

ARTHIK SAMVAAD

Dialogue | Discourse | Deliberation

NEWSLETTER



INDIA 2030: Becoming a 7 Trillion USD Economy

ACKNOWLEDGEMENT

We extend our heartfelt gratitude to all those who have made the inaugural edition of our newsletter a resounding success.

We extend our gratitude to Mr. Suresh Prabhu for his insightful foreword, which has rightly set the tone for this edition.

We would like to express our deepest appreciation to Mr. Devesh Tripathi, President of NEF, for his unwavering support and invaluable guidance throughout this journey.

To the experts who generously shared their knowledge and wisdom, your contributions have enriched our publication and elevated the discourse on economics. We are extremely grateful for your contribution.

We are immensely grateful to the general public for the overwhelming response and keen interest shown by your valued submissions. Your enthusiasm fuels our commitment to fostering economic understanding.

A profound acknowledgment is due to Mr. Abhishek Singh and Mr. P. Ramgopal for their exceptional leadership, which has steered this endeavour to success.

Our heartfelt thanks go out to the entire NEF team, whose dedication and tireless efforts in design, content creation, social media, editing, and logistics support have brought this newsletter to life.

Last but not least, we express our sincere appreciation to our readers for being a part of NEF's mission to facilitate positive change in India's economic landscape.

With warm regards and appreciation,
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FOREWORD

Dear Reader

I am deeply honored and privileged to write this foreword for the inaugural issue of the National Economic Forum's newsletter, dedicated to the theme of '**India 2030: Becoming a 7 trillion USD Economy.**' As I peruse through the pages of this publication, I am reminded of the power of knowledge, collaboration, and the shared vision for India's economic future.

In the coming decade, India aspires to become a 7 trillion USD economy. I am convinced that the journey towards India's 7 trillion USD economy will require collective wisdom, visionary policies, and unwavering dedication. It is not a goal that can be achieved in isolation, but rather through a shared commitment to progress.

Throughout my tenure as India's Commerce and Industry Minister and in other key roles, I have witnessed firsthand the power of economic policies to shape a nation's destiny. The future of India's economy lies in the hands of individuals, organizations, and leaders who are committed to innovative thinking and meaningful action.

This newsletter serves as a vital platform for fostering dialogue, knowledge sharing, and innovative thinking on how this ambitious goal can be realized. It is a forum where experts, scholars, students, and policy enthusiasts converge to share their insights, research findings, and solutions, all in an effort to shape the discourse on India's economic trajectory.

I extend my sincere congratulations to the National Economic Forum on the launch of this remarkable newsletter. I am confident that NEF will continue to be a vital catalyst for positive change and an enduring source of knowledge and inspiration for all those who are passionate about India's economic growth.

I express my gratitude for allowing me to be a part of this significant endeavor. Together, let us work towards a brighter and more prosperous India by 2030.

Suresh Prabhu



Shri Devesh Tripathi

President and Founder
National Economic
Forum
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PRESIDENT ADDRESS

Dear Members and Colleagues

As the President of the National Economic Forum, I am excited to address you all and share my thoughts on a topic that holds immense significance for our beloved country - "India 2030: Becoming a 7 trillion USD economy."

It gives me great pleasure to witness India's remarkable economic growth and development over the years. Our nation has emerged as one of the fastest-growing major economies globally, serving as a testament to our resolute vision and unwavering determination.

Looking ahead to 2030, our aspirations are set even higher. We envision India transforming into a 7 trillion USD economy, demonstrating our potential and marking a milestone that will shape the future of our nation for the better. To achieve this audacious goal, we must focus on critical areas such as infrastructure, manufacturing, agriculture, healthcare, and education. By investing strategically in these sectors, we will nurture sustainable growth and unlock opportunities that will pave the path to economic prosperity.

However, economic growth cannot be achieved in isolation. Strong policy and legal frameworks are essential to provide a conducive environment for businesses, attract investments, and facilitate innovation. Yet, the core of our endeavours lies in the well-being and empowerment of our people. We strive for an inclusive society where every citizen has access to quality education, healthcare, and opportunities. By investing in the development of our youth, we aim to equip them with the skills and knowledge required to thrive in the global arena. Furthermore, gender equality, diversity, and social welfare are essential components of our vision for India 2030.

I am confident that with our collective efforts and unwavering determination, we will successfully propel India towards becoming a 7 trillion USD economy, unlocking vast opportunities and prosperity along the way. I wish to congratulate the team as well as the esteemed collaborators on one year of NEF, looking forward to the future.

Thank you for your unwavering support and commitment.

Devesh Tripathi



Mission

The National Economic Forum is an independent policy research organisation that works to transpose and envision sweeping policy changes that could be brought about through collective action. The NEF places emphasis on three key areas; People, Places and Programs. We strive to conceptualise solutions (Programs) that are aimed at achieving equitable outcomes (People) while tailoring implementation plans per each state's (Places) unique strengths and shortcomings.

The NEF looks forward to creating a platform for discussions and deliberations on issues of both national and global interests in the areas of Technology, Economy and Development, Good Governance and Economic Growth, Knowledge Economy, Sustainable Economy, Law and Economy and Strategic Economic Areas. Our objective is to provide government stakeholders with well-founded and data-driven insights into crucial and emerging economic issues in India.



Vision

Our vision is of an India that learns from the world, and a world that can learn from India. We are rooted firmly in our identity, but forever growing and branching out. We believe that economic growth should be aligned with national interest in order to make India a self reliant, self sufficient and sustainable economy. Our approach is to provide accessible, feasible, implementable solutions to create robust, coherent and collaborative models and mechanisms for addressing India's emerging legal and policy challenges



ABOUT US

The **National Economic Forum (NEF)** is one of India's finest not for profit, bipartisan and independent think tanks and policy research institutions. The forum utilises data, analytical approach, comprehensive research, and policy outreach programs to produce policy outputs and outcomes about the issues that directly or indirectly impacts Indian economy.

We work across six focus areas namely Technology, Economy and Development, Good Governance and Economic Growth, Knowledge Economy, Sustainable Economy, Law and Economy, and Strategic Economic Areas. The NEF conducts in-depth, focused yet holistic research on a variety of contemporary and emerging policy relevant economic issues.



Focus Areas

- Technology, Economy and Development
- Sustainable Economy
- Good Governance and Economic Growth
- Knowledge Economy
- Law and Economy
- Strategic Economic Areas

Dear Reader

Welcome to the inaugural edition of *Arthik Samvaad- Dialogue, Discourse and Deliberations*. As we celebrate the successful completion of our first year, we embark on an exciting journey to delve deeply into the realm of prospects and challenges that lie ahead of India.

We aim to foster dialogue, create opportunities for novel discourse, and drive positive change through open deliberations in India's economic and policy landscape. This aligns with NEF's objective of creating an inclusive forum for the exchange of ideas and views by inviting written submissions from experts and the general public alike. We cordially invite research scholars, students, and policy enthusiasts from all over the country to read our newsletter and contribute their insights to our upcoming newsletters.

It is with great enthusiasm that we introduce the central theme of this edition: "India 2030: Becoming a 7 Trillion USD Economy." This collaborative effort is designed to facilitate India's mission of becoming a 7 trillion dollar economy in the next 7 years, aligning our goals with the Nation's vision, by focusing on 7 key areas. These areas encompass a wide spectrum of economic and policy considerations that will be integral to India's economic journey. The proposed 7 key areas are, **Green and Blue Growth; Expansion of the Digital Economy; Enabling Good Governance; Technology and Innovation-led Development; Globalization and Foreign Direct Investments; Empowering Domestic Industries; Leaving No One Behind (LNOB)**. Each key area is a component of the grand vision of a 7 trillion USD economy, and experts, researchers, and the general public across the country have proposed their ideas in this edition to successfully assemble this mosaic. These areas encompass a wide spectrum of economic and policy considerations that will be integral to India's economic journey.

