12th Edition
INDIA AND SUSTAINABILITYSTANDARDS
International Dialogue & Conference

Organised and Hosted by
CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact



POST CONFERENCE REPORT 2025

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CEO Message

As the 12th edition of CRB's annual India and Sustainability Standards (ISS) Summit concludes, it is pertinent to reflect on the depth of engagement, ideas, and continued commitment demonstrated by stakeholders across business, government, civil society, and academia, especially in the context of the urgency to address socio-economic and environmental challenges that confront us, bearing in mind the geopolitical uncertainty, conflicts and evolving governance of global value chains.

Over the three days of ISS 2025, a consistent message emerged: while the global sustainability discourse is witnessing moments of recalibration, even hiatus, in some parts of the world, businesses continue to invest in sustainability as a strategic imperative. This is supported by a number of reports recently published by leading global think-tanks. It reinforces an important reality that was echoed across plenaries and thematic sessions alike: sustainability is no longer viewed merely as a normative aspiration, but as a key determinant of competitiveness, resilience, and long-term value creation.

India's sustainability journey, though not without its challenges, continues to show steady progress. The country's improving performance on the Sustainable Development Goals and the presentation of its third Voluntary National Review at the United Nations reflect the cumulative impact of coordinated efforts by government, businesses, and other stakeholders. Discussions at ISS 2025 reinforced the view that enterprises—large corporations as well as MSMEs—have an increasingly central role to play in translating national ambition into on-ground outcomes. Further, integration of certain sustainability related aspects in the conceptualisation of Viksit Bharat 2047, demonstrates this commitment at the highest level.

CRB's annual sustainability summit - India and Sustainability Standards (ISS) represents a convergence of the learning generated through our year-round engagement with enterprises, government departments, international organisations, MSMEs, entrepreneurs, and local communities across diverse regional contexts. This year's Summit offered an opportunity to critically reflect on what is working, where implementation gaps persist, and how collaborative, context-sensitive approaches can help scale solutions. Sessions spanning MSME decarbonisation, deforestation-free supply chains, water stewardship, handloom livelihoods, and EU–India sustainable business collaboration signaled that many solutions already exist—the task ahead lies in aligning policy, finance, data systems, and partnerships to enable wider adoption. One additional element this year was the engagement with and dialogues around sustainability initiatives of Public Sector Enterprise (PSEs).

A particularly important reminder throughout the Summit came from voices representing youth, artisans, small producers, and community-led initiatives. Their perspectives grounded the sustainability discourse in everyday realities and reinforced that economic competitiveness must advance alongside social equity and environmental integrity. Responsible business, as repeatedly emphasised, is not about eliminating trade-offs but about navigating them transparently and thoughtfully.

ISS 2025 also reaffirmed the importance of multi-stakeholder collaboration as the defining feature of India's sustainability pathway. Whether through innovative financing mechanisms, evolving regulatory frameworks, or voluntary standards, progress will depend on shared responsibility and sustained collective engagement in critical sectors. The draft ISS Declaration emerging from the Summit reflects this collective intent to move decisively from dialogue to action.

As India advances towards its vision of a Viksit and sustainable Bharat, the insights and partnerships forged at ISS 2025 will continue to inform our work at CRB, and hopefully that of our partners and other key stakeholders. We remain committed to enabling enterprises to deliver balanced sustainability outcomes that strengthen competitiveness while creating positive impacts for people, nature and society.

We thank all our partners, speakers, participants, and supporters for contributing to ISS 2025, and we invite you to continue this journey with us—demonstrating, through practice, that responsible business is not only compatible with growth, but essential to building enduring value in an increasingly complex world. Stay tuned for the next edition – as some new developments are expected.



Rijit Sengupta

Chief Executive Officer
Centre for Responsible Business



Enhancing Competitiveness and Positive Impacts through Responsible Business

Theme Paper

In today's rapidly evolving global economic landscape, responsible business strategies and practices have become crucial for businesses to operationalise their commitment towards long-term sustainability and SDGs. There is enough data to support this view, especially demonstrating how responsible business is helping businesses achieve international competitiveness while delivering long-term value on the ground.

Despite the relegation of climate change and sustainability issues to the backburner by certain advanced economies, evidence from recent global research reports suggest that a large majority of companies continue with their sustainability investments and have stayed on course with their supply chain initiatives. A similar trend can be observed in India: a recent report indicates that 91% of Indian CXOs increased sustainability investments over the past year, and 54% are reconfiguring operations and supply chains to be more climate-resilient. Another recent study found that 72.4% of mid-market firms see sustainability as key to strengthening supply chain resilience.

Business leaders clearly identify climate and sustainability as key areas of focus, as per the Deloitte C-Suite sustainability report 2025; and underline the 'business-case effect' as the main reason for that (See Fig 1 below). The MIT Sustainable Supply Chain report asserts that despite regulatory shifts and uncertainties, corporate commitment to sustainability remains unfazed. While 15% of companies report reduced commitments, 12% have increased theirs, and 73% report no change, showing that most organisations are holding steady with their sustainability goals.

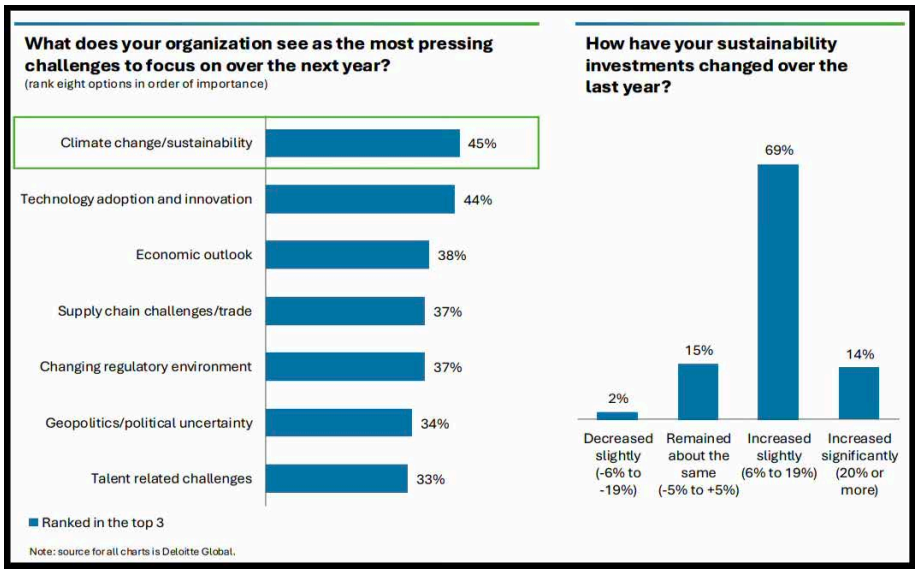


Fig 1: Deloitte C-Suite Sustainability Report 2025

Since its establishment, Centre for Responsible Business (CRB) has engaged with multiple stakeholders in India and beyond, to enable enterprises to steer positive sustainability outcomes. This has been achieved by supporting businesses/enterprises in embracing responsible business strategies and practices, including by collaborating with different stakeholders.

Continued commitment together with ambitious and concerted actions by businesses, government, civil society, scientific/academic community is critical as scientific evidence clearly indicates that we have now breached the seventh of the nine planetary boundaries, which represent the 'safe operating space' for humanity.

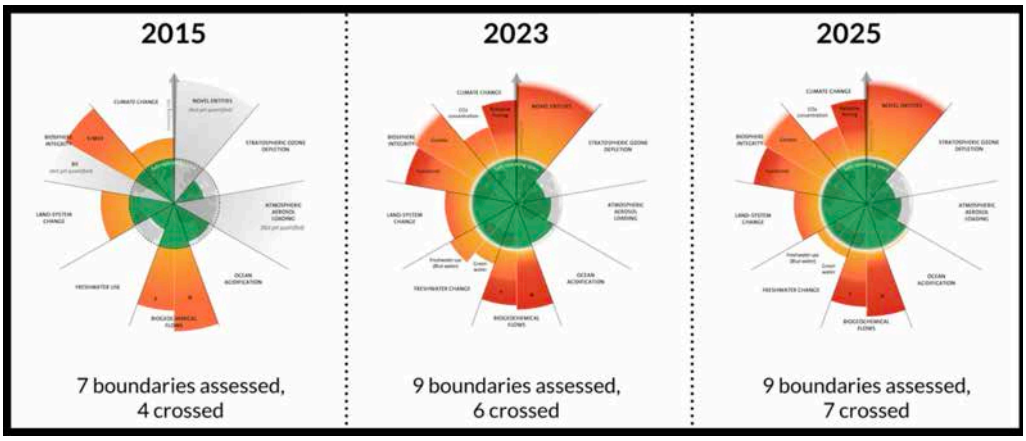


Fig 2: Planetary Boundaries (Source: Stockholm Resilience Centre)

CRB's 12th annual sustainability summit is dedicated to the theme – 'Enhancing Competitiveness and Positive Impacts through Responsible Business'. The theme has been carefully chosen to underscore the relevance of responsible business not just to business and enterprise leaders but to all stakeholders, especially those who still remain beyond the 'fence'. Experience demonstrates that the transition from conventional, linear models of production and consumption to regenerative and circular models that embed sustainability and equity across the entire value chain is certainly not straightforward. It is also abundantly clear now that such transition cannot be achieved only by pivoting and preaching a 'risk' mitigation and management narrative. In emerging and aspiring economies like India — which are key components of international businesses' value/supply chains — it is imperative to explain and leverage potential socio-economic 'opportunities' that responsible business strategies and practices can achieve locally. Such transition would also entail a comprehensive transformation of business strategies and practices, including changing if not overhauling mindset, design and capabilities not just across enterprises, but also value chain and the wider ecosystem. This requires collaboration and partnership with stakeholders with common interest and shared value.

As domestic markets open up through trade and investment agreements — for example, India's agreement with its key partners like UK, EFTA or the forthcoming deal with the EU — businesses on both sides should explore such collaborative pathways. It is evident from existing evidence and practice, that such partnerships are increasingly the need of the hour. Not only in India, but across the world, the trade and the sustainability community have on most occasions chosen not to engage with each other in dialogues that explore issues at the interface of trade and sustainability. This has resulted in lack of trust and created doubts on both sides, with little room for compromises or trade-offs on either side. However, given that sustainability principles are getting embedded into trade policy and practices, across the globe, it is critical now for these two communities to come together, and proactively engage with each other.

Consumer behaviour is also undergoing change and should be leveraged by forward-looking sustainable business and enterprise leaders. A number of recent studies show consumers not just in advanced economies, but also in India increasingly becoming aware of and supportive towards sustainable products, though a gap continues to exist between the 'intent' and the 'action'.

A recent report, surveying 2,200 urban consumers across 10 Indian cities, found 84% preferred sustainable products, with 62% being aware of eco-friendly practices. The PwC India Voice of the Consumer 2024 survey showed 46% viewing climate change as a major threat and 60% having shifted purchasing toward sustainable options. Consumers are also willing to pay more for sustainable goods, assert these studies. Rising demand is pushing firms to adopt eco-friendly packaging and ethical sourcing (Deloitte & FICCI, 2024). Yet, a Consumer Protection Association survey found many consumers being unaware of Mission LiFE and urging stronger action against greenwashing. Overall, India's sustainable consumption narrative hinges on affordability, access, and credibility of green products.

Businesses have realised they are part of a larger interconnected system, and are both dependent on and impact other parts of this system. Risk and opportunity management for businesses need to take both these 'dependencies' and 'impacts' into consideration. There is emerging acceptance that value creation by transformative businesses is not only to be estimated through financial parameters, but also using other non-financial parameters that help assess impacts on natural, social, and human capitals and assets.

Various different innovative approaches for delivering responsible business practices have been devised and are being explored and deployed to achieve long-term positive impacts on all these capitals (natural, social, human and produced), involving businesses and multiple stakeholders. CRB is fortunate to have been working with a number of leading national and international partners on some such pioneering and innovative initiatives – some of them will be presented and discussed at this year's summit.

Regenerative agriculture is a well-established systems approach that helps in improving soil carbon (through incorporation agriculture, biofertiliser application, etc.) and reducing other greenhouse gas (GHG) emission due to optimisation of fertiliser application, land management and water stewardship. Food and agri-based companies including those operating in India are realising the benefits from promoting regenerative agriculture, especially to decarbonise their supply/value chain among other benefits. However, there is still a gap in appreciating the social welfare component of regenerative agriculture, especially in terms of the opportunities it provides for women's economic empowerment and community leadership. A lot more attention is needed in this area.

The imperative for ethical decarbonisation or ensuring that the transition to a low-carbon economy is fair and just, pervades a number of sectors. For example, in manufacturing and building/construction in India (two of the most employment-generating sectors) – achieving equity and inclusiveness often remains a real challenge. Innovative businesses and leading organisations are involved in various initiatives that demonstrate how such transition could achieve desired socio-economic outcomes. For small and medium enterprises (SMEs) and small producers, collectivisation/collective leadership on sustainability and climate action clearly stands out as the way forward. Enterprises and producers in clusters, landscapes and value chains are realising the potential positive impacts that can be achieved by embedding sustainability principles in their thinking, language and practice. Champions are emerging in clusters and in landscapes – who need more visibility, recognition, mentoring and partnership opportunities. For a long-time, experts have argued for a wider and more comprehensive view on circular economy principles as a conduit for achieving sustainable and inclusive growth. Efforts to embed resource efficiency thinking and strategies at the sourcing or design stage as compared only at the 'end of the pipe' – is now being given more attention, which is exciting news. This promises significant opportunities for industrial and economic policy that aims to decouple economic activity from adverse environmental impacts.

Finally, in view of the proliferation of responsible business frameworks, standards, and certification, it is critical and urgent to focus on credibility. Several studies have highlighted weaknesses of certification systems especially with respect to their accountability, and verification of actual social or environmental impact.

Many industry leaders believe India's BRSR framework, for example, mandated by SEBI, has helped businesses strengthen processes and systems that enable transparency through detailed sustainability disclosures and third-party assurances. Others, especially those closer to the ground may differ in their views about seeing tangible benefits of the BRSR translated to the ground. These benefits are often slow and creeping in nature, difficult to compute and attribute. The focus therefore has to be on ensuring that sustainability benefits reach communities and across value-chain partners.

Therefore, transparency (of processes), access (for beneficiaries) and accountability (to impacts) will remain the most critical determinants of credible sustainability systems, now and in the near future.

DAY - 1













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Co-host

European Union

Inaugural Plenary: Enhancing Competitiveness and Positive Impacts through Responsible Business

Speakers:

- Rijit Sengupta, Chief Executive Officer, Centre for Responsible Business
- Farhad Vania, Member, CRB Governing Body, Portfolio Management Advisor
- Ambassador Mikael Anzen, Ambassador for Sustainable Business & Innovation, Ministry for Foreign Affairs, Sweden
- Prof. Vasanthi Srinivasan, Co-Chairperson, CRB Governing Body, Professor, IIM Bangalore

Youth Champions:

- Pragati Kumari, ASN Senior Secondary School
- Parth Sarthy, Columbia Foundation Senior Secondary School
- Suhani Sharma, Rainbow English Senior Secondary School



Rijit Sengupta, Chief Executive Officer of the Centre for Responsible Business, opened the 12th edition of the India and Sustainability Summit by welcoming all participants, partners, and dignitaries. He framed ISS 2025 not merely as a gathering but as a significant conclave addressing India's most pressing contemporary challenges.

Rijit articulated the dual significance of responsible business: its role in creating positive social and environmental impact on the ground and its contribution to business competitiveness in the marketplace. He emphasised the critical need to restore confidence in sustainability and responsible business, which he acknowledged was "wavering at this point in time." His core call was direct, "We have to bring back the confidence on sustainability and responsible business... let us celebrate the ways in which sustainability and responsible business can help India to take a leadership role on these issues at the international level." He highlighted that the 2025 edition features 1,800 registrations, 70 partner organisations, and over 175 national and international speakers from diverse backgrounds including corporations, ministries, and universities, with support from four government departments.



Farhad Vania, Member of the CRB Governing Body, delivered opening remarks reflecting on CRB's institutional evolution. He noted that CRB, now nearly 15 years old, has grown substantially from its inception in 2011. The India and Sustainability Summit, started in 2014 and inspired by the late Dr. Bimal Arora and others, has reached its 12th edition.

Vania emphasised that ISS is far more than an annual conference; it functions as a flagship convergence platform where "everything that the CRB does for the rest of the year comes together today." He drew from evolutionary biology to frame business adaptation: species that fail to adapt to ecosystem changes do not survive, and similarly, businesses must navigate rapidly evolving ecosystems of laws, policies, markets, and consumer behaviour while maintaining responsible mindsets and delivering positive impacts.



Ambassador Mikael Anzen, Ambassador for Sustainable Business & Innovation at Sweden's Ministry for Foreign Affairs, delivered a video address recounting Sweden's journey toward sustainability leadership. He began by reaffirming Sweden's partnership with India, referencing the latest Sweden–India Joint Commission for Economic, Industrial and Scientific Cooperation held in Stockholm.

Ambassador Anzen outlined how Sweden transformed from a "pretty poor rural country" in the late 19th century into one of the world's most progressive societies, driven by engineers, entrepreneurs, and innovators. He highlighted sectoral examples shaping this transformation, including mining, forestry, life sciences, and recycling as embedded cultural practice. Anzen emphasised the centrality of due diligence and international norms like the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, increasingly treated "almost as international laws."

The most distinctive session component was the Youth Champions segment, organised in collaboration with the United Schools Organisation of India (USO), established in 1951 and celebrating 75 years of engaging young people in social transformation. Moderated by Nandini Sharma and Ms. Devyani Hari, the segment featured three students from different schools.

Understanding Sustainability—Student Perspectives:

When asked to define sustainability and sustainable development, students offered clear, values-driven responses.



Pragati Kumari stated: "For me, it's just not a buzzword. It's basically owing to our actions to keep this planet alive, making sure that whatever resources we are using, we are also saving it for the future generations and we are not being selfish." She invoked Gandhi's famous principle, "There is enough for everyone's need, but not enough for even a single person's greed."



Parth Sarthy described sustainable development as: "Improving and growing our lifestyles without harming the world and conserving it for the future generations."



Suhani Sharma emphasised personal responsibility, "For me, sustainability is not something world leaders discuss in their meetings. It's a duty, it's a responsibility to all of us... It's a smart way of living in which we utilise the resources in the right way by saving for the future generation, not by sacrificing our planet, our environment, our beautiful nature."

Students were invited to describe their desired future. Suhani emphasised, "Something that needs to be different in the future is not the machines, the buildings; it has to be the mindsets... If we develop a thinking of carrying reusable bottles, of planting trees... this can bring a very big change."

Parth stressed behavioural changes in everyday life including careful water use, no littering, proper waste disposal, with everyone taking responsibility for small actions.

Pragati painted a vivid vision: "Where people during the pollution season don't have a swollen eye, don't have difficulty in breathing... where fresh air is there which doesn't stain your lungs." She argued for transition from coal mining toward wind and solar, highlighting India's geographic potential in areas like the Rann of Kutch and Gujarat. She proposed nature-based solutions like sea moss cultivation, stopping waste imports, addressing ship-breaking and chemical leakage, and reviving traditional practices like using leaf-based plates that compost naturally.

The audience and panellists responded with enthusiasm, recognising the youth segment as both moral reminder and solutions reservoir. CRB and USO representatives joined students and teachers on stage for felicitation.

Prof. Vasanthi Srinivasan, Co-Chair of the CRB Governing Body and Professor at IIM Bangalore, presented CRB Strategy 2030 virtually, framing it as emerging from three years of organisational reflection on CRB's journey, changing stakeholder expectations, and the evolving sustainability landscape.



She traced CRB's original vision—encouraging businesses to integrate responsibility into core practices—and major developments in India's regulatory and normative environment: National Voluntary Guidelines, business and human rights frameworks, Companies Act CSR rules, NGRBC, SEBI's BRSR, and global supply chain norm evolution.

Prof. Srinivasan articulated persistent paradoxes in sustainability conversations including sustainability versus profitability, efficiency versus effectiveness, long-term versus short-term imperatives. Yet she positioned responsible business as fundamentally about navigating these paradoxes rather than resolving them, "These tensions and paradoxes... will continue into the future. And yet responsible business for us in the future is really at the intersection of how we navigate these paradoxes and tensions."

She explained that the CRB's new vision is "to be a glocal leader enabling enterprises for multi-dimensional sustainability outcomes", and reaffirmed CRB's core values—inclusion, equity, contextual relevance, trust, empathy, collaboration, holistic and solution-oriented work—noting these will become increasingly important. Thematic focus areas include circular economy, inclusive growth, and environment and climate action, with recognition that environmental change now affects all human existence dimensions and that social development must remain central to economic transformation.

Rijit Sengupta announced that CRB was developing an 8-page draft declaration representing the collective aspirations of ISS 2025, with participants invited to scan a QR code and provide input throughout the summit. This declaration functions as both synthesis and blueprint, capturing the summit's distributed intelligence for post-event action.

Devyani Hari delivered the Vote of Thanks, reflecting on her seven-year journey at CRB growing from a small team of five to six people in one city to over 30 staff across multiple locations in India. She expressed gratitude to: partners and supporters placing trust in CRB; board members and management guiding the Strategy 2030 development process; students and schools extending sustainability conversation beyond expert communities into classrooms.

Key Highlights

- Glocal Positioning: CRB's new vision explicitly acknowledges Indian enterprises' embeddedness in global value chains while maintaining commitment to local context relevance.
- Paradox Navigation: Rather than attempting to resolve tensions between sustainability and profitability, responsible business is positioned as skilfully navigating these inherent paradoxes.
- Multi-Dimensional Sustainability: Solutions must address social, environmental, and economic dimensions simultaneously, rejecting siloed approaches.
- Generational Stewardship: The recurring theme—youth asking whether adults are leaving a better world—became the summit's moral anchor.
- Continuous Endeavour: International experience (Sweden) and youth perspectives converge on sustainability as "never-ending," requiring sustained commitment beyond regulatory compliance.
- Solutions Already Exist: Student presentations demonstrated that technological and behavioural solutions exist; the challenge is scaling and implementation.
- Collective Responsibility: The summit framed responsible business as a shared obligation—government, business, civil society, and individuals together—operationalising SDG 17 in practice.

First High-Level Plenary: Responsible Business Strategies to Drive Competitiveness

Moderated by:

Deepak Arora, CRB Governing Body Member

Panellists:

- Kathy Roussel, Head of Advocacy and Engagement, AMFORI
- Gyaneshwar Kumar Singh, Director General and CEO, Indian Institute of Corporate Affairs (IICA)
- Frank Viault, Minister Counsellor and Head of Cooperation, Delegation of the European Union to India
- Ravi Kumar Nara, National President, Dalit Indian Chamber of Commerce and Industry

Nandini Sharma, Director at the Centre for Responsible Business, opened the session by emphasising that this plenary would explore how companies gain competitive edges by integrating responsible business principles into core operations. The discussion would examine global sustainability frameworks, public policy and enabling ecosystems, sustainability-led value creation, MSME resilience, and Indian business readiness to compete on sustainability outcomes.



Deepak Arora, moderating the panel discussion, reflected on India's sustainability journey from 2008 when founder Dr. Bimal Arora's vision for a sustainability-focused institution seemed ahead of its time. Over subsequent decades, efficiency and resource-use discussions have become structured, reaching corporate boardrooms and becoming central to strategic decision-making. Deepak emphasised that competition has always driven progress; as value chains transform—particularly with transition toward greener energy—industries face new challenges, shifts, and paradoxes that strengthen connections between national competitiveness and sustainability standards.

Ms. Kathy Roussel, Head of Advocacy and Engagement at AMFORI, provided context on the organisation's four decades of work advancing sustainable trade globally. AMFORI operates with 2,400 member companies and 58,000 active suppliers across 120 sourcing countries, with 2,000 suppliers specifically in India. She highlighted the AMFORI BSCI (Business Social Compliance Initiative) launched in 2002 and the M40 Academy established in 2014 as foundational programmes. Notably, AMFORI conducted more than 2,500 BSCI social compliance audits in India over the past three years, underscoring the intensifying focus on social sustainability in Indian supply chains.



The establishment of AMFORI's Mumbai office in March 2025, Roussel emphasised, reflects long-term commitment to supporting Indian companies in aligning with international ESG expectations. She stressed a critical insight: competitiveness and sustainability are not mutually exclusive but mutually reinforcing. Businesses managing ESG risks effectively strengthen brand value, enhance market differentiation, and ensure long-term viability. Due diligence, risk management, supply chain resilience, and supplier partnerships are not compliance burdens but strategic imperatives enabling profitability and market access.

Mr. Gyaneshwar Kumar Singh, Director General and CEO of the Indian Institute of Corporate Affairs, traced India's Business Responsibility and Sustainability Reporting (BRSR) evolution. He noted that BRSR's fundamental intent is making ESG a genuine business case rather than compliance exercise, with reporting becoming mandatory for India's top 1,000 companies.

However, Gyaneshwar Kumar identified significant implementation gaps. Data consistency and integrity remain weak across many organisations; board structuring on ESG is inadequate, with many companies lacking dedicated ESG committees; and integration of ESG into corporate governance remains superficial. A parliamentary committee has recommended establishing an overarching institution under the Ministry of Corporate Affairs to address greenwashing, standardise disclosure ratings, and mainstream ESG integration in annual reports.



Gyaneshwar Kumar stressed that genuine ESG integration requires a fundamental shift in corporate purpose: from shareholder-centric models toward broader stakeholder-oriented governance. This requires structured approaches, robust data systems, and deliberate efforts avoiding superficial "greenwashing." He emphasised that sustainability must be viewed as a strategic advantage rather than compliance obligation.

Gyaneshwar Kumar also highlighted that carbon taxation frameworks and carbon trading rollout will significantly affect market access and competitiveness, requiring urgent MSME sensitisation to view these mechanisms as opportunities rather than burdens. ESG must evolve into a business philosophy that cannot exclude MSMEs, given their centrality in India's economic fabric.

Frank Viault, Minister Counsellor and Head of Cooperation at the Delegation of the European Union to India, situated the discussion within the EU-India strategic partnership framework. He outlined five foundational pillars, including prosperity and sustainability; technology and innovation; security and defence; connectivity; and global cooperation. Business communities play essential roles across all pillars, making private sector engagement central to partnership realisation.

Frank highlighted ongoing workstreams, including boosting trade and investment through Free Trade Agreement (FTA) negotiations; strengthening supply chains and economic security; and advancing clean transition and resilience.



Frank noted that policy dialogues are advancing on clean energy, smart urbanisation, water, and sustainable agriculture, with regulatory frameworks being harmonised to facilitate trade while strengthening sustainability standards. Critical enablers include sustainable and green finance instruments: the Sustainable Finance Facility, KfW-type funding mechanisms, and Switch Asia grants supporting projects ranging from €2.5 million to €4 million with up to 75% grant coverage.

Frank emphasised that EU sustainability regulations have shaped Indian company competitiveness in European markets. Preparedness in aligning with these regulatory frameworks translates directly into market access and profitability. However, he stressed that widespread dissemination of EU sustainability regulations among Indian companies, especially MSMEs, is essential so they can adapt effectively and benefit from alignment.

Ravi Kumar Nara, National President of the Dalit Indian Chamber of Commerce and Industry, brought powerful social and equity dimensions to the competitiveness discussion. He emphasised that marginalised communities—Scheduled Castes and Scheduled Tribes (SC/STs)—constitute nearly 25% of

India's population yet face deep-rooted disparities including limited access to opportunities, persistent implementation gaps, and decision-making frameworks lacking transparency. Government MSME data reveals significant potential; approximately 7 crore (70 million) MSMEs are registered on the Udyam Portal, with approximately 2.5 crore (25 million) registered by SC/ST entrepreneurs. This represents both the scale and untapped potential of marginalised entrepreneurs despite their severely constrained support systems. Policy shifts and finance schemes—including collateral-free credit extending to significant limits—have begun enabling SC/ST enterprises, yet implementation remains inconsistent.

Ravi Kumar urged the private sector to embrace moral responsibility and partner in wealth creation and enterprise development. He cited the Tata Group's example: ₹432 crore worth of business provided to SC/ST entrepreneurs, demonstrating how companies can combine commercial success with social commitment. If replicated across industries, such models could significantly accelerate national growth and broaden prosperity.



Nara clarified that marginalised communities are not seeking concessions but equitable opportunities—partnerships where companies grow in return, which he described as "reverse affirmative action." By enabling SC/ST entrepreneur success, India could significantly reduce dependence on welfare schemes and enable upward mobility.

The panel addressed the critical question, how can MSMEs begin sustainability journeys amid geopolitical complexity and rising regulatory expectations? Ms. Kathy Roussel emphasised that regulation alone cannot enable transformation. Instead, essential elements include collaboration, access to finance, capacity-building, technological innovation, and knowledge exchange.

Kathy stated that due diligence, risk management, supply chain resilience, supplier partnerships, and long-term value creation are interconnected imperatives. Companies integrating these elements strengthen brand value, enhance market differentiation, and ensure business viability. For MSMEs, competitive advantage increasingly derives from sustainability integration rather than despite it.

The panel converged on practical implementation priorities, including MSME inclusion in Scope 3 emissions accounting; sectoral frameworks recognising industry-specific contexts; board-level integration of ESG; capacity building across organisational levels; research and documentation of best practices; technology transfer enabling efficiency; access to capital and carbon credit mechanisms; and ecosystem engagement spanning government, business chambers, industry associations, and academia.

Gyaneshwar Kumar reiterated that structured engagement models must ensure MSMEs adopt sustainability without compromising financial health. Human rights awareness, stakeholder-specific frameworks, technology-driven solutions for waste management and EPR, and emphasis on SDG 17 (partnerships) must be integral to holistic sustainability approaches.

Deepak Arora highlighted the shared responsibility of all stakeholders—government, business, civil society, academia—in advancing responsible business. Competition as a driver of progress means that companies embracing responsible business integration gain sustainable competitive advantages. However, this requires supportive ecosystems: clear regulatory signals, access to finance, capacity-building support, technology availability, and collaborative platforms enabling collective problem-solving.

Discussion touched on gender equality and women's economic empowerment as integral to competitiveness and responsible business. UN Women's work in India and industry coalitions addressing workplace safety particularly in textiles demonstrate that sustainability encompasses social dimensions alongside environmental and economic. FTA sustainability chapters increasingly integrate gender considerations, strengthening commitments to sustainable production and consumption.

Key Highlights

- Competitiveness and Sustainability are Mutually Reinforcing: Businesses managing ESG risks effectively strengthen brand value, enhance market differentiation, and ensure long-term viability.
- BRSR Reveals Implementation Gaps: Whilst BRSR reporting is mandatory for top 1,000 companies, implementation quality remains weak across data integrity, board structuring, and ESG integration.
- Regulatory Alignment Brings Profit: EU sustainability regulations affecting Indian companies' European market access create incentives for proactive alignment. Preparedness translates to market access and profitability.
- MSME Inclusion is Non-Negotiable: With 2.5 crore SC/ST entrepreneurs among 7 crore registered MSMEs, sustainability transformation must deliberately include smaller enterprises.
- Systemic Barriers Require Systemic Solutions: Access to finance, capacity-building, technology transfer, regulatory clarity, and ecosystem collaboration are all essential; no single intervention suffices.
- Greenwashing is Rampant: Parliamentary recommendations for overarching institutions addressing greenwashing and standardising disclosure ratings reflect recognition that superficial ESG integration is widespread.
- Equitable Opportunities, Not Concessions: Marginalised entrepreneurs seek equitable access to markets and finance—partnerships enabling mutual growth, not charity.

Second High-Level Plenary: Nurturing Positive Impacts on Nature and People through Responsible Business

Moderated by:

Prof. Pavan Budhwar, CRB Board Member, Associate Vice Chancellor International, Aston University

Panellists:

- Rajiv Ashok, Managing Director, National Handloom Development Corporation (NHDC)
- Adrian Sym, Chief Executive, Alliance for Water Stewardship (AWS)
- Dr. Purnima Devi Barman, Recipient of UN Champions of the Earth 2022 Award, Hargila Army Founder
- Rajib Kumar Sen, Senior Advisor and Programme Director, NITI Aayog
- Lieske van Santen, Global Network Director, Forest Stewardship Council (FSC)



Prof. Pavan Budhwar opened by addressing a question he frequently encounters from colleagues: if academic research appears to have little real-world impact, why does it matter? He used this to argue that alongside identifying challenges, there is a compelling need to examine positive contributions businesses already generate and can amplify for society and the environment.

Prof. Budhwar introduced guiding questions about relationships between people and nature on one side and responsible business on the other, acknowledging that measuring "impact" in this space remains both conceptually and practically difficult. The panel would explore how impacts can be better understood, captured, and scaled.

Prof. Budhwar presented four research projects demonstrating how academic work delivers tangible social and environmental outcomes, moving beyond theoretical contribution toward practical transformation.

Decarbonising SMEs: An initiative that conducts audits with manufacturing SMEs, identifies emission-reduction options, and advises on practical measures. Visits to approximately 1,800 manufacturing SMEs have contributed to an estimated 26,000-tonne CO_2 reduction. This demonstrates that decarbonisation is not merely aspirational but operationally achievable with proper support structures.



Stubble Burning Alternatives: Research in Punjab and Haryana addressed air pollution from crop-residue burning through direct engagement with three villages. The approach compensated farmers for not burning stubble while demonstrating its conversion into pellets for biochar and biodiesel, yielding health benefits and shifting local practices toward sustainable alternatives. This model shows how financial incentives, combined with demonstrable alternatives, can reshape farmer behaviour.

Circular Economy in Coastal Gujarat: Addressed saline-water challenges by improving desalination and managing residual brine whilst developing plant-based uses for by-products within circular-economy frameworks ensuring "nothing goes to waste." This exemplifies how waste streams become resource streams when systems are redesigned.

Biological Solutions in Kenya: Ongoing work uses black soldier flies to convert human waste into protein for poultry and fish feed, illustrating how biological solutions close nutrient loops whilst addressing sanitation and livelihood issues simultaneously.

Across these initiatives, Prof. Budhwar identified the constraint, which is not technology feasibility but financial viability and multi-stakeholder commitment. "We can prove, as researchers, it's doable, but the financial viability of these things to be taken forward is not easy," and crucially, "we need multiple stakeholders to come on board and make a commitment. That also perhaps rarely happens." This assessment reveals that scaling sustainability solutions requires systemic change beyond technical innovation.

Rajiv Ashok, Managing Director of the National Handloom Development Corporation, presented handloom as a clear example of sustainable, purposeful business where growth and environmental stewardship align. He stressed that business excellence cannot be measured by profits alone; it must be defined by purpose and positive social impact. NHDC's experience demonstrates that growth and sustainability can proceed hand in hand when properly structured.

He stated that NHDC promotes natural fibres preserving biodiversity while supporting rural livelihoods and advancing low-carbon productivity. This approach empowers India's 3.5 million weavers, approximately 70% of whom are rural and tribal women, through skill development, entrepreneurship, and digital outreach.

He further noted that digital traceability, geographical-indication tagging, and certified eco-production align traditional crafts with contemporary market expectations without diluting their essence. Rajiv Ashok argued that sustainability fundamentally requires mindset change rooted in daily practice rather than regulatory compliance. Artisans and weavers must see themselves as entrepreneurs rather than beneficiaries; institutions like NHDC function as enablers facilitating this transformation rather than mere scheme implementers.

Dr. Purnima Devi Barman presented a co-existence model bringing together conservation, cultural transformation, and economic empowerment through the Hargila Army initiative. The Greater Adjutant Stork (Hargila), a tall scavenger bird, was historically regarded as a bad omen and pest. Witnessing a nesting tree being cut and chicks killed convinced Dr. Barman that transforming social perceptions was the foundational task. Rather than imposing external conservation mandates, she built a community-centred movement.



The initiative embedded the Hargila into daily life, traditions, and culture through creative approaches including an annual "baby shower" for the Hargila modelled on Assamese ceremonies for expectant mothers. This cultural integration transformed community relationships with the bird.

The cultural shift was linked directly to livelihoods as traditional women weavers began "weaving for a cause," incorporating Hargila motifs into scarves and textiles. What was once feared became a source of regional pride and income. Over time, the Hargila Army itself evolved into a recognised venture.

The movement expanded to encompass more than 20,000 village women who transitioned from homemakers to conservationists and educators. Community-driven conservation improved the bird's status from "endangered" to "near threatened," demonstrating that grassroots action achieves measurable conservation outcomes.



Rajib Kumar Sen, Senior Advisor at NITI Aayog, framed the Sustainable Development Goals not as a complex external agenda but as integral to everyday life and business operations. The SDGs represent shared responsibility requiring active participation across all sectors, with private sector engagement increasingly essential.

He explained that NITI Aayog's LIFE sustainable development framework positions SDGs through both social and commercial lenses. Goals such as decent work and responsible consumption directly intersect business operations and investment strategies, presenting both responsibilities and market opportunities. This reframing moves SDGs from philanthropic concern toward strategic advantage. Drawing on India's Voluntary National Review presented to the UN in July, Rajib Kumar identified three mechanisms through which the private sector can advance SDGs by 2030.

First, Corporate Social Responsibility: India legally mandates corporations allocate a percentage of profits to CSR, a global first. However, Rajib Kumar stressed that systematic, ongoing engagement is now required beyond one-time consultations. Companies must mobilise networks and resources to drive sustained change rather than viewing CSR as separate from core business.

Second, Responsible Business Conduct: This embeds inclusivity within operations through carbon neutrality, green infrastructure, responsible supply chains, diversity in procurement aligned with ESG principles, and green certifications focusing on zero liquid discharge and energy efficiency. This approach transforms sustainability from external mandate to operational imperative.

Third, Startup and Innovation Ecosystem: Indian startups drive scalable solutions across healthcare, agriculture, social inclusion, and circular economy through waste management, sustainable packaging, and responsible consumption. These ventures create economic opportunities for women and marginalised groups in areas such as menstrual health, financial inclusion, and vocational skill development.



Adrian Sym, Chief Executive of the Alliance for Water Stewardship, addressed the psychological and strategic dimensions of sustaining commitment amidst geopolitical and climatic headwinds. The transition toward genuinely resilient economies is slower than anticipated, affecting not only outcomes for businesses and communities but also individuals driving change. "These are tough times, and so we need to be resilient too."

He noted that waning commitment among global leaders has created space for those unwilling to prioritise climate action. However, Sym identified water as a genuine source of hope. Water is rising in prominence both as critical business and community risk and as fundamental to economic viability and growth. Unlike divisive debates over Net Zero or single-use plastics, water's essential nature commands broad agreement, making it a potentially unifying force.

He explained that water is cross-cutting in relevance and fundamental to human rights, livelihoods, biodiversity, climate action, and business continuity—particularly in digital and AI-dependent technology sectors where data centres, semiconductors, and chips require ever-greater water and energy inputs. Major technology companies increasingly take water stewardship seriously, presenting real opportunities to build resilience.



Lieske van Santen, Global Network Director of the Forest Stewardship Council, advocated for sustainability as "business sense"—inherent win-win for environmental wellbeing and business growth. Sustainability is not an optional add-on but a fundamental driver of resilience in both business ethics and day-to-day operations.

She highlighted that genuine progress must be inclusive. When discussing smallholders, "there is no other way to go about it but to look for synergies. Growth is not just about numbers; it should be holistic." This principle rejects growth models that increase aggregate output while marginalising producers.

FSC's frameworks ensure every link—from raw material extraction to finished products—upholds integrity, transparency, and accountability. This is particularly relevant in high-growth sectors: paper, packaging, rubber, and the expanding global bamboo market.

She underscored that sustainable development cannot overlook the rights and dignity of those involved—whether field labourers or white-collar corporate workers. Ensuring basic rights for all strengthens not only the workforce but the entire ecosystem of responsible production.

Key Highlights

- Impact Measurement is Essential: Quantifying environmental and social outcomes moves sustainability from aspirational to operational and investable.
- Tradition and Innovation are Complementary: Modern tools strengthen rather than dilute traditional practices when properly integrated.
- Empowerment Must be Central: Sustainability at scale requires enabling marginalised communities as protagonists, not beneficiaries.
- Certification and Traceability Prevent Greenwashing: Robust, third-party verified standards build credibility and enable market differentiation.
- Resilience Includes Psychological Dimensions: Maintaining optimism and personal resilience while navigating systemic challenges is essential for sustaining long-term commitment.
- Growth Must Be Holistic: Genuine progress respects both people and environment; numerical growth without distributional equity is not sustainability.

Third High-Level Plenary: EU-India Sustainable Business Collaboration: Leveraging Shared Interests and Common Values

Co-host

European Union

Moderator:

Shouvik Datta, Senior Programme Manager, Cooperation Section, Delegation of the European Union to India and Bhutan

Panellists:

- Richard Howitt, Former MEP, Corporate Responsibility and Sustainability, Bus Sustainability, Business and Human Rights
- Angana Guha Roy Chowdhury, Assistant Director General, Bengal Chamber of Commerce and Industry (BCC&I)
- Priyangshu Dutta, Head Public Affairs – India, Grundfos India
- Cecilia Tall, Counsellor/Head of Section, Office of Science and Innovation, Embassy of Sweden in India
- Rasmus Wendt, Energy Counsellor, Royal Danish Embassy in India\,
- Alok Kesari, Director– Policy Advocacy & Trade Facilitation, Federation of European Business in India (FEBI)



Anamika Ghosh, CRB, introduced the session, noting that it was being held at a pivotal time, with the world poised to attend COP30 and assess its progress on climate action. Similarly, the 12th edition of ISS was also reviewing its own progress. She pointed out that the EU roadmap with India 2025 highlighted the mutual desire of both parties to collaborate in areas such as clean energy, the environment, circular economy, sustainable cities, research, innovation, and sustainable finance. The increased participation led to the establishment of the EU-CRB Alliance, which evaluated the productive cooperation between EU companies and Indian partners on sustainability, recognised good practices, and examined the necessity of further supporting the stated need, particularly in the Northeast region, where two pilot projects were introduced.

