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॥ सुखिनो भवन्तु ॥

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

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Chairman's Message

As we commemorated Earth Day on 22nd April, it is essential to reflect on our collective responsibility towards our planet and reaffirm our commitment to sustainability. Earth Day serves as a poignant reminder of the delicate balance between human activities and the health of our environment. As stewards of the planet, it is incumbent upon us to nurture and protect the natural resources that sustain life in all its forms.

The Sustainability Standards Board of ICMAI recognizes the pivotal role that sustainability plays in shaping our future. Through our endeavours, we strive to integrate environmental consciousness into our professional practices and promote sustainable development principles among our members and the wider community.

Let us remember that the choices we make today will shape the world we leave for future generations. Let us work hand in hand to build a sustainable and prosperous future for all.

I am filled with gratitude and admiration for our esteemed resource persons for their valuable contributions in various editions of *Sukhinobhavantu*. Your thought-provoking insights, innovative perspectives, and deep understanding of contemporary issues in the field of sustainability enrich us and drive meaningful discourse.

I hope that the readers of *Sukhinobhavantu* will learn from diverse viewpoints, and stay informed on the latest trends in sustainability. Your feedback and involvement inspire us to continually strive for excellence and relevance in our content.

I urge each of you to take meaningful action towards sustainability, both in your personal and professional spheres. Whether it's reducing carbon emissions, conserving water resources, or promoting eco-friendly practices, every effort, no matter how small, contributes to the greater good.

Professionally yours,

CMA (Dr.) Ashish P. Thatte
April 25, 2024

SUSTAIN THE SUSTAINABILITY

Conference of Parties (Part-III)

CMA (Dr.) Aditi Dasgupta
Jt. Director, ICMAI

In the previous two parts of this COP series, the outcomes of COP1 to COP16 has been highlighted. In this issue, the highlights of COP17 to COP21 has been highlighted.

COP 17

COP 17, or the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), took place in Durban, South Africa, from November 28 to December 9, 2011. Here's a summary of the key outcomes:

1. **Durban Platform:** Perhaps the most significant outcome of COP 17 was the establishment of the Durban Platform for Enhanced Action. This platform laid the groundwork for a new climate agreement that would apply to all countries, not just developed ones, and would be implemented by 2020.
2. **Kyoto Protocol Extension:** The conference saw an agreement to extend the Kyoto Protocol, which was due to expire in 2012. This extension committed developed countries to further emissions reductions up to 2020.
3. **Green Climate Fund (GCF):** COP 17 made significant progress in establishing the Green Climate Fund, aimed at assisting developing countries in their adaptation and mitigation efforts to combat climate change. The fund was intended to mobilize \$100 billion annually by 2020.
4. **Adaptation Framework:** COP 17 emphasized the importance of adaptation to climate change impacts, particularly for vulnerable countries and communities. Parties agreed to establish an Adaptation Committee to promote the implementation of adaptation measures.

5. **Technology Mechanism:** The conference established the Technology Mechanism, which aimed to accelerate technology development and transfer to support mitigation and adaptation efforts in developing countries.
6. **Reducing Emissions from Deforestation and Forest Degradation (REDD+):** There were discussions and progress made on the REDD+ mechanism, which aims to provide incentives for developing countries to reduce emissions from deforestation and forest degradation.
7. **Loss and Damage Mechanism:** COP 17 recognized the importance of addressing loss and damage associated with the impacts of climate change, particularly for vulnerable countries and communities. Discussions were initiated on establishing a mechanism to address this issue.

Overall, while COP 17 made significant strides in several areas, it also highlighted the ongoing challenges of reaching consensus among nations with diverse interests and priorities in addressing climate change.

COP 18

The COP 18, or the 18th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), took place in Doha, Qatar, from November 26 to December 8, 2012. The Conference produced a package of documents collectively titled The Doha Climate Gateway. The conference made little progress towards the funding of the Green Climate Fund. Here are some key

outcomes from COP 18:

1. **Doha Amendment to the Kyoto Protocol:** The major outcome of COP 18 was the adoption of the Doha Amendment to the Kyoto Protocol. This amendment extended the Kyoto Protocol, an international treaty aimed at reducing greenhouse gas emissions, until 2020. It also established new emissions reduction targets for developed countries for the period 2013-2020.
2. **Progress on Climate Finance:** COP 18 saw discussions and some progress on climate finance, particularly regarding the establishment of the Green Climate Fund (GCF). The GCF was designed to support developing countries in their efforts to mitigate and adapt to climate change. However, concrete commitments and contributions to the fund were still being negotiated.
3. **Loss and Damage Mechanism:** The conference established the Warsaw International Mechanism for Loss and Damage, which aimed to address the adverse impacts of climate change, including extreme weather events and slow-onset events, in developing countries that are particularly vulnerable to such impacts.
4. **Negotiations on Future Commitments:** COP 18 laid the groundwork for negotiations on a new global climate agreement to be reached by 2015 and to come into effect by 2020. This process eventually led to the adoption of the Paris Agreement in 2015.
5. **Adaptation:** Discussions on adaptation to climate change, particularly in vulnerable countries, were emphasized at COP 18. Parties agreed to enhance action on adaptation, including through the sharing of knowledge, experiences, and best practices.

Overall, while COP 18 made progress in some areas, particularly in extending the Kyoto Protocol and advancing discussions on future commitments, it also highlighted ongoing challenges in reaching consensus on key issues such as climate finance and emissions reduction targets.

COP 19

COP 19 was the 19th yearly session of the Conference of the Parties (COP) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 9th session of the Meeting of the Parties (CMP) to the 1997 Kyoto Protocol (the protocol having been developed under the UNFCCC's charter). The conference was held in Warsaw, Poland from 11 to 23 November 2013.

The outcomes of the 19th session of the Conference of the Parties (COP 19) to the United Nations Framework Convention on Climate Change (UNFCCC) took place in Warsaw, Poland, from November 11 to 23, 2013. Several key outcomes emerged from this conference:

1. **Warsaw International Mechanism for Loss and Damage:** One significant outcome was the establishment of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts. This mechanism was set up to address issues related to the impacts of climate change that are beyond adaptation measures, particularly for vulnerable countries and communities.
2. **Progress on Financing Climate Action:** COP 19 saw discussions on climate finance, where developed countries reiterated their commitment to provide financial assistance to developing countries to support their climate change mitigation and adaptation efforts. However, concrete commitments on financing were limited.
3. **Progress on REDD+ (Reducing Emissions from Deforestation and Forest Degradation):** Progress was made on REDD+, with discussions focusing on methods for measuring, reporting, and verifying emissions reductions from deforestation and forest degradation in developing countries.
4. **Work on a New Global Climate Agreement:** Negotiations continued toward the development of a new global climate agreement, which was expected to be adopted by 2015 in Paris (COP 21). While there were some advances in the negotiations, significant differences between developed and developing countries remained on issues such as emission reduction targets and financial support.
5. **Preparation for COP 20:** COP 19 also laid the groundwork for the subsequent conference (COP 20) in Lima, Peru, where further discussions on the new global climate agreement were scheduled to take place.

Overall, while COP 19 made progress on some fronts, there were also challenges and disagreements that reflected the complexities of international climate negotiations.

COP 20

The 20th session of the Conference of the Parties (COP 20) to the United Nations Framework Convention on Climate Change (UNFCCC) was held in Lima, Peru, from December 01 to 12, 2014. The conference aimed to lay the groundwork

for a new global climate agreement, to be finalized in Paris the following year (COP 21).

The key outcomes of COP 20 in Lima included:

1. **Lima Call for Climate Action:** This agreement outlined the general framework for the new climate agreement to be adopted in Paris in 2015. It called for all countries to submit their Intended Nationally Determined Contributions (INDCs) towards greenhouse gas emissions reduction within the first quarter of 2015.
2. **Adoption of the Lima Climate Action Infographic:** This visual representation summarized key elements of the Lima Call for Climate Action, providing a concise overview of the agreement's components.
3. **Green Climate Fund (GCF) Contributions:** There was a significant push for developed countries to fulfill their pledges to the Green Climate Fund, which aims to support climate mitigation and adaptation efforts in developing countries. Several countries announced contributions to the fund during COP 20.
4. **Loss and Damage Mechanism:** COP 20 also addressed the issue of loss and damage associated with the adverse effects of climate change, particularly for vulnerable countries and communities. The conference established a mechanism to address loss and damage, though the specifics were left for future negotiations.
5. **Pre-2020 Ambition:** There was a recognition of the importance of increasing climate action before 2020, when the new agreement would take effect. Parties acknowledged the "significant gap" between current emission reduction pledges and what is needed to limit global warming to 2 degrees Celsius above pre-industrial levels.

Overall, while COP 20 made progress in laying the groundwork for a global climate agreement, some contentious issues remained unresolved. These issues would continue to be negotiated leading up to COP 21 in Paris, where the historic Paris Agreement was adopted.

COP 21

The COP 21 was held in Paris from 30 November to 12 December 2015. Negotiations resulted in the adoption of the Paris Agreement on 12 December, governing climate change reduction measures from 2020. The adoption of this agreement ended the work of the Durban platform, established during COP17. The agreement entered into force (and thus become fully effective) on 4 November 2016. On

4 October 2016 the threshold for adoption was reached with over 55 countries representing at least 55% of the world's greenhouse gas emissions ratifying the Agreement.

The COP 21, also known as the 2015 United Nations Climate Change Conference, resulted in several key outcomes:

1. **Paris Agreement:** The most significant outcome of COP 21 was the adoption of the Paris Agreement. It is a legally binding international treaty on climate change, aiming to limit global warming to well below 2 degrees Celsius above pre-industrial levels, with efforts to limit it to 1.5 degrees Celsius. This agreement replaced the Kyoto Protocol, which had set emissions reduction targets but was not ratified by major emitters like the United States and China.
2. **Nationally Determined Contributions (NDCs):** Under the Paris Agreement, countries committed to submitting individual NDCs, outlining their emissions reduction targets and plans. These contributions are non-binding but represent each country's efforts to mitigate climate change. Countries are expected to update and enhance their NDCs regularly.
3. **Long-Term Goal:** The Paris Agreement established a long-term goal to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century. This essentially implies achieving a state of net-zero emissions.
4. **Financial Support:** Developed countries pledged to provide financial support to developing countries to help them transition to low-carbon economies, adapt to the impacts of climate change, and build resilience. The goal was to mobilize \$100 billion annually by 2020, with a commitment to further finance in the future.
5. **Transparency and Accountability:** The Paris Agreement introduced a framework for transparency and accountability, requiring countries to regularly report on their emissions and progress towards their NDCs. This transparency is essential for tracking global progress in addressing climate change.
6. **Loss and Damage:** The agreement recognized the importance of addressing loss and damage associated with the adverse effects of climate change, particularly for vulnerable developing countries. However, it stopped short of establishing a mechanism for compensation, leaving this issue open for further discussion.



Overall, the outcomes of COP 21 represented a historic moment in international efforts to combat climate change, with nearly all countries in the world coming together to commit to collective action. However, subsequent COP meetings have focused on the implementation of the Paris Agreement and enhancing ambition to meet its goals.


COP 22

COP 22, or the 22nd Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), took place in Marrakech, Morocco, in November 2016. Here's a summary of its key outcomes:

1. **Paris Agreement Implementation:** COP 22 focused largely on the implementation of the Paris Agreement, which was adopted at COP 21 in 2015. Parties discussed and worked on the details of how the agreement would be put into action, including setting emission reduction targets and creating mechanisms for transparency and accountability.
2. **Entry into Force:** During COP 22, the Paris Agreement officially entered into force on November 4, 2016, much earlier than anticipated. This was a significant milestone, as it demonstrated the commitment of the international community to combatting climate change.
3. **Pre-2020 Action:** There was a strong emphasis on the need for action before 2020, as many countries had made pledges under the previous climate agreement (the Kyoto Protocol) that needed to be fulfilled. Discussions revolved around ways to accelerate efforts to reduce emissions and provide support to developing countries in meeting their targets.
4. **Climate Finance:** Financing for climate change mitigation and adaptation efforts, particularly in developing countries, was a central theme. Parties

discussed mechanisms for scaling up financial support, including the role of both public and private funding sources.

