WORLD ECONOMIC FORUM

Centre for the Fourth Industrial Revolution (C4IR) India – an Impact Journey

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Foreword

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A new societal revolution is upon us as the world enters the Intelligent Age, with rapidly advancing converging technologies such as artificial intelligence (AI), quantum computing and blockchain fundamentally changing all aspects of our lives. Strong partnerships and coordinated efforts between all regions and across all sectors of society are crucial to ensure that these technological advances act as catalysts for equitable progress and positive change. The World Economic Forum has always been at the forefront of such actions, meeting the needs of a changing world and addressing pressing global challenges through multistakeholder dialogue and collaboration. As the foremost global platform for public–private cooperation, it is uniquely positioned to bring together diverse voices to develop new approaches, pilots and policy frameworks for technology regulation and adoption to ensure they benefit all of humanity without harming the environment.

In an era defined by technological evolution, India stands at the forefront of an age defined by technological evolution as one of the world's fastest-growing economies and a global hub for start-ups and digital innovation. The World Economic Forum's partnership with India dates back more than 40 years. Over the past four decades, this relationship has developed into a strong, multifaceted and meaningful collaboration with the national government, several state governments, business leaders across key industries and other important stakeholders including civil society and leading experts, resulting in several impactful initiatives that have advanced shared priorities. India's advocacy for and pursuit of developmental templates where technology serves as a bridge rather than a barrier are highly relevant and the Forum is proud to act as its partner in shaping a more human-centric, planet-friendly and resilient future.

The Centre for the Fourth Industrial Revolution (C4IR) India was launched in 2018 by Prime Minister Narendra Modi as a statement of the country's commitment to harnessing emerging technologies responsibly and inclusively for societal good. Today, C4IR India is not just a hub for innovation; it is a flagship centre of the World Economic Forum, exemplifying a vision for technology-driven development with impactful, on-the-ground results.

Over the past six years, C4IR India has had a direct impact on 1.25 million citizens throughout the nation, driving meaningful change through its initiatives. These include artificial intelligence (AI)-enabled agricultural programmes that increase farmers' incomes; innovative healthcare solutions that improve access to life-saving services; and urban development frameworks that make cities more sustainable and liveable. Such efforts have been made possible by our commitment to multistakeholder collaboration – engaging the public sector, private companies, academia and civil society to create solutions that meet real-world needs while adhering to responsible governance principles.

As we look to the future, C4IR India will spearhead transformative initiatives with a sharp focus on impact. The **AI for India 2030** initiative aims to promote inclusive AI innovation, overcoming challenges to unlock AI's potential for societal benefit. Our **Space Economy** initiative will establish a foundational framework to position India as a global leader in space technologies. **Climate Technology** focuses on shaping Indian cities into climate-smart urban centres, enhancing resilience and sustainability. Finally, **AVIATE India** will enable a future in which aerial mobility alleviates congestion in urban areas and strengthens rural connectivity, improving infrastructure access for underserved communities.

This report encapsulates our journey and reflects on our commitment to building an inclusive digital future. C4IR India remains dedicated to strengthening its partnerships and scaling its impact, driving progress towards a future in which emerging technologies serve as a cornerstone for economic growth, environmental sustainability and social equity. Together, we are shaping a brighter, technology-empowered tomorrow for India and the world.

Our vision

Solve for India, solve for the world

As the world's largest democracy embarking on a massive digital transformation, India is a key political, social and economic player that will shape the course of the Fourth Industrial Revolution.

Narendra Modi, Prime Minister of India, at the launch of the Centre for the Fourth Industrial Revolution in India

India's model serves as a global template for leveraging technology as a catalyst for shared human progress while ensuring environmental sustainability. The inspiring and groundbreaking innovations by the country's young, educated and ambitious population are propelling India's progress in the Intelligent Age. C4IR India in the past six years has shown that it is dedicated to supporting initiatives that drive innovation and sustainable development, and the impact achieved with initiatives like AI4AI, AVIATE and FIRST Cancer Care is a testament to this ongoing commitment.

Klaus Schwab, Founder and Chairman of the Board of Trustees, World Economic Forum

Revealing the impact

The operational philosophy of the centre is to “think big, start small, scale fast”. With this philosophy over the past six years, C4IR India has pioneered key projects aimed at harnessing the potential of technology to improve various sectors, including agriculture, healthcare, education and urban transformation.

1.25m citizens impacted via improved livelihoods and better access to healthcare

Agriculture

30+

agritech solutions prioritized, targeting 1 million farmers globally by 2025

55,000

smallholder farmers in the chilli value chain doubled their income, with 21% seeing improvements in productivity and 9% reducing their use of fertilizers and pesticides

500k farmers

programme launched in India, covering five crop value chains and affecting smallholder farmers in Telangana

20+

agri data exchanges

launched to unlock industry-led agritech services

15

public–private partnership agreements signed between industry and governments for scaling the deployment of agritech

10m

smallholder farmers, including 30% women, are the target of this initiative.

Healthcare

AI-driven early-detection cancer-screening programme in Meghalaya: FIRST Cancer Care-led Meg Can Care programme

Drones for social impact

15,000 km
covered by drones delivering healthcare essentials in rural and remote regions

650+
flights serving 100,000+ individuals, providing critical supplies to hard-to-reach areas

10,000+
medical products delivered

Urban transformation

10 pioneer cities

India Hub for Urban Transformation (I-Hut): partnership to promote tech-enabled liveability, AI playbook and data governance frameworks

Collaboration stakeholders

200
partner organizations

6 national governments

9 state governments


A drone being loaded with medicines for a long sortie


GOVERNMENT OF KARNATAKA
Dept. of E, IT & Bt
TECH SU
18TH - 21ST NOV, 2024


UTTAR PRADESH
DIGITAL AGRICULTURE AND EXPORT
PROMOTION (DAEP) COUNCIL

Strategic overview

Our story

The Centre for the Fourth Industrial Revolution (C4IR) India was launched in 2018 in Mumbai, with NITI Aayog and Reliance Industries as founding partners. Over six years, C4IR India has evolved into the nation's leading multistakeholder platform, demonstrating impactful solutions for 1.25 million citizens and aiming to reach 10 million over the next five years. As a flagship centre of the World Economic Forum, C4IR India makes the most of India's unique position as a global technology leader, the world's fastest-growing economy and a dynamic start-up hub to drive responsible, inclusive adoption of advanced technologies, addressing critical social and economic challenges.

Our approach

C4IR India's **implementation model** follows an hourglass model, an approach designed to drive systemic, scalable impact. This involves **constituting multistakeholder communities** to promote dialogue on challenges, **developing strategic insights, frameworks and toolkits** to identify achievable pathways, and **piloting solutions** that can be scaled through partner ecosystems, ensuring robust feedback and refinement. Our initiatives prioritize collaborative action, drawing insights from real-world pilots to inform policies that facilitate technology-driven solutions aligned with societal needs.

The Centre for the Fourth Industrial Revolution India has been working as a hub for multistakeholder collaboration for the last six years. The centre has engaged nearly 200 institutions, working as a platform for government, industries and other stakeholders to accelerate the journey of Fourth Industrial Revolution technologies in India. Reliance, as a founding partner of the centre, is delighted with the successful six-year journey enabling significant impact across agriculture, health and aviation. We are looking forward to our partnership with the centre as it expands into new domains of advanced energy, AI, manufacturing and emerging technologies.

Akash Ambani, Chairman, Reliance Jio

Over the past six years, C4IR India has emerged as a key hub for multistakeholder collaboration and has improved the lives of 1.25 million citizens through enhanced livelihoods and better access to healthcare. The centre has driven Fourth Industrial Revolution technologies across agriculture, health and aviation, setting a benchmark for transformative progress. As C4IR India continues to expand, it is now focusing on cutting-edge areas such as AI, climate tech, and space tech, with exciting potential for creating lasting value for society.

Jeremy Jurgens, Managing Director, World Economic Forum

Through **multistakeholder engagement**, C4IR India has forged a network that includes government bodies, industry leaders, start-ups, multilateral organizations, research and academic institutions, and civil society organizations. This diverse coalition brings a range of expertise, enabling us to address complex challenges effectively. Our partnerships with central ministries and state governments, industries and global multilateral agencies have been instrumental in crafting scalable solutions that bridge policy with on-the-ground execution, promoting responsible and inclusive technology adoption in different sectors.

Demonstrating impact

1 Impact for the multistakeholder community

C4IR India's **theory of change** centres on a multistakeholder model, engaging technology firms, start-ups, industries and government agencies to address complex societal challenges. By promoting **consent-based data systems**, creating **data exchanges** and encouraging **public–private partnerships (PPPs)**, this approach transforms sectoral barriers into opportunities for innovation. Technology companies, start-ups and industries collaborate to scale and validate solutions, while government agencies use these insights to drive impact across priority sectors defining governance structures. This model positions technology as a catalyst for inclusive, sustainable change, uniting diverse stakeholders in moving towards a shared vision of progress.

2 Impact on civil society

C4IR India's initiatives have had a significant social impact on agriculture, healthcare, emergency services and urban development.

- **Agriculture:** The AI for Agriculture Innovation (AI4AI) initiative has transformed agriculture in Khammam, Telangana, affecting 50,000 farmers, with a 21% yield improvement and income growth per acre of $800. The AI4AI project has now scaled to four states in India and is on track to reach 1 million farmers by 2025, advancing sustainable agricultural practices.
- **Healthcare:** Through the FIRST Cancer Care project, C4IR India has enabled early cancer detection for nearly 1 million people in Meghalaya, addressing critical healthcare gaps through AI-driven screening and localized oncology frameworks.
- **Medicine from the Sky (MFTS):** MFTS uses drones to deliver medical supplies to isolated regions, covering 15,000 km in Arunachal Pradesh. More than 100,000 individuals in remote areas have benefitted from life-saving interventions, particularly during adverse weather events.
- **Urban Transformation:** Collaborating with the Smart Cities Mission, C4IR India has helped implement AI frameworks in 10 cities, directly enhancing urban governance and improving services for 18 million citizens in cities such as Bengaluru and Hyderabad.

This methodology demonstrates C4IR India's commitment to addressing complex social needs through structured, multistakeholder collaboration and a scalable impact approach.

Our ambition

Aligned with Prime Minister Narendra Modi's vision for **Viksit Bharat 2047**, C4IR India is dedicated to advancing an inclusive, sustainable and technology-driven future for the nation. Our mission is to partner with the Indian government to drive innovation and societal impact, helping to shape India's path to becoming a developed nation by 2047.

As India's **foremost multistakeholder platform**, C4IR India is committed to supporting **on-the-ground impact** by collaborating with national and state governments to design and pilot-test responsible, action-oriented initiatives. We aim to **promote emerging technologies** for economic growth and development, harnessing them to advance India's technology and digital transformation agenda. Our efforts further focus on **leading strategic dialogues** to develop India's role in the Global South, showcasing the country's contribution to responsible technology adoption and governance.

Over the next five years, our ambition is to reach **10 million citizens** by scaling flagship initiatives such as **AI4AI** and **AI for India 2030** and global-focused projects such as **AVIATE India**, **Climate Technology**, **Space Economy**, **FIRST: Health** and **Advanced Energy**, using the global C4IR network to drive sustainable and inclusive growth.

Looking ahead

C4IR India is strategically positioned to scale impactful initiatives over the next five years and venture into new high-potential domains. Guided by the philosophy to "think big, start small, scale fast", we aim to advance transformative projects that address India's evolving socioeconomic landscape.

AI4AI will enhance the lives of farmers through digital agriculture, targeting sustainable food security by 2050. By using public–private partnerships, AI4AI will strengthen agrifinance and value chains and enable climate-resilient farming practices. **AI for India 2030** seeks to establish a framework for responsible AI, tackling data quality, ethical considerations and infrastructure gaps through collaborative innovation. In urban centres, **Climate Technology** will focus on creating climate-smart cities that balance growth with environmental sustainability, advocating for policies that promote urban resilience. Through **Space Economy** initiatives, C4IR India will drive India's leadership in space technology by building a comprehensive multistakeholder community and advancing frameworks for space solutions that benefit both people and planet.