She explained that the session was aimed at achieving 4 major goals:

- To provide actual cases of EU–India business partnerships in important industries
- To demonstrate the EU–India mechanisms that can transform ideas into business activities
- To emphasise emerging opportunities that build excellence
- To speak about the ability to invest in such areas as the Northeast

Mr. Shouvik Dutta, Senior Programme Manager, Cooperation Section, Delegation of the European Union to India and Bhutan, provided insight into the rapidly developing EU-Indo Corporation. He mentioned that the relationship evolved into a strategic one due to changes in global geopolitics and a shared interest in climate and technology. He remembered that the College of European Commissioners had visited India in February 2025, marking a defining moment in enhancing the relationship.



He emphasised the preparations for the next EU-India Summit in 2026, which will be supported by a new Joint Communication and various political discussions. An increase in cooperation has occurred in space, clean energy, water, digitalisation, climate, sustainable urbanisation, and the circular economy. Another one that he observed was cooperation on international projects such as the Coalition for Disaster Resilient Infrastructure, and taking trilateral actions. He emphasized that it is governments that offer guidance, while enterprises provide the technology, funding, and implementation to reach sustainability objectives.

He noted that the Northeast region would be a top priority, with a particular focus on the development of the private sector, innovation centers, and start-ups. He further provided that future collaboration would also be guided by strengthening supply chains, including semiconductors, pharmaceutical ingredients, clean tech, and biotech, as well as enhancing the movement of skilled workers in the ICT sector.

He also highlighted that the Northeast had significant inequalities and developmental gaps, despite its rich biodiversity and natural resources. He explained that businesses should not be charity-minded towards the region, but rather have sustainable business models that can create long-term value for the region. Positive results were already emerging from the existing pilots.



According to Mr. Richard Howitt, Former MEP, Europe treated India as a partner, not a rival, in a time of geopolitical uncertainty. He touched upon the current trends in EU sustainability regulations, such as the Non-Financial Reporting Directive and the Corporate Sustainability Due Diligence Directive. He also explained that new technologies and markets would emerge, as the current tools could not reach the target of 1.5 °C. This has provided a big business innovation opportunity.

He emphasised that the concept of sustainability should not be perceived as limiting or driven by guilt; there are ways to balance commercial and environmental interests. The trends he identified, including carbon pricing, CBAM, and supply-chain transparency, are starting to become the norm in the future. Full visibility would reduce costs, and companies that are prepared to be transparent, aided by digitalisation and AI, would reap overwhelming benefits. He also emphasised that B2B cooperation had to be taken into consideration, as businesses learn the most from other businesses going through similar predicaments. Enhancing B2B interactions would aid in speeding up the sustainability of Indian companies.



According to Cecilia Tall, Counsellor/Head of Section, Office of Science and Innovation, Embassy of Sweden in India, Sweden's national and research strategy included elements of sustainability as well as innovation. Sweden had established two long-term structures:

- Strategic Innovation Programs (17 programs that run 12 years each)
- The Impact Innovation Programs (10-year duration)

She cited the example of Sweden and India and the establishment of a 20-year innovation partnership that has resulted in more than 500 shared projects between industry, academia, and the public sector, based on a Swedish triple helix model.

She further talked about mutual work in climate-neutral cities by 2030 given that currently, there is limited information available regarding the formulated strategy of sustainable mobility as understood by the majority of smart city enthusiasts. Decarbonization of steel and cement is also part of this endeavour as part of the joint India-Sweden LeadIT project.

Speaking about the circular materials and bio-based materials, Cecilia spoke about textile sustainability in India, which relies on such institutions as the Swedish School of Textiles, H&M, and IKEA. Recycling of fiber, she pointed out, is a collaboration between Swedish and Indian companies to develop fiber-recycling and green manufacturing methods.



Rasmus Wendt detailed Denmark-India collaboration across technically demanding decarbonisation frontiers: offshore wind grid integration (critical as renewable penetration escalates); green hydrogen scaling; zero-carbon shipping pathways; and industrial transitions in steel and cement. Denmark contributes sophisticated grid planning expertise while India provides deployment scale. Rasmus highlighted industry-led demand signals outpacing governmental mandates, positioning India for global sustainability leadership.

For the Northeast, Rasmus acknowledged geographical constraints demanding sustained investment in foundational infrastructure—healthcare, connectivity, public capacity—rejecting shortcut narratives in favour of patient capital deployment. Green hydrogen emerges as a meta-opportunity, with Alok Kesari from FEBI noting cost advantages from India's renewable base despite capex hurdles and investor caution. Demand maintenance remains imperative across steel, shipping, and heavy transport, amplified by prospective International Maritime Organization green fuel regulations. EU firms increasingly view India as an indispensable sustainable supply chain partner, with business chambers, CRB, and EU delegations coordinating MSME integration into global value chains.



Priyangshu Dutta exemplified operational sustainability through Grundfos India's three-decade trajectory across manufacturing, utilities, industry, and households. As global leader in smart energy-efficient water pumps, the company embeds emissions reduction into product DNA while achieving world's highest TRUE Platinum certification at its Chennai facility. Operating across eight cities, Grundfos delivers tangible carbon savings through low-energy water management solutions.

Strategic collaborations with the Danish Embassy and Indian institutions target SME supply chain capacity on the water-energy nexus—a domain where efficiency represents the simplest, highest-impact decarbonisation lever. Priyangshu identified Northeast opportunities in solar pumps, semiconductor manufacturing (water-energy interlinkage), and entrepreneurial ecosystems, underscoring energy efficiency as a prerequisite for manufacturing competitiveness at all scales.



Angana Guha Roy Chowdhury charted chambers of commerce's evolution from facilitating voluntary initiatives to mandating sustainability as horizontal business imperative across agriculture, IT, manufacturing, and shipping. Large enterprises lead while SMEs accelerate supply chain integration.

BCC&I's startup incubation centre, partnered with the West Bengal Government, nurtures SDG-aligned innovation.

Financing gaps persist despite donor appetite, demanding chambers pioneer blended financial models and technology deployment. Emerging vectors include mangrove restoration (dual carbon-livelihood benefits) and EV infrastructure. Northeast potential aligns precisely with EU priorities: terrain-compatible clean energy microgrids, organic industries, entrepreneurial talent, and private sector development infrastructure.



Alok Kesari identified the forces influencing the formation of sustainable partnerships in the present period. According to him, there was good commercial potential for green technologies in India and Europe, especially Denmark.

He said that renewable energy provided companies in India with cost advantages, which formed a significant incentive. Nevertheless, he also recognised setbacks in the green-hydrogen industry, including increased capitalisation fees and reluctance by the investors. He underscored the need to maintain the demand for green hydrogen since it is crucial to industries such as steel, shipping and heavy transportation. He argued that India has already taken some constructive measures, like adding green hydrogen to natural gas and using it in transportation.

In case the International Maritime Organization (IMO) proposes powerful rules of green fuel in international shipping, it would contribute significantly to the green hydrogen market in India.

He also mentioned that India was a potential market for EU companies, and the companies were interested in creating sustainable supply chains. Cooperation between business chambers, B2B networks, CRB, and the EU Delegation would be required for scaling up. He reported that the EU was seeking to assist MSMEs in embracing sustainability value and to become part of world value chains.

In the Northeast, he saw that EU business activity was also only clustered in a few Indian states, whereas the Northeast had not developed investment-wise. This was, however, evolving with the support of the government and with increased interest and investment from industry sectors, such as renewable energy, logistics, semiconductors, and digitalization, which had potential.

Key Takeaways

- The partnership between the EU and India in the sustainability arena is developing swiftly in the fields of clean energy, climate action, circular economy, digital technology, and sustainable urbanisation.
- The cooperation between business organisations has become the main force of action, which transforms the agreements that exist on the governmental level into technological and operational advancement in the real world.
- The guidelines and reporting standards of sustainability, particularly in the EU, are getting increasingly stricter and irreversible, and the Indian companies will be forced to comply with the standards.
- New prospects are arising in clean energy, water-energy, circular materials, semiconductors, and logistics of startups, SMEs, and underdeveloped regions, such as the Northeast.

Day 2: 13 November 2025

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Small Is the New Big: The Strategic Role of SMEs in India's Low-Carbon Transition

Co-hosts



Moderated by:

Dr. Sanjeevan Bajaj, Former CEO, FICCI Quality Forum

Opening Remarks:

- Devyani Hari, Senior Director, Centre for Responsible Business (CRB)

Partner Remarks:

- Mukesh Gulati, Executive Director, Foundation for MSME Clusters (FMC)

Keynote Address:

- Mithileshwar Thakur, Secretary General, Apparel Export Promotion Council (AEPC)

Panellists:

- Rohit Kumar, Secretary General, Carbon Markets Association of India
- Padmakar Pandey, Vice President, Corporate Sustainability, Aditya Birla Fashion & Retail Ltd.
- Parvinder Kadyan, Founder, GATS; CEO, Aadi Sustainability Solutions Pvt. Ltd.
- Bratin Roy, Global Head of Decarbonisation, TÜV SÜD
- P. Shyam Sunder, Director, Bureau of Energy Efficiency (BEE)

Devyani Hari, Senior Director, Centre for Responsible Business, reflected on CRB's fifteen-year journey as an organisation founded on consistent collaboration and acknowledged the complexity of the global sustainability landscape but emphasised that the pursuit of Net Zero remains non-negotiable. Research now shows that nearly 90 per cent of businesses who had committed to Net Zero have reaffirmed their commitments, despite moments of political hesitation.

Devyani stressed that MSMEs must be placed at the centre of India's climate transition because their choices significantly influence both national climate goals and the sustainability strategies of large corporations. She posed a critical question, asking if MSMEs should decarbonise simply because they constitute a major share of the Scope 3 emissions of large companies, or because doing so strengthens their own resilience and competitiveness?

She argued that MSMEs must recognise the direct benefits of decarbonisation. They face increasing climate-induced disruptions, resource scarcity and emerging risks that threaten business continuity. Reducing emissions enhances long-term resilience and positions MSMEs as future-ready enterprises. However, she acknowledged persistent barriers including limited access to finance and technology, inadequate awareness and fragmented ecosystems.

Devyani noted a positive generational shift, observing that students and young professionals are increasingly engaging with real-world environmental challenges such as pollution, waste and public health. Student-led innovations, including wastewater treatment solutions and circular-economy ideas, were cited as early indicators of a more sustainability-conscious future workforce.



She briefed about the decarbonisation project in the Panipat textile cluster, developed jointly by CRB and the Foundation for MSME Clusters with support from HSBC. The initiative aims to identify practical, scalable pathways for MSMEs to reduce emissions and improve efficiency. She emphasised that the time has come to move decisively from dialogue to implementation, as sustainability is rapidly becoming central to export competitiveness.

Mukesh Gulati, Executive Director of the Foundation for MSME Clusters, grounded the discussion in decades of work with enterprise clusters. He identified competitiveness as the most compelling driver for MSMEs to decarbonise. Improvements in energy and resource efficiency directly enhance productivity and market positioning.

Mukesh highlighted the growing demand for low-carbon products, both globally and domestically. International regulations, particularly in Europe, are reshaping expectations for exporters, with similar pressures emerging locally. Carbon accounting, however, remains a major hurdle for MSMEs—not due to unwillingness but due to high costs and the absence of dedicated professionals.

He outlined essential steps for MSMEs to progress, which includes establishing a baseline, preparing a decarbonisation plan and implementing measures through available schemes or self-funded improvements offering clear economic value. He referred to FMC's work with 60 clusters and the Cluster Observatory, mapping more than 1,000 industrial and artisanal clusters, as critical tools for guiding targeted action. Cluster-based approaches significantly reduce costs and improve access to finance, technology and expertise. Partnerships between MSMEs, financial institutions, policymakers and industry bodies are critical for scaling sustainability solutions.



Mithileshwar Thakur, Secretary General, Apparel Export Promotion Council, in his keynote emphasised that MSMEs must become active participants in India's decarbonisation journey. He noted that while India has emerged as a reliable global supplier of textiles and apparel, this status comes with responsibility, given the sector's contribution to emissions and water-related impacts.

He cited an alarming statistic which reports that one garbage truck of garments is burned or landfilled every second globally, highlighting the sector's environmental footprint. Sustainability is increasingly determining market access, with global buyers prioritising responsible sourcing and low-carbon textiles. European regulations, such as the Green Deal and upcoming due diligence requirements, are expected to further influence trade.

He cautioned, however, that such regulations must provide adequate transition time for Indian MSMEs, which form the backbone of the industry. India has made progress in areas like recycled polyester production and social compliance standards such as SA 8000, where India has a high number of certified units.

He also stressed that achieving sustainability at scale will require supportive policies, capacity-building, strengthened ecosystems and accessible finance. Collaboration between government, industry and support institutions will be essential. Sustainability is no longer optional but a catalyst for India's aspiration to become a global source of sustainable textiles

Dr. Sanjeevan Bajaj, Former CEO, FICCI Quality Forum, moderator for the panel discussion set the context by emphasising quality systems, standardisation and process optimisation as foundational elements for sustainability in MSMEs. She argued that decarbonisation must be embedded into operational excellence frameworks rather than treated as an add-on. Transformation can begin through incremental



yet structured steps like consolidating existing data, applying early LCA methodologies and enabling use rather than waiting for perfection. Guidance frameworks, baseline datasets and reporting protocols already exist; what is now required is commitment and activation.

Mr. Padmakar Pandey, Vice President – Corporate Sustainability, Aditya Birla Fashion & Retail Ltd., described the diversity of ABFRL's network, which spans more than 2,000 vendors with varying levels of maturity. While older verticals within the group have well-established sustainability practices, newer acquisitions are still developing their capabilities. MSMEs play a central role in the company's Scope 3 emissions.

With ABFRL targeting a 53 per cent reduction in Scope 3 emissions by 2033, much of this effort focuses on materials, spinning, processing and garmenting. The company has begun ESG assessments of key suppliers and is working with them to identify and implement decarbonisation measures. The group has established a short-term decarbonisation target for 2033, supported by ESG assessments, decarbonisation actions and operational integration. To date, ABFRL has taken 34 concrete steps to strengthen its sustainability roadmap.



Padmakar emphasised that lack of awareness was the initial barrier. Many MSMEs associate carbon reduction with superficial steps such as reducing paper use. Data gaps, lack of expertise, financial constraints and uncertainty about long-term partnerships further complicate progress. ABFRL therefore focuses on simplifying concepts, building awareness and breaking down decarbonisation into practical steps. The company also encourages suppliers to adopt renewable energy, biomass and efficiency solutions.

Padmakar stressed that large buyers have a responsibility to guide and support MSMEs through structured engagement, capacity building and long-term commitments. ABFRL begins by identifying the specific needs of each supplier and conducts energy audits at its own expense. Improvements are tracked annually, and the company partners with financial institutions to ease supplier access to funding. It also facilitates connections with technology providers and best-practice references.

Parvinder Kadyan, Founder GATS and CEO, Aadi Sustainability Solutions Pvt. Ltd., provided a cluster-level perspective, focusing on Panipat as a major textile recycling hub where 80–90 per cent of yarn is recycled. He emphasised the importance of identifying enterprises best positioned to succeed in sustainability transitions and cautioned against one-size-fits-all approaches.

Parvinder explained that sustainability and circularity must be understood across materials, processes and disposal, each requiring distinct interventions. MSMEs often lack long-term vision and prioritise lower-cost machinery that is operationally expensive in the long run. Many exporters hesitate to adopt certifications such as Global Recycled Standard (GRS) because buyers do not demand them, and MSMEs fear added complexity without corresponding incentives.

He argued that the industry lacks strong feedback loops between recyclers, manufacturers and brands, resulting in fragmentation. Entrepreneurs largely learn through experience, which is both their strength and limitation. He discussed registered decarbonisation projects, common pitfalls in sustainability journeys and the implications of the new textile policy. Parvinder highlighted the importance of documenting success stories to enable peer learning and replication, noting that visibility of practical outcomes is essential to build confidence amongst MSMEs.



On recycling itself, Parvinder clarified that mechanical recycling of polyester and cotton does not rely on water, dyes or chemicals, and that energy requirements are comparable to conventional spinning. The main differences between recycled and virgin supply chains lie at the fibre stage, highlighting the need for greater focus on garment-to-garment closed-loop systems. He stressed the need for collaboration and improved feedback mechanisms between designers, recyclers, manufacturers and brands.

Bratin Roy, Global Head of Decarbonisation at TÜV SÜD, shared insights from TÜV SÜD's decarbonisation journey, including its target to reduce Scope 3 emissions by 53 per cent by 2033. He explained that the largest emissions arise at the spinning stage of textile supply chains. While working with MSME suppliers, he observed that decarbonisation knowledge is often limited to a small group of experts within organisations.

Bratin noted that some of the biggest barriers originate not from MSMEs but from brands themselves. Short-term sourcing strategies and frequent vendor switching discourage suppliers from making long-term sustainability investments. He stressed that stable, committed partnerships between brands and suppliers are essential to enable MSMEs to invest confidently in low-carbon technologies and practices. The absence of long-term partnerships undermines MSME confidence in sustainability investments.

P. Shyam Sunder, Director, Bureau of Energy Efficiency, responded to questions on enablers for decarbonisation by highlighting energy efficiency and resource efficiency as the most effective entry points for MSMEs. While regulations play a role, India's policy approach focuses on incentivising and 'nudging' industries rather than imposing punitive measures.



Shyam noted that one of the most significant challenges for MSMEs is the cost of adopting best practices, which makes it essential for enterprises to first establish credible baselines of their operations. Several national and state-level schemes exist to support MSMEs, but many remain underutilised due to lack of awareness and capacity. A major structural issue is the absence of reliable data at both enterprise and cluster levels, which limits targeted interventions.



He highlighted ongoing efforts to focus on approximately 60 industrial clusters across the country to promote energy efficiency and investment-led transformation. He described BEE's extensive work with MSMEs since 2009 and reflected on the challenges of providing consistent support across a vast industrial landscape. MSMEs require end-to-end assistance, from awareness to technology adoption and access to finance. BEE's programmes have evolved continuously to meet sector needs.

Rohit Kumar, Secretary General, Carbon Markets Association of India, underlined the emerging role of carbon markets in enabling MSMEs to monetise emission reductions. He noted that India has three active carbon pathways: the compliance market under BEE, the international voluntary carbon market and the emerging Article 6 market. MSMEs will increasingly enter compliance frameworks as targets expand, creating both pressure and opportunity.

Rohit emphasised the importance of aggregation, capacity-building and government-backed support to help MSMEs generate credits and access carbon finance. Technology, digitalisation and public–private partnerships will be essential for scaling these efforts. He stressed the need for awareness, capacity building and simplified mechanisms to ensure small enterprises can participate meaningfully in carbon markets.



He observed that enterprises already focusing on energy efficiency, waste management, cold-chain improvements and high-impact decarbonisation projects are best positioned to benefit from carbon markets. He emphasised the need for data transparency across value chains and highlighted the role of responsible Extended Producer Responsibility in enabling future reductions.

Key Highlights

- MSMEs Are Central to India's Climate Transition: Their choices significantly influence both national climate goals and the sustainability strategies of large corporations. Approximately 90 per cent of businesses have reaffirmed Net Zero commitments, making MSME participation non-negotiable.
- Competitiveness, Not Compliance, Is the Primary Driver: Energy and resource efficiency improvements directly enhance productivity and market positioning. MSMEs are most motivated when they see direct economic and operational benefits from decarbonisation.
- Long-Term Brand Partnerships Are Essential for MSME Investment: Short-term sourcing strategies and frequent vendor switching discourage suppliers from making sustainability investments. Stable, committed partnerships enable confident MSME investment in low-carbon technologies.
- Cluster-Based Approaches Reduce Costs and Enable Scale: Shared infrastructure, collective monitoring systems and peer learning within clusters dramatically lower adoption barriers. FMC's work with 60+ clusters demonstrates the viability of federated decarbonisation.
- Carbon Markets Will Increasingly Shape MSME Economics: Three active carbon pathways are emerging in India. Aggregation, capacity-building and government support will determine whether MSMEs can participate meaningfully and monetise emission reductions.
- Brands Must Invest Financially in Supplier Transitions: Energy audits, technology support, access to finance and long-term commitments are essential. Large buyers have the responsibility to guide MSMEs through structured engagement, not merely impose requirements.



Deforestation Free Supply Chains

- Policy Perspectives on Deforestation–Free Supply Chains: Global and National Policy Shifts

Co-hosts

WWF

Preferred by Nature™

- Sustainability Initiatives for Forest Risk Commodities in India: Opportunities and Challenges

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CERTIFIED SUSTAINABLE PALM OIL™ RSPO

Policy Perspectives on Deforestation-Free Supply Chains: Global and National Policy Shifts

Co-hosts

Context Setting by:

Adarsh Mohandas, Regional Director, South Asia, Rice Commodity Lead, Preferred by Nature

Moderator:

Murli Dhar, Director Sustainable Agriculture Program, WWF-India



Speakers:

- Dr. Suresh Gairola, India Country Director, Forest Stewardship Council
- Siraj Hussain, Advisor, Food Processing, FICCI & Ex-Secretary – Ministry of Agriculture
- Dr. Sushil Saigal, Executive Director, The Nature Conservancy Centre – India
- Ashwin Selvaraj, Deputy Director, Market Transformation Liaison India – RSPO
- Emily Fripp, Director – Efeca
- Dr. Madhu Verma, Senior Economic Advisor & Chief Environmental Economist, IORA



- Smt. Shaik Yasmeen Basha, I.A.S., Director of Horticulture & Sericulture, Department of Horticulture, Government of Telangana

The session opened with remarks by Adarsh Mohandas, Regional Director, South Asia and Rice Commodity Lead, Preferred by Nature, who set the tone for the discussions and stressed on the importance of multi-stakeholder dialogues, understanding deforestation-linked international regulations, assessing the stock of our forest-risk commodities, and calibrating India's response to evolving global compliance expectations on these issues.

The panel discussion was moderated by Murli Dhar, Director Sustainable Agriculture Program, WWF-India, who focused on deforestation patterns and the resulting loss of biodiversity. He highlighted the need for a strong regulatory framework in this field and pointed out that since India is an important importer of commodities (oil palm, rubber, timber) that are major drivers of deforestation around the world, the country must adopt a more proactive approach. He stressed that the policy and regulatory framework should accommodate both voluntary and mandatory sustainability initiatives.

Emily Fripp, Director, Efeca, emphasised that emerging regulations like EUDR must be seen in the broader context of corporate commitments and the need for secure, resilient raw material supply.



International businesses function globally and have to shape their sustainability strategies and commitments such that they can adjust across all markets, not just in the EU. Knowing suppliers, origins, and conditions of production is increasingly being viewed as central to business especially from a risk management perspective, not merely for regulatory compliance.

Emily noted that data is increasingly becoming a norm alongside the physical product, and the success of any regulatory or certification system depends on the quality and credibility of embedded data. The cost-of-living crisis in consumer markets and price sensitivity are real, but these pressures must be addressed through collective, equitable sharing of costs along the supply chain, particularly to avoid shifting the burden onto smallholders, she opined.

Emily underscored the importance of consistent and clear information requirements across markets so that producers are not forced to prepare multiple, incompatible data sets; national certification schemes (e.g., MSPO, ISPO in the palm oil producing countries) as key vehicles to generate credible evidence for both domestic and export markets; continued dialogue and coalition-building between Global North and South to align expectations, evidence standards, and cost-sharing.



Commenting on India's policies around imports and forests, Siraj Hussain, Advisor, Food Processing, FICCI & Ex-Secretary, Ministry of Agriculture and Farmer's Welfare, Government of India — highlighted that India currently has no import-related regulatory controls specifically linked to deforestation or conversion-free requirements for imported forest risk commodities (especially palm oil, natural rubber, wood, cocoa etc.) At the same time, some concerns were raised about domestic deforestation and forest governance, including recent amendments to environmental and forest laws, allowing projects within 100 kilometers of international borders without prior central government approval, and the lack of publicly available data on tree felling and forest loss in such zones.

Adding to Mr. Hussain's point, Dr. Sushil Saigal, Executive Director, The Nature Conservancy Centre, highlighted that official statistics on "forest cover" in India do not distinguish between natural forests and plantations. For example, replacing a hectare of Western Ghats rainforest with a hectare of oil palm can still show "no loss" in forest cover. The forest cover category also includes coconut plantations, orchards and even housing gardens, which obscures any focus on ecological quality. He explained how the term "wasteland" historically referred to land that did not yield any revenue, and was not necessarily ecologically degraded. Today's "wasteland atlas" includes river sands, coastal sands and even glacier and snow-covered areas, all of which have important ecological functions.



Dr. Madhu Verma, Senior Economic Advisor & Chief Environmental Economist, IORA, spoke about the need to control deforestation and to promote conservation. She emphasised that landscape management is essential for responsible business practices and encouraged stakeholders to evaluate the economic value of degradation versus the value of conservation. She identified coffee, cocoa, and rubber as major sectors with high potential for intervention.

Speaking on the costs and benefits of sustainability and certification, Dr. Suresh Gairola, India Country Director, Forest Stewardship Council, stressed that sustainability and certification come with costs, but clarified that, "It's a misconception that certification is costly." The larger costs arise from improving systems such as legal wages, compliance with laws, better labour and environmental practices rather

than the certification fee itself.



Dr. Gairola noted that many Indian industries are "a bit jittery" about cost escalations from European Union Deforestation Regulation (EUDR) and other instruments, but underlined that such costs are part of the transition towards credible, traceable global-standard supply chains — and not merely compliance to a specific regulatory requirement (in this case, the EUDR). He emphasised the need for capacity building and awareness-raising among exporters and suppliers, many of whom are still unsure what exactly is needed to become compliant and certified.

Dr Gairola also emphasised the need to understand deforestation correctly and in the right context, noting that although deforestation intensity has decreased from 10 ha/year to 4 ha/year in recent years, significant work still has to be done. He suggested that certifications aligned with ESG principles should be widely implemented and easily accessible and advocated the use of advanced technology such as blockchain support transparency and accountability.

Ashwin Selvaraj, Deputy Director, Market Transformation Liaison India, RSPO, highlighted that for palm-based ingredients exported from India (to Europe and the US), the biggest challenge is traceability: many ingredients are made from imported palm oil and derivatives, sourced via numerous traders and brokers.



The supply chain is largely mass-balanced, with limited transparency and an ecosystem not used to full traceability. He stressed that suppliers struggle to obtain: clear information on who they are buying from, and reliable origin and geolocation data, which are now central requirements in emerging regulations.

At the same time, he saw a strong opportunity in domestic Indian production. He noted that from the viewpoint of the EUDR, India is considered a low-risk country for deforestation, especially under the National Mission on Edible Oils – Oil Palm. The mission's design includes digital traceability and highly regulated production, which positions Indian palm oil well for meeting future regulatory demands.

Ashwin explained ongoing efforts to: certify Indian palm oil production, substitute a part of imported palm oil with domestically produced, traceable and certified oil, and ensure that incentives and value from premium markets can flow back to Indian farmers.

Smt. Shaik Yasmeen Basha, I.A.S., Director of Horticulture & Sericulture, Department of Horticulture, Government of Telangana began by congratulating CRB and its partners for convening the workshop and bringing all stakeholders onto one platform to discuss a global concern. She positioned Telangana as one of India's youngest states and a strong performer in agriculture, leading in paddy production and producing significant quantities of cotton, maize, pulses, and sugarcane, along with a diversified horticulture base where oil palm is a major crop.



Smt. Basha emphasised that Telangana is "in the forefront of zero-deforestation policy" while expanding oil palm cultivation. Oil palm and horticultural expansion is strictly limited to existing agricultural land, cultivable wastelands and non-forested landscapes. The state uses land suitability mapping, promotes climate-resilient horticulture, micro-irrigation and soil health management, and focuses on raising productivity from existing holdings to reduce pressure on land. She also stressed that Telangana integrates GIS monitoring with digital land records to closely track expansion and ensure traceability from plantation to market, while exploring carbon market linkages to reward farmers maintaining deforestation-free production models.

In the closing remarks, the moderator and speakers underscored the significance of such dialogues as part of a broader set of conversations occurring against the backdrop of upcoming global climate negotiations (COP30). They also stressed on the need to refine forest definitions and quality metrics in India, going beyond simplistic forest-cover indicators to reflect ecological reality. The panel members agreed that India is a unique and complex context, requiring nuanced policy design and implementation, especially as it becomes a major consumption centre for forest-risk commodities like palm oil. There was also a stress on the importance for coalitions between Global North and South, and between governments, industry, certification bodies, and civil society, to harmonise expectations and evidence standards.

Key Highlights

- Strengthening Traceability and Digital Systems: Continue building and integrating GIS-based monitoring, digital land records and supply-chain traceability platforms, to ensure full visibility from plantation to market, especially in domestic oil palm production.
- Ensuring Zero-Deforestation Expansion: Maintain and deepen commitments like those highlighted by the Govt. of Telangana to limit horticulture and oil palm expansion to non-forest, existing agricultural land and cultivable wastelands, avoiding any encroachment into natural forests.
- Building Capacity for Compliance and Certification: Invest in capacity building and awareness among suppliers, processors and exporters so they understand what is required to comply with EUDR and related regulations, and to obtain and maintain certification.
- Aligning Data Standards and Improving Credibility: Work towards consistent, credible and interoperable data standards across markets, so that the same evidence can be used to fulfil multiple regulatory requirements, minimising duplication and costs.
- Promoting Shared Responsibility and Fair Cost Distribution: Advance platforms where Global North and South can jointly address perceptions of non-tariff barriers, agree on shared responsibility, and ensure that the costs of sustainability are distributed fairly across the supply chain, rather than being borne primarily by producers and smallholders.
- Re-examining Domestic Definitions and Policies on Forests and Wastelands: Revisit and refine definitions of forest cover and wastelands in Indian policy and statistics, so that they accurately reflect ecological quality, and do not inadvertently incentivise conversion of natural ecosystems to monoculture plantations.

Sustainability Initiatives for Forest Risk Commodities in India: Opportunities and Challenges

Co-host

Earthworm

Supported by

CERTIFIED SUSTAINABLE PALM OIL RSPO

Context Setting:

Karl Yen Quek, Regional Director, Earthworm Foundation



Moderated by:

Rijit Sengupta, CEO, Centre for Responsible Business

Speakers:

- Pratibha Baveja, Senior Expert–Commodities and Sustainable Supply Chain, WWF–India
- Sanket Bondre, Programme Manager, Earthworm Foundation
- Anubhav Srivastava, Asia Lead & Director South Asia & Sub–Sahara, AAK
- Shivnayan Aggarwal, Manager Market Transformation, RSPO
- Dr. M.P. Singh, Director General, FIPPI
- Anuj Sharma, Deputy Country Director, Forest Stewardship Council – India

Karl Yen Quek, Regional Director, Earthworm Foundation, opened the session by highlighting that 50% of global biodiversity has disappeared in the last 40 years. He discussed both the upstream and downstream aspects of supply chains, and noted Brazil's soy moratorium as an inspiration, a landmark agreement that reduced deforestation rates by 80%. Karl emphasised the importance of adhering to the Paris Agreement and the need for coordinated regional and national actions, citing examples such as the EU Deforestation Regulation (EUDR), Indonesian Sustainable Palm Oil (ISPO), and Malaysian Palm Oil Standard (MSPO).



Karl pointed out that corporate and marketing approaches must evolve through improved innovation, transparency, collaboration, and conservation practices. He also divided the sustainability journey into three eras:

- The Pledge Era (2010–2015)
- The Implementation and Verification Era (2015–2020)
- The Integration Era (2020–2025)

Karl also pointed out the importance of India from a global perspective given that India is an importer of commodities (oil palm, rubber, timber) that are major drivers of deforestation around the world. Furthermore, India itself is also the seventh most vulnerable country to climate change. He noted that we can overcome such challenges by working collaboratively and empowering farmers working in these commodities.



Rijit Sengupta, CEO, Centre for Responsible Business, introduced the panel by emphasising on their experiences on deforestation-free or forest-risk commodities' supply chain sustainability related work. Most of the leading organisations working on this topic in India, were represented in this panel, he added. He spoke about the role of policy in steering businesses towards deforestation-free or sustainable forest risk commodities' supply chain. He quoted recent research studies that indicate continued and consistent willingness amongst the private sector to continue investing in sustainable value chains, with or without policy or regulatory obligations. He encouraged the community of organisations present in the room (and in the previous session) to work collectively and present the "India narrative" on sustainable forest-risk commodities supply chains in India.

Sanket Bondre, Programme Manager, Earthworm Foundation focused on traceability in the timber sector and the need for a responsible supply chain. He noted that demand for timber is rising in both India as well as Western countries and outlined several challenges, including low transparency, complex legislation, weak compliance awareness, unorganised supply chains, certification barriers, and sourcing difficulties.



He noted a need for working on supply chain initiatives such as a wood control system, as well as field projects that enhance biodiversity. Sanket noted that the main goal and focus areas should be promoting responsible sourcing, multi-stakeholder collaboration (platform), enhancing bio-diversity through agroforestry, knowledge sharing and capacity-building, and supplier engagement in the furniture sector.

Pratibha Baveja, Senior Expert, WWF, focused on soy, explaining why it matters in relation to vegetable oils and afforestation. She presented the rising trends in global and Indian soy consumption, leading to deforestation in South American regions. She highlighted the need for a deforestation-free soy supply chain and offered recommendations for corporates and financial institutions, especially to do with certifications.

Pratibha also underlined the hidden trade footprint — the land footprint of commodities in their production countries, which is not visible to consumer countries — of six forest-risk commodities. She noted that India's total overseas land footprint is 13.94 million ha (2014-2023), and soy accounts for 65% of this footprint, roughly at 9 million ha, importing mainly from Argentina, which is a high deforestation risk country.



Pratibha suggested mainstreaming supply chains, visibility and traceability, upholding of Amazon Soy Moratorium, diversification of supply chain as some of the steps to lead a deforestation-free soy supply chain.

Shivnayan Aggarwal, Manager Market Transformation, RSPO, presented the global palm oil consumption scenario and discussed major market trends, highlighting the global impacts of oil palm cultivation, particularly risk related to sustainability. Shivnayan also examined palm oil use in the Indian context, covering its role in households, the cosmetics sector, market size, and employment. He also spoke about relevant reporting tools, including Business Responsibility and Sustainability Reporting (BRSR), which recognises RSPO. Shiv noted that oil palm is leading the fulfillment of vegetable oil needs in the world followed by Soybean, and India is its largest importer, followed by China and Europe. Shiv demonstrated that the global market trends are showing that the need for palm oil is increasing, which is likely to have significant implications on 'risks' including deforestation, GHG emission, loss of biodiversity, water

stress, etc.. He highlighted that the only way out of it is sustainable palm oil. Shiv also stressed upon the inclusion of local stakeholders like farmers, governments, NGOs and industries.



Anubhav Srivastava, Asia Lead & Director South Asia & Sub-Sahara, AAK, spoke about the importance of achieving 100% TTP (Traceability to Plantation), and emphasised the need to address forest and risk degradation through strong policies and regulations. He discussed the palm oil sector, noting that India has a maturing market and even holds an advantage over Malaysia and Indonesia in some areas.

Abubhav noted that India is a booming region for palm cultivation, especially states like Andhra Pradesh, Telangana, etc. Current domestic palm production is roughly ~400,000 tons, which is expected to reach ~1 million tons by 2030, driven by the government's National Mission on Edible Oils. However, Indian palm expansion is happening largely via crop shift (from rice/other crops) rather than forest conversion, so deforestation risk is low compared to Southeast Asia.

Abubhav highlighted that one of the biggest barriers is to have overlapping standards and policies which leads to confusion & fatigue in industry. He suggested moving towards one or two consolidated, widely accepted standards that are: aligned with global frameworks (RSPO, EUDR style requirements) and practical for both plantation companies and private sector buyers.



Dr. M. P. Singh, Director General, FIPPI, explained that, historically, plywood was forest-based, but after the 1988 Forest Policy and the 1996 Supreme Court judgement, industries had to shift from forest timber to outside-forest sources. Over the last three decades, plywood & panel clusters (Yamunanagar, parts of Bihar, South India, etc.) have moved heavily to agroforestry. Today, most products use agroforestry species: eucalyptus, poplar, Malabar neem (melia dubia), silver oak, rubber wood, etc.

He noted that India's plywood and panel sector is already practicing sustainability at scale through agroforestry-based sourcing rather than forest extraction. Industry investments led farmers to plant timber trees in Gujarat and in that area, forest/tree cover reportedly increased by ~20%. Despite this model, the sector is not formally recognised as "sustainable": they are levied the same 18% GST slab as PVC boards and non-sustainable materials.

Dr. Singh argued for an India-level narrative: he explained that the country was not doing open-ended deforestation and noted that conversion is legal and regulated. He also suggested a national traceability + GIS platform (using Forest Survey of India + state data) that can auto-generate "deforestation-free" certificates, rather than every producer chasing individual NOCs, which becomes cumbersome and time-consuming.



Anuj Sharma, Deputy Country Director, Forest Stewardship Council - India, explained that natural rubber is the second-largest global driver of deforestation, after palm oil. In India, roughly 85% of natural rubber production comes from smallholders, with nearly ~1.3 million smallholders involved. Although India is the 5th largest producer of natural rubber, it is also the 2nd largest importer, with much of the imported rubber coming from high-risk countries (Malaysia, Indonesia, etc.) with deforestation, biodiversity loss, social violations, and child labour concerns.

To this end, FSC has taken a few initiatives:

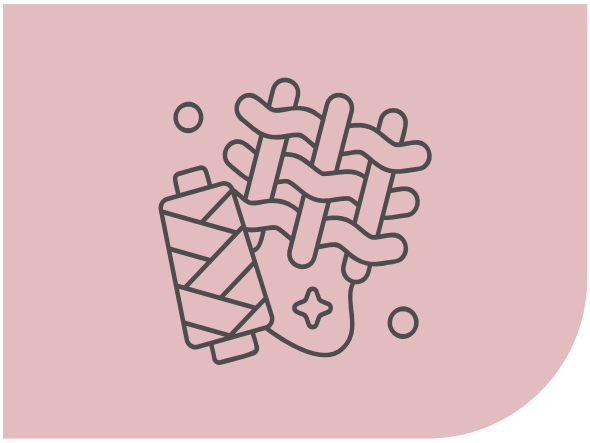
- Forest Management (FM) Certification
- Ensures plantations/forests are managed according to environmental and social criteria.
- Chain of Custody (CoC) Certification
- Ensures traceable, responsible material throughout the supply chain.
- Smallholder Standard (launched 2022)

These interventions are specifically designed for smallholders with limited funds and technical capacity. Initially rolled out for Indonesia, Thailand, Malaysia, and India, there is no annual admin fee for smallholder certification, which reduces the cost burden. Anuj also laid emphasis on group certification: NGOs, cooperatives, or entities who can aggregate smallholders.

Anuj stressed that certification must become the norm, not a niche or only for export markets. He explained that the higher cost of "sustainable" products is actually paying the true cost, not a premium. He noted that India needs policies for imported commodities as well, to ensure imports are also deforestation-free, not just domestic production.

Key Highlights:

- India's deforestation narrative needs to be clarified: India is broadly a "low deforestation-risk" country, with stringent laws since the 1980s. Current forest land diversion is legal, project-based, and regulated. However, global regimes don't automatically accept this: India must prove it, using: Forest Survey of India data, State forest records, Integrated GIS platforms And then issue standardised, auto-generated "deforestation-free" certificates.
- Definitions don't match: "Forest", "Deforestation", "Conversion": How India defines forest vs how EUDR/global markets define it can create risk & confusion. Northeast examples: governance by autonomous councils, unclear land classifications, risk of mislabelling land-use change as "deforestation". Clear, harmonised definitions and maps are critical.
- Certification & standards must become mainstream: Certification should cover the domestic market, not just exports. Be affordable and accessible, especially for smallholders. Avoid fragmentation into dozens of overlapping standards.
- Imports are still a blind spot: While domestic production may be relatively low-risk, India imports large volumes of: rubber, palm, timber, soy, etc., from high-risk regions. There is no robust framework yet to ensure imports are deforestation-free and aligned with India's global footprint.
- Social Capital & Communities: We can't focus only on natural capital (forests, carbon, biodiversity). Social capital such as smallholder livelihoods, community rights, local well-being must be equally central when designing India's sustainable commodity strategies.



Sustainable Textiles

- Empowering Artisans, Enriching Economies: A Sustainable Roadmap for Handloom Market Growth

Co-host

Supported by

- Data is the New Thread: Weaving India's Textile Sector into a Circular Powerhouse

Co-hosts

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Empowering Artisans, Enriching Economies: A Sustainable Roadmap for Handloom Market Growth

Co-host

Supported by

Moderator:

Nandini Sharma, Director, Centre for Responsible Business

Opening Remarks:

Cmde. Rajiv Ashok, Managing Director, National Handicraft Development Corporation (NHDC)

Speakers:

- Payal Jain, Designer & Sustainability Crusader, Design Indi Private Limited
- Deval Dayal, Textile Designer, Dayal Silk Weaves
- Hasina Kharbhih, Founder & Managing Director, Impulse Social Enterprises / Brand Impulse Empower
- Renuka Savasere, Co-founder & Managing Partner, R&A Design
- Nirmal Chudgar, Founding Contributor, Bevolve AI
- Nazir Ahmad, Vice President, Tahafuz (Kashmir Pashmina Society)



Cmde. Rajiv Ashok, Managing Director, NHDC, set a thoughtful and grounded context for the session by reflecting on the evolving expectations of contemporary markets, particularly amongst younger consumers—Gen Z and Gen Alpha—whose aesthetic preferences and consumption patterns now shape how traditional crafts must adapt. He emphasised that meaningful transition requires handloom to retain its cultural authenticity whilst appealing to modern sensibilities, ensuring safe and dignified working environments for weavers and enabling them to envision a viable future within the sector.

