Confederation of Indian Industry

NILGIRIS ECONOMIC DIALOGUE

OUTCOME REPORT

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NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Outcome Report

The global backdrop of NED

The world we inhabit pulsates with change, fuelled by the ever-churning tides of volatility, uncertainty, complexity and ambiguity. Fostering dialogue therefore has become an imperative to better understand current realities and aspirations we weave for the future. Nationally and globally, we seek inspiration from leading models of multi-stakeholder deliberations & forums where intellectuals, researchers, Captains of industry and changemakers converge to introspect, strategize and successfully envision the path ahead.

Alongside the confluence of crises that confront the world today and precipitated by COVID-19, a global economic slowdown will leave everyone vulnerable if we do not act. What is therefore needed and critical are shared platforms for dialogue, stronger partnerships, agile policy frameworks and effective deployment of technologies that can lead to practical and implementable gains for societies across short-term and strategic horizons.

India, amidst its trajectory of transformation, finds itself at the heart of today's global narrative. This new-found position has given us novel perspectives, empowering experiences and pointers to what has gone well & where we could do better. Within this country-wide trajectory, Tamil Nadu emerges as a beacon of dynamism, pulsating with the movement of trade, investments and a burgeoning social consciousness. It is this proactive approach to development that the **Nilgiris Economic Dialogue** takes inspiration from.

Objectives

Nilgiris Economic Dialogue (NED) is an initiative by CII Tamil Nadu as a **3 day** unique confluence of minds. Leaders from diverse spheres – Industry Titans, Government Officials, Academic Luminaries and Social Change Architects came together to engage in critical discourse on issues that shape our present and hold the key to an optimistic future.

The maiden Dialogue took place in Ooty, Tamil Nadu between 02-04 February 2024.

Catalysing Constructive Dialogue and providing an inspired place for collaboration between different & important stakeholders in society

Convening the Leaders of Business, Government and Civil Society in search of co-created solutions to critical societal challenges

Connecting the dots in an increasingly complex environment

NED has been designed to be a transformative journey, where dialogue, panel discussions and keynote addresses will lead to pioneering initiatives & collaboratives. The Nilgiris experience will also help foster connections with local communities, invite exploration through site visits and provide spaces for informal gatherings – all designed to nurture free-flowing conversations and spark action-oriented agendas.

Tracks

Resource Efficiency & Circularity

To explore strategies for optimizing resource usage, reduce waste and integrate sustainable practices into economic models. This not only aligns with environmental responsibility but also enhances long-term economic resilience by mitigating risks associated with resource depletion and environmental degradation.

Geopolitics & Deglobalization

To analyse how shifts in trade patterns, protectionist measures and regionalization influence global economic relationships. Understanding these geopolitical dimensions are essential for businesses and policymakers on the evolving international landscape, impacting trade agreements, supply chains and investment strategies.

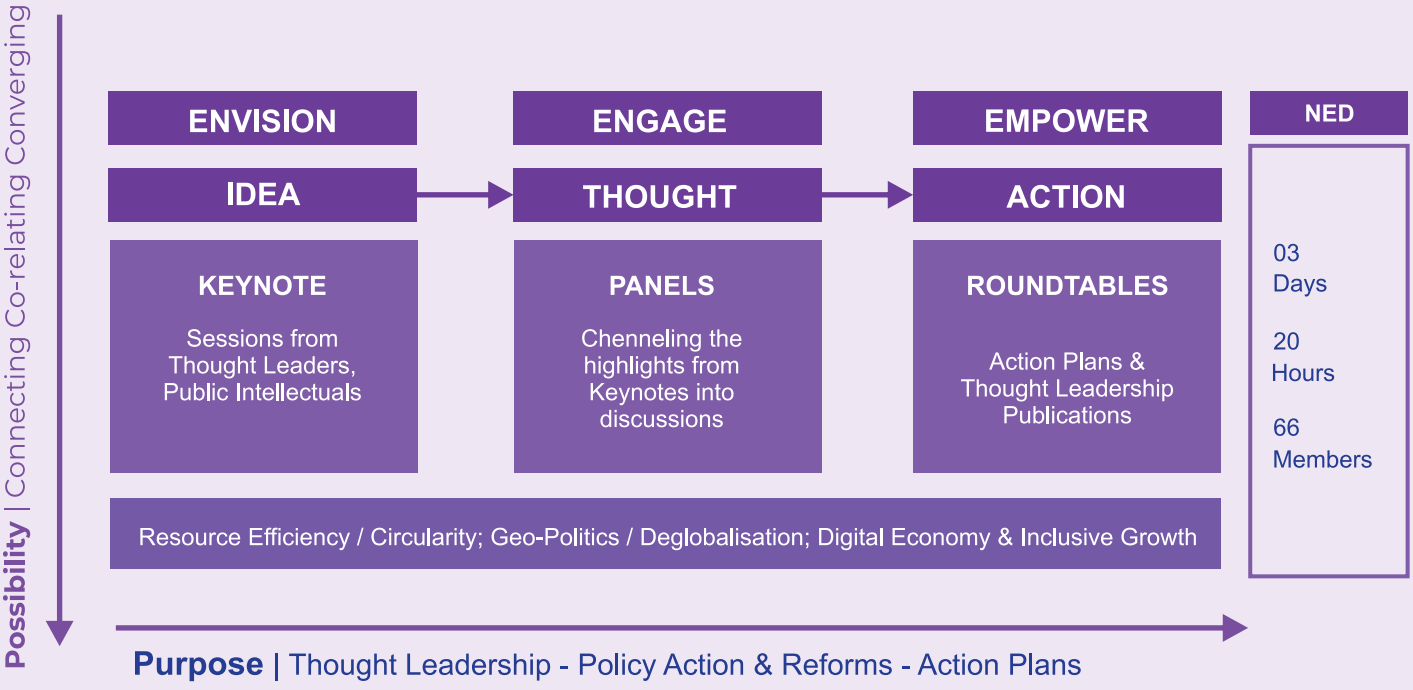
Data, Tech & Digital Economy

To focus on emphasizing the transformative role of technology & data and harnessing digital advancements for economic growth, innovation and competitiveness. Simultaneously, to address challenges such as data privacy, security and ethical considerations, ensuring that the digital revolution is harnessed responsibly for sustainable economic progress.

Inclusive Growth

For addressing social and economic disparities, our discussions aim to formulate strategies for fostering inclusive growth. This involves examining how economic policies can create opportunities for marginalized groups, narrowing income gaps, and ensuring that the benefits of economic progress are shared broadly across society. This track also had a specific focus on the native community of the Nilgiris (Todas).

Framework



NILGIRIS ECONOMIC DIALOGUE

To forge a new leadership paradigm and sustainable prosperity that will propel India, and indeed the world, towards a thriving tomorrow. The Nilgiris Economic Dialogue was not merely an event; it was an invitation. An invitation to engage, explore, envision and to collectively shape the contours of a future brimming with promise. This dialogue was therefore an opportunity to dialogue, discourse and join together to scale the peaks of possibility and emerge with a shared vision that is inclusive, sustainable and eternally hopeful.

Venue

The WelcomHeritage Fernhills Royal Palace

The WelcomHeritage Fernhills Royal Palace, nestled amidst 50 acres of lush greenery, was once the summer retreat of Mysore's Kings. Built in 1844, this Swiss chalet-style palace boasts Burmese teak interiors, a magnificent ballroom and opulent suites, each a testament to its grandeur.

Standing tall against the Nilgiris Hills, enveloped by tea gardens and cardamom plantations, the palace was the playground for British elites during colonial times. They sought refuge from the scorching summers in this quaint Ooty haven.

Venue

The Madras Regimental Centre

A legacy forged in 1794, the Madras Regimental Centre in Wellington isn't just a training ground for the valiant soldiers of "Shano Varunastra" (Weapons of Yama), but a custodian of history, a symbol of national pride and a cornerstone of India's defence. From World War I and UN missions to shaping future generations, its rigorous training, preserved traditions and unwavering courage stand tall, etched in every battle honour and echoing in every soldier's march. More than just bricks and mortar, the Centre's very essence is resilience, reminding us that the legacy of the Madras Regiment will forever march on, safeguarding our nation's sovereignty and inspiring new heroes to rise.

Venue

The Lawrence School Lovedale

The Lawrence School, Lovedale transcends its colonial beginnings to be a vibrant tapestry of education, heritage and community. Founded in 1858, its stately Swiss chalet whispers of a bygone era, while within, classrooms seamlessly blend with tea gardens, nurturing young minds amidst nature's serenity. Here, rigorous academics and diverse passions flourish, from art and music to drama and sports, all fuelled by a spirit of inquiry that cultivates independent thinkers and global citizens. Portraits of past luminaries whisper tales of service, while the library's shelves brim with history's lessons, shaping future leaders for a changing world.

Curators Council of NED 2024

Shankar Vanavarayar
Convenor, Nilgiris Economic Dialogue;
Chairman, CII Tamil Nadu State Council &
Executive Director, ABT Industries Ltd

Srivats Ram
Vice Chairman, CII Tamil Nadu State Council &
Managing Director, Wheels India Ltd

N K Ranganath
Past Chairman, CII Tamil Nadu State Council &
Director, Strategy Catalysts Pvt Ltd

P Ravichandran
Past Chairman, CII Tamil Nadu State Council &
President, Danfoss Industries Pvt Ltd

AR Unnikrishnan
Chairman, CII Chennai Zone &
Managing Director – Glass & Glass Solutions
Saint-Gobain India Pvt Ltd

Kezevino Aram
President
Shanti Ashram

Kumaravel Thangavel
Past Chairman, Young Indians Erode Chapter &
Whole Time Director
V Thangavel & Sons Pvt Ltd

Vish Sahasranamam
Co-Founder & CEO
Forge Innovation & Ventures

Participants Diversity

Inaugural Address

Mr Shankar Vanavarayar, Chairman of the CII Tamil Nadu State Council, Convenor of the Nilgiris Economic Dialogue and Executive Director of ABT Industries Ltd, initiated the dialogue by extending a warm welcome to all attendees in the Thoda language, "Olthisha," expressing gratitude for their participation in the Nilgiris Economic Dialogue 2024.

He began his address by delving into the historical significance of Nilgiris, known as the Blue Hills. Throughout his speech, Mr Vanavarayar elaborated on the objectives of the Economic Dialogue, emphasizing its role as a nexus for Industry, Government, Academia, Planning and Social Work. He outlined three key aims: To commence, Nilgiris Economic Dialogue aimed to serve as a platform for exchange of innovative ideas and ideals, fostering inspiration among participants. Subsequently, it shall facilitate the transition and transformation of the global landscape. Finally, it will leverage human capabilities to attain more favorable outcomes.

NILGIRIS
ECONOMIC
DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Confederation of Indian Industry

Digital Economy

SESSIONS of DAY 1

02 February 2024
WelcomHeritage
Fernhills Royal Palace
Ooty

Keynote Address on Digital Economy

Mr Ramkumar Ramamoorthy, Partner, Catalincs and Former Chairman & Managing Director, Cognizant India, delivered the keynote address on the Transformative Role of Data Technology, especially Artificial Intelligence in shaping the World Economy. He emphasized the significance of technology as the new language of business and highlighted the ongoing evolution of technology, with particular focus on the overlapping phase where value creation or destruction occurred. The current phase is not one single technology but rather a confluence of technologies like Edge Computing, Cloud Computing etc, he said. The keynote explored the impact of Digital Technologies on Business Models, Public Infrastructure in India and other game changing elements in the industry.

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

TRACK - I

Innovative Horizons: Navigating the Nexus of Digital Economics

Ramkumar Ramamoorthy
Partner, Catalincs &
Former Chairman & MD, Cognizant India

M P Vijay Kumar
Executive Director & Group CFO
Sify Technologies Ltd

V M Muralidharan
CEO, Bahwan CyberTek &
Chairman, Ethiraj College Trust

Rajesh Subramaniam
CEO & Founder
embedUR Systems

Karthikeyan A
Managing Director
DIGIIT Business Services Pvt Ltd
- ONDC Network

Overview of the panel discussion:

The panel discussion on Innovative Horizons – Navigating the Nexus of Digital Economics moderated by Mr Ramkumar Ramamoorthy brought together experts from Academia, Industry and Government to explore challenges and opportunities in India's Digital Landscape. The discussion covered various aspects like the Role of Universities, Impact of Digital Transformation on Education, importance of Private Sector involvement in Economic Growth and the significance of Digital Infrastructure & Security.

The panel highlights included insights on India's education system's readiness for technological advancements, emphasizing faculty development and industry collaboration to enhance student preparedness. The discussion also underscored the critical role of digital infrastructure in driving economic growth, with focus on data security and renewable energy. Additionally, the evolving business landscape towards trust-based transactions and the potential of digital platforms like Zoho, Freshworks and Salesforce were explored. Policy initiatives, such as Champion India and collaborations between academia and industry, were highlighted as essential for fostering secure digital growth. The need for a cybersecurity policy, especially in light of increasing household appliance connectivity, was emphasized. Lastly, the importance of liberalizing academia-industry partnerships and leveraging online programs for beneficiary identification and industry linkage were stressed. Overall, the discussion illuminated the multifaceted dynamics shaping India's digital future, underscoring the importance of collaborative efforts across sectors for sustainable growth and innovation.

Under the theme of transforming education for digital economies, the panel emphasized the role of faculty in fostering behavioural changes among students, advocated for global collaboration in education, and highlighted the importance of creating conducive environments for learning. Additionally, discussions revolved around the significant role of private parties in driving economic growth through digital infrastructure investment and addressing challenges in digital platforms, particularly cybersecurity.

The panel also acknowledged the rise of digital native enterprises and discussed India's initiatives in digital public infrastructure, notably the Open Network for Digital Commerce (ONDC). Challenges associated with these initiatives were outlined, alongside discussions on digital acceleration for economic growth, encompassing policies supporting technologies and driving innovation in the digital landscape.

Topics discussed during the Roundtable on Data Tech & Digital Economy

- Digitalization of Industries
- Building supporting Infrastructure
- Exploring New Technology Frontiers & Opportunities beyond Information Technology in India
- Talent Development & Training
- The Engine of Innovation: How Start-Ups Power the Digital Economy

NILGIRIS
ECONOMIC
DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Confederation of Indian Industry

The Changing Ecology and Economy of Nilgiris

EXCLUSIVE
PLENARY SESSION

with

Mr Pratim Roy
Founder & Director
Keystone Foundation

The Changing Ecology and Economy of Nilgiris

The session provided valuable insights into the historical shifts in the region's ecology, particularly focusing on the impact of Tea Industry and the contemporary efforts to address ecological concerns. The session touched upon estates seeking Eco-Reservation, Philanthropic Endeavors to preserve Biodiversity and the adaptation of Nilgiris to emerging industries. Additionally, the discussion highlighted the reasons behind people settling in the region, the potential for forming networks and the evolving perspectives of the younger generation.

Key points discussed

- Transitioning Landscapes: From Tea to Tourism in the Nilgiris
- Fostering Innovation in Nilgiris
- Addressing Outmigration for Economic Sustainability
- Preserving Ecological Harmony Amidst Tourism Pressures
- Innovative Solutions for Microclimatic Prediction
- Conservation Challenges in the Region
- Policy Initiatives necessary for harnessing Nilgiris' Potential
- Sustainable tourism management in the Nilgiris
- Development for Sustainable Growth in the region

The session underscored the pivotal moment facing Nilgiris, emphasizing the urgent need for a balanced approach that intertwines economic growth with environmental conservation. Recognizing the profound impact of the Tea Industry on the region's ecosystem, the discussion urged strategic interventions, spanning policy reforms, technological innovations and sustainable tourism management. Moreover, the session illuminated Nilgiris' potential for vibrant trade and encouraged exploration of industries harmonious with its distinct characteristics. Addressing the evolving preferences of the younger generation, the dialogue emphasized the importance of fostering collaboration across sectors within Nilgiris.

Confederation of Indian Industry

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Jigsaw World: Small Wars, Middle Powers, Big Risks

EXCLUSIVE
PLENARY SESSION

with

Mr Pramit Pal Chaudhuri
Head of India Practice
Eurasia Group

Jigsaw World: Small Wars, Middle Powers, Big Risks

The fireside chat offered a comprehensive analysis of global geopolitics and India's strategic positioning within it. The discussion covered a wide range of topics, providing insights into recent global events, Southeast Asia's response to the US-China rivalry, India's foreign policy, Global Geopolitical Dynamics and the implications of regional conflicts.

Key points discussed

- Assessment of Recent Global Events
- Southeast Asia's Response to US-China Rivalries
- India's Foreign Policy
- Global Geopolitical Dynamics
- India's Relationship with Russia
- Assessment of US-China Rivalry and India's Foreign Policy
- Geopolitical Implications of Global Conflicts
- Economic Shifts and Geopolitical Consequences
- Regional Dynamics and Strategic Alliances
- India's Maritime Strategy and digital infrastructure initiatives
- India's Inclusive Diplomacy
- Impact of China – Taiwan War on the Global Economy
- Consequences of slow growth of China from a Geopolitical Perspective

Mr Chaudhuri's insights provided a comprehensive understanding of the evolving dynamics in Global Geopolitics and India's strategic positioning within this complex landscape. His analysis underscored the imperative for proactive diplomacy and strategic engagement to address the multifaceted challenges facing nations today. It shed light on the intricacies of managing regional conflicts, such as those in the Middle East, emphasizing the delicate balance required to prevent escalation while still sending a clear message. Mr Chaudhuri's assessment of India's cautious approach to balancing relations between major powers like the US & China reflected a pragmatic understanding of the shifting geopolitical dynamics.


CII
NILGIRIS
ECONOMIC
DIALOGUE

DAY 1

02 February 2024
WelcomHeritage
Fernhills Royal Palace, Ooty

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Digital Economy

Confederation of Indian Industry

Key Takeaways

INTRODUCTION

India's digital economy is undergoing substantial growth and change. In 2024, it exhibited a growth rate of almost 2.8 times surpassing the overall GDP growth. By 2025, it is anticipated that the digital economy's expansion could generate between 60 million to 65 million job opportunities, necessitating proficient digital skills. Additionally, novel digital ecosystems are surfacing, altering the dynamics of consumer-producer engagements across various sectors such as agriculture, healthcare, retail and logistics.

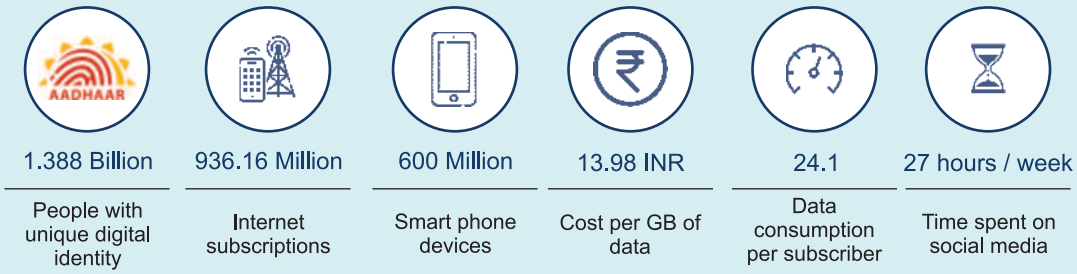
The panel discussions & roundtables at the Nilgiris Economic Dialogue 2024 focused on Digital Economy, examined the role of technology in economic growth to address the challenges and opportunities presented in the digital age. The dialogue encapsulated a broad spectrum of perspectives.

Capturing the gains of the digital economy will require more ease in creating, scaling and exiting startups as well as policies to facilitate retraining and new-economy jobs for workers. This report engulfs the challenges faced by and solutions implemented in pursuit of Digital Economy in India. It provides an overview of the overall India's landscape and gradually delves deeper into the granular approaches of benefitting from a Digital Economy.

India's Booming Digital Economy: Facts and Figures

- India's digital economy accounts for 12% of the GDP in 2024 and is projected to reach 20% by 2026.
- India's digital transformation has been instrumental in improving governance efficiency, with over $400 Billion transferred from the Government to citizens in the last five years, demonstrating the power of Digital Public Infrastructure (DPI).
- Prior to demonetization, digital payments accounted for around 10% of all transactions in India, but this figure has since increased to over 40% in 2023.
- India's digital economy has the potential to create up to $1 Trillion economic value in 2025, with about half the opportunity originating in new digital ecosystems that can spring up in diverse sectors of the economy.

India is one of the top countries globally on key aspects of digital adoption:



Source: pib.gov.in

Drivers of Digital Economy in India

India's digital economy is experiencing rapid growth, driven by several factors. With over 936.16 Million internet users, India ranks second globally in the number of internet users. This massive base provides fertile ground for digital services to flourish. The drivers of India's digital economy encompass various factors that have propelled its growth and transformation.

These drivers include:

- **Digital Public Infrastructure (DPI):** India's digital economy has been significantly influenced by the development and adoption of digital public infrastructure, which has enhanced governance efficiency, financial inclusion and innovation.

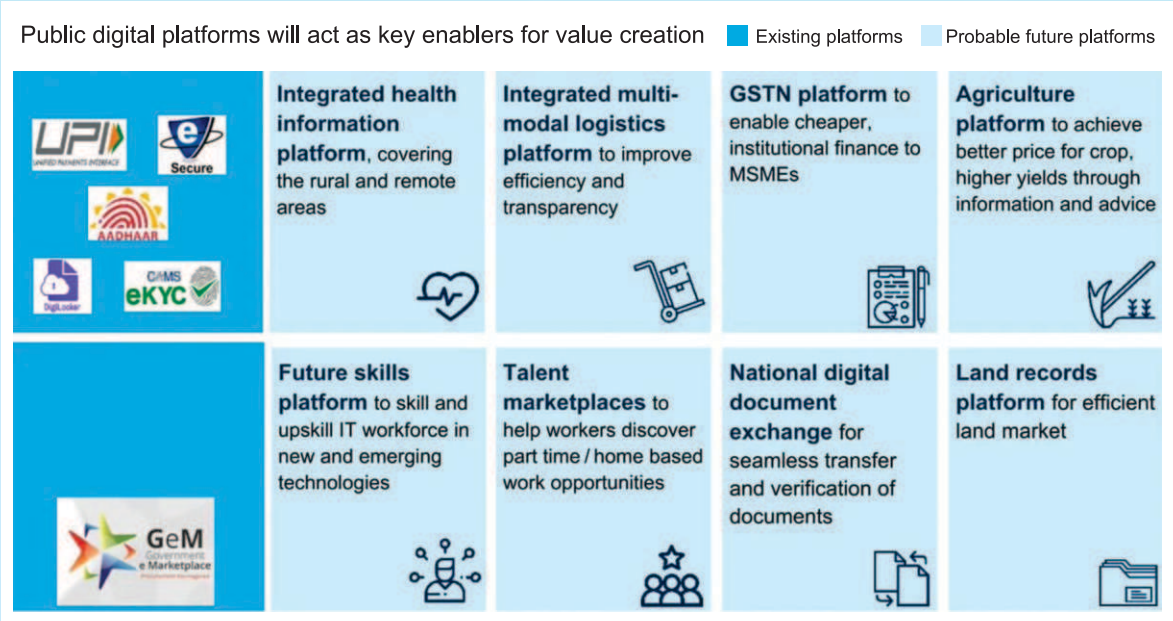
- **Government Initiatives:** Initiatives like the Digital India have played a crucial role in fostering digitalization, creating major cross-cutting National Public Digital Platforms such as Aadhar for digital identity and Unified Payments Interface (UPI) for online payments, transforming service delivery and business operations.

- **Startup Ecosystem:** India's vibrant Startup Ecosystem has contributed significantly to the digital economy, with many tech-focused startups and unicorns emerging in recent years.

- **Emerging Technologies:** The adoption of emerging technologies like Artificial Intelligence, Blockchain, Augmented Reality, Internet of Things and Industry 4.0 is expected to further boost the contribution of the digital economy to India's economic growth.

- **Global Recognition and Partnerships:** India's DPI has gained global recognition, with several countries expressing interest in adopting aspects of it, leading to collaborations that can enhance economic ties and digital development.
- **Policy Reforms:** Key policy reforms like demonetization and the implementation of the Goods and Services Tax (GST) have also played a role in driving India towards a digital-first economy, marking significant milestones in the country's digital transformation.
- **Deep tech:** This encompasses advanced technologies like artificial intelligence, blockchain, quantum computing and more, which are at the forefront of technological advancements and scientific breakthroughs.

The below depiction showcases how future Public digital platforms can act as key enablers for value creation:



Source: pib.gov.in

Addressing Challenges in India's Digital Economy

Numerous initiatives are underway in the country's digital economy, such as the ONDC under the digital public infrastructure. However, these initiatives also face associated challenges

- **Infrastructure Challenges:** Inadequate internet connectivity and disrupted power supply in certain regions pose challenges to the widespread adoption of digital technologies, hindering digital inclusion and access to online services.
- **Digital Illiteracy:** A notable segment of the population lacks digital literacy, leading to barriers in accessing and utilizing digital services effectively, thereby widening the digital divide within the country.

Data Privacy Concerns: Data leaks and cybersecurity vulnerabilities pose significant risks to the digital economy, raising concerns about data privacy, security and the protection of digital assets.

Financial Inclusion: Despite progress, challenges remain in ensuring Universal Financial Inclusion through digital means, particularly in Rural and Marginalized areas where access to digital financial services may be limited.

Addressing these challenges require a concerted effort from stakeholders, including the Government, Private Sector and Civil society, to develop robust cybersecurity frameworks, improve internet connectivity, promote digital literacy, enhance data protection measures and foster collaboration to overcome obstacles hindering the full potential of India's digital economy.

Building a Digital Future: Actionable Approaches and Solutions for Growth

The following part elaborates on the proposed initiatives that could be undertaken to overcome challenges and ensure optimum benefit from digitalization, in turn enhancing the digital economy of our country.

This report delves into seven key sub-topics that were underscored at the panel discussion & roundtables by the delegates to consider while promoting the digital landscape of India.

1 Digitalization of Industries

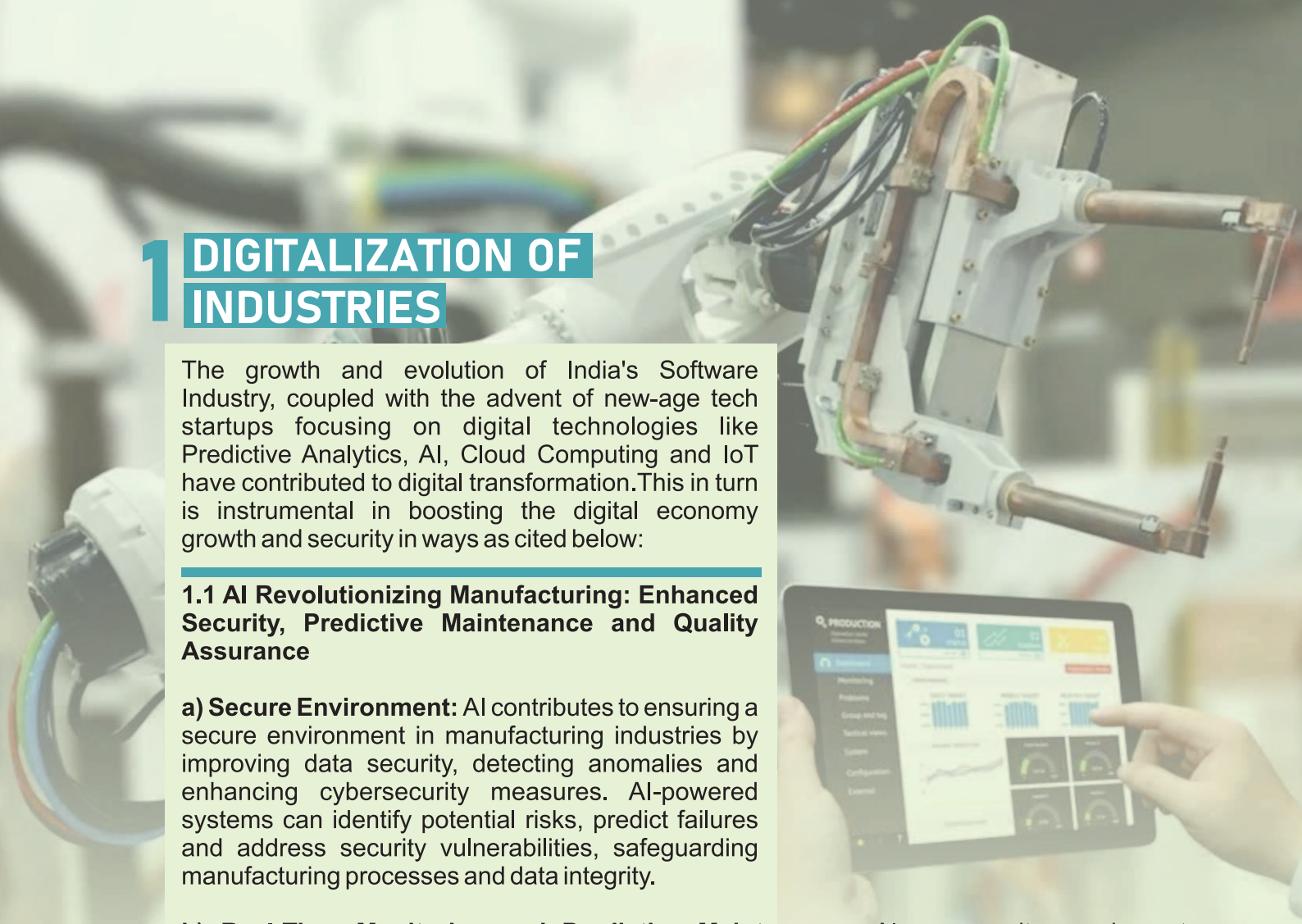
2 Building Supporting Infrastructure

3 Exploring New Technology Frontiers

4 Exploring Opportunities beyond Information Technology in India

5 Talent Development and Training

6 The Engine of Innovation: How Start-Ups Power the Digital Economy



1 DIGITALIZATION OF INDUSTRIES

The growth and evolution of India's Software Industry, coupled with the advent of new-age tech startups focusing on digital technologies like Predictive Analytics, AI, Cloud Computing and IoT have contributed to digital transformation.This in turn is instrumental in boosting the digital economy growth and security in ways as cited below:

1.1 AI Revolutionizing Manufacturing: Enhanced Security, Predictive Maintenance and Quality Assurance

a) Secure Environment: AI contributes to ensuring a secure environment in manufacturing industries by improving data security, detecting anomalies and enhancing cybersecurity measures. AI-powered systems can identify potential risks, predict failures and address security vulnerabilities, safeguarding manufacturing processes and data integrity.

b) Real-Time Monitoring and Predictive Maintenance: AI can monitor equipment performance in real-time, predict potential failures before they occur and enable predictive maintenance. The feasibility of remote access modification using AI garnered significant attention. Participants explored the potential for automated updating of systems through AI, considering its implications on efficiency and adaptability

c) AI in Public Museums Hologram Virtual Interaction: Deliberations extended to the integration of AI in public museums, particularly exploring the possibility of hologram virtual interactions. Participants discussed how this innovation could revolutionize the visitor experience, making it more engaging and immersive.

d) Predictive Analytics for Quality Assurance: AI brings predictive analytics to the forefront of quality management by leveraging historical data and machine learning algorithms to identify potential defects and deviations in the quality process.