Join us on this exciting journey as we catalyse discussions, share knowledge, and contribute to the positive transformation of India's economic landscape. We invite you to be an active part of this endeavour, sharing your insights, experiences, and ideas as we work collectively toward a brighter economic future for India.

Editorial Team
National Economic Forum

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EDITORIAL

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Blue and Green Growth

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Green and blue growth technologies represent innovative solutions aimed at balancing economic growth with environmental preservation. These technologies, which encompass a wide range of practices and innovations, hold the potential to create a more sustainable future for our planet. The technological advancements that promote sustainability and protect our planet has become of paramount importance and with environmental issues becoming more prevalent, the demand for the same is increasing rapidly.

Overall, it's about finding ways to protect the planet and reduce harm to nature. Green and blue technologies play a crucial role in protecting the environment by reducing greenhouse gas emissions, promoting renewable energy sources, and minimising the use of fossil fuels. Green and blue infrastructure has made optimal use of natural resources, for instance, wetlands, greenways, blue streams, forests etc., to protect biodiversity and enhance the ecological environment that helps in the green economy.

Green Growth Technologies:

Key components of green growth technologies include renewable energy sources, sustainable agriculture, eco-friendly transportation, and energy-efficient building design. These technologies aim to reduce greenhouse gas emissions, decrease resource depletion, and minimise waste generation. Green architecture, also known as sustainable or eco-friendly architecture, is an approach that focuses on designing buildings with minimal negative impact on the environment. It aims to use resources efficiently, reduce waste, and create energy-efficient, healthy, and comfortable spaces for occupants. By integrating features like proper insulation, energy-efficient lighting, and renewable energy systems, green architecture can significantly reduce energy consumption and carbon emissions associated with buildings.

Some of the green technology innovations include solar desalination, green architecture, vertical farming and

hydroponics, wind power, electric vehicles, plant-based packaging, sustainable phones, e-waste recycling, carbon capture and storage technology, nuclear energy and fuel cells. As of today we can anticipate further improvements in renewable energy technologies, such as more efficient solar panels and advanced wind turbines that would augment to a greater adoption of clean energy sources and further reduce carbon emissions.

Solar energy is one of the most promising and widely implemented green technologies. It involves using solar panels to convert sunlight into electricity, reducing the reliance on fossil fuels and significantly reducing carbon dioxide emissions. Solar energy systems can be used in both residential and commercial settings, making it a versatile and renewable energy source.

Wind power is a renewable energy source that uses the wind to make electricity, and it's quickly becoming a big part of our clean energy future.

As technology improves, wind power is getting more efficient and widespread. It has immense potential as a renewable energy source. With the advancement of wind turbine technology, we can harness the power of the wind to generate clean electricity on a larger scale. Wind farms located in areas with high wind speeds can contribute significantly to the global transition towards a greener energy mix.

Transportation is a major source of environmental pollution, mainly due to fossil fuel-powered vehicles emitting CO₂ into the atmosphere. However, the shift towards green cars offers hope for a cleaner future. Electric vehicles, or EVs, are another remarkable green technology innovation. Using electricity as their primary power source instead of gasoline or diesel, EVs produce zero tailpipe emissions, reducing the overall carbon emissions from transportation. With advancements in battery technology, EVs are becoming more accessible and practical for everyday use.

Energy-Efficient Buildings and Infrastructure

Green building technologies are revolutionising the construction industry. From smart lighting systems to passive heating and cooling designs, these innovations optimise energy consumption in buildings. Incorporating natural ventilation, high-quality insulation, and sustainable materials not only reduces operational costs but also minimises environmental impact. Furthermore, the integration of green roofs and vertical gardens can enhance urban biodiversity, combatting the detrimental effects of concrete jungles.

Blue Growth Technologies:

Blue growth technologies are centred around sustainable development within the marine and coastal environments. As our oceans face numerous challenges, including overfishing, pollution, and habitat degradation, blue growth technologies seek to balance the economic benefits of marine industries with the conservation of ocean ecosystems. Prominent blue growth technologies include sustainable fisheries management, aquaculture, marine energy generation, and marine biodiversity conservation efforts.

Marine Biotechnology and Aquaculture

Marine biotechnology encompasses a wide range of applications, from pharmaceuticals to biofuels. Extracting valuable compounds from marine organisms can lead to breakthroughs in medicine and sustainable energy. Additionally, aquaculture, or sustainable fish farming, is pivotal in meeting the global demand for seafood while alleviating pressure on overexploited wild fish stocks.

Blue Carbon Sequestration

Blue carbon refers to the carbon stored in coastal and marine ecosystems such as mangroves, seagrasses, and salt marshes. These ecosystems are highly effective in sequestering carbon dioxide from the atmosphere, helping in mitigating



climate change. Conservation and restoration efforts in coastal areas are critical for preserving these invaluable carbon sinks.

The Significance of Green and Blue Growth Technologies

Environmental Conservation:

The most apparent significance of green and blue growth technologies is their role in preserving the environment. Green growth technologies contribute to reducing greenhouse gas emissions, thus mitigating climate change and its associated impacts, such as extreme weather events and rising sea levels. Blue growth technologies, in turn, safeguard marine ecosystems, which are essential for biodiversity, carbon sequestration, and the livelihoods of coastal communities.

Economic Prosperity:

Green and blue growth technologies can create new economic opportunities while simultaneously addressing environmental concerns. Investments in renewable energy sources and energy-efficient technologies can generate jobs and drive innovation. In the case of blue growth technologies, sustainable fisheries and aquaculture practices can enhance food security, support coastal economies, and promote international trade.

Resource Efficiency:

Both green and blue growth technologies promote the efficient use of natural resources. For instance, green growth technologies encourage sustainable agriculture practices that reduce soil erosion, minimise water

usage, and limit chemical inputs. On the other hand, blue growth technologies promote responsible fishing and aquaculture methods, reducing the overexploitation of marine resources and the negative consequences for ecosystems.

Resilience and Adaptation:

As climate change intensifies, societies must become more resilient and adaptive to its impacts. Green growth technologies, including sustainable infrastructure, urban planning, and water management, can help cities and regions better withstand climate-related challenges. Blue growth technologies support the resilience of coastal communities by conserving coastal ecosystems and mitigating the risks associated with sea-level rise and storm surges.

Transformative Impact of Green and Blue Growth Technologies

Renewable Energy Revolution:

One of the most transformative aspects of green growth technologies is the ongoing shift from fossil fuels to renewable energy sources. Solar, wind, and hydroelectric power have gained significant traction, reducing greenhouse gas emissions and decreasing reliance on non-renewable energy sources. The widespread adoption of electric vehicles, improved energy storage technologies, and smart grids further supports this transition.

Sustainable Agriculture Practices:

In agriculture, green growth technologies have ushered in innovative farming practices such as precision agriculture, agroforestry, and organic farming. These approaches

prioritise soil health, reduce chemical inputs, and enhance crop yields. By promoting sustainable agriculture, we can address the challenges of food security, decrease deforestation, and protect biodiversity.

Sustainable Fisheries and Aquaculture:

Blue growth technologies are revolutionising the way we approach seafood production. Sustainable fisheries management practices, such as quota systems and improved monitoring, help prevent overfishing and depletion of fish stocks. Meanwhile, responsible aquaculture practices minimise the environmental impact of seafood production and reduce pressure on wild fish populations.

Ocean Energy Generation:

Marine energy sources, such as tidal and wave energy, are a burgeoning field within blue growth technologies. These clean energy sources have the potential to provide a consistent and renewable energy supply while reducing reliance on fossil fuels. The development of offshore wind farms is also a prime example of how blue growth technologies can create clean energy opportunities.

Ecosystem Conservation and Restoration:

Both green and blue growth technologies emphasise the importance of conserving and restoring natural ecosystems. Reforestation and afforestation efforts in green growth contribute to carbon sequestration and ecosystem restoration, while marine biodiversity conservation programs protect critical ocean habitats, such as coral reefs and mangroves.

