Technical Committee member for BIS Working Groups for preparation of ESG Reporting Standards; and National Circular Economy Framework with CII. Due to her significant contributions in shaping society as a whole, she has received many awards and accolades which also include most prestigious title of "Global Sustainability Professional of the Year, 2025","ET Edge Top 100 Chief Sustainability Officers of 2025", "Trailblazer Women Leadership Award in Renewable/Sustainability, 2025", "Sustainability Leader of the Year, 2024", "Most Impactful Sustainability Leader, 2024", "Inspirational Woman Leader, 2024", "National Excellence Award for Sustainability Professional, 2024", "Sustainability Leader of the Year, 2023" and "Most Impactful Sustainability Leader, 2023

Mritiunjoy Mohanty

Retired Professor of Economics, IIM Calcutta

Mritiunjoy Mohanty retired in September 2024 as a Professor of Economics at the Indian Institute of Management Calcutta, Kolkata. His recent work includes an October 2025 open access volume that he co-edited (with Professor Runa Sarkar) titled 'Financing Climate Action: India in the Global Context', Taylor and Francis, London and New York. Outside of macroeconomics of climate change, he is currently teaching and researching the comparative growth and structural change trajectories of China and India and its relationship with the nature and pattern of their integration into the global economy.

Runa Sarkar

Professor of Economics, IIM Calcutta

Runa Sarkar is a Professor of Economics at the Indian Institute of Management Calcutta. Her interests lie in sustainable development where business works in consonance with environmental and social interests. An independent director on several Boards, she is also a jury member for Sustainability Awards of the World Steel Association, an advisory committee member of the Centre for Sustainable Finance, and

Sustainability Forum, BCC&I, Climate Change and Child Rights, WBCPCR and as a member of CII Taskforces. Besides publications with Mritiunjoy Mohanty in the area of climate change, she has also edited IIR 2024 'Sustainable Energy Transition: A Way Forward for India's Power Sector', Bloomsbury (July 2025)

Prabodha Acharya

Chief Sustainability Officer, JSW Group

Mr. Acharya partners with CEOs, CXOs, Functional and Operations Heads across JSW Group companies to develop and implement sustainability and ESG strategies in sectors including steel, energy, cement, paints, and infrastructure. He has been instrumental in integrating sustainability into core business strategy and advancing long-term value creation for the Group. With over three decades of global experience in corporate sustainability, environmental management, climate change, and policy deployment, he has worked with SAIL, URS Greiner Woodward-Clyde (Australia), Lloyd's Register (UK), and the Aditya Birla Group. Recognised as one of the most impactful sustainability leaders, he serves on key committees of WBCSD, Worldsteel, CII, FICCI and others. He holds engineering degrees from IGIT and IIT Kharagpur, and completed advanced leadership training at Brown University.

Ashish Naidu

Founder and CEO, BluMotiv

Ashish Naidu is the Founder & CEO of BluMotiv, a deep-tech electrified mobility company focused on smart, affordable, and connected transport solutions. With over 20 years of global experience in automotive research, AI systems, and engineering leadership, he has held roles at Ford (UK/USA) and Jaguar Land Rover (UK). Ashish has led innovations in connected propulsion, predictive energy optimization, and intelligent powertrain systems, and holds 26 patents.

He integrates AI, cloud computing, IoT, blockchain, and fintech-aligned sustainability models into practical mobility applications. He holds an MS in Automotive Engineering from Birmingham City University and an MBA from ISB, with further certifications from London Business School and Wharton.

A first-principles thinker, he is committed to building intelligent, ESG-aligned mobility ecosystems that accelerate the transition to predictive, autonomous, and electrified fleets.

Nancy D Cruz

Assistant Manager, UN GCNI

Nancy D'Cruz leads the Gender Division at UN Global Compact Network India (UN GCNI) and also heads Communications for UN GCNI. With over eight years of experience in research and communications, she brings a strong public policy background to her work. She holds a Master's degree in Gender and Development Studies and a Bachelor's in Political Science from Jesus and Mary College, Delhi University. Additionally, she has earned Postgraduate Diplomas in Human Rights and Environmental Law and Policy, reflecting her deep commitment to social justice and sustainability.

Yogita Singh

Programme Officer, UN GCNI

Yogita Singh is a dedicated development professional with four years of experience in research, project management, and communication. She currently serves as a Programme Officer at UN GCNI. Previously, she led the Bharat Pravah project at the Institute for Governance, Policies and Politics (IGPP), a key initiative supported by the Ministry of Ports, Shipping and Waterways, where she managed secondary research, project design, execution, and stakeholder communication. She has also worked on field projects in Odisha under CFD, focusing on socio-economic development and community engagement. At HelpAge India, she contributed as a Data Consultant to a cross-national study assessing elderly access to urban services, demonstrating strong analytical and field-research skills.

Yogita holds a Master's in Sociology from the Delhi School of Economics and a Bachelor's from Maitreyi College, grounding her work in strong academic insight and research rigor.

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Network India

About UN Global Compact Network India

As the United Nations Global Compact (UNGC) local arm, UN GCNI has been acting as a country level platform in providing a robust platform for Indian businesses, academic institutions and civil society organizations to join hands for strengthening responsible business practices. Our '10 Principles in areas of Human Rights, Labor, Environment and Anti-corruption' provide a common ethical and practical Framework for Corporate Responsibility - and the 17 Sustainable Development Goals (SDGs) adopted in September 2015, by all 195 Member States of the United Nations including India in order to end extreme poverty, gender inequality and injustice, and protect our planet- understood and interpreted by businesses around the world, regardless of size, complexity or location. UN Global Compact Network India acts as a nodal agency in providing a robust platform for businesses, non-businesses, academic institutions, civil society organizations and also the state institutions to join hands for strengthening responsible practices and target the 2030 Global Goals. UN GCNI galvanizes an enabling environment for all the relevant stakeholders to drive the movement of Uniting Businesses for a better world.

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