5. **Adaptation:** There was increased attention on adaptation to the impacts of climate change, particularly for vulnerable countries and communities. Discussions centered on strategies for building resilience, enhancing early warning systems, and integrating adaptation measures into development planning.
6. **Transparency and Accountability:** Parties worked on developing guidelines and mechanisms for transparent reporting of greenhouse gas emissions and progress towards meeting targets. This was essential for ensuring trust and confidence among parties and tracking global progress towards the goals of the Paris Agreement.
7. **Technology Transfer:** Discussions on technology transfer focused on ways to facilitate the sharing of environmentally sound technologies between countries, particularly from developed to developing nations, to support their climate action efforts.
8. **Capacity Building:** COP 22 emphasized the importance of building capacity, particularly in developing countries, to effectively implement climate action plans and access international support mechanisms.

Overall, COP 22 marked another step forward in global efforts to address climate change, with a focus on translating commitments into concrete actions and mechanisms for implementation. 

(to be continued..)

References :


1. www.wikipedia.org
2. www.unfccc.int

MONTHLY NEWS

SUSTAINABILITY – A GLOBAL OUTLOOK


1. California battery plant is among world's largest as power storage booms

A major battery plant near Los Angeles will be among the largest in the world when it comes online later this year, promising to shore up California's power grid during the peak summer season and help the state meet ambitious climate goals. Calpine's billion-dollar Nova Power Bank, built on the site of a failed gas-fired power plant, will be able to power about 680,000 homes for up to four hours when charged. It could help boost California's renewable power industries which provide more than a third of the state's power needs.

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2. How zero-waste logistics can close the loop on sustainability

In recent years, sustainability has surged to the forefront of business priorities, marking a 292% increase since 2021, according to Gartner's CEO survey.

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3. Merino Industries: From rooted beginnings to a global example of sustainable growth


Merino Industries' evolution from plywood to high-quality laminates like FABWood reflects its commitment to innovation and sustainability. The company's strategic investments and initiatives underscore its position as a leader in the interior solutions industry.

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4. In Indonesia, deforestation is intensifying disasters from severe weather and climate change.


Roads turned to murky brown rivers, homes were swept away by strong currents and bodies were pulled

from mud during deadly flash floods and landslides after torrential rains hit West Sumatra in early March, marking one of the latest deadly natural disasters in Indonesia.

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5. Over 60 environmental groups demand ban on mega infrastructure projects in Himalayas

They called for a complete moratorium on all mega infrastructure projects, including those related to the railways, dams, hydro projects, tunneling, transmission lines and four-lane highways, along with a comprehensive multidisciplinary review of the impacts of the existing projects.

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6. Climate Inaction Violates Human Rights, ECHR Rules in Landmark Cases

European Court of Human Rights rules in favor of elderly Swiss women in a landmark climate case. The ruling marks the first time the powerful court has addressed climate change, setting a significant legal precedent. The case highlights the intersection between climate change and human rights, emphasizing the need for urgent action.

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7. EY Establishes Global Sustainable Finance Innovation Hub in Dublin to Drive ESG Advancements for Financial Institutions


EY announced the launch of a new Sustainable Finance Innovation Hub in Dublin to help financial institutions around the world accelerate their efforts to meet their environmental, social and governance (ESG) regulatory and reporting requirements.

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8. US SEC Pauses Climate Disclosure Rule Pending Court Challenge

The U.S. Securities and Exchange Commission (SEC) has announced a suspension in the enforcement of its climate disclosure rule while awaiting the outcome of a legal challenge initiated by a group of Republican-led states. This rule, established in March, compels companies to disclose any potential risks posed by climate change to their operations and, for certain larger and mid-sized firms, to report their carbon dioxide emissions. This regulatory pause reflects the SEC's strategy to navigate the legal contestation without indicating any retreat from its commitment to the rule's objectives.

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9. 80% of Global CO2 emissions can be traced to just 57 producers, report says


A new report by InfluenceMap, titled "The Carbon Majors Database: Launch Report," sheds light on a critical aspect of the climate crisis. It reveals a concerning concentration of greenhouse gas emissions, with a mere 57 fossil fuel and cement producers responsible for a staggering 80% of global CO2 emissions since the signing of the Paris Agreement in 2016.

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10. Renewables Growth Lags Behind Rising Energy Demand, Emissions Climb – Finds News Global Report


Policy responses to geopolitical developments and global commitments accelerated the deployment and use of renewable energy in 2023, especially in the power sector. The historic decision at the 2023 United Nations Climate Change Conference (COP28)

to triple renewable energy capacity and double annual energy efficiency improvements by 2030 further raised ambition and built momentum for renewables.

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11. U.S. Sees Record \$239 Billion Investment in Clean Technologies in 2023, Reveals Rhodium Group & MIT Clean Investment Monitor

In a groundbreaking revelation, the Rhodium Group and MIT CEEPR have unveiled the 2023 Clean Investment Monitor (CIM), a comprehensive database showcasing the transformative landscape of clean technology investments across the United States. The report reflects a monumental leap forward in the adoption and deployment of sustainable solutions, underlining a record \$239 billion influx of investments in clean energy, clean vehicle, building electrification, and carbon management technologies throughout 2023 alone.

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12. Boston University report says China could drive Africa's renewable energy revolution


A new report by Boston University's Global Development Policy Center and the African Economic Research Consortium sheds light on China's potential to be a transformative force in Africa's shift towards clean energy. The report acknowledges China's established role as Africa's biggest trading partner, with substantial investments in large-scale infrastructure projects. However, it reveals a critical gap between China's pronouncements on sustainable development and its actions on the ground.

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SUSTAINABILITY – INDIAN CONTEXT


1. IBM Showcases Progress on Sustainability and Social Responsibility in 2023 Impact Report

IBM announced the release of its 2023 Impact report. The report summarizes the company's Environmental, Social and Governance (ESG) initiatives, partnerships and investments in 2023, which were implemented to advance our goal of making a lasting positive impact.

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2. ESG reporting witnesses increase in global variance

India has been an early adopter of corporate ESG regulations - be it mandating listed companies to spend towards corporate social responsibility or disclosing ESG parameters through the 'business responsibility and sustainability reporting', or BRSR. Since FY23, the top 1,000 listed companies in India have been disclosing over 1,600 data points pertaining to different aspects of the ESG framework as part of the BRSR.

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3. 52% GCCs in India proactively championing ESG agenda: EY

The report highlighted that GCCs are establishing dedicated teams to collaborate with global organisations for ESG initiatives, with major areas of support being in the enablement of processes, data and technology.

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4. India among the world's first to standardise ESG disclosures; new SEBI measures to improve transparency

India's ESG investments have grown from \$330 million in 2019 to \$1.3 billion in 2023, and consumers are increasingly favouring socially conscious brands, says Ramnath Iyer.

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5. 67% of Indian healthcare companies form ESG boards: EY-CII report

Around 67 per cent of Indian healthcare companies have set up environmental, social, and governance (ESG) boards, according to a recent joint report by EY and the Confederation of Indian Industries (CII). The report also stated that over half of Indian healthcare firms have embraced zero liquid discharge (ZLD) and implemented sustainable sourcing practices as part of their ESG commitments.

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6. Uniting corporate strategy, ESG imperatives, and stakeholder value in a transformative era

It's a known fact that the Transportation and Logistics (T&L) is a significant contributor to GHG emissions hence the integration, adoption and building of ESG as part of business and culture of the company is imperative.

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7. India-US ESG discusses defence cooperation, highlights comprehensive partnership


The India-US Executive Steering Group (ESG) meeting at the US Army Pacific Headquarters in Hawaii was a key platform for discussing defence cooperation engagements. Led by Lt Gen TK Aich DCOAS (Strategy), the Indian delegation was briefed on the capabilities of the Lightning Academy and Aviation Brigade. This meeting underscores the comprehensive global strategic partnership between India and the US, driven by shared democratic values and vibrant people-to-people contacts.

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8. Carbon compliance norms likely to have limited impact on domestic primary aluminium entities, says ICRA


The European Union signed the CBAM regulations in May 2023, laying the framework for the imposition of taxes

on embedded carbon imports from six sectors, which includes aluminium, steel, cement, hydrogen, electricity, and fertiliser.

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9. Small changes, big futures: India's conscious shift towards health and sustainability

In a world increasingly overwhelmed by environmental degradation and lifestyle-related health issues, there is an urgent need for a collective awakening and action. The air quality is deteriorating at an alarming rate, contributing to a myriad of health problems. The food systems and dietary choices are under scrutiny for their role in the rise of chronic diseases. And unsustainable lifestyle choices like drinking and smoking, emanating from the pressures of modern living are further exacerbating the harms to human life.

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10. 52% GCCs in India adopting ESG agenda: EY

As many as 52% of the Global Capability Centres (GCCs) are taking proactive steps in adopting environmental, social and governance (ESG) policies, according to Ernst & Young report. It further said nearly 70% of these GCC centres are "actively" pursuing tech collaborations to implement ESG initiatives. The EY report, India's inaugural 'ESG GCC Report 2024', has collected data from more than 45 GCCs in the country. The ESG goals require changes in how companies handle their technology, data, and reporting processes.

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11. The original green drivers: The early adopters of electric cars in India are still passionate about EVs and sustainability.


Early EV adopters like Saumya Prasad and Sanjay Gupta show dedication to sustainability. Their experiences with old electric cars demonstrate the longevity and value of EV ownership, contributing to the mainstreaming of electric vehicles in India. Industry watchers say electric vehicles are beginning to make economic sense. Now there is price parity between electric and ICE vehicles which will fuel the purchase of electric PVs and increase their penetration, which is now a mere 2%.

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12. Biofuel company GPS Renewables raises \$50 million debt from PNB, HDFC, ICICI Bank, SIDBI, others

Biofuel company GPS Renewables on Tuesday announced \$50 million (Rs 411.50 crores) funding in debt from a clutch of private and public lenders along with non-banking financial companies (NBFCs) including Punjab National Bank, HDFC, Yes Bank, HSBC Bank, Kotak Mahindra Bank, ICICI Bank, Citibank, Vivriti Capital, Northern Arc, Spark Capital, Tata Capital and SIDBI.

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13. SIDBI announces \$120 million fund for climate, sustainability solutions from startups, MSMEs

SIDBI, the principal financial institution for MSME development, on Monday, announced a new fund to enable investment into early-stage startups and MSMEs harnessing technology-led innovation to spur climate solutions and sustainability in India. The \$120 million Avaana Sustainability Fund (ASF) anchored by SIDBI as an accredited entity was approved by the world's largest climate fund Green Climate Fund (GCF). The latter contributed \$24.5 million to the ASF.

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Sustainability of AI - An Overview of its ESG Impact

Usha Ganapathy Subramanian
Practicing Company Secretary
Chennai

Introduction

The advent of Artificial Intelligence (AI) has taken us by storm over the last few years. Right from user recommendations to search results to chat assistants to self-driven cars to deepfakes, the world is seeing a deluge of AI-enabled or AI-assisted technologies becoming commonplace.

AI refers to mimicking or simulating the human thought processes, especially with respect to learning, problem-solving and adapting to different stimuli. Here the responses are not hard coded into the system. The machine here is taught how to learn and adapt its responses to differing circumstances. Such an AI could operate within a narrow realm like those in the case of self-driven cars or Alexa, for example, or could be general AI capable of performing multiple tasks as a human being would be able to do. While true general AI is not yet available, generative AI like ChatGPT or Copilot seem to be important stepping stones in the process.

As more people and organizations turn towards AI, especially generative AI, it is time to ask an important question – Is AI sustainable? In this article, we look at how generative AI could impact environment, society and governance structures (ESG) in the world.