Challenges and Barriers

Despite their transformative potential, green and blue growth technologies face several challenges and barriers that need to be addressed for their full realisation.

Economic Costs:

The initial investment required for many green and blue growth technologies can be significant. Governments and industries must be willing to commit resources to support the transition to sustainable practices, which can deter some stakeholders.

Policy and Regulatory Frameworks:

The absence of effective policies and regulations can hinder the adoption of green and blue growth technologies. Governments play a crucial role in incentivizing and regulating these technologies, to ensure they are widely adopted.

Public Awareness and Engagement:

Raising public awareness about the importance of green and blue growth technologies is essential for their success. Communities must be engaged and informed about the benefits of sustainable practices, and how they can participate in the transition to a more sustainable future.

Technological Innovation:

Continuous technological advancements are required to further enhance the efficiency and effectiveness of green and blue growth technologies. Investment in research and development is crucial to drive innovation in these fields.

Global Cooperation:

Given that many environmental challenges are global in nature, international cooperation is crucial. Tackling issues like climate change and overfishing requires collective efforts and coordinated policies on a global scale.

The Path Forward

The adoption of green and blue growth technologies is essential for addressing pressing global challenges, from climate change and habitat destruction to resource depletion and food security. As we move forward, several key actions

should be considered. Governments worldwide must commit to and lead the transition to green and blue growth technologies. Policy and regulatory support, along with incentives for businesses and individuals to adopt sustainable practices, are crucial. Raising awareness and educating the public about the benefits of green and blue growth technologies is also essential. Public support and demand for sustainable products and services can drive market changes.

Furthermore, investment in research and innovation is vital to advance green and blue growth technologies. Governments, businesses, and academic institutions should collaborate to develop new, more efficient, and environmentally friendly solutions. Global challenges require international cooperation. Countries must work together to address climate change, ocean conservation, and the responsible use of resources.

Conclusion

Green and blue growth technologies represent a promising path towards a more sustainable and prosperous future of our planet. As the world grapples with environmental challenges, these technologies offer innovative solutions that promote economic growth while preserving our environment. With the right commitment, leadership, and cooperation, we can harness the transformative potential of green and blue growth technologies to create a world where humanity coexists harmoniously with the natural world. It is essential to ensure that the benefits of green and blue growth are equitably distributed. This requires addressing disparities in access to resources, opportunities, and benefits. Effective regulatory frameworks are necessary to ensure that green and blue growth technologies are adopted responsibly.



Are freebies an effective way to provide welfare?

A need for economic
rationalisation of subsidies

Authors: Jatin Mathur
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In 2006, the Government of Tamil Nadu, led by the DMK party, allocated over INR 3,687 crore (a figure under dispute) to procure 10.64 million, 14-inch colour televisions; as part of an election promise made during the state assembly elections. This initiative was part of a state-sponsored freebie scheme to distribute non-merit goods free of cost. In contrast, Karnataka, another Indian state, introduced a merit good program in the fiscal year 2018 by waiving farm loans, initially amounting to INR 18,000 crore. Surprisingly, this amount was subsequently increased to INR 44,000 crore in the following fiscal year, marking an unprecedented rise (HT 2021). Both these initiatives offer insights into the conceptualization and execution of freebie programs in India.

The public discourse and debates surrounding these "special subsidies" predominantly emerge during electoral periods when political parties, in their pursuit to attract voters, make promises of distributing free resources or "freebies" (ORF 2023). While the "explicit" intention behind implementing these "special subsidies" is to uplift beneficiaries socially and economically, their increasing utilisation as political tools to sway votes, especially at the state level, has become a prominent trend. Consequently, it is imperative for an academic discourse to contextualise discussions on freebie policies within economic frameworks, to establish both political and public accountability.

The evolution of human civilization has seen a continued trend of welfarism. With growing inequalities, both economic and social, democracies have been more inclined towards establishing welfare states, with the key focus being placed on uniform development and empowerment of citizens and

ensuring social protection. With the widening socio-economic gap India's own path to welfarism has gone through various phases, influenced by changes in its social, political, and economic landscapes. While social security benefits have been a priority for both the central and state governments, the lack of constitutionally mandated provisions led to a focus on economic measures as the means to reduce poverty. In terms of social schemes, sub-national governments stepped up by introducing their own, like Tamil Nadu's mid-day meal program, which observed an enhancement in the access to education.

In the 1990s, a centre-level shift toward a needs-based approach to welfare occurred, with a focus on human development. Notable initiatives included the National Social Assistance Program (NSAP) and the Targeted Public Distribution System (TPDS). Education programs were also prioritised, and food security remained a critical area. In 2013, India enacted the National Food Security Act, a revolutionary step in its war against hunger, giving the right to food a constitutional status for a significant portion of India's population. These welfare measures are embedded in the constitutional structure, thereby granting them an exalted status.

However, the question now is where does the welfarism stop and the political appeasement begin?

Accruing to India's nature of welfare state and preceding trends of welfare schemes and subsidies, India finds itself in a unique position. While most nations have political parties that compete on terms of policies, India has opposing parties contesting on the basis of which political party is willing to hand out more freebies, resulting in an increased burden on the state finances.

This situation is acutely visible in Southern states with other states following similar trends and warrants public attention. Given that the discourse around freebies centers on its characterisation and the underlying ambiguity highlighted while distinguishing it from welfare subsidies, it is crucial to establish clear definitions for the terms "subsidy" or "freebie." These terms are extensively utilised in the context of explicit budgetary assistance aimed at supporting vulnerable or marginalised sections of the populace.

Traditionally, freebies have been understood as resources, particularly goods, distributed to beneficiaries at zero cost (RBI Bulletin 2022). However, recent discourse suggests a more nuanced and broadened scope of distributing public resources for free. This extension incorporates crucial factors like political expediency, electoral manipulation, lack of long-term vision and the immediate relief goal for targeted beneficiaries, extended beyond the marginalised (ORF 2023, Ghosal et al 2023, Bavadekar 2022). These factors have been argued and highlighted by various scholars in both academic literature as well as in popular media.

For instance, let's take a look at Karnataka's Budget and how they accommodated the flagship Gruha scheme (a freebie policy), as announced by the political party in their manifesto just before the state assembly elections. These free schemes are Gruha Lakshmi, Gruha Jyothi, Gruha Shakthi, Anna Bhagya and Yuvanidhi, portrayed as guarantees targeted towards women, unemployed youth, and households (Manifesto 2022). The annual cost of these five guarantees/freebies has been estimated to be INR 52,000 crore.



However, in the state budget for FY 24, with a total outlay of INR 3.2 lakh Crore, the state has decided to spend INR 39,825 crore, 23 percent lower than the estimated amount. The spending on these schemes accounts for 16 percent of Karnataka's budgeted revenue expenditure in 2023-24 (Karnataka State Budget FY24). This doesn't include the existing and proposed subsidy burden of the state in sectors like power, irrigation, health insurance to Gig economy workers and farmers loan waivers etc. The state government is planning to increase excise duties and property taxes for fiscal consolidation in order to accommodate additional freebie burden (CBPS 2023).

The macroeconomic look provides a concerning economic scenario for the state. Karnataka faces significant challenges with a revenue deficit of INR 12,523 crore and a fiscal deficit of INR 66,646 crore. Moreover, the state's budgeted expenditure has seen substantial cuts in crucial sectors such as agriculture, energy, irrigation, and infrastructure; raising questions and concerns on the allocation of resources.