Furthermore, ensuring the accuracy of data inputted into AI systems for generating predictive results is imperative. This can be readily accomplished through meticulous data validation, governance, and modelling processes.

An Example of Digitalization in the Healthcare sector

Digitalization in healthcare is the application of technology to improve healthcare delivery, patient outcomes and reduce costs. This includes various digital tools and platforms such as mobile health (mHealth) apps, Electronic Health Records (EHRs), Electronic Medical Records (EMRs), Wearable Devices, Telehealth and Telemedicine.

Digital health encompasses a wide array of technologies and innovations aimed at enhancing healthcare delivery and patient outcomes. These include personalized medicine, health information technology (health IT), healthcare tools, health analytics, healthcare informatics, hospital IT and medical technology. Additionally, it involves the integration of telemedicine and remote monitoring solutions to provide convenient and efficient healthcare services.

2 BUILDING SUPPORTING INFRASTRUCTURE

India's current digital landscape presents numerous challenges and gaps in supporting infrastructure for the digital economy. These include accessibility, affordability, mismatches between digital products and local requirements, geopolitical factors and the need for integrated Digital and Social Infrastructures. Addressing these challenges is crucial for fostering inclusive and sustainable digital growth. Improving the supportive infrastructure in the following ways can help overcome the discussed challenges.

2.1 Aligning Businesses with Latest Infrastructure for Digital Economy

Digital Infrastructure including cloud-based solutions, plays a significant role in supporting business operations and enabling digital transformation. Cloud desktops, for example offer cost savings, centralized control and flexibility in employee workflows, contributing to improved business outcomes.

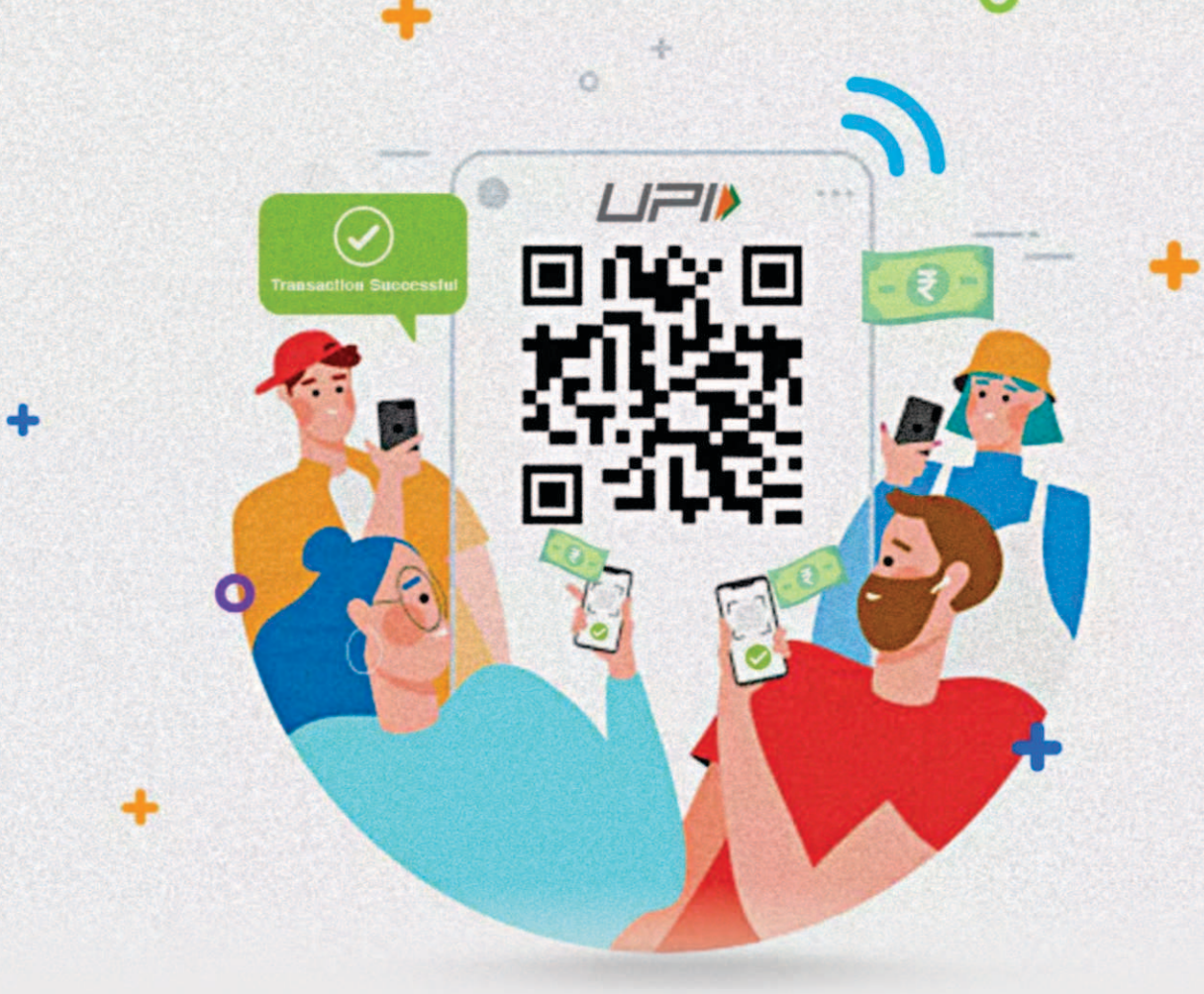
Furthermore, there is a need for collaborative efforts between the Government, Private Sector and Civil Society to bridge these gaps and create an enabling environment for digital transformation. Additionally, investment in Research and development to harness emerging technologies can contribute to overcoming these challenges and ensuring long-term digital sustainability.

Bharat net and Self Help Groups in Remote Villages should be well connected from headquarters to blocks and further to village Panchayat.

Affordability, Accessibility, and Equitable Access will provide collective ownership in areas like education.

2.2 Maintaining ESG Standards and Documentation of Indigenous Culture

Indigenous knowledge and practices play a pivotal role in Environmental, Social, and Governance (ESG) frameworks, given the profound understanding Indigenous communities possess about their lands and social impact. Incorporating this knowledge can enrich ESG initiatives, fostering more inclusive and sustainable outcomes. Moreover, leveraging technology to document indigenous culture and systems has emerged as an innovative strategy to counteract the loss of these indispensable values over time. By integrating indigenous perspectives and harnessing technological advancements, organizations can create more holistic and culturally sensitive approaches to ESG, thereby contributing to broader sustainability goals.



2.3 Bridging the digital divide through India's thriving MSME sector

Digital solutions and tools must be tailored to specific businesses and social needs in the Indian MSME sector, which is a significant contributor to the country's GDP and employment. It is essential to bridge the gaps in digital infrastructure through public-private partnerships, especially in the context of digital literacy among children in India. The MSMEs can play a significant role in reducing the digital divide in India by implementing several strategies like:

Providing Affordable Technology Solutions: MSMEs can provide open-source software options for accounting, marketing, or communication.

Offering Training and Skill Development: MSMEs can organize training sessions and workshops to enhance digital literacy among their employees and stakeholders, empowering them to utilize technology effectively.

Collaborating with Educational Institutions: Partnering with schools, colleges and vocational training centers to provide practical digital skills training programs can help bridge the digital divide by equipping students with the necessary skills for the digital era.

2.4 Develop Digital Public Infrastructures (DPIs)

The Indian Government has initiated various programs to enable access to crucial digital infrastructure for the economy. Initiatives like Aadhaar, UPI and FASTag have experienced remarkable uptake and offer significant potential for wider scalability, extending their reach to remote sections of society.

Efforts should focus on ensuring that the deployment of essential infrastructure, such as Bharat Net, effectively extends from urban centers to rural areas, including village panchayats, with the active involvement of self-help groups (SHGs) in remote regions. This decentralized approach ensures inclusive access to digital resources across the nation.

3 EXPLORING NEW TECHNOLOGY FRONTIERS

Exploration of new technology frontiers is crucial for identifying and addressing challenges that impede technological advancement in Indian industries. These challenges include talent shortages, insufficient investment, and the need for a collaborative, innovative industry mindset. Additionally, fostering partnerships with academic institutions and research organizations can provide further avenues for innovation and skill development, contributing to the growth and competitiveness of Indian industries in the global market. The main levers of this transformation in the IT sector revolves around parameters such as:

a. Digital Skills: Individuals need to be aware of how digitally driven automation may change their work and what skills they will need to thrive. They will also need to become stewards of their personal data and consumers of information.

b. Cybersecurity: With the increasing digitization, cybersecurity becomes a critical concern. Companies need to build deeper technology understanding and capabilities at all levels, including in the C-suite and adopt a test and learn mind-set that encourages rapid iteration and has a high tolerance for failure.

c. Digital Transformation of Core Industries: India's Core Digital Sectors such as IT and business process management (IT-BPM), digital communication services and electronics manufacturing could double their GDP level $355 Billion to $435 Billion by 2025.

The following strategies could contribute to the advancement of new technology frontiers in our nation:

3.1 Raising the level of Investment and Innovation

India is actively raising the level of investment in new technology through various initiatives and developments. One notable example is the significant growth in the Investment Tech Industry in India, which has seen a year-on-year growth of 300% in the last three years. This growth trend is expected to continue, with the investment tech industry projected to be worth $14.3 Billion by 2025. Examples of significant investments include Google's $10 Billion pledge in India, Microsoft's investment in setting up data centres and AWS's commitment to invest $4.4 Billion in India by 2030.

It is proposed for the concept of a Unitary University to streamline education & research and advocate for CSR initiatives to be directed in technology and innovation.

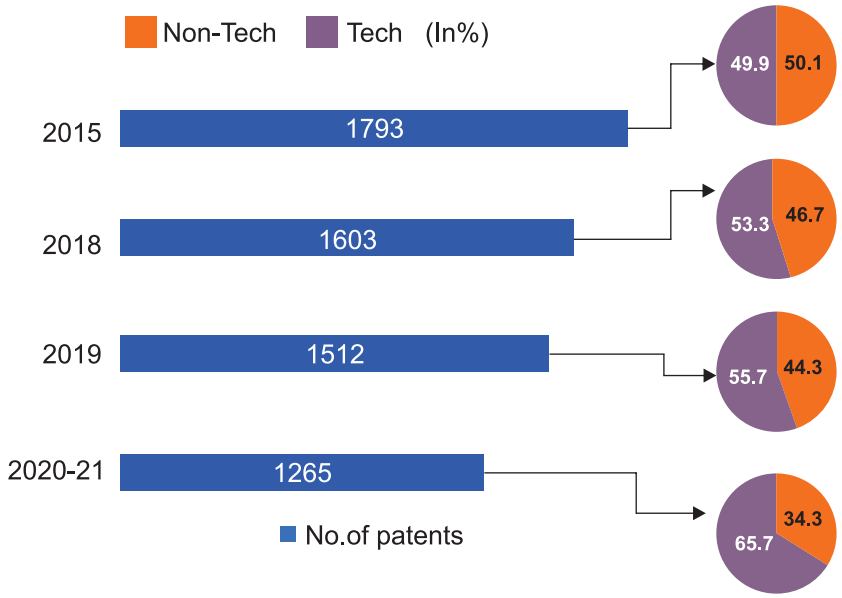
3.2 India's rise to the top: Industries Chasing Global Leadership

Indian tech industries are increasingly investing in emerging technologies, aiming to stay competitive in the global market.

- Promote the establishment of incubators within educational campuses to nurture innovation.
- Encourage research and development in Food Technology and Engineering.
- Foster strategic partnerships between industries and educational institutions.
- Advocate for incentives that promote and reward research and development efforts.
- Encourage industries to shift their focus from profit to compensating innovative contributions.

Innovation in the Indian Tech front: Data suggests a rise in the number of patents filed by Indian firms in the USA, with a significant portion of these patents involving innovative technologies powered by AI and machine learning. Sustained emphasis on emerging technologies will position India as a market leader in this sector.

Patents filed by India-domiciled firms in the US



Indian companies lead

60%
Share of tech patents filed by Indian companies and startups in the US

16.7%
Share of tech patents filed by individual investors / academic research

400+
Tech patents filed by Indian startups in 2015-21, up by 45% over 2015-19

16.7%
share of tech patents related to software apps, healthcare, media

Share of emerging tech

50%+
patents files in 2015-21 related to emerging technologies

2X+
AI patents more than doubled in 2015-2021, compared to 2015-19

Source: Business Standards

Adopting ESG practices: Indian industries should integrate Environment Social and Governance (ESG) practices in their business operations to become more sustainable and responsible. This can help them attract investors, customers and employees who value sustainability and social responsibility

Additionally, initiatives could also be taken to streamline education and research through the establishment of a unitary university, aiming to facilitate collaborative innovation.

4 EXPLORING OPPORTUNITIES BEYOND INFORMATION TECHNOLOGY IN INDIA

This highlights the evolving landscape of the IT sector extending beyond traditional IT domains and its consequential influence on job markets, education, cultural practices and small industries. Some pointers of how digital economy growth can be enhanced beyond the IT perspective are as below:

AI and Indian culture	Recognize the unique family-oriented practice in India and its ancient art heritage, discussing how AI and digitalization draw inspiration from Indian art forms like Bharatanatyam
Spirituality	Explore the concept of spirituality-conscious society and its potential economic implications, linking philosophical conversations to economic considerations.
Impact Assessment	Discuss the impact of materialism and capitalism on global warming and climate change, emphasizing the need for businesses and individuals to address their patterns of impact
Importance of Agriculture	Highlight the continuing significance of agriculture in contemporary Indian society, stressing its role in food security and self-sufficiency, especially in terms of the economy.
Synergy	Examine the interlink between sports economics, digitalization and learning media, showcasing how sports hubs and centres contribute to societal development and economic growth
Aging Economy	Analyse the impact of aging economy in India, particularly in terms of water-oriented and health services, emphasizing the role of remote diagnosis in saving lives
Role of MSMEs	Discuss the role of micro and small-scale entrepreneurs in the global economy, considering social security insurance and sensitization of products to meet global standards

Opportunities in the employment emerging beyond IT in India:

The next wave of opportunities beyond IT in the Indian IT sector includes roles such as Data Scientist, AI and ML Engineer, Healthcare Professional, Digital Marketer and Cyber Security Professional

In addition to these roles, there are also opportunities in emerging sectors such as the EV, which is set to create 5 million direct jobs and 30 million indirect jobs for technology professionals by 2030

The democratization of job opportunities is expected to continue, with a greater demand for tech talent in non-tech companies, particularly in sectors such as BFSI, telecom, media and PSUs.

5 TALENT DEVELOPMENT AND TRAINING

The emphasis on "Talent" aims to scrutinize and comprehend the progression of hurdles within the digital sphere among the youth, ranging from elementary education to tertiary education. Through an examination of the evolving landscape of digital challenges encountered by young individuals throughout their educational trajectory, this report seeks to pinpoint significant trends, barriers and potential remedies to cultivate digital literacy and resilience among youth.

5.1 Building a Strong Foundation: Essential Elements for Digital Innovation Training

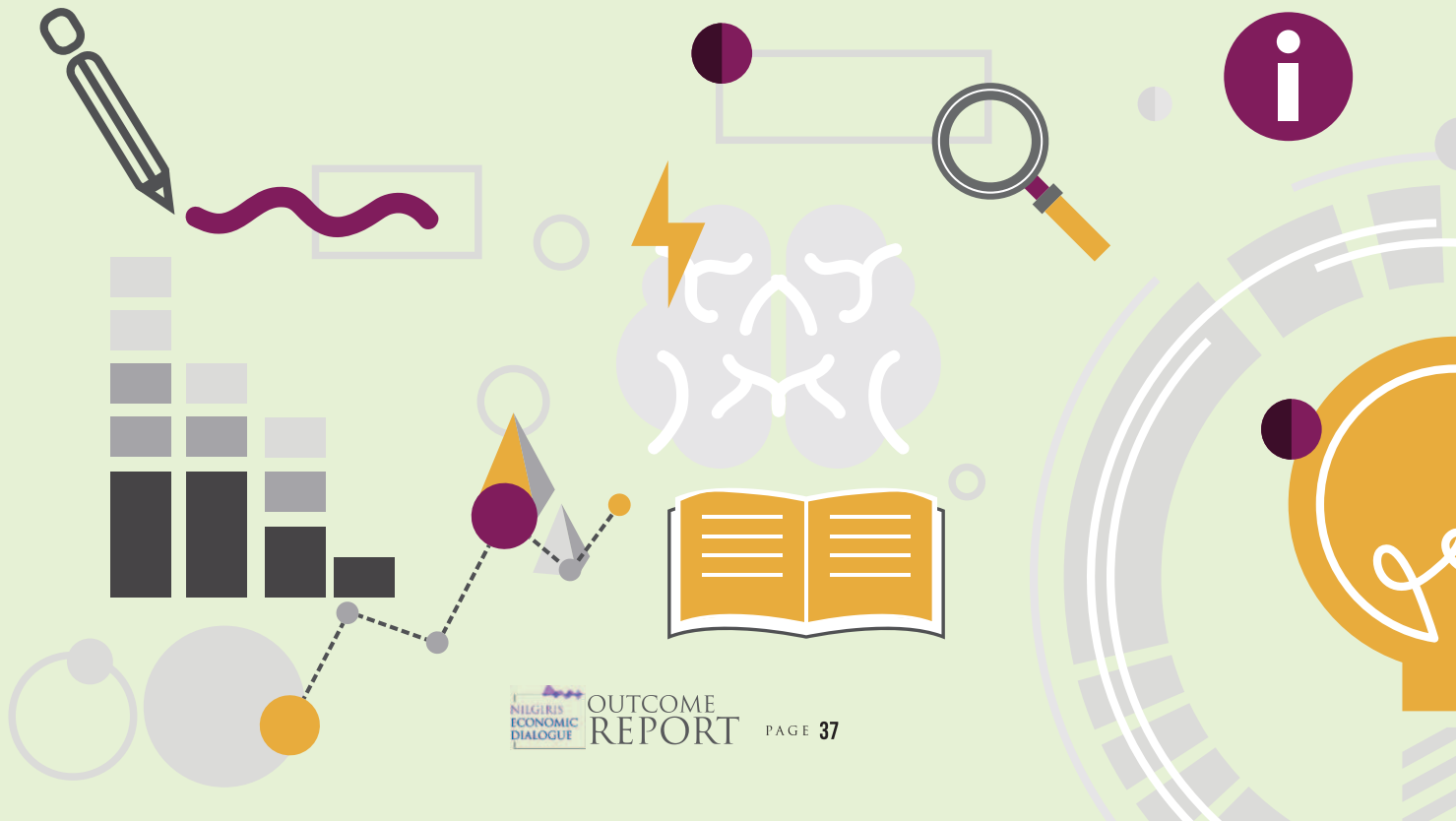
a) Investing in Early Childhood Development

In early childhood education, technology serves as a valuable tool to facilitate learning, with interactive media playing a significant role in guiding the development of young children. Through technology, children can engage in activities that allow them to play, express themselves and hone their skills in a safe and engaging environment. By integrating technology into early childhood education, educators can create immersive learning experiences that cater to the diverse needs and interests of young learners, fostering their cognitive, social and emotional development.

b) Beyond Basic Needs: Focusing on Creative Development, Health Equity, and Climate Solutions

Leveraging digital tools for creative education: Digital tools can be used to enhance creative education by providing interactive and engaging learning experiences.

Incorporating climate awareness into digital learning: For instance, educational games and simulations can be developed to help students understand the impacts of climate change and explore potential solutions.



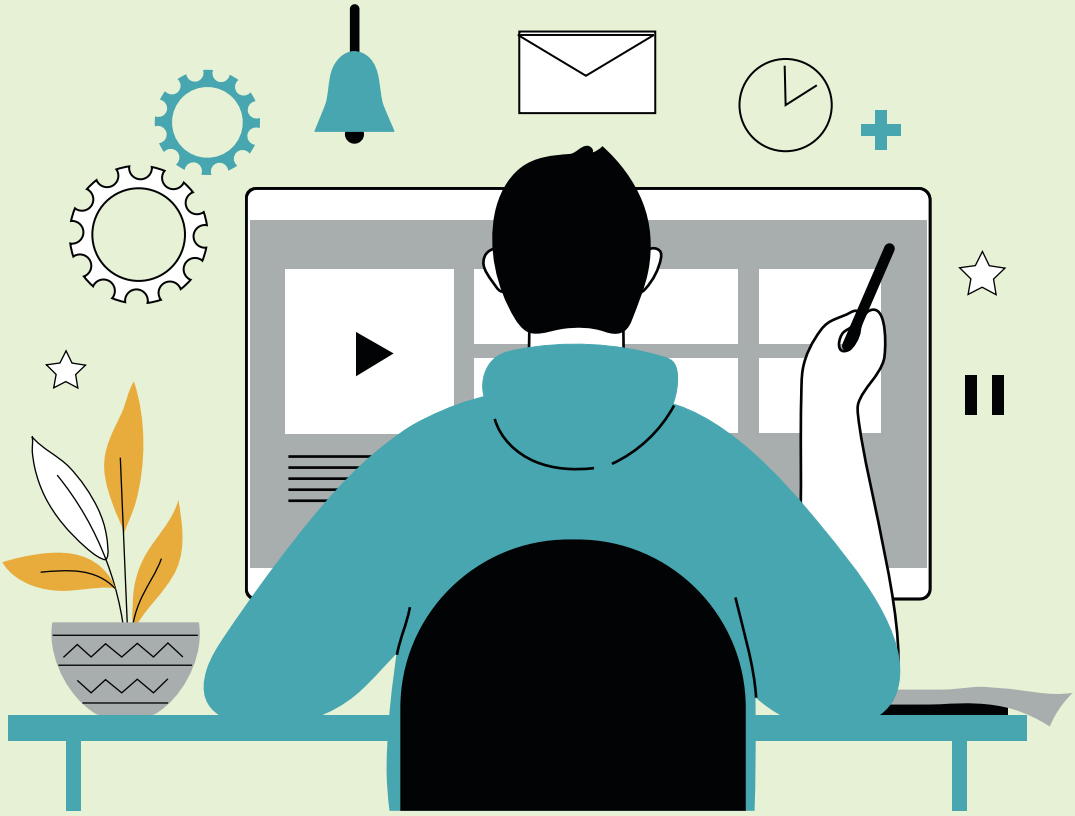
c) Customizing Educational needs through Digital Solutions

Various types of customized educational software exist, such as Learning Management Systems (LMS), Student Information Systems (SIS), Classroom Management Software, Content Creation & Management Tools and Interactive Learning Platforms. These software solutions contribute to the establishment of comprehensive digital learning environments, simplifying data management, facilitating interactive forums, enabling real-time communication, offering mobile compatibility and allowing integration with other educational tools.

d) Modern Gurukuls: Leveraging Digital Platforms for Personalized Learning

Utilizing Artificial Intelligence (AI) in Education: Integrating AI technology into education allows for the creation of personalized and customized learning experiences tailored to students needs. AI algorithms can adjust to individual learning styles, offering tailored content and guidance aimed at improving comprehension and mastery of subjects.

Focus on Knowledge Creation, Skill Building and Character Development: These programs ought to offer comprehensive learning content, personalized mentoring and direct access to webinars to enrich the learning experience for students and parents. This approach has the potential to revolutionize education by addressing individual student needs and preparing them for future challenges.



5.2 Collaboration between Industries and Academic institutions

Educational institutions can enhance their programs by collaborating with professionals and industry leaders, thus ensuring alignment with specific industry needs and equipping students with essential skills for successful careers. These collaborations can also offer students valuable real-world work experience through internships or apprenticeships, providing hands-on learning opportunities. By applying classroom knowledge in practical settings and gaining industry exposure, students can better prepare themselves for the challenges of their future careers.

5.3 Unlocking Potential: Equipping Educators to meet diverse student needs

Implementing a holistic approach to Teacher Professional Development (TPD) is essential for ensuring that educators have the necessary skills and resources to excel in their roles. This comprehensive approach should cover various aspects such as classroom management, instructional excellence and leadership development. By providing teachers with access to a diverse range of strategies, tools, resources and opportunities, organizations can support their continuous growth and improvement. Through targeted PD programs, educators can enhance their teaching practices, stay updated with the latest educational trends and become effective leaders in their schools and communities. This holistic approach to PD is crucial for fostering a culture of continuous learning and professional growth among educators.

6 THE ENGINE OF INNOVATION: HOW START-UPS POWER THE DIGITAL ECONOMY

Indian startups have a crucial role to play in the progress of Digital Economy in the country. Hence, it is essential to address challenges specific to start-ups to avoid hindrances in the long run.

The discussion revolved around the analytical differences between the USA and India, with a focus on India's diversified growth across cities and tier 2 and 3 areas, highlighting the inherent risk-taking ability of Indians.

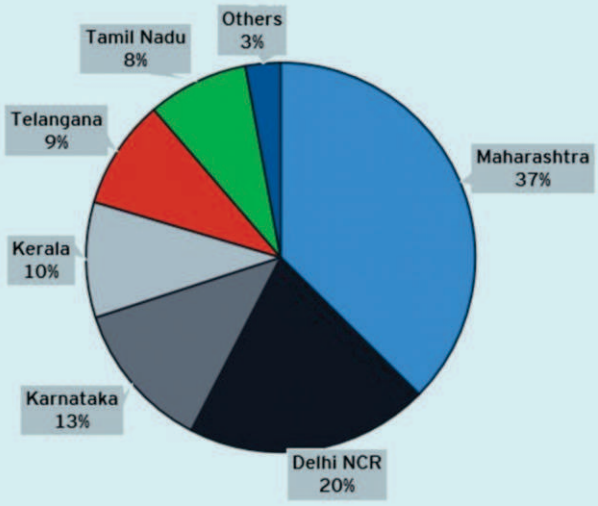
The transition of India from a savings-based economy to investing in small start-ups with sustainable approaches is recognized.

Activities in India by HQ Bay Area and the contributions of various sectors like LIC empanelment models of technology and ICAI providing institutional support could be explored, stressing the importance of encouraging more start-ups to be bought out by big companies.

The nascent nature of the Indian startup ecosystem and the role of privilege in attracting investments were addressed, emphasizing the need for strong support systems and a focus on technology.

The importance of capabilities, energy levels, and willingness to take up challenges for startups mentorship and B2B matchmaking is to be nurtured.

Indian States and Union Territories contributing to the Startup Ecosystem are depicted below:



A total of 1,17,254 Indian startups have been launched to date and a total of 5,068 funded startups in India, with a combined valuation of $554 Billion

The Indian start-up ecosystem is expected to witness a YoY growth of 10-12% in the years to come.

Indian startups have received significant funding, with $13 Billion invested in 2020 alone, mostly from foreign investors such as Soft Bank and Tiger Global Management

6.1 Challenges faced by Indian Startups

Funding and Financial Challenges: Limited access to capital and high-risk perception among investors make it challenging for startups to secure initial investment. Regulatory complexities further compound the issue.

Talent Acquisition and Retention: The education system's limitations in providing necessary skills and training, intense competition from established players and attractive job offers abroad contribute to a scarcity of skilled professionals in certain fields, making it difficult for startups to find and retain talent.

Infrastructure issues: Inadequate healthcare, education, power supply and transportation facilities hinder the progress of startups, particularly in rural areas.

Competitive Landscape and Market Dynamics: Intense competition for funding, talent and customers necessitates strategic approaches for startup survival and growth.

Scaling and Growth concerns: Navigating the complexities of scaling a business, including managing cash flow, marketing and sales, is a common challenge for startups.

Economic and political instability: Economic and political instability, including cash variations, policy changes and international risks, can impact the operations, investor uncertainty and growth opportunities of startups in India.

6.2 Ways to overcome challenges for Indian Startups

a) Diversifying Funding Sources:
Startups should explore alternative funding options beyond traditional venture capital, such as government-backed initiatives, crowd funding and strategic partnerships. Presenting a compelling business case and demonstrating growth potential can attract investors.