Environmental Impact of AI

Energy Consumption: While discussing the energy consumption by generative AI models, it is important to understand that energy consumption arises from various sources – like the use of compute (computing power) for training AI, hardware infrastructure and for keeping the model running after deployment. AI needs to be trained on data and the amount of compute used in the training phase is especially power intensive. The amount of compute used in generative AI has been doubling every 3.4 months as per the information made available by OpenAI in its research paper “AI and Compute”¹. This exponential increase has made

possible the rendering of images based on text inputs by AI tools like Dall.E and Copilot. This is enabled by hardware such as GPUs, which are basically electronic circuits. More compute, more carbon footprint. As per Harvard Magazine’s article, “Should AI be scaled down?” by Nina Pasquini, GPT-3’s training process gobbled the equivalent of annual electricity consumption of 120 US households.² The article also points to the study by 50 Joule which projected that by 2027, the AI industry could be consuming the electricity equivalent of the entire population of Netherlands.³ The article suggests pursuit of efficient ways of developing or training AI instead of scaling up.

In some instances, nuclear power is used, which reduces the carbon footprint. In MIT Technology Review’s article, “We’re getting a better idea of AI’s true carbon footprint” by Melissa Heikkila⁴, it is seen that an AI startup called Hugging Face has embarked upon measuring the carbon footprint of Large Language Models (LLMs) and it started by measuring its own LLM named BLOOM and found that the training phase of BLOOM led to emissions of 25 metric tonnes of carbon dioxide. And this was only the training; and if taken together with the carbon footprint of the infrastructure and the energy required to run the tool once deployed and the equipment, the numbers doubled, which is equivalent to 60 flights between London and New York. However, it must be noted that it is much lesser than other models because BLOOM was trained on a French supercomputer that used nuclear power. Other LLMs that run on fossil fuels have a much larger carbon footprint. The article also summarizes the situation by pointing out that although AI contributes to

¹ <https://openai.com/research/ai-and-compute>

² <https://www.harvardmagazine.com/2024/03/scaling-artificial-intelligence>

³ [https://www.cell.com/joule/abstract/S2542-4351\(23\)00365-3?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2542435123003653%3Fshow-all%3Dtrue](https://www.cell.com/joule/abstract/S2542-4351(23)00365-3?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2542435123003653%3Fshow-all%3Dtrue)

⁴ <https://www.technologyreview.com/2022/11/14/1063192/were-getting-a-better-idea-of-ais-true-carbon-footprint/>

only a fraction of the greenhouse gas emissions of the tech sector, which itself is within 4% of the global emissions, it is still large for a single technology to account for so much of the emissions.

e-waste: The other concern is that with the generation of e-waste could burgeon given that better technology needs use of better and compatible hardware and the old hardware is discarded and needs to be recycled responsibly. The rapid advancement in AI technology leads to faster turnover of hardware, contributing to electronic waste.

Social Impact of AI

Job Displacement and Creation: AI has a wide spectrum of impact on jobs with potential for both job creation and replacement and many things in between. While the concern about AI replacing jobs, such as in manufacturing and customer service, is a valid one, it is also creating new opportunities in fields like data analysis and cybersecurity. It could also give birth to new positions in ethical considerations and policy-making. In its 2020 report, "The Future of Jobs Report 2020," the World Economic Forum predicts machines could replace 85 million jobs but technologies could also create 97 million new roles by 2025, suggesting a shift rather than a loss in employment.^{5,6} Efforts to mitigate job displacement include training workers in AI-related skills to adapt to the evolving job market are the need of the hour not just at the government level but also in the traditional educational institutions and even in workplaces.

Bias and Fairness: If AI models are trained on biased training data, it could impact certain groups disproportionately. This is an important matter to be considered and the reason why explainability of AI becomes important. Regulators should take up the efforts to ensure creation of more equitable AI systems.

Digital Gender Divide: GSMA's The Mobile Gender Gap Report, 2023⁷ shows that the gender gap in basic mobile ownership in India is 11%, whereas in smartphone ownership and mobile internet usage it is much higher at 40%. In economies with a gaping digital gender gap, the availability of AI with those who have access to smart phones would

5 <https://www.weforum.org/publications/the-future-of-jobs-report-2020/in-full/executive-summary/>

6 <https://www.weforum.org/publications/the-future-of-jobs-report-2020/in-full/chapter-2-forecasts-for-labour-market-evolution-in-2020-2025/#2-1-technological-adoption>

7 https://www.gsma.com/r/wp-content/uploads/2023/07/The-Mobile-Gender-Gap-Report-2023.pdf?utm_source=website&utm_medium=download-button&utm_campaign=gender-gap-2023

make the impact of the divide more pronounced in the society.

Overdependence on AI: A prolonged and sustained dependence on AI systems for various tasks may even lead to loss of certain capabilities for the humankind. Imagining a generation relying on AI for executing simple physical tasks to complex real-life problems itself shows the peril we face in gradually losing our thinking and problem-solving abilities, judgment and intuition.

Threat to privacy and safety concerns: There are several concerns to data privacy in the realm of AI. The ability of AI tools to generate very real-looking deepfakes is a growing concern among the public. Further, the ability of AI to process data in a way that it encroaches upon privacy is also a concern. For example, installing cameras in public places is nothing new; however, if AI is able to process it to understand the emotions of a person or using that information for commercial exploitation, it is definitely a cause for concern. This could lead to widespread lack of trust and discontent in the society.

Governance Impact of AI

Organisations, Government bodies and regulators, who use AI will see a sea of benefits arising out of deployment of AI tools, including generative AI combined with other technologies like ERP and Big Data. For example, early identification of patterns that could predispose an entity to fraud could help nipping frauds in the bud. More realistic predictions of economic variables could be possible with AI working on Big Data. Risk management systems, internal controls, management information systems could all benefit from deployment of AI. Governance could be enhanced greatly with the increased sensitivity and speedier responsiveness to situations enabled by AI tools.

However, the ethical considerations involving explainability of the results generated by AI, possible infringement of intellectual property rights, violation of privacy, its impact on environment and society are bigger questions that will need to be reconciled before widespread formal adoption of AI.

Moreover, human judgment should not be delegated to AI tools to ensure ethical use of AI and because of the simple fact that human intuition gifted by nature cannot be replaced by AI.

Conclusion

Policymakers need foresight, imagination and wisdom to understand the impact of the ongoing developments in

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the field of AI on environment, society and governance. The exponential patterns seen in the training of AI and consumption of AI by the population make predicting the sustainability of AI a task beyond extrapolation of past trends.

Initiatives aimed at reducing the environmental impact, such as using more efficient algorithms, using greener energy sources, and developing more sustainable hardware solutions will help neutralize the impact on environment. Governments should gear up to detect and prevent

malicious use of AI. The push for both domestic and global cooperation to regulate AI in a way that it can be used in a safe and sustainable way is the need of the hour.

As AI tools are becoming more ubiquitous, public discourse on AI should be encouraged to make people better aware of the capabilities and dangers of AI. Industry associations and professional bodies should come up with ethical and technical standards for deployment of AI. AI is the reality today; the question is will it create a happier tomorrow for all.

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Past Issues of Sukhinobhavantu



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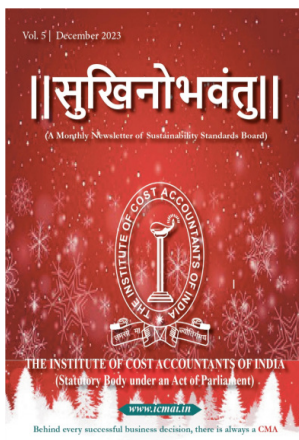
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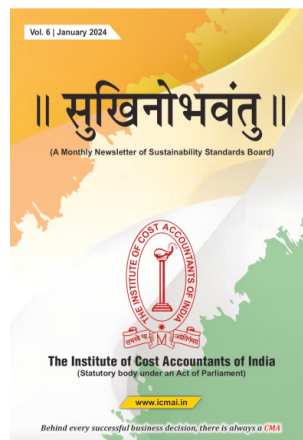
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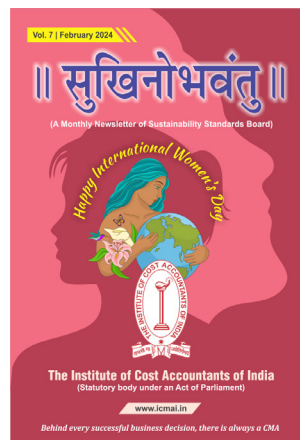
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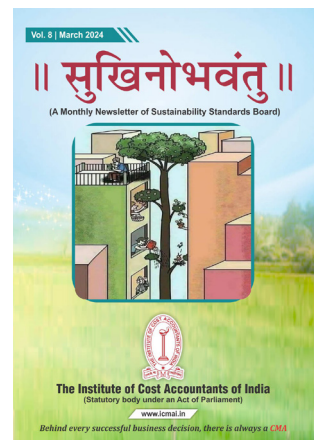
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ESG Audits: Ensuring Accuracy and Reliability in Sustainability Reporting

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Abstract

Environmental, Social, and Governance (ESG) audits have become increasingly important for organizations to assess and manage risks related to sustainability and ethical practices. These audits provide assurance regarding the accuracy of ESG reporting, evaluate risks in environmental, social, and governance domains, and help in identifying areas for improvement. This paper explores the significance of ESG audits, the process involved, and effective risk mitigation techniques. It also discusses the importance of ESG risks for sustainable growth and suggests ways to integrate ESG practices into business strategies.

Keywords: ESG audit, sustainability, risk management, governance, environmental, social, ethical practices.

ESG Audit

An ESG audit can offer some assurance regarding the reliability of a company's ESG statements by evaluating the risks an organization confronts in the environmental, social, and governance domains. It can be challenging to get even a little comfort regarding the accuracy of ESG reporting in the absence of a rigorous ESG audit. Internal and external ESG audits are both possible. According to KPMG, LLP, organizations looking to reassure their stakeholders about the veracity of their ESG claims will find that having third-party auditors and professionals with experience in ESG evaluations will become more crucial. "Role includes validating the effectiveness of ESG-related controls and activities to help organizations manage those risks and foster resilience," according to Deloitte, is what internal audit does. ESG assurance involves both internal and external audit functions.

Companies should be ready to answer questions about their ESG-related business procedures, reporting frameworks they employ (if any), and how they collect, evaluate, and present their ESG data during an ESG audit. They might have to supply proof or artifacts for validation and audit procedures. Additionally, auditors could make suggestions for benchmarking, strengthening internal controls, and filling up gaps.

An ESG audit can help you be ready to submit reports to regulatory bodies and will probably be in line with other aspects of your financial statements, risk management plan, and compliance obligations.

It's crucial to remember that other external stakeholders and investors utilize ESG disclosures to comprehend an organization's stance on corporate governance, the environment, and social issues. The target audience should be considered while designing the format and methodology for reporting on ESG subjects.

Every business faces environmental, social, and governance (ESG) concerns. But what will separate a company that is prepared from one that is not is how these issues are gathered, handled, and reported.

Because the environment is not an endless resource that can be used without consequences, businesses will inevitably suffer expenditures associated to ESG issues. Thus, it's critical that companies consider these risks when deciding how to run their operations and what goods and services to offer. The process of assessing the social and environmental risks associated with a business's activities, goods, or services is known as an ESG audit. This audit's objective is to find any possible hazards so that they can be dealt with now, before they become issues later.

Every ESG audit sheds light on how the business handles these concerns. Businesses can examine their supply-chain risks, risk management skills, and shareholder transparency by conducting an ESG audit.

ESG risk and its assessments

Concerns about environmental, social, and governance issues are included in the category of ESG hazards. Many firms used to see ESG as a compliance function rather than a socially conscious endeavour.

ESG risk assessment will change, particularly as risk managers and internal auditors learn more about the impact of ESG risks and the expansion of socially conscious behavior. The ESG elements can be divided into three categories to begin with, and these can then be further broken down into specific hazards. The specific risks you include in your risk assessment will change based on your organization's and industry's characteristics.

Environmental Risk

Most people agree that environmental risk has a role in contributing to climate change. In-depth risks would take into account the way the company oversees or assists with overseers in areas such as recycling, waste reduction, ocean protection, water conservation, and the shift to renewable energy.

Social Risk

Fairness in hiring, promoting, and compensating all employees is a component of social risk, an ESG that is related to diversity and equity. Bullying, sexual harassment, and discrimination are comparable topics. Providing services to economically distressed places or promoting equality in other organizations' educational initiatives are examples of social hazards.