Cmde. Ashok highlighted a sobering reality in that despite decades of social sector efforts, the financial and social conditions of most artisans, weavers and farmers have improved only marginally. Production costs remain largely unchanged whilst consumer prices have risen significantly, creating a widening gap that does not benefit primary producers. This structural inequity, he argued, is perhaps the most pressing concern. Unless incomes become stable and equitable, and unless artisans can access markets without exploitative intermediaries, the craft ecosystem cannot thrive.



He described how the NHDC is steadily taking steps to bridge this gap by enabling young designers, entrepreneurs and business houses to connect directly with weaver clusters and cooperatives. A thriving weaver, he reiterated, is the foundation of a thriving sector. He positioned this work not as charity but as nation-building—investing in weavers enriches not only India but the world.

Cmde. Ashok further stressed that Indian handloom products already possess inherent sustainability advantages that global markets increasingly value. The challenge lies in strengthening the ecosystem to systematically leverage these advantages. He described NHDC's work towards promoting Geographical Indication registrations and raising awareness about the legal protections they offer. He spoke at length about the need to revive natural dyes, which have gradually fallen out of mainstream use. Although chemical dyes offer ease and consistency, a truly sustainable value chain requires returning to natural dyes alongside natural fibres. Encouragingly, some companies now produce natural dyes at industrial scale and in quantities suitable for small weavers.

Regarding traceability, now essential for international markets, NHDC has introduced Internet-of-Things devices on handlooms, with successful pilots completed in Jammu & Kashmir and Ladakh. These devices distinguish handwoven products from powerloom-made ones and allow consumers to watch short videos of the weaving process and meet the artisan behind each piece. This direct connection builds pride amongst weavers and enables buyers to appreciate craftsmanship intimately.

Cmde. Ashok outlined NHDC's vision: anything woven in any Indian village should be sellable worldwide with full transparency and fair margins. Achieving this requires digital integration and improving digital literacy amongst weavers. He called for a stable roadmap involving modernised common facility centres for dyeing, design and finishing, updated skill-upgradation centres, easier credit access and design development anchored in heritage. These, he argued, are the building blocks transforming traditional skills into viable enterprises.

He concluded by reaffirming that the handloom will play a significant role in India's vision for Viksit Bharat 2047. For this to happen, weavers must be recognised not merely as custodians of tradition but as entrepreneurs who drive local economies. The sector's survival through centuries has been rooted in resilience; the collective responsibility now is to transform that resilience into opportunity.



Payal Jain, Designer & Sustainability Crusader, emphasised that India's unparalleled textile diversity, which no country in the world can match, is the sector's greatest asset. However, she pointed out that the industry often undermines its own heritage by aspiring to replicate Western trends rather than building from its own identity.

Whilst technology and social media have improved access to clusters, Jain stressed that a unified and credible national platform connecting designers, consumers and craft communities remains a major gap. She reflected on the evolution of sustainability thinking over three decades, noting that while Indians are inherently sustainable, the surge of fast fashion and market manipulation has led to widespread waste and dilution of authentic craft value.

She also emphasised the critical need for consumer education and emotional connection-building. She advocated for storytelling, transparency and fair recognition as essential to restoring appreciation for handcrafted textiles. Jain strongly advocated for a long-pending national certification system to protect Indian handloom and craft traditions, preventing mislabelling and misrepresentation in global markets. She called for designers to reconnect with traditional practices and engage more deeply with weavers as creative collaborators rather than anonymous suppliers. The absence of structured platforms for designer–weaver collaboration limits both innovation and equitable value sharing.

Deval Dayal, fourth-generation textile designer from Bhagalpur, shared insights from deep within India's historic Silk City, known for its unique handloom traditions. He spoke about why younger generations hesitate to remain in the sector, explaining that many view weaving as a space without financial security, upward mobility or social respect.

Dayal described returning to Bhagalpur after education to discover weavers hoping for new opportunities, yet simultaneously witnessing declining artisan pride and youth disengagement. He highlighted a pressing concern which is the gradual disappearance of local raw materials. Bhagalpur's tassar silk, once integral to making Banarasi sarees, has been widely replaced by imported yarns from China and Korea. This erodes not only local ecosystems but the original quality and identity of the product itself.



He stressed that while handlooms cannot be forced into mass scalability, dignity and better working conditions are non-negotiable to prevent further attrition. To preserve and revitalise the craft, he advocated for cluster-level educational systems where senior weavers themselves become teachers, passing knowledge directly to the next generation. He emphasised that modernisation must be sensitive to local identity, geography and cultural practices—no single template can apply across India's diverse clusters.

When questioned about modernising looms across clusters, Dayal explained that Panipat's model—relying heavily on mill-made yarns—cannot be simply replicated in Bhagalpur, where loom and fabric requirements are fundamentally different. He demonstrated that authentic innovation within tradition is possible but demands respect for local distinctiveness.

Renuka Savasere, Co-founder and Managing Partner of R&A Design, traced her journey of over a decade of work in Kashmir, working with 2.5 lakh artisans and 32 crafts in the region. She explained that genuine intervention required reimagining the educational structure itself. This led to the creation of a Craft Management Programme, developed with inputs from leading experts, which eventually evolved into an MBA degree at Kashmir University. The programme has produced professionals who understand craft both as heritage and as a viable economic enterprise—bridging the apparent divide between tradition and entrepreneurship.

Savasere also spoke about securing the Geographical Indication (GI) for Kashmir Pashmina, a process that faced legal, political and administrative challenges. While the GI was a landmark achievement, she posed a critical question: what has been the real impact on artisans, and how can mechanisms like GIs translate to meaningful livelihood enhancement? This question underscored her commitment to measuring success not by certifications awarded but by tangible improvements in artisan circumstances.

She emphasised that community-driven models strengthen the handloom ecosystem by addressing localised realities that large-scale policy interventions often overlook. She highlighted the 'Impulse Empower yarn bank initiative' as exemplifying grassroots solutions: by ensuring consistent availability of yarns such as Eri silk, the initiative has enabled nearly 7,000 artisans to continue production without disruption, reducing dependency on exploitative intermediaries and market volatility.

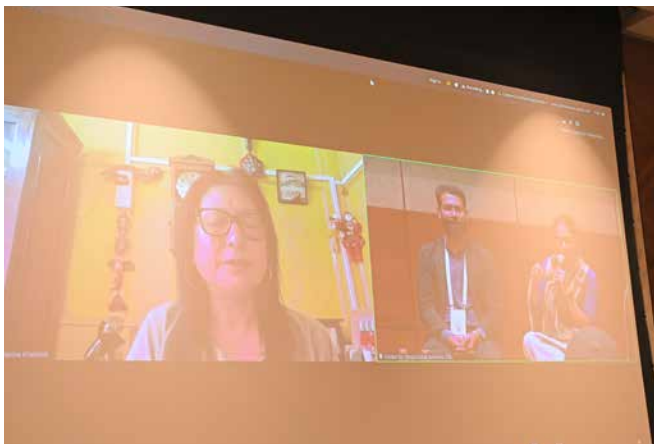
Savasere stressed that sustainability in handloom must be rooted in dignity, continuity of work and community ownership. Empowering artisans at the local level strengthens resilience and contributes directly to inclusive development goals under Viksit Bharat 2047.

Nirmal Chudgar, Founding Contributor at Bevolve AI, specialises in building ESG- and sustainability-linked technology frameworks. He described his work developing tools that enable craft enterprises to articulate their social and environmental impact in clear, measurable terms—crucial for helping smaller organisations access funding, improve supply-chain transparency and speak the language of global sustainability frameworks without being overwhelmed by technical complexity.



Chudgar emphasised that AI-driven insights can help artisans and cooperatives understand consumer preferences, reduce overproduction and improve pricing strategies. However, he cautioned that technology adoption must be accompanied by adequate training and capacity-building to ensure artisans are not excluded from digital transformation.

He argued that when applied thoughtfully, technology can act as an enabler bridging the gap between tradition and modern markets rather than a disruptor displacing skilled craftsmanship. His interventions highlighted the need to demystify ESG compliance and ensure that technology is positioned as empowering rather than burdensome. Technology must amplify artisan voice, not replace it.



Hasina Kharbhih, Founder and Managing Director of Impulse Social Enterprises, offered a distinct perspective from the North-East—a region characterised by its border geography, tribal diversity and unique weaving traditions. She explained that while the North-East has deep roots in natural fibres and eco-friendly practices, it faces significant raw material shortages that threaten production continuity.

To bridge this gap, her organisation introduced yarn banks and promoted Eri silk cultivation, providing stability for weavers who balance farming and weaving. Kharbhih highlighted the pitfalls of repeated training under national skill programmes, arguing that artisans are already skilled and instead require market access, design support and entrepreneurship pathways.

Over 18 years, her hybrid model has connected 30,000 weavers across eight states, enabling decentralised production rooted in community identity. She emphasised that the North-East cannot be evaluated using mainstream cluster templates; its uniqueness must be preserved rather than standardised. She reiterated the importance of ecosystem-level support systems—access to finance, raw materials and market intelligence—to reduce vulnerability amongst artisans.

Kharbhih's work exemplifies how inclusive, women-centric business models can serve as cornerstones of sustainable handloom development. She demonstrated how ethical supply chains prioritising artisan ownership, fair wages and market access—whilst retaining community control—can scale impact without eroding cultural identity.

Nazir Ahmad, Vice President of Tahafuz, joined virtually from Kashmir to share on-ground realities from the Pashmina sector. He explained that Tahafuz works primarily to protect the artisan and craft, operating on a voluntary basis to support the community directly. They issued identity cards to women artisans, helping them return to work and regain recognition—a simple intervention with profound dignity implications.

Nazir noted that Tahafuz now oversees six GI-certified crafts. When asked about the impact of Geographical Indication status for Pashmina, he shared a remarkable transformation. Awareness campaigns—including hoardings at airports—catalysed unprecedented growth: sales of GI-certified Pashmina jumped from 1,000 pieces annually to 6,000, with nearly 1,000 pieces certified daily today.

Tahafuz developed a sustainable revenue model: certification fees are split between supporting testing laboratories and contributing to Tahafuz's corpus, which has accumulated nearly INR 60 lakh. This is being reinvested into strengthening the craft ecosystem and ensuring standardised, foolproof GI protocols. Tahafuz now receives active police support to take action against counterfeit sales and has successfully



influenced retailers and showroom owners to ensure correct labelling, discouraging machine-made or powerloom products from being passed off as originals.

Nazir's account demonstrated that GI protection, when coupled with consumer awareness, market access support and community leadership, can translate certification into tangible artisan benefit—proving that structural mechanisms work when designed with artisans at the centre.

The panel discussion surfaced several interconnected challenges facing the handloom sector. Multiple speakers raised concerns about the growing prevalence of counterfeit products, particularly in high-value segments like Pashmina. Machine-made imitations sold at lower prices mislead consumers, while authentic handcrafted products struggle for recognition.

Speakers emphasised the urgent need to strengthen Geographical Indication protections and improve consumer awareness on identifying genuine products. While GI certification can safeguard artisan clusters, procedural delays and external objections continue to slow its implementation. The Tahafuz model demonstrated that when GI mechanisms are backed by community leadership, administrative support, and consumer awareness, they become powerful tools for protecting artisan livelihoods and market integrity.

Several speakers highlighted the potential of emerging platforms like ONDC to directly connect artisans with buyers, reducing middleman layers. The use of short videos documenting the weaving process can enhance trust, transparency and appreciation of craftsmanship.

Key Highlights

- Structural Income Inequality Is the Core Problem: Despite policy attention, the gap between production costs and consumer prices has widened, with primary producers receiving minimal benefit. Fair margins and direct market access are prerequisites for sector viability.
- Cluster-Specific Approaches Are Essential: No single modernisation template applies across India's diverse clusters. Bhagalpur's requirements differ fundamentally from Panipat's; the North-East's sustainability practices differ from Kashmir;s. Respect for local identity, materials and practices is non-negotiable.
- Raw Material Security Is Foundational: The disappearance of local tassar silk in Bhagalpur and raw material shortages in the North-East demonstrate that input supply instability threatens both production continuity and craft authenticity. Reviving natural dyes and local fibre production are sustainability imperatives, not optional luxuries.
- Market Access Must Be Direct and Transparent: Intermediaries extract value without adding it, leaving artisans with minimal returns. Platforms like ONDC, India Handmade and emerging e-commerce partnerships that reduce middleman layers show promise but require investment in digital literacy and logistical support for weavers.
- Sustainability Is Already Embedded: Indian handlooms already meet essential sustainability parameters global markets value. The challenge is systematising these advantages, from natural fibre sourcing to fair labour practices, and communicating them credibly to buyers.

Data Is the New Thread: Weaving India's Textile Sector Into a Circular Powerhouse

Co-hosts

InTex India

UN environment programme

With the kind financial contribution of

Ministry of Environment of Denmark

National Implementing Partner

CRB Centre for Responsible Business — Enabling Change for Impact

In collaboration with

CEE Centre for Environment Education

Moderated by:

Devyani Hari, Senior Director, Centre for Responsible Business

Anwesha Sarma, Consultant, Circular Textiles, UNEP

Opening Remarks:

Claudia Giacovelli, Programme Officer, Industry and Economy Division, UNEP

OVERVIEW OF THE SESSION

The roundtable brought together a wide array of stakeholders including policymakers, industry leaders, brand representatives, academics, cluster associations, sustainability consultants and international organisations. The objective of the session was to examine how environmental data and Life Cycle Assessment (LCA) can support a credible, scalable and competitive transition of India's textile sector toward circularity.

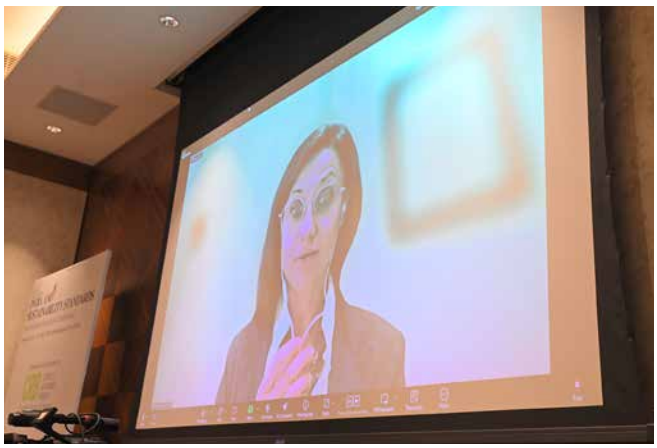
The discussion was moderated by Devyani Hari, Senior Director, Centre for Responsible Business (CRB), and Anwesha Sarma, Consultant, Circular Textiles, UNEP. Opening remarks were delivered by Claudia Giacovelli, Programme Officer, Industry and Economy Division, UNEP, followed by special remarks from Casper Mayland, Environment Counsellor, Embassy of Denmark in India. A presentation on importance of LCA and the data gap prevailing in industry has been made by Dr. Prabhat Bhuddha Dev, Senior Programme Officer, CRB. The roundtable format was intentionally chosen to encourage open dialogue and peer learning, recognising that participants represented different positions along the value chain and varying levels of readiness in terms of data maturity and sustainability integration.

Participants acknowledged that the Indian textile and apparel sector plays a critical role in both the national economy and global supply chains. At the same time, it is a major contributor to environmental pressures related to water consumption, greenhouse gas emissions, chemical use and waste generation. Against this backdrop, the session focused on how data-driven approaches can help move sustainability from broad intent to measurable impact, particularly as regulatory expectations, buyer requirements and disclosure mandates continue to expand.



The discussion also highlighted that while solutions are still evolving, there is growing consensus across stakeholders that delaying action is no longer viable. Tushar Jani, Senior Program Director, Centre for Environment Education concluded the session

by reiterating the key insights put forth in the discussion panel. The session therefore aimed to build shared understanding, surface practical challenges and identify pathways that balance ambition with feasibility.



IMPORTANCE OF DATA & LIFE CYCLE ASSESSMENT (LCA)

Speakers consistently emphasised that data has moved beyond being a functional compliance requirement to becoming a strategic foundation for business resilience and competitiveness.

Devyani Hari noted that emerging global mechanisms such as Digital Product Passports, traceability frameworks and enhanced disclosure norms are fundamentally reshaping expectations from textile manufacturers. Companies are increasingly required to understand and report environmental impacts across the full life cycle of products, extending responsibility beyond factory operations to include raw material sourcing, processing, product use and end-of-life management.

Claudia Giacovelli reinforced that Life Cycle Assessmentemains among the most scientifically rigorous tools available to quantify environmental impacts and prioritise mitigation actions. Drawing on international experiences from denim manufacturers in Indonesia and North Africa, she illustrated how LCAs identified raw material production and chemical intensity as key environmental hotspots. These insights enabled companies to introduce targeted interventions such as sustainable supplier conduct frameworks and digital chemical dosing systems.

The outcomes included reduced environmental impacts, lower material losses, improved traceability and measurable cost savings.

Several speakers highlighted that LCA plays a critical role in preventing trial-and-error approaches to sustainability. By providing evidence on where impacts are most significant, LCA helps companies focus resources on interventions that deliver the greatest benefit. However, its effectiveness is directly linked to the quality and relevance of underlying data. Participants repeatedly stressed that the absence of India-specific Life Cycle Inventory (LCI) datasets remains a major constraint. Existing global databases often fail to reflect Indian production realities, including the national energy mix, decentralised manufacturing structures and regional diversity.



Casper Mayland emphasised that from the perspective of European brands and regulators, reliable data from Indian suppliers is essential to ensure traceability, regulatory compliance and environmental integrity. Inconsistent or weak data systems can therefore act as trade barriers. Conversely, robust data builds trust, strengthens long-term buyer–supplier relationships and enables sustainability to function as a business advantage rather than a regulatory obligation. The development of India-specific datasets was repeatedly highlighted as essential for credible environmental claims, informed policy-making and investment decisions.



CURRENT PRACTICES & CHALLENGES

The session revealed that data adoption across India's textile sector is uneven. Larger mills and export-oriented units, particularly in southern

India, have begun investing in automated systems to monitor water, energy and emissions at the facility level. Cluster-based initiatives supported by organisations such as AIC–NIFT TEA were cited as examples where shared infrastructure has enabled real-time monitoring, high levels of water recycling and growing readiness for Digital Product Passport requirements.

At the same time, fragmentation remains a defining challenge. India's textile ecosystem comprises thousands of MSMEs dispersed across regions, many of which operate with limited financial resources, technical expertise and clarity on reporting expectations.

A discussant representing a textile confederation highlighted that unlike countries with more consolidated supply chains, India's diversity makes standardised data collection and traceability particularly complex. Smaller units often struggle to engage with sustainability requirements due to limited awareness and capacity rather than lack of willingness.

Multiple speakers pointed to overlapping frameworks and reporting requirements as a key barrier. Businesses are required to respond to BRSR disclosures, integrated reporting frameworks and buyer-specific sustainability demands, many of which overlap but differ in format and interpretation.This has led to audit and reporting fatigue, diverting time and resources away from operational improvements toward administrative compliance.



From the brand perspective, discussants noted that while data-capture technologies have improved significantly, validation remains the weakest link. Buyers often hesitate to rely on supplier-reported data without assurance, resulting in repeated audits and parallel data requests.

This places additional strain on suppliers, who may be asked to provide similar information in different formats to multiple customers. Brands themselves face challenges in reconciling varying regulatory requirements across different markets.

Product-level LCA was also discussed as a practical challenge. A discussant from another brand explained that conducting LCAs for each individual garment is not feasible due to variations in design, fit, material composition and production processes. As a result, many companies rely on representative profiles and hotspot analysis toinform internal decision-making rather than external communication.

This approach allows LCA to function as a strategic tool while acknowledging current capacity limitations at the supplier level.

RECOMMENDATIONS



Participants broadly agreed that harmonisation across data frameworks is the most urgent requirement. Establishing common minimum datasets accepted by multiple brands would significantly reduce supplier fatigue and improve data consistency. Several speakers stressed that brands demanding supply chain transparency must share responsibility by investing in supplier capacity building through financial support, technical assistance and shared digital platforms.

The development of India-specific Life Cycle Inventory datasets was identified as a national priority. Participants emphasised the need for multi-state, multi-season data collection that reflects real production conditions across fibre types, processing stages and geographies. Collaboration between government agencies, industry associations, academic institutions and international partners was seen as essential to accelerate this process and avoid duplication of effort.

Cluster-based approaches emerged as a scalable solution for MSMEs. Shared data infrastructure, collective training programmes and phased adoption models can lower entry barriers and build confidence among smaller units. Speakers highlighted that MSMEs are often hesitant to disclose data due to fear of exposing inefficiencies; clear guidance, trust-building and handholding can help address these concerns.

Participants also emphasised the importance of starting with available data rather than waiting for perfect systems. Consolidating existing information, applying early-stage LCA methodologies and progressively improving data quality was viewed as a practical and achievable pathway. Simplified and affordable verification mechanisms were seen as critical to ensure that smaller suppliers are not excluded from global markets as sustainability scrutiny increases.

CONCLUSION

The session concluded with a shared recognition that data-driven transformation is no longer optional for India's textile sector. Environmental data and Life Cycle Assessment have become foundational to competitiveness, credibility and market access in an increasingly regulated global landscape.

While challenges related to fragmentation, data gaps and audit fatigue are significant, the discussion made clear that these challenges are not insurmountable.



Collective action through harmonised standards, shared responsibility between brands and suppliers, cluster-level implementation and investment in India-specific datasets offers a clear pathway forward. Participants emphasised that meaningful progress will depend less on ideal conditions and more on the willingness to begin, collaborate and scale solutions pragmatically.

In this context, data truly emerges as the new thread capable of weaving India's textile sector into a resilient and circular future.

ACKNOWLEDGEMENT

We extend our sincere gratitude to the following industry experts, academician, brand & SME representatives and though leaders for their invaluable contributions to this session. Their diverse perspectives and shared expertise provided the foundation for the insights of the report.

- Casper Mayland, Environment Counsellor, Embassy of Denmark, India
- Col. S. Kapoor, Director General, Okhla Garment & Textile Cluster (OGTC)
- Chandrima Chatterjee, Secretary General, Confederation of Indian Textile Industry
- P. Gopalakrishnan, President, Karur Textile Manufacturer Exporters' Association (KTMEA)
- SMS. Sankaralingam, CEO, Karur Textile Manufacturer Exporters' Association (KTMEA)
- Dr. Sanjeevan Bajaj, Former CEO, FICCI Quality Forum
- Dr. Saurabh Kumar, General Manager, Apparel Export Promotion Council
- Parvinder Singh Kadyan, Founder GATS, CEO, Aadi Sustainability Solutions Pvt. Ltd.
- Anurag Gupta, Managing Director, Usha Yarns
- Aditya Goyal, CEO & Managing Director, Anubha Industries
- Dr. Madhuri Nigam, Associate Professor, Lady Irwin College
- Rakesh Vazirani, Director – Decarbonization & Cleaner Production, BUREAU VERITAS
- S. Periasamy, Advisor, AIC–NIFT TEA
- Anant Srivastava, President, Home Textile Exporters' Welfare Association
- Padmakar Pandey, Vice President, Corporate Sustainability, Aditya Birla Fashion & Retail Ltd.
- Shubhransu Singh, Senior Environment Specialist – India, Sri Lanka & Vietnam, Varner

New Age Transitions

- Energy Transition: Aspiring Towards a Collaborative Global Low Carbon Economy – 2030 & Beyond

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- Sustainability Principles in Artificial Intelligence: Why? What? How?

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Energy Transition: Aspiring Towards a Collaborative Global Low Carbon Economy – 2030 & Beyond

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CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact

Moderated by:

Anamika Ghosh, Senior Programme Manager, CRB

Speakers:

- Deepak Arora, Head of Public Affairs, Arcelor Mittal Nippon Steel India
- Sukla Mistry, Former Director (Refineries), Indian Oil Corporation Ltd.
- Asim Prasad, Executive Director, GAIL India
- Uma Reddy, President, Federation of Karnataka Chambers of Commerce and Industry
- Bartosz Przywara, Counsellor for Energy, Environment and Climate, Delegation of the European Union to India
- Priyangshu Dutta, Head of Public Affairs, India, Grundfos
- Dr. Sapna Narula, Director, CCS National Institute of Agricultural Marketing, Ministry of Agriculture and Farmers Welfare, Government of India
- Dr. Ashish Rawat, General Manager, Environment, Social and Sustainability Services
- Dr. Muneer Ahmad Magry, Teaching Fellow, School of Management Studies, Nalanda University
- Subrata Chakrabarty, Assistant Programme Director, WRI



Deepak Arora, Head of Public Affairs, Arcelor Mittal Nippon Steel India, established the session's central paradox, which was that while net-zero transition is universally acknowledged as imperative, no single pathway exists. Countries employ diverse technologies and design solutions—a diversity that is healthy. Yet this masks a fundamental underlying question: "green growth" is not entirely green.

As countries transition away from fossil fuels toward clean energy, they simultaneously become increasingly dependent on emerging materials and critical minerals. This creates new competitive dynamics and geopolitical dependencies. Raw material extraction remains geographically dispersed, yet processing is now heavily concentrated in China, creating new supply-chain vulnerabilities and dependencies replacing those of the fossil fuel era.

Deepak highlighted geopolitical complexity and underscored that analysts suggest subtle associations between rare-earth mineral agreements and broader conflicts (Russia-Ukraine war), though direct causal links remain unproven. This demonstrates the entanglement of energy transitions with geopolitics, resource competition and technological dominance. His conclusion was unambiguous in noting that India's transition to clean energy cannot be achieved through isolated national efforts. It demands powerful institutions, effective policies and an enabling ecosystem—requiring international collaboration, critical mineral security and technological partnership.

Shukla Mistri articulated the central challenge facing hydrocarbon industries, that of transforming current activities to achieve net-zero whilst preserving profit margins. The sector faces simultaneous demands including investing in new technologies (renewables, methane reduction, carbon capture), maintaining aging existing infrastructure and continuing global energy supply at affordable costs.



The technological challenge is acute as most enabling technologies remain in infancy. Carbon capture, advanced methane reduction and large-scale renewable integration lack proven, scalable, cost-competitive implementations at the scale required. Yet regulatory timelines are increasingly stringent—2035-2040 net-zero targets imposed by regulatory bodies are rapidly approaching.

She underscored that despite these challenges, nearly all major industry corporations have established net-zero objectives and are investing substantively in clean technologies. The sector trajectory is towards gradual development, with most organisations believing net-zero achievement by 2035-2040 is feasible, though demanding and requiring relentless organisational effort. The transition, while challenging, is underway across industry leadership—the question is whether pace matches climate imperatives.

Mr. Asim Prasad emphasised entrepreneurs and startups as critical actors defining energy's future. Startups are creating cleaner, smarter, modernised and automated technologies propelling smarter energy systems. Yet the broader enabling layer is crucial as Artificial Intelligence and Machine Learning will determine optimal energy mix across regions and industries.

AI/ML systems can evaluate multiple competing variables—demand trends, resource availability, cost dynamics, environmental impacts—to determine optimal renewable-conventional energy combinations. Smarter energy modelling through AI/ML enables simultaneous achievement of previously competing objectives:



- Reduce wastage through real-time demand forecasting and adaptive dispatch
- Lower costs through optimal resource allocation and predictive maintenance
- Increase reliability through predictive failure prevention and demand smoothing
- Expand infrastructure through smart grids with distributed auto-intelligence

He explained that technology-oriented startups will be crucial for enhancing energy access, mitigating operational risks and increasing long-term energy security. AI/ML represents the infrastructure layer enabling transition from centralised, inflexible systems toward distributed, responsive, efficient energy ecosystems.

Uma Reddy addressed a critical gap, stating that while large companies and Tier-1 suppliers pursue ESG standards, these expectations weaken as one moves down supply chains. Micro and small enterprises face three fundamental barriers: Awareness Gap: Most MSEs lack awareness of ESG standards and lack access to formal information about requirements and implementation pathways. Compliance expectations flow from large-company procurement policies, yet implementation support is minimal.

Competitiveness Pressure: MSEs operate with thin profit margins. Cost-reduction focus limits capacity for ESG investments. When large buyers demand ESG compliance, MSEs face conflicting pressures: maintain cost competitiveness or invest in sustainability, often mutually exclusive given financial constraints.



Capacity and Resource Constraints: MSEs lack financial resources for basic operations, leaving no margin for sustainability investments. Small organisations cannot achieve economies of scale in sustainability technologies or practices.

Uma Reddy highlighted that infrastructure-level support can overcome these barriers. She gave an example of how GAIL Gas installed pipelines in Bangalore ensuring clean gas availability to industries. Similar infrastructure provision—treated water supply, waste management systems, energy infrastructure—could enable MSEs to participate in sustainable supply chains without individual investment burden.

When basic infrastructure is provided externally, MSEs gain confidence and sense of responsibility, motivating long-term sustainability engagement. Infrastructure investment is more efficient than attempting to drive ESG compliance in under-resourced organisations.

Bartosz Przywara directly challenged the pervasive assumption that climate action undermines economic performance. He stressed that this narrative, frequently repeated in public discourse, contradicts empirical evidence. EU data demonstrates: 1990-2023: EU GDP increased approximately 70 per cent. Same period: EU emissions decreased 37 per cent.



This represents genuine decoupling—economic growth achieved while reducing environmental impact. OECD research documents that 40 nations have simultaneously reduced emissions and maintained GDP growth. The narrative of trade-off between climate action and economic performance is empirically false for countries implementing coherent policies.

Bartos argued that climate action enhances competitiveness as countries investing in clean technologies position themselves advantageously in future international markets where demand for low-carbon products and services will be decisive. Yet he cautioned against policy incoherence as some nations simultaneously increase coal use while investing heavily in renewables, sending mixed signals undermining credibility and casting doubt on long-term commitment.

Priyanshu Dutta articulated a critical but underexplored nexus of how water systems and their energy consumption are directly linked to decarbonisation trajectories. Nearly all industries and households rely on water movement—inherently energy-intensive processes. India can achieve substantial energy savings and emissions reductions by improving water efficiency.

Priyanshu proposed unifying three historically separate efficiency domains: water efficiency, energy efficiency and methane reduction. These three are interconnected; optimising all simultaneously yields greater carbon impact than addressing individually. Water-intensive sectors—oil refineries, thermal power plants, agriculture—offer particular opportunities: enhanced water efficiency directly reduces fossil fuel consumption for water pumping and movement.

This nexus perspective reveals hidden decarbonisation leverage: water efficiency becomes a decarbonisation strategy, not merely a resource conservation measure. India's massive water infrastructure and consumption create substantial emissions reduction potential through integrated water–energy–methane efficiency programmes.



Dr. Sapna Naula documented India's increasingly sophisticated climate finance architecture. Historically, India lacked formidable climate finance policies; this landscape is now transforming. Recent innovations include:

- Green Bond Policies developed by RBI, mobilising capital for sustainable projects
- Cap–and–Trade Markets and voluntary carbon markets creating price signals for emissions reduction
- Critical Minerals Partnerships: India founding member of India–Australia Critical Minerals Research Hub, ensuring access to minerals essential for low–carbon technologies

She cited CSCP research assessing India's net–zero investment requirement amounting to USD 437 billion across power, cement, steel and transport sectors by 2030. Steel and cement command largest investments due to energy–intensive production processes. These hard–to–decarbonise sectors require technological breakthrough and substantial capital mobilisation.

India's international engagement—EU partnerships, Netherlands collaboration, Australia critical minerals cooperation—reflects recognition that energy transition requires global collaboration. India cannot achieve net–zero through isolated effort; technology transfer, capital flows and resource security demand international partnership.



Dr. Ashish Rawat spoke of TÜV SÜD's role in energy transition: promoting economic development while addressing environmental risks. He noted that many organisations pursue carbon reduction and net–zero planning, yet international collective effort remains constrained by fragmentation and uneven commitment.

TÜV SÜD assists organisations across risk domains, including mechanical, electrical, oil and gas, renewable energy. Critical to transition credibility is carbon credit authentication through schemes like VERRA, VCS and GCC—ensuring credits represent genuine, verified emissions reductions rather than greenwashing. Article 6.4 of UNFCCC has recently come into force, with earliest projects scheduled for listing, facilitating transparent carbon credit generation and assessment of social effects.

Dr. Rawat expressed cautious optimism, as technological advances and regulatory evolution are driving substantive emissions reductions, yet progress remains constrained by coordination challenges and technological immaturity. Third–party verification and certification are essential infrastructure preventing greenwashing and ensuring credibility of climate commitments.

Dr. Muneer Ahmad Magry presented Nalanda University as a case study in institutional sustainability integration. The campus operates:



- Traditional water harvesting systems capturing and utilising seasonal rainfall
- 5-megawatt solar plant providing renewable electricity
- Sahabhagita Samvad initiative adopting five surrounding villages, providing water and surplus renewable electricity enabling community transition to renewable energy systems

This integrated model demonstrates that institutional sustainability extends beyond campus boundaries toward surrounding communities. The university becomes a hub for sustainable practices, technology demonstration and community engagement.

Dr. Muneer provided context on India's emissions trajectory, stating that India generated approximately 2,500 gigatonnes emissions in 2022. Yet simultaneously, India decreased emissions intensity (emissions per GDP unit) by 35 per cent and created a natural carbon sink sequestering approximately 500 million tonnes annually—yielding 22 per cent offset of emissions. This demonstrates that India's land-use and forest systems provide significant carbon sequestration, yet this advantage is insufficient without rapid emissions reductions. He made a critical observation that India still lacks sufficient access to sophisticated technologies necessary for effective climate action—a repeated complaint at global forums reflecting technology transfer limitations constraining developing economy transition pace.



Subrata Chakrabarty emphasised that Global South perspectives must be centred in global energy transition conversations. Investments in clean energy reached USD 900 billion in 2024, yet access disparities between developed and developing nations remain acute. MSMEs in India particularly struggle accessing international climate finance; bureaucratic processing times and complex procedures favour large corporations with dedicated climate finance functions.

Subrata highlighted Article 6 mechanisms' potential that these can unlock new financing pathways, yet glacial pace of rule development hinders progress. International carbon markets could mobilise capital, yet regulatory delays prevent effective deployment Most critically, Subrata emphasised subnational (state and district-level) action has become neglected in global forums despite being essential for India's transition. States and districts are where implementation occurs, yet international dialogues focus on national-level commitments. He proposed five mainstreaming mechanisms:

- Strong policy frameworks providing clear direction and incentives
- Well-established institutional mechanisms enabling coordinated action
- Improved sectoral coordination breaking institutional silos
- Enhanced peer learning across states and districts
- Long-term leadership ensuring sustained commitment beyond electoral cycles

He concluded that central policies can cascade to influence state and district action, yet only through deliberate institutional design and resource allocation to subnational governments.

Key Highlights

- The session revealed that energy transition is technically feasible, economically compatible with growth, yet operationally complex requiring coordinated action across multiple domains. No single actor—technology, finance, policy or institution—suffices; transformation demands integrated effort.
- Critical minerals security, technology innovation, infrastructure investment and climate finance are all necessary. Yet the primary bottleneck is coordination: institutional fragmentation, policy incoherence and inadequate subnational engagement limit progress. India possesses substantial assets—renewable energy capacity, technological talent, growing green finance architecture—yet realising these requires alignment of government, industry and civil society around shared objectives and timelines.
- The energy transition will reshape global competition, create new dependencies and fundamentally alter economic systems. India's success depends on strategic clarity, institutional coordination and international partnership—recognising that while diversity in energy pathways is healthy, alignment on transition urgency and shared investment is non-negotiable.

Sustainability Principles in Artificial Intelligence: Why? What? How?

Co-hosts

CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact

Moderated by:

Prof. Pawan Budhwar, Associate Deputy Vice Chancellor (International), Aston University

Speakers:

- Srikanth Chandrasekaran, Senior Director and Country Head, IEEE Standards
- Alok Agrawal, Co-Founder, AI4India
- David Joseph Menezes, Director Programs, people+ai, EkStep Foundation
- Dr. Anshu Sharma, Co-Founder, SEEDS
- Alpan Raval, Chief Scientist, Wadhwani AI
- Sandeep Rao, Chief Principal Consultant Data Privacy and Responsible AI, Persistent Systems
- Nikhil Bimbrahw, Global Head Solutioning & Delivery Data Analytics and AI GigaFactory, Genpact
- Dona Mathew, Senior Research Associate, Digital Futures Lab



Prof. Pawan Budhwar opened the session by establishing the connection between the previous energy transition discussion and the present focus on artificial intelligence. The link is direct and urgent as contemporary AI programmes consume enormous amounts of electrical power, requiring significant energy and generating substantial environmental impact. The responsible deployment of AI therefore becomes fundamentally dependent on access to clean and renewable energy sources—making AI sustainability inseparable from energy transition imperatives.

Beyond environmental concerns, Prof. Budhwar introduced a second critical dimension, that of digital well-being at work. As AI tools proliferate in everyday workplace environments, workers face escalating challenges including screen burnout, stress, surveillance pressures, and performance demands from robot-like systems. Sustainability, therefore, must encompass not merely environmental protection but also the psycho-physical health of people navigating increasingly digitalised work environments. This reframing expands sustainability beyond weather and atmospheric concerns to include human welfare in digitally mediated labour.

The session would proceed along two broad perspectives, he noted. First, understanding the threats and drawbacks posed by AI and developing policy instruments and schemes to sustain responsible AI deployment. Second, reviewing how sustainability can be actively facilitated by AI itself, leveraging its capacity for efficiency optimisation, predictive analytics, automation, and improved resource management. Prof. Budhwar concluded that while AI possesses immense potential and confronts numerous challenges, the speed of technological change must be accompanied by ecological, social, and economic sustainability safeguards.

Sandeep Rao, Chief Principal Consultant Data Privacy and Responsible AI, Persistent Systems, articulated the relationship between AI and sustainability across four interconnected dimensions. Environmentally, AI systems are characterised as highly power-intensive and computationally demanding, requiring not only substantial electricity but also extensive cooling systems and significant water consumption for heat dissipation. This renders AI a profoundly resource-consuming technology with direct climate impacts—making its environmental footprint a core sustainability concern rather than a peripheral consideration.



Socially, AI creates multiple harms. Algorithmic automation displaces jobs, particularly routine work. More critically, AI models replicate discrimination embedded in their training data, generating unfair outcomes that harm marginalised populations. Simultaneously, global inequality is exacerbated in that wealthier nations and corporations can afford advanced AI systems while the Global South experiences limited access, deepening technological and economic disparities.

Regulatory pressure is intensifying globally. Nations are developing laws to address AI risks; India has introduced guidelines whilst the US and EU have implemented federal and state-level regulations targeting high-risk sectors including finance and healthcare. For organisations, compliance with emerging AI regulations has become an integral component of sustainability strategy, not a separate compliance exercise.

Trust emerges as a critical asset. When AI systems generate biased or harmful outcomes, companies lose customer confidence and damage long-term brand reputation. Organisations pursue two distinct deployment strategies, with some deploying AI first and subsequently categorising it as responsible, while others establish responsible AI policies before deployment. This choice reflects sectoral risk exposure and corporate culture—industries like BFSI and pharmaceuticals, having used AI longer and encountered greater risks, are further advanced in responsible AI strategising.

An overlooked but substantial internal challenge is "shadow AI": the unregulated use of AI tools by various teams across organisations, posing threats to privacy, ethics, and compliance. Addressing this requires making all AI use transparent and visible, establishing governance structures and adequately training staff so that innovation and responsibility are balanced rather than treated as opposing forces.



Dona Mathew emphasised that "AI for sustainability" is conceptually complicated and contextually dependent. In mining, AI can identify potential deposits and assess ecological risks, yet since mining is intrinsically linked to exploitation and environmental harm, applying AI to such industries raises profound ethical questions. This illustrates that technological efficiency and sustainability are not automatically aligned.

Dona noted that the environmental footprint of AI varies dramatically by model architecture. Large language models require significantly more electricity and water than task-specific models, meaning environmental discussions must distinguish between AI types rather than treating AI as a monolithic category. This differentiation is essential for accurate assessment and targeted mitigation strategies. Critically, Dona stressed that responsible AI principles cannot be mechanically imported. Concepts like fairness and bias are challenging to implement in countries like India, where social structures are fundamentally shaped by caste, class, and gender. Implementing these principles requires organisations to develop internal capabilities extending beyond technical models—they must cultivate social and contextual understanding. Her conclusion was unambiguous in that AI and sustainability cannot be perceived in isolation but must be considered simultaneously through ethical, environmental, and social lenses.

Alpan Raval, Chief Scientist, Wadhwani AI, shared a perspective grounded in direct engagement with marginalised communities across public health, agriculture, and education. He observed that Western responsible AI frameworks—emphasising bias, fairness, and privacy—are important but incomplete for India. Instead, fundamental questions must be posed, like what should AI actually do in India? What does responsibility mean in the Indian context?



Alpan emphasised that inequity arises not only from biased models but also from poor connectivity, language barriers, limited digital literacy, and energy constraints. Responsible AI in India therefore requires lightweight models operating on simple devices, functioning offline or at the edge, and supporting local languages. Communities with low digital literacy demand user-friendly interfaces. These design choices determine whether AI includes or excludes people.

Nikhil Bimbrahw extended this analysis by focusing responsibility on alleviating inequality. He stressed the importance of lightweight and multilingual AI tools functioning effectively when internet connectivity is slow and devices are limited—particularly critical in rural and underserved communities. Beyond accessibility, he highlighted sustainability concerns as data centres sustaining free tools like ChatGPT consume extensive electricity and water. GPU-based data centres are significantly more power-intensive than CPU-based facilities; a single 75-megawatt data centre could serve 300,000–500,000 households.