Finally, **AVIATE India** will improve mobility through advanced aerial infrastructure, reducing urban congestion and enhancing rural connectivity. Together, these initiatives will shape India's future, driving inclusive growth and positioning India as a leader in the Fourth Industrial Revolution.

Medicine from the Sky is a good example of emerging technologies for social impact. This being demonstrated in the state of Arunachal Pradesh.

Droupadi Murmu, President of India

Telangana deserves the sobriquet of 'The Future State', given its current set of game-changing projects such as the AI city, Net Zero Future City, and massive reimagining of Hyderabad. To successfully carry out these pioneering projects, we believe it is essential to bring together the combined efforts of industry bodies, government ministries, start-ups and academic professionals. Over the past six years, our collaboration with C4IR India has helped establish a platform that unites these diverse stakeholders, accelerating the adoption of Fourth Industrial Revolution technologies in Telangana and driving meaningful impact across sectors like agriculture and health. We look forward to strengthening our partnership with the centre as it expands into new areas, including advanced energy, AI, manufacturing and other emerging technologies.

D. Sridhar Babu, Minister of Information Technology, Electronics and Communication, Industries & Commerce and Legislative Affairs, Government of Telangana

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We greatly value our partnership with C4IR India, especially on emerging topics like AI. They offer an exceptional platform that brings together multistakeholder communities to explore the strategic implications of Fourth Industrial Revolution technologies, fostering collaboration and insights that drive impactful innovation.

Mallanagouda Basanagouda Patil, Minister for Large and Medium Industries and Infrastructure Development in the Government of Karnataka

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India has an opportunity to create a trillion-dollar digital economy by 2025, benefitting all sectors and people. To enable this growth and become a global tech powerhouse, we need collaboration from all stakeholders. Our partnership with the Centre for the Fourth Industrial Revolution India focuses on developing a multistakeholder community to leverage Fourth Industrial Revolution technologies for critical challenges on health, education, smart cities and agriculture. AI for India 2030 is an important initiative in partnership with MeitY, enabling stakeholders across industry and start-ups to partner with government to realize the potential of AI.

S. Krishnan, Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India

India is on an ambitious path of growth, with opportunities for transformation across industries and communities. To support this journey, our association with the Centre for the Fourth Industrial Revolution India is driving forward innovative solutions that address key challenges in healthcare, education, urban development and agriculture through the power of advanced technologies.

Ajay Kumar Sood, Principal Scientific Adviser to the Government of India

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The Government of Uttar Pradesh's partnership with the Centre for the Fourth Industrial Revolution (CFIR) India, World Economic Forum, began with a focus on agriculture and the use of AI in developing smart solutions to scale up the state's agriculture value chain (AI4AI) and benefit farmers. We look forward to growing this partnership, enabling our state to be the gateway for adoption of the latest and most transformative technologies.

Manoj Kumar Singh, Indian Administrative Service (IAS) Chief Secretary, Government of Uttar Pradesh

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Our long-standing partnership with the World Economic Forum has fostered a robust multistakeholder platform, advancing thought leadership and collaborative action. We look forward to deepening this collaboration with the Centre for the Fourth Industrial Revolution in India to accelerate progress towards the Sustainable Development Goals (SDGs). By driving the adoption of emerging technologies, we aim to foster inclusivity, empower youth and women, and promote equal opportunities for all, ensuring that no one is left behind in the pursuit of a sustainable and equitable future.

Shombi Sharp, United Nations Resident Coordinator in India

At SAP, we envision technologies as catalysts for transformative growth, and we're dedicated to simplifying tech adoption for businesses. We recognize the immense value of the initiatives of C4IR India; they align with our vision and foster collaboration to harness the potential of multistakeholder communities. Initiatives such as AI4AI and AI for India 2030 offer a unified platform to create lasting impact across sectors. We look forward to building on these synergies and advancing impact together.

Sindhu Gangadharan, Managing Director, SAP Labs India

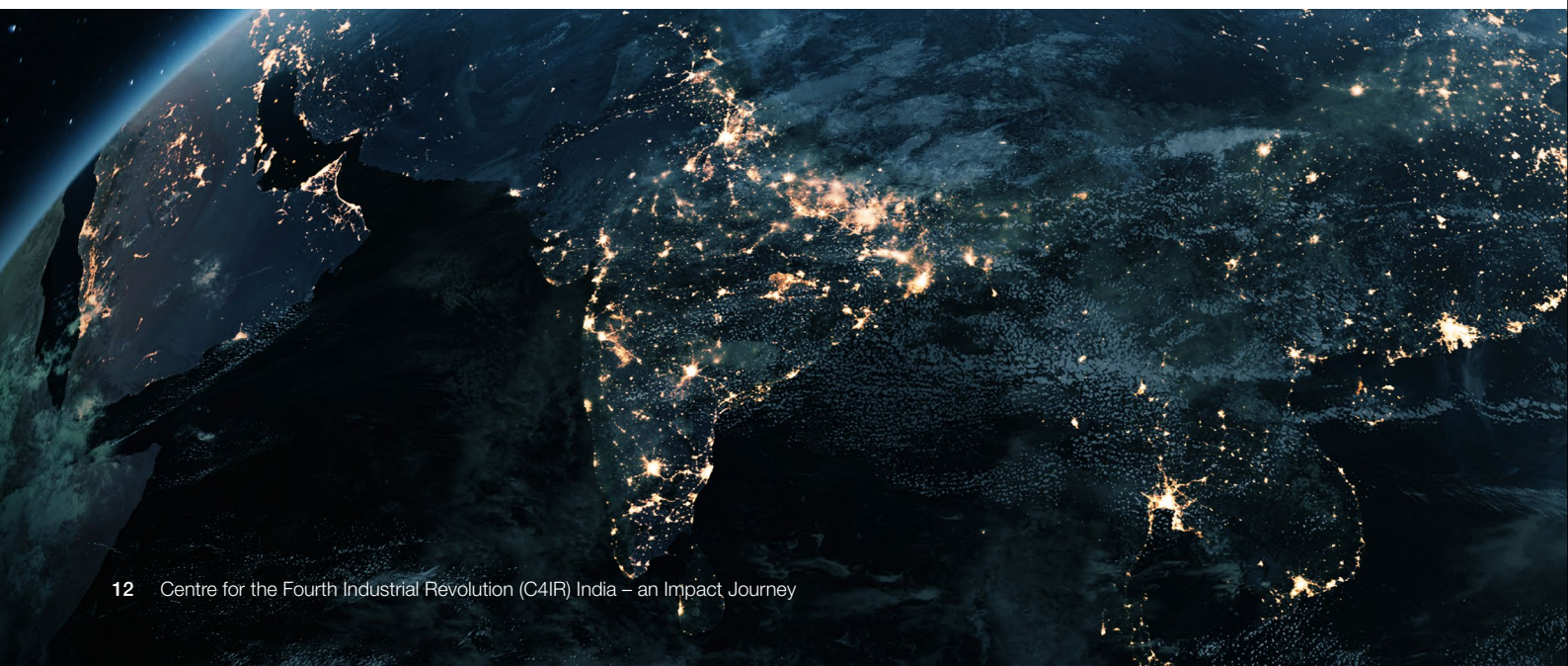
Collaboration with the C4IR Network

India is at the forefront of creating a robust ecosystem for scaling Fourth Industrial Revolution (4IR) technologies in its agriculture sector, potentially serving as a model for other emerging economies seeking to revolutionize their agriculture practices. The country's innovative approach to integrating advanced technologies in agriculture could pave the way for a new agricultural revolution globally. The Centre for the Fourth Industrial Revolution (C4IR) India has emerged as a thought leader in developing frameworks to scale agritech solutions. This initiative not only benefits India's agriculture sector, but also creates significant opportunities for cross-country collaboration, allowing other nations to learn from and adapt India's successful strategies.

Basma AlBuhairan, Managing Director, Centre for the Fourth Industrial Revolution Saudi Arabia (C4IR Saudi Arabia)

The AI untuk Rakyat (AI for Citizens) initiative by Malaysia Centre for 4IR and AI for India 2030 initiative by C4IR India are focused on leveraging artificial intelligence to create accessible, impactful solutions that benefit citizens directly. Both of these initiatives seek to explore the strategic role of AI across sectors, co-create essential blueprints and establish forward-looking governance frameworks that contribute to a globally unified approach to responsible AI. We're excited about the impactful work ahead and look forward to collaborating on the progress being made with the C4IR India team.

Fabian Bigar, Head, Malaysia Centre for 4IR (C4IR Malaysia)



We believe AI holds the potential to vastly improve public and private operations and help meet the needs of citizens in new ways across the world. Through our collaboration with C4IR India's AI for India 2030 initiative, we plan to share insights to accelerate strategic applications of AI across sectors and develop essential governance approaches that promote a unified, responsible adoption of AI worldwide. We're eager to see the advancements this collaboration will drive and are excited to exchange learnings.

Fariz Jafarov, Executive Director, Centre for the Fourth Industrial Revolution Azerbaijan (C4IR Azerbaijan)

Through our collaboration with C4IR India, we are excited to share insights, co-develop innovative solutions and accelerate the growth of commercially viable technologies such as drones and AAM that can deliver lasting benefits to the region and beyond. By combining the advancements and learnings from our Israel National Drone Initiative (INDI) on advanced air mobility with the remarkable work of our India counterparts in AVIATE AAM and Medicine from the Sky, we aim to establish best practices and standards that ensure these technologies are safe, sustainable and tailorable to unique needs around the world.

Daniella Partem, Senior Director; Head, Centre for the Fourth Industrial Revolution Israel (C4IR Israel)

The C4IR Rwanda and C4IR India both focus on advancing data governance, AI and machine learning to drive societal benefits. We are collaborating across sectors to develop frameworks that ensure responsible technology use, while also supporting national AI policy. We are hopeful that our partnership with C4IR India will contribute significantly to global knowledge in this space.

Crystal Rugege, Managing Director, Centre for the Fourth Industrial Revolution Rwanda (C4IR Rwanda)

Initiatives in India

AI4AI

Mission:
Accelerating the adoption of emerging technologies for agriculture globally through public–private partnerships to build inclusive, sustainable and efficient agrifood systems.

Context

By 2050, global agrifood systems will have to cater to the food demands of 9.1 billion people. To meet this demand, food production will need to be almost doubled in developing countries. This increased production is expected at a time when the agriculture sector faces the brunt of climate change, soil degradation, water depletion and increased input prices. In parallel, smallholder farmers and small and medium enterprises (SMEs) engaged in agriculture and food systems in low- and middle income countries (LMICs) face a multitude of challenges with respect to access to finance, information and markets.

Challenges in global agriculture

600 million

smallholder farmers depend on agriculture for their livelihoods[1]

$170 billion

finance gap for smallholder farmers and agri SMEs[2]

31% agrifood systems' contribution to global human-made greenhouse gas (GHG) emissions[3]

70% agriculture sector's share in global freshwater withdrawals[4]

13.2% food lost globally after harvest on farm, transport, storage, wholesale and processing[5]

Notes: 1. Shroff, J. (2022, September 28). *Why smallholder farmers are central to new food security interventions*. World Economic Forum. https://www.weforum.org/agenda/2022/09/smallholder-farmers-key-achieving-food-security/.

2. Mastercard Foundation Rural and Agricultural Finance Learning Lab & ISF Advisors. (n.d.). *Pathways to prosperity: 2019 rural and agricultural finance state of the sector report*. Retrieved November 13, 2024, from https://pathways.isfadvisors.org/#:~:text=The%20latest%20data%20suggests%20that%20financial%20service%20providers,a%20large%20gap%20in%20lending%20to%20agricultural%20SMEs.

3. Douglas, L. (2023, December 2). *How food and agriculture contribute to climate change*. Reuters. https://www.reuters.com/business/environment/factbox-how-food-agriculture-contribute-climate-change-2023-12-02/.

4. United Nations Educational, Scientific and Cultural Organization (UNESCO). (2024). *United Nations World Water Development Report: Water for prosperity and peace*. https://www.unesco.org/reports/wwdr/en/2024/s.

5. Food and Agriculture Organization of the United Nations. (n.d.). *SDG Indicators Data Portal*. Retrieved November 13, 2024, from https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/1231-global-food-losses/en.