Governance Risk

Corporate governance risk, as it relates to ESG risks, is the supervision and execution of policies and procedures meant to reduce the risks mentioned earlier. Funding for social and environmental activities may be redistributed if corporate governance isn't up to par. A further danger to the ESG program arises from the writing of policies that are never completely executed or upheld.

Recognizing the Importance of ESG Risks

The field of environmental, social, and governance (ESG) risks has become increasingly popular among many types of corporate organizations. Notable financial institutions

have made significant financial commitments to address ESG concerns, including J. P. Morgan Chase, Citi Bank, and Bank of America. These financial leaders' recognition of the seriousness of ESG issues makes it necessary for risk managers, internal auditors, and investors to give the assessment and management of these risks top priority. This paper explores the essential elements of ESG risks and practical approaches for incorporating them into the audit plan, clarifying the crucial function that ESG risk management technology serves.

Effective Risk Mitigation and Decision-Making Techniques for Managing ESG Risks

Constructing an integrated strategy that makes use of strong risk management capabilities is required to mitigate ESG risks. To enhance the business's resilience and enable well-informed decision-making processes, it is essential to include a comprehensive risk management solution that is customized to meet the unique needs of the organization. Businesses that take a proactive approach to ESG risk management not only avoid possible problems but also take use of these difficulties to propel sustainable growth and strengthen their competitive advantage.

- ❖ **Identification of Risks:** Perform a comprehensive evaluation to determine and classify relevant ESG risks, such as supply chain risks, ESG issues, and climate change, to the organization's industry and operations.
- ❖ **Prioritization:** After the identification of ESG risks, it is critical to measure and rank these risks according to their possible consequences and probability of occurring, taking sustainability and financial performance into account.
- ❖ **Including in the Audit Framework:** ESG risks should be smoothly integrated into the current audit framework by integrating ESG data and reporting and coordinating them with the organization's overall risk management strategy and objectives.
- ❖ **Engage important stakeholders,** including as staff members, financiers, clients, and authorities, to obtain opinions and insights into the recognized environmental, social, and governance (ESG) hazards, as well as the possibilities for profitability.
- ❖ **Monitoring and Reporting:** To measure the efficacy of the integrated ESG risk management system, including ESG reporting and board of director's oversight, establish a strong monitoring and reporting process. Adopt a culture of intentional adaptation and

ongoing development by encouraging a flexible and dynamic approach to ESG risk management, which includes putting ESG frameworks into practice, being transparent with disclosures, and taking climate change into account.

Accepting ESG Risks as Sustainable Growth Catalysts

The growing importance of ESG risks calls for a paradigm change in how risk management and corporate governance are approached. Businesses are forced to accept ESG issues as essential drivers of sustainable growth and wealth creation as investors increasingly recognize the material influence of these aspects on the financial performance, profitability, and long-term survival of organizations. By incorporating ESG measurements and targets into the fundamental operations of the firm, investors' interests are protected and their confidence is increased. This is because doing so not only guarantees regulatory compliance but also increases the company's resilience to market fluctuations and socio-environmental issues. Businesses can promote a culture of ethical stewardship and accountability by giving ESG problems top priority. This will show that they are proactive in reducing risks and taking advantage of possibilities related to social responsibility, environmental stewardship, and strong governance processes. In addition to providing protection against possible financial risks, the company's strategic alignment with ESG principles positions it as a responsible and progressive investment option, drawing in an increasing number of ESG-aware investors who place a higher priority on long-term profit than on sustainable and ethical investment opportunities. Additionally, businesses can proactively adapt to changing regulatory landscapes and consumer preferences by incorporating ESG practices into their business strategies, such as sustainability reporting, ESG benchmarking, transparent ESG disclosures, and obtaining ESG scores. This will ensure long-term success and sustainable growth in a market environment that is becoming more and more competitive and socially conscious.

What Sustainability Audit aim to achieve?

High-quality audits are intended to assist businesses in locating opportunities, strengthening their areas of weakness, and monitoring the advancement of ESG projects. Companies engage in an activity known as an environmental, social, and governance (ESG) audit with both internal and external stakeholders to evaluate how well they are managing environmental and social issues. For financial

purposes, this process should be kept apart from an audit because its goals are different. Some questions that an ESG audit aims to address are:

- ❖ Which environmental challenges affect the company directly?
- ❖ What dangers are connected to these problems?
- ❖ In terms of ESG policies, procedures, and controls, how is the company set up?
- ❖ How are senior management, staff members, clients, and other stakeholders informed about these issues?

Businesses should always be evaluating how they are doing when it comes to environmental, social, and governance (ESG) issues because the outside world is continually changing and might have an impact on your business. Additionally, the business needs to assess its performance to ensure that it is not in danger of breaking any rules or regulations.

Sustainability Audit v/s ESG Audit

Due to their distinct goals, financial and ESG audits are not the same. While sustainability audits concentrate on how businesses can become more socially and ecologically responsible, ESG audits highlight the risks to the environment and the community associated with conducting business.

Conclusion

ESG audits are essential for organizations to demonstrate their commitment to sustainability and ethical practices. By identifying and managing ESG risks, businesses can improve their resilience, enhance stakeholder trust, and seize opportunities for sustainable growth. Integrating ESG practices into the core of business operations not only ensures regulatory compliance but also strengthens the organization's competitive advantage in a rapidly changing market environment.



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Driving Sustainability through Social Entrepreneurship: Empowering Circular Economy Growth

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Abstract

Social entrepreneurship places a primary emphasis on addressing specific social and environmental issues. By prioritizing these social and environmental outcomes alongside financial gains, social entrepreneurs embody a more holistic approach to sustainable business growth. This holistic approach aligns well with the principles of the circular economy. The article aims to shed light on the transformative power of social entrepreneurship in creating a circular economy. Towards the end of the article some suggestions are ideated to advance the social entrepreneurship for the circular economy development.

Introduction

Social entrepreneurship is a dynamic approach to business development. Its primary focus is on addressing specific social and environmental issues with the objective to promote sustainable development of the business. The social entrepreneurship ventures can take various forms. It includes non-profits, charities, and for-profit businesses. The aim of social entrepreneurship is to make a positive impact on society and the planet. Traditional entrepreneurs, main goal often revolves around profit generation, on the other hand social entrepreneurs are driven by a meaningful change in their communities or the world at large. Often, their passion is deeply personal. The conventional businesses typically measure success using financial metrics on the other hand social entrepreneurs take a broader view of success. The social entrepreneur evaluate their impact based on a range of indicators. The prominent indicators are job creation, environmental conservation efforts, and contributions to charitable initiatives. By emphasizing on these social and environmental outcomes

aside from financial benefits, social entrepreneurs embody a more holistic and sustainable model for the business growth and development. The principle and practice of social entrepreneurship closely align with the philosophy of the circular economy. The circular economy is different from the traditional linear model of economy. In traditional economic model the focus is on resource consumption and disposal. The traditional model follow a “take-make-dispose” approach. On the other hand the circular economy seeks to sustainably manage resources by minimizing waste and promoting regeneration. It emphasizes principles such as reuse, recycling, and regeneration. The overarching goal of circular economy is to achieve long-term environmental and economic sustainability. The aim of the present research article is to develop a nuanced understanding of the role of social enterprises in advancing sustainability within the circular economy framework. Additionally, the article seeks to uncover the potential synergies between social entrepreneurship and the circular economy.

Objectives of the Study

- To explore the linkages between sustainable social entrepreneurship and its contribution in circular economy development.
- To give some suggestive measures for advancement of social entrepreneurship and circular economy growth.

Research Methodology

The author gathered information from different websites and research papers and efforts have been made to put together and briefly analyze those information to build right perspective on linkages between sustainable social entrepreneurship and circular economy development.

Why Sustainable Social Entrepreneurship?

There are several reasons behind popularity of sustainable social entrepreneurship. Firstly, social entrepreneurship provide social benefits by employing models that cater need of specific target groups within the circular economy. For instance, an enterprise might manufacture affordable products for economically disadvantaged consumers. Secondly, social entrepreneur help mitigate social risks by adopting Provider, Buyer and Employer models. This model has potential to address issues like equitable economic outcomes, community health, and environmental impact. The model ensure fair working conditions, safety measures, and decent wages for those involved in waste management activities. Lastly, social enterprises contribute to building of circular economy. It helps in bridging gaps in different regions and value chains. For instance, one firm may be involved in the transfer of discarded products from one location to another for repurposing or reuse. Thus ensure global connectivity, sustainability, and resource efficiency.

Ways to Measure Profit by Social Entrepreneurs

The social enterprises ascertain their performance using a triple bottom line approach. The three key dimensions of triple bottom line approach are:

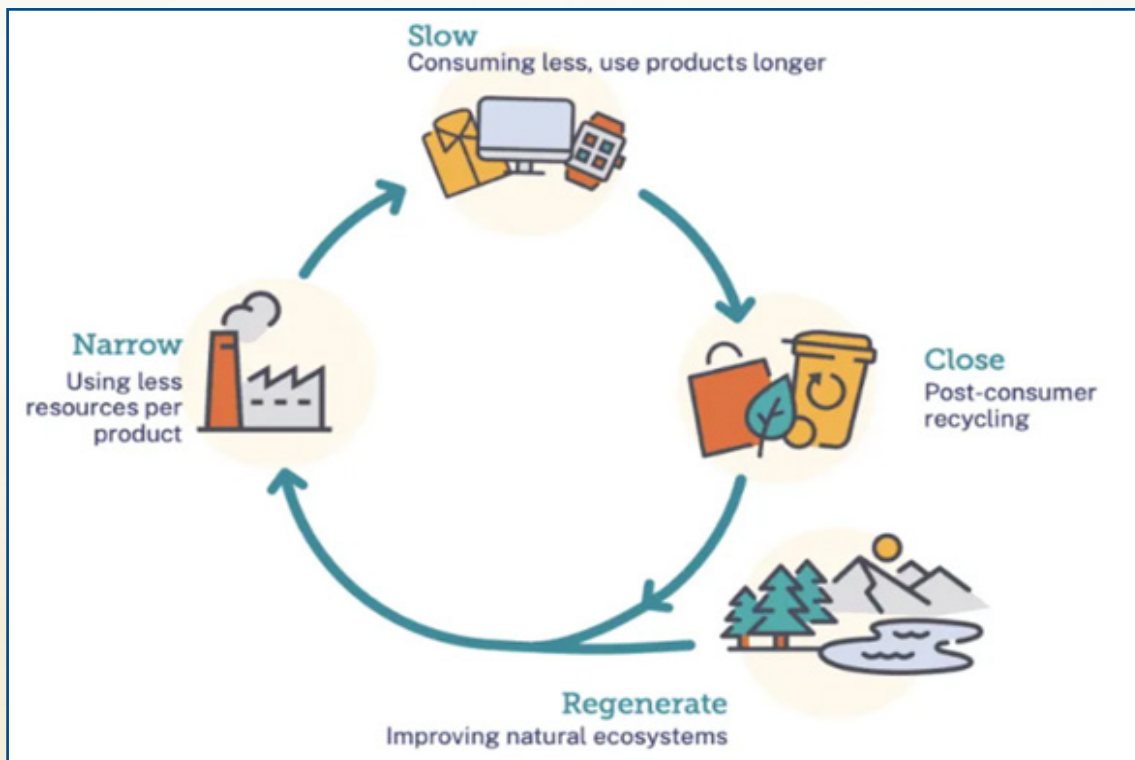
1. **People:** This dimension evaluates the human impact of the business. It focus on driving social change, enhance lives, and foster community development in a sustainable manner. This dimension give due care to factors such as job creation, empowerment initiatives, and societal well-being.
2. **Planet:** The planet dimension focus on promoting sustainability and minimize ecological harm. This dimension encourage eco-friendly practices throughout operations and supply chains.
3. **Profit:** The social entrepreneur also gives due importance to financial viability. Profitability is essential for sustaining operations in long run. Profitability also impacts future growth.

By focusing on all three dimensions, people, planet, and profit social enterprises aim to achieve a balanced, sustainable, and holistic approach of growth and development.

Circular Economy Model

The circular economy aims to manufacture such product which would last for longer duration and can be recycled after its use. Circular economy narrow down the resource consumption per unit of the product. Chart 1 highlight the circular economy model.

