AG Group

SCIENCE & TECHNOLOGY

SECTOR SPECIFIC REPORT

01

INDIA'S SCIENCE BUDGET WITNESSED QUANTUM LEAP UNDER UNION BUDGET 2025-26

₹ UNION BUDGET 2025

Rs 500 Crore Boost for **AI Education** with **New Centre of Excellence!**

The Union Budget 2025-26 has marked a significant milestone in India's commitment to scientific research and development, with substantial allocations aimed at fostering innovation and technological advancement.

A cornerstone of this budget is the allocation of Rs 20,000 Crore to the Department of Science and Technology (DST). This funding will initiate a Rs 1 lakh Crore research and development fund, primarily focussed on promoting private sector-driven innovation. The initiative aims to bolster research in deep tech and emerging sectors, enhancing India's strategic autonomy in critical technology domains. The Economic Survey preceding the budget highlighted the need for increased private sector investment in R&D, and this allocation is expected to stimulate greater participation and accelerate breakthrough innovations.

DEPARTMENT-WISE BUDGET ALLOCATION

DEPARTMENT OF SCIENCE AND TECHNOLOGY
Rs.28,508.90 Crore

DEPARTMENT OF BIOTECHNOLOGY
Rs.3,446.64 Crore

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH
Rs.6,657.78 Crore

DEPARTMENT OF ATOMIC ENERGY
Rs.24,049.10 Crore

DEPARTMENT OF SPACE
Rs.13,416.2 Crore

ISRO CENTERS
Rs.10,230.2 Crore

SPACE APPLICATIONS
Rs.1,706.8 Crore
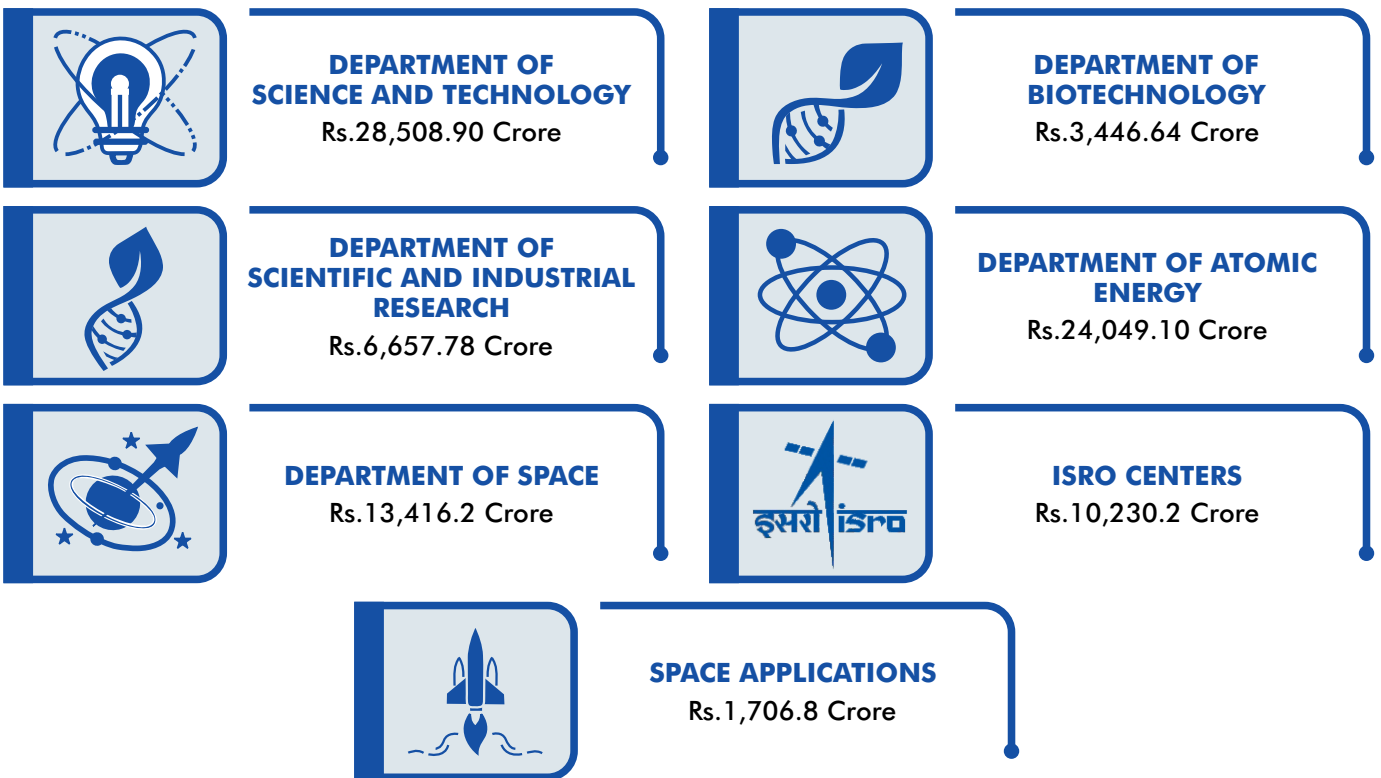
The government has also proposed a Deep Tech Fund of Funds to support next-generation startups in Artificial Intelligence, Quantum Computing, Semiconductors, Space Technology, and Biotechnology. By fostering an environment conducive to innovation, India aims to become a leader in these fields and strengthen its global competitiveness.