Digitalization of agricultural and food systems combined with tech-enabled service delivery can address several of the challenges related to future food security. Furthermore, these digital agricultural technologies are being recognized as a key lever to reduce agrifood emissions. As of 2023, LMICs hosted more than 1,400 digital agriculture service providers, with more than half being set up since 2018, indicating the rapid growth in the space. With advances in Fourth Industrial Revolution technologies including AI, use cases of digital technologies for agriculture and food systems are increasing, further augmenting the role of these technologies for transforming agrifood systems. For instance, research suggests that digital agriculture could LMICs by more than $450 billion, or 28% per annum.[1]

1. Beanstalk. (n.d.). *State of the digital agriculture sector: Harnessing the potential of digital for impact across agricultural value chains in low- and middle-income countries*. Retrieved November 13, 2024, from https://www.beanstalkagtech.com/d4aglmic.

Objectives

The AI4AI initiative focuses on using public–private partnerships (PPPs) to accelerate the deployment of digital and AI-enabled technologies in the agriculture sector to deliver an impact on:

Inclusivity

Using technology to ensure agricultural services are inclusive and cater to the needs of smallholder farmers, women and other marginalized groups.

Sustainability

Using technology to reduce the environmental footprint of the agriculture sector by minimizing the need for harmful chemicals and fertilizers, reducing water stress and building resilience against future shocks.

Efficiency

Using technology to ensure that losses and wastages at all stages from farm to fork are minimized.

Image: Workshop on AI4AI framework with KSA

Levers

AI4AI's PPP framework is based on the principle that governments play a critical role in developing an environment that promotes access, affordability and adoption of digital agricultural innovations, while the private sector complements government efforts by investing in and deploying the latest technology innovations for inclusive, sustainable and efficient supply chains.

The AI4AI PPP framework has three levers

Value chain transformation

Transforming agriculture value chains by plugging gaps and inefficiencies in crop production and supply chains using digital technology.

Agri-digital public infrastructure

Developing digital public infrastructure such as Agricultural Data Exchange (ADeX), an agricultural data management policy and agritech sandboxes that can support the private sector in developing and piloting customized and innovative services for farmers.

Gender-inclusive digital technologies

Building inclusive technology solutions that address the unique challenges of women farmers (such as low literacy, perception as high-risk borrowers, restricted participation in market-facing roles, among others), to ensure the just participation of women in global food security.

The three levers are deployed via public–private partnerships and accelerated via a global agritech community that facilitates peer-to-peer learning and collaboration to build robust digital agriculture ecosystems.

Impact of the AI4AI initiative:

Telangana: Project Saagu Baagu

AI4AI's first success was the adoption of the PPP framework by the Telangana Government under the project name "Saagu Baagu". In the pilot phase of the initiative, 7,000 chilli farmers were supported with four digital technology applications: soil-testing, advisory, quality assaying and e-market connect. In the programme's first season, participating farmers saw an incremental profit of $800/acre through 21% yield improvements and 9% reduced use of fertilizers and pesticides. Owing to the success of the initiative, in 2024 the state government expressed an interest in taking the initiative to 500,000 farmers in Telangana in 10 districts.

In addition to the value chain transformation efforts, the Government of Telangana also launched India's first agricultural data exchange. The exchange became the first piece of digital infrastructure to allow sector stakeholders to exchange agricultural data under a set of binding principles, including proper consent management. It had seen more than 4,000 data queries by October 2024, and a leading private-sector bank was using data from the exchange to lend to smallholder farmers.

> **The Centre for the Fourth Industrial Revolution India has been a critical partner for us in conceptualizing Saagu Baagu and Agri Data Exchange, initiatives that increased yield and supported optimal use of farm inputs, which ultimately raised farmers' income. Based on the success of the pilot with 7,000 farmers, we have scaled the initiative to 50,000 farmers and plan to scale it to impact 500,000 farmers in the next two years.**
>
> Rama Devi Lanka, Director, Emerging Technologies, Government of Telangana

Uttar Pradesh

In Uttar Pradesh, as a knowledge partner to the Department of Horticulture and Food Processing, the AI4AI initiative supported the formation of a Digital Agriculture and Export Promotion (DAEP) Council with representatives from 16 private-sector companies and government departments. The council is currently working to achieve its target of reaching more than 30,000 smallholder farmers and boosting their export readiness through digital technologies. Additionally, in collaboration with Deloitte India, the AI4AI initiative supported the drafting of the Uttar Pradesh Agritech Policy 2024, approved by the state cabinet in July 2024. The policy allowed the state government to allocate more than $2.75 million for agritech ecosystem development in the state and will focus on establishing a state-level data exchange, a sandbox and a state agritech conference. The implementation is likely to affect more than 250,000 farmers directly and more than 26 million farmers indirectly.

Global expansion: AI4AI in other contexts

Owing to the success of the PPP frameworks of AI4AI, the initiative has been replicated in other countries such as the Kingdom of Saudi Arabia. The programme has since supported the Saudi government in identifying digital technologies for value chains such as date palms, especially for early pest detection. Several countries are currently discussing the initiative with a view to replicating the PPP frameworks.

Madhya Pradesh: Scaling food innovation through multistakeholder action

AI4AI is working with the Government of Madhya Pradesh to develop proofs of concept for technology solutions that could have significant impact potential. Under the programme, the initiative supported the government to partner with many private-sector partners to test use cases related to data-driven lending to farmers, working capital access for SMEs, carbon finance for transitioning to sustainable agricultural practices, AI-based quality assaying and geospatial imagery-based credit scoring. On completion, the pilots will have had an impact on more than 18,000 farmers, after which the programme will enable the private sector to scale these services to at least 100,000 farmers.

Maharashtra: Supporting women farmers to adopt digital agricultural solutions

In Maharashtra, AI4AI has partnered with the Maharashtra State Women's Economic Development Corporation (Mahila Arthik Vikas Mahamandal – MAVIM) to provide digital agricultural technologies to around 100,000 women farmers. AI4AI supported MAVIM in conceptualizing the programme and creating an interface for the body to identify and partner with relevant private-sector digital agriculture service providers.

Tech is an integral part of our strategy to further scale our services and advisories to the last-mile farmer. We believe for tech to scale it is critical that an enabling ecosystem and partnerships are forged. The Centre for the Fourth Industrial Revolution India's efforts in facilitating this partnership are a step in the right direction and will have long-term implications. I congratulate the centre on its incredible six-year journey.

Sanjiv Kanwar, Country Manager, Yara International

Cropin stands as the first global agritech company to build intelligence across 1 billion acres of cultivable land, analysing over 5% of the world's cultivable land. We have digitized 30 million acres of farmland, positively impacting the lives of over 7 million farmers worldwide. While proud of these achievements, we recognize that we are still at the beginning of realizing agriculture's full potential through technology, digitalization and AI. We believe collaboration across diverse stakeholders is essential, particularly the initiatives at the Centre for the Fourth Industrial Revolution; our continued association with the World Economic Forum will, we hope, drive meaningful progress towards transforming global food systems for the benefit of our planet.

Krishna Kumar, Co-Founder and Chief Executive Officer, Cropin

Small-scale farmers are leveraging digital technologies from mobile phones to AI systems to make better decisions on their farms across India. Stakeholder collaborations like Saagu Baagu with the Government of Telangana and the World Economic Forum's Centre for the Fourth Industrial Revolution are critical so that we can better meet farmers' demand for information, services and markets that boost farm income and climate resilience.

Rikin Gandhi, Chief Executive Officer, Digital Green

Systemic interventions in agriculture such as digital public infrastructure and agritech policy frameworks can drive long-term positive impact to scale the agritech sector. The Centre for the Fourth Industrial Revolution India's AI4AI initiative has been quite effective in developing frameworks for these systemic interventions. We congratulate the Centre for the Fourth Industrial Revolution for its six-year journey.

Srivalli Krishnan, Senior Program Officer – Global Development,
Bill & Melinda Gates Foundation

Wadhwani AI aims to develop AI solutions that address critical challenges in the agriculture, health and education sectors in collaboration with governments. We appreciate the Centre for the Fourth Industrial Revolution's support to facilitate multistakeholder partnerships that provide platforms to ideate, test and scale path-breaking AI solutions, especially in a complex sector like agriculture.

Shekar Sivasubramanian, Chief Executive Officer, Wadhwani AI

Milestones

Milestones planned for the next 18 months

Have an impact on 1 million farmers (of whom 30% are women farmers) globally by June 2025 through scaling Fourth Industrial Revolution technologies to enhance economic opportunity, support women farmers and improve environmental sustainability in agriculture. We plan to achieve this by extending the initiative's geographic presence.

1. Develop interventions in gender-inclusive agritech and engage community members to advance thought leadership and create collaborative projects locally.
2. Scale the initiative to two additional countries and five states in India.
3. Initiate a digital agriculture readiness assessment that facilitates inter-country transfer of methodologies and collaboration to establish robust digital agricultural systems.

Work in the next 18 months will focus on scaling the initiative based on lessons learned since 2021 through: a) deepening engagement with partners, b) delivering impact through flagship activities and c) continuing to build thought leadership.

a) Deepening engagement with partners

Formalize a global digital agriculture alliance with representation from businesses, governments, philanthropic organizations, development funders, investors and farmers' associations from at least 10 countries to accelerate cross-learning and collaboration in digital agriculture.

Build a national steering council including chief executive officers, chief experience officers and senior government officials, on scaling emerging technologies in the agriculture sector.

b) Delivering impact through flagship activities

Continue to support four state-led value-chain transformation and digital public infrastructure initiatives through convening and thought leadership.

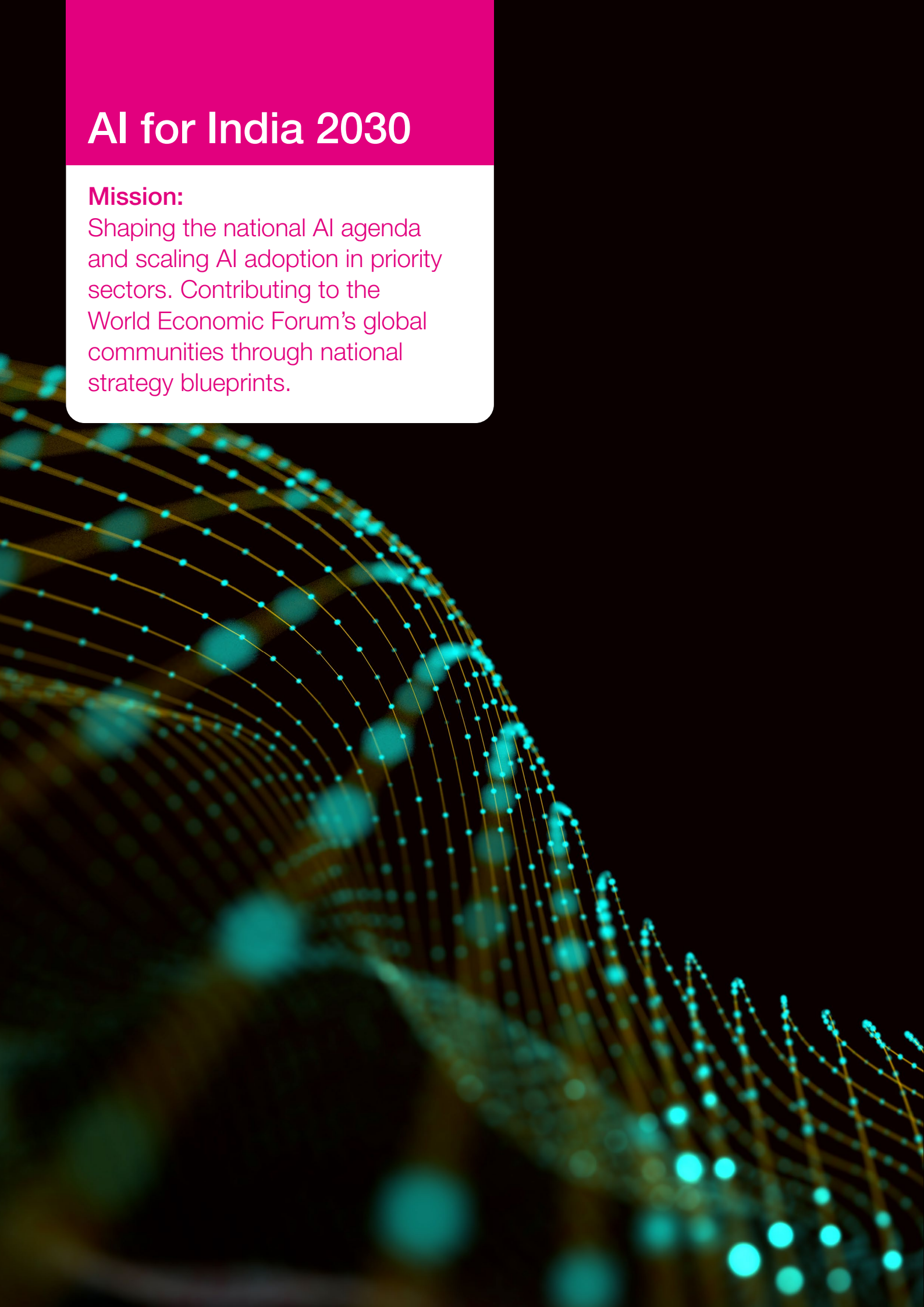
c) Continuing to build thought leadership

Produce insight reports on Fourth Industrial Revolution technologies, emerging trends and learning from existing flagship activities with a clear call of action and next steps.