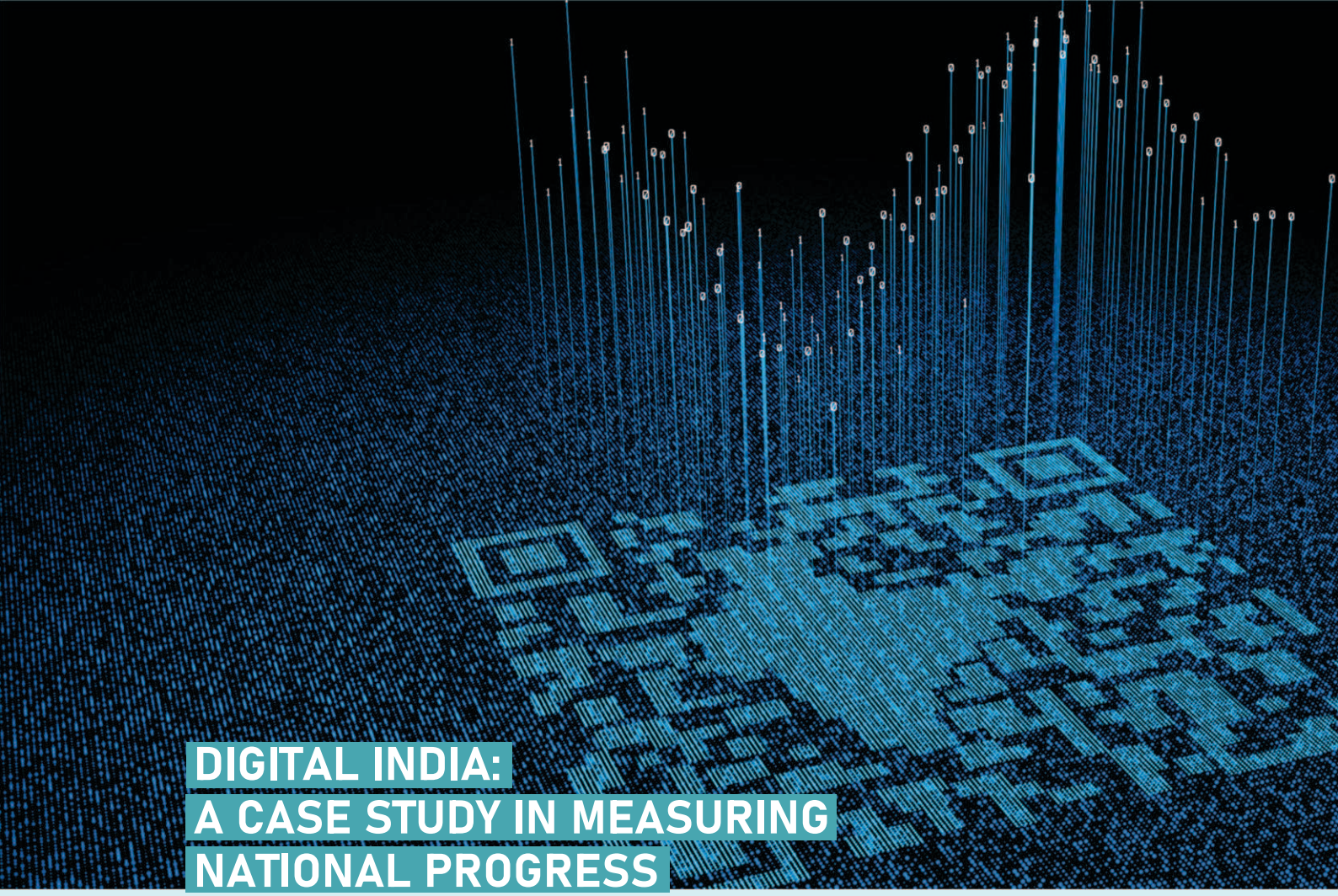
b) Navigating Regulatory Complexities: To tackle regulatory challenges, startups must stay informed about industry regulations, establish relationship with legal experts & industry associations and engage with Government bodies to contribute to a more favourable regulatory environment.

c) Understanding the Consumer Market: Building consumer trust, adapting to changing consumer behaviour and differentiating products through innovation and unique selling propositions are essential for startups to succeed in a competitive market.

d) Entrepreneurial Initiatives: The Indian Government has also taken steps to promote entrepreneurship through initiatives such as *Make in India* and *Startup India,* which have helped attract both domestic and international funding into various sectors like eCommerce and Healthcare.

e) Promoting sustainability through Government schemes: The *Startup India* Scheme, launched by the Indian Government in 2016 is aiding sustainable startups by providing a platform for showcasing eco-friendly solutions and offering financial support through exemptions on Capital Gains Tax and Income Tax for eligible startups while Indian startups are increasingly focusing on sustainability across various sectors, including fashion, agriculture, waste management and carbon reduction.

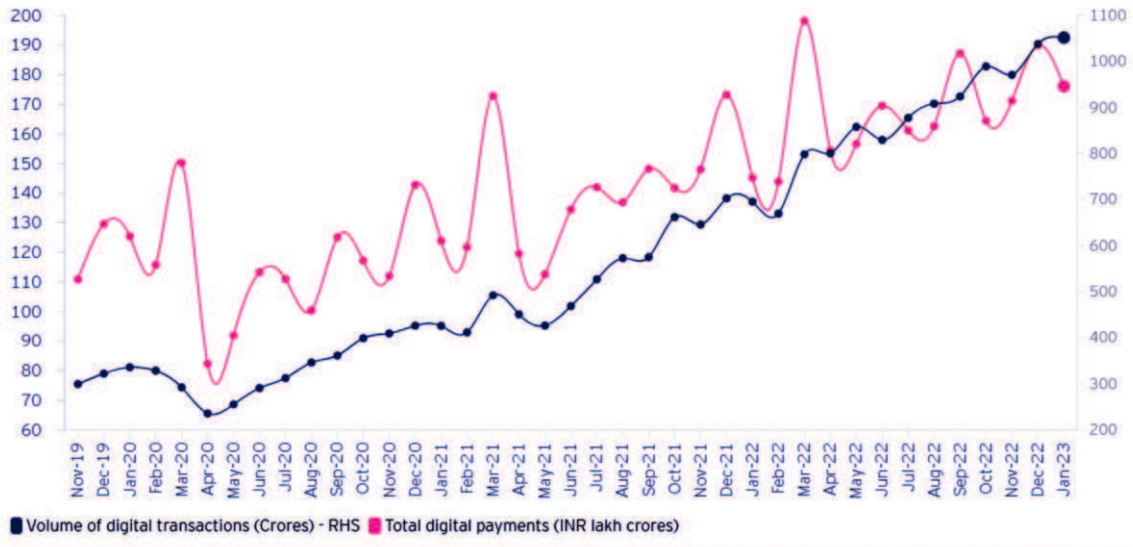
The Indian startup ecosystem is expected to continue its rapid growth and innovation, with a focus on deep tech, social impact and sustainability. The Government's support and the availability of venture capital are also expected to contribute to the ecosystem's success.



DIGITAL INDIA: A CASE STUDY IN MEASURING NATIONAL PROGRESS

The value and volume of digital payments in India have witnessed rapid growth in recent months, including the period affected by COVID-19 from November 2019 to January 2023, as depicted in Chart 1. During this time frame, the number of digital transactions surged more than threefold, rising from INR 300 Crores in November 2019 to INR 1,052 Crores by January 2023.

Chart 1: Volume and value of digital payments



Source : RBI
Note: Monthly average exchange rates from the RBI-FBIL have been used for conversion into US$ terms

India's Digital Boom: Scale of the Digital Economy

As per the RBI, the share of India's Core Digital Economy increased from 5.4% of GVA in 2014 to 8.5% in 2019 to 12.5% in 2023. In US dollar terms, India's digital economy exhibited a growth rate of 15.6% over the period 2014 to 2019, which was 2.4 times the growth of the Indian economy. Further, the share of digitally dependent economy (digitally enabled sectors) is estimated at 22.4% in 2019.

A recent study by Ministry of Electronics and Information Technology (MeiTY) has estimated the size of India's digital economy to $500 Billion by 2025 in their 'Business as Usual' scenario. However, they also highlight the potential for India's digital economy to expand up to $1 Trillion by implementing a series of policy initiatives encompassing 30 digital themes across 9 National Goals.

1. 21st-century IT infrastructure and software capabilities
2. E-governance of the future
3. Healthcare for all
4. Quality education for all
5. Energy for all
6. Next-generation financial services
7. Doubling farmers' income
8. Make in digital India, make for India, make for the world.
9. Jobs and skills of the future.

The Impact of the Digital Economy on Employment

Based on India's current population (2022) and the worker population ratio in 2019-20 as per Periodic Labour Force Survey (at 38.2%), the total employed workers in the core digital economy were estimated at 4.9 Million. Among the digital sectors, the highest share of employment at 59.8% is for the computer programming consultancy and related activities followed by telecommunication services at 15.2%.

Future of Digital Economy in India

The growth of the digital economy in India is being driven by the increasing adoption of digital payments and the use of social media and video conferencing to reach and support customers. Digital applications are expected to proliferate across most sectors of India's economy, with core digital sectors such as IT and business process management, digital communication services and electronics manufacturing potentially doubling their GDP level to $355 Billion to $435 Billion by 2025.

Digitizing various sectors such as agriculture, education, energy, financial services, healthcare, logistics, retail, government services and labour markets have the potential to generate incremental economic value ranging from $10 Billion to $150 Billion in 2026. Digital applications within these sectors can enhance output, decrease costs and time, mitigate fraud and optimize demand-supply matching.

7 CONCLUSION

Digital economy in India is a significant driver of innovation, growth and job creation and has the potential to transform the way businesses operate and consumers behave. With the right policies and investments, India can become a global leader in the digital economy, creating new opportunities for businesses and citizens alike.

However, there are also challenges associated with the growth of the digital economy, such as the digital divide, where wealthy countries and businesses are far more connected digitally. To address these challenges, it is essential to invest in digital literacy and infrastructure, particularly in developing countries, as described in the report.

This will help bridge the digital divide and ensure that everyone has equal access to the benefits of the digital economy and help the country strive towards a better future.

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SESSIONS of DAY 2

03 February 2024
WelcomHeritage
Fernhills Royal Palace
Ooty

TRACK - II

Circular Alchemy: Transforming Resources into Sustainable Wealth

Hans Raj Verma IAS
Chairman & Managing Director
The Tamilnadu Industrial
Investment Corporation Ltd

Ranganath N K
Member - Curators Council,
Nilgiris Economic Dialogue &
Director, Strategy Catalysts Pvt Ltd

Ravichandran P
Member - Curators Council,
Nilgiris Economic Dialogue &
Managing Director, Danfoss Industries Pvt Ltd

Katja Larsen
Founder
Silverspoon Consultancy

Kapil Bansal
Partner, EY Energy Transition
and Decarbonization, India

Overview of the panel discussion:
Resource Efficiency and Circularity have emerged as critical imperatives in the Global Pursuit of Sustainable Development. From conserving Natural Ecosystems to reducing waste and optimizing resource utilization, the principles of sustainability are at the forefront of efforts to address environmental challenges and promote resilience. In this comprehensive analysis, the panel delved into the intricacies of promoting Resource Efficiency and Circularity, with focus on the Nilgiris Ecology Conservation Amendment (NECA) in India. Through an exploration of key concepts, challenges, opportunities and best practices, this discourse aimed to shed light on pathways toward a more sustainable and equitable future.

Promoting Resource Efficiency and Circularity is imperative for achieving sustainable development goals and safeguarding the planet for future generations. The Nilgiris Ecology Conservation Amendment serves as a testament to the importance of conservation efforts in ecologically sensitive regions, while broader global initiatives underscore the interconnectedness of environmental, social and economic dimensions of sustainability. By embracing collaboration, innovation and policy interventions, stakeholders can work together to address emerging challenges, capitalize on opportunities and build a more resilient and equitable world. As we navigate the complexities of sustainability, it is essential to remain committed to the principles of stewardship, solidarity and shared prosperity, ensuring a sustainable future for all.

Topics of Roundtable Discussions on Resource Efficiency & Circularity

- Navigating the Circular Economy in India
- Sustainable Manufacturing to Meet India's 2070 Net Zero Target
- Power Sector Landscape of India: The Transition Towards Renewable Energy
- Enhancing Water Use Efficiency
- Clearing the Air: Strategies to Combat Air Pollution in India
- Achieving Zero Waste Goals in India
- Revitalizing Biodiversity

Confederation of Indian Industry

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

India's Space Revolution

EXCLUSIVE
PLENARY SESSION

with

Wg Cdr Rakesh Sharma (Retd)
First Indian Astronaut in Space & Senior Member of Gaganyaan Advisory Panel

India's Space Revolution

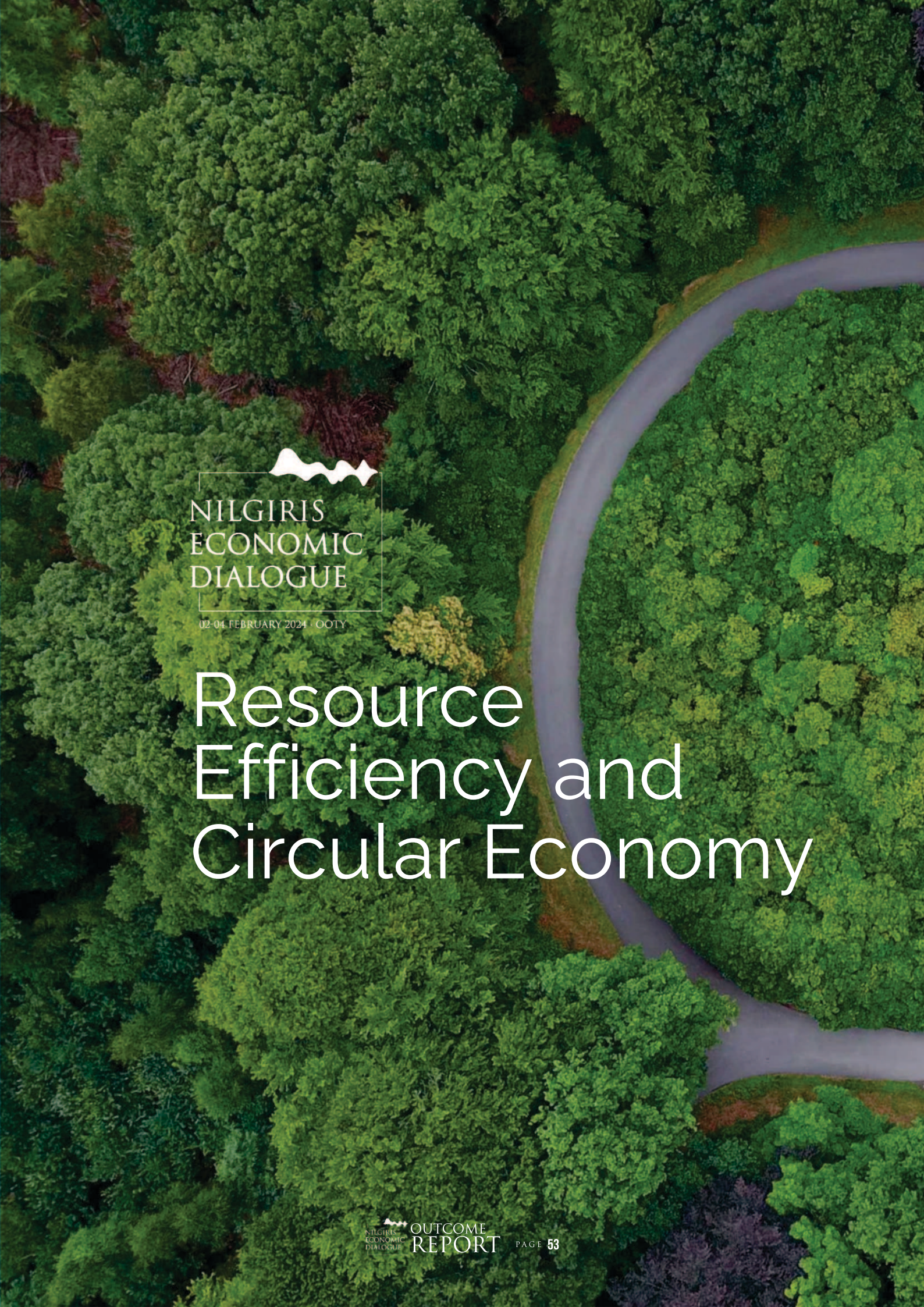
The session on India's Space Revolution was marked by the introduction of Wing Commander Rakesh Sharma (Retd), a pioneer in Indian Space Exploration. As the first Indian astronaut to venture into space, Sharma's illustrious career spanning from his Military Service to his pivotal role in the Gaganyaan Advisory Panel captured the audience's attention, setting the stage for an enlightening discourse on India's Space Endeavours. Amidst a backdrop of global interest in Space Exploration and India's burgeoning role in the field, the session commenced, highlighting the pressing need for Environmental Preservation and Sustainable Development.

Key Highlights of the Session

- Importance of Environmental Preservation
- Factors Contributing to India's Space Progress
- India's Potential Leadership in Space Exploration &
- Imagining Sustainable Futures

The session highlighted the ethical implications of technological advancements and the dispossession of people's rights. Emphasizing the need for conscientious pursuit of science, the session apprised against prioritizing financial gains over ethical considerations. Environmental degradation and pollution were highlighted as global concerns requiring proactive solutions for the benefit of humanity.

The exclusive plenary session provided an extensive exploration of India's Space Revolution, highlighting achievements, challenges and future prospects. With insights from distinguished speakers and audience participation, the session underscored the importance of international collaboration, ethical considerations and imagination in shaping humanity's cosmic aspirations. As India continues its journey into the final frontier, the session served as a testament to its commitment to harnessing the power of space for the betterment of humanity.



NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Resource Efficiency and Circular Economy

Confederation of Indian Industry

Key Takeaways

INTRODUCTION

Resource efficiency and circular economy have emerged as pivotal concepts in India's pursuit of Sustainable Development. With a growing population, rapid urbanization and industrial growth, efficient utilization of resources and the adoption of circular economy principles are imperative to mitigate environmental degradation, ensure long-term economic viability and enhance societal well-being.

The transition towards resource efficiency and circular economy represents a paradigm shift from the traditional linear *'Take-Make-Dispose'* model to a regenerative system that aims to minimize resource consumption, maximize resource utilization and eliminate waste generation. Through strategies such as Reuse, Recycling, Remanufacturing and adoption of Renewable Energy, India can unlock new opportunities for innovation, job creation and economic growth, while simultaneously reducing its ecological footprint by closing the loop of material flows.

At the heart of this transition lies the concept of circularity, which emphasizes the interconnectedness of economic, environmental and social factors. In the Indian context, this entails reimagining production processes, supply chains and consumption patterns to optimize resource use, minimize waste and foster sustainable growth across sectors.

This report delves into seven key sub-topics that were underscored at the roundtables to understand the multifaceted nature of resource efficiency and circular economy in India.

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1. Navigating the Circular Economy in India

Examining the potential of circular economy principles across Industries and Governmental sectors, highlighting collaborative initiatives and best practices.

2. Sustainable Manufacturing to Meet India's 2070 Net Zero Target

Exploring strategies for transitioning towards sustainable manufacturing practices aligned with India's ambitious goal of achieving net-zero emissions by 2070.

3. Power Sector Landscape of India: The Transition Towards Renewable Energy

Identifying barriers hindering the widespread adoption of resource efficiency measures and proposing collaborative approaches between industries and governments to overcome these challenges.

4. Enhancing Water Use Efficiency

Analysing the integration of technology, sustainable practices and policy interventions to optimize water use across various sectors and mitigate water scarcity challenges.

5. Cleaning the Air: Strategies to Combat Air Pollution in India

Investigating efforts to combat Air Pollution and sustain progress towards cleaner air, with a focus on Policy Interventions, Technological Innovations and Public Awareness initiatives.

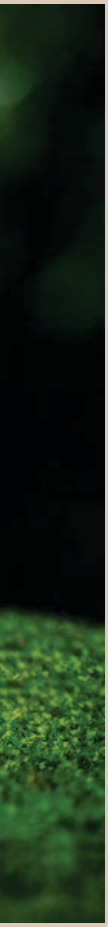
6. Achieving Zero Waste Goals in India

Assessing the challenges and outlining strategies for achieving zero waste targets in India's Waste Management landscape through innovative policies and practices.

7. Revitalizing Biodiversity

Exploring collaborative approaches to Biodiversity conservation and Ecosystem Restoration, emphasizing the importance of stakeholder engagement and holistic conservation strategies.

Through comprehensive analysis and case studies, this report aims to shed light on the opportunities, challenges and pathways towards advancing Resource Efficiency & Circular Economy in India. By fostering dialogue, knowledge sharing and collaborative action, we can accelerate the transition towards a more sustainable, inclusive and resilient future for India and beyond.



1 NAVIGATING THE CIRCULAR ECONOMY IN INDIA

Circular economy aims to *'Close the Loop'* in the production and consumption processes. Through resource efficiency, materials resources are efficiently utilized to their full potential and waste is minimized by enriching the value of products through their lifecycle.

In the current economy, we take materials from the Earth, make products from them and eventually throw them away as waste – the process is linear. In a circular economy, by contrast, we stop waste being produced in the first place.

The circular economy operates on three design-driven principles. Firstly, it aims to eliminate waste and pollution. Secondly, it focuses on circulating products and materials at their highest value. Lastly, it endeavours to regenerate nature. These principles form the foundation for sustainable resource management and foster a more resilient and environmentally conscious economy.

1.1 Why India needs a circular economy

A circular economy holds significant promise for India, offering advantages for both the environment and the economy. Here are some key reasons to adopt this approach:

- **Resource Management:** India, home to 1.3 billion individuals and comprising 18% of the global population, resides only on the 2.4% of the Earth's surface, thus creating ecological stress. This juxtaposition underscores India's resource limitations. To achieve sustained economic growth amidst its growing population, India must address the challenge of resource scarcity and embrace a constructive, inclusive and environmentally sustainable development approach. A circular economy could enhance resource efficiency, resulting in their conservation and sustainable use.

- **Waste Reduction:** A circular economy emphasizes waste reduction through effective recycling and reuse of materials. Currently approximately 377 Million urban residents generate 55 Million Tonnes of Municipal Solid Waste (MSW) annually.

  Projections indicate a substantial rise in this figure, with an estimated annual MSW output of 165 Million Tonnes by 2031 and further rise to 436 Million Tonnes by 2050. Moreover, only 75-80% of the MSW gets collected; out of which only 22-28% is processed and the rest is dumped. A circular approach can address India's escalating waste management challenges effectively.

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- **Economic Growth and Job Creation:** Transitioning to a circular economy could tap new economic possibilities. It encourages innovation, thus leading to new business models and opportunities, which can in turn create jobs. India's adoption of a circular economy path could yield an annual value of $218 Billion (INR 14 Lakh Crores) by 2030 and $624 Billion (INR 40 Lakh Crores) by 2050. As per the National Chemical Laboratory (NCL) and PET Packaging Association for Clean Environment (PACE), the recycled Polyethylene Terephthalate (PET) plastic in India is valued at approximately $400-550 Million. India boasts a PET recycling rate of 90%, surpassing rates in Japan (72%), Europe (48%) and the United States (31%). Thus, there are enormous opportunities for a circular economy in India.

- **Climate Change Mitigation:** Annual greenhouse gas emissions from MSW are expected to go up to 41.09 Million Tonnes by 2030. The Reserve Bank of India (RBI) estimates up to 4.5 percent of India's GDP could be at risk by 2030, due to lost labour hours from extreme heat and humidity. Circular economy practices contribute to lowering greenhouse gas emissions. This is crucial for India, which is amongst the countries most vulnerable to climate change impacts.

- **Cost Savings:** Businesses opting for the circular approach can expect lower service costs compared to the traditional take-make-waste model. By embracing circular practices, India stands to save an estimated $624 Billion across construction, food and agriculture and mobility sectors by 2050. A circular economy can result in substantial cost savings through efficient use of resources and decreasing dependency on material inputs, which in many cases have volatile prices due to global demand and supply.

- **Compliance and Reputation:** Aligning with the circular economy principles also helps companies meet regulatory requirements regarding sustainability & waste management and enhances their reputation.

1.2 Government Policies Supporting India's Sustainable Circular Economy

Various regulations have been enacted by the Government to manage plastic waste, including the Plastic Waste Management Rules 2016, E-Waste Management Rules 2022, Construction and Demolition Waste Management Rules 2016 and Steel Scrap Recycling Policy 2019.

The Government has established 11 Committees comprising representatives from NITI Aayog, Ministry of Environment, Forest & Climate Change, Small & Medium-Sized Enterprises (SME) and Industry stakeholders. These committees are dedicated to eleven specific focus areas aimed at expediting the shift from a linear to a circular economy. Each committee will formulate a comprehensive action plan to facilitate this transition within their respective focus areas. Additionally, the committees will enforce regulatory measures to ensure the effective implementation of their recommendations. The 11 focus areas targeted by the Government to accelerate this transition encompass Municipal and Liquid Waste Management, Scrap Metal Recycling, E-Waste Management, Lithium-ion Battery Recycling, Solar Panel Recycling, Gypsum Utilization, handling of Toxic and Hazardous Industrial Waste, Management of used oil waste, Agriculture waste management, Tire & Rubber Recycling and End-of-Life Vehicle (ELV) Recycling.

The National Solar Mission has been established to reduce reliance on fossil fuels by promoting the use of solar energy in India. This significant Government initiative, with active involvement from States, aims to foster ecologically sustainable growth while addressing the Nation's energy security concerns. The overarching objective is to position India as a global leader in solar energy by creating favourable policy conditions for the widespread adoption of solar technology nationwide.

In tandem, the National Electric Mobility Mission Plan seeks to electrify at least 30% of all vehicles in India by 2030. This strategic plan is designed to strengthen National Fuel Security, offer affordable and environmentally friendly transportation options and propel the Indian Automotive Industry to attain global manufacturing leadership.

The National Action Plan for climate change focuses on devising a comprehensive strategy to mitigate emissions and adapt to its impacts in India.

To safeguard farmers from climate-related risks such as droughts and floods, the Pradhan Mantri Fasal Bima Yojana provides crop insurance. Conversely, the establishment of the National Clean Energy Fund supports the development and deployment of clean energy technologies across India.

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In a bid to combat greenwashing, the Securities and Exchange Board of India (SEBI) has introduced new guidelines mandating companies to disclose their Environmental, Social and Governance (ESG) performance. These guidelines require companies to divulge information on their environmental and social policies, performance, risks, as well as their governance structure and practices. These measures aim to equip investors with additional insights into a company's ESG performance, facilitating informed investment decisions. Implemented in 2023-24 fiscal year, these regulations provide businesses with a framework for disclosure and reporting, thereby aiding in the enhancement of their ESG performance.

Moreover, the Government of India will issue Sovereign Green Bonds (SGrBs) as part of its broader market borrowings to raise funds for Green Projects. The proceeds will be utilized to finance public sector initiatives aimed at reducing the economy's carbon intensity.

1.3 Boosting Circularity in India: Creative strategies for a sustainable economy

- **Value-Chain mapping:** This technique can be combined with resource efficiency. Industries should implement value chain mapping to identify waste streams and then implement strategies to reuse or recycle it.
- **Digital Solutions:** Use digital solutions and technologies like IoT, AI or blockchain for efficient resource management, waste tracking and aggregation of Industry-Specific waste data.
- **Business Models:** Develop new business models that focus on recycling, reusability and waste reduction. Collaborate with other industries to create value-added products from waste materials.
- **Research and Development:** Investing in R&D for Advanced waste treatment facilities and sustainable technology solutions. Also, focus R&D efforts on extracting value from waste materials. Designing products for longevity, reuse and recycling as opposed to a *Make-Use-Dispose* approach.

- **Public Procurement:** To accelerate the shift towards a sustainable future, Government organizations can incentivize the procurement of recycled and green products, ensuring they remain price-competitive for wider adoption.
- **Reverse Logistics:** To tackle challenges in reverse logistics, like the return of packaging, we can enhance infrastructure and enact policy reforms. Deposit Refund Systems (DRS), Standardized Labelling and Extended Producer Responsibility (EPR) are some approaches to address this issue.
- **Waste Segregation:** Encourage segregation of waste at the source through tech-based solutions like sensors, promoting efficiency in waste management practices. Additionally, incentivize organizations to implement waste segregation within their premises, fostering a culture of sustainability and responsible waste disposal.
- **Carbon Accounting:** Businesses should account for their carbon footprint in their operations and make conscious efforts to minimize it. Tools like Greenstich can be helpful in achieving this.
- **Public-Private Partnerships:** Encourage PPPs to implement circularity initiatives in industrial parks, residential areas and hospitals. This could include waste-water treatment, food waste reduction and energy consumption tracking.
- **Bottom-Up Approach:** Encourage a shift in individual mindset towards sustainability, advocating for waste segregation and resource efficiency at the grassroots level. This involves promoting awareness and education on sustainable practices within local communities.
- **Policy Incentives:** The Government should provide policy incentives for stakeholders adopting circular economy principles, such as rewarding waste reduction, implementing carbon pricing, tax incentive and supporting organic waste to fertilizer conversion.
- **Compliance:** Government policies should be more proactive towards enforcing compliance with circular economy principles, such as rainwater harvesting, energy efficiency and waste recycling. The introduction of Extended Producer Responsibility (EPR) policies across various sectors is a positive step forward. However, it is imperative to elevate the penalties for non-compliance to ensure effectiveness.
- **Collaborative Models:** Foster collaborative environment for Digital Public Infrastructure (DPIs), EV based vendors, businesses and Government entities to share knowledge and innovative solutions for promoting circular economy.

1.4 From Linear to Circular: A Business Case Study

a) Tata Chemicals

Tata Chemicals' consumer products division consumes 4,000 Tonnes of Multi-Layer Plastic Film annually for packaging purposes. This plastic variant is strenuous to be recycled and most of it ends up in landfills. To promote sustainability, the company explored the use of Biodegradable and Recyclable Packaging Materials. However, challenges such as the limited availability of fully biodegradable coating and the need for specific conditions for decomposition made this approach economically unfeasible. As an alternative, the packaging team collaborated closely with Dow Chemicals to develop a Polyethylene (PE) based film that could match the print quality and technical specifications of the existing PET packs. The newly designed recyclable pack is an adhesive laminate made of the same polymer (PE-PE) as the existing packs, offering similar aesthetics and shelf life. Due to its single polymer structure, recycling can be more effectively done. As a result, the pack can be transformed into Waste to Energy via Combustion, Gasification, Pyrolysis, Anaerobic Digestion and Landfill Gas Recovery.

b) CERO

CERO (Mahindra MSTC Recycling), a collaboration between Mahindra Accelo (Mahindra Group subsidiary) and MSTC (Government of India enterprise under the Ministry of Steel), stands as India's inaugural Government-approved vehicle recycler.