The overall expenditure has risen by 12 percent, primarily to accommodate the five 'guarantees' freebies in the budget, accounting for 60 percent of the state's fiscal deficit. Additionally, there has been a 40 percent increase in debt repayment, a 32 percent increase in loans disbursement, a 28 percent increase in borrowings, and a 3 percent decrease in capital outlay. It is noteworthy that the capital outlay was estimated to be 21 percent higher than the budget estimate in FY23 (PRS Budget Analysis FY24). Apart from current indicators, the FY24 budget increased the limit for short-term "interest-free" loans to farmers from three lakhs to five lakhs leading to an unprecedented 60 percent rise that is estimated to result in an additional state expenditure of INR 25 thousand crore (Karnataka State Budget FY24). These indicators provide a concerning picture of the state's macroeconomic financial ecosystem and future possibility of fiscal instability and inflation (RBI State Finances FY23) (State of Finances 2022-2023).

In the fiscal year 2020-21, Karnataka recorded a fiscal deficit of INR 67,098 crore, equivalent to 3.7 percent of its Gross State Domestic Product (GSDP) which is estimated at INR 18 lakh crore (Refer to table I for more information). However, the debt has increased five folds in the last five years. Additionally, it is important to note that Karnataka's outstanding liabilities, amounting to INR 4.3 lakh crore, account for almost 24 percent of its Gross State Domestic Product (GSDP). This alarming trend indicates that the state's debt is growing at a rate nearly twice as fast as its GSDP, which raises concerns about its long-term sustainability.



Table I: Overview of State's Macroeconomic Indicators for FY23 (RE) and FY24 (BE) (in crores)

Macroeconomic Indicators	Value in FY23	Value in FY24
GSDP	22,41,368	23,33,902
Total expenditure	2,89,653	3,27,747
Fiscal Deficit	61,137	66,646
Revenue Deficit	5,996	12,523
Borrowings	67,000	85,818
Debt	27	25
Capital Outlay	52,766	50,989
Loans given by the state	2,555	3,385

(Source: RBI State Finances, Karnataka Economic Survey, PRS State of State Finances, State Budget FY24)

It's worth noting that this culture of distributing free resources, both merit-based and non-merit-based, is not unique to Karnataka and can be observed in other states as well (MEDC 2022, Singh 2016). While these activities may seem like they are intended to provide welfare to citizens, they come at a high opportunity cost and can lead to macroeconomic instability (as elaborated in previous paragraphs).

Thus, this increased trend of freebies is detrimental to the otherwise planned and implemented welfare schemes; for the rise in state sponsored benefits debilitates the state budget from accommodating the cost in the long run. This is clearly indicated in the push and pull between the now opposing discourses of welfarism and populism. These "state sponsored subsidies" on the surface look attractive as they provide instant relief to the strained population of India, however, their long term impact can be seen with increased dependence of the public on the state, and increased debt of the states. At present, taxes make up for 88 percent of government revenues and future rise in indirect taxes or reduction of state expenses on health, education or other welfare benefits, can be anticipated to decrease the deficit.

The ultimate burden of the taxation falls on the middle and working classes of the population, given the continued leeway to the richest and corporates. Additionally, resulting in the diversion of investments from key asset generating sectors due to debt based financing (ORF 2023, Bavadekar 2022).

Research studies examining energy subsidies and agricultural subsidies have demonstrated their positive influence on the social advancement of marginalised communities. While the economic outcomes, such as increase in real incomes, reduction in poverty, employment, and investments have shown varying degrees of impact, the social upliftment resulting from these subsidies remains consistent (Tilak 2004, Bhalotra 2002, Acharya et al 2017).

A welfare state in its true essence observes welfarism to ensure equitable distribution of resources, doing so to ensure basic access to necessities to the economically and socially marginalised communities. Having accessibility to basic needs such as health services and education, ensures that the productivity and contribution of the citizens is improved. While it would

make sense to tax the richer and ensure safety for the poorer sections of the country, in reality the scenario is different. The 2023 Oxfam study suggests that primary school openings nationwide might be filled for thirteen years if the top ten Indian billionaires were subjected to a 1% taxation rate and a three-year subsidy on malnutrition can be obtained by taxing all of India's billionaires at a rate of 2%. This is both reflective of the wealth accumulation as well as how the burden can be evened out if taxes were better planned.

The realisation of a USD 7 Trillion economy in India extends beyond mere economic metrics such as GDP or GVA; it encompasses the translation of incremental economic growth into specific social objectives. Hence, it becomes imperative for the state to consider well nuanced schemes with long term returns as compared to band aid reliefs which incur long term costs. The trade off between welfarism and populism should not result in driving out welfare. Hence it is essential to acknowledge that what constitutes welfare, is not just a reflection of its political intention and social necessity but also its economic feasibility and long term sustainability. Having a long-term vision, targeted beneficiary identification, balanced taxation policies and potential economic returns becomes imperative to accommodate such schemes in the future.

Constructing a robust welfare strategy for a defined period becomes pivotal; it serves as a guiding framework enabling the state (in advance) to rationalise objectives and operationalise a spectrum of subsidies for the next few years. Furthermore, conducting a comprehensive cost-effectiveness analysis is essential and can inform our understanding of the varying impact of policy measures, facilitating a rational process to decide optimality among selected policy alternatives. It is of utmost importance that the contemporary governments grasp the essence of welfarism and take it beyond mere tokenism and appeasement.

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Comprehensive FTA's: Fuelling India's Trade Prospects

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At a press conference held on September 16, 2023, Union Commerce and Industry Minister Piyush Goyal announced that the Government of India has indefinitely paused the comprehensive trade talks with Canada [1], jeopardising the gradual but steady rise in bilateral trade between the two nations. Due to this, India will miss out on valuable investments, high-value manufacturing, and technology transfer. These aspects are crucial for securing India's position in the rapidly changing global supply chains [2]. The recent development has put free trade agreements (FTAs) under the spotlight. This article aims to question whether free trade agreements (FTAs) can help bolster the Indian economy.

Free Trade Agreements (FTAs) are international pacts between two or more nations or trading blocs that aim to reduce or eliminate customs tariffs and non-tariff trade barriers on significant trade activities.

As of August 01, 2023, there were 360 FTAs in force worldwide, according to the World Trade Organisation's database.

Over the years, India has signed various trade agreements, which have further evolved into agreements that offer closer integration in domains including investment, intellectual property rights (IPRs), services, and government procurement in addition to preferential tariff rates [3].

Comprehensive FTAs can provide Indian businesses with enhanced access to global markets, driving export growth. For instance, the India-UAE CEPA (Comprehensive Economic Partnership Agreement) which came into effect on May 01 2021, the UAE has eliminated duties on 97% of its tariff lines, accounting to 99% of imports from India. Also, in value terms, India has received prompt exemption of duty on over



In 2021, India took a significant step by forming a Comprehensive Economic Cooperation and Partnership Agreement (CECPA) with Mauritius, making it the first African economy to establish such a partnership. In addition, Mauritius holds the distinction of being India's largest investor, contributing to 27% of the total cumulative FDI inflows from April 2000 to March 2022 [5].

Leveraging these investments in key economic sectors can spur economic growth, create jobs, and promote innovation.

To enhance its export competitiveness and secure larger market shares, India has the opportunity to broaden the coverage of Free Trade Agreements (FTAs) to include high-value products and services. By doing so, India can tap into the potential for growth in technology, pharmaceuticals, and services. These sectors not only have the capacity to drive economic expansion but also create higher-value jobs. According to the Services Exports Promotion Council (SEPC), there is a positive projection that services exports to Australia will more than double to USD 5 billion in the upcoming five years [6]. This signifies the potential for increased trade and collaboration between India and Australia in the services sector.

Expanding FTA networks beyond traditional partners to include African and Latin American countries can reduce reliance on a few markets and diversify risk. A case in point is in the context of India's growing demand for critical minerals in order to facilitate smooth transition of sustainable and green industries through renewable energy and clean technology. India has begun FTA discussions with Peru. Chile has also expressed interest to negotiate an FTA deal with India.