Create an AI4AI playbook and one for digital public infrastructure for agriculture (Agri DPI).

AI for India 2030

Mission:
Shaping the national AI agenda and scaling AI adoption in priority sectors. Contributing to the World Economic Forum's global communities through national strategy blueprints.



Context

AI for India 2030 is a pioneering global multistakeholder initiative that unites industry leaders, academic institutions, civil society organizations and governments co-hosted by the World Economic Forum, along with the Ministry of Electronics and Information Technology (MeitY) of India, the Office of the Principal Scientific Advisor (PSA) of India, and the National Association of Software and Service Companies (NASSCOM) of India.

The AI for India 2030 initiative is aligned with the World Economic Forum's AI Governance Alliance (AIGA). AIGA, which was launched in June 2023 and focuses on responsible AI and transforming how AI shapes our world, has more than 463 global partners in 31 countries. These partners include representatives from industry, start-ups, academia, think tanks and governments. The alliance promotes national and global collaboration to use AI's potential across industries.

Objective

The AI for India 2030 Initiative aims to investigate the strategic implications of AI in various industries and sectors in India and co-design essential blueprints and anticipatory governance mechanisms to contribute to a globally harmonized understanding of responsible AI.

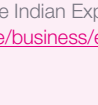
AI presents unprecedented opportunities to stimulate transformative growth and development in India, with the potential to contribute approximately $500 billion to the economy by 2025,[2] and has the capacity to revolutionize sectors such as agriculture, manufacturing, healthcare and urban planning. As the nation integrates AI across sectors, the collective goal is not only to enhance national competitiveness but also to position India as a global leader in the responsible and inclusive dissemination of AI technologies.

The main challenges include the availability and quality of data, skills development, infrastructure, regulatory frameworks, ethical considerations, equitable access and public–private collaboration. The mission of AI for India 2030 is to solve these obstacles by facilitating collaborative efforts and harnessing AI's potential for societal benefits. By working together, we aim to shape a future where AI serves as a catalyst for sustainable development, economic growth and social inclusion.

Workstreams

The National Advisory Council for the AI for India 2030 initiative, chaired by Ajay Sood (PSA) and S. Krishnan (Secretary, MeitY), and consisting of domain leaders and pioneers from industries, start-ups, academia and government, identified two important workstreams:

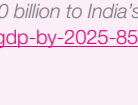
1



AI playbooks for priority sectors

Simplify and proliferate the adoption of AI in priority sectors such as agriculture, micro, small and medium enterprise (MSME) manufacturing and health by designing implementable frameworks and providing a dynamic compendium of methodologies for policy leaders, government institutions, industry and start-ups.

2



AI sandbox

Create multistakeholder innovation hubs designed to address critical challenges such as availability of data, navigation of regulations and creation of systems for equitable access and collaborative deployment of AI solutions, aimed at positioning India as a global AI leader.

AI for India 2030 expert groups will determine workstreams to deliver an outcome-focused multistakeholder framework. The framework will be submitted to the National Advisory Council for the AI for India 2030 initiative for feedback and published for national adoption with possible pilots with two states.

2. The Indian Express. (2023, March 20). *Artificial intelligence expected to add $500 billion to India's GDP by 2025: Report.* https://indianexpress.com/article/business/economy/artificial-intelligence-expected-to-add-500-bn-to-india-gdp-by-2025-8507775/.

Community information

The AI for India 2030 Advisory Council consists of 20 leaders from government (including state governments), industry (such as NASSCOM, Microsoft, Amazon, Mahindra, Infosys, HCL, Reliance and Nvidia), non-profits (Wadhwani AI, the Indian Software Products Industry Round Table [iSPIRT]), academia (the Indian Institute of Technology Madras) and start-ups (Haptik AI and Sarvam AI).

Milestones

Milestones planned

JANUARY 2025

Publication of AI playbooks for agriculture and manufacturing

A comprehensive report outlining the architecture, design, governance frameworks and operational protocols for AI sandboxes

FEBRUARY 2025

Publication of AI playbook for healthcare

MARCH 2025–DECEMBER 2025

Scaling adoption of AI playbooks and AI sandbox frameworks with state governments and industries

These reports will serve as a guiding document for future deployments anchored by state governments, which will follow during the rest of 2025.

India AI Mission, with the vision of making 'AI in India, for India and the World', aims to establish India as a leader in AI applications and responsible AI, with priorities on infrastructure, data accessibility, AI skills, AI start-ups and safety. India's AI industry is poised for massive economic impact. In order to sustainably scale and adopt AI, India AI Mission works with key stakeholders from government, industry, start-ups, academia and non-profits including C4IR India, World Economic Forum, which is contributing to positioning India as a global leader in responsible and ethical AI. We look forward to the implementation of AI projects and initiatives and the development of AI adoption frameworks as playbooks for priority sectors such as agriculture, healthcare, education, fintech and MSME.

Abhishek Singh, Additional Secretary, Ministry of Electronics and Information Technology

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Telangana's pioneering spirit in tech-driven governance and innovation aligns perfectly with our ongoing partnership with the World Economic Forum through the AI4AI initiative. Joining AI for India 2030 is an exciting step to drive AI adoption in various priority sectors for the state, ensuring Telangana continues to lead by example.

Jayesh Ranjan, Special Chief Secretary, Department of Information Technology, Electronics & Communications (ITE&C) and Department of Industries & Commerce, Government of Telangana

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As India's IT and start-up capital, Karnataka is committed to becoming a global leader in AI. In partnership with C4IR India, World Economic Forum, we aim to build a robust AI environment that advances priority sectors such as agriculture, healthcare and education, positioning India as a hub for sustainable, tech-driven innovation. By providing a platform and sandbox for scaling AI solutions, we strive to empower businesses and drive impactful transformation through this collaboration.

Ekroop Caur, Secretary, Department of Electronics, Information Technology, Biotechnology and Science & Technology, Government of Karnataka

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At Mahindra, we believe in harnessing technology to drive meaningful change across industries. The AI for India 2030 initiative aligns perfectly with our vision of leveraging AI to create sustainable, impactful solutions. As part of this journey with the World Economic Forum, we look forward to shaping India's future as a global leader in AI.

Mohit Kapoor, Group Chief Technology Officer, Mahindra

I am delighted to be a part of the AI for India 2030 initiative, a pioneering multistakeholder AI initiative that embodies the vision to simplify AI adoption. I believe AI can drive transformative benefits and it is critical to drive AI implementation quickly with the help of stakeholders from government and industrial bodies. The AI playbooks will serve as a vital guide, paving the way for the broader adoption of AI-driven technologies and accelerating the transformation in priority sectors like MSMEs across India.

Tejpreet Chopra, Founder and Chief Executive Officer, Bharat Light and Power Group

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We at Microsoft believe AI has immense potential to benefit people, industries and governments, and we are committed to co-piloting India towards becoming an AI-first nation. We are proud to be part of the AI for India 2030 initiative, as it fosters an environment of trust among multiple stakeholders, which is crucial for unlocking AI's full value. Our collaboration with the Centre for the Fourth Industrial Revolution India unites the ecosystem to ensure that India adopts and scales AI in a manner that promotes trust, inclusion and responsibility.

Rohini Srivathsa, Chief Technology Officer, Microsoft India and South Asia

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AI for India 2030 is a visionary initiative that underscores the importance of responsible AI deployment in priority sectors. This initiative is aligned with our vision at the Centre for Responsible AI (CeRAI), IIT Madras, to advance responsible AI research that serves the unique needs of India. I'm thrilled to be part of this journey to build scalable, ethical, and impactful AI solutions for the nation.

Balaraman Ravindran, Head, Centre for Responsible AI,
Indian Institute of Technology Madras

As BCG X collaborates with the World Economic Forum's C4IR on the AI for India 2030 initiative, we're witnessing the powerful intersection of policy and practice. The Forum has assembled an exceptional community of leaders across government, industry and academia – creating a unique ecosystem where our hands-on experience in large-scale AI implementation can inform policy frameworks. This partnership enables us to bridge the crucial gap between AI strategy and real-world deployment, ensuring India's AI journey is both ambitious and responsible.

Nipun Kalra, Managing Director and Partner, BCGX India,
Boston Consulting Group

With AI for India 2030, we are setting a foundation for sustainable, impactful AI adoption across India. This initiative brings together thought leaders and innovators to design AI solutions that not only solve national challenges but also position India as a role model in the global AI landscape.

Aakrit Vaish, Co-Founder and Chief Executive Officer, Haptik

AI is set to reshape India's tech landscape, and AI for India 2030 is the launchpad for that change. At Sarvam, we're on a mission to make AI accessible and impactful for Bharat's unique needs – and we're excited to help drive this transformation forward.

Pratyush Kumar, Co-Founder, Sarvam AI

AVIATE India

Mission:
Developing regulatory frameworks and pilot projects through AVIATE India to position the country as a global leader in advanced air mobility and lay the groundwork for urban and rural air mobility.

Context

India is uniquely positioned to benefit from advanced air mobility (AAM) due to its rapid growth, technological advances and increasing need for innovative mobility solutions. As the world's third-largest domestic passenger market, India has already made remarkable strides in transforming air travel through initiatives such as the Government of India's Ude Desh ka Aam Naagrik (UDAN) scheme,[3] which has operationalized 601 routes and 71 airports, bringing the benefits of aviation to 14.4 million citizens. The AAM sector is building on this momentum by introducing the next frontier in mobility, using cutting-edge technology to enhance urban and rural connectivity.

AAM offers a significant opportunity to decongest urban centres by introducing new, efficient air transport options that can bypass the challenges of road traffic and infrastructure limitations. It also provides rural India with faster access to jobs, finance, healthcare and markets, ensuring that the benefits of economic development reach all corners of the country. In creating seamless, rapid connections between regions, this delivers social benefits and drives economic growth.

India's leadership in automation and smart infrastructure further strengthens its case for embracing AAM. By integrating aerial mobility with existing transportation networks, India can create a forward-looking, sustainable and efficient transport system that serves both its bustling cities and its vast rural areas. The development of vertiports and the management of airspace will allow for seamless integration with urban transport systems, enhancing convenience and reducing travel times for millions of people.

India has already demonstrated its capacity to lead in this space through successful initiatives such as Medicine from the Sky, which used drones to deliver essential healthcare to remote areas in Telangana and the Himalayan region. This project, endorsed by key decision-makers in government, has been recognized globally, showcasing India's ability to harness advanced technology for social good.

By embracing AAM, India has the opportunity to lead the world in sustainable, innovative aviation solutions, improving mobility, reducing congestion and driving economic growth, all while enhancing its citizens' quality of life.

Objectives

AVIATE[4] AAM India aims to develop a strategic roadmap and create sandboxes for the responsible adoption of AAM throughout regional and urban India. The initiative seeks to ensure that autonomous aviation technology enhances the safety of the entire aviation ecosystem, is introduced equitably, minimizes externalities such as noise and privacy concerns, and maximizes benefits for both current and future aviation workforces. To achieve these objectives, AVIATE India will bring together Indian and global stakeholders to position India as a leader in the AAM sector, develop a comprehensive roadmap and concept of operations for scaling AAM, support pilot project activities in collaboration with India's Aviation Ministry and regulatory bodies, and document key lessons learned to inform future global deployments.