CERO, signifying Zero in Spanish, aims for Zero Waste, Zero Pollution and Zero Hassles. CERO commenced operations in FY2020 and has since scrapped approximately 15,000 ELVs. Currently, it operates nine scrappage and recycling facilities across India, strategically located in Noida, Pune, Chennai, Ahmedabad, Indore, Bengaluru, Guwahati, Hyderabad and Chandigarh. These plants serve 36 cities within a 300-400km radius, including major urban centers like Mumbai, Kolkata, Bhopal, Jaipur, Coimbatore and Nagpur.

CERO envisions expanding its presence to every major city in India, with a target of over 100 cities by 2025. Each facility is designed to have a vehicle scrappage capacity of about 15,000 units per year, with potential for further scalability based on demand.

2 SUSTAINABLE MANUFACTURING TO MEET INDIA'S 2070 NET ZERO TARGET

India's 2070 net zero target demands a sustainable manufacturing revolution. By adopting circular practices, clean production and green innovation, industries can slash emissions and resource use. Government support through policies and infrastructure is key to propel India towards a greener, more competitive future.

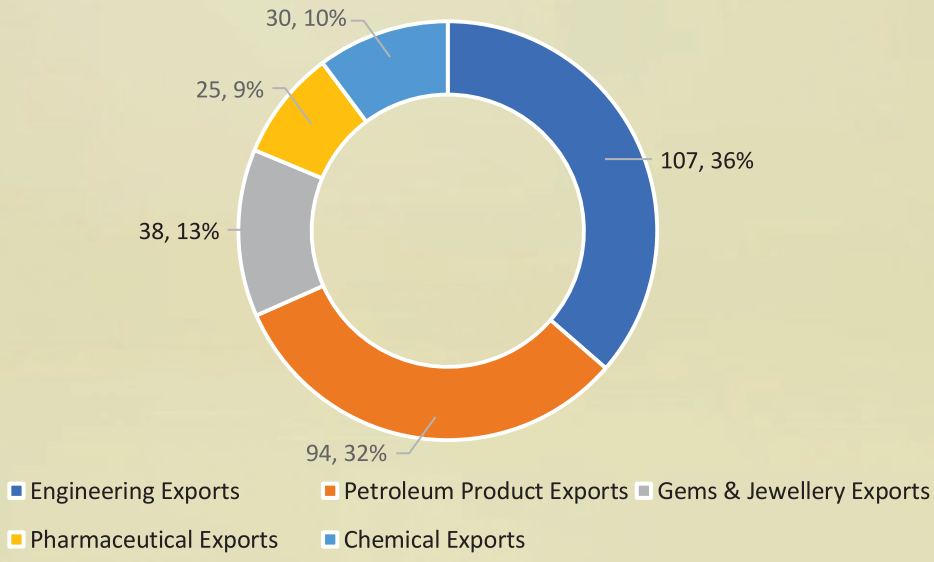
2.1 Overview of the Manufacturing Sector in India

India's Manufacturing sector forms a crucial pillar of its economic landscape, contributing around 16-17% of the Nation's GDP pre-pandemic. It is one of the rapidly advancing sectors, anticipated to attain a worth of $1 Trillion by 2025. This growth trajectory is powered by sectors such as Automotive, Engineering, Chemicals, Pharmaceuticals and Consumer Durables.

Below is an expansion on the unique elements influencing this sector.

- **Technological influence and innovations:** Digital transformations are shaping the future of the Indian manufacturing industry, encouraging a wave of innovation. This technological intervention is steering the Industry towards automated and systematic manufacturing processes, increasing operational efficiency and productivity.
- **Growth as a Global Exporter:** Indian manufactured goods exports touched $447.46 Billion in FY23, recording a tremendous growth of 6.03% from $422 Billion in FY22. India is set to emerge as a significant player in the global manufacturing sector. With its strengthened physical and digital infrastructure, the Nation is capable of exporting goods worth $1 Trillion by 2030 further solidifying its position in the global economy.

FY23 Exports of Top 6 Major Export Industries ($ Billion)



Source: IBEF

- **Government aid and reformative policies:** Recent policy interventions from the Government had acted as a catalyst for local manufactures to go global. Noteworthy initiatives like *Make in India, Digital India, Production Linked Incentive* (PLI) and *Startup India* have injected significant momentum into the Electronics System Design and Manufacturing (ESDM) sector.

- **Skilled Workforce and Foreign Investment:** The manufacturing sector employees over 27.3 Million workers, making it a major job generator. On top of that, this sector is experiencing a surge in capital investments and an influx of mergers and acquisitions, leading to substantial manufacturing yield and increased contribution to the country's exports.

- **Production Incentive Schemes:** The Government's *Production Linked Incentive* (PLI) scheme is aimed at attracting large-scale investment in electronic manufacturing, offering a fillip to the creation of mobile phones and specific electronic components.

  By 2030, India's middle class is expected to be the second-largest contributor to global consumption at 17%. Supported by manufacturing capacity expansion, favourable Government policies, intense merger and acquisition activities and investments backed by private equity/venture capital, the manufacturing sector in India is poised to power the nation's economic growth trajectory.

  As per National Industrial Classification, following 24 activities make up the Manufacturing Sector in India:

Manufacturing Sub-sectors		
Food products	Paper and paper products	Fabricated metal products, except machinery and equipment
Beverages	Printing and Reproduction of recorded media	Computer, Electronic and Optical Products
Tobacco products	Coke and Refined Petroleum Products	Electrical Equipment
Textiles	Chemicals and Chemical Products	Machinery and Equipment
Wearing Apparel	Pharmaceuticals, Medicinal Chemical and Botanical Products	Motor Vehicles, Trailers and Semi-Trailers
Leather and related products	Rubber and Plastics Products	Other Transport Equipment
Wood and products of Wood and Cork, except Furniture; manufacture of articles of Straw and Plaiting materials	Other Non-Metallic Mineral Products	Repair and Installation of Machinery and Equipment
Furniture	Basic Metals	Other Manufacturing which includes Jewellery, Bijouterie and related articles, Musical Instruments, Sports Goods, Games & Toys, Medical and Dental Instruments and Supplies

2.2 Imperatives of Embedding Sustainability in Manufacturing in India

As noted earlier, the manufacturing sector plays a vital role in India's Gross Domestic Product (GDP), driving economic growth by creating employment opportunities across Secondary and Tertiary sectors. Additionally, the sector heavily relies on energy and natural resources like water, while its waste production adversely affects the environment. Industries such as Metals, Chemicals, Non-Metallic Minerals and Heavy Machinery are chiefly responsible for these emissions, energy usage and waste output.

Given this scenario, it is crucial for the sector to prioritize decarbonization efforts and move beyond dependence on fossil fuel-based electricity. There is a pressing need to adopt sustainable manufacturing practices that encompass various aspects including design, sourcing, operations and supply chains to achieve comprehensive sustainability goals.

It is important to let sustainability guide manufacturing for numerous reasons which can be broadly clustered under the following categories:

i. Minimizing Our Footprint: Strategies for a Sustainable Future

Manufacturing is a key sector contributing to India's greenhouse gas emissions. As per an IMF working paper, manufacturing industry was responsible for 22% of India's total Co2 equivalent GHG emissions. Aligning with the sustainability model will help in reducing the environmental footprint of these industries.

Furthermore, sustainable manufacturing practices align with the Indian Government's goal of reducing its emission intensity to GDP under the COP 21 Paris Agreement by 45% by 2030, compared to 2005 levels. Hence, sustainable manufacturing lies at the heart of achieving this ambitious environmental goal.

Some of the major initiatives undertaken and implemented by the Government of India with the aim of sustainable manufacturing are:

a) **Zero Defect Zero Effect (ZED):** Launched in 2016, the ZED initiative aims to foster competitive, high-quality, environmentally friendly manufacturing, driving the development of world-class products and enhancing market opportunities for MSMEs.

b) **Make-in-India:** Introduced in 2014, Make-in-India seeks to attract multinational and foreign companies to establish sustainable manufacturing facilities in India.

c) **National Mission for Sustainable Agriculture (NMSA):** Established in 2014-15, the NMSA endeavors to improve agricultural productivity, profitability and resilience to climate change by advocating for location-specific Integrated Farming Systems and implementing soil and moisture conservation measures.

d) **National Clean Energy Fund (NCEF):** Founded in 2010-11, NCEF supports the rapid deployment of renewable energy projects in the manufacturing sector.

e) **National Action Plan on Climate Change (NAPCC):** Introduced in 2008, NAPCC aims to promote sustainable manufacturing practices to mitigate climate change impacts.

f) **Perform, Achieve, Trade Scheme (PAT Scheme):** Introduced in 2011 by India's National Mission for Enhanced Energy Efficiency, aims to:

- Reduce energy consumption in energy-intensive industries.
- Increase cost-effectiveness by certifying excess energy savings that can be traded.
- Target the industry sector to achieve energy efficiency.

ii. Double Win: How sustainable manufacturing boosts profits and market share

Economic Benefits: The journey towards sustainable manufacturing carries the promise of considerable economic growth trajectories, enabling businesses to stay competitive while also contributing to environmental welfare. The economic advantages are not trivial but involve a substantial shift in cost paradigms, market positioning and enhanced fiscal resilience.

Cost Reduction: Sustainable manufacturing processes often involve energy-efficient operations and optimized use of raw materials. This minimizes waste and significantly lowers utility and disposal costs. Sustainable practices also enhance a company's efficiency by streamlining processes and thereby improving overall productivity, which further minimize waste generation and operational costs.

Customer perception and demand: Increasingly, customers are opting for products and services from companies that demonstrate a commitment to sustainability. Companies focusing on sustainable manufacturing can cater to this growing customer demand, providing a competitive edge and potentially increasing market share.

iii. Investing in Sustainability: How ESG makes companies more attractive

Investors globally are increasingly prioritizing Environmental, Social and Governance (ESG) practices when considering investment opportunities. Indian manufacturers incorporating sustainability into their business models are better positioned to attract Foreign Direct Investments. Additionally, data from the World Economic Forum indicates that companies with robust ESG credentials demonstrate improved profitability and are less susceptible to risks. A 10-point increase in ESG scores is associated with approximately a 1.8x higher EV/EBITDA multiple, suggesting that maintaining a strong ESG score renders companies more appealing to investors.

2.3 Beyond Compliance: Innovative solutions for a sustainable Indian manufacturing sector

Efforts to embed sustainability within Indian manufacturing are critical for fostering long-term environmental resilience and meeting India's ambitious 2070 net zero target. By embracing innovative approaches and integrating cutting-edge green technologies, Indian industries can drive significant progress towards sustainable manufacturing practices. We have outlined actionable insights gathered from discussions on sustainable manufacturing strategies, highlighting key recommendations to enhance resource efficiency, promote social transformation and address emerging market trends.

a) Energy efficiency improvement:
Manufacturing enterprises can significantly reduce their environmental footprint by becoming more energy efficient. Energy management should be seen as an important part of any decarbonization journey. Good energy management performance is not just a legal obligation or proactive commitment, but it also makes good business sense to create long-term value.

b) Green Manufacturing:
Moving towards the production of eco-friendly products using environment-friendly inputs, technologies and processes will reduce waste and pollution. This would encompass adopting biodegradable, recyclable and sustainable materials.

c) Adoption of Renewable Energy:
Using innovative and sustainable solutions like renewable electricity resources or green hydrogen will be the next normal to run factories. Solar and wind-based electricity does not only help in reducing scope 2 emissions but also leads to cost savings when compared with grid electricity.

d) Leveraging Innovative Technologies:
Incorporating green technologies and sustainable practices is crucial for fostering environmental stewardship within the Indian manufacturing sector. This entails adopting advanced digitalization of products to improve efficiency and sustainability. Furthermore, decentralizing sustainable regulations and monitoring mechanisms enhances accountability. Automation in manufacturing can also result in reduced resource consumption and increased efficiency.

e) Sustainable Supply Chain:
Opting for suppliers committed to sustainability aids in minimizing the collective environmental footprint of products. Involving MSME companies in initiatives to mitigate Scope 3 emissions is vital. Furthermore, sourcing materials sustainably, reducing carbon emissions in transportation and implementing ethical labour practices will further diminish emissions across the supply chain.

f) Initiatives and Policies for Environmental Responsibility:
Initiatives and policies play a crucial role in shaping a manufacturing landscape driven by environmental responsibility in India. Implementing daily audits on water consumption, targeted actions to address water scarcity issues and recognizing outstanding companies that demonstrate exemplary environmental responsibility further promote sustainability. By incorporating sustainability considerations into business decisions, Indian Industries can recognize the long-term benefits of environmental responsibility. Further the formation of Industry clusters encouraging effective resource utilization and collaboration among stakeholders will be crucial.

g) Adoption of Circular Production Techniques:
Promoting circular production techniques is key to minimize waste generation and enhancing sustainability. This includes advocating for the use of innovative packaging solutions and adopting innovative approaches to manage reverse logistics like aggregating logistics partners through app-based or decentralized platforms streamlining operations and reducing environmental footprint.

2.4 Industry examples of Sustainable Practices in Manufacturing

a) Sustainable Product Design & Innovation:

Bharat Forge, a prominent manufacturer of Machinery and Automotive Components, is now prioritizing a systematic approach to develop lightweight automotive parts. This involves optimizing designs, analyzing material properties, employing various manufacturing processes and utilizing Computer-Aided Engineering (CAE) techniques. These efforts have led to the development of lighter and fuel-efficient vehicles, contributing to reduced carbon emissions.

b) Process Innovation for Sustainable Solutions:

Hindalco has installed windscreens of approximately 1,000m in the periphery of its Coal yard to contain the Coal Dust Emissions and to prevent them from spreading. The company has also installed a water tank to store blowdown water, which has high turbidity and it reuses this water in the sprinkler system. To further reduce the emissions generated while unloading the coal the company has installed a central sprinkler system with 78 nozzles.

c) Responsible Waste Disposal and Waste Management:

i. Kirloskar Oil Engines Ltd has installed a manufacturing plant unit that can convert 100kg of plastic waste into fuel, which has characteristics like those of diesel.

ii. Eaton India is recycling industrial water waste for reuse within its manufacturing plants and have reduced wastewater discharge to less than 2% for these plants

d) Circularity in the Value Chain:

I. Hindalco is setting up long-term contracts with Cement/Road Developers for bauxite residue as it can be used in road building.

ii. Tata Steel introduced a marketplace called 'FerroHaat' to procure steel scrap of good quality from small suppliers or vendors who do not have recycling facilities in their area/region to recycle scrap and reuse it for steel manufacturing.

3 POWER SECTOR LANDSCAPE OF INDIA: THE TRANSITION TOWARDS RENEWABLE ENERGY

3.1 India's Power Sector Stakeholders

I. **Ministry of Power (MoP):** The Ministry is primarily responsible for the development of electrical energy in the country. Main functions include planning, formulating policies, administration & enactment of legislation and bidding guidelines.

ii. **Ministry of New and Renewable Energy (MNRE):** The MNRE is the nodal Ministry of the Government for all matters relating to new and renewable energy.

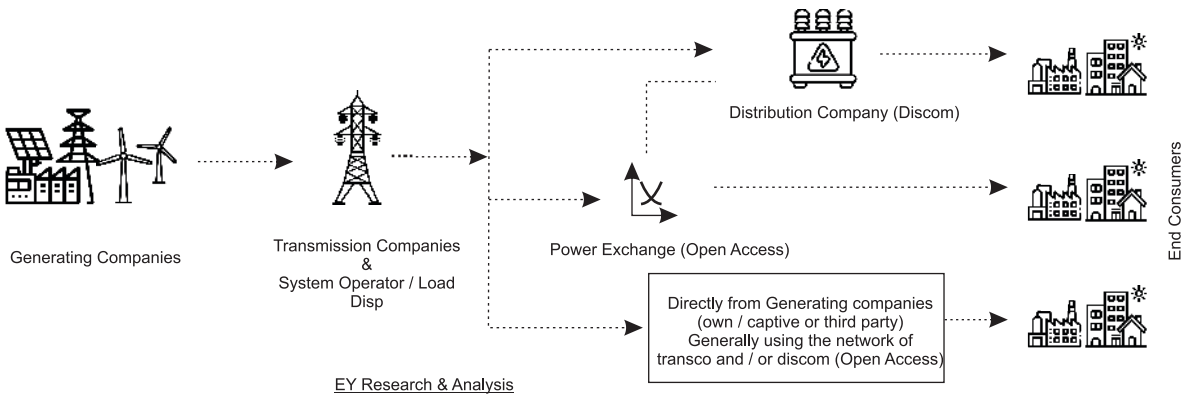
iii. **Central Electricity Authority (CEA):** CEA is a statutory body responsible for the technical coordination, standards and supervision of programs. Commission is also charged with responsibility of National Electricity Plan, Monitoring of projects, Maintaining Data & Statistics and release demand forecast.

iv. **Central Electricity Regulatory Commission (CERC):** The CERC is a statutory body responsible for regulating the tariff of generating stations (CGS), tariff on Inter-State Transmission System (ISTS) and adjudication of disputes etc.

v. **State Electricity Regulatory Commissions:** SERCs are statutory bodies responsible for determination of tariff and grant of license at state-level.

vi. **Generation Company:** Section 7 of the Electricity Act 2003 allows any company to establish, operate and maintain a Power generating station without obtaining a licence if it complies with the technical standards relating to connectivity with the grid. Subject to provisions of Electricity Act, the generating company can generate power based on contracts or independently.

Typical Flow of Power

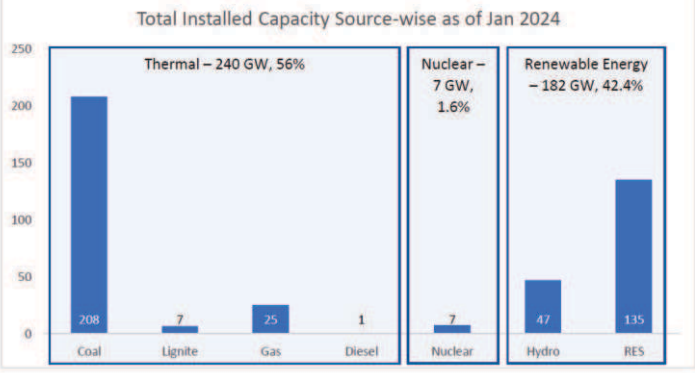


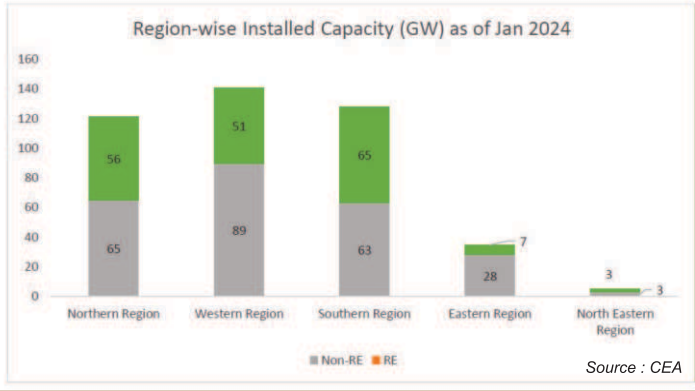
EY Research & Analysis

vii. **Transmission company:** Transmission sector in India is majorly owned by Central Transmission Utilities (CTU) and State Transmission Utilities (STU). However, private sector has also been allowed to participate in transmission sector facilitating bilateral and inter-regional exchanges etc. The transmission system is divided into five Regions i.e., Northern Region, Southern Region, Western Region, Eastern Region and North-Eastern Region

viii. **Distribution company:** The distribution company is involved in distributing electricity to consumers and oversees maintaining and building distribution network. Currently there are 62 Government DISCOMs and 14 Private DISCOMs

ix. **Grid Controller of India Limited (formerly POSOCO):** Load Dispatch Centre is a statutory autonomous body entrusted with the scheduling and accounting of power. They are responsible for maintaining grid stability and discipline. The National Load Despatch Centre (NLDC) and the five Regional Load Despatch Centres (RLDCs) of POSOCO are required to carry out the functions like monitoring of system parameters and security, ensuring the integrated operation of power system, daily scheduling, facilitating bilateral and inter-regional exchanges etc.





Source : CEA

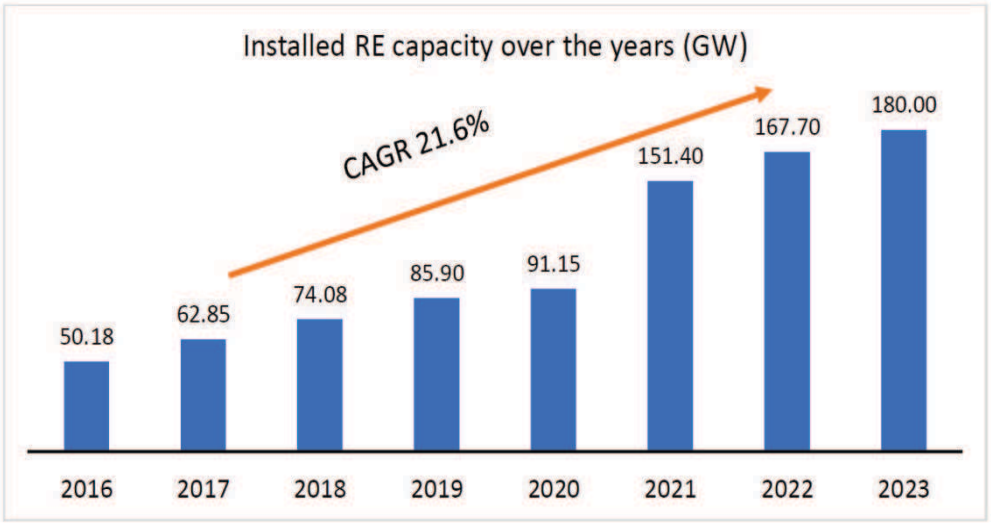
x. **Power Exchanges & Trading Companies:** A Trading Company facilitates transaction of power from surplus to deficit ones at power prices which are negotiable. Electricity Act 2003 has also recognised trading as a separate activity and is in sync with the overall framework of encouraging competition in all segments of the electricity industry.

Currently there are 3 power exchanges in the country where power trading takes place:
- Indian Energy Exchange (IEX)
- Power Exchange India Limited (PXIL)
- Hindustan Power Exchange (HPX)

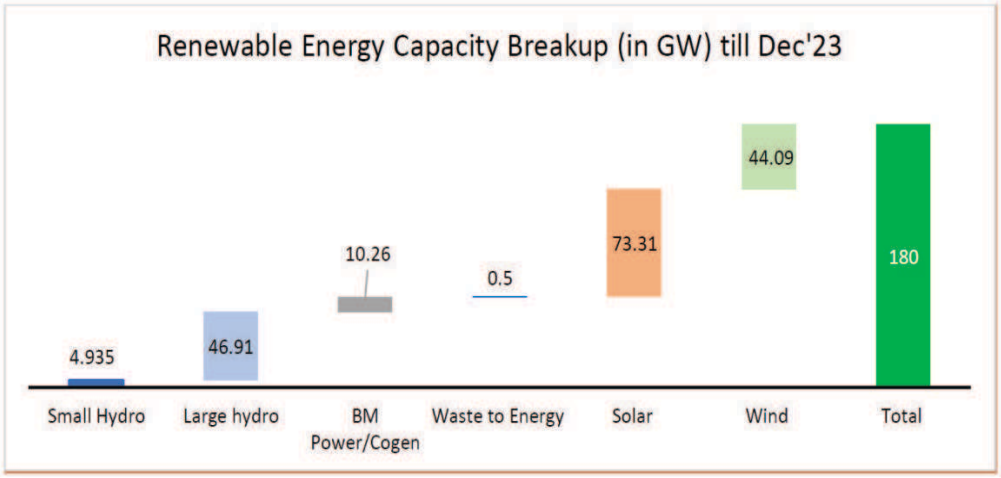
3.2 Overview of India's Renewable Energy Landscape

India has a total installed capacity of 430 GW, with Renewable Energy (RE) constituting 42% of the capacity mix. Most of the RE capacity is owned by private companies. Thermal power still leads the capacity mix, constituting 56%. Except the Southern Region, in most regions, non-RE capacity (including nuclear) exceeds the RE installed capacity.

India plans to achieve 500 GW by 2030 with a view to achieve 50% of its cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030.This would primarily be achieved by adding 50GW of renewable energy capacity via bidding process over the next 5 years which would be mix of Solar, Wind, Firm and Dispatchable Renewable Energy (FDRE) based tender. Additional capacities are also planned via Rooftop Solar, PM KUSUM Scheme as well as Open Access additions. RE transition is additionally driven by its ambition to achieve net zero by 2070.



Source: InvestIndia



Source: InvestIndia

3.3 Powering up with Renewables: The advantages for Indian industries

Tackling climate change and reducing carbon emissions are global imperatives that demand global attention. India, with its booming economy and expanding industries, plays an increasingly critical role in this global movement. The country has demonstrated robust commitment to renewable energy and its industrial sector has a unique opportunity to leverage these greener sources for immense benefits, from sustainability to financial savings and beyond.

a) **Sustainability and emission reduction:** Primarily, the adoption of renewable energy in industries helps substantially in reducing scope 2 GHG emissions. Transitioning towards these sources also reduces dependence on fossil fuels, contributing to the national effort to combat climate change. Renewable energy adoption is one of the quick fixes that industries can apply to reduce emissions.

b) **Reduced Energy Costs:** Renewable energy is most States is cheaper than grid electricity by 20% to 30%. The difference is even more for some States. Given that energy costs make up a considerable amount of the operating costs in most industries, this represents significant financial savings in the long run. The introduction of net-metering further benefits industries, as excess energy generated can be fed back to the grid, thereby reducing overall energy costs. Furthermore, group captive and third-party Power Purchase Agreements (PPAs) offer Commercial and Industrial (C&I) players various ways to access renewable energy. These models require lower upfront investment compared to traditional captive power generation. In the case of PPAs, there's no investment needed, making them a particularly attractive option.

c) **Energy Independence:** Investing in renewable energy can secure a company's energy requirements in the face of fluctuating electricity prices and disruptions in supply. Energy independence shields industries from the volatility of fossil fuel prices, ensuring uninterrupted operations and a consistent power supply. Moreover, decentralised renewable energy sources can be particularly beneficial in remote industrial areas where grid connectivity is inconsistent.

d) **Enhanced Corporate Reputation:** As environmental concerns rise to the forefront of the collective consciousness; businesses can enhance their corporate image and brand value by adopting clean energy solutions. Embracing renewables can underscore their commitment to sustainable practices, making them more attractive to environmentally conscious consumers and investors. Metrics on RE adoption are considered by rating agencies while calculating ESG scores for a company.

3.4 Roadblocks to Renewables: Addressing Challenges in India's Clean Energy Transition

Although India has committed itself to a major renewable energy expansion, it faces hurdles that could hamper its goals. These challenges are multifaceted, ranging from infrastructure constraints and financial quandaries. For India, the world's third-largest emitter of greenhouse gases, overcoming these obstacles is not just an environmental imperative but also an economic and social necessity.

a) **Infrastructure Limitations:** Renewable energy technology requires robust infrastructure for optimal functioning. Currently in India, inadequate transmission networks, outdated grid infrastructure and lack of ancillary services pose significant problems. The grid's capacity to accommodate renewable energy on a large scale without destabilizing power supply is a major concern. Furthermore, renewable sources such as wind and solar are location-specific, requiring extensive power lines and efficient storage facilities for effective distribution and utilization.

b) **Policy Inconsistencies:** A complex regulatory environment and inconsistencies in policy are notable challenges. A more centralized and transparent policy strategy could better serve India's renewable energy goals.

c) **Finance and Investment hurdles:** To reach net zero emissions by 2070, the International Energy Agency (IEA) estimates that $160 Billion per year is needed, on average, across India's energy economy between now and 2030. That is three times today's investment levels. Therefore, access of low-cost long-term capital is key to achieve net zero. The renewable industry largely depends on capital-intensive technologies, which intensifies the demand for access to affordable financing options. Additionally, fluctuating returns and the uncertainty associated with renewable energy off-take make it a risky investment proposition. High-interest rates, limited tenures of debt and stringent terms and conditions further discourage investors from committing to renewable energy projects.

d) **Challenges for MSMEs:** The Micro, Small and Medium Enterprises (MSMEs) sector in India faces significant challenges in adopting renewable energy sources. Despite the compelling economic case for transitioning to solar energy, MSMEs encounter obstacles such as limited financing options, stringent creditworthiness requirements and substantial initial capital investments. Concerns regarding Renewable Energy Service Companies (RESCOs), long-term business sustainability and collateral requirements further impede progress. Operational barriers, including the absence of quality control standards, limited consumer awareness, indifference from DISCOMs, Rooftop Space Scarcity and maintenance issues add complexity to the adoption process.