India's current data-centre capacity—approximately 1.8 gigawatts—is expanding at an alarming rate, raising acute concerns about energy and water consumption. Other nations are adopting energy-saving liquid cooling and constructing renewable-powered data centres using solar, wind, or small nuclear plants. Nukhil argued that India must follow suit.



Srikanth Chandrasekaran drew an optimistic vision grounded in rigorous design principles. He stressed that ethically aligned design means incorporating privacy, transparency, accountability, and fairness from the outset of development, not retrofitting ethics later. AI is no longer purely engineering; it now encompasses ethicists, climatologists, social scientists, and sustainability professionals because AI systems are simultaneously technical, social, and environmental systems.

He noted that "sustainability by design" entails constructing energy-efficient, low-carbon AI systems. As AI models grow more powerful and computing requirements escalate, this becomes increasingly essential. India's cultural and linguistic diversity—a foundational design constraint—requires that AI models be accessible in local languages and reflect local realities. Western-trained models often prove ineffective in Indian contexts, particularly when applied to farmers and rural populations. Culturally relevant, locally grounded models are essential for meaningful inclusion.



Alok Aggarwal offered a balanced perspective, noting that widespread AI use is relatively recent—ChatGPT is merely three years old—yet the sustainability debate is already underway, a positive sign that stakeholders recognise the importance of addressing AI impacts early.

He proposed a pragmatic three-step sustainable AI method. First, identify significant issues such as energy usage, accuracy, and equity; second, quantify these problems to raise awareness among consumers and developers about AI's environmental consequences; third, develop realistic mitigation strategies rather than relying on speculative solutions.

Critically, Aggarwal emphasised that AI brings sustainability benefits. AI is utilised to minimise electricity transmission losses and enhance grid management efficiency in India. Remote studying through AI devices reduces travel emissions. Therefore, AI's overall environmental effect should be calculated as a balance between energy consumed and energy conserved or emissions avoided through beneficial applications.



David Menezes addressed the inevitable AI expansion in India, arguing that it must be directed towards safe deployment. He noted that his organisation collaborates with governments, non-governmental organisations, and corporations in developing responsible AI. Three principles, he argued, are foundational: interpretability, steerability, and trust.

Interpretability requires that AI systems be explainable, particularly in government programmes where outputs directly affect citizens' livelihoods and rights. Steerability means AI must be tuned to provide contextually accurate responses, especially when Western-trained models are applied in local Indian environments. Trust demands that publicly presented AI systems be dependable and predictable.

David invoked the MahaVistar programme—a government initiative providing AI-based advisory services to approximately one million farmers in Maharashtra—to illustrate why guardrails are non-negotiable. If the system provides recommendations unsuitable for Indian soil and climate conditions, consequences could be disastrous. Powerful guardrails and domain validation are therefore essential. He concluded that AI's expansion is poised for acceleration, and India will be a significant participant; safety, ethics, and trust must be ensured throughout this expansion.

Key Highlights

- AI's Energy and Water Footprint Requires Clean Energy Integration: Contemporary AI systems consume enormous electricity for computation and cooling, making their environmental impact inseparable from energy transition imperatives.
- Responsible AI in India Must Address Structural Inequalities, Not Just Algorithm Bias: Inequity arises from poor connectivity, language barriers, limited digital literacy, and energy constraints alongside biased models. Indian-context responsible AI requires lightweight multilingual models for offline operation on simple devices, user-friendly interfaces for low digital literacy, and accessibility as a core design constraint rather than Western-imported fairness metrics.
- Model Type Dramatically Affects Environmental Footprint: Large language models require substantially more electricity and water than task-specific systems. Environmental discussions must distinguish between AI types rather than treating AI as monolithic, enabling targeted and proportionate sustainability strategies.
- AI's Net Environmental Effect is Balance Between Energy Used and Energy Conserved: AI simultaneously consumes significant resources and enables efficiency gains (transmission loss reduction, grid optimisation, remote education reducing travel emissions). Sustainability assessment must account for both dimensions rather than focusing solely on consumption.
- Public-Interest AI Demands Interpretability, Steerability and Trust Under Strong Guardrails: Systems affecting citizens' livelihoods must be explainable, contextually tuned to local conditions, and dependable. Agricultural advisory systems exemplify high-stakes deployment where Western-trained models could prove disastrous without rigorous domain validation and guardrails.

Building Climate-Ready MSMEs: Free Tools for Measuring and Managing Emissions

Co-host **Supported by**

Speakers:

Pallavi Ahuja, Manager, SME Climate Hub

Swapna Patil, Manager, SME Climate Hub

The session titled "Building Climate-Ready MSMEs: Free Tools for Measuring and Managing Emissions" was designed to address a growing and urgent need among micro, small, and medium enterprises (MSMEs): the ability to understand, measure, and manage their climate impact in an increasingly sustainability-driven business environment. As global supply chains evolve and regulatory expectations around environmental performance intensify, MSMEs are finding themselves under mounting pressure to disclose emissions-related data and demonstrate credible climate action—often without the internal resources or technical expertise available to larger corporations.

Recognising this challenge, the session brought together representatives from the SME Climate Hub, industry associations, and MSME stakeholders to explore practical, accessible tools that allow small businesses to begin their climate journey independently. The session placed particular emphasis on demystifying emissions measurement and demonstrating how existing business data—already available within financial and operational records—can be used to calculate carbon footprints without reliance on costly consultants.



The session was opened by Ms. Pallavi Ahuja, representing the SME Climate Hub. In her introductory remarks, Pallavi outlined both her role and the purpose of the session. She noted that the SME Climate Hub is hosted through the We Mean Business Coalition and focuses on equipping MSMEs with practical tools for climate action.

Before proceeding further, Pallavi engaged participants with two preliminary questions aimed at understanding the room's experience with climate disclosure. First, she asked how many participants had been asked—by banks, buyers, or institutions—to disclose non-financial data related to environmental or climate responsibility. One participant acknowledged that such disclosures often require reliance on external agencies to generate the necessary information.

In response, Pallavi highlighted a core challenge faced by MSMEs: dependency on third-party consultants for data that businesses already possess in fragmented form. She explained that the SME Climate Hub was created precisely to address this gap by offering tools that business owners and managers can use directly, without specialised training, and based on information they already handle daily. She then posed a second question: how many participants had ever attempted to calculate their own emissions. Only a handful of participants indicated prior experience. One participant described having access to emissions data through automated monitoring systems installed to comply with pollution control regulations, particularly in biomass-intensive textile operations.

Pallavi used this response to highlight an important distinction. While certain businesses with regulatory oversight or advanced monitoring infrastructure may have access to emissions data, a large majority of MSMEs operate without such systems. For these businesses, emissions remain invisible—not because they do not exist, but because they are not translated from operational and financial activity into environmental metrics. Businesses know how much energy they purchase, how much fuel they consume, and how much they spend on raw materials, but often lack the tools to interpret what this means in terms of emissions.



This framing set the stage for the core objective of the session: enabling MSMEs to bridge the gap between financial data and climate insight. Pallavi then invited Mr. Sandeep, representing the Foundation of Indian SMEs (FISME), to share their perspective on climate action from the standpoint of an SME operator and ecosystem leader. Sandeep began by posing a fundamental question: is going green cost-effective, particularly for small businesses?

Drawing on over three decades of experience as an SME operator, he acknowledged the reality of the "survival mindset" that dominates small business decision-making. SMEs, he noted, constantly navigate challenges such as high interest rates, delayed payments, labour shortages, and demanding customer requirements. In this context, sustainability is often perceived as an additional burden rather than a strategic priority.

However, Sandeep strongly challenged this perception. He argued that sustainability is not an act of charity, but a smart investment with measurable returns. He cited studies and real-world examples demonstrating that relatively simple interventions—such as energy-efficient machinery, water-saving processes, or waste recycling—can reduce operational costs by 10–15 percent. In one example from the textile sector, a shift to low-water dyeing not only reduced utility expenses but also enabled access to premium pricing from environmentally conscious buyers.



He emphasised that for Indian MSMEs, the cost of ignoring sustainability is rapidly increasing. Rising energy tariffs, fuel price volatility, and emerging trade mechanisms such as the European Union's Carbon Border Adjustment Mechanism (CBAM) pose significant risks to export competitiveness. He noted that MSMEs in sectors such as automotive manufacturing have already seen tangible benefits—including increased orders—after adopting recognised environmental management standards.

He further highlighted government-backed financial mechanisms designed to support MSMEs in this transition, including green investment funds offering interest subsidies and credit guarantees, as well as initiatives supporting circular economy pilots such as waste-to-energy clusters. These schemes, he argued, significantly reduce the financial barriers associated with sustainability investments. Mr. Sandeep concluded by reinforcing the central message of the session: emissions measurement is the first and most critical step. Without understanding where emissions originate, businesses cannot reduce them. He urged MSMEs to treat this learning process as an investment in future competitiveness rather than a regulatory obligation. Following this, Pallavi returned to contextualise the role of the SME Climate Hub within the broader sustainability ecosystem. She acknowledged the difficulty MSME owners face in adding yet another responsibility to already demanding operational workloads. The goal of SME Climate Hub, she explained, is to simplify climate action to a level that aligns with the realities of small business operations.

She stressed that while emissions disclosure may currently be voluntary for many MSMEs, it is rapidly becoming mandatory—particularly for exporters and businesses integrated into international value chains. SME Climate Hub therefore aims to help businesses prepare in advance, reducing future dependency on consultants and enabling internal ownership of sustainability data. Pallavi described the SME Climate Hub as a free, digital platform designed specifically for MSMEs. It provides access to tools, resources, and guidance that can be used flexibly and independently. Importantly, SME Climate Hub was established in partnership with the United Nations, enabling participating MSMEs to formally align with global climate initiatives such as the Race to Zero campaign.



She explained that large corporations often have dedicated sustainability teams and access to expert consultants. MSMEs, by contrast, require tools that are affordable, intuitive, and grounded in existing business processes. SME Climate Hub's tools are therefore designed to work with financial and operational data already captured in balance sheets, profit-and-loss statements, and procurement records.

Participation in SME Climate Hub does not impose compliance obligations or penalties. Instead, it allows businesses to declare intent, track progress, and document incremental actions. Even small steps—such as installing rooftop solar panels, improving employee commuting practices, or encouraging sustainable transport—are recognised and encouraged. Pallavi also highlighted that the SME Climate Hub goes beyond measurement. Once emissions are calculated, businesses receive visual insights, such as pie charts, identifying major emissions sources. This enables MSMEs to prioritise actions where impact is greatest, rather than dispersing efforts across less significant areas. SME Climate Hub further provides India-specific guidance to support decision-making on renewable energy and other interventions. She shared that since its formal launch in India in 2023, SME Climate Hub has engaged approximately 385 Indian SMEs, placing India among the top participating countries globally. SME Climate Hub has conducted multiple workshops and continues to expand its outreach, with plans to scale significantly by 2026. Participating SMEs also gain opportunities to showcase their efforts through case studies and international platforms, enhancing credibility with buyers and stakeholders.



The session then transitioned to the live demonstration led by Swapna Patil, who began by grounding the discussion in a simple, relatable analogy. Using the example of a tea shop, she explained how emissions are generated at every stage of production—from fuel combustion to waste generation—even when visible smoke is no longer present. This analogy helped clarify the concept that emissions persist despite shifts to cleaner fuels.

Swapna spoke about greenhouse gases and explained why they are collectively referred to as carbon emissions. She outlined how emissions originate not only from on-site activities such as machinery, generators, and vehicles, but also from upstream and downstream activities, including raw material sourcing, transportation, and waste management. Together, these constitute an MSME's carbon footprint.

She then explained the internationally recognised classification of emissions into Scope 1, Scope 2, and Scope 3. Scope 1 includes direct emissions under the company's control, Scope 2 covers emissions from purchased energy, and Scope 3 encompasses indirect emissions across the value chain. Understanding these distinctions, she noted, is essential for accurate measurement and reporting.

Moving to the practical demonstration, Swapna introduced the two carbon calculators available on the SME Climate Hub: a small business carbon calculator for beginners and single-site operations, and an advanced business carbon calculator for experienced users or multi-site enterprises. She demonstrated how users can access the tools through SME Climate Hub's website, register using basic information, and begin creating or editing a greenhouse gas report. She explained that both calculators rely on two types of data: activity-based data (such as electricity consumption and fuel usage) and spend-based data derived from financial records. Throughout the tool, users are guided by explanatory prompts that clarify why each data point is required and how precise it needs to be.



Swapna walked participants through each step of the calculator, covering employee data, revenue, facility size, energy consumption, heating and cooling sources, vehicle usage, machinery fuel, business travel, employee commuting, and major expenditures. She highlighted built-in flexibility, including options to indicate unavailable data, making the tool accessible even to first-time users.

Once data entry is complete, the calculator generates results within seconds, presenting emissions across all three scopes in clear visual formats. Users can download reports in PDF format for sharing with stakeholders. She concluded by noting that the calculators are aligned with the GHG Protocol and use scientifically recognised emission factors, including location-specific grid factors. While the beginner calculator is not designed for audit purposes, the advanced calculator produces auditable outputs suitable for formal reporting.

The session demonstrated that emissions measurement need not be complex, expensive, or intimidating for MSMEs. By translating everyday business data into meaningful climate insights, the SME Climate Hub provides a practical starting point for small businesses seeking to remain competitive in a low-carbon economy. The discussions reinforced that climate action, when approached strategically, offers not only environmental benefits but also tangible business value.



Key Highlights

- Emissions disclosure is becoming a business necessity, particularly for MSMEs integrated into global supply chains.
- Climate action can deliver direct cost savings, operational efficiencies, and improved market access for MSMEs.
- Existing financial and operational data is sufficient to begin measuring emissions accurately.
- Incremental actions matter, and even small sustainability steps contribute to long-term resilience and credibility.
- Building internal capacity now reduces future dependency on consultants and prepares MSMEs for upcoming regulatory requirements.



Regenerative Agriculture

- Advancing Gender Inclusiveness in Regenerative Agriculture Value Chain

Co-hosts

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NARVOS NATIONAL ALLIANCE FOR REGENERATIVE VEG OIL SECTOR

- Working Towards Incentives for Regenerative Farmers: Appreciating Multiple Socio-Environmental Benefits and Advocating for Carbon+ Incentives

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NARVOS NATIONAL ALLIANCE FOR REGENERATIVE VEG OIL SECTOR

Moderated by:

Aditya Petwal, Assistant Director, Centre for Responsible Business (CRB)

Presentation by:

Nidhi Choudhary, Senior Programme Officer at CRB

Aditya Petwal, Assistant Director, CRB, opened the session by outlining the programme's background, including the initiative's focus on transforming degenerating agricultural systems into regenerative ones by improving soil health, agro-biodiversity, water sustainability and climate resilience. A central priority is gender inclusiveness, and it is implemented in collaboration with Solidaridad (lead partner) and CARD across twelve districts of Madhya Pradesh under an alliance called National Alliance for Regenerative Veg Oil Sector (NARVOS).

Aditya contextualised the focus on women in agriculture by noting historical cultural respect for women, contrasted with persistent vulnerabilities arising from low capacity enhancement opportunities. He highlighted that women constitute nearly half the agricultural workforce, with two out of three rural women engaged in agriculture. Yet nearly 50 per cent work unpaid, raising fundamental questions about recognition, agency and benefit-sharing.

He noted that women's access to land entitlements, credit and technology could increase agricultural output by 20–30 per cent, with most of the income reinvested in family welfare. This underscores that gender inclusiveness is not merely a social imperative but an economic multiplier for household welfare and agricultural productivity. The session aimed to build on earlier discussions and work toward a clear framework for advancing gender integration across the regenerative agriculture value chain.



Nidhi Choudhary, Senior Programme Officer at CRB and a field researcher for this project, presented findings from a comprehensive study on advancing gender inclusiveness in regenerative agriculture within the vegetable oil sector, conducted across selected Madhya Pradesh districts. The study examined conventional and regenerative practices and compared women's participation across both systems. The research was part of a broader initiative benefiting 35,000 farmers, including 10,000 women farmers.

Nidhi identified key focus areas: decision-making barriers, limited women's participation in training due to workload and time constraints, need for gender-responsive mechanisation, digital literacy gaps and low institutional representation. The study revealed that women face multiple interconnected constraints: limited land access, restricted profit-sharing mechanisms, low decision-making power and lack of institutional support.

The research examined women's involvement across agricultural tasks and found a striking pattern suggesting that labour-intensive activities are dominated by women, while decision-oriented tasks such as crop selection and input purchase are largely controlled by men. This division perpetuates a system where women's contributions are essential yet invisible, and their voices are absent from decisions affecting the value chain.



Institutional representation data revealed another sobering reality, pointing out that only 24 per cent of Farmer Producer Organisation (FPO) members are women. Despite high labour contributions, women lack ownership and recognition. Even when they participate in meetings, their actual decision-making authority remains limited.

Nidhi presented comparative analysis showing that regenerative agriculture (RA) practices slightly increase women's decision-making, especially in bio-input preparation. However, this increased decision-making often added to women's workload without corresponding reductions in other tasks or improvements in support systems.

She outlined emerging barriers identified through the research including lack of ownership in farm enterprises, inadequate extension systems failing to reach women, limited market access and insufficient representation in leadership structures. Women's restricted access to training, technology and markets further constrains their ability to participate fully in value chain upgrading.

The research revealed stark patterns in how agricultural tasks are distributed and who holds decision-making authority. Women dominate labour-intensive activities like sowing, transplanting, weeding, harvesting and post-harvest processing. These tasks are physically demanding, time-consuming and often undervalued. Men dominate decision-making tasks: selecting crops, purchasing inputs, determining land use and managing finances.

A particularly revealing finding emerged regarding crop choice. Women exhibit more control over millets and similar crops than over household staples like paddy, which are dominated by male decision-making. This suggests that women's agency is channelled toward lower-status crops while men retain control of high-status, commercially significant crops. This hierarchy reflects and perpetuates broader gender inequalities.



A critical paradox emerged from the research suggesting that regenerative agriculture practices, by design more labour-intensive and knowledge-driven, could theoretically increase women's participation and decision-making. Yet in practice, regenerative transitions have increased women's work without proportionally increasing their authority or benefit-sharing.

Bio-input preparation, composting, and biodiversity management, which are all central to regenerative systems, require substantial labour. Women's participation in these tasks increased. However, increased participation did not translate into increased control over decisions regarding which inputs to use, how to implement practices or how income from improved productivity would be distributed.

Women's low participation in FPO leadership reflects multiple reinforcing barriers. Government guidelines reserve one board position for women and offer modest financial incentives, yet representation without capacity-building remains insufficient. Several systemic obstacles emerged from the research:

- Mobility challenges: Women's restricted mobility, arising from household responsibilities and cultural norms, limits their attendance at meetings and training. Attending an FPO meeting often requires childcare arrangements and spousal permission—administrative burdens men rarely face.
- Digital literacy gaps: Women's lower access to formal education and digital technology limits their ability to participate in increasingly digitalised FPO operations. Registration systems, mobile apps, and digital record-keeping exclude women with limited literacy.



- Dependence on male family members: Women's decision-making authority within households often depends on male relatives. Attending meetings and making independent decisions in FPO forums challenges this dependence, creating household conflict.
- Absence of gender-responsive capacity building: Even when women hold FPO positions, training and support remain generic, failing to address women's specific constraints. Capacity building programmes do not account for women's time poverty, competing household responsibilities or gendered information gaps.

The study revealed that regenerative agriculture practices, while ecologically beneficial, can increase women's workload without simultaneous investment in labour-saving technologies or support systems. Bio-input preparation, composting and other labour-intensive practices fall disproportionately on women.

However, an important mitigating factor was observed: Bio Resource Centres (BRCs)—facilities that prepare inputs collectively—significantly reduce workload by making inputs accessible without requiring individual farm-level preparation. Field observations also suggested that improved soil health under regenerative agriculture reduces drudgery in physically demanding tasks such as transplantation, where better soil structure eases labour.



The paradox here is clear that regenerative agriculture can reduce drudgery if coupled with labour-saving infrastructure (BRCs, improved soil), yet without such infrastructure, it can increase women's work burden. This underscores that technology and infrastructure choices directly impact gender outcomes. Participants highlighted the urgent need for gender-responsive mechanisation—tools and equipment designed for women's use, affordable, accessible and appropriate for their tasks. Custom Hiring Centres (CHCs) under the Agriculture Infrastructure Fund proliferate across Madhya Pradesh (thousands of centres), yet none are women-owned. Gender-friendly equipment remains scarce.

The research acknowledged but did not fully explore caste-based intersectional barriers. A participant working in the Northeast described how women's constraints are compounded by geography and cultural norms. In some regions, women's working hours are restricted by cultural expectations, limiting their ability to participate in training or FPO meetings held outside 'appropriate' times. Agroforestry—a regenerative practice—poses unique challenges in mountainous regions where mobility is already constrained.

Another participant emphasised value-addition activities undertaken predominantly by women—processing, preservation, direct marketing—remain invisible in agricultural statistics. Official data focuses on production, not processing; on landholdings, not labour contributions. This statistical invisibility perpetuates policy blindness to women's true economic roles.

A speaker highlighted the critical distinction between operational holdings and actual ownership: most available datasets record who operates land, not who owns it. Women often operate family land without ownership rights, giving them none of the security, credit access or decision-making authority that ownership provides. Disentangling these distinctions requires careful evidence-building and policy attention often absent.



The working group discussion shifted toward solutions, moving beyond problem documentation to actionable frameworks for change. Participants proposed a multi-layered approach addressing household dynamics, institutional structures, technology access and policy reform.

Participants recommended starting with gender dialogues at household and community levels, facilitated by civil society organisations. These dialogues aim to shift household role distributions and increase men's recognition of women's contributions. Critical to success is follow-up monitoring to track behavioural changes, as dialogue alone is insufficient without accountability.

Context-specific strategies emerged as essential. Successful women-led FPOs have emerged driven by cultural norms favouring women's agency or necessity arising from male out-migration. Replicating these successes requires understanding local conditions and tailoring interventions accordingly. One-size-fits-all programmes fail.

Mobility assistance for women leaders was proposed to increase FPO participation—providing transport, childcare support or scheduling meetings at times enabling women's attendance. These practical accommodations remove barriers that men rarely face.

The iCARE Framework for gender mainstreaming in FPOs was introduced to help build Intent, Capacity, Results-oriented indicators, and Evolution for scale. Participants emphasised that representation alone does not guarantee agency; structures must deliberately shift decision-making power and benefit-sharing mechanisms.



Participants stressed reinterpreting existing policies rather than assuming women are excluded. Many exclusions arise from misinterpretation or implementation gaps rather than legal barriers. The 10,000-FPO initiative, for instance, could allocate focused funding for gender inclusiveness without new legislation.

A market-linked perspective also emerged during the discussion, stating that carbon credit systems such as Gold Standard reward projects demonstrating women's participation, directly linking gender mainstreaming to higher-value carbon credits. Participants agreed this incentive structure is powerful but emphasised that carbon-related income must flow directly to women, not disappear through male-controlled household budgets.

Credit access and resource ownership emerged as major challenges. Social-collateral-based financial models, similar to microfinance structures, were suggested to bypass land-ownership barriers. Blended finance approaches combining grants, concessional capital and commercial finance could support women's access to productive resources. Schemes like the Credit Guarantee Trustee scheme for Micro and Small Enterprises (CGTMSE) could be adapted to support women farmers' access to credit without land collateral.

Participants integrated the decent work agenda into gender mainstreaming: ensuring childcare access, provision of personal protective equipment (PPE), and social protection for women engaged in agriculture. Women's disempowerment in meetings must be countered with structural safeguards—reserved speaking time, women facilitators, group decision-making processes that amplify women's voices.

Participants recommended assessing outcomes beyond productivity including food quality, health impacts, soil and water improvement, and ecological benefits. Evidence comparing women-led FPO performance with mixed FPOs, particularly regarding sustainability metrics, could support policy advocacy. If women-led models outperform on ecological outcomes, this becomes a powerful argument for gender-intentional policy design.

Several research and knowledge gaps emerged requiring attention in the next phase. These include caste-based intersectional analysis as the current study focuses on gender but does not adequately disaggregate by caste. Dalit women, particularly, face compounded barriers requiring specific analysis and tailored interventions. Moreover, the first tranche of research covered production and parts of processing. Future phases must expand into processing and market stages, examining how women's roles and constraints differ as agricultural products move through value chains. Lastly, systematic mapping of state-level policies affecting women in agriculture, particularly mechanisation programmes and women-focused schemes, is required to identify reinterpretation opportunities and reform priorities.

Key Highlights

- Women Constitute Nearly Half the Agricultural Workforce Yet Remain Marginalised: Two out of three rural women engage in agriculture; nearly 50 per cent work unpaid. Women's access to land, credit and technology could increase agricultural output by 20–30 per cent, with most income reinvested in family welfare.
- Labour-Intensive Tasks Are Women's Domain: Women dominate physically demanding agricultural tasks (sowing, transplanting, harvesting); men control decisions (crop selection, input purchase, resource allocation). This division perpetuates women's invisibility despite their essential contributions.
- Institutional Representation Without Authority Is Tokenism: Only 24 per cent of FPO members are women. Government guidelines reserve board positions and offer incentives, yet representation without corresponding shifts in decision-making power and benefit-sharing perpetuates marginalisation.
- Regenerative Agriculture Increases Women's Workload Without Proportional Authority Gains: Labour-intensive regenerative practices (bio-input preparation, composting) fall disproportionately on women. Without household dialogue, decision-making reform and labour-saving infrastructure (BRCs), regenerative transitions can deepen women's burden whilst maintaining subordination.
- Existing Policies Contain Untapped Potential for Gender Integration: Many exclusions arise from misinterpretation or implementation gaps rather than legal barriers. Reinterpreting schemes like the 10,000-FPO initiative and mechanisms like CGTMSE to prioritise women requires no new legislation, only deliberate implementation choices.

Working Towards Incentives for Regenerative Farmers: Appreciating Multiple Socio-Environmental Benefits & Advocating for Carbon+ Incentives

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NARVOS NATIONAL ALLIANCE FOR REGENERATIVE VEG OIL SECTOR

Moderated by:

Aditya Petwal, Assistant Director, Centre for Responsible Business (CRB)



Aditya Petwal welcomed participants and established the session's purpose, which was discussing Payment for Ecosystem Services (PES), carbon markets and nature-based solutions as mechanisms to incentivise regenerative agriculture. Participants were invited to introduce their organisations and current work, framing the discussion within their respective expertise areas.

Aditya then presented the carbon feasibility study, sharing key findings from the first working group meeting. He introduced the project, "Promotion of Regenerative Agriculture Practices for a Food Secure and Climate Resilient Future in the EU-India Partnership" and noted that it is being implemented by Solidaridad (lead partner), CRB and CARD in 12 districts of Madhya Pradesh, benefiting 35,000 farmers, including 10,000 women farmers. He explained that the project's core objectives are to strengthen national and local collaboration in adopting regenerative practices within vegetable oil supply chains, promoting soil health, biodiversity, and ecosystem services.

There was also a discussion on The National Alliance for Regenerative Vegetable Oil Sector (NARVOS) and how it reflects the efforts being made under the EU–India Partnership on "Promotion of Regenerative Agricultural Practices for a Food Secure and Climate Resilient Future." NARVOS is a voluntary, inclusive, and multi-stakeholder platform committed to accelerating the adoption of regenerative agriculture across.

The experts were divided in two groups based on their expertise: PES and Carbon Market

The PES group discussed:

- Identifying Feasible Incentive Pathways for Regenerative Agriculture Farmers
- Defining Priority Ecosystem Services and Verification Mechanisms
- Clarifying Institutional Roles and Governance Structures
- Having a Roadmap for Establishing the Proposed Incentive Pathway

The carbon group discussed:

- Assessing Systemic Feasibility for Mainstreaming Agricultural Carbon
- Identifying Practical and Low-Cost Measurement, Reporting and Verification (MRV) & Aggregation Models
- Exploring Hybrid Market and Finance Models for Price Stability

Key Discussion Insights on Carbon-Based Incentive Systems



Participants engaged in an in-depth discussion on the design and feasibility of carbon-based incentive systems for regenerative agriculture. A strong consensus emerged around the need to move away from individual farm-level approaches toward cluster-based models, where Panchayats, FPOs, or farmer groups serve as the unit of implementation. Such aggregation was seen as critical for reducing MRV and transaction costs, while also enabling group-level incentives such as shared infrastructure (e.g., cold storage, tractors, or farm implements) instead of fragmented and low-value cash payments.

Participants also highlighted the absence of a unified regenerative agriculture or natural farming standard in India as a major barrier to scaling carbon and ecosystem service markets. There was agreement on the need for benchmarking and standardisation, potentially through BIS or other government-recognised guidelines, to ensure credibility, comparability, and wider market acceptance.

The discussion also emphasised the importance of convergence with existing government schemes, particularly those of the Agriculture and Horticulture Departments. Currently, carbon project developers often bear costs related to irrigation and farm inputs, which reduces farmer benefits and increases the developer's share of revenues. Aligning carbon projects with government schemes was seen as a way to lower overall project costs and improve benefit-sharing outcomes for farmers.

Participants strongly noted that insetting presents a viable and often preferable alternative to offsetting, especially for crops such as cocoa, oilseeds, and cotton. Many large companies with Scope 3 emission targets already rely on internal carbon pricing mechanisms linked to profitability or sustainability funds. Emission reductions achieved within their own supply chains can allow companies to reward farmers through premiums or incentives while avoiding the volatility associated with external carbon markets.



Building on this, a policy concept akin to Renewable Purchase Obligations was discussed, whereby a portion of corporate net-zero or Scope 3 requirements could be met through agriculture-based insetting. While a fixed price floor was considered difficult to implement due to the diversity of private-sector actors, premium-based pricing models were viewed as more feasible for ensuring farmer incentives and steady domestic demand.

The role of consumer awareness was also highlighted as a key driver for strengthening market signals. Increased demand for sustainably and regeneratively produced products can encourage companies to source from regenerative landscapes, pay sustainability premiums, and invest directly in farmer incentive mechanisms.Participants further discussed the need to improve linkages between India's Carbon Credit Trading Scheme (CCTS) and voluntary carbon markets. Better alignment between these systems could enhance demand, enable improved price discovery, and create more competitive pricing for agricultural carbon credits.

Given the long duration of agricultural carbon projects, reducing MRV costs was identified as essential. Participants stressed the importance of decentralised technologies such as remote sensing, farmer-facing digital applications, and soil sampling, along with transparent data collection and reporting systems. Capacity building of local institutions and FPOs was seen as critical to ensuring integrity, transparency, and trust in regenerative agriculture credits.



Finally, the discussion underscored the importance of identifying like-minded private partners early in the project lifecycle. Long-term commitments from responsible buyers can help ensure price stability, reduce market risk, and improve predictability of benefits for farmers.

Perspectives from Experts and Organisations

Dr. Nour Boli, Policy Lead at The Nature Conservancy India (TNC), outlined TNC's policy strategy across five thematic pillars, namely regenerative agriculture, freshwater conservation, renewable energy, priority landscapes and natural climate solutions with climate adaptation. She noted current focus on the Northeast region for natural climate solutions and climate adaptation work.

Atul Mohan presented WA Sustainability Services' approach of zero-input natural farming solutions designed to support carbon sequestration and carbon credit generation. This reflects the emerging intersection between regenerative practice and carbon finance.

Paula Puram, Director of Restore Solution, described her consulting firm's work supporting carbon project developers and farmers. Services include project design documentation, MRV system development, emission estimation and volumetric water accounting related to ecosystem services. This technical foundation is essential for credible carbon project implementation.



Ashok Biswal from HCL Foundations leads the organisation's River Basin portfolio within its environment and CSR work, indicating corporate engagement with ecosystem service protection and restoration.

Singh from Fair Climate Fund India explained the organisation's focus on integrating carbon finance into development initiatives for smallholders and community-based organisations. Fair Climate Fund currently operates eight registered projects across India, with active work in Chhattisgarh and Odisha.

Ravi Gupta, Senior Carbon Manager at The Nature Conservancy India, outlined TNC's carbon work across approximately 80 countries. TNC's approach emphasises three areas: demonstrating carbon projects through feasibility studies, implementing projects with aligned partners and scaling or transitioning projects for long-term sustainability. TNC is also engaged in climate finance and climate policy initiatives.

Key Highlights

- Payment for Ecosystem Services and carbon markets emerge as critical mechanisms to incentivise regenerative agriculture adoption amongst smallholders and community-based organisations.
- Multiple organisations are actively implementing carbon projects in Indian regions, with eight registered Fair Climate Fund projects and TNC's multi-country experience demonstrating growing market maturity.
- MRV systems and ecosystem service accounting (particularly water-related) are essential technical foundations for project credibility and farmer benefit realisation
- Collaborative engagement across policy, implementation, consulting and finance sectors is required to develop coherent frameworks linking regenerative practice to carbon and ecosystem service incentives.

Inclusive Growth

- Extreme Heat from the Lens of Labour Resilience & Industrial Productivity: Solutions & Challenges

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Extreme Heat from the Lens of Labour Resilience & Industrial Productivity: Solutions & Challenges

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Moderated by:

Sudipto Dey, Editor, Outlook Business

Speakers:

- Aarti Nain, Senior Advisor for Urban Cooling & Heating Risk, UNEP
- Dr Tina Kuriakose, Consultant, International Justice Mission (IJM)
- Dr. Anshu Sharma, Co-Founder, SEEDS
- Jhumki Dutta, Programme Lead, Partners In Change
- Sauvik Dey, Technical Advisor, Climate & Disaster Risk Finance, GIZ
- Shri Thiru K. Veera Raghav Rao, Labor Secretary, Tamil Nadu, Govt. of Tamil Nadu

Purushottam Kumar, Senior Programme Manager, CRB, opened the session by underscoring the urgency of the extreme heat crisis. He noted that 2024 was the hottest year ever recorded globally, and according to the World Meteorological Organization, extreme heat events are now longer, more intense, and occurring earlier in every season.

Citing data from the International Labour Organization (ILO), Purushtham highlighted that globally over 2.4 billion workers across transport, logistics, construction, and other sectors work under unsafe extreme heat conditions. He stated that research from the World Health Organization (WHO) and ILO showed that with every one degree Celsius increase in temperature above comfortable working temperatures, worker productivity decreases by roughly 2–4%, which could translate by 2030 to the loss of 80 million full-time jobs equivalent. Purushtham stressed that South Asia will especially bear the brunt of these impacts, positioning India at particular risk.



Mr. Thiru K. Veera Raghav Rao, Labor Secretary, Government of Tamil Nadu, delivered the keynote address, grounding the discussion in concrete state-level data and challenges. Tamil Nadu, he noted, is home to over 50,000 factories employing 30 lakh workers, with more than 20 labour boards registering over 50 lakh workers. The state also has over 30 lakh construction workers, making it a critical context for understanding extreme heat's labour impacts.

Mr. Rao emphasised that extreme heat is not a one-off event but a persistent, intensifying risk with longer duration and greater intensity. He outlined the challenges labour faces on more than one level: intensity and variety of work, inadequate shelter, insufficient break hours, and wage insecurity. However, he presented practical solutions grounded in Tamil Nadu's experience: mandatory field studies to understand on-ground realities; organisational systems ensuring proper shelter, adequate rest periods, and fair wages; health screening and advisory services for workers; and insurance mechanisms to cover heat-related losses and wage protection during extreme heat events.

Mr. Rao stressed that construction sites vary considerably, some have proper sheds and water facilities while others do not, requiring differentiated approaches. He called for deliberate policy action informed by ground realities and underlined that this is a critical moment for India to act at scale.

Following this, Sudipto Dey, Editor at Outlook Business, set the context for the panel discussion to deliberate upon solutions and challenges around extreme heat, especially from the perspective of labour and industrial productivity. He presented the macroeconomic case for action and cited Reserve Bank of India (RBI) data showing that 2.5 – 4.5% of annual GDP is at risk from climate change, with a loss of $4.2 billion recorded in 2022 alone from climate-related impacts. He further noted that construction and related sectors account for 5.4% of India's GDP, with 167 billion labour hours affected by climate change.

Sudipto cautioned that air conditioning, while a tempting short-term fix, is not the solution: cooling emissions are set to double by 2050, exacerbating climate change rather than solving it. He underlined the need for climate risk assessments to be mainstreamed into business strategy and policy, ensuring that climate adaptation does not undermine economic competitiveness but rather strengthens it.



Aarti Nain, Senior Advisor for Urban Cooling & Heating Risk, UNEP, presented the India Cooling Program's approach, which prioritises passive and nature-based cooling solutions tailored to India's diverse climate zones. She emphasised that retrofitting and design interventions—such as cool roofs, reflective surfaces, improved shading, and natural ventilation—can reduce indoor temperatures by 3–4°C without high energy consumption.

The program focuses on vulnerable, low-income communities, implementing projects such as green schools, retrofitted low-income housing, and industrial building upgrades. Aarti stressed that evidence-based policy, tailored to local climate contexts, is essential for effective adaptation. She also highlighted the critical role of policy support and innovative financing mechanisms in scaling these solutions from pilot projects to state and national levels. Furthermore, Aarti also addressed practical solutions for micro, small, and medium enterprises (MSMEs), stressing that retrofitting for heat resilience—through careful material selection, shading, ventilation, and cool roofs—is feasible and cost-effective, with modest incremental costs that are typically one-time investments. However, awareness and incentives are lacking. She called for subsidies for MSME retrofitting, and cluster-based solutions that allow businesses to share costs and knowledge.



Jhumki Dutta, Programme Lead, Partners In Change, highlighted a critical gap: current business regulations and reporting frameworks focus overwhelmingly on mitigation rather than adaptation. She noted that while the Business Responsibility and Sustainability Report (BRSR) framework has evolved, climate resilience metrics and worker protection remain poorly integrated.

Jhumki pointed out that adaptation initiatives, when they exist, often target white-collar employees rather than workers, particularly informal workers. She cited the example of a sanitisation worker whose company provided gloves for hand protection but offered no protection against extreme heat. She called for national-level adaptation policies and stronger integration of human rights and worker welfare into both business reporting standards and government regulations.

Dr. Tina Kuriakose, Consultant, International Justice Mission (IJM), brought a human rights lens to the discussion, focusing on informal and vulnerable workers in construction, brick kilns, and manufacturing sectors. She highlighted that these workers face long working hours, often 16–17 hours, lack of paid leave, and the constant fear of wage loss or replacement if they slow down—all of which force them to continue working even when experiencing heat stress.



Dr. Kuriakose presented an on-ground case: a child worker in a manufacturing setting fell asleep at a cutting machine due to heat stress and lost his hand, yet the employer did not classify this as a work accident. Such cases are endemic but invisible in labour statistics. She called for integrated protection frameworks, comprehensive vulnerability mapping by sector and geography, and government-led regulatory action to protect informal workers. She stressed that while civil society can pilot solutions, only the government can enforce compliance and scale protective measures.

Dr. Anshu Sharma, Co-Founder, SEEDS, spoke to the use of artificial intelligence and hyperlocal data for heat risk assessment and mapping. He emphasised that heat is an "invisible" disaster—unlike cyclones or floods, its impacts are not immediately apparent and vary dramatically across neighborhoods, buildings, and even rooms within a building. This invisibility leads to underestimation and inaction.



Dr. Anshu highlighted that the India Meteorological Department (IMD) recently launched a heat stress forecast index, a welcome step in making heat visible. He noted that maximum heat-related deaths often occur during night-time heat waves, not during the hottest daytime hours—a critical insight for designing effective responses. He called for digital public infrastructure that uses satellite imagery, AI, and hyperlocal data to identify vulnerable areas and populations, enabling targeted interventions at the building and community level.

Sauvik Dey, Technical Advisor, Climate & Disaster Risk Finance, GIZ, stressed that heat is not yet widely recognised as an occupational health issue—neither by workers nor by businesses. This lack of awareness is a major barrier to action. He emphasised that partnerships between government, business, and civil society are essential; the goal is not to guide these actors but to create platforms where they collaborate, exchange ideas, and propose coordinated solutions.

Sauvik noted that informal workers in sanitation, transport, and other value chain sectors are particularly vulnerable, with productivity losses often compensated through informal overtime arrangements that keep wages depressed and exploitation hidden. He called for integrating heat risk assessment into business value chain policies, financing mechanisms, and occupational health standards.

Key Highlights

- Vulnerable Workers Invisible in Policy: Informal sector workers (construction, brick kilns, sanitation, agriculture) bear disproportionate heat risk but remain largely invisible in policy responses and business strategies. Women, children, elderly, and disabled persons face compounded vulnerability.
- Data and Technology as Enablers: AI, satellite imagery, and hyperlocal heat mapping can make heat impacts visible and actionable, enabling targeted interventions at the building and community level. Digital public infrastructure is essential for scaling solutions.
- Practical, Affordable Solutions Exist: Nature-based cooling, retrofitting, work schedule adjustments, shading, hydration, and health screening are proven, cost-effective measures. The barrier is not technology but awareness, incentives, and policy support.
- Policy Must Be Sector-Specific and Ground-Informed: Field studies and on-ground data must inform policy design. Solutions must be tailored to different sectors (construction, agriculture, textiles, manufacturing, brick kilns) and local climate contexts.
- Collaboration and Collective Action: Effective adaptation requires coordinated action among government (regulation, financing, data infrastructure), business (value chain integration, transparency, worker protection), and civil society (vulnerability assessment, pilot solutions, advocacy).