India had a strong presence at the Paris Air Show 2023, and AVIATE AAM was announced at this point. Technology is advancing at a rapid pace: the number of operations by unmanned aircraft systems is soon expected to surpass the number of manned operations, with at least 20 companies including legacy aviation companies pursuing certification of autonomous passenger aircraft. Despite this, there remains a mismatch between the capability of technology and public perceptions of autonomy.

With emerging technologies at the core of our agenda, AVIATE India is focusing on topics around advanced air mobility and drones through a host of programmes, initiatives and global coalitions.

Advanced air mobility

Through our global coalitions and peer communities, we are working to revolutionize transportation by enabling efficient, sustainable and accessible urban and rural mobility solutions.

Drones for social impact

As a subset of AAM, this initiative focuses on powering up legacy sectors such as healthcare and agriculture by unlocking new possibilities for data collection, monitoring and delivery. Medicine from the Sky has been a flagship initiative.

3. Government of India, Ministry of Information and Broadcasting. (n.d.). *Ude Desh ka Aam Naagrik: Journey from Hawai Chapal to Hawai Jahaj.* Retrieved November 15, 2024, from https://www.civilaviation.gov.in/sites/default/files/migration/Udaan_Eng.pdf. **4.** AVIATE stands for Aviation – Innovation, Autonomy and Technology for Everyone.

Strategy

The AVIATE India strategy will focus on a multipillar approach designed to promote the adoption and growth of AAM throughout India, integrating key aspects of community engagement, infrastructure development, market readiness and next-generation innovations.

The initiative will concentrate on the following strategic pillars

Community acceptance

Gaining widespread community acceptance is crucial for the successful adoption of AAM. This requires transparent communication with the public, addressing safety concerns and showcasing the tangible economic and social benefits that AAM can bring to local communities. By highlighting improvements such as faster mobility, job creation and enhanced accessibility, AVIATE India aims to build trust in and enthusiasm for AAM technologies.

Infrastructure and airspace management

Establishing well-coordinated infrastructure for advanced air mobility involves the strategic placement of vertiports, charging stations and other operational hubs, while also optimizing airspace management. This pillar focuses on creating a seamless integration with existing transportation networks to enable efficient urban mobility, including enhancing coordination between AAM operations and ground transportation systems.

Market aggregation

Efficient market aggregation is key to driving AAM adoption at scale. By aggregating demand and ensuring a coordinated market entry, AVIATE India aims to make air taxis and AAM solutions more affordable and accessible. This also accelerates technology adoption, ensuring that AAM services are available to a broad spectrum of users in both urban and rural settings.

Next-generation attributes

The benefits of integrating next-generation technological advances, such as reduced emissions, congestion mitigation and improved accessibility, are at the core of the strategy. The adoption of third-party solutions – such as booking systems, flight tracking and data analytics – will further enhance the user experience and operational efficiency, positioning AAM as a future-ready mode of transportation.

Impact methods

1

Sectoral pilots

Grounded in regional India, AVIATE India will conduct pilot programmes in controlled environments, transforming theoretical frameworks into practice. These pilots will test the real-world application of AAM technologies and provide valuable data for scaling operations.

2

Regional alliances

Building alliances with like-minded nations will enable AVIATE India to participate in cross-border collaboration, promoting innovation through international partnerships. These alliances will promote the exchange of business ideas, regulatory methodologies and technological solutions, ultimately positioning India as a global leader in AAM.

3

India CONOPS

AVIATE India will develop a concept of operations (CONOPS) specifically tailored to India, which will include detailed impact assessments, issue briefings, expert blogs and policy papers to guide the sector's growth and regulatory evolution.

For coverage areas see Figure 1

FIGURE 1 | **AVIATE advanced air mobility areas of coverage**

Air taxi operations overview

1. Definition and types of air taxis
2. Potential use cases and benefits
3. Integration with urban mobility

Operational framework

1. Key stakeholders and roles
2. Airspace management and regulation
3. Infrastructure requirements (vertiports, charging stations, etc.)

Technology and innovation

1. Electric and hybrid propulsion
2. Autonomous flight capabilities
3. Vehicle design and safety considerations

User experience and integration

1. Passenger booking and onboarding
2. In-flight experience and comfort
3. Connectivity and digital interfaces

Environmental and sustainability considerations

1. Emissions reduction and noise mitigation
2. Energy efficiency and alternative fuels
3. Impact on urban planning and land use

Safety and risk management

1. Safety standards and certification
2. Collision avoidance systems
3. Emergency procedures and contingency planning

Regulatory and policy framework

1. Current regulations and challenges
2. Policy Recommendations and advocacy
3. International collaboration and harmonization

Market and economic factors

1. Market trends and potential demand
2. Cost analysis and affordability
3. Economic benefits and job creation

Roadmap for implementation

1. Short-term milestones (1–3 years)
2. Medium-term goals (3–5 years)
3. Long-term vision (beyond 5 years)

Challenges and considerations

1. Public acceptance and perception
2. Infrastructure investment and scaling
3. Intermodal connectivity with other transport modes

Milestones

Milestones planned

6–12 MONTHS

Community conventions and field studies planned to design and develop controlled testing environments

12–18 MONTHS

Develop a sandbox for drone implementation with at least two partnering states, benefitting 100,000 citizens throughout these two states with better last-mile delivery services

CASE STUDY

Medicine from the Sky

The Medicine from the Sky (MFTS) initiative was the first coordinated drone programme under India's liberalized drone regime. It was facilitated by C4IR India in collaboration with the state governments of Telangana and Arunachal Pradesh in coordination with India's Ministry of Civil Aviation, the Directorate General of Civil Aviation (DGCA) and the Airports Authority of India.

The medical delivery programme launched as a trial operation in Vikarabad, Telangana: drones were used to transport medicines, vaccines and samples to local health centres from medical stores and district hospitals. About 10,000 doses of vaccines were transported using drones over a period of six weeks, covering more than 850 kilometres (530 miles).

This was followed by a full-scale pilot programme in Arunachal Pradesh, where lessons learned from the trial were implemented to document how health systems respond when drones are integrated. The Arunachal Pradesh pilot programme was funded by the United States Agency for International Development (USAID) under the Sustainable Access to Markets and Resources for Innovative Delivery of Healthcare (SAMRIDH) programme managed by IPE Global.

The Himalayan drone network completed two years of operations on 15 August 2024, India's Independence Day, making it the country's longest-running drone delivery network.[5]

With this initiative, Arunachal Pradesh uses drones to deliver emergency drugs, vaccines and blood samples safely to tribal and rural communities isolated in mountainous terrain following prolonged rain, landslides and other natural calamities; to date, upwards of 700 flights have flown more than 15,000 aerial kilometres (9,300 miles), delivering more than 12,000 medical products. The International Civil Aviation Organization (ICAO), a specialized agency of the United Nations, celebrated the MFTS scheme as an "inspirational story" and showcased it at the AAM symposium in Montreal in September 2024.[6]

5. World Economic Forum. (2024). *Medicine from the Sky: Community outcomes of drone deliveries in the Himalayan region.* https://www3.weforum.org/docs/WEF_Medicine_from_the_Sky_2024.pdf. **6.** World Economic Forum. (2024). World Economic Forum's *"Medicine from the Sky – India" gains ICAO accolades for pioneering drone health supply chains.* https://initiatives.weforum.org/aviate-india/icao-aam-medicinefromthesky.

FIGURE 2 | **The environmental impact of using drones instead of traditional vehicles**

Being electric, drones have the potential to reduce CO_2 emissions compared to traditional means. In the long term, drones and other larger advanced air mobility vehicles can be used to connect goods and people to remote areas, avoiding the need to construct more intrusive road infrastructure in protected natural areas.

Assuming a diesel vehicle covers 25,000 km (15,500 miles) in hilly terrain annually at a mileage of 10 km/litre, the environmental impact of taking it off the road for one year is as follows:

CO_2 emissions

6.7 tonnes

of CO_2 emissions avoided

Fuel consumption

Cost of

2,500 litres

of diesel saved

Health benefits

0.3-0.6

premature deaths avoided

2.5-4.5

cases of chronic bronchitis and acute respiratory illnesses avoided

Noise

A more peaceful environment results that is noise and congestion free

Climate change mitigation

34.5 kg

(assuming 1.38 g/km) reduction in particulate matter

57.5 kg

(assuming 2.3 g/km) reduction in nitrogen oxides

12.5 kg

(assuming 0.5 g/km) reduction in volatile organic compounds (VOCs)

Source: Apollo Hospitals

India is at the threshold of a transformative shift in mobility, and advanced air mobility represents a pivotal step towards unlocking the potential of our skies. With the development of this concept of operations, we are laying the foundation for a future where air transportation is not just faster and more efficient, but also accessible, sustainable and inclusive for all Indians. This collaboration with the World Economic Forum underscores our commitment to embracing innovation while ensuring safe and secure integration into our national airspace.

Ram Mohan Naidu, Minister for Civil Aviation, Government of India

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Medicine from the Sky, a new dawn in our Arunachal! In sync with the vision of Hon'ble Prime Minister Shri Narendra Modi ji to use drones to revolutionize services and make it easier to provide government services, we are firm in our resolve to do everything possible to improve our people's ease of life, which has been at the core of our governance for the last six years. Relentless in our efforts to take things to the next level of excellence, we have decided to make the optimum use of drones in areas like healthcare, agriculture and disaster management in collaboration with the World Economic Forum.

Pema Khandu, Chief Minister, Arunachal Pradesh, Government of India

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Our healthcare sector could potentially witness large-scale deliveries of long-tail medicines, vaccines, blood and vital organs throughout the country across terrains with drones in action. As clinical partners in the Medicine from the Sky initiative, Apollo Hospitals' HealthNet Global will be responsible for enabling vaccine and medicine availability and properly monitoring the adherence of clinical protocols throughout the project.

Sangita Reddy, Joint Managing Director, Apollo Hospitals

Image: The International Civil Aviation Organisation (ICAO), the UN Specialised Agency for Aviation, recognizes India's Medicine from the Sky initiative as an inspirational story.

AVIATE India brings together the brightest minds and most driven organizations in the advanced air mobility (AAM) space by providing an ecosystem to co-create a future-ready mobility landscape for India. We envision AVIATE as a catalyst for driving economic growth and fostering sustainable innovation in advanced air mobility, and are working with them to provide strategic guidance and actionable insights that will help unlock the full potential of this industry, from optimizing infrastructure to fostering public–private partnerships.