80% of its tariff lines, corresponding to 90% of India's exports [4]. Most of these tariff schedules relate to labour-intensive sectors such as leather, pharmaceuticals, clothing, oil & oil seeds, fish & fish products, textiles, engineered products, et cetera. Since the Arab nation is a major global commercial hub and is known to be a key redistribution centre, it enables ease of access to potential exporters, including MSMEs in India. Thereby, facilitating an increase in their global visibility.

It is well known that Free Trade Agreements (FTAs) play a crucial role in attracting foreign direct investments (FDI) from partner countries. India has already experienced substantial FDI inflows due to FTAs.

Both possess enormous supplies of critical minerals like copper, cobalt, nickel, lithium, phosphorus and silicon to supplement the manufacturing of key renewable energy technologies [7]. With the African Union's (AU) successful induction into the G20 this year, India will also look for potential FTA avenues with AU member-states for procuring the required set of resources and establish its presence in the global value chain of the global south. Growing tensions with China, the Russia-Ukraine war, and the Taiwan crisis necessitated this shift in focus to other potential markets.



The emerging role of trade-in-services model

Focusing on trade in services within FTAs can help India tap into the rapidly growing global services market. India's strengths in IT, healthcare, and professional services can be leveraged for higher exports in these sectors. As part of the India-UAE CEPA, both nations have agreed to include a Mutual Recognition Agreement (MRA) which shall mutually recognise professional certifications/licences like nursing, accounting, architecture, medical and engineering [8]. This is a first for India and will surely facilitate better access to India's pharmaceutical products. It exhibits India's affirmative action on its learnings from previously signed FTAs with other nation states. Such a nuanced approach was lacking in the 2011 India-Japan CEPA where it was anticipated that the deal would successfully foster a broad range of trade in services. This goal continues to be unrealised owing to issues such as inert law enforcement, needing more comprehensive data protection norms [9].

FTAs and Economic Growth

According to a MeitY report titled, "India's Trillion-Dollar Digital Opportunity" [10], India experienced the second-fastest digital adoption rate among a studied group of 17 major digital economies (including, Australia, Brazil, Canada, etc) with a 90% increase in the Country Digital Adoption Index from 2014 to 2017. India has done well in various elements of digitalisation in recent years, thanks to a combination of government action and private innovation and investment. This calls for the inclusion of digital trade provisions in FTAs to help India capitalise on the growing digital economy. E-commerce and digital payments can significantly drive economic growth and job creation at scale. According to a 2019 study titled, "Economic Implications of Cross-Border Data Flows", India may lose over USD 700 million in total volume of commodities exchanged if there was a 1% drop in international internet capacity [11].

Contemporary times necessitate that FTAs be comprehensive in their scope. The Indian Government should



lay emphasis on strengthening trade facilitation initiatives as well as increasing the FTA utilisation rate, to realise its long-term economic goals. Trade facilitation initiatives include customs, logistics, digital business infrastructure and speed of trade, all of which aim at creating a seamless trade environment. Based on the World Bank's 2018 Logistics Performance Index (LPI), India was ranked 44th globally regarding logistics performance. There has been a notable improvement in India's ranking in 2023, with it standing at 38th, this can be attributed to India's National Logistics Policy and the implementation of Integrated Digital System [13]. This indicates that India has made significant progress in enhancing its logistics capabilities, which play a crucial role in facilitating efficient trade and transportation networks.

For India to fully benefit from the already signed Free Trade Agreements (FTAs), it is crucial that its exporters are able to effectively utilise them. Factors such as complex and strict rules of origin (ROO) requirements, lack of awareness, and high documentation costs are often cited as reasons for the under-utilisation of FTAs [14]. Despite the government's recognition of these factors, efforts to lower the high ROO requirements in the recent India-UAE CEPA were unsuccessful.

These stringent requirements can lead to trade inefficiencies and further reduce trade volumes. Therefore, a case-by-case approach is necessary when determining the ROOs for goods and services under an FTA. The Indian economy should focus on formulating even more comprehensive agreements. This can be achieved by giving heightened attention to trade facilitation measures and considering necessary renegotiations of current FTAs.

By adding clauses that enable greater market access for trade in services and actively pursuing new FTAs, India can unlock significant benefits in the near future. By addressing these factors, India can create a favourable environment for trade and position itself for increased economic growth through enhanced focus on technology transfers, best practices, and better utilisation of its domestic capabilities.

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Regulatory Framework for Blockchain: Leveraging Digital Transformation for Economic Growth

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Don Tapscott was the first person to define digital economy in his bestseller "The Digital Economy: Promise and Peril in the Age of Networked Intelligence" (1). He stated that "Digital economy refers to an ecosystem that results from the interconnection of people, businesses, devices, data and processes through digital technology". The Indian Government has acknowledged the need to bring digital transformation across government services which in return could bring accessibility, inclusion and convenience to the daily lives of the masses. This can be achieved by using Blockchain technology. Blockchain technology is a shared, immutable ledger system that assists in recording of transactions and tracing of assets across a business network (2). An asset can be classified as tangible (building, automobile, cash and land) or intangible (intellectual property, patents, copyrights, trademarks). Digitally anything which has a value attached to it can be traced and traded on a blockchain network, reducing risk and lowering costs for all parties.

Blockchain is one such technology that has developed over a period of time and has the potential to revolutionise transactions that take place between government, businesses and citizens, in a way that was unimaginable a decade ago. However, implementing governance rules (legal or regulatory) in a public blockchain may be difficult, given that the system is likely to be distributed across different jurisdictions.

The objective of the article, thus, is to throw light on why there is a need to create a policy or framework on blockchain technology that can support India's ambition for a 7 trillion economy by fostering digital innovation, enhancing transparency and improving efficiency across various sectors (3). By implementing a well-defined policy on blockchain technology, India can

capitalise on the transformational power of blockchain technology to drive economic growth, attract investment, and improve various aspects of governance and business operations.

Blockchain and Digital Economy

The internet drives the digital economy. In today's global era, 68% of the world population are mobile phone users, 54.4% of the populace is online and 42% uses at least one social media platform (4). The internet delivers an infinite amount of knowledge and intuitive technologies, and it connects a vast majority of people. It allows for more communication and simpler interactions between customers and businesses. The digital economy is about to take a new turn, one that could be even more revolutionary than everything that has come before it (5). This is due to blockchain. Blockchain can streamline processes, reduce inefficiencies and optimise costs, leading to significant savings in resource conservation. By reducing reliance on intermediaries, blockchain can create new revenue for Blockchain service providers.

Blockchain technology is transforming the way we do business making transactions faster, safer, and more efficient. It has the power to catalyse the shift to a digital economy, and here is how. Blockchains use cryptography to sign transactions and create accountability while preventing identity fraud. Blockchain technology reduces the dependency on intermediaries, streamline processes and offer transparency. Transparency through decentralisation is one of the primary characteristics of blockchain, because transactions are stored and recorded in a public ledger whereby anyone with the access can see them. This reduces the possibility of fraud because transactions can be easily traced and validated.

Blockchain technology has a profound impact on the digital economy by using incentives to coordinate economic activity without relying on traditional intermediaries. It is estimated that blockchain could generate USD 3 trillion in annual business value by 2030.

The World Economic Forum predicts that 10% of global GDP will be stored on Blockchain by 2025 (6). Therefore, it can be concluded that use of blockchain technology is directly related to the reduction of two important costs (a) the cost incurred to verify transactions and (b) the operational cost of digital platforms. This cost reduction is possible because of a brilliant combination of cryptography and game theory.

Regulatory Mechanism: Indian Context

India lacks the necessary legal framework that is required for effective implementation of blockchain and its uses. However, at present sector-specific regulators have the authority to regulate the use of blockchain backed technologies. The Ministry of Finance along with RBI has cautioned (7) the investors about the risks involved with virtual currencies; and issued a notification prohibiting certain entities from dealing in blockchain backed currencies or providing such services that facilitate persons or entities to deal in or transact in virtual currencies (8).