3.5 The Road Ahead: Overcoming barriers to accelerate india's renewable energy transition

a) **Financing Solutions:** Strategies must be developed for meeting ambitious power and renewable energy goals. Issues related to cost and duties need resolution through comprehensive policy changes and incentives. Traditionally, MSMEs have heavily relied on conventional energy resources, which come at a high cost and environmental damage. The MSME sector is one of India's largest energy consumers, accounting for approximately 20-25 percent of Industrial Energy Consumption. Financing solutions for Micro Small and Medium Enterprises (MSME) are essential to ensure RE adoption in the sector.

b) **Focus on energy storage solutions:** Energy storage systems play a pivotal role in enabling Round-the-Clock (RTC) clean power, serving as a crucial tool for effectively managing the variable nature of renewable energy generation. Backed by Battery Energy Storage Systems (BESS), RTC power is currently priced at approximately Rs 10/kWh, with projections indicating a significant reduction to nearly half, reaching Rs 5.1/kWh by FY32. The implementation of the Production Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC) batteries marks a strategic step forward in fostering the development of energy storage technologies and advancing India's renewable energy objectives.

c)**Improved Grid Infrastructure:** About a quarter of electricity generated undergoes loss during transmission due to outdated infrastructure utilized by India's discoms. This outdated infrastructure leads to line faults, leakages and the use of undersized and over-utilized transformers. An upgrade to the existing grid system is essential for handling the power load from renewable sources, necessitating an investment in smart grid technologies and robust energy storage systems.

d)**Business Roadmap:** Businesses should integrate a renewable energy roadmap within their business model. Environmental considerations must play significant role in their strategy to ensure sustainable practices.

e)**Building Designs:** Encouraging the integration of renewable energy systems into the construction of new buildings or the retrofitting of existing buildings can amplify green energy adoption in the commercial and residential spaces.

f) **Public-Private Partnerships:** Collaborations between Government bodies and private industries can facilitate the sharing of resources, encouraging renewable energy adoption on a broader scale.

3.6 Green Champions: Indian companies leading the way in renewable energy

a) **Tata Steel** planned several initiatives to reduce Scope 1 and 2 greenhouse gases (GHG) emissions by utilizing solar energy as a primary source for electricity needs of their manufacturing plants. Also, the company is executing a trial initiative to replace coal consumption with hydrogen gas in the steel manufacturing process. It aims to help the company in improving on various Key Performance Indicators (KPIs) such as CO2 emission intensity (tCO2/tcs), dust emission intensity (kg/tcs) and support in achieving the overall vision of being net zero by 2030.

b) **Wipro** has set the target to achieve net-zero emissions by 2040. To reach this goal, Wipro aims for a 55% reduction in GHG emissions by 2030 compared to its 2016-17 levels. Wipro also has the target to source 100% renewable energy by 2030. To achieve this goal, Wipro must nearly double its renewable energy consumption in the next eight years. Despite these obstacles, Wipro has implemented green building design principles and as a result, Wipro's renewable energy consumption has nearly doubled since 2017, reaching around 55% in 2022.

4 ENHANCING WATER USE EFFICIENCY

Water is a vital resource for sustaining life and supporting economic activities. With a population of over 1.3 billion, India faces significant challenges in managing its water resources effectively. The country's water management landscape is complex, encompassing issues such as groundwater depletion, uneven distribution of water resources, pollution of water bodies and climate change.

4.1 Challenges in India's Water Landscape:

- **Groundwater depletion:** Overexploitation of groundwater resources, particularly in agricultural regions, has led to depletion and declining water tables.
- **Uneven distribution:** Despite abundant rainfall in some regions, water scarcity persists due to inadequate infrastructure for storage and distribution.
- **Pollution:** Industrial discharge, agricultural runoff and untreated sewage have polluted rivers and groundwater sources, compromising water quality.
- **Climate Change:** Erratic monsoon patterns, increasing temperatures and extreme weather events deepen water stress and contribute to droughts and floods.

4.2 Combating Water Challenges: A multifaceted approach

Addressing India's water challenges requires a multifaceted approach involving:

- **Conservation and Management**: Implementing sustainable water management practices, including rainwater harvesting, watershed management and water-use efficiency measures.
- **Policy Reforms**: Strengthening water governance, enacting stringent regulations and promoting integrated water resource management to ensure equitable distribution and sustainable utilization.
- **Community Participation**: Involving local communities in water management initiatives, raising awareness about water conservation and promoting community-based water resource management.
- **Technological Innovation**: Leveraging technology for efficient water monitoring, wastewater treatment and irrigation practices to optimize water use and minimize wastage.

4.3 Taking Charge of our water: Solutions for sustainable water management in India

To ensure sustainable water management in India, the following solutions are recommended:

- **Mandating water footprint labels:** Implementing a policy to mandate water footprint labels on consumer goods can raise awareness among consumers about the water used in production processes, encouraging responsible consumption habits.
- **Decentralized wastewater management:** Promoting decentralized wastewater treatment systems at the community level can reduce the burden on centralized treatment plants and ensure efficient management of wastewater, leading to water reuse and conservation.
- **Data-driven Governance:** Empowering local Governments with accurate water consumption data, including pricing and smart metering data, can enable informed decision-making and efficient allocation of water resources based on surface and groundwater availability.
- **Community Awareness Programs:** Conducting awareness campaigns and educational programs on water management at the grassroots level can empower communities to adopt sustainable water practices and reduce wastage.
- **Recycled Water Mandate:** Enforcing policies mandating a certain percentage of recycled water in freshwater consumption can promote equitable access to water resources and alleviate pressure on diminishing freshwater sources.
- **Circular Economy Approach:** Revising the Zero-Discharge Policy and promoting circularity in water management by reusing and recycling wastewater can minimize pollution and maximize resource efficiency.
- **Water-efficient fittings:** Encouraging the adoption of water-efficient fittings and appliances in Households, Industries and commercial establishments can significantly reduce water consumption without compromising functionality.
- **Urban Planning Reforms:** Integrating water-sensitive urban planning practices and training urban planners in sustainable water management techniques can mitigate urban water challenges and enhance resilience to climate change impacts.
- **Water metering in buildings:** Mandating the installation of water meters in buildings can enable monitoring of water consumption, incentivize conservation efforts and facilitate accurate billing based on usage.

Confederation of Indian Industry

- **Consumption-based Pricing:** Implementing a tiered water pricing system based on consumption levels can incentivize water conservation and discourage wastage.
- **Industry incentives:** Providing incentives to Industries that adopt water-efficient technologies and practices can promote sustainable production processes and enhance profitability while reducing water consumption.
- **Smart Farming Practices:** Promoting smart farming practices, including low-cost techniques and training farmers in efficient water management methods, can optimize agricultural water use and improve crop yields.
- **Food Conservation Initiatives:** Encouraging food conservation measures such as improving Cold Chain Infrastructure and implementing efficient food processing practices can minimize water wastage associated with food production and distribution.
- **Government intervention for Farmers:** Introducing policies and programs, including financial assistance and technological support, to encourage marginal farmers to adopt water-saving technologies and sustainable farming practices can enhance water efficiency in agriculture.
- **Water Availability Mapping**: Leveraging technology to map water availability, flow patterns and developing strategies to store water underground can enhance water security & resilience to droughts and climate variability.
- **Product Water Consumption Data:** Providing consumers with information on the specific water consumption associated with each product can empower them to make informed choices, incentivizing companies to adopt water-efficient production methods. By implementing these approaches and solutions, India can effectively address its water management crisis, ensure sustainable utilization of water resources and secure water availability for future generations.

4.4 Beyond Funding: Exploring the World Bank's Multifaceted Approach to India's Water Challenges

India, with 18% of the world's population but only 4% of its water resources, faces significant water stress, exacerbated by an erratic monsoon and climate change. The World Bank is actively engaged in various initiatives across the country to tackle these challenges and improve water resource management. Here are some key interventions:

I. Groundwater Conservation:

a) The World Bank supports the Atal Bhujal Yojana, the world's largest community-led groundwater management program, promoting sustainable groundwater management practices.

b) In Punjab, the "Paani Bachao, Paisa Kamao" scheme incentivizes farmers to reduce groundwater usage, resulting in significant water savings.

II. Rural Water Supply:

a) Projects like the Uttarakhand Rural Water Supply and Sanitation Project and Jalanidhi I & II in Kerala have improved access to clean drinking water in rural areas, benefiting millions.

b) In Uttarakhand, infrastructure and institutional capacity building have enhanced resilience to natural disasters.

III. Urban Water Supply:

a) In Karnataka, the Karnataka Water Supply Improvement Project demonstrates the feasibility of 24/7 water supply in urban areas, ensuring affordability and sustainability.

b) Projects similar in Shimla and Punjab are aimed at transitioning to surface water sources and ensuring uninterrupted water supply to urban communities.

c) Tamil Nadu Climate Resilient Urban development program is a world bank approved initiative to strengthen urban management and improve access to efficient and climate resilient urban water and sanitation services for approximately 2 million people in Tamil Nadu.

IV. Wastewater Recycling:

Chennai's Wastewater Recycling initiative, supported by the World Bank, enables the city to meet industrial water needs sustainably, reducing reliance on freshwater sources.

V. Ganga Rejuvenation:

World Bank projects worth $1 Billion are aiding the Government of India's efforts to clean the Ganga River, including Sewage Treatment Plant construction and pollution abatement measures.

The World Bank's initiatives in India's water sector address critical challenges, from groundwater depletion to urban water supply and disaster management. By promoting sustainable practices and enhancing resilience, these efforts contribute to safeguarding water resources for present and future generations.

VI. Nadanthai Vazhai Cauvery Scheme

Nadanthai Vazhai Cauvery scheme in Tamil Nadu is a project proposed by the TN State Government for the conservation & rejuvenation of Cauvery river. National River Conservation directorate has approved INR 934.3 Crore for first phase.

The components of this scheme include sewage management, people participation awareness creation, river front development & water monitoring etc.

5 CLEARING THE AIR: STRATEGIES TO COMBAT AIR POLLUTION IN INDIA

5.1 India's Air Quality Crisis: A Look at the numbers

India faces significant challenges with air pollution, being the world's second most polluted country. Fine particulate air pollution (PM2.5) in India shortens the average life expectancy by 5.3 years

Air pollution contributes to around 2 Million premature deaths annually in India, with emissions from vehicles and industries being major sources.

In 2019, 1.67 Million deaths in India were attributed to air pollution, representing 17.8% of total deaths in the country.

The health impacts of pollution also represent a heavy cost to the economy. Lost output from premature deaths and morbidity attributable to air pollution accounted for economic losses of $28.8 Billion and $8 Billion, respectively, in India in 2019. This total loss of $36.8 Billion was 1.36% of India's gross domestic product (GDP)

5.2 Sources of Air Pollution:

The sources of air pollution in India are diverse and include both natural and anthropogenic origins. Specifically, Vehicular Emissions, Industries, Road Dust, Plastic Industry, Domestic Waste Burning, Food Processing Factories, Diesel Generators, Coal-Based Industrial Emissions, Oil Refinery Emissions, Thermal Power Plants, Open Burning and Landfill Fires of Municipal Solid Waste are significant contributors to air pollution in various Indian cities.

The following table depicts the classification of pollution according to different sources:

Source of Air Pollution	% Contribution to Air Pollution	Components
Dust & Construction	45%	Construction dust, which includes substances like Silica Dust from materials containing silica such as concrete and sandstone, is a major source of airborne Particulate Matter that affects the surrounding environment and population.
Waste Burning	17%	This practice adds to the emissions of pollutants like particulate matter and other harmful substances, exacerbating air quality challenges in India.
Transport	14%	The transport sector in India is estimated to emit about 15% of CO2 emissions, highlighting its impact on air quality and climate change. Vehicle transport is a key source of air pollution and greenhouse gas emissions in Indian cities.
Diesel Generator	9%	Diesel exhaust contains over 40 toxic air contaminants, including cancer causing substances like Benzene and Arsenic. Compared to gasoline engines, diesel engines produce more pollutants, impacting air quality and health.
Industries	8%	The sector releases various pollutants into the atmosphere, including Nitrogen Oxides (NOx), Sulfur Dioxide (SO2), Particulate Matter (PM 2.5) and Carbon Dioxide (CO2).
Domestic Cooking/ Household Emissions	7%	Indirectly, household emissions contribute to about 24% of ambient air pollution exposure in the country with coal combustion being a notable contributor.

State-wise Trends:
According to the WHO, India has 14 out of the 15 most polluted cities in the world in terms of PM 2.5 concentrations. (PM 2.5 is a term that refers to fine inhalable particles that have a diameter of less than 2.5 Micrometres).

The following cities in India are with the highest level of PM 2.5:

Cities	PM2.5 Levels
Delhi	153
Patna	149
Gwalior	144
Raipur	134
Ahmedabad	100
Lucknow	96
Firozabad	96
Kanpur	93
Amritsar	92
Ludhiana	91
Prayagraj	88
Agra	88
Khanna	88

5.3 Initiatives taken by the Government of India:

The Swachh Bharat Abhiyan advocates for citizens to embrace cleanliness practices and responsible waste disposal, leading to a notable decrease in waste incineration.

The 'Smart Cities Initiative' guarantees urban planning, construction of energy-efficient housing and the establishment of a robust public transportation network, all of which prioritize environmental sustainability.

Pradhan Mantri Ujjwala Yojana (PMUY) launched in 2016 provide clean and safe LPG connections to women belonging to Below Poverty Line (BPL) families.

Smoke-free legislation to reduce exposure to second-hand smoke is already in place in India viz. Cigarette and other Tobacco Products Act, 2003. India is also a signatory to the WHO Framework Convention on Tobacco Control, 2004.

5.4 Taking Action: Solutions and Approaches to combat air pollution

The Government of India's *National Clean Air Programme (NCAP)* is a proactive step in acknowledging and resolving the problem of deteriorating ambient air quality. The NCAP has set a time-bound goal for improving air quality across the country, with a focus on around 132 "Non-Attainment" cities where air pollution standards are not being met. The NCAP provides cities an overall framework for developing air quality management plans, with guidance on policies across a range of sectors.

a) Encouraging Public Transportation

Utilizing public transportation significantly diminishes CO_2 emissions from vehicles, thereby reducing air pollution. Public transit, when compared to solo driving, slashes CO_2 emissions by 45%, leading to a decrease in atmospheric pollutants and an enhancement in air quality. It is imperative for the Government to prioritize initiatives such as encouraging tourism and commuting through public transport options like trains and metros. By advocating for increased utilization of public transportation, cities can effectively lower air pollution levels, alleviate congestion and create a more environmentally sustainable urban environment.

b) Use of Electric Vehicles

Electric cars are recognized for their favourable influence on urban air quality due to their absence of air pollutant emissions and their ability to minimize fuel consumption. Furthermore, although there are emissions associated with generating electricity for electric vehicles, these levels are significantly lower compared to the pollution from conventional vehicles. Consequently, electric vehicles emerge as a pivotal solution in the endeavor to curtail carbon pollution.

c) Use of bio-charcoal

Biochar, a versatile material, demonstrates remarkable efficacy in the removal of various air pollutants such as metal vapours, acidic gases, ozone and other contaminants. Its unique properties make it an ideal medium for air pollution control systems, offering a sustainable solution to enhance air quality.

d) Improved Monitoring and Pollution Forecasting Technologies

India is working on better monitoring and pollution forecasting technologies to help identify areas with high pollution levels and implement targeted measures to reduce emissions.

e) Incentivize shift to higher vehicle emissions standards

Encouraging the use of vehicles with higher emissions standards can help reduce the overall level of air pollution.

5.5 Success Stories: How industries are taking action on air quality

a) **Emission Reduction Targets:** Twenty-four leading Private Companies in India, including Tata, Reliance, Mahindra, ITC, ACC, Adani and Dalmia Cement have voluntarily committed to transitioning towards carbon neutrality and net zero emission objectives. These companies have aligned their initiatives with India's commitments under the Paris Agreement and have outlined precise mitigation strategies to attain these objectives. These measures include promoting renewable energy, improving energy efficiency, implementing water-efficient processes, encouraging green mobility, fostering afforestation and enhancing waste management and recycling practices.

b) **Scope 3 Emissions Reduction**: Indian companies are focusing on reducing Scope 3 emissions, which include emissions from sources not owned or controlled by the reporting organization but are related to its activities. Companies like Infosys and ITC are actively working on reducing their Scope 3 emissions through strategies like promoting carpooling, public transport use, Electric Vehicles (EVs), renewable energy adoption and optimizing business travel. These efforts aim to address challenges in collecting accurate data on Scope 3 emissions and involve various functions within the companies to measure progress and reduce emissions effectively.

6 ACHIEVING ZERO WASTE GOALS IN INDIA

6.1 Waste Management in the Indian Context

- A report from Energy and Resources Institute (TERI), India generates over **62 Million Tonnes (MT).**
- The Indian Central Pollution Control Board (CPCB) recently projected that annual waste generation in India will increase to **165 MT by 2030.**
- The Solid Waste Management sector in India is expected to grow at a CAGR of 7.5% from 2021-2026 due to factors like Urbanization and Government initiatives like the Swachh Bharat Abhiyan
- By 2025, the waste management market in India is projected to be worth around **$ 15 Billion**, with an annual growth rate of about **7%.**

Classification of Waste Categories:

Type of Waste	Hazardous Waste	Plastic Waste	E-Waste	Bio-Medical Waste
Quantity Generated	7.9 Million Tonnes	5.6 Million Tonnes	1.5 Million Tonnes	0.17 Million Tonnes

Waste Treatment:

Treatment	Collected	Treated	Discarded in wasteyard
Quantity	43 Million Tonnes	12 Million Tonnes	31 Million Tonnes

6.2 Sources of Waste Generation

Type	Source	Contents
Commercial Waste	Commerce Or Commercial Enterprises	Food, Disposable Medical Products, Textiles, Garbage and Waste from Restaurants, Hotels, Market or Offices
Household Waste	Home (can be Organic/Inorganic)	Food, Plastic, Cardboard, Rubber, Metal, Paper, Wood, Materials, Chemicals, Food Waste generated at home (organic), Batteries, Electronics and Metals
Medical Waste	Hospitals, Clinics, Operating Rooms, Veterinary Hospitals and Laboratories	Surgical Supplies, Medicines, Blood, Body Parts, Wound Dressings, Needles and Syringes
Agricultural Waste	Agricultural Activities such as Horticulture, Livestock, Vegetable Fields, Farming	Waste from Slaughterhouses, Poultry Farms, Feedlots, Vineyards, Dairy Farms and Agricultural Farms, Empty Pesticide Containers, Old Silage Packages
Industrial Waste	Manufacturing and Processing Industries Such as Chemical Plants, Cement Factories, Power Plants, Textile Industries, Food Processing Industries and Petroleum Industries	Metals, Chemicals, Plastics, Demolition Materials, Medical Waste, Ash, Packaging and other hazardous materials. Industrial sludge contains toxins that are harmful to the environment.
Electronic Waste	Government, Public and various sectors like Appliances and White Goods	Appliances such as Refrigerators, Washing Machines, Dryers, Air Conditioners and other Electronic Devices
Chemical Waste	Industry, Farms, Commercial Enterprises and Housing	Cleaners and Coolants, Toxic Chemicals
Mining Waste	Mining activities	Mine Debris (waste left over after ore is extracted from rock) and Harmful Gases released by blasting
Radioactive Waste	Nuclear Reactors, extraction of Radioactive Materials and Atomic Explosions	**Low Level Waste** includes contaminated process equipment, protective clothing, used filter cartridges, concentrated precipitates and sludges from low-level liquid waste treatment plants. **Intermediate-Level Waste** consists of materials with intermediate levels of radioactivity, such as fuel cladding and radioactive components from decommissioned facilities. High Level Waste is the most radioactive waste, consisting of spent nuclear fuel and the products of the reprocessing of spent fuel

6.3 India's Mounting Waste Crisis: Challenges in Effective Management

a) Inadequate Garbage Collection Infrastructure:
India lacks sufficient infrastructure for garbage collection, leading to difficulties in handling the significant amount of waste generated annually.

b) Rapid Urbanization and Growing Population:
With over 377 Million urban residents generating around 62 Million Tonnes of municipal solid waste annually, the demand for effective waste management is enormous. However, the current system is inefficient, resulting in improper disposal, haphazard dumping and limited recycling.

c) E-Waste Management:
E-waste is a growing concern in India, with projections showing an average yearly increase of 10% in e-waste generation. Proper management of electronic waste is crucial due to its toxic components and potential for resource.

d) Lack of Recycling Infrastructure:
Only about 30% of waste in India is properly sorted for recycling, highlighting the need for improved recycling infrastructure and practices to reduce the amount of waste ending up in landfills.

e) Informal sector challenges:
The informal sector plays a significant role in extracting Value from Waste, but challenges remain in integrating informal waste pickers into the formal waste management system to provide better income opportunities.

f) Lack of Awareness and Enforcement:
Despite regulations like the Solid Waste Management Rules of 2016 making waste segregation mandatory for all waste generators, poor implementation and lack of awareness hinder effective waste management practices in the country.

6.4 From Segregation to Sustainability: A Roadmap for Effective Waste Management in India

Collaboration and tailored innovations are crucial for waste management, addressing challenges like low awareness and regulatory barriers and fostering a unified effort toward sustainable practices and a circular economy. Some of the recommendations are mentioned below:

a) Smart Waste Bins & Command Centre
Smart Recycling Bins, also known as Smart Waste Bins, represent innovative waste management solutions incorporating sensors, connectivity features and data analytics capabilities to improve recycling endeavors and waste management efficiency. These bins utilize sensors and cameras to detect fill levels, identify types of waste and determine location, transmitting this data wirelessly for real-time communication. While these bins contribute to effective waste management, a significant challenge remains in converting waste into usable manure for targeted applications.

b) Establishment of Micro, Small and Medium Enterprises (MSMEs)
The Government of India's MSME website emphasizes the significance of waste minimization and clean technology adoption among MSMEs. This involves implementing strategies for waste reduction, utilizing eco-friendly materials and embracing clean technologies to mitigate waste. MSMEs have achieved an 8% reduction in waste. The current scenario underscores the necessity for a broader Green Workforce driven by MSMEs, particularly with 95% of E-Waste being recycled by the unorganized sector.

c) Technology adoption and avoiding discontinuity
Machine learning and computer vision: These technologies are being integrated into smart waste bins to improve waste management efficiency.

Automated Route Optimization: IoT applications in waste management is automated route optimization for garbage pickup trucks, improving operational efficiency and reducing unnecessary expenses.

E-waste Kiosks: These kiosks facilitate the collection and recycling of electronic waste, promoting responsible disposal practices and preventing environmental pollution. Continuous adherence to technological implementations is required for successful waste handling.

d) Water Conservation Measures:
Recycling Water: Wastewater recycling initiatives play a vital role in conserving water resources by reusing treated wastewater for non-potable purposes, reducing the overall demand for freshwater. This emphasizes the need for self-awareness and ethical practices in water usage.

e) Empowering a Responsible Future: A Communication campaign for smart waste management
The recommendation involves launching a communication campaign with experts aimed at educating and raising awareness about waste management practices. It emphasizes the crucial role of instilling ethical values in individuals and promoting recycling methodologies.

f) Industry and Medical waste management
Addressing industry and medical waste, particularly the substantial volume of textile waste amounting to 2000 Tonnes daily and the challenge of electronic waste urban mining, presents significant challenges. To tackle these issues, digital innovation solutions such as website integration for tracking waste production and utilization are proposed. Additionally, effective medical waste management strategies must be implemented to ensure the safe and proper disposal of waste generated in healthcare settings, thereby mitigating environmental and public health risks.

g) Waste Reduction in Supply Chain
Proposes the implementation of waste audit throughout the supply chain to ensure responsible waste management at all stages. This also encourages big companies to set examples and collaborate with MSMEs for waste reduction.

h) GPS Tracking for Waste Vehicles
GPS tracking systems enable real-time monitoring of waste vehicles, allowing for efficient route planning and optimization to enhance operational efficiency.

I) Triple-A Approach
Advocates a comprehensive approach of: Awareness, Action and Advocacy. It stresses the importance of identifying industry waste data and proposing resolutions for effective waste management.

6.5 Leading the Way: Best Practices in Waste Management

I. Sustainable Waste Management in Indore
Indore has emerged as a model for sustainable waste management practices. Over the past few years, the city has consistently ranked as the cleanest city in India, pertaining to the efficient waste management system put in place by the municipal corporation.

Indore has a population of over 3.2 Million and generates around 1,100 Metric Tonnes of waste daily. Prior to 2016, the city struggled with waste management, leading to unhygienic conditions, increased pollution and adverse effects on public health. The launch of the Swachh Bharat (Clean India) campaign in 2014 led the Indore Municipal Corporation (IMC) to undertake a comprehensive transformation of its waste management system.

II. Past Challenges in Waste Management in Indore

Lack of waste segregation at the source

Indore faced issues with mixed waste, which hindered the recycling and disposal process. This unsegregated waste resulted in inefficient waste collection and processing, causing further strain on the waste management system.

Inefficient waste collection and transportation system

With limited resources and vehicles, the city's waste collection and transportation system could not keep up with the growing population and waste generation.

Open dumping and burning of waste

The absence of adequate waste processing facilities led to the practice of open dumping and burning of waste, which contributed to air and land pollution.

Inadequate public awareness and participation

Citizens were not fully aware of the importance of waste segregation, recycling and proper disposal, resulting in low participation rates and disregard for waste management rules.

Limited infrastructure for waste processing and disposal

The city's waste processing and disposal infrastructure was unable to cope with the increasing waste generation, leading to unmanaged landfills and environmental degradation.

III. Solutions Implemented

Segregation at the Source: The Indore Municipal Corporation (IMC) implemented a mandatory waste segregation policy, requiring households to separate waste into wet (biodegradable) and dry (recyclable) categories. This allowed for more efficient waste collection and processing, as well as increased recycling rates

Door-to-door waste collection: A fleet of over 600 GPS-enabled vehicles were deployed to collect segregated waste daily from all households and commercial establishments. This ensured timely and efficient waste collection, preventing littering and illegal dumping.

Waste processing and disposal: The city established a state-of-the-art waste processing facility capable of handling 1,000 Metric Tonnes of waste daily, including a 15 MW waste-to-energy plant and a 200 TPD (Tonnes per day) composting plant. These facilities enabled the city to process and dispose of waste more effectively, reducing the environmental impact of waste disposal.

Public awareness and participation: The IMC launched numerous awareness campaigns, involving local celebrities, schools and religious institutions, to educate the public on the importance of waste segregation and cleanliness. This resulted in increased community involvement and support for the waste management program.

Strict monitoring and enforcement: Regular inspections, fines and incentives were introduced to ensure compliance with waste management rules. This helped maintain the cleanliness of the city and encouraged citizens to adhere to waste segregation and disposal guidelines.

IV. Benefits Achieved

Waste segregation: Over 90% of households in Indore now segregate their waste, significantly improving the efficiency of waste collection and processing and reducing the burden on landfills.

Waste processing: The city's waste processing facility successfully manages 1,000 Metric Tonnes of waste daily, with a 95% waste recovery rate. This has led to a substantial reduction in landfill usage and has minimized the environmental impact of waste disposal.

Cleanliness: Indore has consistently ranked as the cleanest city in India in the annual Swachh Survekshan survey since 2017. This highlights the success of the city's waste management system and the active participation of its residents in maintaining cleanliness.

Health and environment: Cases of vector-borne diseases have dropped by 60% since the implementation of the waste management system and air quality has improved due to reduced open burning of waste. This has led to a healthier environment and improved overall quality of life for Indore's residents.

7 REVITALIZING BIODIVERSITY

7.1 Biodiversity in the Indian Context

- India is renowned for its rich biodiversity, with nearly 7-8% of the world's recorded species found in the country.
- India is considered a Mega-Diverse Nation, hosting 4 of the 34 globally identified biodiversity hotspots, including the Himalaya, Indo-Burma, Western Ghats and Sri Lanka-Sundaland regions.
- India is home to a vast array of flora and fauna, with 16 types of forests, 15,000 species of flowering plants, 2546 species of fishes, 423 species of mammals, 1331 species of birds and 408 species of reptiles.
- India's biodiversity includes unique endemic species like the Nilgiri Tahr, Wild Ass, Lion-tailed Macaque and various endemic birds, reptiles and amphibians.

The United Nations Biodiversity Conference in Montreal, Canada (2022) emphasized the significance of this biological wealth. In the same conference, 188 country representatives adopted an agreement to "halt and reverse" biodiversity loss by conserving 30% of the world's land and 30% of the world's oceans by 2030, known as the 30×30 pledge.

However, India faces challenges as 929 animal species are currently threatened in the country due to factors like habitat loss and unplanned development.

The country currently hosts 17% of the planet's human population and 17% of the global area in biodiversity hotspots, placing it at the helm to guide the planet in becoming biodiversity champions. To achieve the 30% goal, India needs to have biodiversity friendly management.

7.2 Challenges in Biodiversity Conservation

a) **Habitat Loss and Fragmentation:** Human activities such as deforestation, agriculture, urbanization and infrastructure development are leading to the loss and fragmentation of natural habitats, making it difficult for many species to survive and reproduce.

b) **Climate Change:** Rising temperatures, changing rainfall patterns and extreme weather events are affecting ecosystems and altering the distribution and behaviour of many species.

c) **Invasive Species:** Non-native species introduced by humans can compete with and displace native species, disrupt ecosystem functioning and spread diseases.

d) Overexploitation: Unsustainable use of natural resources such as overfishing, hunting and harvesting of timber and other forest products can lead to the decline or extinction of species.

e) Pollution: Contamination of air, water and soil with chemicals and waste products can harm wildlife and their habitats. For example: pollutants such as sulphur can lead to excess levels of acid in lakes and streams and damage trees and forest soils; atmospheric nitrogen can reduce the biodiversity of plant communities and harm fish and other aquatic life; ozone damages tree leaves and negatively affects scenic vistas in protected natural areas.

f) Lack of Awareness and Appreciation: People are not aware of the importance of biodiversity and the role it plays in supporting human well-being, leading to insufficient public support and funding for conservation efforts.

g) Poverty and Inequality: Poverty can drive people to rely on natural resources for their livelihoods, leading to overexploitation and habitat destruction. Lack of access to education and economic opportunities can also contribute to biodiversity loss.

7.3 Policy to Preservation: Government strategies for Biodiversity Conservation

a) Green Growth Priority in Budget 2023: The Union Budget 2023 mentioned Green Growth as one of the seven priorities or Saptarishis. These green growth efforts will help in reducing carbon intensity of the economy and provide for large-scale green job opportunities.

b) National Mission for a Green India: The National Mission for Green India (GIM) is one of the eight Missions outlined under the National Action Plan on Climate Change (NAPCC). It aims at protecting, restoring and enhancing India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

c) Green Credit Programme: It has the objective to incentivize environmentally sustainable and responsive actions by companies, individuals and local bodies

d) MISHTI Initiative: The Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) is particularly significant because of the extraordinary importance of mangroves and coastal ecosystems in mitigating climate change.

e) PM-PRANAM: Launched to promote the balanced use of chemical and alternative fertilisers and generating awareness of regenerative agriculture.

f) Amrit Dharohar scheme: The Amrit Dharohar scheme is expected to encourage optimal use of wetlands and enhance biodiversity, carbon stock, eco-tourism opportunities and income generation for local communities.