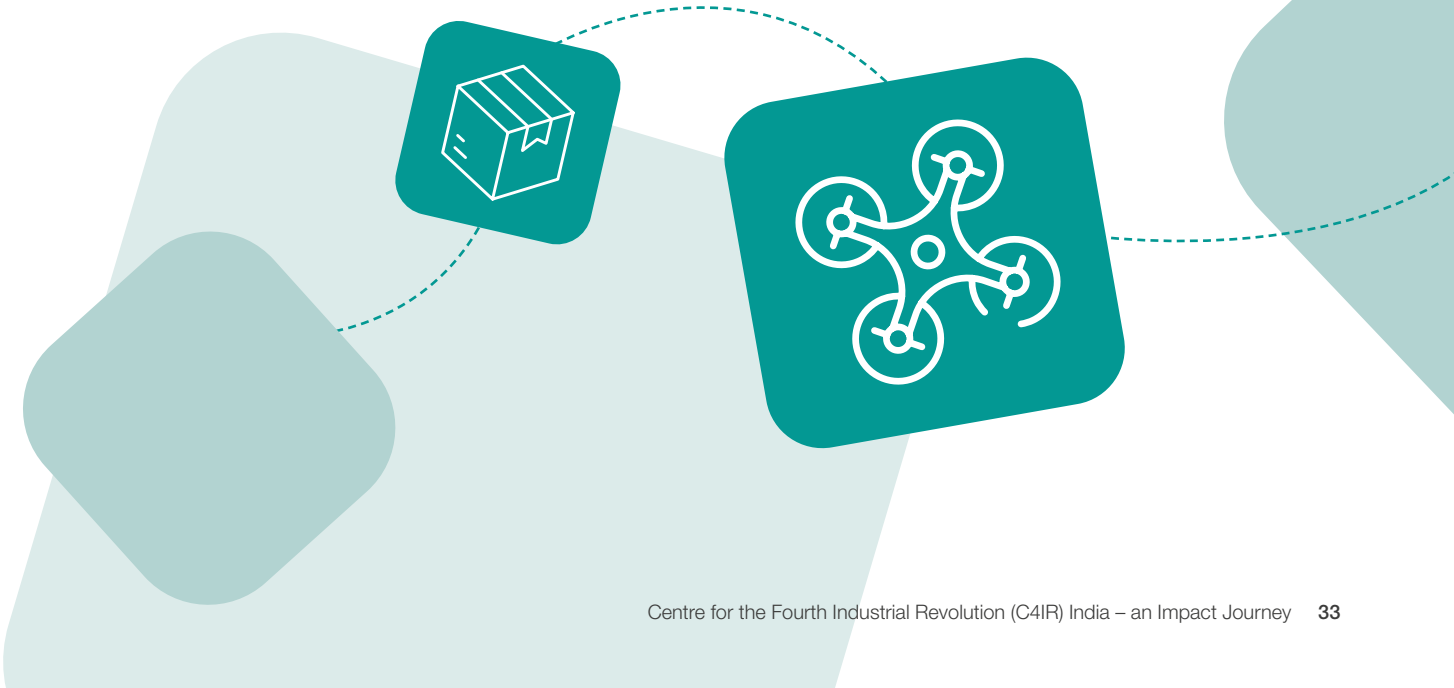
Sudeepta Veerapaneni, Partner and Chief Innovation Officer, Deloitte, India

The AVIATE India initiative offers an unparalleled opportunity to pioneer the skies of India with advanced air mobility solutions. At JetSetGo we are eager to demonstrate the practical value AAM brings to urban and rural connectivity, reducing travel time and improving access to remote areas while solving challenges around urban congestion. This initiative allows us to prove, through real-world applications, how AAM can be a safe, reliable and scalable solution for the future of Indian transportation.

Kanika Tekriwal, Chief Executive Officer, JetSetGo

India's journey into advanced air mobility represents a significant leap forward, and AVIATE AAM India is the bridge that will help us cross into this new era. The collaboration within AVIATE offers academic institutions like ours the chance to contribute research-backed insights, address regulatory concerns and test the socioeconomic impacts of AAM. I am excited to see how our work will shape a robust, inclusive framework for this transformative technology.

Satyanarayanan Chakravarthy, Professor of Aerospace Engineering, Indian Institute of Technology Madras



Healthcare

Fourth Industrial Revolution for Sustainable Transformation of Healthcare

Mission:
Establishing a collaborative framework to accelerate the adoption of digital health initiatives in India.

Context

India has more than

4.3 billion

doctor consultations per annum,[1] but most health records are not digital, or are unstructured/ inconsistently maintained.

Households' out-of-pocket expenditure on health (OOPE) is about

$46 billion

which equates to 39.4% of total health expenditure, 1.51% of GDP, 2,600 rupees [$30] per capita.[2]

India is ranked

66th

in the world out of 195 countries in the 2021 Global Health Security Index.[3]

Notes: 1. Praxis Global Alliance. (2021). *Outpatient healthcare market in India*. https://www.praxisga.com/PraxisgaImages/ReportImg/praxis-report-on-outpatient-healthcare-market-in-india-Report-3.pdf.

2. Ministry of Health and Family Welfare, Government of India, National Health Accounts Technical Secretariat. (2024). *National Health Accounts estimates for India 2021–22.* https://nhsrcindia.org/sites/default/files/2024-09/NHA%202021-22.pdf.

3. Global Health Security Index. (2021). *GHS Index country profile for India.* https://ghsindex.org/country/india/.

Objectives

The aim is to demonstrate the impact and value of digital health-led transformation in Indian healthcare at scale via public–private partnerships. We intend to create a collaborative framework to accelerate adoption of digital health programmes in India, as part of the World Economic Forum's global digital health transformation initiative. The focus will be to:

Build collective will

by demonstrating need, inspiring leaders and illustrating new value creation

Chart a clear path

to systems change and collaborative innovation with a multisectoral approach

Develop enabling environment

via dialogue, blueprints and capability-building

Strategy/lever/workstreams

Activators

Create public–private coalitions at the regional, national or subnational levels, driving activation of digital initiatives in health systems.

Community-driven

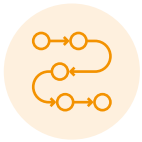
Engage with senior stakeholders from both the public and private sectors such as private healthcare providers, government agencies, pharmaceutical companies, insurance companies, academia, technology companies, multilaterals, corporate wellness leaders, global firms and civil society organizations.

Regional focus

Target one or two regions as hubs in the first year, focusing on the specific priorities and needs of the respective geographical areas while keeping the national-level objectives in mind.

Milestones

Milestones achieved



APRIL 2020

FIRST Health strategy published

Ministry of Health, Department of Aayush, NITI Aayog

DECEMBER 2021

More than 25 stakeholders from academia, industry, government, clinics, civil society organizations and start-ups put forward a detailed gap analysis and set of technological solutions. This resulted in the publication of the FIRST Cancer Care: Leveraging Fourth Industrial Revolution Technologies for Cancer Care white paper at the national roundtable chaired by the Joint Secretary of Ministry of Health and Family Welfare.

AUGUST 2021

In phase two, three recommended technological interventions – early detection and diagnosis, capacity-building and oncology data models – were included in the scope for the pilots under the public–private partnership mode in East Khasi Hills, Meghalaya. The Apollo Foundation was the project implementation partner that helped screen a population of more than 1 million in 18 months to target oral, breast and cervical cancers.

MAY 2023–JULY 2024

The 18-month pilot is complete, and the plan now is to scale the initiative at a state level.

JULY 2024 TO DATE

As part of the World Economic Forum's global digital health transformation initiative, a digital health strategy for India is being conceptualized. The idea is to promote public–private coalitions in India to drive digital health impact at scale. Our aim is to create a collaborative framework for accelerating the adoption of digital health initiatives in India.

Screening statistics

Total camps conducted	3,482
Total people screened	104,387
Total number of screenings performed	439,939*

*Each person is screened on several parameters

Capacity-building statistics

Total training sessions conducted	87
Total paramedics trained	685
Total medical officers trained	72
Village health councils (including Accredited Social Health Activist Facilitators [AFs] and Anganwadi Workers [AWWs]):	201

Milestones planned

NEXT THREE MONTHS

Build a community of senior stakeholders from both the public and private sectors. This will include a national-level chief experience officer community as a steering committee and a working group community of subject-matter experts.

THREE TO SIX MONTHS

Undertake the official launch of India Activator's first hub in Telangana with a focus on regional digital health priorities. Activators are regionally focused multisectoral coalitions that drive concrete impact at scale and demonstrate effective blueprints for public–private collaboration, generating new partnerships, solutions and best practices. There will be a focus on identifying supply-side and demand-side gaps and opportunities.

SIX MONTHS TO A YEAR

Launch a national dialogue among key stakeholders to strengthen and align digital health efforts for the first hub. Identify the second hub and create a working group to focus on the hub's priority areas.

ANNUAL IMPACT REPORT

Publish an annual impact report for target release at the World Economic Forum Annual Meeting in 2026.

CASE STUDY

FIRST Health

FIRST Health (Fourth Industrial Revolution for Sustainable Transformation of Healthcare) was launched in January 2021 with the Ministry of Health and a core group of industry partners and subsequently expanded into the FIRST cancer care project[7] in April 2022, with Meghalaya state as a key partner.

The Meg Can Care project was launched with the aim of screening 1 million people free of charge, making it an ambitious initiative to reach around a third of the state's population. The project's primary goal is to ensure the early identification of suspected cancer cases through comprehensive screening programmes. It emphasizes the importance of timely diagnosis and follow-up testing to enable early intervention and improve patient outcomes.

The collaboration between the Meghalaya government, the Apollo Telemedicine Networking Foundation and the World Economic Forum has been crucial, using expertise and resources to implement effective cancer-screening programmes. The project's focus on telemedicine highlights the importance of technology in extending healthcare services to remote areas and facilitating access to specialized consultations for cancer patients.

The implementation pilot project was officially launched in Meghalaya in East Khasi Hills in the presence of the chief minister and the health minister of Meghalaya on 31 May 2023 at the state Central Library Auditorium in observance of World No Tobacco Day. A cycle rally was organized in the city of Shillong and its outskirts to raise awareness of the project.

7. World Economic Forum. (2022, February). *FIRST cancer care: Leveraging Fourth Industrial Revolution technologies for cancer care*. https://www3.weforum.org/docs/WEF_FIRST_Cancer_Care_2022.pdf.

CASE STUDY

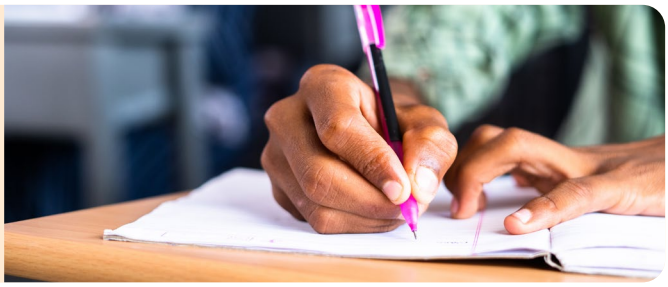
Glimpses of screening

As part of the pilot, more than 100,000 people have been screened with the total number of screenings being 439,939. A total of 3,482 camps were organized.

CASE STUDY

Glimpses of capacity-building

There was a strong focus on capacity-building: 87 training sessions were conducted, with 685 paramedics, 72 medical officers and 201 village health councils (including AFs and AWWs) in total being trained.



As we strive to enhance the healthcare landscape in Telangana, it is crucial that we harness the power of digital health to drive transformation. Achieving our vision for a resilient healthcare system requires a multifaceted approach that actively engages public institutions, private enterprises and community stakeholders. By collaborating across these sectors, we can develop innovative health solutions that improve access and quality of care while empowering individuals to take charge of their health. Our commitment to building a robust healthcare infrastructure depends on these partnerships, which are essential for addressing the unique challenges faced by our diverse population.

Jayesh Ranjan, Special Chief Secretary, Department of Information Technology, Electronics & Communications (ITE&C) and Department of Industries & Commerce, Government of Telangana

To achieve health equity in India, we need to harness the collective strengths of the public and private sectors through robust partnerships. Embracing digital health solutions will be crucial in reaching underserved communities and ensuring that healthcare delivery is efficient, accessible and sustainable. Our vision aligns with the broader goal of Viksit Bharat 2047, where collaborative efforts pave the way for transformative healthcare solutions.

Suhel Bidani, Lead – Digital & AI, Bill & Melinda Gates Foundation

For India to achieve the aspirations of Viksit Bharat 2047, we must prioritize digital health as a cornerstone of our healthcare strategy. Digital health helps drive standardized care, improves efficiency and increases access, resulting in higher patient safety and health equity. Public–private partnerships will play an integral role to create the necessary momentum and resources to drive the digital health transformation across India.

Rizwan Koita, Chairperson, National Accreditation Board for Hospitals and Healthcare (NABH)

A future-ready India in line with Viksit Bharat 2047 demands a healthcare system that is digitally sophisticated and universally accessible. Public–private partnerships are key enablers of this transformation, connecting the latest health innovations with the communities that need them most. Through collaboration with the government, we can empower patients across the country with digital health solutions, ensuring that healthcare is not just a privilege for some but a foundation for a truly developed and resilient India. It is critical for us to use the power of artificial intelligence to enable healthcare access to everyone, everywhere.

Sangita Reddy, Joint Managing Director, Apollo Hospitals

The true potential of corporate social responsibility lies in its ability to drive transformative changes, especially in healthcare. By embracing digital health initiatives, health systems can evolve further by creating a systematic and systemic approach and a solution that addresses real challenges detrimental to better health outcomes. In the CSR space, organizations/foundations can co-design an innovative approach, pilot and test the concept, validate through multistakeholder participation and establish the pathway of results. Partnerships and sustained dialoguing are essential to ensure that impactful solutions reach wider population and generate long-lasting improvements in healthcare systems and prevalent behaviours.