Ethical Decarbonisation, Circularity & Social Wellbeing in India's Built Environment: Innovations, Learnings & The Way Forward

Co-host **Supported by**

Moderated by:

Nandini Sharma, Director, Centre for Responsible Business (CRB)

Panellists:

- Pratisha Laskar, Vice President – Design, DLF
- Sunita Purushottam, Managing Director, Global Buildings Performance Network
- Elaine Mitchel-Hill, International Lead, Design for Freedom
- Vasudevan Suresh, Chairman Policy & Advocacy Committee, Indian Green Building Council – CII
- Bhaskar Venugopal, Consultant, International Justice Mission
- Ashwini Kumar, Regional Lead (North) and EHS – Asset Management, Embassy REIT

India's construction and built environment sector is responsible for nearly 40 per cent of greenhouse gas emissions. Simultaneously, rapid urbanisation is accelerating; 70 per cent of India remains yet to be built, with the construction market expected to reach $2.1 trillion by 2030. Nandini Sharma used this context to invite the panellist to offer a macro perspective, keeping in mind that the convergence of urgency and scale presents both a climate crisis and an unprecedented opportunity to embed ethical decarbonisation, circularity and social wellbeing into the nation's built environment from the outset.

Pratisha Laskar, Vice President – Design, DLF, described how social wellbeing is integrated throughout design and operations at DLF. Life safety exceeds code requirements with comprehensive fire exits and protection systems. Air quality is upgraded through MERV 14 filters and increased air changes per hour, which is particularly significant given India's urban air pollution crisis. She noted that for them at DLF design prioritises social interaction through terraces, outdoor spaces and parks, recognising that buildings shape community wellbeing.



Circularity is embedded through stringent waste management, segregation and recycling programmes. Most DLF buildings achieve platinum LEED certification, yet significant challenges persist: retrofitting older buildings to meet evolving codes, managing logistics in operational buildings and accommodating renewable energy infrastructure within spatial and technological constraints.

Elaine Mitchel-Hill, International Lead, Design for Freedom, presented an international perspective, noting that businesses are increasingly engaging in ethical decarbonisation, particularly in procurement and material specification. Cross-sector collaboration is growing—the Institute of Civil Engineering, Carbon Neutral Cities Alliance and similar platforms are addressing materials and social issues simultaneously. She cited the Serendipity Arts Foundation's Delhi project, which tracks construction materials to ensure ethical sourcing. The principle is that ethical intent must be embedded at the design stage, before procurement decisions lock in supply chain impacts. Human rights due diligence must extend through entire supply chains, not terminate at project gates.



Vasudevan Suresh, Chairman Policy & Advocacy Committee, Indian Green Building Council – CII, outlined how policy is evolving to integrate sustainability at all scales. The National Building Code and Energy Conservation Sustainable Building Code now embed sustainability, water, energy and waste management requirements. The policy approach is moving from building-level green ratings toward neighbourhood, campus and city-level assessments—recognising that buildings exist within broader urban systems.

He noted that states increasingly offer incentives—Floor Space Index (FSI) benefits, tariff reductions and tax incentives—to encourage green building adoption. Yet a critical challenge has emerged that net zero carbon targets require addressing embodied energy in materials and supply chain emissions (Scope 3), not merely operational energy. Performance-based ratings and third-party assessments are increasingly essential to prevent greenwashing and ensure genuine environmental performance.



Sunita Purushottam, Managing Director, Global Buildings Performance Network, framed the imperative clearly, stating that a healthy building brings healthy people. She outlined four opportunity areas: low-carbon materials and innovative solutions, the retrofit market, healthy climate-resilient homes, and clean construction. She has developed science-based guidelines for healthy affordable homes, focusing on ventilation, thermal comfort and resilience for low-income segments—ensuring that health-positive design is accessible to vulnerable populations, not merely affluent markets. Sunita warned of "sleeping carbon emissions" in aspirational mid-income housing—embodied carbon in construction materials and supply chains that will persist for decades. She called for moving beyond compliance to competitive, innovative strategies where health and climate resilience become market differentiators.

Bhaskar Venugopal, Consultant, International Justice Mission, brought critical focus to social realities often absent from built environment discourse. Eighty-six per cent of India's workforce is unorganised; most MSMEs are unregistered. Dehumanisation and exploitative circularity persist in labour recruitment, working conditions and payment practices within construction supply chains.

He called for holistic standards addressing environmental, social and governance pillars simultaneously. He noted that collaboration between government, civil society and business is essential and underscored that Corporate Social Responsibility funds can be leveraged for interventions addressing the systemic vulnerabilities that perpetuate exploitation. Bhaskar pointed out that social indicators and audits must extend beyond immediate project sites and into upstream supply chains where most vulnerability concentrates. The unorganised labour force—invisible in most ESG reporting—constitutes the foundation of India's built environment.



Ashwini Kumar, Regional Lead (North) and EHS – Asset Management, Embassy REIT, underlined a significant shift in investor orientation. Investors are moving from green labels and certifications toward green performance—operational data, third-party verification and measurable outcomes. ESG is increasingly recognised not as a compliance burden but as financial resilience and risk mitigation. He noted that greenwashing is tackled through scientific, data-backed target setting and rigorous third-party audits. Investors now recognise that health, safety and wellbeing of occupants drive productivity and operational efficiency. Social aspects are no longer peripheral to ESG; they are central to business resilience and license to operate.



Ashwini explained that the shift reflects investor recognition that buildings with poor indoor air quality, inadequate thermal comfort or unsafe working conditions generate operational challenges—sick leave, reduced productivity, etc. —that undermine returns. Health and wellbeing are drivers of financial performance, not competing priorities.

The speakers agreed that holistic integration of social, environmental and governance pillars is essential and that decarbonisation without social wellbeing creates efficient prisons. Circularity without ethical sourcing perpetuates exploitation. Social investment without environmental stability undermines long-term resilience. There was also consensus that cross-sector partnerships and policy coherence are critical enablers and that scaling requires institutional coordination and policy alignment. They also suggested embedding human rights due diligence as a standard practice, not an optional add-on.



It was highlighted that the built environment sector faces challenges requiring systemic solutions. Net zero targets demand addressing Scope 3 emissions—supply chain, materials and embodied carbon—alongside operational emissions. This is substantially harder than energy efficiency improvements, requiring supply chain transformation, material innovation and ethical sourcing frameworks embedded from the design stage. Simultaneously, most of India's built environment already exists. Retrofitting older buildings to meet new standards—energy efficiency, air quality, seismic safety—is logistically difficult, economically challenging and often impossible in operational buildings. Yet retrofitting represents the largest market opportunity for energy and health improvements, requiring policy and financing mechanisms to overcome adoption barriers.

The speakers also had a consensus about emerging infrastructure challenges compounding these difficulties. Data centres and computing infrastructure are becoming increasingly energy and water intensive; while individual facility efficiency is improving, aggregate computing demand continues rising exponentially, potentially overwhelming efficiency gains achieved through facility-level improvements. Policy attention to this expanding demand is nascent. Temporary structures for large gatherings and events generate significant waste with minimal regulatory oversight, requiring better policy frameworks and waste management systems. Beyond buildings themselves, extending green building principles to broader infrastructure—roads, airports, water systems—requires policy coherence across multiple ministries and fragmented governance structures, a coordination challenge that remains largely unaddressed.

Key Highlights

- Social Wellbeing, Environmental Performance and Ethical Sourcing Are Interconnected: Buildings that prioritise air quality, thermal comfort, safety and community spaces while sourcing materials unethically are incomplete. Conversely, net zero buildings built through exploitative labour represent failure of holistic purpose.
- Policy Is Evolving to Integrate Sustainability at Multiple Scales: National Building Code, Energy Conservation codes and state-level incentives increasingly embed environmental requirements. However, policy must equally integrate social standards, human rights due diligence and labour protections.
- Investors Are Shifting from Certification to Performance: Green labels are necessary but insufficient. Investors now demand operational data, third-party verification and measurable outcomes. This shift toward accountability over jargon is accelerating market discipline.
- Retrofit Market Represents Largest Opportunity for Energy and Health Improvements: While new construction is important, retrofitting existing buildings offers immediate impact with less technical complexity than achieving net zero in new construction.

Scaling and Global Positioning of Regenerative Vegetable Oil Supply Chain from India

Co-hosts

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CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact

NARVOS NATIONAL ALLIANCE FOR REGENERATIVE VEG OIL SECTOR

Moderated by:

Prof. Dr. Manfred Max Bergman, Chair of Social Research and Methodology, Director of the Social Transitions Research Group, University of Basel

Speakers:

- Anubhav Srivastava, Asia Lead & Director South Asia & Sub-Saharan Africa, AAK
- Sandeep Bhura, Director Indian Oilseeds & Produce Export Promotion Council
- Richard Howitt, Former Member of European Parliament, Corporate Responsibility and Sustainability
- Dr. Ramesh Mittal, Former Senior Director, CCS-NIAM; Senior Advisor, CRB



Prof. Dr. Manfred Max Bergman opened the session by situating India's vegetable oil sector within global strategic importance. India accounts for 60 per cent of global vegetable oil production, making it a critical determinant of global food security and commodity price stability. The sector is vulnerable to price shocks that cascade through global supply chains and affect vulnerable populations worldwide.

He outlined five critical intervention points for sector transformation: soil health replenishment through regenerative practices, farm and agro-biodiversity initiatives, support for multitasking smallholder farmers, water conservation practices appropriate to India's regional water stress, and institutional support enabling farmer participation in higher-value supply chains. These intervention points form the architecture for the NARVOS initiative positioning India's vegetable oil sector as a global leader in regenerative production.



Sandeep Bhura, Indian Oilseeds & Produce Export Promotion Council, shared data on two critical oilseed crops illustrating sector vulnerabilities and opportunities.

Sesame Seeds: Sandeep Bhura noted that India is the world's largest sesame producer, yet production has declined significantly over the past decade. Fifteen years ago, production reached 800,000 tonnes annually. Six years ago, this had fallen to 600,000 tonnes. Current production stands at approximately 250,000 tonnes—a steep decline reflecting challenges in cultivation, farmer retention and market dynamics. Paradoxically, while domestic production has collapsed, India imports approximately 200,000 tonnes of sesame seeds annually, creating a puzzling supply chain inversion. India, Brazil and Pakistan are global sesame exporters; Belgium and Germany are primary processors converting sesame seeds to oil. This structure illustrates how India's production capacity and farmer expertise are not fully leveraged domestically, with value-

addition occurring primarily in European markets rather than within India.



Groundnuts: Mr. Sandeep Bhura underscored that Current production reaches approximately 10 billion tonnes, yet only 1 million tonnes are converted to groundnut oil domestically. The vast majority of groundnuts are consumed as food rather than processed for oil, indicating either insufficient domestic crushing infrastructure, inadequate market signals favouring oil production or farmer preference for direct food sales. This underutilisation of groundnut's oil production potential represents a significant opportunity for supply chain value-addition.

Dr. Ramesh Mittal, former Senior Director at CCS-NIAM, highlighted several strategic pathways for sector growth. Exports are increasing, particularly for premium oils recognised for health benefits. The Prime Minister's commitment to reducing edible oil import dependency by 10 per cent signals government priority for sector strengthening.

Dr. Mittal emphasised that meaningful sector transformation requires farmer-centric approaches. Natural farming and zero-based budget farming practices are gaining adoption, with organisational support enabling farmer transition. Yet profitability is central because if regenerative and organic oil farming practices do not deliver farmer income comparable to conventional approaches, adoption will stall. He noted that India's SME sector, while unorganised, is entering a critical phase. The sector's high operational costs present challenges, yet government support is expanding. Overcoming cost barriers and enabling small enterprises to participate in regenerative supply chains is essential for inclusive sector growth.



Anubhav Srivastava, Asia Lead & Director South Asia & Sub-Saharan Africa, AAK, emphasised that India's vegetable oil sector has become a global sustainability anchor. He stated that India possesses the complete portfolio of oilseed crops necessary for global vegetable oil supply chains, with the exception of palm oil. This portfolio diversity is a competitive advantage, particularly as global markets increasingly privilege diversified, deforestation-free supply chains.

He highlighted the significance of modern deforestation data and monitoring. Deforestation tracking methodologies have evolved dramatically: data available today reveals supply chain risks and environmental impacts invisible 70–80 years ago. This transparency creates both risk (supply chains that were previously opaque are now scrutinised) and opportunity (producers committed to environmental stewardship can demonstrate differentiation through credible data).

Richard Howitt, former Member of European Parliament, articulated European market perspectives, stating that consumers there increasingly value labels and certifications attesting to sustainable production. Over the long term, transparent labelling of sustainably produced Indian oils will become increasingly important for European market access and consumer preference. However, he noted a critical distinction: NARVOS (National Alliance for the Regenerative Vegetable Oil Sector) is not primarily driven by European buyer demand but by domestic Indian stakeholder commitment to environmental and social improvement. This indigenous motivation for regenerative practice—driven by soil health, biodiversity, farmer welfare and water conservation—is more durable and authentic than supply chain demands imposed externally.



Key Highlights

- India's Vegetable Oil Sector Accounts for 60 Per Cent of Global Production, Yet Faces Structural Vulnerabilities: Sesame production has collapsed from 800,000 to 250,000 tonnes in fifteen years. Paradoxically, India imports 200,000 tonnes of sesame annually whilst exporting limited quantities of oil. Groundnut production reaches 10 billion tonnes, yet only 1 million tonnes are processed domestically for oil, indicating underutilised value-addition potential.
- India Possesses Complete Oilseed Portfolio Except Palm Oil: This diversity is a strategic advantage, particularly as global supply chains seek to diversify away from deforestation-linked palm oil. India can supply diversified, traceable, deforestation-free vegetable oils to global markets.
- Regenerative Practice Adoption Requires Farmer Profitability: Natural farming and zero-based budget farming approaches are gaining adoption, yet farmer income parity with conventional methods is essential. If regenerative practices do not deliver comparable or superior profitability, adoption will remain marginal.
- SME Sector Transformation Is Critical: India's vegetable oil SME sector is unorganised, operates with high costs and lacks economies of scale. Government support is expanding, yet enabling cost-effective participation in regenerative supply chains remains a central challenge.
- NARVOS Is Domestically Driven: The regenerative vegetable oil alliance is motivated by Indian stakeholder commitment to soil health, biodiversity, farmer welfare and water conservation—not by European buyer demands. This indigenous motivation creates more sustainable, durable transformation\.
- European Market Access and Labelling Are Long-Term Opportunities: Over time, transparent labelling of sustainably produced Indian oils will support European market positioning. However, this is a medium to long-term dynamic, not the primary driver of current sector transformation.

Day 3: 14 November 2025

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Value Creation by Business Through the TEEBAgriFood Framework: Towards a Biodiversity-Dependent Economy

Co-hosts

Moderator:

Dr. Alka Bhargava, Senior Policy Advisor, UNEP TEEB

Opening Remarks:

Dr. Salman Hussain, Global Coordinator – TEEB, UNEP

Special Remarks:

- Alay Barah, Executive Director, ICCo, India
- Shivani Bundela, Founder, Abrossa
- Avinash Ahlawat, Founder, The Organic Tree

Speakers:

- Dr. Debashish Sen, Director, People's Science Institute
- Sanjay Agarwal, CEO, Clover Organic Pvt. Ltd.
- Dr. Nimish Shah, Head of Regulatory Sciences, Hindustan Unilever
- Ramnath Vaidyanathan, AVP & Head – Environmental Sustainability, Godrej Industries
- Aruna Rajoria, IAS, Assam, Meghalaya Cadre



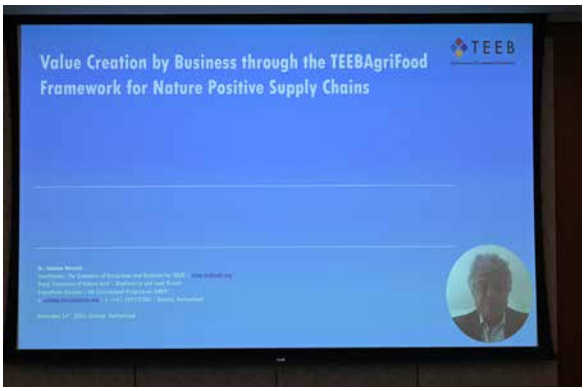
Sanjeeb Sahoo, Assistant Director, CRB, opened the session with a warm welcome to participants. His remarks emphasised the centrality of nature in shaping agricultural value chains and the urgency to shift from linear, extractive models to regenerative systems thinking. He also highlighted the importance of embedding sustainability in business core operations and the role of TEEBAgriFood in redefining business value—from nature, for nature.

Dr. Salman Hussain delivered a sharp and compelling global framing for the session via a pre-recorded message, emphasising the urgent need to rethink the way food systems are measured and governed. He noted that the traditional dependence on yield per hectare as the primary performance indicator has driven decades of decisions that discount the ecological and social foundations of agriculture. This narrow metric overlooks:

- The degradation of soil, water, and biodiversity
- The erosion of social and community resilience
- Hidden environmental and social externalities
- Long-term risks to productivity and livelihoods

Dr. Hussain positioned the TEEBAgriFood Framework within major global policy commitments, highlighting its alignment with The Kunming–Montreal Global Biodiversity Framework (Goal B), The UN Food Systems Summit, and FAO's State of Food and Agriculture report.

Across countries such as Brazil, Indonesia, and India, the framework has already informed public policies, demonstrating that valuing ecosystem services and nature's contributions leads to better agricultural and developmental choices. Focusing on India, he appreciated the work being undertaken in Assam, Uttar Pradesh, and Uttarakhand, acknowledging that each state's unique agro-ecological conditions demands differentiated strategies.



Dr. Hussain reiterated that sustainability must sit at the center of food system transformation. He underlined that imbalances across natural, human, social, and produced capital threaten long-term prosperity, leading to soil degradation, water scarcity, biodiversity loss, and weakened community resilience.

He therefore encouraged governments, businesses, and value-chain actors to:

- Assess their impacts and dependencies on all four capitals
- Incorporate these insights into strategic and investment planning
- Promote organic farming, agroforestry, and biodiversity-based enterprises
- Strengthen biodiversity-dependent economies through participatory, cross-sector partnerships

He concluded by highlighting ongoing collaborations with ICAR and IIFSR—particularly in evaluating natural and organic farming using the TEEBAgriFood lens—and reiterated UNEP's commitment to enabling grounded, evidence-based action through alliances with organisations like CRB.

Sanjeeb from CRB presented consolidated learnings from CRB's extensive engagement under the UNEP TEEB programme, drawing on field visits, multi-stakeholder consultations, training workshops, and enterprise interactions across Assam, Uttar Pradesh, and Uttarakhand. His presentation highlighted how the programme is gradually shifting stakeholders from a yield-centric mindset toward a capitals-based, systems-oriented understanding of agricultural value chains.

Furthermore, the session showcased grounded experiences from three enterprises and partner organisations representing Assam, Uttar Pradesh, and Uttarakhand. Their presentations demonstrated how the TEEBAgriFood Framework is being interpreted, applied, and adapted across diverse agro-ecological and socio-economic landscapes.

Alay Barah, Executive Director, ICCo, provided an evidence-rich account of ICCo's work in Assam and the wider Northeast, where the organisation supports livelihoods through a combination of value-chain strengthening, market development, and community mobilisation. With a portfolio aligned to multiple SDGs, ICCo currently works with 10,000+ farmers, focusing on commodities such as aquaculture products, apiculture, piggery, banana fibre, black pepper, and turmeric.



ICCo's exposure to the TEEB program began during the state-level consultation in March 2025 and deepened through the training workshop held in September 2025. Their key learnings included:

- Recognising soil health, water availability, and

biodiversity as core natural assets

- Appreciating the long-term benefits of integrating capital-based thinking into daily operations
- Understanding the value of mapping impacts and dependencies along the value chain

The training translated into concrete on-ground initiatives:

- Distribution of 50,000 saplings under an agroforestry initiative with the Assam Agroforestry Development Board
- Soil testing support for women turmeric farmers, enabling them to plan inputs with ecological sensitivity
- Training on value-chain mapping and on identifying which capitals are most critical for specific crops and enterprise models

He concluded with a key message: systemic transformation in agriculture requires partnerships, and organisations must work collaboratively to deliver nature-positive and livelihood-enhancing outcomes.

Shivani Bundela, Founder, Abrosaa, shared a compelling entrepreneurial journey rooted in the revival of India's native "super fruits". Abrosaa works across Bundelkhand—spanning UP and MP—to source and process fruits such as Ber, Jamun, Karonda, Wood Apple, and Mulberry. These fruits are nutrient-rich and climate-resilient, yet remain heavily underutilised in India.



She outlined structural challenges that currently limit the growth of these fruits:

- Lack of post-harvest infrastructure for sorting, grading, and drying
- High levels of wastage due to weak market linkages
- Absence of globally benchmarked processing machinery in India
- Low consumer awareness about the nutritional value of these fruits
- Minimal incentivisation from the public distribution system (PDS), which focuses on rice and wheat

India, despite its biodiversity advantage, lags behind countries like China and Australia where utilisation is far higher and value-added products are more diversified. With support from CRB, Abrosaa adopted the capitals approach to redesign parts of its business strategy. The framework enabled the enterprise to:

- Map and strengthen social capital by organising producer groups and training them
- Identify gaps in produced capital, especially processing technology
- Understand the ecological and market potential of biodiversity-linked fruits
- Move toward more structured, measurable outcomes

This shift helped Abrosaa better integrate farmer relationships, quality control practices, and sustainability criteria. Ms. Bundela made a strong policy recommendation: Integrate native, climate-resilient fruits into India's public distribution and nutrition program. Her rationale:

- The government is the largest buyer; what it procures shapes farmer choices
- Inclusion of fruits can shift both production behavior and nutritional outcomes
- Tree-based food systems can simultaneously promote biodiversity, soil health, and farmer incomes

Her presentation showcased the transformative potential of applying the capitals lens to neglected commodities.



Avinash Ahlawat, Founder, The Organic Tree, offered a personal yet powerful reflection on the lived realities of farming in the Himalayan foothills of Uttarakhand. After leaving a corporate career, he returned to his family farm to understand agricultural challenges first-hand—an experience that inspired the creation of The Organic Tree, which now supplies organic milk, vegetables, and millet-based products to 600+ families in Dehradun.

He shared how the enterprise produces natural pesticides and soil enhancers using cow milk, buttermilk, dung, and urine—demonstrating a deep reliance on biological cycles.

The capitals approach resonated strongly with his lived experience:

- Natural capital (especially soil) is seen as the foundation of all value
- Human and community capital drive trust, quality, and continuity
- Produced capital must be built cautiously to avoid ecological trade-offs

His perspective reinforced TEEB's core message: agriculture is a holistic system, not an isolated activity. Mr. Ahlawat underscored that, "Farming is not just about growing crops; it is about valuing what sustains us—soil, water, biodiversity, and people". He encouraged wider farmer sensitisation on the long-term benefits of soil investment, biodiversity regeneration, and capital-based decision-making.



Moderated by Dr. Alka Bhargava, Senior Policy Advisor, UNEP-TEEBAgriFood, the panel discussion illuminated both the systemic challenges and transformative opportunities for embedding nature-positive approaches in India's agricultural value chains.

Dr. Alka Bhargava framed the discussion by drawing attention to two structural concerns:

- Circularity in Agriculture: She highlighted the untapped potential of circular economy principles across agricultural value chains—such as residue reuse, regenerative practices, and localised resource loops—that can reduce waste and enhance resilience.
- Out-Migration from Hill Regions: She noted that Uttarakhand continues to face significant rural out-migration driven by poor returns from traditional farming. She invited panelists to reflect on practical interventions—policy, institutional or business-driven—that could strengthen rural economies and reduce this trend.



Dr. Nimish Shah, Head, Regulatory Sciences, Hindustan Unilever Ltd. underscored the growing contribution of small enterprises and agri-startups in driving biodiversity-positive innovations. He noted that these grassroots models often incubate ideas that large companies can later scale.

Key points included:

- Livelihoods as the Core of Sustainability: Among the pillars of sustainability, he highlighted livelihoods—fairness, equity, dignified income—as central to resilient supply chains.
- Commodity Choices Influence Landscapes: Decisions around commodities such as tea, tomatoes, and palm influence entire communities, shaping land use patterns and farmer well-being.
- Climate-Smart Feedstocks: The industry must gradually shift away from fossil-based feedstocks and explore agricultural residues and bio-based materials as alternatives.

- Multiple Income Streams for Farmers: Crop residues, organic cropping, and biodiversity services offer opportunities for farmers to diversify livelihoods.
- Need for Integrative Programmes: He emphasised that isolated initiatives cannot transform food systems—integrated programmes linking climate, biodiversity, livelihoods, and markets are essential.



Smti Aruna Rajoria, IAS, Commissioner & Secretary, Department of Agriculture, Government of Assam provided a comprehensive policy perspective from Assam:

- Promotion of Organic Zones: The state has rolled out a scheme to convert specific clusters into organic zones, acknowledging a 2–3 year soil transition period.
- Strengthening FPO Aggregation: The state is encouraging aggregation at the FPO level to increase scale, reduce costs, and improve negotiation power.
- Upgrading Certification Systems: Assam is enhancing the capacity of its certification agency to strengthen PGS systems and improve compliance with international markets.
- Balancing Profit with Ecosystem and Social Values: She stressed the need for systems that reward ecological stewardship alongside profitability.
- Value Addition and Shelf-life Enhancement: The state intends to expand downstream processing and storage capacities to improve returns for farmers.

Her interventions reinforced the alignment between Assam's policy direction and the Capitals Approach.



Dr. Debasish Sen, Director, People's Science Institute (PSI) offered a grounded perspective on Uttarakhand's unique agro-ecological context:

- Mountain-Specific Vulnerabilities: Inaccessibility, ecological fragility, and small landholdings shape local agriculture, contributing to youth migration and the feminisation of farming.
- Biodiversity Potential Across Elevation Zones: Villages span altitudes from 600–1200 meters, enabling diverse crop portfolios, if supported adequately.
- Human–Wildlife Conflict: Increasing animal incursions threaten crops and productivity, requiring integrated landscape solutions.
- Agroforestry as a Climate-Resilient Strategy: He illustrated how combining pulses and cereals with tree species improves soil fertility, weather resilience, and moisture retention.
- Need for Value Chain Strengthening: The region suffers from limited processing units, weak market access, complex certification procedures, and lack of enterprise-ready infrastructure.



Sanjay Aggarwal, CEO, Clover Organic, focused on systemic reforms required to make sustainable agriculture economically viable:

- Redirecting Financial Incentives: Subsidies and financial support should shift away from practices that degrade biodiversity. Incentives should instead reward ecological benefits such as increased soil organic carbon.
- Certification and Standards: He highlighted the limitations of the current "organic" label, calling for more credible, accessible, and farmer-friendly certification systems.
- Rewarding Ecological Gains: Farmers should not be rewarded only for yield but also for contributions to soil health, biodiversity, and cultural landscapes.

- Consumer Food Security: India's growing middle class should first be ensured access to healthy, chemical-free food before prioritising export markets.



His remarks highlighted the need for financial, institutional, and narrative shifts in the agricultural ecosystem.

Ramnath Vaidyanathan, AVP & Head, Environmental Sustainability, Godrej Industries Group, spoke about valuing sustainability in financial terms, bridging environmental action with business decision-making:

- Valuation Metrics Are Evolving: Concepts such as carbon pricing demonstrate how value can be embedded into financial systems.
- Ecosystem-Level Approaches: He urged companies to collaborate, as supply chains are interdependent and ecosystem-level interventions deliver greater impact.
- Market Signals Are Still Weak: Sustainability investments are not yet rewarded sufficiently through market premiums due to inadequate communication or recognition.
- Incentive Mechanisms: Farmers could be encouraged through tools such as lower crop insurance premiums or preferential procurement.
- Rethinking Green Premiums: He challenged the notion that sustainable products must always cost more, advocating for systemic support to mainstream affordability.



Key Takeaways

- Capitals Approach as a Common Framework: Participants agreed that the four capitals lens (natural, human, social, produced) provides a practical and coherent framework to understand value creation, identify risks, and guide more informed decision-making across agricultural value chains.

- Agroforestry and Organic Practices Show Strong Potential: Across discussions—especially from Assam and Uttarakhand—agroforestry and organic farming emerged as viable pathways for improving soil health, regenerating landscapes, diversifying farmer incomes, and building climate resilience.

- Certification and Market Access Remain Key Bottlenecks: High certification costs, lengthy procedures, and limited alignment with global standards continue to restrict market access for SMEs, FPOs, and hill farmers. The need for more accessible, credible, and farmer-friendly certification systems was repeatedly emphasised.

- Technology and Infrastructure Gaps Constrain Enterprise Growth: Enterprises highlighted gaps such as post-harvest technologies for fruits (UP), processing and grading units (hill regions), and the absence of suitable machinery for underutilised crops. These gaps restrict value addition and reduce competitiveness.

- Collaborative and Ecosystem-Level Approaches Are Essential: There was clear willingness across government, private sector, FPOs, and enterprises to work together. Speakers stressed that systemic issues—such as market access, certification, and climate risks—cannot be addressed in isolation, underscoring the need for coordinated, cross-sector strategies.



Trade and Sustainability

- Strengthening Regional Dialogues and Collaboration to Promote Circular Apparel for Positive Climate Action

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- Exploring the Interfaces Between Trade, Global Value Chains & Sustainability

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Strengthening Regional Dialogues and Collaboration to Promote Circular Apparel for Positive Climate Action

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Moderated by:

Divyani Hari, Senior Director, Centre for Responsible Business (CRB)

Opening and Special Remarks:

- Arjan De Haan, Senior Program Specialist, International Development Research Centre (IDRC)
- Mikael Garellick, Senior Expert – Textile, Clothing, Leather and Footwear, European Commission

Speakers:

- Lalit Matai, Co-Founder and Director, PT Ananta Universal, Indonesia
- Susmit Dutta, Partner, Intellecap
- Dr. Anjali Taneja, Regulatory Affairs Leader, Range Inter IKEA Group, IKEA
- Samantha Kumarasena, Chief Executive Officer, National Cleaner Production Centre (NCPC), Sri Lanka
- René Van Berkel, International Faculty, Thammasat University; Co-convenor ASEAN Circular Economy Business Alliance



Arjan De Haan, Senior Program Specialist, IDRC, opened the session by expressing his great pleasure in introducing an important new synthesis report, marking a key step toward nurturing a circular economy in the textile sector across four participating economies: India, Indonesia, Sri Lanka, and Vietnam. De Haan highlighted how circular approaches can reduce waste, create green jobs, and enhance the competitiveness of these nations in global sustainable value chains. He closed by stressing that sustained regional collaboration is essential for addressing regulatory and infrastructure gaps and positioning these countries to meet global sustainability standards in textile trade.

Mikael Garellick, Senior Expert in Textile, Clothing, Leather and Footwear, European Commission, outlined the EU's perspective on the urgency of textile sector transformation. He underlined the EU's significant trade deficit in textiles, noting that a handful of supplier countries—China, Bangladesh, Türkiye, and India—account for the bulk of imports and generate a substantial environmental and climate footprint.



He linked this scale of trade to a grim reality: EU textile consumption has the fourth highest environmental and climate impact after food, housing, and mobility, with global textile production having doubled since 2000 and nearly 6 million tonnes of textile waste discarded annually in the EU with very low recycling rates.

Mikael then outlined the EU Strategy for Sustainable and Circular Textiles and its 2030 vision that all textile products placed on the EU market should be durable, repairable,

and recyclable. He explained forthcoming ecodesign requirements, stricter information and labelling rules, and revisions to the Waste Framework Directive that will introduce an Extended Producer Responsibility scheme under which producers finance collection, sorting, reuse, and recycling. He also highlighted controls on waste shipments and awareness campaigns for more sustainable consumption. Garellick closed by stressing that sustained collaboration across the value chain and with major supplier countries is essential to address regulatory and infrastructure gaps.



Divyani Hari opened the panel discussion by acknowledging the significant gap highlighted between EU standards and current regional capacities. She stated that the session's objective is to facilitate dialogues about the EU's direction and vision versus the challenges and constraints faced by regional economies, discuss how to address this technology gap, identify who will unlock necessary advancements, work together to build a narrative that can effectively manage issues like the informal sector, and co-develop a plan to meet international norms.

The EU regulations—including ecodesign requirements, Extended Producer Responsibility (EPR) schemes, and bans on destroying unsold clothing—are creating both pressure and opportunity for Asian textile exporters. Given that 70% of fashion products consumed in the EU are imported, the success of the EU's sustainability goals depends heavily on producer countries, especially in South and Southeast Asia.

René Van Berkel, International Faculty, Thammasat University, began by contextualising the push for a circular economy within a planetary crisis. He noted that humanity has already crossed seven of the nine planetary boundaries, driven mainly by unsustainable material extraction and use, which causes 60% of climate emissions, 90% of biodiversity loss, and 40% of pollution. He emphasised that the circular economy is now a global policy priority, highlighting initiatives such as the EU's Ecodesign Strategy and ASEAN action plans.

Van Berkel outlined three complementary strategies as essential for achieving true circularity: Resource Circularity, Resource Efficiency, and Resource Substitution. He stressed a holistic philosophy of "Performing well, while doing good", emphasising that circularity benefits both business through reduced material costs and new revenue streams, and society and the planet through nature regeneration and resource conservation. He underlined that ambition is crucial, and circular principles should guide businesses toward responsible innovation.



Lalit Matai, Co-Founder and Director of PT Ananta Universal, offered an Indonesian industry perspective, underscoring the seriousness with which Indonesia is approaching circularity, combining strong government intent with growing private-sector initiatives in textiles and apparel. He pointed to the government's 20-year Circular Economy Country Roadmap (2025–2045), which identifies textiles alongside four other priority sectors and sets out mechanisms for cooperation among planning, industry, and environment ministries as well as engagement with donors and external partners. He noted that early discussions on Extended Producer Responsibility in the textile waste sector are also underway.

Turning to industry action, Lalit Matai observed that companies are not waiting for regulation, with large export-oriented apparel manufacturers already adopting circularity as a core business strategy. He illustrated this with examples such as the startup Pebble, which converts post-consumer and post-industrial textile waste into yarns for domestic and export markets, and the establishment of the industry-led NGO Rantai Tekstil Lestari, which helps connect stakeholders and facilitate collaboration. He noted that Indonesia's participation in the Circular Fashion Partnership, supported by the H&M Foundation and Global Fashion Agenda, positions it as an advanced pilot environment relative to peers such as



Bangladesh, where progress is paused, and Cambodia, which is only at an initial stage. Matai concluded that there is strong and aligned intent across both public and private sectors in Indonesia to advance circularity and attract deeper engagement from international brands.

Dr. Anjali Taneja, Regulatory Affairs Leader, IKEA, outlined both the promise and the substantial constraints of advancing circularity in the textile and apparel sector across South Asia. She noted that South and Southeast Asia together account for a major share of global textile and apparel exports, and that the region's scale of production, large consumer base, and low labour costs create strong potential for resource efficiency and material recovery through reuse, repurposing, and recycling of textile waste, particularly in countries such as India and Bangladesh.

She also pointed to positive policy momentum, with India focusing on the circular economy since 2017, including a draft EPR framework supported by the Ministry of Textiles, and Bangladesh progressing with green factory certifications. However, Dr. Taneja highlighted substantial constraints including limited advanced recycling technologies, innovative business models, and knowledge systems needed to turn textile waste into resources at scale. She drew attention to gaps in infrastructure for segregating post-consumer textile waste, which is often mixed with municipal solid waste, and stressed the need to find realistic, economically viable pathways to convert waste into value. She emphasised challenges with accurate fibre composition labelling, essential for meeting EU standards, noting that manual and mechanical sorting cause inconsistency, driving urgent demand for advanced fibre separation technologies such as AI-based fibre identification.

Dr. Taneja concluded by stressing the urgency of addressing India's estimated 7,800 kilotons of textile waste annually, noting that post-consumer waste now exceeds pre-consumer waste—a critical point that demands immediate infrastructure and policy action.

Samantha Kumarasena, Chief Executive Officer, National Cleaner Production Centre (NCPC), Sri Lanka, provided an overview of Sri Lanka's policy landscape and circular industry context, distinguishing between well-established sustainability efforts and the still-emerging focus on true circularity. He noted that while industries are actively pursuing source-reduction and other sustainability initiatives, actual resource circulation remains limited, even though high waste-disposal costs are creating economic incentives for recirculation.

Kumarasena highlighted that the textile sector generates over 20,000 tonnes of pre-consumer waste annually. He also outlined ongoing policy reforms, including a draft Extended Producer Responsibility regulation and the government's move toward a Green Public Procurement policy focused on textiles, as important enablers for circular practices. He also referred to a major study underway to develop guidelines for Eco-Industrial Parks, where resource-circulation opportunities are central because much of the country's textile offcut waste is generated within these zones.

Samantha emphasised that the textile industry is increasingly demanding recycled polyester yarn through PET-to-textile recycling, but current PET bottle collection is insufficient to meet this growing domestic demand. He stressed that while Sri Lankan producers are smaller in scale, they specialise in high-value, high-quality products and have demonstrated sustainability leadership (through the Higg Index and zero-waste approaches) that can offer replicable best practices for the region. He highlighted the importance of technology access, noting that while Europe supplies high-end recycling machinery, costs make it inaccessible to regional producers. He called for regional collaboration in technology transfer and machinery production, where India's existing manufacturing capacity could play a crucial role in adapting European technologies for regional use.



Dr. Anjali Taneja also presented IKEA's collaborative approach to circular textile value chains, which combines democratic design principles with partnerships involving social enterprises and local artisans. She described how IKEA is working on textile-to-textile recycling pilots in Taiwan, ocean plastics circularity, and the rollout of its IWAY code of conduct reinforcing ethical and environmental standards across value chains. She proposed a regional value chain approach where different countries focus on complementary roles: fibre-to-fibre recycling, repair and reuse, design innovation, reverse logistics, and shared infrastructure and standards. Such a model leverages each country's comparative advantages—for example, Bangladesh in manufacturing and India in recycling and manufacturing—to create shared benefits.

Susmit Dutta, Partner, Intellecap, described a significant and necessary shift towards circularity within Asia's large textile and apparel industry, driven both by economic opportunity and by growing regulatory commitment from governments. He explained that the core aim of South–South cooperation is to enable developing countries to reduce over-reliance on the Global North by jointly addressing their development challenges. He noted that collaboration is increasingly moving beyond knowledge sharing towards the cross-border movement of innovations and entrepreneurs, with success judged by tangible outcomes rather than simply exchanges between countries.

Susmit outlined key principles for successful South–South innovation transfer. First, a demand-led approach: understanding the receiving country's needs, alternatives, and economics to ensure strong solution-market fit. Second, selecting the right innovations: those with technical credibility, that have moved beyond the lab stage, have pilots demonstrating viability and preliminary unit economics, and are flexible enough to adapt to local contexts. Third, a bias toward outcomes: focusing on scaling solutions, numbers of beneficiaries, and real adoption rather than activity counts. He emphasised that "the success of this entire program is linked to outcome and not the activity of moving from country A to country B."

Susmit stressed the critical role of catalytic funding in de-risking early-stage entry and accelerating the transition for small, impact-oriented innovations that cannot absorb repeated failures. Drawing on an earlier agri-tech pilot that successfully transferred Indian solutions to Africa, he framed innovation transfer as a way to rapidly scale models that already have demonstrated technical soundness and viable unit economics.

The final panel segment centered on how South Asia and ASEAN can jointly advance the circular economy in textiles through innovation transfer and blended finance. Lalit Matai underscored that regional cooperation is essential both to increase the bloc's global export share and to meet tightening sustainability requirements in key markets such as the EU, while also addressing practical gaps in feedstock, technology, and capital. He noted that even combined, South Asia and ASEAN textile exports remain well below China's, arguing that a collaborative regional strategy is needed to build competitiveness in high-value, sustainability-driven segments.

The panel converged on a vision of a regional circular value chain that leverages each country's comparative advantages. Speakers suggested developing regional "fibre-to-fibre" recycling hubs to streamline reverse logistics and make better use of textile waste generated within Asia, instead of exporting it to distant markets for processing. This approach would also address cross-border issues such as marine litter, where ocean currents move waste across borders—a challenge best tackled through regional cooperation.

Key Highlights

- Regulatory Catalyst for Change: The EU's Sustainable and Circular Textiles Strategy is creating both pressure and opportunity for South and Southeast Asian producers. Given that 70% of EU textile consumption is imported, regional compliance with EU standards is critical for maintaining market access and competitiveness.
- Strong Policy Momentum and Private-Sector Leadership: Indonesia's 20-year Circular Economy Roadmap and India's draft EPR framework demonstrate growing government commitment. Private-sector initiatives—from startups converting post-consumer waste into yarn to large manufacturers adopting circular business models—show that industry is not waiting for regulation.
- Waste as a Growing Crisis: India's estimated 7,800 kilotons of annual textile waste, with post-consumer waste now exceeding pre-consumer waste, underscores the urgency of scaling infrastructure and business models. Sri Lanka's 20,000+ tonnes of pre-consumer waste annually and growing demand for recycled polyester highlight the region-wide challenge.
- Blended Finance as a Catalyst: The primary barrier to scaling advanced recycling is capital, not technology. A dedicated regional circularity fund pooling development finance, public sources, and private investors can de-risk early-stage projects and accelerate technology deployment.
- Informal Sector Cannot Be Ignored: Informal actors play a central role in textile waste handling, particularly in India and Indonesia. Regional collaboration must include strategies to integrate, formalize, and support informal workers, drawing on best practices rooted in similar socio-economic contexts.

Exploring the Interfaces between Trade, Global Value Chains and Sustainability

Co-hosts

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Canada

Moderated by:

Prof. Dr. Manfred Max Bergman, Chair of Social Research and Methodology, Director of the Social Transitions Research Group, University of Basel

Opening Remarks:

- Nandini Sharma, Senior Director, Centre for Responsible Business (CRB)
- Arjan De Haan, Senior Programme Specialist, International Development Research Centre (IDRC)

Speakers:

- Anil Bhardwaj, Secretary General, Federation of Indian Small and Medium Enterprises (FISME)
- Sudipta Bhadra, Senior Programme Officer, International Labour Organization (ILO)
- Prof. Aparna Sawhney, Professor of Economics, Centre of International Trade and Development, Jawaharlal Nehru University (JNU)
- Richard Howitt, Former MEP, Strategic Advisor, Corporate Responsibility and Sustainability, Business and Human Rights
- Joseph George, Senior Research Assistant, Sub-Regional Office for South and South-West Asia (UNESCAP)
- Cristina Larrea, Director, Agriculture, Food and Sustainability Initiatives, International Institute for Sustainable Development (IISD)



Nandini Sharma, Senior Director, Centre for Responsible Business, opened the session by framing trade and sustainability as a complex, fast-evolving agenda rather than a narrow technical issue. She emphasised that the discussion must simultaneously address the shifting trade dynamics, geopolitical tensions, climate imperatives and social impacts, making the subject inherently dynamic and multidimensional.