Chart 1: Circular Economy Model



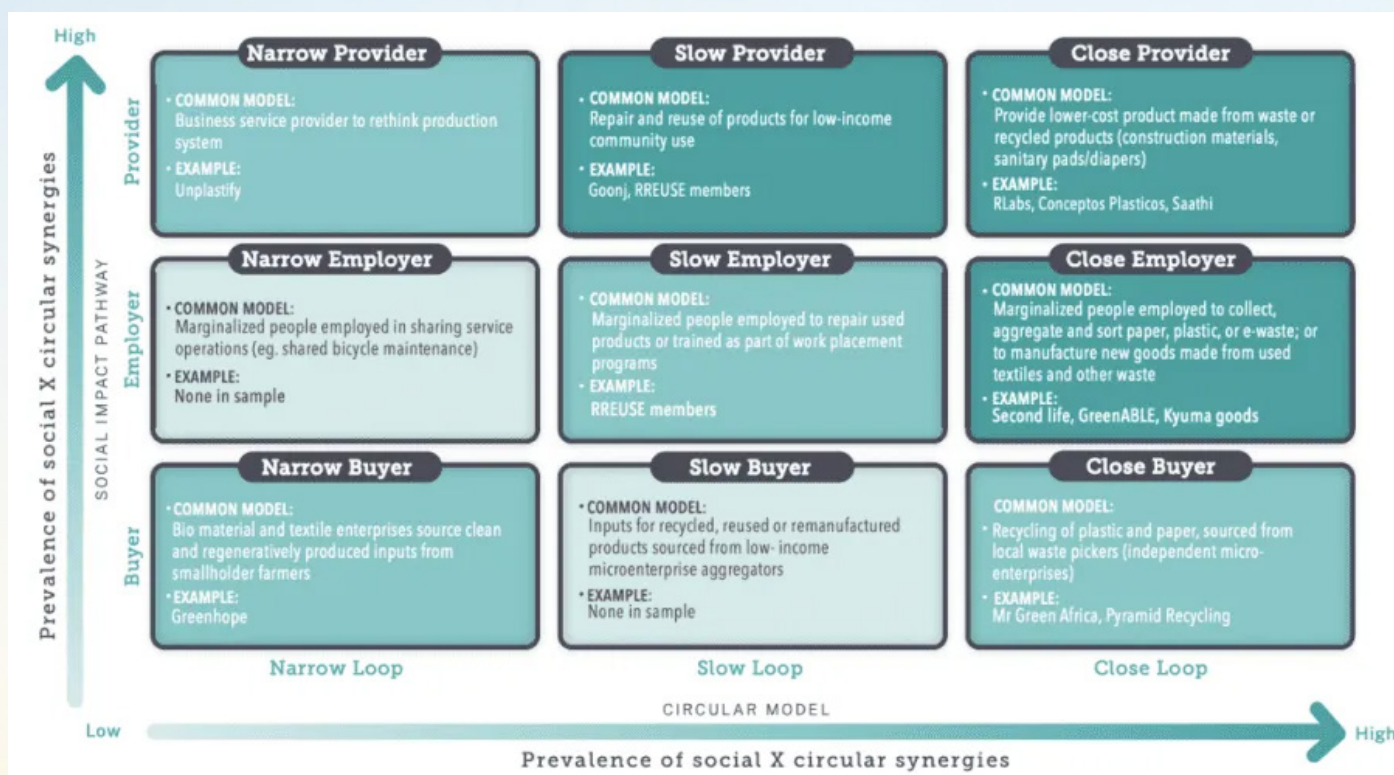
Source: <https://www.technoserve.org/blog/circular-economy-social-enterprises/>

Sustainable Social Entrepreneurship and Circular Economy Development

As the world grapples with ever-growing social and environmental complexities, the transition towards a circular economy model emerges as a pressing imperative. Yet, despite its urgency, the convergence of sustainable social enterprises and the circular economy remains largely unexplored terrain. Recognizing this gap, the article endeavors to lay the groundwork for understanding this intersection, providing a framework to guide social entrepreneurs and stakeholders. Within this framework, three main pathways delineate. Firstly, sustainable social

enterprises can generate positive social impact within the circular economy. Secondly, these enterprises leverage circular business models that focus on reusing and recycling materials. Thirdly, social entrepreneurs adopt one of the three primary impact models namely buyer, employer and provider thereby amplifying their societal contributions. Through strategic adoption of circular business practices and alignment with impactful models, social enterprises can not only thrive financially but also make sustainable social change. Thus, it helps in addressing the interconnected challenges faced by global community. Chart 2 presents the synoptic view of the circular synergies.

Chart 2: Circular Synergies



Source: <https://www.technoserve.org/blog/circular-economy-social-enterprises/>

Circular business models face several challenges. The key challenge is doubt about reused or recycled goods and common misconceptions about their quality and durability. Sustainable sourcing and hiring from marginalized communities often incur higher costs. This further complicates price competitiveness. Research shows that consumers express willingness to pay more for sustainable products however, in real their actual willingness to do so is limited. Transitioning to a circular economy requires a fundamental reimagining of business operations. Innovative collaborations and broad partnerships are the key factors behind the transformation of circular economy.

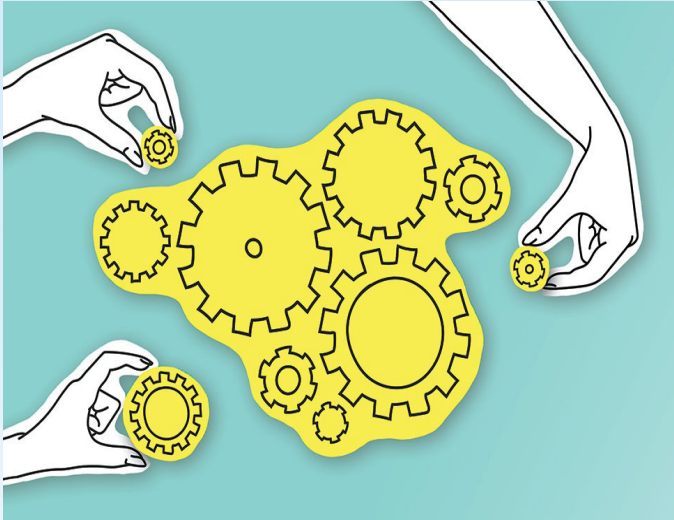
Sustainable Social Entrepreneurship and Circular Economy: Opportunities and Challenges

Social entrepreneurship serves as a key driver in advancing the circular economy. It plays a critical role in promoting environmental sustainability. The overarching objective of a social entrepreneur is societal well-being. Some key opportunities and challenges are discussed here.

Opportunities Available to Social Entrepreneur

1. Advancement of Circular Economy:

The circular economy has the potential to address pressing global challenges. It could eradicate income inequality,



nature loss, and climate change to a greater extent. By 2030, transitioning to a circular paradigm is projected to generate up to 8 million new jobs. Additionally, circular economy unlock \$4.5 trillion of economic growth. This statistics indicates that circular economy has immense potential for positive impact.

2. Social Entrepreneurs as Trailblazers:

Social entrepreneurs are pioneers in the circular movement. The social entrepreneur addresses societal challenges. They initiate innovative business practices. These modern practices bridge the gap between environmental sustainability and social impact. Their deep understanding of local contexts enables effective resource reduction and waste management. It helps in achieving economic and social opportunities aligned with circular models.

3. Opportunities for Companies to Engage:

To enhance sustainability and societal contributions the traditional business houses should engage with social enterprises. The integration of the circular economy and social entrepreneurship could benefit the economy.

Challenges Faced by Social Enterprises in the Circular Economy

The workers involved in processing waste present challenges for social enterprises. This is because of their exposure to hazardous environments. It has adverse impact on their health and safety. Balancing environmental and social sustainability becomes intricate when navigating these challenges. Therefore, it is important to address both aspects effectively.

Conclusion

The emergence of social entrepreneurship is a powerful force for positive change. Through innovative business practices it helps in addressing pressing societal and environmental issues. The social entrepreneurs have become pivotal players in advancing the transition of a circular economy. This transition, characterized by preservation and restoration of natural resources and promote sustainable development of the economy. It hold immense promise for creating a more sustainable future. The social entrepreneurship centered on making a difference in the world. The traditional entrepreneur's primary focus may be on profit whereas, social entrepreneurs are driven by meaningful social and environmental change. The social entrepreneur businesses are organized around bringing sustainable social change. They intend to bring changes by developing keen understanding of the communities they serve. This intimate connection often stems from personal experiences. One of the unique characteristics of sustainable social entrepreneurship success is its triple bottom line approach. While traditional businesses often measure success using financial metrics on the other hand, social enterprises place equal importance to three major dimensions namely, people, place and profit. The social entrepreneur success are measured by considering at number of jobs created, trees planted, or donations made to charitable causes. Social enterprises embody a holistic approach to business because they are not just focusing on economic return but also considering sustainability aspects. This aligns well with the principles of the circular economy. The circular economy shows a paradigm shift in how we produce and consume goods and services. The circular economy focus on the factors like reduce, reuse, and recycle which aligns well with the sustainability principles. It has potential to offers solutions to some of the most pressing global challenges. The circular economy can reduce income inequality, climate change, and food insecurity. Social entrepreneurs are at the forefront of this movement. The innovative business models developed by the social entrepreneur can bridge the gap between environmental sustainability and social impact. Though, there are immense potential of social entrepreneurship in advancing the circular economy however, it is not free from challenges. It has been observed that often marginalized workers pose barriers to the success of social enterprises growth. Developing environmental sustainability with social equity becomes challenging where poor workers are involved in waste management. Addressing these challenges will require concerted efforts from government. Aside from this businesses and civil society need to ensure that the

transition to a circular economy is inclusive. Though there are several barriers but still opportunities for collaboration between companies and social entrepreneurs are abundant. The combination of the circular economy and social entrepreneurship could help the companies seeking to align profit with sustainable progress.

Suggestions

Here are few suggestions for advancement of sustainable social entrepreneurship and circular economy growth.

- 1. Foster Collaborative Partnerships:** Encourage collaboration between social enterprises and traditional businesses. This would help to leverage their respective strengths in advancing the circular economy. By combining innovative business practices these kind of partnerships can drive meaningful impact at scale.
- 2. Prioritize Social Equity:** The social entrepreneurship initiatives for advancing the circular economy should prioritize social equity. This can be achieved by providing fair wages, safe working conditions, and creating opportunities for marginalized communities.
- 3. Promote Consumer Education:** Educate consumers about the benefits of circular economy practices. Through constant education and advertisement develop a greater understanding of the environmental and social benefits of sustainable products.
- 4. Advocate for Policy Change:** Promote such policies that support the integration of social entrepreneurship into the circular economy. This includes promoting those regulations that incentivize sustainable business practices.
- 5. Invest in Research and Development:** Invest in research and development to drive innovation in circular business models. By encouraging a culture of innovation, new solutions can be developed. It could help to overcome barriers and maximize impact.
- 6. Empower Local Communities:** Empower local communities to participate in the circular economy. To achieve this goal provide access to resources and training. The benefits of the circular economy can be more equitably distributed by training the people of local community.
- 7. Leverage Technology:** Harness the power of technology to streamline circular economy processes. Connect social enterprises with broader value chains. This includes leveraging digital platforms for business activities.

- 8. Encourage Cross-Sector Collaboration:** Develop collaboration between social entrepreneurs, government agencies, NGOs, and academia. This could drive systematic change. It has potential to develop a circular economy. By bringing together diverse stakeholders, innovative solutions can be developed.

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Catch them Young!



Master Ram Iyer, a 2nd Standard student from Thane, Maharashtra spreading awareness on Sustainability during the occasion of Earth Day.

Green Finance and Sustainable Development: The Role of ESG in the Indian Banking Industry

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Introduction

India, a nation at the nexus of rapid economic growth and pressing environmental and social challenges, finds itself at the forefront of the global conversation on sustainable development. The banking sector, as a key enabler of economic activities, has a profound impact on India's trajectory toward sustainability. Green finance, a multifaceted approach that considers environmental, social, and governance criteria in financial decision-making, has emerged as a critical tool for fostering sustainability within the financial industry.