Asheesh Jain, Head, Health and Nutrition, JSW Foundation

The journey of FIRST Cancer Care highlights the essential role of multistakeholder collaboration in tackling India's cancer care needs. By focusing on screening, capacity-building and raising awareness, we are laying the groundwork for a healthcare ecosystem that can effectively manage cancer and improve patient outcomes. This initiative serves as a valuable model for how partnerships can help overcome challenges and extend critical healthcare services to all.

P. Jagannath, Chairman, Department of Surgical Oncology, Lilavati Hospital and Research Centre, Mumbai

Climate-Smart Urban Transformation

Mission:
Supporting forward-looking Indian cities to leverage frontier technologies for their climate-smart urban transformation.

Context

India is currently experiencing one of the most significant urban transformations of the 21st century. The nation's growth ambitions depend on the ability of its cities to function as engines of economic development.

However, the demands being placed on Indian cities are also growing. Many of the challenges that cities face today will be exacerbated by the impacts of climate change.

To prepare for the future and meet the current challenges to living standards, Indian cities must undergo a transformation to avoid infrastructure bottlenecks and being locked into a future of high emissions, pollution, heat stress and frequent urban flooding.

Frontier technologies can be important enablers in building urban systems that are more efficient and resilient to climate change.

Objective

Our community's ambition is to support Indian cities in moving towards the following technology-enabled and climate-smart urban transformation objectives by 2035:

Improve efficiency of the urban mobility system by a third and enable an energy transition in mobility.

Make the built environment more efficient and reduce embodied and operational emissions from new buildings by a third.

Halve the expected adverse per-capita climate impact of flooding, heat stress and pollution.

Strategy

Our multistakeholder community will create a consensus-driven holistic framework for how cities can plan to use frontier technologies for their climate-smart urban transformation. This framework will cover horizontal interventions around aspects such as:

1. Shared digital and physical infrastructure for a city's climate-smart urban transformation
2. A public–private collaboration framework, procurement guidelines and principles for the application of frontier technologies to solve the city's main challenges
3. Funding and business models for climate-smart urban transformation in the context of Indian cities

The framework will also include a detailed investigation of interventions covering **climate mitigation in mobility and the built environment, and adaptations against adverse urban climate impacts:**

1 Climate-smart urban mobility

Physical and digital infrastructure for mobility as a service (MaaS),[8] intelligent traffic management, an interface to facilitate small energy transactions in the mobility transition (to enable vehicle-to-grid [V2G], battery aggregation, renewable energy integration, etc.).

2 Climate-smart built environment

Low-carbon construction technologies, advanced materials for construction, smart buildings, city and building digital twins for built-environment planning and management.

3 Climate resilience of cities

Predictive urban infrastructure maintenance with AI, data-driven warnings and interventions related to urban flooding, air pollution and heat stress.

This framework will be further applied to a forward-looking city to support it in undertaking its technology-enabled, climate-smart urban transformation.

8. Maas Alliance. (n.d.). *Mobility as a service?* Retrieved November 25, 2024, from https://maas-alliance.eu/homepage/what-is-maas/.

Milestones

Milestones planned

DECEMBER 2024

The community to create a technology-enabled climate-smart urban transformation proposal for city engagement

MARCH 2025

Finalize at least one forward-looking city willing and able to collaborate closely with our community on its ambitious climate-smart urban transformation

JUNE 2025

Based on the proposal, create a city action plan specific to the city with support and approval from both the city and the state government, adding new objectives as required – and announce the first-of-its-kind technology-enabled climate-smart urban transformation initiative

JUNE 2025 ONWARDS

Support the implementation of urban transformation efforts through multistakeholder engagement

In the coming decades, 90% of urban population growth will occur in countries with socioeconomic conditions similar to India. The World Economic Forum's Centre for Urban Transformation and Centre for the Fourth Industrial Revolution in India are committed to supporting and learning from India's transition, helping to identify and scale frontier technologies and solutions that can support more resilient and prosperous urbanization across the globe.

Jeff Merritt, Head, Centre for Urban Transformation; Member of the Executive Committee, World Economic Forum

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Cities are the growth engines of India's economy, and their transformation is crucial to achieving developed country status by 2047. Cities are also key stakeholders in meeting the sustainable development goals (SDGs) and enabling a citizen-led lifestyle for environment (LiFE). In our partnership with the World Economic Forum, we are keen to support forward-looking cities in achieving a technology-enabled climate-smart urban transformation.

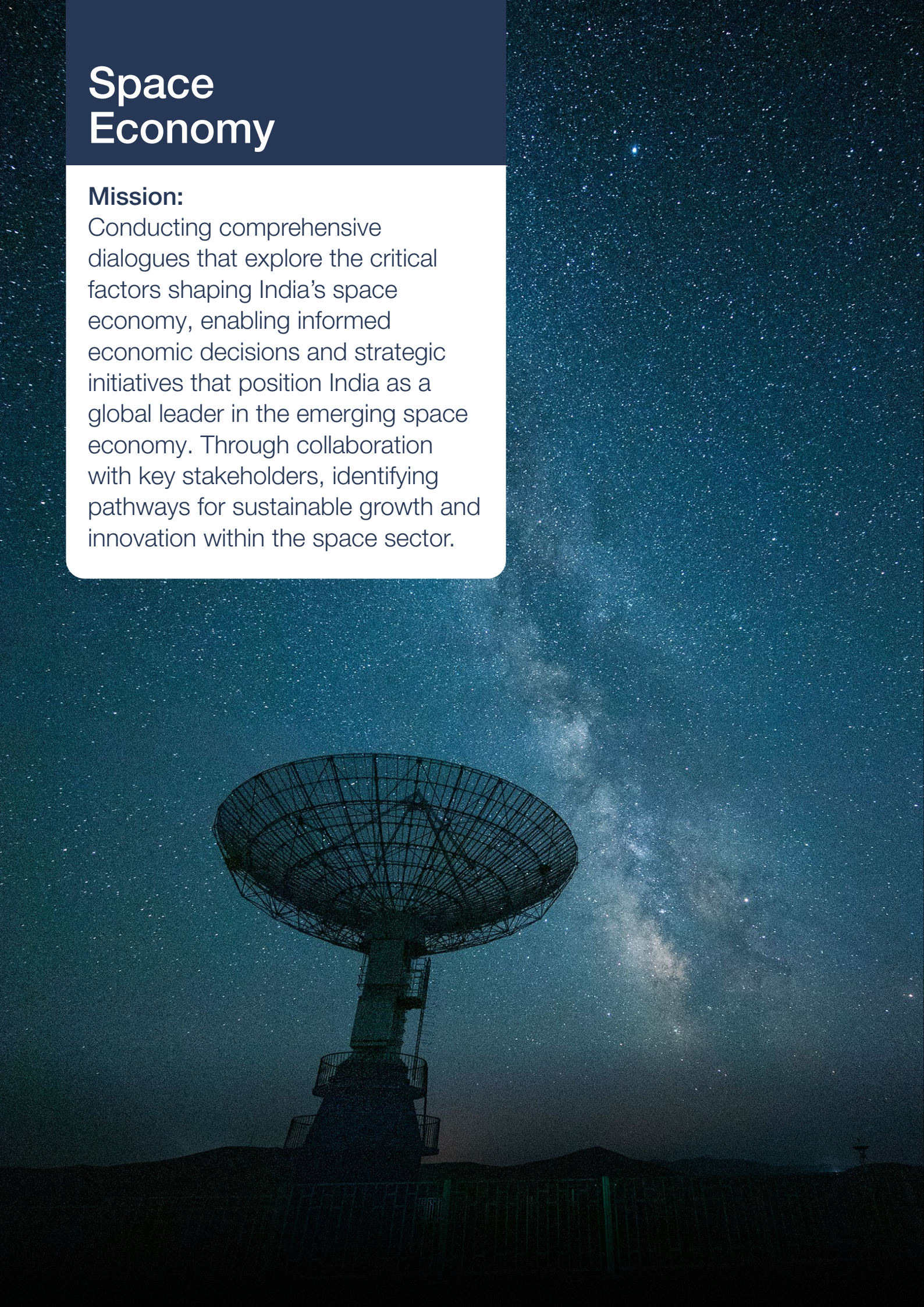
Nitin Seth, Chief Executive Officer – New Mobility, Reliance

Data-driven decision-making is helping cities in their climate action. Google is supporting cities across the world, including in India, to achieve meaningful climate outcomes. The key to success in any such initiative depends on collaboration between cities, start-ups, ecopreneurs, investors, businesses and academia. We are happy to be a part of the World Economic Forum's community that aims to support Indian cities leveraging technology for their climate-smart urban transformation.

Ed Barron, Director, Geo, Commerce, Payments and Public Sector, Government Affairs and Public Policy, Google

Space Economy

Mission:
Conducting comprehensive dialogues that explore the critical factors shaping India's space economy, enabling informed economic decisions and strategic initiatives that position India as a global leader in the emerging space economy. Through collaboration with key stakeholders, identifying pathways for sustainable growth and innovation within the space sector.



Context

The World Economic Forum is building a community and conducting dialogues to better understand the opportunities and challenges facing India's space sector. India aims to represent 8% of the global market by 2033, with a space economy worth $44 billion.[9] To enable a thriving space ecosystem, the Forum's Space Economy India initiative seeks to enhance collaboration between agencies and industry while addressing key sectoral and societal challenges. It aims to cultivate a multipolar space community that uses the expertise of the space community and maximizes the use of existing resources. Additionally, Earth Observation (EO) data has the potential to tackle pressing challenges and drive innovation through joint efforts by government, industry and academia.

Objectives

The World Economic Forum's Space Economy initiative seeks to develop a multistakeholder space community with diverse expertise. The project will help identify opportunities, shape policies and propose sustainable solutions in India's space sector, while also contributing to global space sustainability and innovation.

The key objectives include:

Strengthen space ecosystem and innovation hubs

Develop a roadmap to enhance India's space manufacturing capabilities and propose space parks and tech centres for R&D and global competitiveness.

Position India as a leader for emerging space nations

Promote India as a hub for aspiring space nations through capacity-building, partnerships and the sharing of technical expertise.

Optimize space launch efficiency and return on investment

Establish methodologies to improve mission planning, execution and return on investment for space launches.

Boost international collaboration and investment

Create frameworks to promote global partnerships and technology sharing and to attract venture capital into India's space sector.

Address space sustainability

Develop policy recommendations for space debris mitigation, cataloguing and sustainability in space activities.

Strategy

The anticipated outcomes of the Space Economy India initiative are as follows:

National space manufacturing roadmap

Produce a comprehensive roadmap to enhance India's space manufacturing ecosystem, identifying investment areas and technology upgrades.

Space parks and innovation hubs

Propose the establishment of space parks and tech centres throughout India to drive R&D, local manufacturing and innovation in space technology.

Global leadership and partnerships

Position India as a leader for aspiring space nations through technical assistance, capacity-building and strategic partnerships.

Progress assessment and strategic adjustments

Assess India's progress towards its decadal space vision and provide policy recommendations to accelerate growth and address gaps.

Investment and collaboration frameworks

Create strategies to attract venture capital into the space sector and develop frameworks to enhance international collaboration, focusing on technology sharing, joint missions and sustainability efforts.

9. Indian National Space Promotion and Authorization Center (IN-SPACe). (2023). *Decadal vision & strategy for the development of the Indian space economy.* https://www.inspace.gov.in/inspace?id=inspace_decadal_vision_strategy.

Community

C4IR India is formally collaborating with IN-SPACe, India's apex authorization and promotional agency for space activity, for the launch of a National Dialogue Series.

Milestones

Milestones planned

Launch of a national space dialogue series along with the Indian National Space Promotion and Authorisation Centre (IN-SPACe) and the development of India's foremost multistakeholder space technology community to shape and pilot a policy framework for emerging space nations to enable innovative space solutions for people and planet.