7.4 Investing in our Planet: Solutions and Approaches for a Biodiverse Future

a) Data-Driven Monitoring Program

A science-based and inclusive monitoring programme is critical not only for the success of the biodiversity conservation related steps taken but also for documentation and distillation of lessons learnt for replication, nationally as well as globally. Some examples of science-based monitoring programs for biodiversity conservation include: The Global Biodiversity Information Facility (GBIF), The Living Planet Index, The National Biodiversity Network (NBN), etc.

b) Promoting sustainable bioeconomy through holistic ecosystem valuation
Utilizing modern sustainability concepts and ecosystem valuation methods in new missions and programs are essential. These approaches should encompass ecological, cultural and sociological dimensions of biological wealth. Achieving a sustainable bioeconomy requires delineating clear system boundaries, prioritizing benefits for resource providers and establishing value through service-based funds, rather than solely emphasizing the flow of goods.

c) Preserving Wetland Ecosystems
The future of our wetland ecosystems will depend on how we are able to sustain ecological flows through reduction in water use in key sectors such as agriculture by encouraging changes to less-water intensive crops such as millets as well as investments in water recycling in urban areas using a combination of grey and blue-green infrastructure.

d) Focusing on Ecological Restoration
In the context of the Green India Mission, we suggest the emphasis should be on ecological restoration rather than solely tree plantation efforts. Site selection is crucial, aiming to boost ecological connectivity within landscapes that are often fragmented by linear infrastructure. Additionally, decisions regarding species selection and planting density should be guided by comprehensive knowledge and evidence, particularly regarding resilience in the face of climate change. Evaluating synergies and trade-offs concerning hydrologic services is equally important in this regard.

e) Enhancing Mangrove Initiatives: Emphasizing Biodiversity and Coastal Ecosystem Integrity
Careful consideration should be given to site selection for the mangrove initiative, placing a stronger emphasis on the diversity of mangrove species. It is essential to maintain the integrity of coastal mudflats and salt pans themselves, as they play a crucial role in supporting biodiversity.

f) Local Community Engagement
Efforts aimed at biodiversity conservation must prioritize the inclusion of local and nomadic communities residing in the areas where these initiatives will be implemented. It is crucial to integrate the traditional knowledge and practices of these communities into the implementation plans to ensure their effectiveness. By leveraging the latest scientific and ecological knowledge, each of these programmes have the potential to significantly enhance the state of biodiversity.

g) Seeding Innovation: Funding for Education and Research
To ensure that India's rich biological wealth is thoroughly evaluated and brought to the forefront of public awareness, each program should allocate significant funding for education and research. An agreement has already been reached among the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC) and the Government is expected to promptly launch the National Mission on Biodiversity and Human Wellbeing. This mission aims to leverage interdisciplinary knowledge to green India's economy, restore and enhance natural capital for the benefit of its people and establish India as a global leader in applied biodiversity science.

h) Encouraged community participation and support for biodiversity initiatives.
Initiating dialogues on collective well-being among co-habitats and integrating creative solutions through accessible platform such as mobile biodiversity.

7.5 Industry Champions: Examples of Businesses Leading the Way in Biodiversity Conservation

a) Habitat Restoration and Management:

ITC's Bhadrachalam Sanctuary Project: ITC has collaborated with the Government of Telangana to restore over 50,000 hectares of degraded forest land in the Bhadrachalam Sanctuary, creating corridors for wildlife movement and improving habitat quality.

The Mahindra Group's Nature Conservation Initiative: Mahindra has undertaken various projects across India, including restoring native tree species in the Aravalli Hills and creating wildlife corridors near their manufacturing facilities.

b) Species Conservation Programs:
Nestle's Project Gaitonde: In collaboration with the Wildlife Trust of India, Nestle India supports the conservation of the endangered Great Indian Bustard through habitat improvement and community awareness programs.

Dabur's Amur Falcon Conservation Project: Dabur works with the Wildlife Conservation Society India to protect the Amur Falcon, a migratory raptor species, during its stopover in Nagaland.

CONCLUSION

The importance of a circular economy in addressing pressing resource limitations and waste management challenges is evident. It is clear that sustainability and circularity principles can significantly minimize waste in manufacturing and enhance overall resource efficiency.

A myriad of strategies towards achieving success in a circular economy have been proposed, underscoring the importance of advanced technology, innovative business models and grassroots level actions.

Furthermore, the necessity of sustainable water management is emphasized, outlining strategies necessitating community involvement, data governance and a circular approach. With sustainability on the horizon, these strategies provide a robust roadmap, paving the way for a more efficient future circular economy.

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SESSIONS of DAY 2

03 February 2024
Madras Regimental Centre
Wellington

TRACK - III

Strategic Symphony: Navigating De-Globalisation, Geo-Politics, and Synergies in Defence

Stanly Johny
International Affairs Editor
The Hindu

Lt Gen Karanbir Singh Brar, AVSM
General Officer Commanding (GoC)
Dakshin Bharat Area, Chennai

Gen Raj Shukla (Retd)
Former Army Commander &
Member, Union Public Service Commission

Pramit Pal Chaudhuri
Head – South Asia Practice
Eurasia Group

Nitin Pai
Co-Founder and Director
Takshashila Institution

The panel discussion on Geopolitics & Deglobalization, delved into the evolving global geopolitical landscape amidst trends of deglobalization, particularly focusing on India's strategic responses to emerging security challenges and opportunities within the shifting international order.

Dr Stanly Johny initiated the discussion by highlighting the fluctuating trends in global economic integration, emphasizing the rise of protectionism and the emergence of multiple economic power centers, including India. He underscored the evolving international order post the Soviet Union's disintegration, noting the transition from unipolarity to a more ambiguous global structure. Further, he highlighted ongoing security crises worldwide, such as the Russia-Ukraine conflict, Israel-Palestine Conflict and escalating tensions in West Asia, alongside the strategic competition in the Indo-Pacific region.

The Panel discussion on Geopolitics & Deglobalization provided an analysis of the evolving global landscape and India's strategic responses to emerging challenges. With insights from panelists spanning military dynamics, defence-industry collaboration, regional geopolitics and global economic trends, the discourse highlighted the interconnected nature of contemporary security and economic challenges. The discussion highlighted the importance of strategic foresight, innovation and collaboration to navigate the complexities of a shifting geopolitical order effectively. As India navigates the currents of deglobalization, the insights shared during the panel underscored the importance of adaptability, pragmatism and proactive engagement to safeguard national interests and capitalize on emerging opportunities in the evolving global arena.

Perspectives and Insights from the Panelists:

The panel discussion, moderated by Dr. Stanly Johny, International Affairs Editor at The Hindu, brought together distinguished experts to delve into the evolving dynamics of global geopolitics amidst deglobalization. With Lt Gen Karanbir Singh Brar, Gen. Raj Shukla (Retd), Mr. Pramit Pal Chaudhuri, and Mr. Nitin Pai as panelists, the session aimed to explore India's strategic responses to security challenges and opportunities in a rapidly changing international landscape

1. Security Challenges and Defense Strategies (Lt Gen Karanbir Singh Brar): Lt Gen Brar emphasized the need for nuanced defense strategies in response to escalating global security investments. He advocated for a balance between qualitative and quantitative aspects in defense capabilities, emphasizing India's imperative to prioritize innovation and technology.

2. India-China Relations and Strategic Responses (Gen. Raj Shukla): Gen. Shukla discussed the complexities of India-China relations and the role of industry in bolstering military preparedness. He stressed the importance of aligning with evolving military advancements to maintain strategic parity with emerging powers.

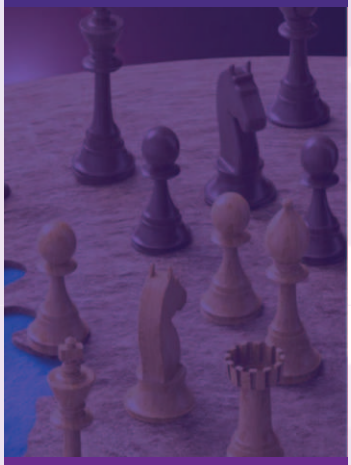
3. Multilateral Diplomacy and Regional Crises (Mr Pramit Pal Chaudhuri): Mr. Chaudhuri highlighted the relevance of multilateral diplomacy in addressing regional crises, such as those in West Asia. He underscored the challenges of fostering consensus among sovereign nations and emphasized India's diplomatic imperative in advancing its strategic interests through proactive engagement.

4. Deglobalization and Economic Interdependencies (Mr Nitin Pai): Mr. Pai dissected the implications of deglobalization on global economic interdependencies. He advocated for a more inclusive approach to global governance, emphasizing collaborative efforts to navigate deglobalization while harnessing emerging opportunities for sustainable development.

The panel provided a comprehensive analysis of India's strategic imperatives amidst shifting global dynamics. Through insightful deliberations, it underscored the significance of proactive engagement, strategic foresight, and multilateral cooperation in safeguarding India's interests on the world stage.

As India navigates a rapidly evolving geopolitical landscape, adaptive strategies and collaborative initiatives are deemed crucial to address emerging challenges and capitalize on opportunities for sustainable growth and development.

Focus of Roundtable Discussions on Geopolitics & Deglobalization



- Seizing Opportunities in the Global Market: India's Strategy for Friend Shoring and China+1
- Building Resilience: Exploring Supply Chain Resilience in the age of deglobalisation
- Identifying key areas of dependencies & vulnerabilities between India and its South & Southeast Asian counterparts to address concerns.
- Evaluating India's Position in Multilateral Trading Arrangements.
- Balancing Act: India's Quest for Export Supremacy amidst Trade Restrictions.

Confederation of Indian Industry

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Thematic Synergies between Indian Defence and Industry

EXCLUSIVE
PLENARY SESSION

with
Lt Gen Karanbir Singh Brar, AVSM
General Officer Commanding (GoC) Dakshin Bharat Area, Chennai

Thematic Synergies between Indian Defence and Industry

Lt Gen Brar emphasized the historical role of the Indian Armed Forces in safeguarding the Nation's Security, dating back to decades. He underscored the critical need for a strong defense for the country, citing the historical instances of wars and conflicts both internally and externally. In discussions concerning the evolving Global Geopolitical Landscape, the significance of maintaining a robust defense was underscored considering India's growing prominence. He cited examples of conflicts worldwide and emphasized the correlation between a Nation's strength and its ability to deter aggression.

Key highlights of the session

- Need for Security and Historical Significance of Indian Armed Forces
- Global and Regional Concerns
- Multi-Domain Warfare and Whole-of-Nation Approach
- Capability Building and Collaborative Ecosystem
- Military Exercises and Encounters
- Assessment of Adversaries
- Technology and Warfare
- Defense Capability Building
- Industry Collaboration & Commitment

The plenary session, enriched by Lt Gen Brar's expertise and personal experiences, underscored the critical synergy between Indian Defense and Industry in ensuring national security and fostering innovation. His insights into historical precedents, contemporary geopolitical challenges and collaborative approaches offered valuable perspectives for stakeholders to navigate the complex landscape of defense and security. The session provided valuable insights into the evolving geopolitical landscape and the symbiotic relationship between defense and industry in addressing contemporary security challenges. Lt Gen Brar's expertise and Mr Vish Sahasranamam's moderation facilitated a fruitful discussion on strategic synergies and collaborative opportunities.

DAY 2

03 February 2024
Madras Regimental Centre
Wellington

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Geopolitics and Deglobalization

Confederation of Indian Industry

Key Takeaways

INTRODUCTION

Prior to delving into the concept of "Deglobalization," it is crucial to examine "Slowbalization," the period that paved the way for this change. The era of Slowbalization was characterized by the aftermath of the 2008 financial crisis, escalating trade tensions, the rise of affluent middle classes in developed countries and mounting concerns over excessive reliance on trade with single partners. Recent disruptions to global value chains, exemplified by events like the COVID-19 pandemic, Russia-Ukraine conflict, Israel-Iran tensions and the Green Transitions, have compelled both Governments and Corporations to reevaluate their external dependencies. They are now turning their attention closer to home and towards trusted partners in pursuit of more resilient growth models. These shifts in the dynamics of globalization have not only restructured global economic terrains, but have also ignited discussions on the concept of deglobalization.

The process of deglobalization, which involves reducing interdependence and integration between nations, has various impacts on India.

Economically, deglobalization may lead to a reduction in the rate of economic growth in India, hurt Indian trade and exports, increase import costs and reduce employment opportunities within & outside India.

This report offers a comprehensive overview of the impact of deglobalization in India and the necessary steps that could be undertaken to mitigate the negative impact arising from geopolitical shifts and deglobalization. It also captures the essence of the critical discourse surrounding deglobalization and India's unwavering commitment to navigating this evolving terrain.

Geopolitics and Deglobalization: An Indian Context

While India's rise as a geopolitical force coincides with a potential era of deglobalization, this presents a complex strategic landscape. Established trade patterns, crucial for India's export-driven economy, could be disrupted and rising nationalism and protectionism might limit access to foreign markets.

However, India can leverage this shift. By focusing on domestic production and building a robust internal market, India can lessen its dependence on external forces. Deglobalization also opens doors for regional cooperation. India can strengthen ties with neighbouring countries, fostering a more self-reliant Asian economic bloc. By strategically navigating the deglobalization wave, India can solidify its economic and geopolitical standing.

This strategic maneuvering becomes even more crucial when considering the broader geopolitical landscape. India has also been actively increasing its influence both regionally and in the West, forging stronger ties with countries like the United States, Japan and Australia. India must navigate these complex geopolitical dynamics while capitalizing on the opportunities presented by deglobalization.

Recent Geopolitical Challenges Encountered by India

- **Middle East Crisis:** The ongoing conflict between Israel and Palestine has disrupted efforts to normalize ties between Israel and the Arab world. India has backed a Two-State Solution to resolve this conflict and bring lasting peace in the region

- **Tensions in India-US Ties:** The India-US strategic partnership has faced stress regarding the Countering America's Adversaries Through Sanctions Act (CAATSA) due to India's continued defense relationship with Russia, particularly the purchase of the S-400 air defence system.

- **Rising Energy Prices and Disrupted Supply Chains:** The global rise in energy prices and disrupted supply chains pose serious challenges to the Indian economy. Domestically, India is expected to have a decline in its GDP growth rates encountered due to these supply chain disruptions

- **Taiwan Strait Conflict:** India's trade connections with Japan, South Korea, Southeast Asian nations and those across the Pacific constitute more than 55 percent of its trade, which traverses the South China Sea. A potential escalation of tensions in the Taiwan Strait could hold considerable consequences for the Indian Economy.

- **Economic Slowdown in China:** A potential economic slowdown in China and a reorientation of its economy to reduce damage to local economies could impact India's own economic growth. The easing of US-China relations might also prompt Beijing to investigate the Line of Actual Control, leading to tensions between the two countries.

- **China's Dominance in Rare Earths Minerals:** Currently, China holds a dominant position in the Rare Earths Minerals, producing 60 percent of the World's Rare Earths and processing nearly 90 percent of them. This setup has effectively granted China a near monopoly in this industry. Potential repercussions of tensions with China over rare earth minerals could reverberate across multiple sectors of the country's economy, highlighting the importance of diversification in sourcing crucial resources. Proactive measures to secure alternative supply chains must be looked upon to mitigate such risks effectively.

- As India navigates through a rapidly evolving geopolitical landscape, adaptive strategies and collaborative initiatives are deemed crucial to address emerging challenges and capitalize on opportunities for sustainable growth and development in the long run.

Strategies / Solutions to Mitigate the impact of Deglobalization

This section delves into the emerging trend of deglobalization and its associated concerns. Furthermore, it sheds light on the imperative measures that could be undertaken at individual, governmental or collective levels to mitigate the adverse effects of deglobalization.

During the roundtables, delegates identified the following key areas as pivotal for addressing concerns pertaining to geopolitics and deglobalization in India:

1 Navigating Deglobalization: Understanding its Reach, Presence and Impact on India

2 Seizing Opportunities in the Global market: India's Strategy for Friend Shoring and China+1

5 India's Role in Upholding Liberal Trade Principles in Deglobalization

6 Strengthening India's Trade Position: A Review of Multilateral Trade Arrangements

Confederation of Indian Industry

3 Exploring Supply Chain Resilience in the Age of Deglobalisation

4 Building Resilience Through Regional Dialogue: Assessing Interdependencies and Vulnerabilities in South & Southeast Asia

7 Balancing Act: India's Quest for Export Supremacy amidst Trade Restrictions

8 India's Policy Dilemma in navigating the 21st century

1 NAVIGATING DEGLOBALIZATION: UNDERSTANDING ITS REACH, PRESENCE AND IMPACT ON INDIA

In recent years, the phenomenon of deglobalization has gained significant traction, manifesting in shifts towards protectionist policies, trade barriers and a revaluation of international economic relationships. As an initial step, the understanding of the following questions helps to have an idea and comprehend the impact of deglobalization, at the same time highlighting solutions:

1.1 Securing Trade: Strategies for Trade Security in Deglobalization

The potential shift towards deglobalization presents India with unique challenges and opportunities regarding trade security. Here are some key strategies India can adopt:

- **Alliance Building:** Forging strategic partnerships with nations like the USA can strengthen supply chain resilience. Collaborative efforts can focus on diversifying sourcing options, building stockpiles of critical materials and fostering joint research & development initiatives.

- **Intellectual Property (IP) Safeguards:** Protecting India's Intellectual property is crucial. This can be achieved by strengthening domestic IP laws, collaborating with International Partners on enforcement mechanisms and raising awareness of IP rights among businesses.

- **Transparency and Predictability:** Adopting transparent regulatory measures enhances trust and facilitates trade. This includes online access to regulations, clear timelines for licensing processes and ample public consultations before implementing new regulations.

- **Digital Trade Security:** Investing in cybersecurity infrastructure is critical to protect against cyberattacks targeting trade data and logistics.

- **Multilateral Cooperation:** Engaging actively in international forums like the G20 allows India to advocate for fair trade practices, contribute to global standards development and showcase its commitment to trade security and cultural preservation.

By implementing these strategies, India can build a more resilient and secure trading environment in a deglobalized world. Additionally, India can consider:

- **Promoting Regional Trade Agreements:** Strengthening trade ties with neighbouring countries can create a more self-reliant regional economic bloc, reducing dependence on distant trade partners.
- **Investing in Domestic Infrastructure:** Developing robust domestic infrastructure, including logistic networks and manufacturing capabilities can lessen reliance on international supply chains.
- **Promoting Innovation and Self-Sufficiency:** Encouraging domestic research and development in critical sectors can reduce dependence on foreign technologies and enhance trade security.

1.2 Foresight and Strategies for Protecting Domestic Industries Institutional Safeguards:

How Government agencies support domestic industries?

The Indian government has taken proactive steps to protect domestic industries and consumers through various agencies and regulations. These existing frameworks provide a strong foundation for navigating deglobalization:

- **The Bureau of Indian Standards (BIS):** BIS ensures quality control and safety standards for domestic products, fostering consumer confidence and creating a level playing field for domestic manufacturers.
- **One District One Product Scheme**
- **The Food Safety and Standards Authority of India (FSSAI):** FSSAI's focus on food safety standards promotes domestic food production and protects consumers from potentially unsafe imported products.
- **The Indian government's Foreign Trade Policy (FTP):** While the current FTP focuses on export promotion, its underlying principles of trade facilitation and market access can be adapted to support domestic industries in a deglobalized world.

- **Expanding the Toolkit:** Beyond these existing frameworks, India can implement additional strategies to anticipate future trends and protect domestic industries:

- **Invest in Future-Oriented Research:** Establish dedicated research groups to identify emerging technologies, consumer preferences and global trade patterns that might impact domestic industries.

- **Scenario Planning:** Develop contingency plans for various potential deglobalization scenarios, including disruptions in supply chains, trade wars and technological advancements.

- **Global Scanning:** Monitor international trade policies, resource availability and competitor strategies to identify potential threats and opportunities for domestic industries.

- **Industry-Specific Strategies:** Develop tailored protection and growth strategies for critical industries, considering their specific needs and challenges.

- **Promoting Innovation and Self-Sufficiency:** Encourage research and development in key sectors to reduce reliance on foreign technology & resources, fostering domestic innovation and job creation.

- **Selective Protectionism:** Implement temporary tariffs or quotas strategically, protecting nascent domestic industries from unfair competition during their growth phase. This should be coupled with a clear roadmap towards increased competitiveness.

- **Focus on Free Trade Agreements:** Negotiate strategic free trade agreements with countries offering complementary strengths and reliable partnerships, furthering India's economic integration with trusted partners.
- **Promoting Exports:** Develop programs and incentives to support domestic businesses in entering new export markets, diversifying export destinations and reducing dependence on specific trade partners.
- **Upskilling Workforce:** Invest in education and training programs to equip workforce with skills and knowledge necessary to thrive in a changing global environment.
- **Focus on STEM education:** Prioritize Science, Technology, Engineering and Math education to foster innovation and technological advancement.
- **Lifelong learning initiatives:** Encourage ongoing skill development throughout a worker's career to adapt to evolving industry needs.
- **Securing Cultural Heritage:** The notion of securing cultural heritage as a strategic response to evolving market dynamics aimed at pressuring India's negotiating power in International Trade.
- **Global Intellectual Exchange :** The need to nurture a globally connected, locally educated workforce through digital platforms.

By building on existing frameworks and implementing these additional strategies, India can proactively anticipate future trends in deglobalization and create a more resilient and competitive domestic industrial sector.

1.3 India Rising: Strategies to Unleash Potential in a Deglobalized World

Strategic Alliances

- **BRICS and Beyond:** India can strategically leverage its bilateral and multilateral ties, particularly with BRICS nations, to counterbalance alternative power structures to foster cooperation on critical issues.

Infrastructure Development

- **Building the Future:** Investments in Modern Infrastructure, such as 5G technology can fuel domestic economic growth and create a conducive environment for domestic businesses to thrive.

Soft Power Diplomacy

- India's successful use of soft power diplomacy demonstrates the potential for leveraging its rich cultural heritage. By promoting shared values and historical ties, India can build stronger relationships with Southeast Asian nations and beyond, fostering collaboration across various sectors.

Selective Engagement in Trade Agreements

- **Prioritizing National Interests:** India's decision not to join RCEP highlights its cautious approach to trade agreements. This allows India to prioritize its domestic industries and protect itself from potential trade imbalances.

2 SEIZING OPPORTUNITIES IN THE GLOBAL MARKET: INDIA'S STRATEGY FOR FRIEND SHORING AND CHINA+1

China+1, involves diversifying business operations beyond China to mitigate risks and capitalize on opportunities in other countries. While India holds significant promise, several challenges hinder its ability to fully leverage friend-shoring and China+1 Strategy. These challenges include concerns regarding workforce readiness, policy barriers to foreign direct investment (FDI), infrastructure limitations, imperative of promoting self-reliance through initiatives like Atma Nirbhar Bharat and the importance of enhancing collaboration with allied nations through bilateral agreements. To address these challenges and seize opportunities in the global market, India can implement the following solutions, tailored to aspects such as Workforce Development, Investment Attraction and Export Expansion:

2.1 Approaches to Enhance Skill Development and Meet Industry Needs

- **Enhanced Skill Development Programs:** Implementing robust skill development initiatives that align with industry demands can bridge the gap between academia and the job market.
- **Public-Private Partnerships:** Collaborations between the Government, educational institutions and private sector can leverage resources and expertise to maximize the effectiveness and efficiency of education and skill development.
- **Collaboration with Foreign Universities:** The University Grants Commission (UGC) of India has introduced regulations to facilitate foreign universities to set up campuses in India, aligning with the National Education Policy (NEP) 2020's Internationalization goal. This regulation empowers Foreign Higher Educational Institutions (FHEIs) to offer Certificate, Diploma, Degree, Research and other programs at various levels.
- **Job Allocation based on Education:** Assigning jobs in other nations according to the education and qualifications of individuals to maximize their potential and contribution.

2.2 Attracting Foreign Industries to Invest India:

Foreign Direct Investment (FDI) plays a crucial role in propelling India's economic development. Not only does it provide a substantial source of non-debt financial resources, it also acts as a conduit for valuable technology, knowledge, skills and expertise. This is evident in the record-breaking FDI inflow of $71 Billion witnessed by India in the Financial Year 2022-23, highlighting its growing attractiveness as an investment destination. To continue attracting foreign industry to India, the following strategies could be implemented:

Confederation of Indian Industry

Strategy	Key Initiatives
Boosting Domestic Manufacturing	In a bid to revitalize domestic manufacturing, boost exports and attract foreign investment, the Indian government has launched *Production - Linked Incentive (PLI)* schemes targeting 13 key sectors. These schemes incentivize both domestic and foreign companies to set up new facilities, engage in Research and Development (R&D) or expand their existing manufacturing units within India.
Improving Ease of Doing Business	The Indian Government has taken steps to reduce the compliance burden and promote domestic manufacturing through initiatives like *Phased Manufacturing Programme (PMP)* and Production Linked Incentive (PLI) schemes across various Ministries.
Infrastructure Development	India is focusing on infrastructure development, including the National Infrastructure Pipeline, which will attract investments into infrastructure and will be crucial for attaining the target of becoming a *$5 Trillion Economy.*
FDI Policy Reforms	Some key sectors where 100% FDI is permitted include the Insurance Sector (up to 74% in insurance companies and up to 100% in insurance intermediaries), Telecom, Petroleum and Natural Gas.
Investment Promotion Initiatives	India has introduced several schemes and policies to create a favourable investment climate, such as India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), National Single Window System (NSWS), National Infrastructure Pipeline (NIP) and National Monetization Pipeline (NMP).
Attracting Investors Looking Beyond China	India can appeal to businesses that want to hedge against geopolitical tensions by spreading their operations more broadly, known as a “China+1” strategy. In addition, India has improved its ranking in the World Bank's Ease of Doing Business Index which can help attract foreign investors. The Government has taken several initiatives to make the investment process easier, such as relaxing FDI norms across various sectors.

2.3 Promoting Atma Nirbhar Bharat Initiatives

One of the key focus areas of Atma Nirbhar Bharat is promoting domestic production and self-sufficiency. The Government has introduced several policy reforms and initiatives to achieve this goal.

Sector	Initiatives
Agricultural Sector	The "Mega Food Parks" scheme and the "Pradhan Mantri Kisan Sampada Yojana" have strengthen Food Processing and Agriculture Sector reducing post-harvest losses and increasing farmers income.
Healthcare and Pharma Sector	The "Atma Nirbhar Swasth Bharat Yojana" was launched to enhance healthcare infrastructure, with a focus on setting up health and wellness centres across the country. India's pharmaceutical industry, known as the "Pharmacy of the World," played a crucial role in providing affordable medicines and vaccines not only to its citizens but also to other countries during the COVID-19 pandemic
Infrastructure Sector	The National Infrastructure Pipeline (NIP) aims to develop world-class infrastructure in sectors such as roads, railways, ports and airports. The "Bharatmala" and "Sagarmala" projects, under NIP are set to transform India's connectivity and logistics landscape, facilitating Trade and Economic Growth.
Global Recognition	The Government's Act East Policy has led to deeper economic and strategic collaboration with countries in the Asia-Pacific region Bilateral trade agreements and partnerships in various sectors have expanded India's global footprint, opening new avenues for growth and cooperation.

2.4 Bilateral Agreements

India has entered into numerous bilateral trade agreements with various countries to enhance economic cooperation and trade relations. Some of the key bilateral trade agreements by India include:

India-ASEAN FTA	This agreement involves 11 countries, including Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam and India, focusing on trade in goods
India-Japan CEPA	A Comprehensive Economic Partnership Agreement between India and Japan, aimed at boosting economic ties and facilitating trade between the two nations
India-South Korea CEPA	This Comprehensive Economic Partnership Agreement between India and South Korea aims to enhance economic cooperation and promote trade between the two countries
India-Mauritius CECPA	The Comprehensive Economic Cooperation and Partnership Agreement between India and Mauritius, implemented in 2021, focuses on enhancing economic cooperation and trade relations
India-UAE CEPA	The Comprehensive Economic Partnership Agreement between India and the United Arab Emirates, operational since May 2022, aims to strengthen economic ties and promote trade between the two nations
India-Australia ECTA	The Economic Cooperation and Trade Agreement between India and Australia, operational since December 2022, focuses on enhancing economic cooperation and trade relations between the two countries

3 EXPLORING SUPPLY CHAIN RESILIENCE IN THE AGE OF DEGLOBALISATION

As globalization trends evolve, there is a growing need for India to address Supply Chain vulnerabilities and reduce dependency on external sources. The emergence of deglobalization poses challenges to traditional supply chain models, necessitating strategies for resilience and self-sufficiency.

3.1 Localization of Production for Self Sufficiency:

India's path to becoming a Self-Reliant ("Atma Nirbhar") Economic Powerhouse hinge on a robust domestic supply chain. Supporting local suppliers and manufacturers capable of producing crucial components strengthens the industry.

Furthermore, nurturing the participation of Small and Medium Enterprises (SMEs) is crucial. SMEs can not only offer specialized services and products, but also bring agility and innovation to the table.

To navigate the unique challenges and opportunities within the Indian market, partnering with experienced supply chain specialists becomes even more valuable.

3.2 Strengthening National Security to enhance Self-Sufficiency:

- **Data Sovereignty:** India can strengthen its data sovereignty by implementing policies that protect its citizens data and promote technological self-reliance. This includes enacting Data Localization measures, such as enforcing a data replica to be retained locally and encouraging domestic firms to develop indigenous technologies. For example, Reserve Bank of India (RBI) has introduced data localization mandate for financial institutions operating in the country, requiring them to store and process customer data within India's borders. This mandate was introduced with the aim of enhancing data security and protecting the privacy of Indian citizens.