Green finance represents a transformative approach within the financial sector that aligns economic activities with environmentally sustainable and socially responsible practices. Rooted in the recognition of the profound impact financial institutions have on global environmental and social challenges, green finance integrates Environmental, Social, and Governance (ESG) considerations into investment, lending, and risk management decisions. Green finance encompasses four important dimensions as identified and analysed below (Figure – 1).



- 1) **Environmental Considerations:** At the core of green finance is a commitment to environmental sustainability. Financial institutions engage in practices that support the transition to a low-carbon economy, mitigate climate change risks, and promote conservation of natural resources. This includes investments in renewable energy projects, financing energy-efficient initiatives, and adherence to stringent environmental standards in lending and investment portfolios.
- 2) **Social Considerations:** Green finance extends beyond environmental considerations to address social impacts and responsibilities. Financial institutions integrate social criteria into their decision-making processes by supporting projects that contribute to social equity, inclusion, and community development. This may involve funding initiatives related to affordable housing, education, healthcare, and poverty alleviation, fostering a holistic approach to sustainable development.
- 3) **Governance Considerations:** The governance dimension of green finance emphasizes the importance of responsible business practices within financial institutions. This includes transparency, ethical conduct, and accountability in corporate governance structures. Effective governance ensures that financial institutions not only pursue financial success but also uphold principles that contribute to long-term sustainability, trust, and resilience.
- 4) **Global Trends in Green Finance:** The global landscape of green finance has witnessed a significant evolution in recent years. International organizations, regulatory

bodies, and financial institutions are increasingly recognizing the need for standardized frameworks and guidelines to facilitate the integration of ESG factors. Initiatives such as the Principles for Responsible Banking (PRB) and the Task Force on Climate-related Financial Disclosures (TCFD) exemplify the commitment to promoting transparency, accountability, and collaboration within the financial sector.

Need for Sustainable Practices in Banking Sector

The need for sustainable practices in banking has become increasingly evident as financial institutions recognize their role in fostering a more resilient, responsible, and environmentally conscious global economy. Several compelling reasons emphasize the importance of integrating sustainability into banking practices are presented below (Figure – 2) and followed by an analysis.



- 1) **Risk Mitigation:** Sustainable banking practices contribute to long-term risk mitigation. By assessing and integrating Environmental, Social, and Governance (ESG) factors into decision-making processes, banks can identify and address potential risks associated with environmental degradation, social unrest, and governance lapses. This proactive approach helps mitigate financial, regulatory, and reputational risks.
- 2) **Regulatory Compliance and Standards:** Governments and regulatory bodies are increasingly emphasizing sustainability in the financial sector. Compliance with evolving regulations and international standards, such as the Principles for Responsible Banking (PRB) and the Task Force on Climate-related Financial Disclosures (TCFD), is crucial for maintaining a robust and ethical banking system.

- 3) **Customer Demand and Expectations:** Today's consumers are more environmentally and socially conscious, and they increasingly prefer to engage with businesses that share their values. Banks that demonstrate a commitment to sustainable practices are likely to attract and retain customers who prioritize ethical and responsible business behavior.
- 4) **Enhanced Reputation and Brand Value:** Sustainable banking practices contribute to a positive corporate image and brand value. Consumers, investors, and stakeholders appreciate and support financial institutions that align with ethical and sustainability principles. A strong reputation for responsible banking can lead to increased customer loyalty and attract socially responsible investors.
- 5) **Access to Capital:** As the demand for sustainable investments grows, financial institutions that adopt sustainable practices may have improved access to capital. Investors, including institutional investors and asset managers, are increasingly integrating ESG criteria into their investment decisions, making sustainable banks more attractive investment options.
- 6) **Long-Term Financial Performance:** Sustainable practices are linked to long-term financial performance. By incorporating ESG factors into risk management and investment strategies, banks can position themselves to capitalize on opportunities associated with the transition to a low-carbon economy and evolving societal expectations.
- 7) **Innovation and Operational Efficiency:** Sustainability initiatives drive innovation and operational efficiency within banks. Implementing green finance solutions, adopting digital technologies, and optimizing resource use contribute to operational resilience and can lead to cost savings over time.
- 8) **Contributing to Sustainable Development Goals:** Banks play a crucial role in supporting sustainable development goals by financing projects that have positive environmental and social impacts. This includes funding renewable energy projects, supporting social enterprises, and promoting financial inclusion.
- 9) **Employee Engagement and Talent Attraction:** Employees increasingly seek employers who prioritize social and environmental responsibility. Banks that foster a culture of sustainability and social responsibility are more likely to attract and retain top talent, leading to a motivated and engaged workforce.

10) Global Collaboration: In an interconnected world, global challenges such as climate change require collaborative efforts. By adopting sustainable practices, banks contribute to a global movement that addresses shared environmental and social challenges.

Green Finance Initiatives in Indian Banks

Green finance initiatives in Indian banks reflect a growing commitment to sustainable practices and environmental responsibility within the financial sector. These initiatives span various aspects of banking operations, from lending and investment to risk management and stakeholder engagement. Some of green finance initiatives in Indian banks.

- 1) **Renewable Energy Financing:** Many Indian banks have established dedicated funds or financing programs to support renewable energy projects, including solar, wind, and hydroelectric power. Similarly, offering attractive loan terms and financial incentives for businesses and individuals investing in renewable energy installations.
- 2) **Energy Efficiency Loans:** Providing loans and financial products to businesses and homeowners for energy efficiency upgrades, such as the installation of energy-efficient appliances, lighting, and building systems.
- 3) **Green Bonds Issuance:** Indian banks have increasingly shown interest in issuing green bonds to raise funds specifically for environmentally sustainable projects. The proceeds from these bonds are earmarked for green initiatives.
- 4) **Sustainable Agriculture Financing:** Banks in India are exploring opportunities to finance sustainable agriculture practices, supporting farmers in adopting eco-friendly and resource-efficient farming techniques.
- 5) **Social Impact Investments:** Investing in projects and initiatives that have both environmental and social benefits, such as clean water projects, sustainable livelihood programs, and community development initiatives.
- 6) **Climate Risk Assessments:** Incorporating climate risk assessments into lending and investment decisions to identify and manage risks associated with climate change, such as those related to extreme weather events and shifts in regulatory landscapes.
- 7) **Green Building Financing:** Offering financial products to support the construction or retrofitting of green buildings that adhere to environmentally friendly design and construction practices.
- 8) **Eco-friendly Vehicle Loans:** Providing special financing options for the purchase of electric or hybrid vehicles to encourage the adoption of environmentally friendly transportation solutions.
- 9) **Carbon Credit Financing:** Exploring opportunities to finance projects that generate carbon credits, allowing businesses to offset their carbon emissions and contribute to climate change mitigation.
- 10) **ESG Integration in Investment Portfolios:** Integrating Environmental, Social, and Governance (ESG) criteria into the assessment of investment portfolios, aligning investments with sustainability goals.
- 11) **Sustainability Reporting:** Several Indian banks have started incorporating sustainability reporting into their annual reports, providing stakeholders with information on the bank's environmental and social impact, as well as its commitment to sustainable practices.
- 12) **Employee Awareness and Training:** Conducting training programs to raise employee awareness about environmental and social issues and incorporating sustainability principles into the corporate culture.
- 13) **Partnerships with Renewable Energy Companies:** Collaborating with renewable energy companies to facilitate project financing and investments in the renewable energy sector.
- 14) **Regulatory Compliance:** Ensuring compliance with evolving ESG regulations and guidelines to align banking practices with national and international standards.
- 15) **Stakeholder Engagement:** Actively engaging with customers, investors, regulators, and the broader community to gather feedback, communicate sustainability initiatives, and foster a culture of responsible banking.

Implementing ESG in Banks

- The regulatory environment related to ESG in India is still evolving, leading to uncertainties and variations in compliance requirements.
- The absence of standardized ESG disclosure frameworks makes it challenging for banks to report their sustainability performance consistently.
- Limited availability and quality of ESG-related data in India make it challenging for banks to assess the environmental and social impact of their activities accurately.

- Many banks in India may lack the necessary expertise and capacity to integrate ESG considerations into their decision-making processes effectively.
- Implementing ESG practices may involve upfront costs for technology, training, and system upgrades.
- Embedding a culture of sustainability within the organizational DNA requires a shift in mindset and awareness among employees and leadership.
- Fully integrating ESG factors into risk management processes is complex, and banks may struggle with assessing and quantifying environmental and social risks.
- Some banks may face skepticism from stakeholders about the sincerity of their ESG commitments, leading to concerns about greenwashing.
- Engaging SMEs in ESG practices can be challenging due to resource constraints and limited awareness.
- Striking a balance between financial objectives and sustainability goals can be challenging, especially when faced with competing priorities.
- Investors, including institutional investors, are increasingly considering ESG criteria in their investment decisions.
- Integrating social impact considerations in banking activities contributes to financial inclusion and positive community development.
- Emphasizing sustainability in the workplace enhances employee satisfaction and attracts talent committed to ESG principles.
- The global nature of ESG challenges necessitates collaboration and information exchange among banks on an international scale.
- By addressing environmental and social risks, the banking industry can enhance its long-term financial stability and contribute to the overall sustainability of the financial system.
- The adoption of ESG principles by banks has a ripple effect, influencing other sectors to align their practices with sustainable and responsible principles.

Some Implications

The adoption and successful implementation of Environmental, Social, and Governance (ESG) principles in the Indian banking industry have far-reaching implications, impacting various aspects of the sector. Some implications for the Indian banking industry.

- The evolving regulatory landscape related to ESG in India will shape the banking industry's approach to sustainable practices.
- Integrating ESG factors into risk management practices enhances banks' ability to identify and mitigate environmental and social risks.
- Demonstrating a commitment to ESG principles enhances the reputation and brand value of banks in the eyes of customers, investors, and the broader public.
- Banks that actively embrace ESG practices may gain a competitive advantage in the market.
- The adoption of ESG principles encourages banks to innovate in financial product offerings, such as green bonds, sustainable loans, and ESG-focused investment products.
- Increasing customer awareness and expectations regarding sustainable practices influence their choice of banking partners.

Conclusion

To sum up, the integration of Environmental, Social, and Governance (ESG) principles in the Indian banking industry represents a pivotal shift towards sustainability and responsible finance. The journey towards ESG integration is not just a response to market trends; it is a strategic imperative for the long-term viability of the Indian banking industry. By adopting sustainable and responsible finance practices, banks position themselves as key contributors to India's sustainable development goals and as leaders in a global movement towards a more resilient and equitable future. As the industry continues to evolve, collaboration, innovation, and a steadfast commitment to sustainable practices will be essential for creating a banking ecosystem that fosters positive impacts on society, the environment, and the broader economy.

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Just Transitions: A Vision and a Process

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Just transition aims to transform the existing socio-economic system into a scenario where all forms of justice prevail. These include procedural justice (ensuring active participation of affected groups in planning, policy formulation and implementation phases); distributive justice (equitable and fair sharing of the costs and opportunities of any transition); recognitive justice (recognising that climate change and historical developmental policies have exacerbated inequality and have been unjust to marginal communities); and restorative justice (restoration of the historically marginalized communities to a more dignified future by compensating them for the harm and injustice they have endured in the past).

The concept of just transitions first emerged in the United States in the 1970s when Tony Mazzocchi, a leader in the Oil, Chemical and Atomic Workers' Union, sought the support of environmental groups to help address safety and health issues affecting his members in their fight against Shell Oil (*Morena et al., 2018*). Mazzocchi and other union leaders advocated for policies that would protect workers' livelihoods, health, and safety while also preserving the natural environment.

Different unions, environmental and social groups in North America and other industrialized regions have embraced the concept, as highlighted by *Morena et al. (2018)*. Notably, during the early 2000s, unions like Comisiones Obreras in Spain and the Australian Council of Trade Union frequently incorporated the notion of just transition into their actions (*Morena et al., 2013*). Moreover, governments such as Canada and the UK, through initiatives like the Powering Past Coal Alliance, have recognized the significance of a just transition in phasing out coal and other fossil fuels. Additionally, at the 24th Conference of Parties of the United Nations Framework Convention on Climate Change in 2018, more than 40 heads of state and governments endorsed the Solidarity and Just

Transition Silesia Declaration, reaffirming the importance of creating high-quality jobs to ensure a fair transition for workers.