Nandini observed that traditional notions of economic success are being redefined, with the focus moving beyond value created solely for shareholders towards the broader value and impacts generated for a wide range of stakeholders. In this context, she underlined that Indian producers and policymakers are actively adjusting to the changing landscape, seeking to safeguard business continuity and competitiveness whilst maintaining secure access to international markets under tightening sustainability expectations.

Arjan De Haan, Senior Programme Specialist, IDRC, emphasised that research must focus on how to effectively address development problems and generate top-quality, peer-reviewed evidence. He stressed that evidence needs to be effectively placed into the hands of local communities, citing the example of training 'Village Hydrologists' to mediate scientific water management research. De Haan concluded by encouraging that businesses should actively find and collaborate with researchers to tailor studies to their needs, ensuring that profit motives are matched with inclusion and sustainability motives.



Prof. Dr. Manfred Max Bergman, moderator for the session, opened the panel discussion by inviting each panelist to respond to the question: what shared outcome would signify that India's participation in global value chains between 2026 and 2030 has been truly successful?

Anil Bhardwaj, Secretary General, FISME, underlined that the shared outcome should be achieving a 20% increase in Indian MSME exports to key markets such as the EU and Canada, underpinned by compliance with supply chain requirements and the nation's decarbonisation commitments. He stressed that the principal financial burden for implementation, particularly for investments to reduce dependence on grid energy, must be borne by the sovereign and by lead firms in the supply chain through direct funding, knowledge sharing and capacity-building support.

Sudipta Bhadra, Senior Programme Officer, ILO, shared her view that genuine progress would be reflected in millions more workers moving into formal employment with living wages and safe working conditions. She emphasised that if India can strike the balance between productivity, inclusiveness and resilience, it could establish a new benchmark for the wider Global South.

Prof. Aparna Sawhney, JNU, shared her belief that only by establishing a government-driven carbon accounting system that forces the internalisation of environmental costs would the entire trade system become compliant and measurable. She stressed that both trade economists and the environmental community would be satisfied when a government-driven system accounts for carbon footprints and they can measure the difference.

Richard Howitt, Former MEP, suggested that India's success will come when producers adopt sustainable practices not out of fear of losing markets, but because they see the business and economic opportunity. He stressed that this shift must be backed by measurable improvements in livelihoods and by government-endorsed labels and standards that build trust and help organise supply chains to meet new due-diligence requirements.



Joseph George, UNESCAP, focused on making sustainability standards accessible to small producers, arguing that systemic barriers must be removed through collective approaches. Drawing on examples from other sectors in Asia, he highlighted 'collective certification' as a way to treat certification as a domestic public good, thereby spreading costs across many small suppliers and dramatically lowering the marginal cost for new exporters. He stressed that for India, the priority should be to develop an ecosystem of collective certification models in sectors dominated by small-scale suppliers so that MSMEs can meaningfully participate in sustainable global value chains.

Cistina Larrea, IISD, expressed the importance of recognising and rewarding progress, allowing Indian companies to demonstrate improvement in their practices, systems and market presence, which the market must be able to legitimise and incentivise.

Prof. Bergman followed up with a more probing question: 'What flexibility would you give or where would you start to compromise in order to achieve this goal, and who should bear the costs?' This question exposed both tensions and emerging consensus among panelists.

Prof. Aparna Sawhney focused on the need for time and capacity building to implement complex environmental standards such as the EU's Carbon Border Adjustment Mechanism (CBAM), noting that the EU itself had a long runway for implementation. She highlighted the difficulty of identifying an Indian



carbon price that is comparable to the EU's market price, warning that this gap could expose Indian exports to greater scrutiny and possible penalties at the border. She stressed that governments must cooperate to avoid imposing rigid standards without support, arguing that extensive hand-holding will be essential to prevent firms from being unfairly penalised.

Richard Howitt stressed that any new trade and sustainability system must be designed as a genuine partnership with Southern producers, not imposed by the Global North. He underlined that success will depend on giving Indian producers a real role in governance, including the agency to define accurate data and shape sustainable improvements. He also noted that buyers in Europe and other Northern markets are likely to invest substantial resources in the data systems because it is in their own interest.

Joseph George stressed that producer associations must be strengthened to mobilise members for collective certification, with regulators providing assistance in terms of clarity on certification requirements. He highlighted the essentiality of technical support for certifying bodies whilst taking the coordinating role and potentially frontloading initial capital investments.

Cristina Larrea emphasised that flexibility should centre on the recognition and reward of progress, allowing Indian companies to demonstrate improvement in their practices, systems and market presence, with markets able to legitimise and incentivise these advances.

Furthemore, Prof. Bergman, acknowledging that the global landscape will likely become tougher by 2026 and beyond, invited panelists to identify what Indian SMEs should do in the next six months to remain viable in global value chains and what institutional support they could offer.

Anil Bhardwaj urged Indian SMEs to begin systematically mapping their supply chains and to embrace digitalisation, with particular attention to carbon intensity and labour practices. He stressed that an immediate priority is to establish a clear pathway for carbon measurement and reporting, which he described as the first prerequisite for complying with emerging global regulations.



He added that firms should conduct a materiality assessment to understand how different requirements affect their business, clarify stakeholder expectations and prepare a roadmap to track vulnerabilities over time. Bhardwaj noted that FISME is supporting this process through capacity-building programmes that guide SMEs on decarbonisation pathways and the technological upgrades needed to implement them. He called on other institutions to provide assistance on digital readiness and to establish reporting hubs that work across sectors.

Sudipta Bhadra emphasised that SMEs need to move from reactive compliance to strategic readiness. She recommended that they immediately invest in knowledge building and social capital through a multi-stakeholder approach to improving workers' basic rights, health and wages. Value addition lies in linking MSMEs to buyers, investors and various government schemes. Bhadra pointed out that the ILO not only promotes social dialogue and works extensively on policy enablers to ensure the voice of workers is heard, but also supports industrial associations by offering practical tools such as improving management practices, costing without compromising working conditions, training on human rights, and the Decent Work Toolkit for SMEs to diagnose and map Indian labour-standards performance.

Prof. Aparna Sawhney underscored the need for solid research and cluster-level data to understand which strategies work, particularly in relation to geopolitics and deforestation risks. She argued



that long-standing trade issues such as export rejections for antibiotic residues or toxic pesticides often stem from SMEs' lack of awareness about certification, testing and basic sanitary and phytosanitary requirements, which remain as important as newer concerns like carbon and deforestation.

She called for better information and technology access for SMEs and highlighted recent institutional efforts that have helped larger firms measure and reduce carbon emissions, pointing to carbon inventory systems as a useful tool that can help firms of all sizes measure emissions and meet emerging global value-chain expectations. She also noted that nearly 60% of India's exports come from clusters, where knowledge spreads quickly, and that demonstrating the business case for sustainability—particularly cost savings—is the most effective way to convince MSMEs. She cited examples from Morbi, where walkthrough audits helped firms identify energy savings; once inefficiencies such as boiler energy loss were pointed out, owners immediately recognised the financial benefit, and best practices spread quickly through the cluster.

Richard Howitt urged Indian producers to take immediate action by conducting their own risk assessments today, identifying company and sector weaknesses through media and NGO reports rather than waiting for prescribed requirements. He advised focusing compliance efforts on the most relevant sustainability data points, noting that complex European regulations are shifting toward proportional, risk-based approaches that make adherence more feasible.He called for genuine partnerships with purchasers to discuss expectations and co-responsibility, adding that data management systems, now essential under limited assurance standards, will require investment that buying companies are expected to support.

Joseph George emphasised that producers must strengthen their associations to mobilise and lead initial steps, pointing to collective certification as the key model. He cited Kerala's Ashtami Lake fishery cooperative as a successful Indian example. He outlined a multi-stakeholder support framework in which regulators provide coordination, regulatory clarity and upfront capital for process changes; certifying bodies deliver technical assistance for testing and traceability; and UNESCAP synthesises regional learnings into practical guides whilst convening experts through its platforms.

Cristina Larrea stressed that Indian companies need to illustrate progress on their sustainability journey, with markets recognising and rewarding these improvements. She highlighted emerging shared responsibility, where European manufacturers and retailers collaborate with Indian suppliers on capacity building for practices such as sustainable cotton sourcing and processing, supported by incentives to drive the process forward. She noted that IISD contributes through credible research, strategic advice, capacity building and technical assistance to help small-scale producers and MSMEs in developing countries access markets and secure fair remuneration.



Prof. Dr. Bergman closed the panel with a forward-looking question: 'What lies ahead for Indian SMEs in global value chains? What is your gut feeling about what is coming?'

Answering the question, Anil Bhardwaj anticipated that increasingly more Indian SMEs will participate in GVCs, not solely because of external pressure but also because the Indian Government is putting resources and commitments toward transforming MSMEs from their traditional, informal nature into more formal business structures.

Prof. Aparna Sawhney stressed the critical role of multilateral trading rules in maintaining balance within the global trade system, emphasising that foreign countries prefer a rules-based approach to trade, which is a long-standing preference for developing countries as opposed to a deal-based approach often dictated by market power. This will help achieve consistent, fair rules and principles.

Richard Howitt saw a significant moment of opportunity for Indian SMEs, but cautioned that the real test will be how quickly and efficiently they can act. He noted that global value chains are shifting toward bringing firms into more sustainable ways of doing business, with an emphasis on inclusion rather than excluding companies from markets.

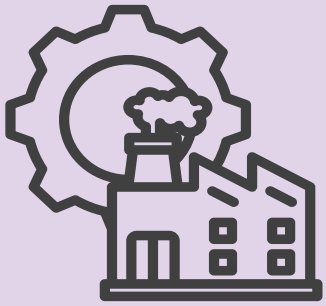
Joseph George conveyed that India holds considerable potential in global value chains through cost reductions in operating and logistics expenses and MSME skill development, drawing from early 2000s Asian models driven by low-cost production through intermediate exchanges and specialisation. Though some chains have lost cost advantages, they persist by evolving into thick markets for irreplaceable skills. For India, participating less than East Asia offers entry points, with SMEs positioned to leverage these opportunities for skill-building and market thickening.

Sudipta Bhadra argued that India's growth model differs from export-oriented countries due to its large domestic market, so SMEs need not prioritise exports but can integrate into value chains for value addition. She cited Foxconn's production presence as evidence of rising formalisation, digitalisation and technological adoption. However, she pointed out that many Indian SMEs currently perform low-value activities such as cleaning and packing in food processing and fisheries, with true value addition occurring overseas in places such as Vietnam or China. She anticipated a technological shift that will enable higher competitiveness, though she noted that whilst some enterprises will leverage digital, technological, market and finance tools to thrive, others will close due to inability to compete.

Cristina Larrea expressed her belief that India benefits from adoptive sustainability driven by both trade and domestic markets, with research showing rising sustainable consumption across sectors. She highlighted innovation and technology progress fuelled by domestic demand, citing India's first-time increase in sustainable palm oil consumption as key evidence that consumers and markets are pushing companies to adopt and position sustainability strategically.

Key Highlights

- Redefining Economic Success: The paradigm is shifting from shareholder value to stakeholder value creation, requiring Indian producers and policymakers to reposition competitiveness not as the ability to produce cheaply but as the ability to produce sustainably, inclusively and responsibly.
- MSMEs as Critical Actors: Indian MSMEs represent approximately 60% of exports and operate predominantly within clusters, making them both vulnerable to tightening global standards and strategically positioned to drive rapid adoption of best practices through cluster dynamics.
- Carbon Accounting as a System-Level Imperative: Ad hoc reporting is insufficient; India must establish government-driven carbon accounting systems that force the internalisation of environmental costs, making sustainability a structural feature of the economy rather than a compliance checkbox.
- Collective Certification as a Scale Model: Individual certification is prohibitively expensive for SMEs; collective certification models—treated as domestic public goods—can distribute costs across many suppliers and dramatically lower entry barriers, enabling meaningful MSME participation in sustainable value chains.
- Formal Employment as Transformational Goal: Success is not about job creation per se but about transitioning the workforce from informal self-employment into formal, decent work with living wages, safe conditions, social protection and recorded contracts. India's large informal base offers both a challenge and an opportunity for inclusive economic transformation.
- Technology Transfer and Machinery Localisation: Advanced recycling and manufacturing technologies exist but remain inaccessible due to cost and availability. Regional cooperation—including India's capacity to adapt and manufacture machinery—can democratise access and reduce technology costs.
- Buyer Investment in Data Systems: Northern buyers have financial incentive to invest in data systems and supply chain transparency because supply chain risk is existential to their businesses. This creates opportunities for cost-sharing and shared responsibility in sustainability transitions.
- Domestic Demand as a Sustainability Driver: India's large domestic market is increasingly demanding sustainable products—from sustainable palm oil to responsibly sourced cotton. This domestic pull, combined with export-market requirements, creates dual drivers for sustainability adoption, reducing reliance on compliance-only approaches.



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- Transitions for a Viksit Bharat – Perspectives from Public Sector Enterprises

Co-host

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Miniratna PSE Spotlight: Responsible Business – Multi-Stakeholder Negotiations and Impact

Co-host

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Moderated by:

Rohan Sarma, Senior Fellow, Centre for Responsible Business

Speakers:

- Dr. Bhaskar Chatterjee, Former Secretary, Department of Public Enterprises & Senior Advisor, CRB
- Kailash Bhandari, Joint Director, Department of Public Enterprises
- Nandini Sharma, Director, Centre for Responsible Business
- Siddhartha Shankar Lal, General Manager (SD & CSR), Central Coalfields Limited
- Ajay Nath Jha, IAS – District Collector, Bokaro, Jharkhand
- Kanchan Singh, District Collector, Simdega, Jharkhand
- Soumi Dutta, Director, ASHRAY, South Vihar Welfare Society for Tribal, Ranchi
- Dinesh Agrawal, Former General Manager, NTPC & Principal Consultant, Consocia Advisory
- Dr. Enu Anand, Assistant Professor, Goa Institute of Management
- Shubhanshi Chakraborty, Environmental Advocate and Author, Mumbai
- Jay Vikram Bakshi, Advisor, CII Foundation, Gurgaon

Rohan Sarma, Senior Fellow, Centre for Responsible Business, opened by emphasising that PSEs have historically played a foundational role in nation-building and in maintaining balance between economic aspirations and social equity. This moment, he observed, represents India's time—of India, by India and for India—as PSEs increasingly embody pride, purpose and ownership in their contributions.

Rohan reflected on the paradox between unlimited human wants and finite natural resources, questioning how rising aspirations could be met responsibly while adhering to sustainability principles. He also offered an aspirational interpretation of "INDIA": Impact, Negotiation, Development, Institutionalisation and Aspiration—reflecting India's collective steps toward Viksit Bharat and the imperative to harness potential of youth, farmers, women, communities and institutions.

Dr. Bhaskar Chatterjee, widely regarded as the "Father of Indian CSR," reflected on the conceptualisation of CSR in India. Working alongside Shri Kailash Bhandari, six months of foundational work led to articulation of an Indian—or Bharatiya—model of CSR, distinct from Western templates. The CSR regime integrated ESG considerations, particularly climate change, into corporate dialogue.



As CSR evolved into CSR 2.0, Dr. Chatterjee described it as the harmonised form of ESG and CSR in its fullest sense, recognising expanding responsibilities of business. He revisited his well-known "Chatterjee Triangle," comprising government as regulator and facilitator, corporate sector as funders and overseers, and NGOs and civil society as implementers attuned to ground realities. With CSR 2.0, he proposed evolution of this structure into the "Chatterjee Quadrilateral" by adding a fourth foundational element: the supply chain, without



which no conversation on stakeholder responsibility can be complete.

Kailash Bhandari, Joint Director at the Department of Public Enterprises, outlined CSR and corporate governance within the distinct district-level ecosystem in which PSUs operate. PSUs often function in complex stakeholder environments where district administrations, elected representatives, implementing agencies and the nature of PSU funding itself shape planning and execution of CSR initiatives.

He observed that each stakeholder's role varies from project to project, and challenges often arise from differing expectations, top-down approaches or misalignment amongst actors who must collaborate to achieve outcomes. He emphasised the need for four interlocking forces—administration, elected representatives, implementing partners and the PSU itself—to work in harmony for effective CSR implementation.



Nandini Sharma, Director of CRB, distinguished CSR from responsible business by positioning CSR as a small subset of the broader domain of responsible business conduct. Responsible business is not what companies do at the end of the year but how they design and operate across the entire value chain. The National Guidelines on Responsible Business Conduct (NGRBCs), released by the Ministry of Corporate Affairs in 2019, outline nine guiding principles. Both CSR and responsible business thinking play crucial but distinct roles in nation-building.

Ajay Nath Jha, IAS and District Collector of Bokaro, Jharkhand, emphasised that districts with significant industrial activity require close coordination between enterprises and local administration to address gaps in education, healthcare, skill development and livelihoods. CSR initiatives are most effective when complementing government schemes rather than operating in isolation. Participatory planning, where community voices inform project selection and design, builds trust and ensures that CSR resources address genuine needs. Long-term partnerships enable measurable improvements in social indicators.

Kanchan Singh, District Collector of Simdega, Jharkhand, highlighted development challenges faced by tribal and remote districts. CSR support from PSEs can play a critical role in bridging infrastructure and service delivery gaps in areas with limited state capacity. Interventions in education, health, nutrition and livelihoods have a direct impact on quality of life for vulnerable populations. CSR programmes must be context-specific and culturally sensitive, particularly in tribal regions. Involving local institutions and community leaders in implementation enhances ownership and sustainability. Multi-stakeholder coordination is essential to avoid duplication and ensure optimal resource use.



Dutta, Director of ASHRAY, brought lived experience from tribal communities in Jharkhand, a state rich in natural resources yet ranked low in human development indicators. She emphasised that trust-building is central to successful CSR engagement, especially where communities have historically faced marginalisation and extractive exploitation.

Soumi underscored the gap between global standards such as UNDRIP (United Nations Declaration on the Rights of Indigenous Peoples) and their ground-level implementation. In CSR projects, she argued, the absence of Free, Prior and Informed Consent (FPIC) remains one of the biggest gaps. Tribal communities carry memory of extractive exploitation; unless companies adopt behavioural shifts rooted in empathy, trust is difficult to rebuild. Negotiations must begin with what communities want, not just what projects propose. She emphasised that short-term or poorly contextualised projects often fail to

deliver lasting benefits. Long-term, community-centric approaches that strengthen local capacities and institutions are essential. Livelihood-based interventions, education and access to basic services are pathways to empowerment. She stressed that NGOs must learn to negotiate strategically rather than confrontationally, recognising internal pressures, perspectives and constraints within corporate boards. Responsible collaboration requires diplomacy and alignment.



Siddhartha Shankar Lal, General Manager (SD & CSR) at Central Coalfields Limited, showcased CCL's extensive experience with multi-stakeholder negotiations and tangible impacts of CSR initiatives. CCL committed to need assessment, empathy-based planning, careful impact measurement and mindful stakeholder engagement. As early as 2013, CCL operated across eight districts and invested ₹5 crore annually in community development. CCL currently spends approximately ₹70–80 crore annually on CSR efforts.

The coal industry operates without clear physical boundaries, impacting villages adjacent to mines and leading to displacement, groundwater depletion, air and noise issues, transportation through densely populated settlements and land disturbances. CCL must negotiate with multiple stakeholders: displaced persons, district administrations, local representatives, civil society organisations and internal officials, each presenting different expectations and constraints. Ethics in CSR decision-making is essential at every level.



CCL's learning insights emphasise community engagement, job-linked skill development, convergence with government schemes, NSQF-aligned training and technology-enabled transparent monitoring. Flagship initiatives—CCL ke Lal and CCL ki Ladli for educational advancement, a sports academy in Ranchi, a 5,000-seater library project, a centralised kitchen in Ramgarh serving 50,000 people, and the Hazari Bagh District Operation Theatre project—represent sustained and meaningful interventions. For CCL, the greatest reward remains community beneficiary feedback and visible transformation.

Dinesh Agrawal, Former General Manager of NTPC, emphasised moving beyond expenditure-based CSR metrics. Success should be measured through tangible social outcomes and long-term sustainability. Strategic planning, professional execution and independent evaluation are essential. Multi-stakeholder engagement enables enterprises to leverage diverse expertise and resources, enhancing impact. Responsible business must be embedded into organisational culture rather than treated as an external obligation.

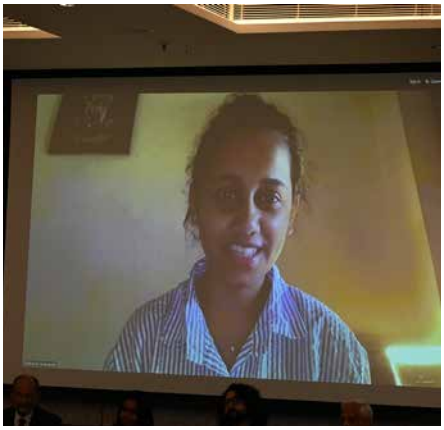


He explained that businesses do not exist in a vacuum but are deeply embedded in social contexts. Customers are human beings with emotions and values; the sustainability of profit hinges on understanding and responding to these human dimensions. While companies often articulate responsibility, gaps persist in demonstrating and measuring it. Listening to communities, setting strategic goals and ensuring transformational impact continues after corporate involvement ceases are essential components of ethical practice.

Dr. Enu Anand, Assistant Professor at Goa Institute of Management, addressed impact assessment methodology. She referenced India's adoption of the Multidimensional Poverty Index, which acknowledges that poverty cannot be measured by income alone. Impact assessment must employ multidimensional indicators and appreciate complexity. Many companies measure what is convenient rather than what is meaningful, often lacking well-designed indicators.

She supported standardisation in assessment methodologies, while noting that responsible business

requires knowing which KPIs matter and who is best suited to implement them. Impact assessment is not about documenting activities but proving change. Companies must define whether they are measuring compliance or transformation. Impact is fundamentally about change that can be evidenced; comparing development outcomes in intervention villages with untouched villages often reveals the clearest measure of progress.



Shubhanshi Chakraborty, Environmental Advocate and Author, stressed that environmental sustainability must remain integral to responsible business practices. She highlighted ecological risks associated with resource-intensive industries and the need for stronger environmental safeguards within PSE operations. Climate resilience should be embedded into both core business strategies and CSR initiatives. She called for greater transparency in environmental reporting and stronger accountability mechanisms.

Speaking virtually, 20-year-old author reminded the audience that PSEs shape development trajectories of regions they operate in, often without due recognition. Sustainability must become part of everyday life and everyday thinking. India now moves through two simultaneous timelines—the timeline of development and the timeline of climate pressure. Unless these converge, progress will falter. PSEs hold the capacity to anchor India's future by leading with environmental clarity, community sensitivity and long-term vision.

Jay Vikram Bakshi, Advisor at CII Foundation, highlighted transformation underway in PSE-led CSR through innovation, partnerships and improved governance practices. Participatory planning and outcome-oriented monitoring are key drivers of impact. Collaboration between industry bodies, enterprises and civil society significantly enhances programme effectiveness. CSR is increasingly viewed as a strategic tool rather than compliance obligation. By integrating sustainability into business operations, PSEs can generate shared value for communities and enterprises.

Jay Vikram drew attention to uneven distribution of CSR funds across states: industrially dense states like Delhi and Maharashtra accumulate higher CSR spending per capita, whilst tribal belts like Jharkhand and Chhattisgarh receive less despite greater need. He urged the audience to challenge such structural assumptions and revisit CSR locality principles.



Key Highlights

- Miniratna PSEs Represent India's Confidence in Charting Its Own Developmental Trajectory: Rather than importing Western templates wholesale, India has operationalised a Bharatiya model of CSR that integrates ESG considerations whilst remaining rooted in Indian realities. This distinctly Indian approach reflects institutional maturity and contextual understanding absent in generic global frameworks.
- Responsible Business Extends Far Beyond Statutory CSR Spending: CSR represents a small subset of responsible business conduct. True responsible business encompasses how enterprises design and operate across entire value chains—from supply chain ethics to environmental stewardship to stakeholder engagement.
- District Administrators Are Essential Partners, Not Auxiliary Actors: CSR is most effective when complementing government schemes and aligning with local priorities. Participatory planning, long-term partnerships and coordination with district administrations dramatically improve relevance and sustainability of interventions.
- Environmental Sustainability and Social Equity Are Convergent, Not Competing Imperatives: Climate resilience must be embedded into both core operations and CSR strategies. India now moves through two simultaneous timelines—development and climate pressure—which must converge for progress. Indigenous communities' historical stewardship of ecological knowledge is foundational to achieving this convergence.
- Impact Continuity Requires Long-Term Commitment and Systems Thinking: Short-term interventions fail to generate lasting change in complex social systems. Long-term partnerships, community-centric capacity building and embedding of responsible business into organisational culture—rather than treating it as an external obligation—are essential for sustainability.
- India's Indigenous Communities Embody Sustainability Principles Predating Modern Discourse: Recognition of indigenous knowledge systems and custodianship is non-negotiable in responsible business conversations. Any genuine sustainability agenda must be rooted in learning from and partnering with indigenous leadership.

Navratna PSE Spotlight: Dialogues on 'Materiality' and Sectoral Insights

Co-host **Supported by**

Moderated by:

Rohan Sarma, Senior Fellow, Centre for Responsible Business

Speakers:

- Tarun Kumar, AGM (Infrastructure), IRCTC
- Ravindra Kumar, Executive Director (HR and CSR), Rail Vikas Nigam Limited
- Devyani Hari, Senior Director, Centre for Responsible Business
- Dilip Kumar Das, Head – Administration and CSR, Balmer and Lawrie
- Aanchal Srivastava, DGM – Climate Change, EN Green Services Pvt. Ltd
- Megha Paul, Senior Communications Expert, UN Tourism

Rohan Sarma, Senior Fellow, Centre for Responsible Business, opened by reflecting on the evolution of the concepts of matter, material and materiality, highlighting their importance when viewed from the perspective of those delivering value on the ground. This framing establishes materiality not as an abstract ESG concept but as grounded understanding of what genuinely matters to stakeholders. He referenced CRB's impact assessment work with Rail Vikas Nigam Limited across challenging terrains in Jaipur, Kolkata, Maharashtra and other regions, demonstrating the value of collaboration between technical institutions and knowledge partners in enabling PSEs to deepen sustainability commitments.



Tarun Kumar, AGM (Infrastructure) at IRCTC, grounded the session in IRCTC's CSR philosophy rooted in Indian values—Vasudhaiva Kutumbakam (the world is one family) and Sarve Bhavantu Sukhinah (may all be happy). IRCTC operates across four major business segments (catering, ticketing, tourism and Rail Neer), touching millions of lives daily. With a CSR budget of ₹30.72 crore, IRCTC ensures equitable distribution of development efforts with special focus on aspirational districts and the North-East.

He shared the transformative example of IRCTC's work in a remote village in Leh, where a school was completely renovated through new infrastructure, smart classrooms, digital learning tools and interactive educational experiences. Teachers observed notable motivational improvements amongst students, demonstrating potential of well-planned field interventions. IRCTC deliberately prioritises projects in remote and underserved areas, believing its mandate extends far beyond service delivery to genuine community transformation.

Tarun Kumar highlighted a major CSR partnership with Healing Himalayas in remote Himachal Pradesh, addressing solid waste management through infrastructure development and community engagement. He showcased IRCTC's work with the Blind People's Association and TorchIt in the North-East, enabling visually impaired individuals to become self-reliant through assistive mobility devices. These initiatives illustrate IRCTC's conviction that CSR must transcend compliance to create genuine transformation. He noted that IRCTC had reduced printed A4 ticket requirements by enabling passengers to travel using digital ticket details—a small intervention generating meaningful environmental impact at India's scale.



Aanchal Srivastava, DGM – Climate Change at EN Green Services, shed light on the concept of materiality in responsible business contexts. Materiality begins with a deep understanding of what genuinely matters to both businesses and stakeholders. Impact assessments form the backbone of ESG work; material issues differ significantly across geographies. The concerns of a family in Delhi look entirely different from those in Ladakh. Materiality is therefore both contextual and stakeholder-driven.

She introduced the concept of double materiality, which considers sustainability from both financial and non-financial perspectives. No stakeholder should be overlooked; communities, employees, management and peers all contribute to shaping what is material. This pluralistic understanding of materiality moves beyond single-metric ESG assessments toward holistic stakeholder-inclusive analysis.



Ravindra Kumar, Executive Director (HR and CSR) at Rail Vikas Nigam Limited, articulated sustainability in the railway sector and noted that RVNL supports Indian Railways in infrastructure development, electrification and modernisation, playing a central role in helping railways achieve national climate goals. Indian Railways aims for carbon neutrality by 2030 and has already achieved 100 per cent electrification of its tracks. Significant investments are being made in renewable energy, including solar and wind. He stressed that sustainability is not optional but essential for survival. Regulatory frameworks such as BRSR are important, yet the deeper imperative is safeguarding natural resources for future generations.



Dilip Kumar Das, Head of Administration and CSR at Balmer and Lawrie, brought sectoral insights from sustainable mobility and logistics. Drawing from experience in a 160-year-old organisation, he noted that sustainability today carries unprecedented urgency and must be approached realistically. He questioned whether India is fully ready for widespread electric vehicle adoption, particularly since significant electricity still comes from thermal power. Sustainable mobility must aim for minimal carbon emissions across the entire value chain.

Referring to international examples from Copenhagen and France, he emphasised the importance of both project efficiency and behavioural change. India must accelerate its transition to achieve the target of 20 per cent EV penetration by 2030. He praised Indian Railways for offering low-carbon mobility options, describing the Vande Bharat experience as comparable to air travel efficiency. He highlighted that Balmer and Lawrie has implemented electrified transport systems, explored coastal shipping and dedicated freight corridors to reduce carbon footprints whilst maintaining operational efficiency.



Devyani Hari, Senior Director at CRB, commended IRCTC and RVNL for their ability to operate in remote and aspirational regions where private-sector CSR often hesitates to venture. She stressed that sustainability relies on knowledge-sharing, collective learning and problem-solving. PSEs should leverage their scale and public-service mandate to strengthen sustainable supply chains, support MSMEs and empower women entrepreneurs. She observed that sustainable tourism depends not only on sustainable destinations but also on responsible tourists. The challenge is not whether individuals want to act sustainably, but how easily they are enabled to make sustainable choices. Sustainability is not about the survival of the fittest but about empathy and ensuring collective progress.

Megha Paul, Senior Communications Expert at UN Tourism, shared insights from the organisation's Best Tourism Villages initiative, which promotes rural development through sustainable tourism. The COVID-19 pandemic forced the global tourism sector to rethink its models and prioritise community-based, resilient approaches. Today, 319 villages across the world participate in this network, making it the largest rural tourism platform globally. India has performed exceptionally well, with villages such as Pochampally in Telangana and Dhordo in Gujarat receiving international recognition.



She shared the story of Dhordo's Sarpanch, who spearheaded resilience and redevelopment after the devastating 2001 Bhuj earthquake. Such examples show how heritage, community leadership and local pride can drive sustainable transformation. Global networking amongst these villages facilitates exchange of learning and best practices, demonstrating that sustainability requires courage to make better choices today and reconnection with roots to rediscover sustainability's true spirit.

Key Highlights

- Materiality Is Contextual, Stakeholder-Driven and Multidimensional: Material issues differ significantly across geographies and communities. Double materiality considers both financial and non-financial perspectives. No single metric captures what genuinely matters; stakeholder voices—communities, employees, management, peers—must shape understanding of material issues.
- IRCTC Demonstrates that CSR Excellence Requires Remote-Area Focus and Cultural Grounding: Operating in aspirational districts and the North-East where private-sector CSR hesitates to venture, IRCTC anchors its work in Indian philosophical values (Vasudhaiva Kutumbakam, Sarve Bhavantu Sukhinah). Real impact emerges from understanding local cultural nuances, long-term commitment and genuine community transformation.
- Sustainable Mobility Requires Realistic Assessment of Supply Chain Emissions: Simply electrifying vehicles is insufficient if electricity derives from thermal power. Sustainable mobility must address minimal carbon emissions across entire value chains. Behavioural change and mindful consumption are as critical as technological transition.
- Remote Tourism Development Can Drive Inclusive Sustainable Growth: Global platforms like UN Tourism's Best Tourism Villages demonstrate that heritage, community leadership and local pride drive sustainable transformation. Rural development through sustainable tourism creates livelihoods whilst protecting environments and cultures.
- Enablement, Not Imposition, Drives Sustainable Behaviour Change: The challenge is not whether people want to act sustainably, but how easily they are enabled to do so. PSEs should use their scale and public mandate to facilitate sustainable choices, support MSMEs and empower women entrepreneurs.
- People, Animals and Nature Must Remain Central to Development: Sustainability loses meaning when divorced from human welfare, ecological protection and livelihood security. PSEs must ensure development serves collective wellbeing, not concentrate benefits whilst externalising costs.
- CSR Success Requires Long-Term Commitment, Trust-Building and Cultural Sensitivity: Short-term interventions fail; sustained engagement with communities, transparent operations and culturally grounded approaches generate lasting transformation across sectors and geographies.
- PSEs Are Uniquely Positioned for Just Transitions: Operating at the intersection of public accountability, commercial performance and community expectations, PSEs can operationalise people-centric transition pathways integrating climate action with social equity—a model global south can lead.

Maharatna PSE Spotlight: Transitions for a Viksit Bharat – Perspectives from Public Sector Enterprises

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Moderated by:

Rohan Sarma, Senior Fellow, Centre for Responsible Business

Speakers:

- Bibhuti Ranjan Pradhan, Executive Director (CSR), Indian Oil Corporation Limited
- Om Prakash Mishra, Executive Director (HR and Community Development), Coal India Limited
- Neha Kumar, Head, South Asia, Climate Bonds Initiative

Rohan Sarma, Senior Fellow, Centre for Responsible Business, opened the session by noting that the session theme—transitions to a Viksit Bharat—was intentionally chosen to recognise, celebrate and make visible the multidimensional contributions of PSEs.

Om Prakash Mishra, Executive Director (HR and Community Development) at Coal India Limited, opened by emphasising that transition to a Viksit Bharat must fundamentally remain process-centric and people-centric. He noted that CIL operates across eight states and thirty-five districts, many economically dependent on coal. As the centre of coal production inevitably shifts under national energy transition, the urgent question extends beyond reskilling the workforce of 2.5 lakh employees to the future of entire regions whose development is tied to coal economies.

Om Prakash cautioned against understanding transition merely in economic terms. Human aspirations and emotional belonging must form part of any long-term approach. Reflecting on what Viksit Bharat should mean, he questioned whether a purely consumption-based definition of development is adequate, referring to CIL's internal motto—"Smile in every hut"—arguing that well-being and contentment should find place in national metrics for development.

Coal India is deeply engaged in renewable energy initiatives and committed to a planned, responsible shift wherein coal production and consumption will reduce by 2035 whilst balancing the country's growing energy needs. CIL invests more than ₹6,400 crore over eleven years in initiatives ranging from livelihood generation and skill development to community infrastructure. Yet such expenditure is insufficient without addressing human dignity, community trust and cultural preservation.



Bibhuti Ranjan Pradhan, Executive Director (CSR) at Indian Oil Corporation Limited, highlighted IOCL's longstanding culture of responsibility and national service. The company has historically operated in remote and challenging terrains to maintain fuel supplies even during global crises. IOCL ensured uninterrupted supply of LPG and fuel when global prices spiked and supply chains collapsed—demonstrating that CSR has long been embedded in PSE culture, predating the 2013 CSR law.

He recalled that India's CSR legacy extends further back: the Digboi refinery in Assam, established in 1906, established one of the earliest nursing schools in 1986. This demonstrates sustained institutional commitment to social responsibility across generations. He acknowledged Dr. Bhaskar Chatterjee's pioneering role in introducing sustainability as a strategic national conversation as early as 2010, long before it entered mainstream discourse. For Bibhuti Ranjan, the question is not whether CSR 2.0 will survive but what form it will take to contribute meaningfully to India's journey toward Viksit Bharat.



Neha Kumar, Head of South Asia at Climate Bonds Initiative, positioned India's transition within the global context. While advanced economies target net-zero by 2050, India's 2070 target is shaped by a singular fact: India is the only large economy currently attempting to complete its development transformation without relying heavily on fossil fuels. This is simultaneously a climate imperative and a development challenge of unprecedented complexity.

She emphasised that a Viksit Bharat must simultaneously be a green and just Bharat. PSEs are fundamental to this journey; their engagement in transition planning will shape both investment attractiveness and social legitimacy. She outlined dimensions of just transition: job security, affordability of energy, local economic development and financing models supporting decentralised and inclusive growth.

Neha highlighted a critical scale mismatch in that while India's CSR expenditure amounts to approximately ₹35,000–40,000 crore annually, government spending in core development sectors exceeds ₹10 lakh crore. CSR cannot solve all challenges by scale alone. Instead, CSR should focus on innovative, replicable, sustainable projects capable of long-term independent operation—high-impact areas such as women's economic empowerment, skill development and community-led enterprises.

She proposed that CSR should follow a two-part strategy. First, bridge development deficits in areas such as health and education. Second, dedicate resources to creating models of development excellence that district administrations can replicate—projects becoming self-sustaining and ultimately generating income, especially for women in rural and tribal communities. Such models could serve as transformative templates.

Critically, Neha noted that virtually every conversation on financing transitions proposes using CSR as a derisking tool to crowd-in private capital. CSR law should evolve to allow blending of funds because the scale of money required far exceeds current availability. Pooling CSR funds from multiple PSEs could allow for regional skill development facilities supporting both companies and local economies. India's leadership is closely observed across South Asia; countries look to India's financial and institutional innovations as benchmarks. PSEs, given their scale, are uniquely positioned to lead the region in decarbonisation and transition investment.

Om Prakash Mishra detailed Coal India's institutional innovations in CSR implementation. CIL has a unique CSR architecture, including a dedicated Community Development cadre with 206 trained officers placed across subsidiaries. The company routinely spends more than statutory requirements—approximately 26 per cent above the mandated budget—and has adopted a policy where even loss-making subsidiaries contribute to CSR through a formula linked to coal production.

He highlighted pioneering procurement reforms: automated bid evaluation and automatic refund of Earnest Money Deposit (EMD) to unsuccessful bidders. These systems have functioned for more than twenty-five years without human intervention, reducing complaints, increasing transparency and boosting employee morale. CIL is working toward similar reform-oriented models for CSR implementation itself—moving from discretionary decision-making toward systematic, transparent, accountable processes.

Shri Bibhuti Ranjan Pradhan addressed CSR strategy appropriate for Maharatna enterprises. Given that Schedule VII of the CSR Act lists nearly fifty categories whilst the national development budget exceeds ₹10 lakh crore against ₹35,000–40,000 crore in CSR funds, CSR must focus on targeted excellence rather than attempting universal coverage. PSU CSR should create models of development excellence replicable by district administrations and government institutions.

He described Project Vidushi, supporting girls aspiring to join IITs and NITs through intensive coaching and sustained scholarships, resulting in hundreds of successful admissions. This gender-inclusive nation-building model is replicable and scalable. PSU CSR strategies should intentionally direct income-generating opportunities toward women, ensuring that development benefits reach those historically marginalised from economic participation.

Tarun Kumar from IRCTC provided examples of successful social interventions. Project Vidushi demonstrates that CSR can foster gender-inclusive nation-building whilst creating replicable, scalable models. He emphasised the need for PSUs to prepare dedicated transition plans integrating skill-building, financial planning, community engagement and reskilling. By aligning operational strategies with local needs and developmental goals, PSUs ensure transitions are inclusive, just and sustainable over the long term.

Om Prakash Mishra clarified that existing legal frameworks do not yet permit CSR corpus funds; any change would require statutory amendment. However, numerous CSR initiatives focused on women's empowerment are already making a visible impact. Bibhuti Ranjan Pradhan noted that whilst corpus creation is restricted, the magnitude of India's CSR funds has potential to seed transformative models, as the Amul cooperative demonstrated for agricultural development.

India pursues a unique development pathway with rapid economic growth combined with extensive renewable energy expansion and carbon dependency reduction. Unlike countries that industrialised through heavy fossil-fuel reliance, India aims to leapfrog into a green economy. Coal is expected to peak between 2035 and 2040, with renewable energy set to dominate future markets. This transition is neither technologically inevitable nor economically determined; it requires deliberate institutional commitment, policy alignment and just transition planning.

PSEs are central to this model. They operate where private enterprises hesitate—remote regions, coal-dependent communities, economically marginal areas. They possess institutional capacity, accumulated expertise and public mandates enabling long-term commitment to transitions that private capital might abandon if returns prove insufficient.

The session raised fundamental questions about CSR's future. Is CSR in its current form compatible with the vision of Viksit Bharat in 2047? Should CSR replicate traditional development work or instead address bold, future-oriented challenges? Must CSR corpus funds remain restricted or should pooling mechanisms enable scale sufficient for sectoral transformation?

As sustainability becomes strategically integrated into core business operations, CSR will evolve. It will remain relevant, yet its shape will transform. Sustainability is as much an art as it is a science. PSEs committed to public scrutiny and strategic collaboration are uniquely positioned to shape this evolution.