JANUARY 2025

First dialogue: space supply chains

MARCH 2025

Second dialogue: access to financial instruments in space

JUNE 2025

Third dialogue: contours of global collaboration in space

With India poised to become a pivotal force in the global space economy, C4IR India's initiative on Space Economy is creating a unique platform that fosters essential partnerships across government, industry, academia and international stakeholders. By building a dynamic, future-ready ecosystem, we're not only strengthening India's technological capabilities and competitiveness in space but also laying the foundation for sustainable growth, economic resilience and global collaboration. This initiative aligns with our vision to position India as a leader in space exploration, innovation and commerce, opening new opportunities for both domestic advancements and meaningful contributions on the global stage.

Vinod Kumar, Director, Promotion Directorate, Indian National Space Promotion and Authorisation Centre (IN-SPACe)

Through our collaboration with C4IR India, we look forward to not only pushing the boundaries of what's possible but also ensuring that India's space journey is sustainable, impactful and truly transformative for all sectors involved.

Awais Ahmed, Founder and Chief Executive Officer, Pixxel

Advanced energy solutions dialogue series India

Mission:
Engaging leaders in frontier segments of the energy system. Enabling acceleration, reducing from decades to years the time needed to deploy advanced solutions – such as clean fuels and hydrogen, advanced nuclear technologies, energy storage and carbon removal – at industrial scale. Providing a platform, as India emerges as a global powerhouse in advanced energy solutions, through its dialogue series for business and policy-makers to move bigger and faster.

Context

India is adopting ambitious goals for deploying solutions such as clean hydrogen, energy storage, carbon capture and sustainable aviation fuels. This includes a target of 5 MMBTU[10] production capacity of green hydrogen and an electrolyzer manufacturing capacity equal to 40 GW by 2030. This will more than double the total global existing manufacturing capacity at the end of 2023. Achieving this is expected to require 42 GW of battery storage capacity. There has also been an increasing interest in accelerating advanced nuclear technologies in the fuel mix.

These energy transition goals go hand in hand with the country's "Make in India" ambitions, which aim to build the nation's supply chains and industrial capacity. Creating strong industries and supply chains in India is a central part of the country's advanced solutions strategy.

Various central-level policies and regulations have been implemented over the past few years to promote domestic manufacturing of advanced energy technologies and components. The Make in India production-linked scheme is an example of such an intervention to incentivize incremental sales from products manufactured domestically.

In so many ways, the world's energy future will depend on India's energy future.

Jennifer Granholm, US Secretary of Energy

Objective

The dialogue series aims to support the deployment of advanced energy solutions in India to aid its increasing role in global advanced energy solutions supply chains. The dialogue series also informs the global industry vision for the advanced energy solutions community. The key objectives include:

Articulating the impact on job creation, investment and healthcare savings in India by building out domestic supply chains

Exploring the role India can play in global advanced energy solutions supply chains

Suggesting policy tools to achieve this vision

Community

10. Metric million British thermal unit.

Milestones

Milestones planned

FEBRUARY 2025

High-level meeting at India Energy Week, Delhi

SEPTEMBER 2025

Advanced energy solutions vision workshop, Hyderabad

Serving as a trusted hub for public–private dialogue, collaboration and knowledge-sharing, the Centre for the Fourth Industrial Revolution (C4IR) has made significant contributions to India's transition towards a sustainable energy economy. We are grateful for our association with C4IR and the platform it provides for the seamless exchange of ideas, which drives technological, commercial and policy breakthroughs. As dedicated partners to stakeholders whose actions are vital in securing India's energy resources, reducing environmental impact and fostering sustainable economic resilience, we look forward to continued collaboration with C4IR.

Purusharth Singh, Co-Founder, White and Brief's Sidebar

Industry clusters for energy transition

Mission:
Improving collaboration and developing a shared vision among co-located companies and public institutions with the goals of driving economic growth, boosting employment and reducing CO_2e emissions.

Context

The Transitioning Industrial Clusters initiative aims to improve collaboration and develop a shared vision among co-located companies and public institutions, with the goals of driving economic growth, boosting employment and reducing CO_2e emissions. Launched at the 2021 United Nations Climate Change Conference (COP26) with four industrial clusters, the initiative has grown to 25 industrial clusters across 12 countries on four continents, engaging more than 60 public and private stakeholders.

Objective

The aim is to convene the world's leading public and private industrial stakeholders at various stages of ambition and development to align on the measures required to compete for funding, gain regulatory support and launch full-scale development activities to transition industrial clusters.

Strategy

Our approach involves convening industrial stakeholders at various stages of ambition development within a neutral forum to collaboratively shape strategies and share valuable insights across four pillars:

Partnerships

How can we build trust between competing companies on both the supply and demand sides?

Policy

Have enabling policies been developed to accelerate the transition of industrial clusters?

Financing

What innovative options exist for financing?

Technology

What logical pathway should be considered?

The Transitioning Industrial Clusters initiative has focused on three workstreams:

Infrastructure

Identify the challenges and potential solutions to accelerate the scale-up of resilient digital and physical infrastructure to support the energy transition.

Digitalization

Identify synergies and improve industrial cluster key performance indicators (KPIs) (jobs, GDP and reducing CO_2e emissions) by using data sharing, digital tools and common target definitions.

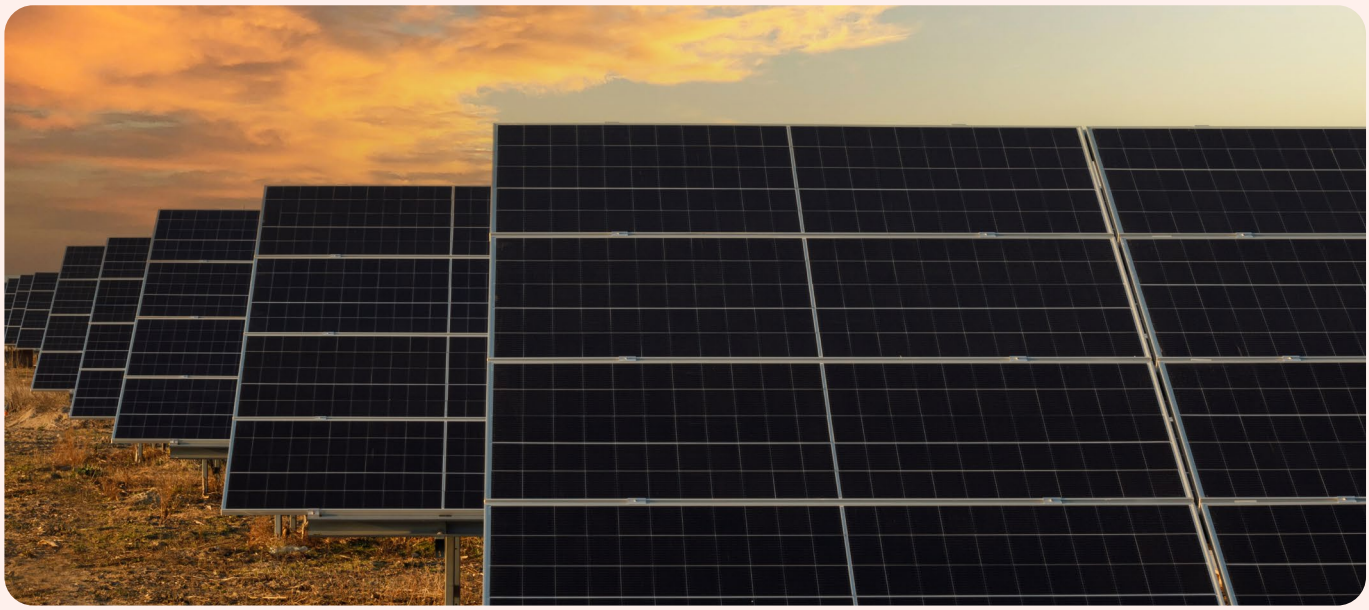
Governance

Bring together co-located companies and public institutions at an industrial cluster level through the development of a cohesive governance structure with a specific focus on India.

Achievements

For the first time in India, the Transitioning Industrial Clusters initiative has played a critical role in fostering collaboration and developing a shared vision among four industrial clusters:

Kerala Green Hydrogen Valley, Kerala	Led by the Department of Power, Government of Kerala
Mumbai Green Hydrogen Cluster, Maharashtra	Led by the Energy Department, Government of Maharashtra
AM Green Kakinada Cluster, Andhra Pradesh	Led by Greenko Group



Engagement opportunities

The Centre for the Fourth Industrial Revolution India has taken a three-pillared approach to its initiatives.

First, it has set out to create a multistakeholder community – enabling strategic guidance on insight reports and frameworks, and in designing and scaling targeted solutions. Second, it has prioritized impact through its initiatives by working with partners to design and scale solutions that address specific challenges, and by collecting and sharing evidence to inform decision-making and policy development. Third, it has provided community members with the opportunity to be a part of local impact pilots associated with its initiatives or to showcase their work as part of scaling ongoing initiatives.

Centre for the Fourth Industrial Revolution Steering Groups

Chief experience officer leadership of regional partners, providing strategic guidance and defining action-oriented roadmaps for Centre for the Fourth Industrial Revolution India initiatives in agriculture, AI, AVIATE, climate tech and Space Economy

45+

partners engaged

Centre for the Fourth Industrial Revolution working groups/expert groups

Multistakeholder network engaged in driving a responsible digital transformation to get the world excited about its future frontiers

170+

partners engaged

Centre for the Fourth Industrial Revolution pilots

Multistakeholder network as part of local impact pilots associated with our initiatives

Our current partners

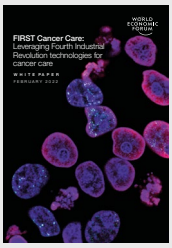
- Amazon India (including AWS)
- Apollo Hospitals
- Axis Bank
- Bayer
- BCG
- Bill & Melinda Gates Foundation
- BLP
- CII
- Coca-Cola
- Cropin
- Dell
- Deloitte
- Digital Green
- Flipkart
- Google
- Govt of Andhra Pradesh
- Government of Karnataka
- Government of Madhya Pradesh
- Government of Maharashtra
- Government of Telangana
- Government of Uttar Pradesh
- HCL
- IIT Madras
- Infosys
- IN-SPACe
- ISPIRIT
- ISRO
- KPMG
- Mahindra Group
- Mastercard
- MeitY
- Microsoft
- Ministry of Civil Aviation
- Ministry of Heavy Industries
- NASSCOM
- NISG
- Niti Aayog
- NVIDIA India & South Asia
- Pixxel
- PSA
- PwC
- RIL
- SAP
- Sarvam.ai
- Siemens
- United Nations India
- UNICEF
- UPL
- Wadhwani AI
- WRG 2030, World Bank
- Yara International

Knowledge products

Medicine from the Sky

Artificial Intelligence for Agriculture Innovation
Community paper
MARCH 2021

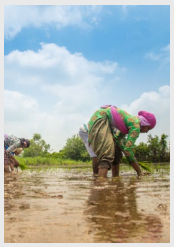
Towards a Data Economy: An Enabling Framework
White paper
AUGUST 2021



FIRST Cancer Care: Leveraging Fourth Industrial Revolution Technologies for Cancer Care
White paper
FEBRUARY 2022

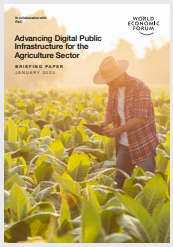
Drones: Ensuring Cost-Effective Maintenance of Oil and Gas Pipelines
White paper
MARCH 2022

Medicine from the Sky, India: How Drones Can Make Primary Healthcare Accessible to All
Insight report
MAY 2022



National Workshop on Public-Private Partnership for Digital Agriculture Framework
Framework
JULY 2022

Using Technology to Improve a Billion Livelihoods Case study – Saagu Bagu ↗
Insight report
OCTOBER 2022



Advancing Digital Public Infrastructure for the Agriculture Sector
Briefing paper
JANUARY 2024

Agritech: Shaping Agriculture in Emerging Economies, Today and Tomorrow
Community paper
APRIL 2024

Medicine from the Sky: Community Outcomes of Drone Deliveries in the Himalayan Region
Briefing paper
SEPTEMBER 2024

Skyways to the Future: Operational Concepts for Advanced Air Mobility in India
Insight report
NOVEMBER 2024

Agritech for Women Farmers
Insight report
DECEMEBER 2024

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WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

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