The above-mentioned notification was challenged before the Hon'ble Apex Court. The Hon'ble Apex Court quashed the RBI's notification on proportionality grounds, finding that the RBI had failed to show how entities under the RBI's supervision had suffered loss or been harmed, directly or indirectly, as a result of trading in virtual currencies (9).

It is therefore quite a challenge to apply existing frameworks to blockchain technology or to develop new ones. For starters, the blockchain ecosystem is dynamic and overseeing it in a global environment with a large number of players could be an arduous task. With G-20 countries agreeing to explore a coordinated regulatory framework for blockchain technology, India can wait for a while before setting its national regulations for blockchain and initiating a dialogue with stakeholders on the way forward.

Challenges of using blockchain

While blockchain technology offers many benefits, there are also several challenges associated with its use. Key issues include scalability, as blockchain networks can become slower and less efficient as the number of users and transactions increase. Blockchain, especially public networks, also consumes significant amounts of energy which raises environmental concerns. There are governance challenges in regulating decentralised blockchain networks while fostering innovation. Different blockchain platforms also lack interoperability, making it hard to connect and share data. Data privacy and security remain a concern as protecting sensitive data and ensuring privacy on transparent blockchain networks can be difficult. Blockchain technology also suffers from low user adoption due to its complexity and usability issues.

The evolving legal and regulatory landscape surrounding blockchain creates uncertainty. Finally, implementing and maintaining blockchain networks comes with high costs that can be challenging for smaller organisations.

While these challenges exist, ongoing research and development efforts are addressing many of these issues. Authorities are exploring various approaches to regulate blockchain technology, including licensing requirements for cryptocurrency exchanges and implementing anti-money laundering and counter-terrorism financing measures (10).

Global Practices

Global practices with respect to blockchain technology vary from country to country. Many countries worldwide have recognized the need for proper regulations in the blockchain industry. Estonia is a pioneer in implementing blockchain technology at the national level (11). They have integrated blockchain to secure health records, judicial, legislative, security, and commercial code systems, amongst others, which has significantly improved data integrity, reduced bureaucracy, and increased the efficiency of public services. Estonian Information Systems Authority (RIA) guarantees the access to the blockchain network for the State Agencies via the X-road infrastructure. The particular blockchain technology used by Estonia is KSI Blockchain by Guardtime, has been proven to adequately enforce the integrity of government data and systems, leaving a trace of all changes within the data's pattern.



Furthermore, in 2018, the UAE government launched the Emirates Blockchain Strategy with the goal of using blockchain technology to transform 50% of government transactions into the blockchain platform by 2021 (12). To regulate the use of virtual assets and cryptocurrencies in the country, the UAE Central Bank has issued regulations that require companies operating in the space to obtain a licence and implement anti-money laundering and counter-terrorism financing measures. On 9 March 2022, Dubai issued Law No. 4 of 2022, concerning the regulation of virtual assets, which established the Virtual Asset Regulatory Authority (VARA). The implementation of the strategy has led to cost savings, reduced paperwork, and improved efficiency in government transactions.

It's important to note that the legal and regulatory landscape surrounding blockchain technology is evolving rapidly, and practices may continue to develop and differ across jurisdictions. Thus, it is crucial for individuals and businesses operating in the blockchain industry to stay updated on the regulations and compliance requirements of the countries they operate in



Way Forward

With increasing interest in blockchain technology, India has recognised the potential for blockchain technology in contributing to the country's economy. India has taken steps to create a comprehensive national strategy to harness the potential of blockchain technology, aligned with global best practices. A way forward for India in creating a policy on blockchain while looking at the global practices is to continue to develop and implement a national policy framework that supports innovation and growth while addressing regulatory challenges and concerns.

India has an opportunity to become a leader in blockchain technology adoption and innovation. However, to do so successfully, India will need to balance stimulating innovation while also addressing risks through effective regulations. India can draw inspiration from other countries that have struck this balance. Some key steps India could take include establishing an ecosystem that supports blockchain startups through funding research, improving infrastructure, and creating a conducive environment.

India can also collaborate internationally to develop common standards and approaches that allow for integration into the global economy. Promoting industry-wide standards for interoperability and developing use cases with global impact would facilitate blockchain growth. Finally, fostering public-private partnerships can bring together the resources and expertise needed to drive the development of blockchain solutions to address India's unique needs. With a thoughtful approach that balances innovation and regulation, India has the potential to harness the power of this emerging technology for economic growth and development.

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Introduction

India's aim of a seven trillion dollar economy is now both realistic and attainable. The question that remains is how soon and what will make this dream a reality. This article recommends and delves into the importance of the vast classification of Micro Small and Medium Enterprises (MSMEs) in achieving the target by the expected year 2030, with a focus on the role of rural women in MSMEs. Catalysing the MSMEs will positively affect the economy especially in terms of self-reliance, promoting domestic industries, innovation and sustainable development. Given their smaller scale and low liquidity, Indian MSMEs were particularly hit by the pandemic's aftermath. However, despite the adverse conditions, the industry's rapid turnaround has been impressive. Capacity utilisation in many industries in the MSME sector is approaching 70%, and sales have reached 88% of pre-pandemic levels, demonstrating the durability and adaptability of these enterprises with the extending government support in form of various effective schemes and investments (Shah, 2022). MSMEs play a crucial role in a country's development by empowering women through employment opportunities, both for highly qualified and less qualified women, contributing to their overall growth and recognizing their potential to work in other sectors when employment in the agricultural sector remains stagnant (Senapati & Ojha, 2019).

Importance of MSMEs in Inclusive Growth and GDP

According to the Economic Survey 2022, MSMEs are a key sector for economic, social, and sustainable development. They account for 45% of all manufacturing output, 40% of exports, and 30% of the national GDP. In terms of employment, MSMEs are the second most important sector after agriculture.

The government has taken steps to promote inclusive development by encouraging retail and wholesale trading among MSMEs, dissipating banking and e-commerce, and providing support through various schemes and policies.

Initiatives like the RBI's digital lending initiative, the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), which focuses on workforce skill development, the ONDC e-Commerce platform that integrates with MSMEs, innovative programmes, and new digital entrepreneurs are all aimed at supporting MSMEs in the increasingly digital and globalised world for more sustainable growth (Kadaba et al., 2023).

The MSME sector accounts for more than 99% of all private enterprises in India, creating millions of jobs across the country. In fact, MSME firms seek to assist major companies by acting as outsourcing partners for supplying raw materials, W-I-P, or adding value to one or a few processes as an adjunct to the large establishments.



Significance of MSMEs in India's Approach to USD 7 Trillion GDP

PUBLIC SPEAKS

Author: Prashant Panche

However, with increasing rivalry and market complexity, MSMEs must compete with major corporations. The world is moving towards the Fourth Industrial Revolution (4IR), which not only calls for automation, speed, and rapid delivery, but also strives to replicate human intelligence through Machine Learning or Artificial Intelligence (AI). It becomes increasingly important for MSMEs to re-modulate their company directions in the context of rapid changes across the Industrial Ecosystem. MSME enterprises must transmit, absorb, and utilise threshold-level technology to play a meaningful role in today's knowledge economies (Chakrabarty et al., 2020).

The MSMEs are expanding throughout the economic sectors, offering a diverse range of goods and services to meet the demands of both domestic and international consumers. As part of the Ministry's "A Scheme for Promotion of Innovation, Entrepreneurship, and Agro Industry (ASPIRE)", organisations exploring integrated value chains in Chennai, Tamil Nadu, are expected to play a vital role in offering rural entrepreneurs opportunities in the agribusiness sector and in sharing essential knowledge, skills, and development. Over the past 50 years, the MSME sector has grown to be a remarkably vibrant and dynamic aspect of the Indian economy. It makes a significant financial and social contribution to the country by promoting business development and creating the largest job opportunities at comparatively lower capital expense, next just to farming (Alaguraja et al., 2020).