Key Highlights

- Transition Must Be People-Centric: When industries, communities and cultures shift, human longing for what is left behind requires genuine acknowledgment. Development cannot be measured by consumption metrics alone; well-being, dignity and community continuity must be central to national development metrics.
- India Is the Only Large Economy Completing Development Transformation Without Heavy Fossil-Fuel Reliance: This singular challenge demands coordination across PSEs, government, civil society and communities. A Viksit Bharat must simultaneously be a green and just Bharat—climate action inseparable from equity imperatives.
- PSEs Have Distinctive Institutional Advantages for Just Transitions: Operating in remote regions, coal-dependent communities and economically marginal areas where private capital hesitates, PSEs possess scale, expertise and public mandates enabling long-term commitment to inclusive transitions.
- Women's Economic Empowerment and Gender-Inclusive Models Are High-Impact CSR Areas: Project Vidushi and similar initiatives direct income-generating opportunities toward historically marginalised populations, creating replicable templates for inclusive development.
- Collaboration with District Administrations Is Non-Negotiable for CSR Sustainability: Whilst companies sometimes attempt to bypass local governance, institutional legitimacy and coordination capacity of district administrations are essential for long-term impact.
- CSR Law Must Evolve to Enable Innovative Financing Models: Current restrictions on corpus creation limit CSR's catalytic potential for transformative projects. Statutory amendments permitting strategic pooling and blending could unlock new financing architectures.
- PSEs Are Uniquely Positioned to Lead South Asian Region in Decarbonisation and Transition Investment: Given their scale, institutional capacity and public mandates, PSEs represent global models for emerging economies navigating just transitions within development imperatives.



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Moderated by:

Rijit Sengupta, Chief Executive Officer, Centre for Responsible Business

Opening and Special Remarks:

- Dr. Suresh Gairola, India Country Director, Forest Stewardship Council
- Akriti Tomar, Communications Manager, FSC India
- Sean Nyquist, Acting Programme Manager, Value Chain Development, FSC International
- Maiprae Loyen, Managing Director, Agriac

Panellists:

- Devendra Gandhi, Manager Strategic Sourcing, Mahindra Group
- Dr. Ashrita Tripathi, Director, Automotive Tire Manufacturer Association
- Jayesh Ullatil, Deputy General Manager, Parry Agro, Murugappa Group
- Aadarsh Mohandas, Regional Director South Asia, Preferred by Nature
- Anuj Sharma, Deputy Country Director, FSC India



Nidhi Chaudhary opened the session by establishing India's strategic position as the world's second-largest consumer and sixth-largest producer of natural rubber, with millions of smallholders forming the supply chain backbone. Yet domestic production remains critically low, creating escalating dependence on imports often from forest-risk regions.



She highlighted that this session marks progression from dialogue to delivery. Last year's India Sustainability Summit initiated discussion and launched the FSC Knowledge Report on natural rubber, proposing development of an alliance for responsible natural rubber sourcing. This year's focus is implementing that vision through reviewing progress on India's first smallholder FSC certification, exploring global regulatory readiness and compliance experiences, and identifying innovative partnership models capable of scaling sustainable practices across India's 1.3 million smallholder base.

Dr. Suresh Gairola, India Country Director of FSC, noted that India possesses approximately 850,000 hectares of rubber plantations—amongst the world's top five—yet faces a profound paradox. Approximately 1.3 million smallholders cultivate these plantations, accounting for 90-92 per cent of India's total natural rubber production. Yet many have abandoned

tapping or are liquidating plantations to cultivate alternative crops, with younger generations particularly hesitant to continue rubber cultivation.



He underscored that the core constraint is economic as existing plantations cannot offer remunerative prices to owners or provide assurance that products will be purchased or that sustainable market mechanisms exist. The Government of India's Rubber Policy encourages plantation expansion—Project INROAD targets 200,000 additional hectares in the North-East and West Bengal—yet without addressing the market failure preventing existing plantations from generating livelihood security, expansion risks creating stranded assets.

Dr. Gairola noted that international pricing compounds this structural failure with Indian companies finding importing latex cheaper than producing domestically. Larger manufacturers, particularly tire manufacturers, prefer imports over domestic sourcing despite forest-risk implications. Climate change lowers productivity whilst exposing plantations to pests and diseases. Yet paradoxically, natural rubber plantations function as massive carbon dioxide sequestering species, providing ecological benefits undervalued in farmer economics. This carbon sequestration potential remains untapped as farmers abandon plantations.



Dr. Gairola outlined FSC's role in addressing this. FSC has developed special instruments for smallholders: tailored standards focusing on small and low-intensity managed forests, group certification enabling one entity to represent larger smallholder networks, and a new small plantation certificate for holdings under 20 hectares with significantly reduced indicators. The continuous improvement programme allows smallholders to begin with partial compliance (38 of 70 criteria) while creating action plans for remaining criteria over five years—receiving certification immediately. FSC standards are aligned with EUDR compliance, enabling exporters to meet European regulations through voluntary certification.

Sean Nyquist, FSC International's Value Chain Development Programme Manager, underscored the momentum reshaping the global natural rubber certification domain. FSC-certified rubber forest area doubled from approximately 205,000 hectares (2022) to 430,000 hectares currently. Certified plantation countries expanded from five (Thailand, Indonesia, Sri Lanka, Guatemala, India) to eleven—adding China, Brazil, Laos, Colombia, Vietnam and Malaysia.

Critically, this expansion is driven by smallholder certification. Estimates of certified smallholders grew from approximately 5,000 (2022) to over 25,000 currently—a fivefold increase with actual numbers likely substantially higher. Sean credits Pirelli as the primary driver transforming the entire sector. As the first tire company certifying FSC-rubber products (BMW tire, 2021), Pirelli subsequently certified F1 tires, Tour de France bicycle tires and Jaguar Land Rover tires. Most significantly, in 2024 Pirelli committed to sourcing all FSC-certified natural rubber for six European factories by 2026. Additional drivers amplifying momentum include EUDR (European Union Deforestation Regulation), creating urgent brand focus on supply chain ownership; rubberwood (timber harvested at plantation lifespan) adding value when certified; and global retailers (IKEA, Costco, Lowe's) incorporating FSC sourcing policies.



GPSNR (Global Platform for Sustainable Natural Rubber) members increasingly adopt FSC as a credible mechanism for deforestation and human rights assurance.



Maiprae Loyen, Agriac's founder and managing director, shared her company's approach empowering 9,000+ smallholders across Thailand's 16,000+ certified hectares through digitalised traceability and FSC certification. Agriac built two integrated platforms: TRAZTRU tracking products from farms to factories, and FARMTRU—an interactive farmer-facing application integrating satellite data, on-site visits and AI-based solutions addressing individual farm challenges. This digital architecture is essential because FSC requires extensive documentation that smallholders historically found insurmountable without technological support. FARMTRU enables farmers to report pest issues, tree health concerns and access AI-assisted, tailor-made solutions. Farmers receive direct engagement through the platform, democratising access to expert agronomic guidance previously available only to large operations.

Maiprae's expansion targets 130,000 hectares by 2030—ten times current area—demonstrating that digital-enabled smallholder certification can scale substantially. She emphasised that India is already technologically advanced in traceability systems, positioning it to lead regional adoption if commitment materialises. Critically, Maiprae stressed that smallholder income must increase through FSC adoption for sustainability. Carbon credit systems, biodiversity rewards and NTFP diversification (honey, pepper from agroforestry) provide additional income streams beyond rubber sales. Community-based governance ensures benefits flow to farmers. She stated unambiguously: without measurable income improvement from certification, smallholders will not sustain practices. Economic sustainability is non-negotiable.



Aadarsh Mohandas from Preferred by Nature articulated why this matters: since 90 per cent of Indian rubber comes from smallholders with marginal landholdings, smallholder sustainable production is essential for national supply security. Sustainable practices ensure long-term yields, tree longevity and improved soil health—creating foundation for intergenerational farming viability. Farmers practising intercropping, regenerative farming and activities like beekeeping now cultivate entire ecosystems alongside rubber. FSC certification enables them to safeguard futures whilst protecting forests.

Devendra Gandhi, Mahindra's Strategic Sourcing Manager, and Dr. Ashrita Tripathi, representing the Automotive Tire Manufacturer Association (comprising Apollo, Bridgestone, CEAT, JK, MRF producing 80 per cent of Indian tires), articulated the demand-side imperative reshaping markets. India consumes 14.1 lakh tonnes of natural rubber—9.2 per cent of global production—yet produces only 6.6 per cent globally. This consumption-production gap drives import dependency and forest-risk exposure. The global tire and natural rubber ecosystem is worth approximately $330-350 billion; India's tire industry alone represents $15-18 billion. Critically, tire production is accelerating: expected to double within three to five years and increase twelve-fold within twenty years. Global materials preferences are shifting toward sustainable, regenerative, natural-source products. This demand-side momentum creates unprecedented opportunity: if India domestically produces responsibly sourced natural rubber, domestic tire manufacturers gain competitive advantage whilst simultaneously addressing forest-risk and livelihood



imperatives.Devendra emphasised that responsible supply chains extend beyond regulatory compliance to represent strategic competitive positioning. Technology adoption—traceability systems enabling suppliers to certify latex origins—is essential for EUDR compliance. Yet it also differentiates products in premium markets increasingly valuing transparency and environmental integrity.



Ashrita noted that ATMA has engaged the Indian government at high policy levels to develop collaborative initiatives addressing India's consumption-production gap. The tire industry, consuming 70 per cent of natural rubber produced in India, is the critical demand-side stakeholder capable of driving momentum toward responsible sourcing at scale.

Jayesh Ullatil, Deputy General Manager, Parry Agro, Murugappa Group, underlined that sustainability efforts in India are most likely to scale when they are anchored in a clear business case. Drawing on learnings from the sector, he highlighted the value of shortening supply chains—working more directly with farmers and manufacturers—to reduce inefficiencies and ensure that more value is retained within the chain. He also emphasised certification as a practical market instrument, noting that frameworks such as FSC certification can provide both operational clarity and credibility, while also enabling improved market access.

Anuj Sharma, Deputy Country Director, FSC India, reflected on the wide variations in how "sustainability" is defined and understood across organisations and stakeholder groups. While there is broad agreement on the importance of the agenda, he noted that divergent definitions often create misalignment in implementation—particularly between large actors and smallholders. He made a case for a shared, stakeholder-endorsed definition that can guide action across the value chain.

Citing an example from Thailand's rubber sector, he described a more integrated approach in which a common set of principles for sustainable plantations was agreed upon, supported through facilitation and handholding for farmers and growers, alongside structured collaboration with industry. He stressed that such a holistic model is strengthened when industry has a clear stake in sustainability outcomes and when smallholders receive fair, predictable prices that make sustainable practices viable.

Key Highlights

- India's Consumption-Production Gap Creates Both Risk and Unprecedented Opportunity: Import dependency exposes India to forest-risk supply chains. Yet simultaneous domestic tire manufacturing capacity (expected to double in 3-5 years, increase 12-fold in 20 years) means if India develops responsible domestic supply, manufacturers gain competitive advantage while addressing ecological and livelihood imperatives.
- Smallholder Certification Has Reached Global Inflection Point: From 5,000 certified smallholders (2022) to 25,000+ currently, with Pirelli's commitment to supply six European factories entirely with FSC-certified rubber by 2026, the market signal is finally clear. This buyer commitment transforms FSC from aspiration to business imperative for upstream producers.
- Digital Traceability and AI-Enabled Support Systems Are Essential and Achievable: Agriac's TRAZTRU/FARMTRU platforms demonstrate that documentation barriers—historically preventing smallholder certification—can be overcome through technology. India's technological advancement and existing traceability infrastructure position it to lead this domain if commitment materialises.
- Smallholder Income Must Increase for Certification Sustainability: Carbon credits, biodiversity rewards, agroforestry diversification and NTFP integration provide additional income streams. Without demonstrable income improvement from FSC adoption, smallholders will abandon certification. Economic viability is the non-negotiable foundation.

Regulatory Modernisation, Policy & Practice Innovations to Drive Sustainable Consumption: Implications for Climate Action

Co-hosts

Hindustan Unilever Limited

Moderated by:

Dr. Nimesh Shah, General Manager Regulatory Affairs South Asia, Hindustan Unilever Limited (HUL)

Opening Remarks:

Rijit Sengupta, Chief Executive Officer, Centre for Responsible Business (CRB)

Speakers:

- Maelys Courtat, Environmental Sustainability Scientist, Unilever
- Rupal Verma, Policy Expert on Sustainable Consumption, International Institute for Sustainable Development
- Dr. Sukriti Sekr, Assistant Professor (Marketing), SPJIMR
- Shikhar Jain, Executive Director, Confederation of Indian Industry
- Dr. Jhanvi Rao, Principal Research Scientist , Unilever
- Dinesh Chand Sharma, Director – Standards & Public Policy, EU Project SESEI (Seconded European Standardization Expert in India)



Rijit Sengupta, Chief Executive Officer, CRB, opened by framing a critical blindspot in India's sustainability discourse in that while extensive attention focuses on industry, supply chains and technology, sustainable consumption—the demand-side imperative—remains largely neglected. The session's purpose was to demonstrate how innovation, policy and consumer behaviour must converge to accelerate climate action.

Rijit established the foundational premise that supply-side initiatives cannot reach optimal potential without demand for sustainable products. Yet India shows encouraging trends including increasing consumer segments willing to spend premium prices for sustainable products. Most Indian companies are making sustainability efforts, yet lack effective storytelling—communicating sincere sustainability narratives without expensive accolades.



Dr. Nimesh Shah presented a foundational framework addressing the central challenge: how to enhance human well-being and economic growth whilet using fewer resources and minimising environmental harm. This requires decoupling economic growth from resource consumption—a transformation requiring integrated action across four dimensions.

Convergence is foundational: advancement occurs only when policymakers, regulators, industry and consumers move in similar directions. Misalignment perpetuates low-progress equilibrium.

Reframing Value involves shifting consumer perception of sustainable products. Consumers perceive premium sustainable products (e.g., five-star air conditioners with lower lifetime energy consumption) as expensive at purchase, yet fail to internalise long-term utility benefits. Marketing and communication must reframe value to encompass lifecycle costs and environmental benefits, not merely upfront price.

Innovation demands substantially greater focus in India, particularly in low-carbon technology and highly efficient product design. Current innovation investment remains insufficient for the transformation required.



Science-Led Action requires applying scientific rigour to eco-labels, environmental claims and product standards. Too often, these derive from marketing convenience rather than empirical environmental impact assessment. Science-based standards enable credibility and prevent greenwashing.

Dr. Shah concluded that when these four pillars align, India can overcome impediments to sustainable consumption. The framework provides a diagnostic tool identifying where convergence breaks down and intervention is required.

Maelys Courtat, Environmental Sustainability Scientist at Unilever, presented research on environmental rating ecolabels (ERA)—systems providing single environmental performance scores for products. Europe has rapidly shifted from traditional certifications toward impact-based ratings, yet high development speed without scientific guidance has created confusion.

Maelys's research identified significant discrepancies in Life Cycle Assessment (LCA) approaches across labelling schemes. Different standards apply different methodologies, creating inconsistent outcomes for identical products. This undermines consumer trust and enables greenwashing—products appearing sustainable under one framework whilst failing under another.

She developed a framework addressing this through four pillars: relevance (appropriate LCA application), scientific rigor (robust methodology), transparency (clear communication) and scalability (feasible implementation across industries). The framework comprises 18 guidelines addressing data quality, verification procedures and harmonised approaches.

Key recommendations include industry-specific regulations tailored to sector characteristics; high data quality standards enforced through verification; transparent methodology and assumptions; robust scientific basis preventing marketing-driven distortion. She emphasised that complex science underlies labelling systems—this complexity must not be obscured by oversimplified marketing claims.



Maelys highlighted a significant challenge, which is convincing consumers that simpler, safer products delivering equivalent performance represent genuine sustainability rather than quality compromise. This requires active consumer involvement in labelling system design, ensuring credibility and acceptance.

Rupal Verma, policy expert on sustainable consumption, articulated that consumer adoption of climate-friendly products depends on powerful policies, trust and intelligently designed incentives. Sustainability policy comprises three elements: enablers (awareness programmes like Mission LiFE), incentives (monetary or social rewards, often invisible to consumers) and disincentives (penalties to unsustainable behaviour, increasingly necessary as incentives alone prove insufficient).

Global regulatory trends are accelerating — the EU's Green Claims Directive requires independent verification of verbal sustainability claims, preventing greenwashing and building consumer trust. Yet trust remains fragile as many consumers are unaware of sustainability issues or distrustful of claims.

Rupal emphasised that sustainable consumption relies fundamentally on trust. Sustainability must transition from optional bonus to standard practice. Simple, well-designed mechanisms prove highly effective. She noted how Germany's bottle-deposit system encourages return behaviour through financial incentive, demonstrating that "friction-reducing" systems can transform behaviour at scale. India should adopt similar mechanisms with uniform standards, digital tools and financial incentives creating automated sustainable behaviour.

She questioned India's cultural transition from extended product lifecycles to throw-away culture—a shift occurring over recent decades. This must be reversed through effective regulations, uniform standards and consumer awareness. She concluded by stating that responsible behaviour requires intelligent policy support and practical systems making sustainability the easy choice.



Dr. Sukriti Sekr, behavioural scientist, presented research on the gap between consumer stated intentions and actual purchasing behaviour regarding sustainable products. Key findings reveal that consumers willingly pay premiums when products offer personal advantages—health or safety benefits tied to sustainability. However, fear of greenwashing and scepticism of green claims limit adoption.

Behavioural nudges effectively overcome this gap. Default settings powerfully influence behaviour when hotels default to towel reuse (rather than automatic washing), reuse rates increase substantially. Social proof similarly motivates—informing guests that many others have reused towels increases participation. These insights suggest that sustainable behaviour can be "designed in" through choice architecture rather than relying on consumer virtue.

Critically, consumers seek real value, not green labels. They prioritise actual performance, cost and personal benefit. Marketing must therefore emphasise authentic benefits (health, durability, cost savings) alongside environmental claims. Storytelling proves highly effective: recycled materials sourced from aircraft parts, for example, create perceived specialness and quality, transforming perception from "poor quality recycled goods" to "innovative, premium products using upcycled materials."



Post-purchase behaviour deserves greater attention including proper disposal, second-hand shopping participation and conscious online purchasing (reducing returns) all extend product lifecycles. Significantly, returned online products frequently end in landfills—a waste stream companies and consumers largely ignore. Consumer responsibility must extend beyond purchase to end-of-life management.

Dr. Sekr concluded that meaningful storytelling, perceived benefits, and consumer responsibility throughout product lifecycles drive sustainable consumption.

Shikhar Jain, Executive Director at CII, noted that industry has substantially improved sustainable production, yet sustainable consumption remains the critical challenge. Policies like Extended Producer Responsibility (EPR) address this by making waste management sustainable rather than relying on ineffective voluntary approaches.

Sustainability has evolved from voluntary corporate initiative to compliance requirement—forcing integration into business models. Yet a fundamental challenge persists in that companies design unsustainable linear business models (e.g., regular mobile phone replacement) that inherently conflict with circularity principles. Product design itself must embed sustainability; consumer responsibility cannot compensate for fundamentally linear systems.



SMEs warrant particular attention as supply chain sources. Many SMEs pursue circularity piecemeal, creating inconsistent systems. Common implementation failures include improper waste separation, revealing gaps between knowledge and action. Digital Product Passports and digital traceability tools can enable consistent implementation, yet require harmonised standards and compliance incentives.

Shikhar highlighted geographic and affordability challenges unique to India, for instance rural populations and limited purchasing power constraining sustainable consumption adoption compared to developed markets. Yet young, digitally-native, sustainability-conscious consumers increasingly drive change—forcing faster corporate and policy responses.

Dr. Jhanvi Rao from Unilever R&D articulated that product redesign is sustainability's starting point for fast-moving consumer goods. She noted in her example that bar soaps contain 70-80 per cent palm oil, yet most dissolves unused during use—massive resource waste. Superior, more natural formulations exist, yet industry defaults to historical designs.



The obstacle is psychological; consumers fear that reduced ingredient quantities signal quality compromise. Yet rigorous product redesign can maintain or improve performance while dramatically reducing resource consumption. The deeper obstacle is regulatory obsolescence: Indian soap standards are based on Total Fatty Matter (TFM)—an oil content grading system dating 200 years—which most countries have abandoned. India's continued reliance on this outdated standard creates competitive incentives against innovation and efficient design.

Industry resistance to regulatory change reflects desire to preserve existing competitive advantages. Yet science-based standards would enable innovation, reducing resource waste without compromising quality. Dr. Rao stressed that India must transition to science-based product standards, unlocking industry capacity for sustainable redesign and resource efficiency.

Key Highlights

- Triple Bottom Line Alignment: Sustainable consumption requires simultaneous action by industry,

government and consumers. Misalignment perpetuates low-progress stagnation. The CRIS framework provides a diagnostic for identifying where convergence breaks.

- Utility and Personal Benefit Drive Adoption: Consumers prioritise actual performance, cost and personal benefit (health, safety, durability) over eco-labels. Marketing must emphasise authentic benefits alongside environmental claims. Greenwashing scepticism remains high; trust is fragile and requires credible, independent verification.
- Regulations and System Design Shape Behaviour: Simple, well-designed mechanisms (bottle deposits, default settings, social proof) effectively transform behaviour at scale. Powerful regulations deter greenwashing and encourage responsible practices. India requires workable, uniform mechanisms: harmonised standards, digital tools, financial incentives and QR codes creating automated sustainability.
- Product Redesign Should Precede Consumer Responsibility: Companies must embed sustainability into product design rather than expecting consumers to compensate for fundamentally unsustainable systems. Obsolete regulations (e.g., TFM-based soap standards) hinder innovation; science-based standards enable efficient resource use without quality compromise.
- Behavioural Nudges Transform Intention Into Action: Choice architecture, social proof, default settings and meaningful storytelling overcome intention-behaviour gaps. Consumer responsibility extends through the entire product lifecycle—post-purchase behaviour, proper disposal and second-hand engagement—yet receives insufficient attention.
- Young Consumers Drive Systemic Change: The generation entering markets is digitally-native, sustainability-conscious and demands responsible products. This generational shift forces faster corporate and policy responses, accelerating the sustainability transition beyond voluntary initiatives.

Sustainable Value Chains

- The Fabric of Change: Our Vision for Regenerative Cotton

Co-hosts

ACRE

Solidaridad CRB Centre for Responsible Business Enabling Change for Impact regenagri

- Advancing Sustainability in Food Systems: A Value Chain Approach

Co-hosts

The Food and Land Use Coalition India Country Platform

CRB Centre for Responsible Business Enabling Change for Impact idh WRI INDIA WWF

The Fabric of Change: Our Vision for Regenerative Cotton

Co-hosts

Moderated by:

Ranjeeb Sarma, Sustainability Leader, regenagri

Speakers:

- Rijit Sengupta, Chief Executive Officer, Centre for Responsible Business
- Arvind Rewal, Global Raw Material Leader–Agriculture, IKEA
- Chandrima Chatterjee, Secretary General, Confederation of Indian Textile Industry
- Professor Dev Nathan, Institute for Human Development
- Murli Dhar, Director Sustainable Agriculture Program, WWF–India
- Dipankar Sen Gupta, Tradecraft
- YG Prasad, Ex–Director, CICR
- Peter J Mccallister, Responsible Business Expert
- Prabeen Singh, Sustainability Program Manager, Bestseller



Rijit Sengupta, Chief Executive Officer, Centre for Responsible Business began by noting that the roundtable format for the session was intentional, designed to encourage brainstorming and inclusive participation. He reflected on discussions from the previous days, particularly a comment by the Chairperson of the Apparel Export Promotion Council, who emphasised that transformation across the entire textile value chain is not only desirable but imperative, both for ethical reasons and commercial benefits, especially for SMEs.

Rijit stated that the Center for Responsible Business had historically focused on downstream aspects of the textile sector but had begun moving upstream through a developing initiative called Alliance of Cotton & Textile Stakeholders on Regenerative Agriculture (ACRE) in collaboration with partners from Solidaridad and RegenAgri. He described this shift as complex and challenging but necessary, given that cotton is the most critical raw material in the Indian textile domain.

He provided contextual data, noting that cotton accounts for approximately 60 to 65 percent of India's textile dependency, and that India is the second–largest cotton producer globally after China with about 21 percent of global production, and that the sector supports more than 6 million smallholder farmers. He added that cotton contributes around 4% to the country's GDP and 14% to industrial output.

Rijit explained that the starting point for the ACRE initiative was the welfare of smallholder farmers. He further stressed that transformation must be comprehensive and include benefits not only for farmers but also for nature, particularly given the declining state of natural capital and production factors. He stated that the alliance aims to form a coalition of organisations and individuals committed to advancing a regenerative and transformational journey in the cotton sector. He outlined three core elements guiding this effort: fair voice, fair nature, and fair credibility.



Ranjeeb Sarma, Sustainability Leader, regenagri, and moderator for the roundtable discussion, noted that India, as a large country with over six million smallholder cotton farmers, contributes significantly to the national economy and the global textile value chain while many of these farmers remain in conventional agriculture and continue to face serious support gaps. He recalled how international value chains had responded through standards such as the Better Cotton Initiative (BCI) and the growth of organic and other sustainable cotton programmes. He emphasised that despite this evolution, the underlying crises remained—environmental pressures, socio-economic vulnerabilities, and systemic barriers—and argued that the transition towards regenerative agriculture required more than standards or certification alone, prompting the creation of ACRE as a coalition rather than just another platform.

Setting out ACRE'S structure, Ranjeeb defined the alliance as focused specifically on the cotton and textile value chain and built on three pillars: system integrity (integrating credibility and equity in an evolving, multi-standards landscape), ecosystem interplay (inclusive roles for diverse actors) and demand-side management (aligning requirements with available supply and clarifying regenerative claims). He linked these pillars to a value proposition in which farmers gain improved soil health, yield stability, market access, and fair compensation; brands and retailers gain credibility and comparability of regenerative claims; manufacturers gain supply-chain resilience and lower input dependence; and civil society organisations gain a platform for coordinated action and systemic transformation. He invited the stakeholders in the room to respond to ACRE's guiding questions on data/verification, enabling actions in policy–finance–technology, and tangible collective commitments.



Prof. Dev Nathan focused on the sustainability of raw cotton production and the question of fair remuneration for smallholders, insisting that any fair price must meet the needs of farmers and their families embedded in the wider system. He pointed out that cotton market prices in India are often significantly lower than what is needed for viable net incomes, that MSP is only partially implemented, and that this combination of low net income and high indebtedness has been associated with a high number of suicides among cotton farmers. He argued that global cotton prices are not simply set by markets but are heavily shaped by large EU and US subsidies (frequently framed as "green box" support), which push world prices below levels compatible with reasonable producer incomes and disproportionately harm smaller West African economies that lack fiscal capacity to offset these effects, even as larger economies like China and India can partially compensate through domestic subsidies.

Prof. Dev Nathan highlighted a structural asymmetry in Indian policy whereby there is a legal minimum wage for workers but no legal minimum price for farmers' products, and noted that farmers are now demanding a legal minimum price based on fair net income rather than narrow cost-plus formulas, urging ACRE and participants to find ways of integrating this fair-price question into the regenerative cotton agenda.

Responding to Professor Devnath, Ranjeeb explained that the "fair voice" element within ACRE explicitly engages with questions of fair prices and incomes across the cotton value chain and that ACRE has already sanctioned ongoing research examining current price-calculation systems, how farmers actually receive their wages and how true-cost calculation can be incorporated into regenerative cotton pricing.



Peter J Mccallister, Responsible Business Expert, reflected on the dynamics of collaborations and cautioned against trying to "fix everything on day one", whether on wages, market prices or standards, arguing that the most effective collaborations recognise transformational work as a journey. He suggested that India is uniquely placed, given its expertise, market position and large domestic market, to set its own standards and develop a nationaL initiative that can inform both domestic production and global practice, provided that tough questions about living wages, value and market positioning are confronted systematically.

Peter stressed the importance of "walking before running", getting principles and collaborative mechanisms right so that the value chain—from farmers through milling, processing and fabrication—can integrate economic viability without losing sight of the core custodial responsibility for finite resources like water, soil and air. He pointed out that government had not been explicitly named as a stakeholder in ACRE's framing, yet district- and state-level governments are crucial in the dialogue and should, at some stage, be formally engaged; he also insisted that the initiative must not be driven by international brands or consumers, who lack deep local contextual knowledge, and instead should originate from local actors in India who can then invite brands to partner, ensuring that economics work from the starting point of farmers' returns.

Speaking from the perspective of a brand that uses cotton, Arvind Rewal, Global Raw Material Leader – Agriculture, IKEA, described regenerative cotton as the "new star on the block" and acknowledged that regenerative agriculture clearly ticks many boxes on environmental sustainability. However, he argued, the biggest challenge regenerative cotton faces is creating demand, noting that global supply of regenagri-certified cotton is already significant—he cited that almost seven to eight percent of global cotton is regenagri-certified—yet demand from brands and consumers has not scaled proportionately. He pointed out that cotton faces competition both from alternative fibres such as polyester and other man-made fibres and from multiple cotton types (BCI, organic, regenerative, among others), leaving designers free to choose lower-cost options while the end product simply reads "made of/in cotton".

Arvind echoed the Prof. Dev Nathan's concerns by stressing the persistent dilemma of balancing sustainability and affordability: millennials and other consumers increasingly ask difficult questions about sustainability but are often unwilling to pay a premium price, and brands also confront tariffs, logistics costs and rising fuel prices. Under such conditions, he warned that unless regenerative cotton is made affordable and mainstream, it risks following the path of organic cotton, which despite 15–20 years of efforts remains a niche, used by relatively few brands for limited product ranges, rather than becoming a standard, widespread material similar to BCI.



Chandrima Chatterjee, Secretary General, Confederation of Indian Textile Industry, explained that their interest in regenerative cotton has been growing over the past years as they try to understand the movement and determine how to participate, but she stressed that pricing is a shared worry for both farmers and industry. She noted that despite a consistently rising MSP, the current system has not clearly benefited either side: in the last two years India has, for the first time, become a net importer of cotton, area under cotton cultivation has shrunk, and it has become increasingly difficult to retain farmers in cotton due to more remunerative alternatives.

From the industry's standpoint, Chandrima argued, the key lies in higher productivity that can create a win–win for farmers and downstream users, pointing to CITI's cotton development work Cotton Development and Research Association (CTRA) as an example of efforts targeted at productivity and farmer retention. She observed that MSP in India is heavily cost-based and does not incentivise cost reduction, contributing to India having one of the highest costs of cotton production globally, and welcomed parallel studies

(by ACRE and others) on pricing mechanisms that avoid distorting the value chain while keeping Indian cotton internationally competitive.



Dipankar Sen Gupta from Tradecraft continued the pricing discussion from a market and consumer angle, arguing that without demand generation at the consumer end there is limited scope to sustainably raise cotton prices given current supply–demand dynamics. He stressed that consumers are often confused about how to differentiate between organic, regenerative and other "sustainable" cottons, and that significant consumer education is needed to demystify these categories. Drawing on sustainability literature, he pointed to the well-documented intention–behaviour gap in green consumption: consumers may express positive intentions towards organic or regenerative products, but these intentions often fail to translate into actual purchasing behaviour due to factors such as higher prices, limited availability, low trust and confusion about certification.

Dipankar noted that the certification domain itself is becoming crowded, which exacerbates consumer confusion, and that greenwashing and selective disclosure by some brands further erode trust, making consumers skeptical of sustainability claims. Beyond labels, he argued that consumers respond to strong narratives, and called for building compelling stories around regenerative cotton that communicate value in ways comparable to examples like Amul's moves in sustainable staples; he suggested that the conversation should be redirected from a narrow focus on premiums, MSP and market price towards ensuring that whatever is decided in rooms like this actually reaches farmers, via mechanisms that keep farmers within the system over time.



Murli Dhar, Director Sustainable Agriculture Program, WWF-India, returned the discussion to credibility and standards, arguing that credibility is essential if regenerative cotton supply is to be trusted and scaled, but that it is difficult to design credible data and verification systems while the underlying definition of regenerative agriculture remains unclear. He observed that regenerative frameworks currently overlap heavily with organic and BCI, and that without clear "red lines" it is hard for practitioners and stakeholders to know what exactly regenerative cotton should achieve or how it differs from existing approaches.

Murli warned that if every brand develops its own definition of regenerative agriculture or regenerative cotton, the sector risks creating a chaotic landscape with thousands of competing definitions that confuse both experts and the public. For Murli, this is where a coalition like ACRE must play a strategic role: first establishing a sector-wide understanding of regenerative agriculture, then using that consensus to shape discussions on data, fair prices, and the outputs required from regenerative initiatives, thereby aligning actors rather than allowing a proliferation of fragmented approaches.



YG Prasad, Ex-Director, Central Institute for Cotton Research (CICR), focused on conceptual clarity, proposing a simple differentiation where natural farming implies "do nothing", organic farming involves clearly defined "dos and don'ts", and regenerative agriculture is about "doing something" proactive for soil health, agro-biodiversity, bio-inputs use, use of water, and carbon and chemical footprints. He cautioned against conflating regenerative



with organic or blended organic–regenerative schemes, and suggested that regenerative cotton should ideally be left as a distinct intermediary approach between conventional and more extreme organic or natural farming, one that combines traditional practices with modern science.

Drawing on his field experience, YG Prasad highlighted the practical difficulties small, largely rain-fed cotton farmers face in adopting regenerative practices and navigating complex measurement, verification and certification processes. Pointing to examples from Australia, he argued that the way forward is to marry traditional moisture-conserving and soil-improving practices with modern precision agriculture and equipment, increasing resource-use efficiency for fertilisers, pesticides and water; he insisted that investments and price incentives are required so that higher productivity itself becomes an incentive for farmers to sustain regenerative practices, and that a full value-chain approach with brand support is necessary to make this viable.

Prabeen Singh, Sustainability Program Manager, Bestseller clarified that regenerative agriculture (and regenagri specifically) faces competition not only from other sustainability standards but within the regenerative space itself, citing BCI's emerging regenerative module, ROC and multiple other standards as creating overlapping practices and pricing pressures that confuse brands. He described internal analysis of five to six regenerative frameworks where no clear "best" emerged, amplifying confusion at the implementation and farmer levels.



Prabeen raised practical dilemmas around BT versus non-BT cotton (noting BT's performance with synthetic agrochemicals) and policy implementation challenges where highly effective synthetic fertilisers and pesticides are available, questioning why organic alternatives lag and how policy can address seed and input availability. He underscored that these micro-level implementation issues—infrastructure, input efficacy and farmer choice—must be resolved to scale regenerative cotton without chaos.

In his closing remarks, Arvind affirmed that there is ample space for everyone in regenerative agriculture to operate and grow, noting that even combining all of the current sustainability standards covers less than 30% of global cotton, leaving significant room for improvement despite challenges. He expressed confidence that with concerted effort, substantial progress is achievable in the coming years.

Murli concluded by acknowledging the multiple dilemmas raised in the discussion around standards and frameworks within regenerative cotton, insisting that credible mechanisms are needed to determine which systems perform better and that the coalition must take up this work seriously to standardise definitions and frameworks. He anticipated that the coalition would address bigger questions emerging from the roundtable, including new standards, transitions within existing ones (e.g., BCI's regenerative approach), and ways to avoid creating chaos through further proliferation of standards, especially since even 30% sustainable cotton coverage leaves a long way to go.



Key Highlights

- ACRE As A Coalition For Alignment: ACRE emerged as a unifying platform to resolve standards proliferation, define "regenerative", integrate fair voice/nature/credibility, and co-create data/verification, policy–finance–tech enablers, and collective commitments.
- Fair Price And Livelihoods Are Central: Debates focused on moving beyond MSP to true-cost, living wages and year-round farmer livelihoods, addressing global subsidies and domestic cost pressures while recognising productivity as a win–win.
- Demand And Affordability Dilemmas: Without consumer education, clear narratives and mainstream affordability, regenerative risks staying niche like organic; intention–behaviour gaps, greenwashing and crowded certifications exacerbate this.
- Credibility And Local Enabling Environment: Calls for simplifying metrics, leveraging precision tech with tradition, building local governance (panchayats/SHGs), empowering women/vulnerable groups, and ensuring transition finance.
- National Leadership Over International: India positioned to set its own standards, with government and local actors driving rather than international brands, while walking a journey that balances economics with ecological restoration.

Advancing Sustainability in Food Systems: A Value Chain Approach

Co-hosts

Moderated by:

Dr. Ruchika Singh, Executive Director, Food, Land and Water, WRI India

Opening Remarks:

- Dr. Madhuri Nanda, Former Director – South Asia, Rainforest Alliance
- Dr. KM Jayahari, India Country Coordinator, Food and Land Use Coalition (FOLU), WRI India

Panellists:

- Rhea Malhotra, Project Officer, UN Environment Programme (UNEP), India Office
- Maarico Baruah, Policy Manager, The Climate Group
- Aleen Mukherjee, Director – Farm Sector, ACCESS Development Services
- Madhur Bhatnagar, Chief Operating Officer, Urban Farms Co.
- Suryamani Roul, Managing Trustee, Forum of Enterprises for Equitable Development (FEED)



Dr. Madhuri Nanda, Former Director of South Asia for Rainforest Alliance, opened the session by addressing sustainability certifications and standards. While certifications are important for building market trust and ensuring credible sustainability claims, current certification systems often impose substantial compliance burdens on smallholder farmers. Certification costs, documentation requirements, audit procedures, and training demands are frequently prohibitive for resource-constrained producers.

She emphasised that simplifying standards, aligning fragmented certification systems, and strengthening traceability infrastructure are essential for enabling smallholder participation. Rather than requiring smallholders to navigate multiple, overlapping certification schemes with different requirements, harmonised approaches reduce confusion and compliance costs. Strengthened capacity-building and farmer training initiatives ensure smallholders understand requirements and can implement practices sustainably rather than merely documenting compliance.

Dr. Madhuri stressed that credibility requires rigorous verification and audit, yet this must not come at the cost of excluding the farmers most needing support. The balance lies in streamlined systems where core requirements are clear and non-negotiable, yet documentation and verification approaches are tailored to smallholder contexts—for instance, group certification where local facilitators assist documentation, peer auditing that leverages farmer knowledge, and adaptive implementation allowing phased compliance.



Dr. K.M. Jayahari, India Country Coordinator of the Food and Land Use Coalition, highlighted that food-system decisions involve profound complexities and unavoidable trade-offs. Questions about land use allocation, water distribution, nutrition targets, and climate adaptation do not have simple answers; they require understanding how decisions in one domain create ripple effects across others.

He emphasised that analytical tools and scenario modelling can guide policymakers, researchers, and grassroots actors in jointly planning sustainable pathways. Rather than relying on intuition or ideology, evidence-based tools enable stakeholders to model different future scenarios, understand long-term impacts of policy choices, and identify leverage points where intervention could have outsized effects. This approach transforms food-system planning from debate-driven toward evidence-informed decision-making where different stakeholder groups can jointly explore consequences of their preferred strategies.

Such modelling requires integrating biophysical data (soil health, water availability, climate projections), economic data (production costs, market prices, employment), and social data (nutritional needs, livelihood options, equity considerations). When these are integrated into transparent models, conversations shift from abstract principles toward concrete trade-offs: what is gained and what is lost if we prioritise production versus nutritional security, or economic growth versus livelihood preservation?

Dr. Ruchika Singh, moderating the session panel discussion, opened by establishing a foundational premise that India's food systems are highly complex, interdependent networks where sustainability cannot be achieved through isolated farm-level interventions. Instead, holistic approaches integrating environmental sustainability with livelihood security are essential. The session would examine how collaborative frameworks connecting farmers, markets, development organisations and policy institutions can drive systemic change in India's food and land systems.



The discussion operated from the conviction that sustainability in food systems is not primarily a technical or environmental challenge—though both matter critically—but fundamentally a governance and equity challenge. How institutions are structured, how value is distributed, and whose voices shape decisions determine whether food-system transitions benefit farmers and communities or exacerbate existing inequalities.

Aleen Mukherjee, Director of Farm Sector at ACCESS Development Services, established that India's food system cannot be understood apart from its approximately 86 million smallholder farmers. Sustainability cannot be achieved through farm-level interventions alone; individual farmer productivity improvements mean little without strong value-chain linkages, improved market access, institutional strengthening, and farmer collectivisation. The critical gap lies between what farmers can accomplish individually and what systemic change requires.



Aleen Mukherjee emphasised that farmers must be placed at the centre of governance systems—not as passive beneficiaries of external programmes but as architects of sustainability transitions affecting their own livelihoods. This requires fundamentally restructuring how decisions are made: moving from top-down implementation toward participatory models where farmer institutions, cooperatives, and farmer producer organisations (FPOs) drive strategy development. When farmers control governance, sustainability models are more likely to reflect ground realities and local knowledge rather than external assumptions.

Dr. Ruchika Singh explained systems thinking as foundational to sustainable food-system transformation. Food, land, and water governance cannot be siloed into separate policy domains; they are deeply

interconnected. Agricultural water use affects downstream water security; land-use choices shape both production capacity and ecosystem services; food production patterns determine both nutrition and livelihood options. She emphasised that national strategies must be informed by local realities—a principle easily stated but difficult to operationalise. Different regions of India face different constraints: water scarcity in some areas versus flooding in others, soil degradation in mining regions versus fertility preservation elsewhere, market access challenges in remote areas versus oversupply in well-connected zones. Generic national policies often fail because they do not account for this heterogeneity.



Critically, Dr. Ruchika stressed that sustainability must simultaneously address livelihoods, social inclusion, and nutrition alongside environmental goals. Too often, sustainability is framed as an environmental imperative disconnected from human welfare. Yet food systems exist to feed people and provide livelihoods; environmental sustainability divorced from these human dimensions is not sustainability at all but rather environmental protection at the cost of social harm. Genuine sustainability weaves together ecological health, livelihood security, nutritional adequacy and equity.