- **Defence Indigenisation:** India can focus on self-reliance in defence production by collaborating with indigenous defence industries, fulfilling contracts and investing in Research, Design, Development & Production Capacities.

- **Energy Security:** To address its energy security concerns, India has been pursuing various strategies. One approach is to diversify its energy supply sources, including renewable energy. India's renewable energy transition has been commendable, with the country setting ambitious targets for renewable energy capacity addition. The country has also been exploring opportunities for Cross-Border Electricity Trade (CBET) with neighbouring countries such as Bangladesh, Bhutan and Nepal.

3.3 Strategic Resource Dependency

India's strategic resource dependency is a significant challenge that requires careful management. The country needs to identify and address constraints on production, diversify its sources of strategic materials, develop its mining sector, focus on emerging materials and reduce its dependency on foreign countries.

Highlighting the importance of a resilient supply chain, drawing parallels with the success of drones, It is emphasized to maintain robust supply chains to meet demand.

4 BUILDING RESILIENCE THROUGH REGIONAL DIALOGUE: ASSESSING INTERDEPENDENCIES AND VULNERABILITIES IN SOUTH & SOUTHEAST ASIA

4.1 India's Dependencies

India's dependence on South and Southeast Asian countries for Non-Critical and Intermediate parts.

India's dependence on East Asia for trade has been steadily rising, with its involvement in such trade climbing to 78%. India's reliance on China, constituted nearly 15% of its imports in 2023-24, making it the largest source of goods imports for India. However, this trade relationship has resulted in a significant trade deficit, amounting to a substantial $63 Billion, representing almost 40 percent of India's total trade deficit in goods.

India's engagement with South and Southeast Asian nations is characterized by a complex web of dependencies and vulnerabilities. While India relies on these countries for the supply of non-critical parts, stability amidst regional instability, and access to rare minerals, it also faces vulnerabilities such as underdeveloped financial solutions in Southeast Asia and language barriers hindering business development. Moreover, emerging competitors and alternative markets, exploitation of government policies for drug imports, and challenges in standardization of technology pose significant threats. Addressing these complexities is crucial for India's sustainable development and regional cooperation.

India can enhance its trade partnerships by expanding relations with nations beyond its traditional trading partners. Exploring markets in regions like Africa, Latin America and Central Asia can diversify India's trade portfolio and reduce dependence on any single market. Additionally, India can capitalize on regional integration initiatives by fostering closer economic ties with neighboring countries.

Initiatives such as the South Asian Free Trade Area (SAFTA) and the Bangladesh-Bhutan-India-Nepal (BBIN) Initiative provide frameworks for enhancing trade cooperation and economic integration within the South Asian region, offering avenues for mutual growth and development. These efforts can help promote regional trade and economic integration, reduce dependence on any single country or region and enhance national security and self-sufficiency.

Building Inclusive Economies: The India Stack as a Model for Less Developed Countries

The India Stack comprises digital public infrastructure components encompassing digital identification, payments and data management. This framework has facilitated the digital financial inclusion of gig workers, leveraging services like UPI and Aadhaar to lower business costs, foster innovation and broaden market reach for both providers and customers.

Western nations like France and Germany, alongside several in South Asia and Africa, have demonstrated interest in or have begun adopting the India Stack, either in trial phases or full implementation. Additionally, countries such as Ethiopia, Guinea, Sierra Leone, Sri Lanka and Togo have actively employed or piloted technologies and services from India's digital public infrastructure.

Combating Climate Threats in Asia: A Focus on Vulnerable Island Nations

India has the opportunity to collaborate with organizations like the South Asian Association for Regional Cooperation (SAARC) or the Indian Ocean Rim Association (IORA) to establish early warning systems, enhance resilient infrastructure, minimize vulnerability and implement suitable financing mechanisms to tackle the effect of climate change. Additionally, India can leverage its leadership position in international forums such as the United Nations Framework Convention on Climate Change (UNFCCC) to advocate for more robust action on climate change and champion the interests of island nations.

4.2 India's Vulnerabilities Bridging the Language Gap: A Hurdle to India-Southeast Asia Business Growth

To overcome language barriers impeding business development in India, there are several strategies that can be employed:

Companies can use real-time language solutions, such as remote interpreting solutions, to connect with employees and clients in their own language.

It is important to entertain the cultural differences in each nation and promote adaptability among individuals and employees to foster flexible working style

- **The Rise of New Challengers:** IT, Manufacturing and Textiles Face Competition from Southeast Asia

  India can adopt the following pathways to survive in an intensive competitive environment in the IT and Textile industry:

- **Invest in Innovation and Technology:** India can invest in research and development to foster innovation and technological advancements in sectors like IT, Manufacturing and Textiles. By promoting a culture of innovation, India can stay ahead in the global market and offer cutting-edge solutions.

- **Improve Infrastructure and Ease of Doing Business:** Enhancing infrastructure and streamlining regulatory processes can make India a more attractive destination for businesses. Improving logistics, transportation and enhancing bureaucratic support can boost efficiency and attract investments.

- **Promote Export-Oriented Growth:** India can focus on promoting exports by providing incentives to industries, improving market access and participating in global value chains. By expanding its export base, India can compete effectively with countries like Vietnam and Bangladesh

- **Safe Migration Initiatives:** Implementing projects like the Safe Migration project, supported by organizations like Free the Slaves and Verité, can foster safe labor migration from India to countries like the GCC.

- **Awareness Campaigns:** Conducting widespread awareness campaigns targeting parents, communities and employers about the detrimental effects of exploitative labor practices can help in preventing the engagement of Indian laborers in situations of forced labor, debt bondage and other forms of exploitation.

5 INDIA'S ROLE IN UPHOLDING LIBERAL TRADE PRINCIPLES IN DEGLOBALIZATION

As the world witnesses a shift towards deglobalization, there arises a question of how India can navigate this evolving landscape while championing liberal trade rules. It becomes imperative to understand the implications and feasibility of advocating for a Rules-Based Trading System in a context where globalization is on the decline.

5.1 Advocating for Seamless Trade in India's Neighborhood to Strengthen Regional Cooperation

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) has highlighted the importance of seamless transport and trade connectivity in Asia and the Pacific, which can help countries respond effectively to crises and epidemics.

India has made an impressive transformations in its trade policy and practices, with merchandise exports valued at $451 Billion in 2023, up from $314 Billion a decade ago.

Trade facilitation priorities and policies of the Government of India along with key trade facilitation interventions could help improve the state of cross-border trade in the region.

It is important to prioritize capacity, capability, quality, efficiency and affordability in trade practices.

5.2 Cultivating the Production of High-Quality Goods to Position India as a Global Market Leader

To become a global market leader by producing high-edge quality products, the approaches that could be taken are as below:

Skill development initiatives are at the core of India's strategy, with programs like *Skill India* providing a platform for skilling, reskilling and upskilling through innovative online training.

The Government's *'Make in India for the World'* vision can play a pivotal role by providing tax incentives, export financing and simplified export procedures, strengthening intellectual property rights protection and prioritizing research and development.

5.3 Implementing the Vishvamithra Strategy to Forge Strategic Alliances and Partnerships

The Vishvamithra Strategy is a framework for forging strategic alliances and partnerships through the following phases that would help to diplomatically pursue foreign alliances:

- **Self-Assessment:** This phase involves a thorough evaluation of India's strengths, weaknesses, opportunities and threats (SWOT analysis) on the global stage.
- **Identifying Shared Values:** Examining potential partners with whom India shares common values and interests, such as democracy, security or economic development.
- **Building Trust:** Engaging in regular communication and high-level visits to build trust and understanding with potential partners.
- **Multilateral Engagement:** Collaborating with potential partners on issues of mutual concern in international forums like the UN or regional organizations.
- **Tailored Partnerships:** Developing specific partnership frameworks tailored to the unique needs and interests of each partner nation.
- **Economic Cooperation:** Promoting bilateral trade, investment and joint infrastructure projects to create a stronger economic foundation for the alliance.
- **Joint Security Cooperation:** Collaborating on defence exercises, intelligence sharing and counter-terrorism initiatives to address shared security threats.
- **Collective Action:** Working together on global issues like climate change, maritime security and non-proliferation to project a strong and united front.
- **Institutionalized Partnerships:** Developing long-term, institutional frameworks that ensure the sustainability and effectiveness of the alliance.
- **Strategic Autonomy:** Leveraging the alliance to enhance India's strategic autonomy and influence in the global order.

By following these phases, the Vishvamithra Strategy provides a roadmap for India to build strong and mutually beneficial partnerships that can advance its national interests on the world stage.

6 STRENGTHENING INDIA'S TRADE POSITION: A REVIEW OF MULTILATERAL TRADE ARRANGEMENTS

India's stance outside of major multilateral trading arrangements prompts examination of the benefits foregone and the feasibility of bilateral trade as a substitute. While India participates in various regional and multilateral agreements, concerns persist regarding the adequacy of these arrangements in maximizing trade benefits and safeguarding national interests. These could be addressed in the following ways:

6.1 Assessing Opportunity Costs - Bilateral vs Multilateral for India:

For India, nearly three decades of cautious economic reforms have resulted in the Indian Government steadily reducing tariffs and improving customs procedures. However, high levels of tariff protection, especially in sensitive sectors like agriculture, remain a persistent obstacle to trade interests. India's approach to trade liberalization is unlikely to change until the people affected by trade liberalization have educational, job and income prospects strong enough to withstand any perceived disadvantage. Hence, these issues should primarily be addressed.

Preparing the ground for Comprehensive and Progressive Agreement for Trans-Pacific Partnerships (CPTPP) is a potential strategy.

6.2 Export Promotion to emerging economies:

Promoting exports to emerging economies and focusing on high-value commodity sectors like engineering and electronics can significantly contribute to India's economic growth and development. The Indian government's initiatives, such as export promotion schemes and PLI are enabling India to become a High-Value Commodity Exporter.

7 BALANCING ACT: INDIA'S QUEST FOR EXPORT SUPREMACY AMIDST TRADE RESTRICTIONS

India faces the challenge of reconciling its ambitions for robust export growth with the necessity of imposing trade and import restrictions on crucial inputs. This balancing act requires addressing issues such as high import duties impacting manufacturing competitiveness, fostering competitive sectors within India, expanding market reach through innovation and enhancing value addition in exports while ensuring environmental sustainability and strategic development. Ways in which India can sustain its position amidst trade restrictions are explained:

7.1 Rationalizing Import Duties to ensure Global Competitiveness:

Recommendations include exploring opportunities in aggregating commodities and addressing high import duties that affect manufacturing competitiveness by removing Import of Goods at Concessional Rate (IGCR) for imported manufacturing inputs:

- **Rationalizing Import Duties:** India should consider rationalizing import duties on key inputs like Steel, Polymers, Copper and Aluminum to reduce financial constraints on Manufacturers, especially MSMEs.

- **Promoting Value Addition:** The objective of customs duty should be to incentivize value creation within the country. By reducing duties on raw materials and intermediate goods, India can encourage domestic manufacturers to add value locally, fostering a more competitive manufacturing sector and boosting exports.

7.2 Promoting Market Expansion and Innovation:

- **India's Exports & Way Forward:** Government initiatives, such as export promotion schemes and sector-specific Production Linked Incentive (PLI) schemes, have enabled India to become a high-value commodity exporter.

- **India as the World's Technology and Services Hub:** India can become a technology and innovation hub as corporations look to adopt technology at a global scale. Diversifying services exports beyond IT and BPO services, with focus on sustainability and accelerating growth are essential for India to maintain its position as a technology and innovation hub. Implementing generous Export Promotion Capital Goods (EPCG) duties and leveraging technology to improve productivity.

- **Leveraging India's Economic Rise:** India's economic rise, forecasted to surpass Japan by 2030 and potentially become the world's second-largest economy by 2075, is anchored by strategic positioning, commitment to digitalization and demographic advantages.

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7.3 Domestic production of defense materials:
The Indian Government has launched various initiatives to promote domestic manufacturing, such as increasing the FDI limit to 74% and encouraging foreign manufacturers to establish operations in India.

The Defense Production and Export Promotion Policy 2020 (DPEPP) and the Strategic Partnership Model aim to provide focused, structured and significant thrust to defense production capabilities for self-reliance and exports.

Industry Cooperation and making Environmental Considerations:
The changing narratives and industry cooperation in India are crucial aspects that are shaping the country's growth and global partnerships. The evolving narratives in various sectors like sustainability, sports and technology are driving industry collaboration and fostering innovation.

Sustainability experts are advocating for regenerative tourism practices, emphasizing the need for deeper study, embedding local and cultural experiences and promoting responsible traveler guidelines to ensure sustainable tourism practices.

Moreover, the role of U.S.-India collaboration in shaping the future of technology underscores the importance of fostering collaboration between American companies and Indian counterparts to nurture technological leaders capable of producing original intellectual property.

8 INDIA'S POLICY DILEMMA IN NAVIGATING THE 21ST CENTURY : CHARTING THE COURSE AMID THE RISE OF INDUSTRIAL POLICY 2.0

While many countries worldwide are implementing measures to safeguard and promote domestic industries, India faces the challenge of formulating an effective policy strategy. Key sectors such as Health, Pharma, Tourism, Insurance and Chemicals exhibit competitiveness in the Indian market.

Additionally, transforming farming practices and enhancing skill development, both in domain-specific and soft skills, are imperative. Tailored interventions by the government and industry, tailored to the unique nature of each sector, are essential for sustained growth and competitiveness.

Identification of Competitive Industries:
Identification of competitive industries can help in the recognition of key sectors where policy amendment can lead to a greater impact in the economy. Some of the competitive Industries are mentioned below:

- **Pharmaceuticals:** The pharmaceutical industry in India is the pioneer in generic pharmaceuticals with significant global exports and a strong presence in generic drugs production
- **Software & Services:** This sector has a substantial opportunities and industry leaders like Infosys, Wipro, TCS and Tech Mahindra are providing diverse products across different segments.
- **FMCG (Fast-Moving Consumer Goods):** The FMCG industry in India has shown steady growth, with household and personal care products accounting for a significant portion of sales.
- **Chemicals and Petrochemicals:** This sector plays a vital role in India's economy, with key players like Reliance Industries Ltd., Indian Petrochemicals Corporation Ltd., Tata Chemicals, Haldia Petrochemicals, Tamil Nadu Petro Products Ltd and others.

Implementation of Regulations on Raw Materials Production:
The implementation of regulations on raw materials production in India has significant implications for various industries, particularly the plastic processing and bioplastics sectors. For instance, the mandatory implementation of Bureau of Indian Standards (BIS) regulations on the import of polymer raw materials in the Plastic Processing Industry poses challenges due to the industry's heavy reliance on imports for raw materials.

Regulation should encourage enhancing market conditions and fortifying foreign exchange reserves, thereby bolstering economic stability.

- **Advocacy for Transformation in Farming Practices:** Participants engaged in extensive dialogue regarding the imperative of modernizing farming techniques to elevate both productivity and sustainability in the agriculture sector. It was collectively acknowledged that this transformation holds the potential to significantly contribute to the overarching goal of economic development.

- **Advocacy for Tailored Interventions:** There was widespread advocacy for collaborative efforts between government entities and industry stakeholders to craft interventions tailored to the specific characteristics and requirements of different sectors. This approach was deemed essential for ensuring the successful implementation of policies and fostering sustained growth across various industries.

9 CONCLUSION

India needs to strategically utilize its demographic advantage by prioritizing on multiple factors that will benefit India's position in the world forum. It can be achieved by the following:

- Encouraging a thriving start-up ecosystem through tax incentives and establishing incubation centers within educational institutions.
- Significant improvements in Port Infrastructure and the establishment of Multi-Modal Logistic Parks are necessary to reduce logistics costs and enhance last-mile connectivity, ultimately improving the ease of doing business.
- Investing in research and development is essential to foster innovation and improve competitiveness.

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NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Inclusive Growth

SESSIONS of DAY 3

04 February 2024
The Lawrence School
Lovedale

Context Setting on Inclusive Growth

Mr Srivats Ram, Vice Chairman, CII Tamil Nadu State Council and Managing Director, Wheels India Pvt Ltd, set the context for the session highlighting the intricacies of today's interconnected world. He emphasized that achieving sustainable and equitable progress entail a transition towards inclusive growth, ensuring that all individuals could participate and reap the benefits of economic development.

The significance of policy's, infrastructure and digital advancements in fostering inclusive growth and cultivating equal opportunities underscored Mahatma Gandhi's Vision of Equity and Equality.

This perspective aligns with India's commitment to inclusive growth and emphasizes the importance of enhancing quality of life and developing the social sector. Achieving inclusive growth requires addressing regional disparities and ensuring the inclusion of marginalized populations. Policies and Infrastructure play a crucial role in creating equal opportunities, he mentioned.

India's progress and potential are acknowledged, but challenges in gender inclusiveness, mental health and family dynamics need to be addressed. The participation of women in the workforce and the creation of a new workspace that accommodates them is crucial for inclusive growth, said Mr Ram.

The importance of education and its impact on individual success and collective progress were highlighted. The parallel between education and health was drawn, emphasizing the need for a robust healthcare system and inclusion of health metrics in measuring progress. There is a need for humility and the recognition of the social sector's importance in achieving inclusive growth. The efficient utilization of resources, such as healthcare funding, can contribute to a more comprehensive and universal approach to development, he remarked.

Keynote Address on Inclusive Growth

Dr Kezevino Aram, President, Shanti Ashram in her address emphasized the significance of individual contributions to the nation-building process during the 14-day commemoration honoring Mahatma Gandhi. Reflecting on Gandhi's notion of inclusivity, termed as Sarvodaya, she underscored his profound insights into fostering collective welfare. Notably, statistics on childbirth were highlighted, revealing that, while the global baseline weight of a healthy newborn 3 kilograms, in India, it was 2.5 kilograms. She emphasized baseline change which was essential for social sector, the State had adequate resources and a thriving primary healthcare system.

Her address emphasized health contribution in India which account for 4.5% of GDP, with the Government allocating 1.5% to preventive healthcare. The remaining 3% was spent out of pocket, predominantly on remedial and acute healthcare expenses. The entire pediatric population of other countries is equivalent to one state of India. Significant attention must be directed towards healthcare and pediatric care, ensuring the promotion of growth, health and gender inclusion among children. For instance, even when services are offered free of charge, the presence of facilitators remains crucial. Moreover, demographic growth relies heavily on support at the panchayat level and the implementation of policies at local level is essential. Dr Aram concluded by stating the triangle approach of mortality to morbidity to Wellbeing contributed to a healthier and happier nation.

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TRACK - IV

EquiVision: Pioneering Pathways for Inclusive Growth

Srivats Ram
Vice Chairman
CII Tamil Nadu State Council &
Member - Curators Council,
Nilgiris Economic Dialogue

Kezevino Aram
Member - Curators Council,
Nilgiris Economic Dialogue &
President, Shanti Ashram

M Ponnuswami
Past Chairman, CII Tamil Nadu
State Council & CMD
Pon Pure Chemicals Group

M Vijayabaskar
Additional Full Time Member of the
Planning Commission,
Government of Tamil Nadu & Professor,
Madras Institute of Development Studies

R Palaniswamy
IAS (Retd)
Advisor-Education
TVS Srinivasan Services Trust

Vinod Daniel
CEO / Chairman
India Vision Institute / AusHeritage

The Panel Discussion on Inclusive Growth, moderated by Dr Aram, brought together a diverse group of experts to delve into the complexities and challenges of fostering inclusive growth in various sectors. The discussion began with Mr M Vijayabaskar highlighting the importance of social stability for long-term economic growth and the detrimental effects of inequitable distribution of wealth on societal trust and cohesion. He emphasized the need for inclusive policies to address these issues and ensure equitable distribution of opportunities.

The discussion emphasized that an inclusive approach must be promoted that prioritized education, empowerment and collaboration to achieve sustainable growth and social stability. Inclusivity is the equal contribution of Government, Industry and Community. Preparing the mind to respond toward inclusivity is the need of the hour. Inclusivity is not the Government's agenda or Industry's but everybody's agenda and responsibility, the panel quoted.

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04 February 2024
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TRACK - IV

EquiVision: Pioneering Pathways for Inclusive Growth

Dr Vinu Aram (Moderator)
Incorporating peace and inclusion strategically into the framework of inclusive growth is paramount for emerging economies like India. As President of Shanti Ashram, Dr Vinu Aram brings a unique perspective on this issue. She sheds light on how organizations like Shanti Ashram can play a pivotal role in bridging healthcare gaps and fostering gender-inclusive growth, contributing significantly to the nation's overall development and how the children of the nation play a significant role in nurturing development. Moreover, she discusses the socio-economic challenges stemming from adverse sex ratios and proposes effective strategies to enhance inclusivity within the workforce, thereby laying the groundwork for a more equitable society.

Mr M Vijayabaskar
As a member of the State Planning Commission and a Professor at the Madras Institute of Development Studies, Mr M Vijayabaskar offers valuable insights into crafting affirmative policies and strategies aimed at promoting inclusive economic growth. His expertise in identifying key indicators for assessing policy success, addressing regional imbalances, and enhancing labor participation in emerging sectors provides a comprehensive roadmap for Tamil Nadu's development trajectory. Additionally, his observations on the livelihood trends of migrant workers and the challenges and opportunities associated with inclusive employment policies offer actionable strategies for fostering economic inclusivity in the state.

Dr R Palaniswamy IAS (Retd)
Drawing from his extensive experience in advisory roles and philanthropy, Dr R Palaniswamy explores the crucial role of industries and educational institutions in contributing to inclusive growth. He highlights the importance of aligning academic curricula with industrial requirements and leveraging philanthropic efforts in education to address the needs of marginalized communities effectively. Furthermore, his insights into collaborating with CSR initiatives and civil societies underscore the significance of establishing a unified database for measuring social outcomes, thereby facilitating more targeted interventions and ensuring accountability in fostering inclusive economic growth.

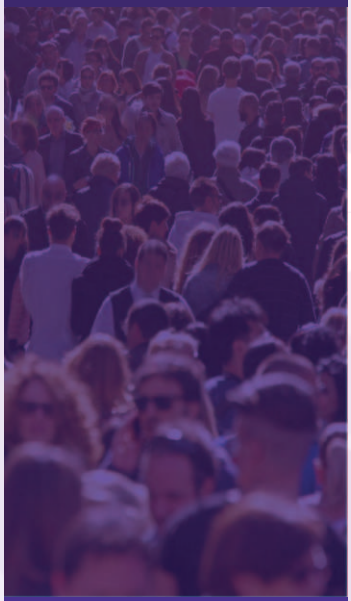
Mr Vinod Daniel

Mr Vinod Daniel's leadership in heritage and culture offers valuable perspectives on integrating these elements into strategies for inclusive growth. He discussed the challenges and opportunities associated with maintaining heritage while fostering economic inclusivity, emphasizing the role of industries and governmental bodies in preserving the cultural fabric of the nation. Furthermore, his insights into leveraging cultural institutions for enhancing public awareness and appreciation of diverse cultural elements provided actionable strategies for maximizing the societal and economic benefits of cultural and heritage initiatives.

Mr M Ponnuswami

Drawing from his extensive experience in the MSME sector, Mr M Ponnuswami, a first-generation, self-made entrepreneur, emphasized the significance of giving back to society, particularly through initiatives that focus on education and healthcare for the underprivileged. He shared personal insights and observations on how marginalized communities, especially SC/ST groups, have been transformed through access to education and economic empowerment. Mr Ponnuswami underscored the need to create equal opportunities for all individuals and communities, advocating for efforts that uplift the socio-economic status of the marginalized. He discussed several successful initiatives that have contributed to the empowerment of these groups, citing examples of how education and skill development have unlocked new opportunities, helping them to break the cycle of poverty and achieve financial independence. His experiences reinforced the message that inclusive growth, driven by education and equal access, is critical to building a more equitable society.

Topics of Roundtable Discussions on Inclusive Growth



- Inclusive Employment: A Key to addressing regional disparity and distributive growth
- Inclusive Entrepreneurial Ecosystems
- Bridging the Industry-Academia skilling gap
- Addressing the multifaceted needs of tribal communities

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NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Inclusiveness from the Nilgiris Viewpoint

EXCLUSIVE
PLENARY SESSION

with

Northay Kuttan
Chairman
The Nilgiris Tribal Heritage & Cultural Protection Society

Inclusiveness from the Nilgiris Viewpoint

Mr Northay Kuttan, Chairman, The Nilgiris Tribal Heritage & Cultural Protection Society highlighted the rich tapestry of traditional wisdom held by tribal communities and their intrinsic connection to the nation. He cautioned against the escalating effects of climate change in the Nilgiris and underscored the imperative of integrating tribal perspectives into policy-making processes, given their profound understanding of forest and environmental dynamics.

The session showcased the diverse tribal communities inhabiting the Nilgiris and illuminated their unique lifestyles. It underscored the crucial contribution of tribal groups in advancing inclusive growth and nurturing sustainable development initiatives.

DAY 3

04 February 2024
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NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Inclusive Growth

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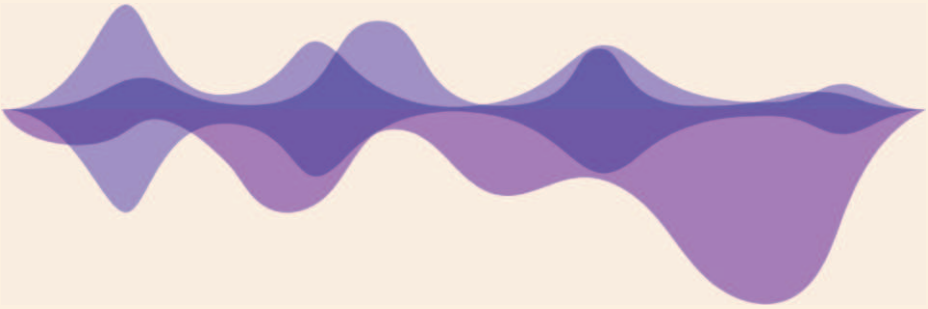
Key Takeaways

INTRODUCTION

When examining the global economic situation, it becomes evident that income disparities in developing and emerging economies far surpass those observed in OECD (Organization for Economic Cooperation and Development) nations. This report meticulously explore the nuances of inclusive growth, offering a comprehensive understanding of the insightful discussions and impactful initiatives put forth by the delegates.

Inclusive growth in India has lately been a focus area for policy makers, with the country experiencing steady economic growth despite domestic and global challenges. The Bharatiya Model of Inclusive Growth, also known as Sabka Vikas by NITI Aayog highlights the importance of Policy and Institutional Reforms in promoting Inclusive Development.

India's growth has been driven by various sectors, including the IT-enabled service sector, which grew from $200 Billion to $320 Billion during the pandemic. The private sector is expected to offer employment to over 600 Million Indians by 2047 with sustained effort. However, challenges remain, such as Poverty, Unemployment, Regional Disparities and Agricultural Backwardness. The World Economic Forum's Inclusive Development Index ranks India 62nd out of 74 emerging countries in terms of inclusive development. The COVID-19 pandemic has further worsened pre-existing inequalities, particularly in the unorganized / informal sectors.



Salient Features of Inclusive Growth in India

Feature	Status	Key Initiatives
Poverty Alleviation	The percentage of people living below the poverty line in India declined from 21.9% in 2011-12 to 8.2% in 2021-22, indicating progress in poverty alleviation efforts. [Source: World Bank].	The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) provides 100 days of guaranteed wage employment to rural households, benefiting millions of impoverished individuals.
Income Equality	According to an SBI Research report, the Gini coefficient (a standard measure of income inequality) on taxable income has dropped from 0.472 in 2014-15 to 0.402 in 2022-23, which is a nearly 15% reduction in income inequality.	Progressive taxation policies, where higher income groups are taxed at higher rates, contribute to reducing income inequality and redistributing wealth more equitably
Social Inclusion	The enrolment rate of girls in elementary education in India increased from 92.3% in 2014-15 to 95.4% in 2022-23, reflecting improved access to education for girls. [Source: Ministry of Education, Government of India]	Reservation policies in educational institutions and government jobs for historically marginalized communities, such as Scheduled Castes and Scheduled Tribes, promote social inclusion
Sustainable Development	India's renewable energy capacity reached 114 GW in 2023, contributing to reducing the country's carbon footprint [Source: Ministry of New and Renewable Energy]	The National Clean Air Program aims to curb air pollution in major cities by promoting cleaner technologies and sustainable practices
Employment Generation	The Pradhan Mantri Employment Generation Programme (PMEGP) has generated over 31.13 lakh employment opportunities since its inception in 2022-23 [Source: Ministry of MSME]	Skill development initiatives, like Skill India and National Apprenticeship Promotion Scheme, equip individuals with job-ready skills, increasing employability

Status of workforce in India as of 2018:

Source: UN

Challenges to Inclusive Growth in India

Achieving inclusive growth in India is a significant challenge due to various factors, including social & economic disparities. Addressing these challenges require a multifaceted approach that involves not only policy interventions, but also active participation from stakeholders at all levels of society. Some of these challenges are listed below:

- **Poverty:** Despite progress in reducing extreme poverty, India still faces significant challenges in eradicating poverty entirely, hindering inclusive growth efforts. According to the NITI Aayog Multidimensional Poverty Index 2022-23 report, 11.28% of the country's population still falls under multidimensional poverty.
- **Unemployment:** The issue of unemployment, especially among educated urban youth, has been a persistent challenge, exacerbated by the COVID-19 pandemic and the dominance of informal employment sectors with limited social security benefits.
- **Urban and Rural Divide:** Disparities between Urban and Rural Areas, particularly in terms of Agricultural Backwardness, Land Availability and Social & Regional disparities pose significant obstacles to achieving inclusive growth.
- **Social Issues:** Gender disparity, caste system, religious disparities and malnutrition among children are social issues that impede inclusive growth by creating barriers to equal opportunities and development for all segments of society.