Role of Women and MSMEs

Indian women entrepreneurs are primarily found in the MSME sectors of the country and have come a long way from the old, deeply ingrained perception of Indian society. The Indian government supports women in entrepreneurship because they contribute to economic growth by engaging in profitable ventures that differ from domestic or non-commercial endeavours. The Indian government now uses entrepreneurship as a two-edged sword to address concerns of women's empowerment and employment. The growth of female entrepreneurs offers more advantages in terms of raising household income levels, living standards, and per capita income in addition to creating a large number of job opportunities (Rajan & Panicker, 2019).

Women's involvement in entrepreneurship contributes to a decrease in economic inequality and poverty. The increasing number of women entrepreneurs in India lends support to this idea. The majority of women entrepreneurs in India are found in the chocolate, bakery, and apparel and handicrafts, primarily produced by tiny manufacturing companies. The female participation is typically linked to MSMEs in their settlements. A small number of the numerous programmes and plans created by the Indian government specifically for MSME businesses are beneficiary- or individual-focused and only open to women. These programmes offer additional perks, incentives, or support with the primary goal of heavily promoting women's entrepreneurship throughout the nation. Additionally, the ministry honours MSMEs as female entrepreneurs who are improving the socio economic landscape of society by giving out annual excellence certifications, innovation prizes, and other recognitions (Rajan & Panicker, 2019).



Conclusion

The MSME sector plays a vital role in the GDP, creation of jobs, overall exports, attainment of the SDGs, and green development, all of which support the Indian economy. Since the majority of MSMEs are located in rural areas and offer year-round non-farm employment, it is necessary to accelerate the rate at which these industries create jobs. This will lessen the strain that population growth has on the rural areas' agriculture sector and reduce the amount of people moving from rural to urban areas. Majority of the MSMEs operate in the unofficial sector of the economy, hence there is a need to see more of these businesses in the formal sector. It would be beneficial for business owners in this industry to register their company with the Ministry of MSME, as this will increase their access to government, banking, and other agency programmes (Shelly et al., 2020).

The likelihood of success in business is higher when women entrepreneurs' ability quotients are raised through different interventions. The study advances our understanding of the factors that influence entrepreneurship success and identifies four key competencies—enterprise motivation, self-efficacy, alertness, and personality—that serve as catalysts for fostering entrepreneurship. To manage their businesses effectively and achieve success, women entrepreneurs need to have these skills (Rajan & Panicker, 2019).

It goes without saying that MSMEs will be essential to India's economy becoming a USD 7 trillion one in the next 7 years, given the size and enormous potential of the sector. The sector's enormous contribution to employment and income generation has already made it regarded as a pillar of the nation's economy.

Currently, the 63 million companies that make up India's MSME sector contribute about 30% of the nation's GDP.

The largest obstacle to the expansion of MSMEs, namely formal credit availability, must be overcome as the nation approaches a USD 7 trillion GDP. This would enable MSMEs to reach their full potential and provide the necessary impetus for the Indian economy to sustain (Shah, 2022). certifications, innovation prizes, and other recognitions (Rajan & Panicker, 2019).

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Towards a Trillion Dollar Data Economy in India Leveraging IoT

PUBLIC SPEAKS

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India registered a 76% increase in data consumption between 2015 and 2020, an increase that has made India one of the largest data economies in the world (1). The 2023 Ericsson Mobility Report states that Indians will consume the highest amount of data by 2028, with the number of Indians using 5G increasing to 700 million from the current 10 million (2). The enthusiastic embrace of Internet of Things (IoT) solutions by both central and state governments and industry, along with one of the cheapest data in the world, has boosted India's digital economy and enabled every Indian from varying social strata to express and empower themselves digitally.

The Government of India has aggressively promoted the digitization of the economy and governance with schemes like JAM Trinity, the UPI ecosystem, FASTag, and Ayushman Bharat, combining the best of software, internet, and hardware solutions to lift millions of Indians out of poverty and significantly eased their lives. Indicative of the importance the government gives to IoT, even the Prime Minister of India, Narendra Modi, spoke about a practical governance application of IoT wherein he suggested the usage of IoT to monitor the functioning of oxygen plants across India given the pandemic (3).



Internet of Things Revolution in India

The IoT-led data revolution has sprung multiple unicorns in India, including Unacademy in the educational sector, Ola in transportation, Swiggy and BigBasket in Food/grocery sector, Flipkart and Myntra in retail, and many more such successful start-ups to provide customised solutions by interpreting the large data coming in from the customer and producer side and make them interact with each other.

India, one of the most vibrant centres for IoT in the world, is now expected to reach 2 billion connections and yield revenue of up to USD 11.1 billion between 2020-2022 (4)

A report titled "India - Emerging Hotbed of IoT Opportunities" by Zinnov, a leading global consulting firm, has estimated that the IoT investments in India, which were close to USD 5 Billion in 2019, are expected to triple to touch USD 15 Billion by 2021 across both technology products and services components (5). Indian companies filed over 5,000 patent applications in the IoT domain between 2014 and 2019 (6). While more than 80% of these patents can be attributed to Industry 4.0, the majority relate to the healthcare sector, too, according to a report by NASSCOM.

There is increasing demand in India for smart IoT products in personal fitness, particularly wearables, data-driven healthcare, and utility management, including smart water and electricity metres and customised e-retail shopping. IoT can be used to effectively implement flagship schemes like the Smart Cities Mission being piloted by the Government of India. The time is ripe for scaling up the IoT ecosystem in India to fuel the digital economy further.

A New Expanded Policy on IoT is needed

The Government of India released its first-ever Policy on IoT in 2016 and sought to develop a smart IoT system that caters to products specific to India's needs in domains such as agriculture, health, water quality, transportation, security, supply chain management, and management of utilities. The policy had set a modest aim of USD 15 billion for the IoT industry by 2020 (7). As per the report by Esya Centre and Digital India Foundation, the US and China account for 50 percent of global spending on IoT and consequently account for a large share of industrial revenues (8). Despite large data consumption, India accounts for just 5% of the total IoT global market (9).

It is time to draft a new comprehensive policy document on IoT and constitute an expert committee to monitor its implementation. The new policy has to emphasise creating industry-lab linkages to spur the development of market-ready sensors and electronics. The nodal organisation must also be formed to ensure interoperability, data-traceability and privacy, safety, and security standards.

The previous policy had an emphasis on using IoT to improve governance. While this is commendable, the economic potential of IoT is too significant to be ignored, and a specific focus on scaling up IoT solutions in technology and service components has to be provided.

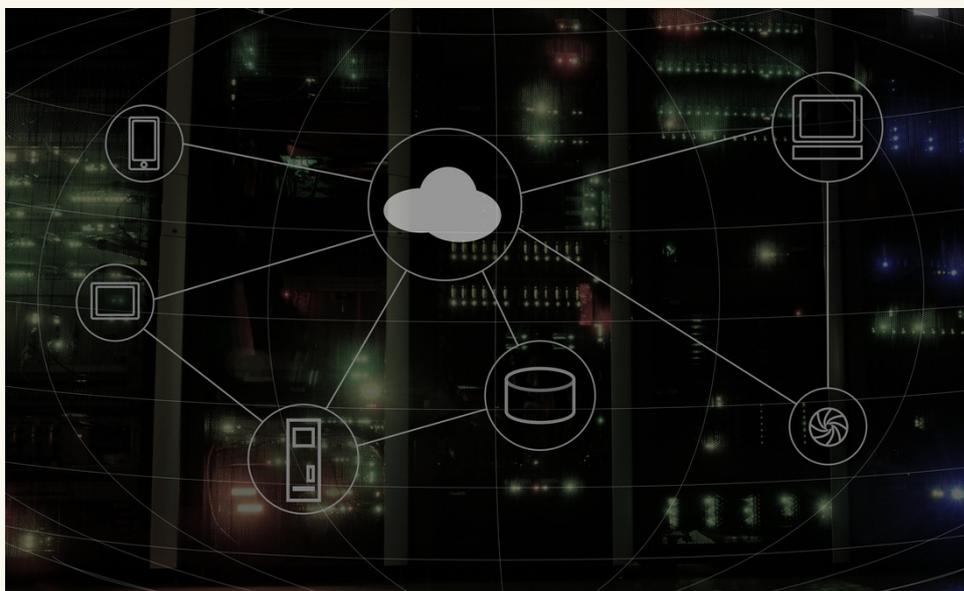
The burgeoning data economy of India, whose raw material is personal, private, and financial data, has to be protected through a clear and transparent data privacy regime with clear standards safeguarding rights of data principals, grounds for transfer and processing of data outside India, and remedial measures.