Maarico Baruah, Policy Manager at The Climate Group, focused on embedding climate action—both adaptation and mitigation—within food value chains. Food systems contribute substantially to India's emissions through agricultural practices, land-use change, and supply-chain logistics. Yet they also face acute climate vulnerability including changing precipitation patterns, temperature extremes, and pest dynamics threaten production stability. Maarico highlighted concrete opportunities to reduce emissions and build resilience simultaneously. Renewable energy adoption in agricultural operations reduces operational emissions while improving cost predictability. Regenerative agriculture—practices restoring soil health, increasing water retention, and enhancing biodiversity—builds adaptive capacity while sequestering carbon. Water stewardship—reducing consumption while improving quality—addresses both climate impacts and livelihood sustainability.



Madhur Bhatnagar, Chief Operating Officer of Urban Farms Co., brought a market and enterprise perspective to food-system sustainability. He highlighted that private-sector engagement in sustainability is increasingly focused on responsible sourcing and sustainability-linked procurement. Companies sourcing agricultural inputs—whether as food manufacturers, retailers, or exporters—are recognising that supply-chain sustainability is a business imperative, not optional corporate responsibility.

Traceability systems enabling companies to verify sustainability claims throughout supply chains are becoming standard expectations. Bhatnagar stressed the importance of transparent market structures that reward farmers adopting sustainable practices—creating financial incentives that make sustainability economically rational, not merely virtuous. When farmers can receive price premiums for sustainable production, premium prices for verified sustainable inputs, or preferential sourcing agreements based on sustainability criteria, market mechanisms become powerful drivers of sustainability adoption.

Yet he also noted a critical challenge: market-based approaches risk benefiting only larger, better-resourced farmers capable of meeting complex traceability and certification requirements. Smaller farmers, particularly in remote areas or without processing assets, may be excluded from premium markets. Therefore, responsible sourcing strategies must deliberately include capacity-building support and simplified verification mechanisms enabling smallholders to participate in sustainable supply chains.

Suryamani Roul, Managing Trustee of the Forum of Enterprises for Equitable Development, foregrounded a critical gap in mainstream sustainability discourse: marginalised groups—tribal farmers, women cultivators, landless labourers, and historically excluded communities—are often overlooked in sustainability transitions. These populations frequently depend most heavily on natural resources yet have the least voice in decisions shaping resource management. Suryamani emphasised that equity



and inclusion must be embedded within sustainability agendas, not treated as separate social dimensions. Participatory governance models enabling marginalised groups to shape decisions; livelihood diversification strategies providing income security beyond agriculture; and equitable value distribution ensuring margins flow to producers rather than concentrating with processors and retailers are all essential components of genuinely sustainable transitions.

Rhea Malhotra, Project Officer at UNEP India Office, highlighted the organisation's focus on promoting nature-positive food systems that enhance ecological health alongside human welfare. This requires strategies centred on behavioural change—shifting farmer and consumer choices toward practices and consumption patterns supporting ecosystem health. Water conservation—addressing the fact that agriculture consumes approximately 70 per cent of India's water—is critical both for climate resilience and livelihood sustainability.



She noted that soil improvement through organic matter addition, reduced tillage, and diversified cropping systems builds productive capacity while enhancing carbon sequestration and water retention. Low-emission production through reduced chemical inputs, improved manure management, and precision agriculture minimises environmental harm while often reducing farmer input costs. She emphasised that adapting global best practices to Indian contexts is essential—replicating models from temperate, developed regions often fails in tropical, developing economies where farmer capacity, market access, and climate conditions differ dramatically.

Key Highlights

- Value-Chain Integration is Non-Negotiable: Sustainability cannot be achieved through farm-level interventions alone. Strong linkages connecting production to markets, input suppliers to processors, and processors to consumers must be deliberately built. Each link in the value chain offers opportunities for sustainability improvements; leaving links disconnected means potential leverage points remain unexploited.
- Smallholder Farmers Must Be Governance Actors, Not Passive Beneficiaries: With 86 million smallholders forming the backbone of India's food system, sustainability transitions cannot succeed without farmer participation in decision-making. Farmer institutions, FPOs, and cooperatives must shape strategy rather than merely implementing external programmes.
- Evidence-Based Scenario Modelling Transforms Policy Conversations: Complex trade-offs inherent in food-system decisions require transparent analytical tools enabling stakeholders to jointly explore consequences of policy choices. Modelling integrating biophysical, economic, and social data enables moving beyond ideology-driven debate toward evidence-informed decision-making.
- Climate Action and Adaptation Must Be Simultaneously Embedded: Food systems contribute to emissions and face acute climate vulnerability. Strategies addressing both mitigation (renewable energy, regenerative agriculture, water stewardship) and adaptation (resilient varieties, water management, diversification) are essential—and often reinforce rather than contradict each other.
- Equity and Inclusion Must Be Designed In, Not Added On: Without deliberate inclusion, sustainability transitions risk benefiting wealthier farmers while marginalising vulnerable populations. Participatory governance, livelihood diversification, and equitable value distribution must be foundational to sustainability models, not optional add-ons.
- Simplified, Aligned Standards Enable Smallholder Participation: Fragmented certification systems impose prohibitive compliance burdens on resource-constrained farmers. Harmonised standards, group certification approaches, and farmer-friendly verification—supported by strengthened capacity-building—are essential for enabling smallholders to participate in sustainable supply chains while maintaining credibility.

Sustainability Standards

- Water Stewardship: Climate Resilience and Industry Policy and Practice

Co-hosts

India Water Stewardship Network

CRB Centre for Responsible Business

Alliance for Water Stewardship

WWF

- The Future of Voluntary Standards in Driving Sustainability: India Strategy Workshop

Co-hosts

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Scaling Collective Action for Water Stewardship in India's Priority Basins

Co-hosts

Moderated by:

Adrian Sym, Chief Executive Officer, Alliance for Water Stewardship

Speakers:

- Ashish Bhardwaj, Programme Lead, Alliance for Water Stewardship
- Manasi Diwan, TGI Secretariat
- Adarsh, Godavari Initiative



Adrian Sym, Chief Executive of the Alliance for Water Stewardship (AWS), opened by contextualising the session within AWS's global evolution. AWS has developed into a global network inspiring leadership across diverse groups and sectors committed to safeguarding freshwater resources. The organisation now comprises 230+ members—businesses, NGOs, and public agencies—functioning as a multi-stakeholder platform providing space for different groups to understand one another and collaborate toward water security.



The AWS Standard provides a framework for businesses using large volumes of water to understand their water use and its impacts. Certification is available, yet the standard functions equally as a capacity-building resource for organisations at various levels of maturity. With over 400 certified sites globally, AWS has established international recognition for best practices in water stewardship.

Sym emphasised that scaling collective action for water stewardship in India's priority basins does not exist in isolation but directly relates to broader water reuse and circular economy imperatives, particularly the World Bank's recent publication on scaling water reuse. Understanding where collective action, policy frameworks, and financing mechanisms fit within the broader water security landscape is essential for effective intervention.

The session aimed to facilitate conversation among diverse stakeholders, enabling knowledge exchange and collaborative problem-solving around water stewardship challenges and opportunities in India's priority basins.



Adarsh, representing the Godavari Initiative, began by establishing that water management in India is extraordinarily complex. More than twenty national agencies and over fifty agencies across various scales govern this single commodity essential for farmers,

businesses, and all human and animal life. Water is simultaneously a raw material for production and a precious resource requiring stewardship. This governance complexity creates both challenges—fragmentation, duplication, coordination failures—and opportunities for aligning diverse actors around shared objectives.

He noted that the Godavari Initiative emerged from recognition that effective water stewardship requires integrating collective action across this fragmented institutional landscape. The initiative envisions collective action through five interconnected pillars. Government Partnership ensures alignment with government policies and priorities, making sustainability institutionally anchored rather than dependent on voluntary corporate initiatives. Strategic Alignment with Standards integrates global standards like AWS with national frameworks, creating coherent implementation pathways.



Collaborative Governance establishes transparent, accountable structures for basin-level impact, transcending siloed departmental approaches. Policy Advocacy actively shapes policy outcomes, exemplified by efforts to expand river-focused funds beyond the Ganges to other priority basins. On-Ground Action translates policy and governance into concrete projects—check dams, agroforestry, waste management—building basin resilience.

Adarsh emphasised that water holds traditional and cultural significance in India, particularly evident through festivals like the Kumbh Mela, creating opportunities to engage spiritual and cultural dimensions alongside technical water stewardship.



Manasi Diwan, TGI Secretariat, presented the Godavari Initiative's operational structure and impact measurement. The initiative operates across nine districts in the Godavari basin, integrating diverse thematic areas beyond water itself. Projects span water management, agroforestry, emissions reduction, and waste management, with impact tracked through integrated dashboards quantifying contributions and outcomes.

The initiative adheres to global reporting standards through either the Basin Water Action Hub or Basin Diagnostic Framework Hub, providing holistic quantitative assessment of impacts. Twenty-four major projects are underway across the basin, with community engagement mapped systematically across districts, focusing on wildlife reserves and alignment with SDGs. The scale is remarkable: basin-level analysis estimates require approximately 7,200 tanks for water management, with data sourced from district plans and government databases.

A signature community engagement initiative, the Watershed Yatra—mandated by the Ministry of Rural Development—traversed the country generating public awareness and sensitisation. The initiative emphasises intergenerational narrative building, engaging youth (TGI Fellows, students) alongside community members, embedding water stewardship into lived experience rather than treating it as external policy.

Manasi stressed that the initiative's heart is "Jan" (community) and the civilisation emerging from community-centred water stewardship. Rather than top-down implementation, the model builds from existing community knowledge, existing water user associations, and participatory approaches ensuring ownership and sustainability.





Ashish Bhardwaj, Programme Lead at AWS, detailed the Collective Action Accelerator—a structured program guiding companies and local stakeholders through practical steps toward water stewardship. The accelerator converts good intentions into credible initiatives through training, facilitation, and shared learning.

He explained that the program operates along three interconnected pathways. Capacity and Trust Building provides training and shared learning enabling diverse stakeholders to develop common language and clarify roles and responsibilities. Shared Understanding of Risks involves mapping water use, dependencies, and impacts at the catchment level—understanding hydrology, identifying who depends on water, and assessing vulnerabilities. Co-Development and Implementation enables joint action planning for catchment water security, translating shared understanding into collaborative projects.

Ashish highlighted that AWS operates 75 international sites in India, with programmes in specific districts like Ramanagar. In Bangladesh, the programme works with approximately thirty suppliers, developing their capacity to understand and address water-related challenges they face.



The science and engineering dimension is substantial. Site selection for intervention (e.g., check dam placement) involves GIS analysis, hydrological assessment, and verification of water associations. Final site selection decisions involve government agencies—exemplified by MARSAC (Maharashtra Remote Sensing Applications Centre) in Maharashtra—ensuring interventions align with government priorities and technical feasibility.

The session broadly emphasised that effective water stewardship requires rigorous data and holistic, science-based approaches. Government data can be problematic due to changing geographical contours and outdated information; dedicated funds for fresh surveys and hydrological analysis are essential for accurate understanding of water availability, quality, and use patterns.

Rivers do not follow administrative boundaries; pollution and water infrastructure interventions have downstream impacts requiring basin-scale understanding. Engagement with NABL-accredited laboratories for water quality testing—both riverine and groundwater—ensures scientific rigor in assessing water status. Nature-based solutions and energy-efficient approaches are preferred to engineered interventions where feasible, maintaining natural state and minimising negative ecological impacts.

The speakers agreed that the importance of hydrological analysis cannot be overstated: determining water flows, identifying groundwater aquifers, assessing recharge rates, and understanding seasonal variations enables informed intervention design. GIS analysis combined with ground verification ensures site selection is scientifically sound rather than based on convenience or political factors.

The 2030 Water Resources Group, hosted by the World Bank, exemplifies multi-stakeholder platform (MSP) approaches to water security. Government-chaired platforms bringing together public, private, and civil society actors facilitate coordinated action on water reuse, recycling, and circular economy imperatives. The Bangladesh Alliance for Water Reuse and Recycling demonstrates how MSPs can develop target frameworks, standards, and investment plans for water recycling at scale.

Innovative financing mechanisms like wastewater reuse certificates function as market instruments incentivising treatment and reuse. India requires a national water reuse roadmap and centre of excellence to systematically advance water recycling, moving from fragmented pilots toward national-scale transformation. MSPs facilitate adoption of cutting-edge solutions, cost reduction through shared learning, and scaling of best practices across sectors and geographies.

Key Takeaways

- Collective Action is Non-Negotiable: No single entity—government, company, community, or NGO—can solve water challenges alone. Multi-stakeholder collaboration integrating diverse expertise, resources, and perspectives is essential.
- Governance Alignment Determines Success: Alignment with government priorities, transparent collaborative governance structures, and integration of global and national standards enable moving from isolated projects toward systemic transformation.
- Community and Youth Engagement Drive Sustainability: Ownership, meaningful capacity building, and intergenerational involvement embedded from programme inception ensure sustainability extending beyond project cycles.
- Science and Data Enable Effective Intervention: Holistic, science-based approaches grounded in accurate hydrological data and rigorous water quality assessment enable precisely targeted interventions rather than generic solutions.
- Policy and Financing Innovation Scale Impact: Innovative frameworks (water reuse certificates, national roadmaps) and financing mechanisms create enabling conditions for adoption and scaling beyond pilot projects.
- Knowledge Sharing Accelerates Learning: Platforms systematising experience capture and best practice dissemination enable rapid learning and avoid duplication of effort across geographies and organisations.

The Future of Voluntary Standards in Driving Sustainability: India Strategy Workshop

Co-hosts

Moderated by:

Vidya Rangan, Director, Policy and Engagement, ISEAL Alliance

Vidya Rangan, Director of Policy and Engagement at ISEAL Alliance, opened the workshop by establishing the context and objectives. ISEAL, a 24-year-old international non-profit organisation, supports credible global sustainability standards across diverse sectors including fisheries, agriculture, textiles, biomaterials, tourism, and water stewardship. The organisation defines credibility and sets best practices for sustainability in action, providing frameworks enabling standards organisations to deliver measurable environmental, social, and economic outcomes.



Vidya noted that sustainability standards have become today's most common business approach for implementing sustainability goals within supply chains, with organisations like Rainforest Alliance and Fair Trade now ubiquitous in global commerce. The workshop's three core components would examine the current state of VSS in India, stakeholder expectations, and future strategic positioning.



Part I: The first part of the discussion addressed fundamental questions like what value do VSS provide? Or, how well have they positioned themselves in India as supply chain sustainability mechanisms? Responses brought out perspectives across stakeholder groups.

Speakers articulated that VSS serves as credible proof of good practices to external actors—demonstrating that companies are trustworthy and responsible. For businesses, VSS provides mechanisms to go beyond legal requirements, signalling extra commitment and building consumer trust. Companies primarily adopt VSS when they believe certification will facilitate business opportunities, improve efficiency, and optimise processes. Structured measurement approaches for water, soil, and pest management provide technical capacity and internal discipline. For consumers and producers, VSS influences purchasing decisions and signals credibility in supply chains.

One participant noted that modern VSS strengthen the three pillars of sustainability—technical, social, and environmental—operating simultaneously. In India, VSS helps build supply chain credibility, function as important tools for industries, and provide support to workers in sectors like agriculture, fisheries, and textiles.



A critical concern emerged regarding differential adoption by company size. While large companies can absorb certification costs, small enterprises struggle with affordability and

acceptance of complex processes. The question of whether VSS can be economically viable for smaller businesses remained contested throughout the discussion.



One participant articulated consumer perspectives bluntly, in that consumers often lack understanding of what certifications mean and why certified products command premiums. Organic products remain expensive, and the value proposition for average consumers remains unclear. The concern was raised: how far have VSS gone in generating actual demand rather than merely responding to regulatory requirements?

Participants stressed that communities can play critical roles in driving demand, yet VSS require sustained market presence throughout entire supply chains. Social impacts must be visible to communities so awareness and demand can be driven from grassroots upward.



Multiple speakers identified a fundamental tension, noting that while sustainability has value, certification costs are often not justified by market benefits or price premiums. Companies frequently bear certification costs without receiving corresponding financial returns, transforming VSS from voluntary initiatives into quasi-regulatory requirements where products cannot access markets without certification. This shifts the motivation from voluntary adoption toward compliance under buyer pressure.

In India's palm oil market, for instance, VSS value propositions remain unclear. As a net importer, India's domestic brands face major certification challenges, particularly since certification becomes important primarily for export markets or multinational buyers. Consumer awareness remains low despite certification efforts.

Part II: The second part examined whether VSS are genuinely part of India's sustainability conversation and analysed stakeholder expectations across business, government, and consumer segments.

It was noted that governments tend to promote or create their own standards, while VSS are primarily market-driven initiatives. However, participants noted that VSS have played an important role in shaping market instruments and mechanisms that subsequently influence government systems—exemplified by their influence on sustainability reporting frameworks like BRSR and VRSR. With new regulations in India, VSS are becoming increasingly important, explaining rapid increases in certifications as businesses align with regulatory expectations.



International standards often require significant adaptation for Indian contexts. Poorly defined standards cause confusion and misunderstanding, weakening their ability to achieve genuine sustainability goals. The tension between global standardisation and local adaptation remains unresolved, with many standards failing when applied without proper localisation.

Most businesses adopt VSS to promote sustainability credentials, yet adoption is highly dependent on market premiums. Businesses increasingly integrate VSS into supply chains for regulatory compliance, though consumer priorities vary significantly—some focus on sustainability whilst many Indian consumers still prioritise product quality and cost.

Participants emphasised the need for common understanding where standards communicate and

officially recognise aspects of each other—described as a major opportunity for India. Currently, companies face confusion and overlap in adopting multiple standards, creating a need for benchmarking systems. The fundamental question emerged: are VSS primarily consumer-driven or policy-driven mechanisms?



From a community standpoint, compliance often creates "islands of prosperity" within widespread poverty. Local communities follow traditional practices, and sudden changes required by certification are extremely difficult to implement. There is risk of lowering standards due to reputational pressure and SMEs struggling to completely change long-standing processes, creating dilemmas between compliance, reputation, and real local development.

When asked whether VSS will remain part of India's sustainability journey in 2030, responses were mixed, with some noting the emergence of homegrown standards like PRAMAN as alternatives.

Part III: The final discussion focused on identifying leverage points and opportunities for VSS to enhance impact in India whilst addressing persistent challenges.

Participants identified VSS positioning as methodologies for carbon credit mechanisms and product carbon footprinting as significant opportunities, aligning with 2030 climate targets. The Climate Finance Taxonomy draft published in India was highlighted as a fantastic opportunity for collective VSS engagement.

Rather than continually reinventing standards, participants emphasised the importance of stopping reinvention and leveraging existing frameworks to avoid taking a year for each product category to establish standards. Existing frameworks like the VCC and Gold Standard should be leveraged rather than duplicated.



The opportunity to actively engage with SEBI and other regulators to create awareness about VSS value and their contribution to solutions was emphasised. Engagement with BRSR frameworks and the emerging VRSR frameworks represents critical leverage points.

Consumer goods sector reports highlight premiumisation—affluent consumers willing to pay more for premium experiences—as a common theme for 2030. VSS must deliberately target these pockets of opportunity where consumers willingly pay premiums for certified products.

Bringing handloom and other traditional sectors under recognised chain of custody systems and recognising blended standards (recycled polyester, cotton blends) creates new engagement possibilities. However, compliance costs, process changes, and brand negotiations remain major hurdles, with group certification helping but audit costs remaining burdensome.

Capacity constraints affect small companies significantly, with limited staff making compliance an additional strain. Climate funds and contracts can encourage sustainable practices amongst smallholders and MSMEs if structured appropriately.

Technology is transforming compliance and traceability, particularly for complex supply chains. Data centers, AI, and water use are emerging issues where technology adoption can enable compliance. For luxury brands, verification for risk management is increasingly preferred over certification, with technology supporting traceability and verification. Increasingly, end-users and buyers demand Human Rights Due Diligence (HRDD) and climate action, representing growing expectations for VSS to address these dimensions.

Key Highlights

- Multifaceted Value Proposition: VSS provide credibility, build trust, enable market access, facilitate efficiency improvements, and structure impact measurement—yet value realisation is uneven across stakeholder groups.
- Cost-Benefit Misalignment: For many actors, particularly SMEs and smallholders, certification costs exceed documented benefits, requiring either premium price realisation or subsidised certification to enable participation.
- Policy-Driven Adoption: Regulatory requirements and international buyer expectations increasingly drive VSS adoption more than inherent business case or consumer demand.
- Localisation Imperative: VSS must be substantially adapted for Indian contexts—incorporating local knowledge, reducing compliance burdens, and aligning with government priorities and capacities.
- Technology as Enabler: Technology can reduce verification costs, improve traceability, and enable data management, making compliance more feasible for smaller actors.
- Strategic Opportunities: Climate finance taxonomy, premiumization trends, BRSR integration, and emerging VRSR frameworks create genuine policy opportunities for VSS positioning in India.
- Stakeholder Alignment Essential: Success requires coordinated action among VSS organisations, government, private sector, civil society, and communities, avoiding duplication and building on existing frameworks.

PSE Leadership Charcha on 'Viksit Bharat': Role and Preparedness of PSEs for Agendas 2030 and 2047

Co-hosts

लोक उद्यम विभाग
DEPARTMENT OF PUBLIC ENTERPRISES
सत्यमेव जयते

Moderated by:

Rohan Sarma, Senior Fellow, Centre for Responsible Business (CRB)

Special Remarks:

Dr. Bhaskar Chatterjee, Former Secretary, Department of Public Enterprises & Senior Advisor, CRB

Speakers:

- Harsh Nath Mishra, Director – HR, Central Coalfields Limited (CCL)
- Anupam Ban, Director – Personnel, Rail Vikas Nigam Limited (RVNL)
- Lucas L Kamsuan, Joint Secretary (Administration and Coordination), Department of Public Enterprises (DPE)
- Sanjay Kumar Jain, CMD, IRCTC
- Adhip Nath Palchaudhuri, CMD, Balmer and Lawrie



Dr. Bhaskar Chatterjee opened the closing session of ISS 2025 by establishing CSR (Corporate Social Responsibility) not as a burden or regulatory compliance exercise, but as an opportunity for businesses to become active participants in nation-building. He emphasised that the concept of CSR is institutionally grounded through stable legislation requiring companies to play meaningful roles in social development, and this is cause for celebration rather than resistance.

He articulated a critical repositioning where the government provides general infrastructure, businesses can deliver focused interventions filling crucial gaps that the government alone cannot address. Particularly promising, he noted, is the rising percentage of CSR investments directed toward environmental and sustainability initiatives—a shift reflecting regulatory evolution allowing capital deployment in the green sector. Dr. Chatterjee stressed that sustainability is not a luxury but a necessity of contemporary times, and CSR functions as a low-risk innovation opportunity. Unlike capital-intensive business ventures dependent on bank financing, CSR enables companies to experiment with solutions to societal and planetary challenges while building organisational capacity and reputation. He called for fresh energy and creativity from leaders.



Lucas L Kamusan, Joint Secretary at the Department of Public Enterprises, articulated the DPE's role as far more than administrative oversight—it functions as the "beating heart" matching PSE objectives with national goals. The DPE provides not merely directives but genuine guidance, support, and funding, operating with humility and clear vision despite its significant institutional position.



Lucas presented a significant reframing: CSR is not a 2% tax obligation or regulatory checklist but a moral imperative for public sector enterprises. It represents utilising all companies possess—not merely financial capital but machines, people, technology, and brand—to enable India's most marginalised populations to become self-reliant. PSEs have a long history of philanthropic engagement predating the 2013 CSR legislation by decades; legal requirements codified what was already cultural practice in many public enterprises.

Lucas described DPE's approach to maximising CSR effectiveness through two mechanisms. First, annual thematic focus—each year the DPE identifies one grand objective (health, nutrition, education) enabling all companies to concentrate on a single significant issue rather than fragmenting efforts across multiple domains. Second, geographic focus on aspirational districts—directing resources to 112 of India's poorest districts and 500 blocks, ensuring assistance reaches underserved areas rather than concentrating in major cities.

PSE CSR expenditure has tripled in a decade, from ₹4,000 crore to over ₹6,400 crore, positioning Indian public companies as globally leading social contributors. Yet Lucas emphasised this is not the maximum but the minimum—most PSEs voluntarily exceed legal requirements, particularly operating in remote rural areas where need is greatest.



Lucas's Vision for 2030-2047 is one where companies focus on nutrition (recognising that every dollar spent on women and child nutrition returns 16 dollars to the economy); transparency in fund flows enabling mass trust; innovation through green startups, telehealth, and online learning; and teamwork integrating NGOs, local communities, and government for tangible poverty impact. His overarching message stressed on partnership—government and business are inseparable companions in India's development journey, with PSEs and national imperatives achieving perfect synchronisation to build Atmanirbhar Bharat (self-reliant India).

Anupam Ban, Director of Personnel at RVNL, provided ground-level perspective on CSR implementation in one of India's most challenging operational contexts. She reflected \that when CSR rules were initially launched around 2010, RVNL teams operated conservatively, spending allocated resources before expiration deadlines. Over time, CSR transformed from external obligation into a natural extension of RVNL's mission—today it is a cultural element, not a regulatory requirement.



RVNL's distinctive advantage is its daily engagement in railway infrastructure construction across India's most remote, underserved areas—deep forests, hilly terrain, and tribal territories. Because RVNL teams reside and work in these locations, they communicate directly with locals and authorities, understanding precisely what communities require. Access is difficult; some locations require day-long travel and security escorts, yet RVNL engages in substantive CSR rather than token initiatives.

Rather than investing in minor, short-term projects, RVNL concentrates on enduring initiatives spanning multiple years despite modest budgets. They construct multi-specialty hospitals, large girls' hostels, and tribal sports



facilities generating long-term community impact. Critically, RVNL aligns CSR with national priorities: when informed of severe sickle cell anemia effects in tribal regions, the company initiated healthcare projects addressing this specific health challenge, demonstrating transition from charity to systematic social wellness.

Adhip Nath Palchaudhuri presented Balmer and Lawrie, a 158-year-old company, operating across diverse sectors including manufacturing, logistics, chemicals, travel services, and cold storage. Despite not being among India's largest PSUs, the company delivers exceptional impact through strategically community-based CSR leveraging its extensive factory and office networks.

When opening new units in remote locations, Balmer and Lawrie rapidly supports local families with essential services like healthcare centres or ambulances. Most notably, the company converted a boat into a floating hospital in the Sundarbans, a remote area where tribal populations lack health professionals. This floating hospital travels waterways providing healthcare to approximately 1,200 tribal individuals, bringing medical services directly to communities.



Adhip Nath acknowledged their smaller CSR budget compared to larger PSUs, yet they maximise impact on neglected problems. For Balmer and Lawrie, CSR is not about spending magnitude but about presence and transformation. Like other PSE leaders, Adhip Nath agreed that CSR significance will escalate as companies deepen societal connections and social awareness expands.

Sanjay Kumar Jain from IRCTC reframed the organisation not as a transport or ticketing company but as a customer-focused enterprise where CSR is embedded in core values and daily activities, not treated as by-product. He emphasised the importance of unlearning entrenched assumptions and approaching modern challenges with childlike curiosity.

IRCTC's digitalisation exemplifies this integration, with approximately 1.6 million tickets booked daily through digital platforms, with 87 per cent online bookings significantly reducing paper usage and carbon footprint. The company introduced Extended Producer Responsibility (EPR) through its Rail Neer bottled-water business, recycling approximately 9,500 metric tons of waste in 2024-25, demonstrating strong environmental stewardship and commitment to ESG and Net-Zero goals.

IRCTC operates a three-level CSR model managed by a Board-level committee ensuring alignment with national interests like Viksit Bharat. With a ₹30 crore annual CSR budget focused on public health, education, and development in aspirational districts, IRCTC demonstrates systematic strategic integration.

Yet Sanjay Kumar stressed that financial expenditure represents only partial impact; genuine power lies in promoting innovation in e-catering and environmentally friendly packaging through continuous self-development. This foundation enables sustainable tourism and responsible hospitality at scale. For IRCTC, CSR is strategic inclusion embedded in every decision—reporting, staff training, business development—creating a central role in strengthening India's socio-economic environment and ensuring inclusive, sustainable future development.

Harsh Nath Mishra, representing Central Coalfields Limited (CCL), presented a detailed perspective on coal's role in the Viksit Bharat 2047 vision. CCL contributes approximately 70 per cent of India's power supply, yet Mishra stressed that industrial growth must be informed by strong social responsibility and commitment to equity and inclusion.

CCL invests substantially in human capital, particularly youth in mining and tribal regions. Through CCL Ke Lal and CCL Laadli programmes, the company offers free specialised coaching enabling students to secure professional positions at national and international levels with high-value remuneration packages. The Sports Promotion Society, collaborating with the Jharkhand government, discovered and trained talented players in remote areas, resulting in 13 international and over 1,800 national awards.

In health and nutrition (SDG 3 and 5 alignment), CCL enhanced 250 Anganwadi centres directly benefiting approximately 18,000 women and children. The company participates in the Nikshay Mitra Programme, adopting districts to support tuberculosis patients, particularly in regions historically affected by left-wing extremism, replacing unrest with development and healthcare.

Regarding sustainability, Mishra positioned CCL as carbon-conscious: while coal remains central to India's energy requirements, CCL operates aligned with Net Zero 2070 vision. Despite global decarbonisation pressure, CCL remains transparent and accountable, spending over ₹30 crore annually on CSR with third-party impact evaluation through partnership with Indian Institute of Corporate Affairs.

Dr. Bhaskar Chatterjee, reflecting on CSR's evolution over 16 years, emphasised the transformation from marginal exercise to essential national development component. What began with 2009 CSR guidelines as a limited concept has become integral to responsible business conduct, inseparably linked with sustainability. This evolution enables PSEs to balance short-term requirements with long-term expansion imperatives.



Dr. Chatterjee stressed that making CSR future-ready requires flexibility in adapting to emerging social, environmental, and economic challenges. Examples like IRCTC demonstrate how organisations transcend primary commercial activities to play socio-economic development roles. Success demands strong, foresighted leadership building robust, inclusive development ecosystems.

Rijit Sengupta, CEO of CRB, offered final gratitude to Department of Public Enterprises representatives, RVNL, IRCTC, and Balmer and Lawrie for their dedicated work promoting responsible and sustainable business practices. Rijit highlighted the summit's success in bridging the business case and ground-level implementation, with organisations across scales increasingly adopting profit-with-purpose models integrating financial success with social and environmental accountability. Government ministry participation strengthened the platform as a manifestation of collective national obligation toward green, inclusive, prosperous India.

In closing remarks, Rijit emphasised commitment to fulfilling young generation expectations, challenging all stakeholders to transcend regulatory compliance toward long-term value creation and positive change.

The session concluded with tribute to Dr. Bimal Arora, CRB's late founder, with whom Dr. Chatterjee worked to develop the 2011 National Voluntary Guidelines, tracking evolution through the 2022 NGRBC model. Dr. Chatterjee described Bimal as the "voice of conscience" of India's responsible business movement, possessing distinctive ability to formulate responsible business as both moral and strategic necessity. Present CSR success in India is grounded in Bimal's visionary foundation, meriting continued honour and recognition.

Key Highlights

- Survival Mandate: Sustainability is no longer a charitable endeavour but business survival requirement.
- Impact Assessment: Independent third-party evaluation is the backbone of responsible business practice.
- Generational Stewardship: Resources are borrowed on behalf of future generations, requiring careful stewardship.
- Qualitative Growth: Social transformation, not merely numerical targets, should measure success.
- Complete Integration: CSR must be fully incorporated with sustainability at governance level.
- Professional Institutionalisation: Organisations should develop dedicated professional cadres focused on CSR strategy and implementation.
- Indelible Legacy: Long-lasting social development benefits to communities represent true organisational success.

Key Highlights

Competitiveness and Responsible Business Are Now Structurally Linked

Across plenaries and tracks—thematic sessions—ISS 2025 reinforced the understanding that sustainability and competitiveness are no longer parallel agendas. Regulatory developments, market access requirements, investor expectations, and supply-chain pressures are increasingly converging, making responsible business practices a determinant of commercial viability rather than a discretionary choice.

Speakers from industry, government, and international institutions consistently noted that companies able to anticipate and align with evolving sustainability standards—particularly in relation to due diligence, reporting, carbon management, and traceability—are better positioned to manage risk, retain customers, and access global markets. In this context, sustainability was framed not as a cost burden but as a mechanism for risk mitigation, differentiation, and long-term resilience.

At the same time, discussions acknowledged that competitiveness gains from sustainability are unevenly distributed, particularly where smaller enterprises lack access to finance, technology, or data systems. This underscored the need for deliberate enabling mechanisms rather than assuming automatic trickle-down effects.

The Shift from Frameworks to Implementation Quality

ISS 2025 marked a clear transition in the sustainability discourse—from the creation of policies and standards to questions of implementation quality, credibility, and outcomes. India has developed an extensive sustainability architecture over the past decade, including BRSR, NGRBC, CSR mandates, and sectoral guidelines. However, multiple sessions highlighted persistent gaps between formal compliance and substantive integration.

Key implementation challenges identified included:

- Inconsistent data quality and limited assurance mechanisms
- Weak board-level ownership of ESG issues
- Fragmented responsibility across business functions
- Limited clarity for MSMEs on regulatory expectations and timelines

Concerns around greenwashing were raised explicitly, with recognition that superficial disclosures undermine trust in sustainability reporting. Participants emphasised that improving implementation quality will require institutional capacity-building, clearer regulatory signals, and greater alignment between voluntary standards and mandatory frameworks.

MSMEs as Key Actors in Sustainability Transitions

A recurring theme across the Summit was the centrality of MSMEs to India's sustainability outcomes. MSMEs were recognised not only as contributors to Scope 3 emissions but also as enterprises facing direct exposure to climate risks, resource constraints, and shifting market requirements.

Discussions highlighted that MSME engagement remains constrained by:

- Limited access to affordable finance
- High transaction costs for data collection and reporting

- Absence of in-house technical expertise
- Short-term procurement practices by larger buyers

Cluster-based approaches emerged as a viable response to these constraints, enabling shared infrastructure, collective monitoring, and cost reduction. Long-term commercial relationships between large enterprises and MSME suppliers were identified as a critical precondition for enabling sustainability investments, particularly in energy efficiency and decarbonisation. The Summit reinforced that sustainability uptake among MSMEs is most effective when framed around productivity, resilience, and market access rather than compliance alone.

Inclusion, Livelihoods, and Equity as Core Sustainability Considerations

ISS 2025 consistently foregrounded the social dimensions of sustainability, particularly in relation to livelihoods, marginalised producers, and informal sectors. Sessions on handlooms, natural rubber, forest-risk commodities, and artisan-led enterprises demonstrated that sustainability outcomes are closely tied to economic security and agency at the grassroots level.

Key insights included:

- Sustainability transitions that do not address income stability and market access risk becoming extractive
- Certification and traceability systems must be designed to be accessible to smallholders and artisans
- Empowerment-oriented models—where producers are treated as entrepreneurs rather than beneficiaries—are more durable

The Summit highlighted that social capital is as critical as natural capital in sustaining long-term transitions, and that responsible business frameworks must account for labour rights, community well-being, and equitable value distribution.

Nature, Climate, and Systems-Based Approaches

Sessions on water stewardship, circular economy, biodiversity, and deforestation-free supply chains reinforced the limitations of fragmented, project-based interventions. Speakers emphasised the need for science-based planning, credible data, and landscape- or basin-level approaches that reflect ecological realities rather than administrative boundaries.

Key themes included:

- The importance of robust hydrological and ecological data to inform interventions
- Nature-based solutions as cost-effective and context-appropriate responses
- The role of traceability, certification, and third-party verification in preventing greenwashing

Discussions also highlighted definitional and measurement challenges—particularly around forests, land use, and deforestation—which have implications for both domestic policy and international market alignment. Addressing these challenges will require harmonisation of data systems and clearer articulation of the Indian context in global forums.

EU–India Collaboration and Global Value Chain Alignment

ISS 2025 underscored the growing significance of EU–India collaboration in shaping sustainable business practices. Regulatory developments in the EU are increasingly influencing Indian enterprises through trade, investment, and supply-chain linkages.

Participants highlighted that preparedness for EU sustainability regulations directly affects competitiveness, particularly for exporters. At the same time, collaboration was framed as an opportunity rather than a constraint—enabling technology transfer, innovation, and access to finance in areas such as clean energy, water efficiency, circular materials, and green hydrogen.

The Summit also drew attention to under-served regions such as the Northeast, where sustainability-aligned investments could address development gaps while strengthening regional integration into global value chains.

Youth Perspectives and Intergenerational Responsibility

The Youth Champions segment provided a grounded counterpoint to technical and policy-heavy discussions. Student perspectives highlighted sustainability as a matter of daily choices, social norms, and long-term responsibility rather than abstract targets.

Their contributions stressed upon a broader Summit insight: sustainability transitions ultimately depend on mindset change as much as technological or regulatory solutions. The intergenerational lens served as a reminder that present-day decisions will shape future economic and environmental conditions in irreversible ways.

Multi-Stakeholder Collaboration as an Operating Principle

Across all thematic areas, ISS 2025 reinforced that no single institution—public or private—can deliver sustainability outcomes in isolation. Effective responses require coordinated action across government, business, civil society, financial institutions, academia, and communities.

Multi-stakeholder platforms were repeatedly identified as critical for:

- Aligning policy objectives with business realities
- Sharing risk and costs across value chains
- Scaling solutions beyond pilots
- Building trust and credibility

The draft ISS Declaration emerging from the Summit reflects this collective orientation, capturing shared priorities and areas for continued engagement beyond the event.

ISS 2025 highlighted that India's sustainability pathway is entering a phase defined less by ambition-setting and more by execution, credibility, and scale. Responsible business is increasingly recognised as a necessary condition for competitiveness, but achieving this at scale will depend on deliberate inclusion of MSMEs, attention to livelihoods, robust data systems, and sustained collaboration across sectors. The Summit reaffirmed ISS as a convergence platform where diverse perspectives can be examined critically and constructively—supporting India's ongoing efforts to align economic growth with social equity and environmental stewardship.

Conference Features

The networking area at the India and Sustainability Standards (ISS) 2025 summit was designed as a participatory and interactive space that encouraged dialogue, reflection, and collaboration among participants. Positioned as a space for informal engagement, the area complemented the conference's formal sessions by enabling stakeholders to exchange ideas, provide feedback, and engage directly with sustainability initiatives and partners.

Interactive Booths and Stakeholder Engagement

The networking zone featured two dedicated booths hosted by Forest Stewardship Council (FSC India) and CRB. Both booths served as active engagement points, facilitating conversations around sustainable supply chains, responsible business practices, and evolving sustainability standards relevant to the Indian and global context. A prominent feature of the CRB booth was an interactive feedback wall that invited participants to share their thoughts through sticky notes. This wall focused on gathering stakeholder inputs on the CRB Strategy 2030, which was formally launched on the first day of the ISS summit. The format encouraged candid and accessible participation, allowing attendees from diverse backgrounds—businesses, policymakers, civil society organisations, and practitioners—to reflect on CRB's long-term vision and priorities.

ISS25 Conference Declaration: A Collective Blueprint

The networking area also served as a consultation space for the Draft ISS25 Conference Declaration, jointly presented by CRB and key conference partners, collectively referred to as the ISS Community. Participants were invited to provide feedback on the draft declaration, envisioned as a collective blueprint underscoring the relevance of sustainability strategies for businesses operating in today's evolving global trade and economic landscape. The draft declaration addressed a range of contemporary sectoral and thematic issues, reflecting the multi-dimensional nature of sustainability challenges and opportunities. By situating the feedback process within the networking area, ISS 2025 ensured that the declaration was shaped through broad-based dialogue and shared ownership among conference stakeholders. Read the declaration here

Visual Storytelling: Farmer Voices and Sustainable Agriculture

A key element of the networking area was the exhibition of ten photographs related to ACRE, a multi-stakeholder project involving Solidaridad, CRB, and regenagri. The photographs showcased farmer voices and lived experiences from cotton cultivation landscapes, offering a perspective on sustainability in practice. Captured by photographer Dinesh Khanna for Solidaridad, the photo series highlighted the human dimensions of agricultural sustainability, bringing attention to farmers' challenges, aspirations, and adaptive practices. The exhibition resonated strongly with participants, reinforcing the importance of inclusive, farmer-centric approaches in sustainability standards and policy frameworks.

Digital Engagement and Data Storytelling

The networking area also hosted an interactive standee set up by The Secretariat, the official online media partner for ISS 2025. This interactive installation invited participants to engage with key ideas emerging from the summit and contributed to the development of a data-driven visual narrative The engagement culminated in a published data story titled "Visualising Hope at ISS25: Green Policy Prescriptions for Businesses, by Businesses", accessible here:

https://thesecretariat.in/article/visualising-hope-at-iss25-green-policy-prescriptions-for-businesses-by-businesses

This initiative extended the reach of the networking area beyond the physical venue, translating on-ground interactions into a wider public-facing digital resource.

By integrating interactive feedback mechanisms, visual narratives, and informal networking opportunities, the space reinforced ISS's commitment to inclusive dialogue and collective action on sustainability standards.

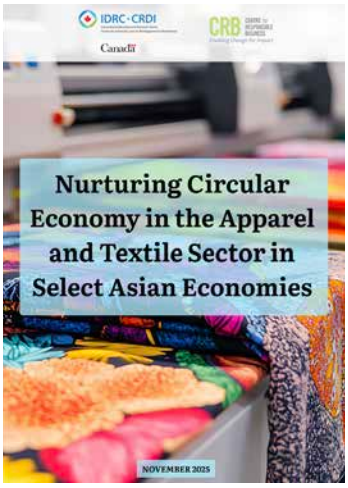
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