There is no single definition of a just transition (*Ward et al., 2021*) but most are based on the core principles of social justice and stakeholder dialogue, and some include issues of climate or environmental justice. Today, most just transition definitions are based on the principles of justice and social dialogue as defined below by *Gass et al. (2020)*:

A just transition is a vision and a process that is negotiated between key partners—workers, employers and governments—who are affected by changes in the economy. These changes are driven by motivators such as the necessary low carbon transition designed to mitigate climate change impacts. It is local in context and must be guided by what can be considered just in the country where the transition is occurring. The overall goal is that social, economic and ecologic opportunities for positive developments are maximized and negative impacts minimized. A just transition also strives to ensure that the costs and benefits of the transition are justly shared. The costs of transition can be economic (e.g., decreased revenues in the fossil fuel sector), social (e.g., unemployment), and environmental (e.g., the level of ambition in climate policy), as can be the benefits (e.g., emergence of new climate-friendly sectors with good and decent jobs). *The concept for just transition is grounded in the International Labour Organization (ILO) publication Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All (ILO, 2015)*.

Climate Transition is Urgent

The accelerating threat of climate change raises the urgency of commitment to climate transition, including the important role of global financial markets to align investment with net zero. Financial markets must play

critical contribution towards achieving an orderly transition to low-carbon economies, and the policies needed to support this. Although financial markets are beginning to integrate climate transition risks and opportunities into investment decision making, a number of constraints are preventing the scaling up of investment to foster orderly transitions to low-carbon economies. Notably, insufficient data, financially material metrics and analytical tools to measure and manage climate transition risks remain critical constraints for corporates and financial institutions, which calls for greater attention to policy considerations.

In recent years, many governments, international organisations and private institutions have endeavoured to analyse climate transition-related risks and opportunities with respect to the transition to low-carbon economies, including implications for the global financial system. An orderly low-carbon transition through financial systems would require that financial markets efficiently allocate capital, assess and transfer risks, and facilitate price discovery. Such an orderly transition would help manage exposures to stranded assets and obsolete production processes, and to support needed investments in renewable energy, efficient production processes, and green technologies. To do this, policy makers and market participants need to understand how to ensure an orderly low-carbon transition whilst balancing the need to respect pre-agreed commitments to reduce global emissions.

While industry closures have prompted action on just transition due to reasons of unprofitability or environmental concerns, the development of laws, policies, and plans specifically alluding to the issue has gained momentum since the signing of the Paris Agreement in 2015.

Market's Understanding of Transition

The societal transformations required to build sustainable and resilient low-carbon economies need to be fair and inclusive. To deliver this 'just transition', significant investment needs to be mobilised. Global debt markets could be a vital source of this finance, and in particular green, social, sustainable and sustainability-linked (GSS+) bonds. To face the challenges posed by climate change and avoid more disastrous events, humanity urgently needs to reverse rising greenhouse gas levels and economies need to adapt to the new changing environment. This will require enormous efforts, particularly from countries and entities with high emissions levels. They will have to reinvent or reimagine themselves by planning and implementing new pathways that incorporate GHG management, sustainability, and climate resilience at the core of their goals.

It is bearing in mind these circumstances that the transition concept has recently emerged. In broad terms, this concept refers to the change that countries and entities need to make from today's high greenhouse gas emissions to levels commensurate with meeting the goals of the Paris Agreement. This is of course easy to say but challenging to implement given the tangle of co-benefits and trade-offs, and the difficulty in establishing measurable metrics that can determine a credible transition.

However, there is a lack of clarity on just transition elements in bond frameworks, and an absence of tools to assess how those elements align with broader just transition financing needs.

Principles Underpinning an Ambitious and Credible Transition

An important starting point for the Guidance is the recognition of existing tools and frameworks, both in transition and sustainable finance. Tools like taxonomies, sectoral pathways, technology roadmaps, and reporting standards are all relevant to and can increase the credibility and comparability of corporate transition plans. Conversely, credible corporate transition plans can minimise the risk of greenwashing in transition finance approaches and transactions by helping to ensure that there is a credible whole-of-entity transition strategy in place, supporting the issuance of relevant financial instruments. In this sense, the Guidance builds on and connects different tools and frameworks, including existing transition and sustainable finance approaches, and helps promote and ensure credible corporate transition plans to minimise the risk of greenwashing in transition finance.

Just Transition Framework Globally:

The Just Transition Framework elaborates on certain key aspects that are essential to guide a just transition and for the implementation of transition measures. These include:

- Principles to guide the transition: This includes ensuring distributive justice, procedural justice, and restorative justice;
- Identification of at-risk sectors and value chains: This includes the coal value chain, the auto value chain, the agricultural sector, and the tourism sector;
- Outlining key policy areas to focus on: This includes, human resource and skill development, industrial development, economic diversification and innovation, and social protection measures for workers and communities;

- **Effective governance arrangement:** This includes arrangements at the national and sub-national levels; and,
- **Mobilising finances:** This involves mobilisation of public and private capital from both domestic and international sources.

One of the key pillars of this approach is social dialogue and participatory forms of governance throughout policy planning, formulation, implementation, monitoring and evaluation as well as any subsequent modifications. Consequently, people from all walks of life, especially those who are affected by the transition and are historically marginalised, must be actively involved in devising and implementing strategies for their well-being in the course of such transitions. In this context, it is important to emphasise that active participation should go beyond a checklist exercise that results in minimal participation of the affected communities.

Just Transition Framework for India:

In 2021, the Government of India (GoI) made two significant announcements that signaled a trajectory for greening the country's energy systems in the coming years and ensuring energy security. In August 2021, the Government announced an energy independence target by 2047, marking 100 years of the country's independence. The focus of this target is to move away from high-cost fossil fuel imports and strengthen the domestic clean energy market. A major emphasis has been laid on electric mobility, production of green hydrogen, and augmenting the supply of natural gas, among others.¹ In November, at the Glasgow Climate Conference, COP 26, a net zero emission target by 2070 was further announced.

For India to achieve carbon neutrality by 2070 and eliminate imports of coal, oil, and gas by 2047 will require a massive increase in green energy and simultaneous phase down of fossil fuel production and consumption. This will necessitate achieving the following intermediate milestones toward the long-term goals:

- Peaking of coal demand between 2030-2035;
- Phasing out of coal-based electricity by 2050-60;
- About 80% reduction of coal consumption by 2050, and a complete coal transition by 2060-70; and,
- Reduction of oil and gas imports by 85% to 90% by 2047, considering current imports and assuming that our current domestic production would continue.

The necessity to phase down the production, import and use of coal, oil, and gas will heavily bear on the sectors that rely on them. The re-invention of other industrial sectors, especially steel, cement, automobile, and fertilizer will also be necessary. To meet the net zero goal of 2070, it is estimated that the share of EVs in the new passenger vehicle sales should increase to 50–100% across all vehicle segments in 2050; this range is significantly higher than the present negligible shares (Energy Policy Solutions, 2022). With a shift from conventional internal combustion engine (ICE) vehicles towards EVs, small businesses along the value chain may risk losing revenues, and workers may lose jobs and livelihoods. Similarly, export-oriented sectors may face risks from climate regulations in other countries. For example, the steel sector may face revenue losses as Europe implements a carbon border adjustment mechanism to tax products that are emission intensive.

Support restructuring of the economy and industries, including transforming the energy sector in coal states

- Economic diversification and creation of new economic opportunities in green industries and a low-carbon economy.
- Harness the potential of local resources to strengthen the micro and small scale industrial sector and economic activities.
- Promote renewable energy, green hydrogen, storage etc. in coal dependent states to substitute their loss of fossil fuels.

Support reskilling of workforce and revitalization of communities to be impacted by the transition

- Provide reskilling, transition support, and reemployment assistance to both formal and informal workers.
- Create opportunities to maintain economic vitality of communities and support induced workers.

Support repurposing of land and infrastructure to maximise the potential of these post closure

- Repurpose and redevelop land available with coal mines to create immediate and long-term economic opportunities.
- Repurpose land and infrastructure available with coal power plants for green energy investments and to reuse the assets.

Support responsible social and environmental practices to foster transformative change

- Invest in improving social and physical infrastructure of impacted regions.
- Ensure energy access.
- Improve environmental and ecological conditions through proper closure and decontamination of mining areas, including abandoned mines.

Support investments to build resilient communities

- Unlock the potential of risk-informed public and private sector financing to build community resilience and minimise losses to the economy and local community in the event of a crisis.

Support substitution of revenue

- Develop a progressive revenue substitution plan to substitute revenues of states and districts.

Support social dialogue and inclusive decision-making

- Support inclusive and participatory decision-making processes for workers and the communities in just transition planning, implementation and monitoring.
- Remain sensitive to the issues of gender and marginalised communities.

While planning and implementing just transition strategies, the ideals of sovereignty (at the global level) and democracy and federalism (at the national and sub-national levels) should be respected and followed in letter and spirit. Nations should not be forced to accept a just transition agenda imposed on them from external countries or group of countries and should therefore, determine what a just transition would mean in their own national development context. Similarly, within a nation's federal structure, sharing of powers and responsibilities between Union and provincial governments should be considered and no legislative, legal or regulatory overreach should be allowed. This is crucial to ensure that a decentralised and cooperative approach to just transition prevails, instead of a centralised, top-down approach.

Providing and mobilising financial resources for implementing just transition measures

Just transition will require substantial financial resources through public financing, private investments, and

international financial support. The Government can support just transition measures through the following mechanisms:

- Integrating the just transition imperative into the national budget and public spending.
- Supporting programmes related to just transition, such as clean energy and industry investment, green skilling programmes, regional development programmes, social security programmes, welfare programmes for vulnerable groups including workers in the unorganised sector, women economic advancement programmes, etc.
- Introduction of fiscal reforms, such as tax credits, interest-free or low-interest loans, capital expenditure support to states through a dedicated scheme (such as the Scheme for Special Assistance to States with 50-year interest-free loan), etc., to incentivise businesses, infrastructure development and support economic growth

- Creating a dedicated Just Transition Fund to provide grants to states to support social welfare investments.
- Developing a framework for the financial institutions to support sustainable investments.
- Mobilising international resources and support.

Challenges to ensuring the energy transition

A just transition strategy, whether it entails retirement packages for workers, or reskilling and re-absorbing them from outgoing industries into new employment avenues in the economy, requires inter-ministerial and inter-departmental acceptance before it can be implemented via the existing executive and administrative channels of development. To accomplish this, efforts must be made to address potential friction from status-quoists that may arise in the implementation of new ideas and plans in the developmental sphere.


Attempting clean energy transition at the scale that India requires faces many challenges. These include access to affordable financing, lack of institutions that can deploy financing effectively in new low-carbon growth areas, and technology risks. Another key consideration, which has far-reaching impact, is ensuring a just transition.

The current economic and planning paradigm treats humans as purely rational beings whose sole motivation is pursuing wealth and self-interest. This “Homo Economicus” view reduces people to one-dimensional agents optimized for financial gain. However, decades of research in behavioral economics and psychology reveal that real humans exhibit a complex set of cognitive biases, emotional influences, social motivations, and moral values that often lead to “irrational” decisions not aligned with wealth maximization. Humans care deeply about fairness, reciprocity, social status, and group identity in ways that supersede narrow self-interest. Furthermore, many people make choices driven by altruism, compassion, and concern for the environment and future generations.

Conclusion

While aspiring to move towards a just transition, it is also important to define and measure ‘just’ outcomes. To support countries in tracking their long-term progress on fair and equitable outcomes and targeting funds towards

the adversely impacted. Efforts should aim to identify metrics and indicators that can monitor transition impacts, measure effects of low carbon policies and focus on redressal actions and initiatives. Such metrics could be developed locally, taking into consideration the context, socioeconomic structures, potential transition implications, and availability of data. Climate policies have the potential to enhance the wellbeing of all and should at least avoid worsening of existing vulnerabilities. Thus, in the Indian context, modelling studies and economic analyses that inform policymakers should also study how current and future policies might affect these groups and suggest necessary policies or instruments, such as social safety nets or compensation for low-income households. MSMEs may not have the resources to undertake the necessary technological shifts and upgrade to the skillset needed in a low carbon industry.