The recently passed Digital Personal Data Protection law is a first step in this direction. With the government in the process of framing rules to operationalise the act, it should accommodate "privacy by design" standards so that Indian product/platform standards are interoperable with their counterparts in advanced countries (10).

India's data economy is expected to grow ten times to USD 800 Billion by 2030, creating millions of jobs and adding immense value to the economy (11). A clear focus on strengthening the fundamentals like expanding R&D, ensuring global interoperability, and implementing comprehensive rules for the newly passed privacy law can easily make the Indian data economy a trillion-dollar industry.

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**SEPTEMBER
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Inception

NEF held its first national conference on the theme of "Public Private Partnerships in the age of Corporate responsibility (Social and Research)" at IIT Delhi.

**JANUARY
2023**

The Lotus project looks at supporting agencies with a report on the state of Lotus production and current supply-chain practices.

The Happy Economy project undertakes a comprehensive study to narrow down the "Why, What and How" of integrating happiness within the Indian Economy.

The Silk Route project undertakes research to propel India on the path to be a frontrunner in the Semiconductor Industry.

**MAY
2023**

NEF provided six key recommendations for Maharashtra to make its state policy comprehensive and implementable.

Blue Economy – June 2023
This study highlights the characterisation, components and ambit and scope of future governance trajectories

**JULY
2023**

The Bamboo project addresses the research gap by undertaking a comprehensive assessment of the current legal and regulatory frameworks and creating a Proof of Concept.

The aim of this project is to modernise the Indian Stamp Act and bridge the gaps that have emerged in the face of the digital revolution.

The Digital Economy project aims to comprehensively define, categorise, understand, analyse, and cultivate India's digital economy to maximise its potential by boosting foreign trade and foreign direct investments.

**SEPTEMBER
2023**

Institutional and Project Collaboration with National Law University, Jabalpur and AMSHA Technologies and in talks with the National Bamboo Mission, Ministry of Agriculture and Farmers Welfare

**NOVEMBER
2023**

**AUGUST
2023**

NEF submitted comments to TRAI's consultation paper on "Regulatory Mechanisms for Over-the-top (OTT) communication Services and selective banning of OTT services".

**OCTOBER
2023**

The Freebies project delineates the nuances present in the discussion and debate on freebies in India and generates legal, economic, and governance insights.

NEF along with the Indian Law Institute (ILI), New Delhi, in collaboration with Youth20 (Y20) is hosting a panel discussion under its project "The Happy Economy".

FUTURE ROADMAP

- National Litigation Policy
- Solar Rooftop and Agri PV
- Cost of Bureaucracy and Policy Reforms
- Management of case pendency in various hierarchies of the judiciary
- Strategic Roadmap for India's clean energy future
- Gig Economy
- Open Access and STI Research Ecosystem

NEF's OUTREACH ACTIVITIES



1 National Conference

NEF held its first outreach conference at the Research and Innovation Park auditorium, IIT Delhi, on the theme "Public Private Partnerships in the age of Corporate responsibility (Social and Research)".

Professor Dheeraj Sharma

NEF had the privilege of hosting Professor Dheeraj Sharma, Director of the prestigious Indian Institute of Management (IIM), Rohtak, for a guest talk on 10th May, 2023.



Deputy General Manager NABARD Mr. Kuldeep Chand

NEF had the privilege of hosting Shri Kuldeep Chand ji, Deputy General Manager, National Bank for Agriculture and Rural Development (NABARD).



4 Dr. Ramesh Yernagula

NEF was honoured to host Dr. Ramesh Yernagula, Director of National Social Science Documentation Centre (NASSDOC), Indian Council of Social Science Research (ICSSR) New Delhi.



5 Mr. Anil Mutha and Mr. Neeraj Mutha, Directors of Mutha Industries

The discussion revolved around the role of industries and industrial growth to accelerate the demand and supply of bamboo, importance of commercial viability, and dedicated R&D opportunities for attracting private sector investments in the bamboo value chain.



6

Mr. Suresh Reddy, MP Rajya Sabha

The National Economic Forum had the privilege of hosting Shri K.R. Suresh Reddy, Honourable Member of Parliament, Rajya Sabha, Government of India.



7

Hon'ble Shri Bandaru Dattatreya

NEF had the distinct opportunity to meet the current Governor of Haryana. The Governor was informed of NEF's current portfolio projects along with upcoming projects.



Mr.Talari Rangaiah , MP, Loksabha

8

NEF had the privilege of hosting Honourable Member of Parliament, Lok Sabha Shri T. Rangaiah ji.



Dr. K. Laxman, Hon'ble Member of Parliament, Rajya Sabha

9

NEF had the privilege of hosting Dr. K. Laxman, Hon'ble Member of Parliament, Rajya Sabha, and giving him a comprehensive overview of the projects spearheaded by NEF.



10

MR. PULKIT TRIVEDI

NEF had the honour of hosting Mr. Pulkit Trivedi, India Managing Director of SNAP, the parent company of Snapchat President. Mr. Devesh Tripathi outlined NEF's vision and ongoing projects, while also discussing relevant issues like the challenges posed by the New Data Protection Act and Artificial Intelligence.





Dr. G. Sateesh Reddy

11

NEF hosted Dr. G. Sateesh Reddy, Scientific Advisor to the Minister of Defence, Former DRDO Chairman and Dr. (Prof) Sukumar Mishra, Associate Dean R&D, IIT Delhi.

12

Mr. Ajay Sawhney, IAS(R)

NEF had the privilege of hosting Shri Ajay Prakash Sawhney: IAS(R), Former Secretary, Ministry of Electronics and Information Technology.



13

Associate Professor Dr. Vikram Vishal and Associate Professor Dr. Arnab Dutta.

NEF was delighted by the opportunity to host two eminent professors from the prestigious Indian Institute of Technology Bombay (IITB)



Mr. Rajendra Singh, PTM, TM

14

NEF was extremely delighted to host Shri Rajendra Singh, PTM, TM, Member National Disaster Management Authority (NDMA), Former Director General, Indian Coast Guard.



Collaboration with Dharmashastra National Law University Jabalpur

15

NEF signed an MoU with NLU Jabalpur for research collaboration in the areas of digital economy, Foreign Direct Investments, and International Trade.

Collaboration with AMSHA Technology Ltd

16

NEF signed an MoU agreement with AMSHA Technology Ltd. for pursuing research in the areas of sustainable economy.



Prof. V. K. Malhotra

17

ICSSR- Former Member Secretary

The National Economic Forum had the privilege of hosting Prof. V. K. Malhotra, Former Member Secretary, Indian Council of Social Science Research (ICSSR), New Delhi

Mr. Pratab Chandra Sarangi , MP, Lok Sabha

18

NEF and Senior Consultant Mr. Abhishek Singh have the opportunity to meet Pratab Chandra Sarangi ji, Member of Parliament was informed of NEF's current portfolio projects along with upcoming projects.



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Mr. A. Narayanaswamy

MoS , Ministry of Social Justice and Empowerment

NEF and Advisor Shri Ram Gopal, have the opportunity to meet Mr. A. Narayanaswamy, MoS SJ&E, GOI and appraised our activities and policy research initiatives



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