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Acting for All: Strategies to Promote Inclusive Growth

This section delves into four key sub-topics that were underscored at the NED roundtables to understand and promote inclusive growth in India.

1 Inclusive Employment: A Key to Addressing Regional Disparity and Distributive Growth

2 Inclusive Entrepreneurial Ecosystem

3 Bridging the Industry-Academia Skilling Gap

4 Addressing the Multifaceted Needs of Tribal Communities

1 INCLUSIVE EMPLOYMENT: A KEY TO ADDRESSING REGIONAL DISPARITY AND DISTRIBUTIVE GROWTH

Regional disparity and distributive growth in India present a significant problem as they perpetuate socio-economic inequalities and hinder overall economic development. The concentration of resources and opportunities in specific urban centres neglects the potential of tier 2 and 3 cities, leading to disparities in Income, Education and Employment opportunities.

Additionally, the lack of affirmative action at the workplace exacerbates these inequalities by limiting opportunities for Marginalized Groups, hindering the creation of a diverse and inclusive workforce essential for Sustainable Development. Addressing these issues through the below initiatives is imperative for inducing balanced economic growth and promoting social equity in India.

1.1 Policy Interventions for Tier 2 and 3 Cities:

Tier 2 and Tier 3 cities in India, defined by populations ranging from 50,000 to 100,000 and 20,000 to 50,000 respectively, have the potential to promote inclusivity by embracing diversity and inclusion. Financial inclusion initiatives and businesses of various scales can also tap into the untapped pools of talent in these cities, unlocking their true potential.

Policy interventions in Tier 2 and Tier 3 cities can focus on leveraging their economical real estate, labour and service costs to attract businesses. For instance, the Government's ambitious plans to build Multi-Modal Logistics Networks can incorporate many lower-tier cities and support large-scale economic activity in these regions.

Additionally, policy interventions can promote the development of specialized and niche skill sets in Tier 2 and Tier 3 cities. According to the CII's India Skills Report 2023, cities like Lucknow and Mangalore rank among the top three cities with the most employable talent in India, indicating a growing pool of skilled labour in these regions.

It is suggested to include implementing menstrual leave and flexible work arrangements, adapting physical infrastructure to meet diverse needs, and incorporating CSR initiatives with a focus on social development. Central to these efforts is the need for internalization, normalization, and ongoing monitoring to ensure progress and accountability.

Several key strategies that can be implemented to support the growth of these cities are:

- **Infrastructure Development:** Investing in infrastructure projects like transportation, utilities and digital connectivity can enhance the attractiveness of these cities for businesses and residents
- **Skill Development Programs:** Implementing skill development initiatives to enhance the capabilities of the local workforce can make these cities more competitive and appealing for industries looking to set up operations
- **Government Incentives:** Providing tax incentives, subsidies and other benefits to businesses operating in Tier 2 and 3 cities can encourage investment and economic growth. To organize vendor-buyer-seller meetings through Government funded schemes supporting first time entrepreneurs.
- **Industry Clusters:** Supporting the development of industry clusters in these cities can create specialized hubs that attract businesses and drive economic activity
- **Promotion of Special Economic Zones (SEZs):** Encouraging the establishment of SEZs in Tier 2 and 3 cities can stimulate economic growth by offering favorable policies and infrastructure for businesses.

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1.2 The Role of the Private Sector in India's Inclusive Growth

The private sector has been instrumental in shaping India's progress since the LPG reforms (Liberalization, Privatization and Globalization) of 1991, contributing to over 90% of employable jobs and accounting for 24.7% of the country's GDP. The private sector can offer employment to over 600 million Indians by 2047, which can contribute to sustainable & inclusive growth. Private sectors in India can promote inclusive growth by adopting various strategies and policies.

- **Rural Development:** Investing in agricultural infrastructure (including digital infrastructure), irrigation facilities and rural industries can help promote sustainable agricultural practices, rural entrepreneurship and financial support to farmers. This can help reduce poverty and improve the living standards of rural communities. Establishing industries in rural areas can also provide employment opportunities and a source of livelihood for people, along with additional positive externalities.

- For instance, ITC's e-Choupal initiative, a market-led business model that commenced in 2000, evolved into the world's most extensive rural digital infrastructure by 2023. ITC e-Choupal is a web-based initiative by ITC Limited that connects with farmers in rural India to enhance the quality of their agricultural products and assist them in obtaining better prices. This initiative has significantly increased the proportion of farmers cultivating crops sourced through e-Choupal while decreasing the volume of produce marketed through mandis.

- **Women Empowerment:** Promoting gender equality and empowering women through education, skill training and entrepreneurship programs can help increase women participation in the workforce, reduce gender disparities and promote social inclusion.

- **Private Sector Engagement:** Encouraging Corporate Social Responsibility (CSR) initiatives that focus on inclusive development can help promote social responsibility among private companies. Encouraging private companies to invest in social sectors and support community development projects can help promote inclusive growth.

- **Financial Inclusion:** Ensuring access to financial services for vulnerable groups at affordable costs can help promote a culture of savings, economic development and entrepreneurship.

- **Infrastructure Development:** Infrastructure development is another area where the private sector can contribute to inclusive growth by developing robust physical infrastructure, including transportation, electricity and connectivity, in both urban and rural areas, which improves accessibility, boosts economic activities and reduces regional disparities.

Leading by Example: Inclusive Growth Practices Across Indian Industries

a) ICICI Foundation

ICICI Foundation, was set up in 2008 to further strengthen the ICICI Banks legacy of promoting inclusive growth. The Foundation focuses on initiatives that promote skill development projects, micro-entrepreneurship and access to employment opportunities, directly or through partnerships with grassroots organization. One of its key areas of functioning is the healthcare sector and the foundation has committed a contribution of INR 1,200 crore to Tata Memorial Centre (TMC), a premier institution that runs cancer treatment and research centres across the country

b) IndiGo:

IndiGo is committed to holistic development, focusing on areas like children & education, environment and active involvement in NGOs to uplift marginalized communities. The company allocates at least 2% of its average net profit towards CSR activities, engages in employee volunteering programs and partners with various initiatives to support Education, Health and Environmental Sustainability.

1.3 Integration of Affirmative Actions into the Workplace

Inclusive growth actions at the workplace can include fostering a culture that values diversity, equity and inclusion. This can be achieved through various initiatives such as

- **Respecting and Appreciating Diversity:** Encouraging team members to respect and appreciate each other's background, cultural values and unique traits. This can be done through activities like cultural acknowledgment practices, where team members share and celebrate their cultural heritage.
- **Encouraging Contributions from a Diverse Workforce:** Actively promoting the participation and contributions of a diverse workforce by ensuring that all team members have a voice in decision-making processes and are given opportunities to share their perspectives.
- **Leadership Training Programs:** Implementing structured leadership training programs that offer employees (often from veterans), especially those from under represented groups, opportunities to develop and enhance their leadership skills. Mentorship programs can also be established to provide guidance and support for career growth.
- **Accountability:** When individuals have a platform to report grievances with anonymity, it creates a culture of trust and fairness, where issues can be addressed promptly, leading to a more inclusive work environment. Grievance reporting mechanisms provide a voice to employees, allowing them to raise concerns related to discrimination, harassment or other barriers to inclusivity.

2 INCLUSIVE ENTREPRENEURIAL ECOSYSTEM

Despite the growing involvement of women in the labour force, there persists a noticeable gap in their representation in middle and senior management roles. This underscores significant inquiries into the significance of having women and marginalized groups in leadership positions and whether their presence correlates with improved socio-economic productivity. Research conducted by the Peterson Institute for International Economics revealed that companies with 30% of women in leadership roles could anticipate adding 6 percentage to their net margin, compared to those lacking women in such positions. Additionally, a study by the International Labour Organization indicated that gender equality in the workplace could result in a 26% increase in GDP per capita in developing nations. This disparity necessitates an examination of the obstacles and difficulties hindering the transition from increased participation of under-represented labour forces to higher leadership roles, through the implementation of the following initiatives:

2.1 Improving access to resources for marginalized groups in the workplace

a) Creating Inclusive Spaces for Empowerment of Marginalized Communities

- **Promoting Inclusivity and Diversity:** Inclusive spaces acknowledge and embrace the unique experiences, perspectives and identities of marginalized groups (including women), promoting inclusivity and celebrating diversity by providing an environment of acceptance and belonging.
- **Encouraging Open Dialogue:** Safe spaces provide an atmosphere where individuals can engage in open and honest conversations about challenges faced by marginalized communities without fear of judgment. These discussions are essential for challenging societal norms, prejudices and misconceptions.

b) Digital Education and Building Networks for Minority Business Growth

Digital education offers a multifaceted solution to the distinctive obstacles encountered by women and minority entrepreneurs. Firstly, it fosters self-confidence and nurtures a growth mindset, critical for individuals from marginalized backgrounds who often contend with self-doubt and imposter syndrome due to societal prejudices. Secondly, digital education provides personalized resources and assistance, encompassing access to funding avenues, networking opportunities and specialized training initiatives concentrating on vital skills like financial literacy, business administration, marketing and sales. These tailored provisions empower women and minority entrepreneurs overcome systemic barriers and thrive in the entrepreneurial landscape.

c) The Role of Organizations in Supporting Marginalized Communities

Organizations like the CII - Indian Women Network, YuvaSakti, CRY (Child Rights and You), Smile Foundation, Give India Foundation, HelpAge India Trust can provide support through targeted programs and initiatives, such as:

- **Education and Training:** Providing education and training programs that focus on developing the skills and knowledge necessary for success in the digital age.
- **Mentorship and Coaching:** Offering mentorship and coaching programs that provide guidance and support to marginalized entrepreneurs as they navigate the challenges of starting and growing a business.
- **Networking Opportunities:** Facilitating networking opportunities that connect marginalized entrepreneurs with potential customers, investors and partners.
- **Financial Support:** Providing financial support to marginalized entrepreneurs, including access to loans, grants and other forms of funding. This can help entrepreneurs overcome the financial barriers that often prevent them from starting or growing a business.

2.2 Empowering Minority Entrepreneurs: Identifying the Need for Dedicated Marketplaces

Marketplaces dedicated to minority-owned enterprises offer a venue for these entrepreneurs to exhibit their offerings, expand their reach to a wider customer base and forge connections with prospective clients. Also establishing secure environments for innovation entails providing minority entrepreneurs and creative individuals with nurturing ecosystems where they can engage in collaboration, networking and access resources customized to their requirements.

2.3 Government Initiatives Supporting Minority Entrepreneurs

Several schemes and practices by the Government of India in ideating the scenario by increasing participation of marginalized communities:

- **Mudra Yojana,** a Government initiative in India has significantly contributed to the inclusion of under represented communities, such as women, SC, ST and OBC categories, in entrepreneurship. It aims to promote economic empowerment, job creation and resilience in grassroots economies.
- **The Annual Ambedkar Business Champions Scheme,** an initiative by the Government of Tamil Nadu in 2023 to support the economic growth of members of the Scheduled Caste and Scheduled Tribe communities. The scheme provides a 35% capital subsidy and a 6% interest subvention for loans used to procure machinery and equipment, with the aim of encouraging the aspiring entrepreneurs from these communities to become entrepreneurs.
- **Tamil Nadu SC/ST Start-Up Fund,** aims to provide financial assistance and resources to aspiring entrepreneurs to establish and grow their businesses. In addition, support from various associations like the TN Jewellery Association and DICCI play a crucial role in fostering entrepreneurship by providing networking opportunities, mentorship and market connections to entrepreneurs, including those from the SC/ST communities.

2.4 Increasing participation of Women at Senior Levels

To increase the participation of women in Manager-Level positions, organizations can implement various strategies and initiatives based as listed below:

- **Promoting Women to Leadership Roles:** Actively promote and support the advancement of women into leadership positions by setting goals for recruiting and promoting women at all levels, with particular focus on entry-level management.
- **Supporting Women's Professional Goals:** Provide support for women's professional goals by ensuring that supervisors recognize and encourage women interest in leadership roles.
- **Mentoring and Sponsorship Programs:** Establish mentoring and sponsorship programs to support the long-term career development of young female employees.
- **Normalize Nonlinear Career Paths:** Recognize and normalize nonlinear career paths, acknowledging that interruptions in careers for reasons like care giving, health challenges or educational pursuits should not hinder career progression.
- **Equity and Gender Roles:** Promoting equity leads to changes in household labour division and challenges traditional norms of masculinity.
- **Voice and Representation:** Recognizing that having a voice is an ethical right, ensuring diverse perspectives and needs are represented.
- **Benefits of Women's Participation:** Acknowledging that women bring resources, knowledge, and diversity to various levels, contributing to a more peaceful and balanced world.
- **Leadership and Teamwork:** Understanding that women's leadership style emphasizes teamwork and multitasking, fostering community bonds and better performance in companies.
- **Challenges Faced by Women:** Recognizing biases, family commitments, and societal institutions as hindrances to women's progress, necessitating sensitization programs, education, and supportive policies.
- **Collaborative Solutions:** Emphasizing that both men and women can work together to address gender biases, support women's leadership journeys, and advocate for equitable policies without relying solely on reservations

3 BRIDGING THE INDUSTRY-ACADEMIA SKILLING GAP

There exists a significant gap between the skills imparted by educational institutions and the requirements of the industry. This disparity raises questions about whether educational institutions adequately comprehend industry-based skilling gaps and challenges and whether they incorporate relevant inputs.

Additionally, the effectiveness and inclusivity of Government skilling programs, in terms of catering to diverse demographics and meeting industry demands, require evaluation and potential improvement measures.

Measures to reduce gap and enhance inclusivity:

Measures	Description
Curriculum Modification	Evaluate and adapt academic curricula to include mid-career skilling from Industries focusing on management skills such as time management, resource planning, process flow and report writing.
Implement GTech Model	Explore the implementation of the GTech model, as demonstrated in Kerala, which involves integrating industry projects into academic programs. Students performance could be evaluated by industry experts, with their assessments contributing to academic credits.
Skill-Based Metrics	Develop and implement metrics to assess diverse skill sets of students, recognizing and amplifying individual strengths.
Access to Subject Expertise	Provide access to recorded videos featuring subject matter experts to enhance learning experiences for students.
Teacher Training	Prioritizing training for educators to effectively teach Industry-relevant skills and concepts, ensuring they are equipped to support students adequately.
Internship Opportunities	Facilitate internship opportunities for students at the school level, enabling them to gain practical experience and enhance their employability.
Corporate Outreach Programs	Collaborate with corporate entities to establish outreach programs, wherein employees can share their expertise with students.
Recruitment Process Overhaul	Revising recruitment processes to accommodate individuals with diverse educational backgrounds and skill sets, reflecting a more liberal education system.
Emphasis on Employability Skills	Integrate employability skills into academic programs, focusing on pedagogical shifts and niche skill development to meet industry demands.

The glaring gap between Education and Industry requirements have given rise to underemployment, fostering personal dissatisfaction and low self-esteem among individuals. Addressing this disparity necessitates a collaborative effort between educational institutions, industries and societal reforms. By reshaping curricula, emphasizing practical skills and fostering a culture of continuous learning, we can bridge the gap and empower individuals to thrive in a rapidly changing world.

4 ADDRESSING THE MULTIFACETED NEEDS OF TRIBAL COMMUNITIES

The discussion focused on the pressing issues encountered by the tribals and ways to integrate them without losing their history, traditions & practices. Development of schemes to uphold and protect the interest of tribal people in the country dates back many years.

To integrate result-oriented development projects especially for the tribal community, the following could be implemented:

4.1 Focus on Community Rights

Community rights protect the cultural identity by recognizing their way of life, allowing them to participate freely in their lifestyle and providing the right to education. There is a need to address the unsettled community rights issues in our country promptly. This can be achieved through:

- **Legislative Support:** India can identify gaps in existing laws like the Forest Rights Act to recognize and act accordingly. The National Research Study on Implementation of the Forest Rights found that inadequate awareness of FRA provisions, Lack of Recognition of Community Rights, PTG habitat rights, Rights over Seasonal Landscapes of Pastoralists & Nomadic Communities, Low Participation of Women in FRC and the rights recognition process are major stumbling blocks in the proper implementation of the FRA. Addressing these challenges through legislative support can help preserve the community rights of natives.

- **Gram Sabha Empowerment:** In this context, it is important to note about The Panchayats Extension to Scheduled Areas (PESA) Act 1996 which was brought in as a response to the long-standing demands of the tribal communities in India for greater autonomy and control over their own affairs. However, many tribal communities in non-scheduled areas of the country are not covered by the Act and do not have access to its provisions. The PESA Act can sometimes conflict with other laws, such as the Forest Rights Act and the Wildlife Protection Act, which can hinder its implementation.

  Many Gram Sabhas and Gram Panchayats lack trained personnel to carry out their functions related to the PESA act effectively. Identifying these shortcomings and enhancing the role and powers of Gram Sabhas, which consist of all adults in a village, can facilitate democratic decision-making at the local level.

4.2 Leveraging Technology through Modern Technology Integration:

Embrace modern technology, such as Geographic Information System (GIS) & Geo-Tagging to visualize, analyse and manage land and property effectively.

- **To preserve tribal culture and traditions:**

  From social media and digital repositories of language to online cultural learning tools and augmented reality, technology is helping to keep tribal languages and traditions alive. Technology can play a vital role in preserving tribal culture and traditions, providing tools for community-based forest management, facilitating communication and ensuring sustainable development.

4.3 Mitigating Man-Animal Conflict

Strategies to prevent conflict between tribal groups and wildlife in India requires a multi-faceted approach.

- **Habitat Protection:** Protecting and preserving wildlife habitat are crucial to ensure that animals have sufficient space and resources without encroaching on tribal territories.
- **Community Engagement:** Involving tribal communities in conservation efforts and decision-making processes can foster a sense of ownership and responsibility towards wildlife. For example, The Sacred groves in India are patches of forested areas or individual trees protected by local communities or religious groups as sacred spaces. These groves are typically found in regions with a long history of nature worship and animistic beliefs.

  Different names are used for sacred groves in different parts of India, such as 'Devara Kadu' in Kannada, 'Devrai' in Marathi, 'Punitha Solai' in Tamil and 'Sarna' in the Chota Nagpur Plateau region. Sacred groves play a crucial role in preserving biodiversity, protecting endangered species and maintaining the cultural and ecological heritage of the communities that protect them.
- **Awareness and Education:** Conducting awareness campaigns and educational programs to inform tribal groups about wildlife behaviour, conservation importance (Example: Demerits of Slash and Burn Technique) and conflict prevention strategies can help reduce misunderstandings and conflicts.

4.4 Public Advocacy

Launching public advocacy campaigns to raise awareness and address concerns regarding forest rights.

The Forest Rights Act (FRA) in India, aims to recognize the rights of Adivasi and other forest-dwelling communities over forest resources.

The implementation of Community Forest Rights (CFR) in various states remain low with only 3% recognized across India. States like Maharashtra has recognized CFR in 15% of potential forest land, benefiting 5,741 communities, followed by Kerala at 14%, Gujarat at 9% and Odisha at 5%.

4.5 Conservation Efforts

This involves taking proactive measures to combat deforestation and preserve forest cover in the country.

- **Forest Conservation Policies:** Strengthening forest conservation policies and regulations, such as the Forest Conservation Act of 1980, can help regulate and control forest land use, reducing deforestation and ensuring sustainable forest management.
- **Promotion of Sustainable Practices:** Encouraging sustainable forest management practices, promoting alternatives to Shifting Cultivation and supporting certified forest products can help reduce pressure on natural forests and promote responsible resource utilization.

4.6 Investing in Education

To accomplish this, it is essential to allocate resources for educational programs designed to meet the specific needs of tribal communities.

- **Initiatives by Government in Tribal Education Sector:** The Ministry of Tribal Affairs, in coordination with the Ministry of Human Resources Development and State Governments/UT Administrations, has brought out various schemes to enhance access to education in tribal areas. These initiatives include the establishment of Government Tribal Residential Schools under comprehensive tribal development programme, Ashram Schools, Ekalavya Model Residential Schools, Kasturba Gandhi Balika Vidyalaya, pre-matric scholarships, incentives for higher education and Vocational Training Centres.
- **Investing in Education:** Allocate resources for educational initiatives tailored to the needs of tribal populations.
- **Promoting Livelihood Opportunities:** Establish milk processing units to support buffalo rearing, with a budget allocation of 1.5 crores.
- **Housing Development:** Prioritize the provision of adequate housing for tribal groups, particularly focusing on the most vulnerable communities like the Paniyars.
- **Stakeholder Engagement:** Engage with stakeholders, including RSV Institutions and the Head of the Policy Department, to ensure continuity and effectiveness in implementing proposals.
- **Capacity Building:** Provide training and education on geo-tagging to enhance community awareness and participation.
- **Consultation and Inclusivity:** Foster a culture of consultation with tribal communities to make them active stakeholders in forest rejuvenation efforts.
- **Career Development:** Offer career guidance and support to tribal youth, including addressing issues such as discontinued college education.
- **Skill Development:** Collaborate with colleges and institutions to provide skill development opportunities for tribal members, aligning with local needs and priorities.

4.7 Employment Opportunities:

Through this step, the Government can recruit and train GPS operators from within tribal communities to enhance their involvement in mapping and land management activities of the forest. In the pursuit of tribal area development, various States have outlined strategies to engage tribal communities and safeguard their rights to land and resources. For instance, the Draft Annual Tribal Area Development Programme document from Himachal Pradesh underscores the importance of community involvement in development initiatives, alongside the protection of their land and resource rights. Similarly, the Madhya Pradesh SDG Progress Report 2023 advocates for equitable assessment of indicators and the utilization of high-frequency data in future SDG Index assessments. Tamil Nadu commission for Adidravidar and ST was constituted to protect tribal rights.

4.8 Extending Healthcare Services

Initiatives to look after the health of tribal communities and minorities in rural areas include efforts to improve health outcomes, increase access to healthcare services, address nutritional deficiencies, provide genetic counselling and focus on preventive healthcare measures. Additionally, the sources highlight the importance of community engagement, local participation and the need for tailored health programs to meet the specific needs of tribal populations.

CASE STUDY: HOW WIPRO BOOSTED PRODUCTIVITY THROUGH INCLUSION & DIVERSITY

Wipro's Diversity & Inclusion was officially launched in 2008. Nurturing inclusivity is an integral part of the organization and has remained a core focus area for the company. It is strategic enabler for ensuring the universal growth of companies. Customer portfolio at Wipro is diversified in size, in terms of regions, history, industries and technologies. Wipro's diversity program is fabricated on four important pillars including gender, persons with disabilities, nationality and underprivileged & disadvantaged communities.

1. Gender Diversity

“Women of Wipro," popularly known as WOW led by senior management, enables women executives from their company to channelize their passion for their personal and professional growth and provides the needed platform for their long-lasting career. WOW has expanded a segmented approach to gender diversity that emphasizes on three major themes focusing on the employee's life-stage:

- **Exposure (Life-stage I):** Fuelling ambition by providing greater visibility.
- **Flexibility (Life-stage II):** Opportunity to grow by instituting flexible policies and processes.
- **Empowerment (Life-stage III):** Making a difference by increasing access.

Wipro offers a specialized curriculum featuring workshops on diversity and inclusiveness, along with dedicated resources such as the Women of Wipro webpage and Kids@Wipro program, designed to support employees and their families. These initiatives, include mentoring, leadership sessions and WOW networking sessions to promote an inclusive and supportive workplace environment for women employees to thrive in their roles.

2. Persons with Disabilities (PwD) Program

Wipro's Persons with Disabilities (PwD) inclusion system target five chief policy areas, which include Attainable Infrastructure, Accessible Information Systems, Recruitment, Education and Understanding.

Wipro collaborates with the Diversity and Equal Opportunity Centre (DEOC) to educate on accessibility measures for disabled workers, a partnership initiated in 2008. Wipro upholds a merit-based employment policy, encouraging individuals with disabilities to apply for all positions. Over the past four years, more than 440 employees have disclosed their disabilities. The company has undertaken various initiatives in services, training and awareness to support differently abled individuals.

3. Nationality

Wipro acknowledges the significance of employing individuals worldwide to cater to global clientele, an integral aspect of its journey towards becoming a truly global entity. To embrace cultural sensitivity, the company utilizes advanced online tool like Globe Smart. Additionally, employees traveling abroad are required to partake in a two-day "Onsite Readiness Program," featuring a cultural sensitivity module. Moreover, specialized culture sensitization sessions are conducted for all account team members alongside the onsite readiness and cross-culture sensitivity programs.

4.Employees from Underprivileged Societies

Creating opportunities for individuals from marginalized communities not only expands the candidate pool but also brings a highly dedicated workforce to the organization. The key strategies for this are:

- Collaborate with Colleges / Universities in small cities to propel recruitments.
- Collaborate with NGOs / Foundations which convey skills training to graduates from marginalized societies.
- Collaborate with State Governments in areas like the North-East and tribal areas to impart expertise and training to Trainers.

Facts and Figures on Wipro's Diversity:

Years	Reports
2022-2023	• Global workforce represents 144 nationalities working in 65 countries • Women comprise 36.4% of workforce • Women comprise 33.3% of Board of Directors • Women comprise 22.2% of Executive Committee • Over 600 disabled employees (with 15 types of disability)

5 CONCLUSION

The report covers how adopting inclusive hiring and promotion practices, offering flexible work arrangements, providing training & education, ensuring equal pay & benefits and providing mentorship & support, companies can create a welcoming environment for under represented communities at the workplace. Ultimately, promoting inclusivity in work spaces is not only the right thing to do, but it is also beneficial for the success of the organization.

In recent years, there has been a significant push towards diversity and inclusivity in the workspace in India, with focus on creating an environment that values people from all walks of life, regardless of their gender, race or ethnicity through the processes that have been highlighted in the report. While some of the initiatives are already in practices, others are approaches that can be pursued to assure inclusive growth at workplace in years to come.

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NILGIRIS ECONOMIC DIALOGUE

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Participants & Testimonials

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Mr S P Vijayakumar
Independent Researcher

Testimonials

Serene settings
Brilliant minds,
Insightful talent,
Impactful ideas….
……we are onto something big…
…… let's act!!

AR Unnikrishnan
Chairman, CII Chennai Zone &
Managing Director – Glass
& Glass Solutions
Saint-Gobain India Pvt Ltd

Despite being from a rival tea making hill station (Darjeeling), I am more than happy to sing the praises of Ooty and the Nilgiris Economic Dialogue

Pramit Pal Chaudhuri
Head of India Practice
Eurasia Group

Thank you so much CII for an amazing, fruitful& interesting dialogue & discussion weekend! The surroundings were most astonishing! Looking forward to (if I can assist in anyway) to be part of the next event!

Katja Larsen
Founder
Silver Spoon Consultancy

It was great participating in the Nilgiris Economic Dialogue, meeting intellectually stimulating people from across different industries. It was a breath of fresh air with a clear group of differentiators

Rajesh Subramaniam
CEO & Founder
EmbedUr

Testimonials

Delighted to have been a part of NED and I look forward to the future editions of this conclave!

Wg Cdr Rakesh Sharma (Retd)
First Indian Astronaut in Space &
Senior Member of Gaganyaan
Advisory Panel

It was wonderful to participate in the CII Nilgiris Economic Dialogue. There were insightful sessions on policy, geopolicies and economic growth. I wish all the best to CII and hope the discussions translate into policy measures that can make a difference!

Stanly Johny
International Affairs Editor
The Hindu

Very rich meeting, kudos to CII in broadening industry thinking and bringing in social capital. Great beginning & please do keep the process going. Will pay rich dividends over the next decade.

Vinod Daniel
CEO / Chairman
India Vision Institute / AusHeritage

It was a really thought provoking experience to delibrate relevant and impactful topics with a diverse group of influential fellow participants. I am sure this program will go a long way towards developing our country and world at large.

Arjun Prakash
Wholetime Director
Effica Automation Ltd

Testimonials

NED 2024 was truly fantastic. It brought together industry experts, academicians, government, startups and activists together to discuss not any industrial growth but inclusive growth, conservation and planet. The focus group roundtables were very objective with clear outcomes discussed. Really looking forward for future editions of NED. Thank you !

Rahul Ganapathy
Co-Founder & CEO
Atsuya Technologies (P) Ltd

This dialogue is an essence of the continued fabric of progress. Thank you to CII for bringing us all together. Lets keep this going.

Kavin Kumar K
Chief Executive Officer
ProClime Services (P) Ltd

Excellent Programme in term of the agenda, organization, quality of discussion and quality of participants. CII has done a phenomenal job in curating the agenda and speakers. Every aspect was managed in a perfect and impeccable way.

Kaviraj Nair
CEO- Office of Institutional Advancement
IIT Madras

Such an enriching experience. Loved the diversity of the cohort, panels and roundtable discussions. Loved the thoughtful curation of it all. Look forward to the next.

Shobhana Kumar
Founder
Small differences

Confederation of Indian Industry

NILGIRIS ECONOMIC DIALOGUE

02-04 FEBRUARY 2024 · OOTY

Glimpses


NILGIRIS
ECONOMIC
DIALOGUE


WELLINGTON GYMKHANA CLUB


DR R SHIVAKUMAR
DR SENTHIL GANESH


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Confederation of Indian Industry

2nd Edition

NILGIRIS ECONOMIC DIALOGUE


7-9 February 2025

Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with around 9,000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 365,000 enterprises from 294 national and regional sectoral industry bodies.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness, and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Through its dedicated Centres of Excellence and Industry competitiveness initiatives, promotion of innovation and technology adoption, and partnerships for sustainability, CII plays a transformative part in shaping the future of the nation. Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes across diverse domains including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

For 2024-25, CII has identified "Globally Competitive India: Partnerships for Sustainable and Inclusive Growth" as its Theme, prioritizing 5 key pillars. During the year, it would align its initiatives and activities to facilitate strategic actions for driving India's global competitiveness and growth through a robust and resilient Indian industry.

With 70 offices, including 12 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with about 300 counterpart organizations in almost 100 countries, CII serves as a reference point for Indian industry and the international business community.

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