To ensure that MSMEs and workers, especially in transitioning sectors, benefit from the opportunities of low carbon transition, it is crucial to understand what this transition will mean for small businesses and workers, identify the sectors that may be impacted, and ensure the availability of requisite technology, finance, skilling, and policy support. Thus, achieving a just transition requires tackling the challenges faced by communities and workers as they shift toward sustainable livelihoods, while also ensuring that the benefits of the zero-carbon and resilient economy are shared fairly. 

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Vasudhaiva Kutumbakam Series (6th Webinar)

Fostering Social Economy through Social Stock Exchange

April 12, 2024 from 4 to 5:15 pm

Mr. Syam Kumar R
Insolvency Professional



CMA Yogender Pal Singh



Mr. Syam Kumar R

The Sustainability Standards Board organized the 6th webinar of Vasudhaiva Kutumbakam Series on the topic 'Fostering Social Economy through Social Stock Exchange' on April 12, 2024.

Mr. Syam Kumar R, Insolvency Professional was the speaker for the webinar.

CMA Yogender Pal Singh, Secretary of SSB welcomed the participants and introduced the speaker for the webinar.

Mr. Syam Kumar R started the session with an overview of Social Sector in Indian Economy and covered in detail various topics such as UN Sustainable Development Goals (SDGs) and its challenges, need to augment Social Capital for fulfilment of SDG by 2030, Introduction to SSE in India, different players/stakeholders in the Social Development Spectrum, getting on boarded on the SSE and various opportunities for Cost Accountants (CMAs).

The webinar concluded with the Institute Anthem and CMA Yogender Pal Singh proposed vote of thanks.

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Organised by Sustainability Standards Board (SSB)



CMA Ashwin G. Dalwadi
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Vice President, ICMAI

SPEAKER



Shri Ashok Kumar Singh
D.G.M. (Listing Compliance)
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AI AND SUSTAINABILITY

Friday | May 24, 2024 | 4 pm to 5:15 pm

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CMA Ashwin G. Dalwadi
President, ICMAI



CMA Bibhuti Bhusan Nayak
Vice President, ICMAI

SPEAKER



Ms. Anju Panicker
Director
SEP Learning and
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CMA (Dr.) Ashish P. Thatte
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Vasudhaiva Kutumbakam Series
11th Webinar

Setting up Sustainability Governance in Companies

Friday | June 21, 2024 | 4 pm to 5:15 pm

Organised by Sustainability Standards Board (SSB)



CMA Ashwin G. Dalwadi
President, ICMAI



CMA Bibhuti Bhusan Nayak
Vice President, ICMAI

SPEAKER



CMA Shivangi Praful Rajpopat
General Manager
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CMA (Dr.) Ashish P. Thatte
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SUSTAINABILITY MUSING!

Disposal of e-waste in Oceans

CMA (Dr.) Aditi Dasgupta

Jt. Director, ICMAI

The term e-waste refers to discarded electronic devices such as computers, networking devices, mobile phones and televisions. This includes working and broken items that are thrown in the garbage or donated to a charity reseller. Often, if the item goes unsold in the store, it will be thrown away.



e-waste is particularly dangerous due to toxic chemicals that naturally leach from the metals inside when buried.

Last year, approximately 57.4 million tonnes of e-waste was generated worldwide, and its growing. In fact, it is the fastest growing waste stream in the world, and by the year 2030, it is estimated that the figure will reach a staggering 74 million tonnes.

According to the European Commission, only around 17% of this waste is recycled. The issue with this (with regard to the oceans specifically) lies in the chemicals that seep from the electronics as they begin to break down. An alarming amount of the e-waste produced by developed countries is shipped off to developing countries such as Ghana and Nigeria to be disposed of there. Once it arrives in developing countries, e-waste is disassembled and dumped in large piles outdoors. These mountains of e-waste then get flooded by rainfall, causing contaminated water to run into the rivers and oceans.

However, even when e-waste is not dumped directly into waterways, the chemicals tend to end up there. The majority of e-waste is landfilled, but this can and

does affect the ocean's biodiversity as the toxic chemicals, metals and battery components make their way into the ground and eventually contaminate the water.

Deliberately disposing of electronic waste (e-waste) in the ocean is highly detrimental to marine ecosystems and

poses significant environmental and health risks. e-waste contains various toxic substances such as lead, mercury, cadmium, and brominated flame retardants, which can leach into the water, contaminate marine life, and ultimately enter the food chain, posing health hazards to both marine organisms and humans.

Dumping e-waste in the ocean is illegal in most countries due to international agreements such as the Basel Convention, which aims to control the transboundary movements of hazardous wastes, including e-waste. However, despite regulations, illegal dumping and improper disposal still occur due to inadequate enforcement and oversight.

The consequences of e-waste dumping in the ocean include:

1. **Environmental Pollution:** Toxic substances from e-waste can contaminate seawater, sediments, and marine organisms, disrupting marine ecosystems and harming biodiversity.
2. **Health Risks:** Exposure to toxic chemicals from e-waste can lead to various health problems for



marine life, such as developmental abnormalities, reproductive issues, and neurological disorders. These risks extend to humans who consume contaminated seafood.

- Economic Impact:** Contamination of marine ecosystems can negatively impact industries such as fishing and tourism, affecting local economies and livelihoods. Plastics and other pollutants can enter the marine food chain when animals mistake them for food. As smaller organisms ingest these pollutants, they can accumulate in the tissues of larger predators, including fish consumed by humans. This can result in the ingestion of harmful chemicals and toxins by humans, posing risks to human health.
- Chemical Pollution:** Along with plastics, marine pollution includes chemical contaminants such as oil, heavy metals, and toxic substances from industrial runoff and agricultural activities. These pollutants can leach into the water, contaminating the marine environment and harming marine organisms. Oil spills, for example, can have devastating effects on marine life and habitats, leading to long-term ecological damage.
- Economic Impact:** Marine pollution can have significant economic consequences. For example, coastal communities reliant on fishing and tourism may suffer due to declines in fish populations, damage to coral reefs, and beach pollution.

Additionally, cleanup efforts for marine debris and pollution can be costly, placing a burden on governments and taxpayers.

- Global Impact:** Marine pollution is a global problem that transcends national boundaries. Ocean currents can carry debris and pollutants across vast distances, contributing to the spread of marine pollution worldwide. Addressing marine pollution requires international cooperation and concerted efforts from governments, industries, and individuals.

Efforts to combat the illegal disposal of e-waste in the ocean include stricter regulations, enforcement of existing laws, public awareness campaigns, and promoting responsible e-waste recycling practices. Governments, businesses, and consumers all play a role in addressing this issue by supporting sustainable waste management practices and recycling initiatives.

Instead of dumping e-waste in the ocean, responsible disposal methods include recycling, refurbishing, and proper disposal through certified e-waste recycling facilities. These practices help recover valuable resources from e-waste while minimizing environmental and health risks.

Overall, the disposal of waste in the ocean poses serious environmental, economic, and social challenges that require urgent action to mitigate its harmful effects and protect marine ecosystems for future generations.



SUSTAINABILITY LESSONS FROM ANCIENT SCRIPTURES

Ayurveda and Environmental Sustainability

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Ayurveda, the ancient Indian system of medicine, has deep-rooted connections with environmental sustainability. Ayurveda considers health as a balance between the body, mind, spirit, and the environment. It emphasizes living in harmony with nature to maintain health and prevent disease. This holistic approach inherently promotes environmental sustainability by recognizing the interdependence between human health and the health of the planet. Ayurvedic remedies primarily rely on natural resources such as herbs, minerals, and other plant-based ingredients. Practitioners often harvest these resources sustainably, ensuring that they do not deplete the environment or harm ecosystems. This approach encourages the conservation of biodiversity and natural habitats. Ayurveda teaches respect for all forms of life and recognizes the intrinsic value of ecosystems. It emphasizes the importance of preserving biodiversity and protecting the environment to maintain the balance of the ecosystem. Practices such as ethical wildcrafting and organic farming are promoted in Ayurveda to minimize environmental impact.

Traditional Ayurvedic practices often advocate for simplicity and minimalism, which can reduce waste and environmental footprint. For example, Ayurvedic treatments may prioritize natural remedies over synthetic drugs, thereby reducing the environmental impact associated with pharmaceutical production and disposal. It emphasizes living in harmony with the seasons, recognizing that our bodies and minds are influenced by seasonal changes. This approach encourages practices such as seasonal eating, which promotes the consumption of locally grown, seasonal foods. By supporting local agriculture and reducing the need for long-distance transportation of food, Ayurveda contributes to lower carbon emissions and promotes environmental sustainability. Ayurveda often incorporates practices such



as yoga and meditation, which not only promote physical and mental well-being but also foster a deeper connection with nature. Many yoga practices, such as outdoor yoga or forest bathing, encourage practitioners to immerse themselves in natural surroundings, fostering appreciation and stewardship of the environment.

Ayurveda places a strong emphasis on preventive healthcare, advocating for lifestyle modifications and dietary changes to maintain health and prevent disease. By empowering individuals to take responsibility for their health and well-being, Ayurveda can potentially reduce the burden on healthcare systems and minimize the environmental impact associated with medical interventions.

By articulating the interaction between prakriti and vikriti, ayurveda makes sustainability tangible by showing that personal wellbeing is always connected to the world around us. The sensitivity of current condition means that whatever happens to the world changes individual experience. Ayurveda and environmental sustainability share common principles of holistic living, respect for nature, and a focus on balance and harmony. By promoting sustainable practices and a deep connection with the natural world, Ayurveda offers valuable insights and solutions for addressing environmental challenges and fostering a healthier planet. 

DO YOU KNOW?



Bhutan, a tiny Himalayan kingdom known for its pristine environment and sustainable development, will cap tourist numbers at 200,000 a year from 2023 to protect its natural resources and fight climate change. The move is part of the country's efforts to become carbon neutral by 2025. Bhutan is already 72% carbon negative, meaning it absorbs more carbon dioxide from the atmosphere than it produces. The government said the cap would be enforced through a quota system, with each tourist paying a daily fee of \$250. The money will be used to fund conservation and development projects.

Bhutan's "carbon negative" approach began in the 1970s, when its then-king pushed for an economy built in part on sustainable forest management - balancing conservation and development. Its forests absorb more than 9 million tonnes of carbon each year, while its economy, which is designed to cut fossil fuel use and waste, emits less than 4 million tonnes.



We are in pursuit of constant improvement and are keen to know your views.

Please write to us at ssb.newsletters@icmai.in

SUSTAINABILITY QUIZ RAPID FIRE ROUND

1. Principle 8 of National Voluntary Guidelines for Responsible Financing issued by the Indian Banks' Association deals with _____.
2. It is estimated that globally around ___% of all workers engaged in informal employment.
3. Ending the epidemic of TB, AIDS, Malaria and neglected tropical diseases by 2030 is one of India's significant goals under SDG ____.
4. Under Principle 6 of BRSR, reporting the details of GHG emissions for Scope 3 is a _____ indicator.
5. The reporting boundary for BRSR can be either "Consolidated" or "_____".

WINNERS	
S. No.	NAMES
1.	Bhagirath Bhutani
2.	Kamal Nath Thakur
3.	Bidyut Basu

Congratulations to all the Winners!

CORRECT ANSWERS OF PREVIOUS QUIZ

1. Climate-related	2. Fugitive	3. Financial	4. Advocacy	5. Processes
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The names of first 5 participants giving correct responses will be declared in the ensuing newsletter. .

The responses may be sent to ssb.newsletters@icmai.in

Call for articles

Sukhinobhavantu is inviting articles on the theme ESG/ Sustainability or related themes for publishing in May 2024 edition. The articles should be relevant and original. The article should clearly cover/depict the scope, opportunity and potential for cost accountants. It should not exceed 1500 - 1800 words and references/ sources are to be given wherever required. It should reach us latest by May 08, 2024, by e-mail to ssb.newsletters@icmai.in The right for selection of articles vests with SSB. Decision of SSB will be final and binding.

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