Recognizing the role of education in scientific advancement, **over Rs 1.28 lakh Crore has been allocated to the Ministry of Education, surpassing the previous year's revised estimate**. This funding will enhance infrastructure in premier institutions like the Indian Institutes of Technology (IITs), particularly five IITs established post-2024. IIT Patna will receive additional hostel and facility upgrades. Additionally, **50,000 Atal Tinkering Labs** will be set up over five years to nurture scientific temper among students. **Rs 500 Crores has been allocated for a Centre of Excellence in Artificial Intelligence for education, aiming to integrate AI-driven learning models into academic curriculum**.

The National Geospatial Mission has also been introduced to modernize land records, urban planning, and infrastructure projects using geospatial technology. The Union Budget 2025-26 demonstrates a robust commitment to advancing India's scientific landscape, ensuring long-term technological progress, economic growth, and global leadership in innovation.

02

Rs 100 CRORE BUDGET ALLOCATION UNDER NATIONAL GEOSPATIAL MISSION TO LEVERAGE PM GATI SHAKTI MASTER PLAN

Under the Union Budget 2025-26, the Finance Minister announced the **National Geospatial Mission, allocating Rs 100 Crore to develop geospatial infrastructure, mapping technology, and data analytics**. This initiative aims to modernize land records, enhance urban planning, and improve infrastructure projects using the PM Gati Shakti Master Plan. **The mission seeks to democratize geospatial data access, foster innovation, attract investments, and enable Indian companies to compete globally**.

> " PM GatiShakti is a transformative approach for economic growth and sustainable development. The approach is driven by seven engines, namely, Roads, Railways, Airports, Ports, Mass Transport, Waterways, and Logistics Infrastructure. All seven engines will pull forward the economy in unison "

Geospatial data integration will benefit space and unmanned aerial vehicles (UAV) startups, as precise mapping is crucial for infrastructure projects. Earth Observation (EO) startups like Pixxel, GalaxEye, and SatSure can provide satellite imagery for real-time monitoring, enhancing project efficiency. Industry leaders welcome the initiative for its potential to foster innovation and tackle urban and rural challenges. Creating a strong spatial infrastructure offers opportunities for startups and strengthens India's role in the geospatial domain, unlocking vast economic potential.

By creating a unified digital interface for publicly funded geospatial data, it enhances decision-making across sectors. This aligns with India's vision of becoming a global leader in the geospatial sector and boosting economic growth. **Launched in 2021, the Rs 100 lakh Crore PM Gati Shakti Master Plan synchronizes operations across railways, roads, and aviation for better logistical efficiency**. Integrating geospatial data into this framework will streamline planning, reduce redundancies, and optimize resources, thereby ensuring faster infrastructure development.

The mission aligns with the National Geospatial Policy 2022, which aims to establish a high-resolution mapping system by 2030. Strengthening institutional frameworks and enhancing coordination at national and state levels will drive technology adoption in urban planning, disaster management, agriculture, and transportation.

KEY TAKEAWAYS

INFRASTRUCTURE & PLANNING

Rs 100 Crore for geospatial data to enhance land records, urban planning, and PM Gati Shakti projects

STRATEGIC ECONOMIC GROWTH & POLICY ALIGNMENT

Strengthens frameworks, boosts coordination, and expands geospatial tech in key sectors

INNOVATION & STARTUPS

Supports UAV and space startups with geospatial data for real-time monitoring and mapping

An allocation of Rs 100 Crore budget marks a strategic move to integrate geospatial technologies into India's infrastructure development. Leveraging PM Gati Shakti, the mission will revolutionize project execution, drive startup innovation, and reinforce India's leadership in geospatial technology.

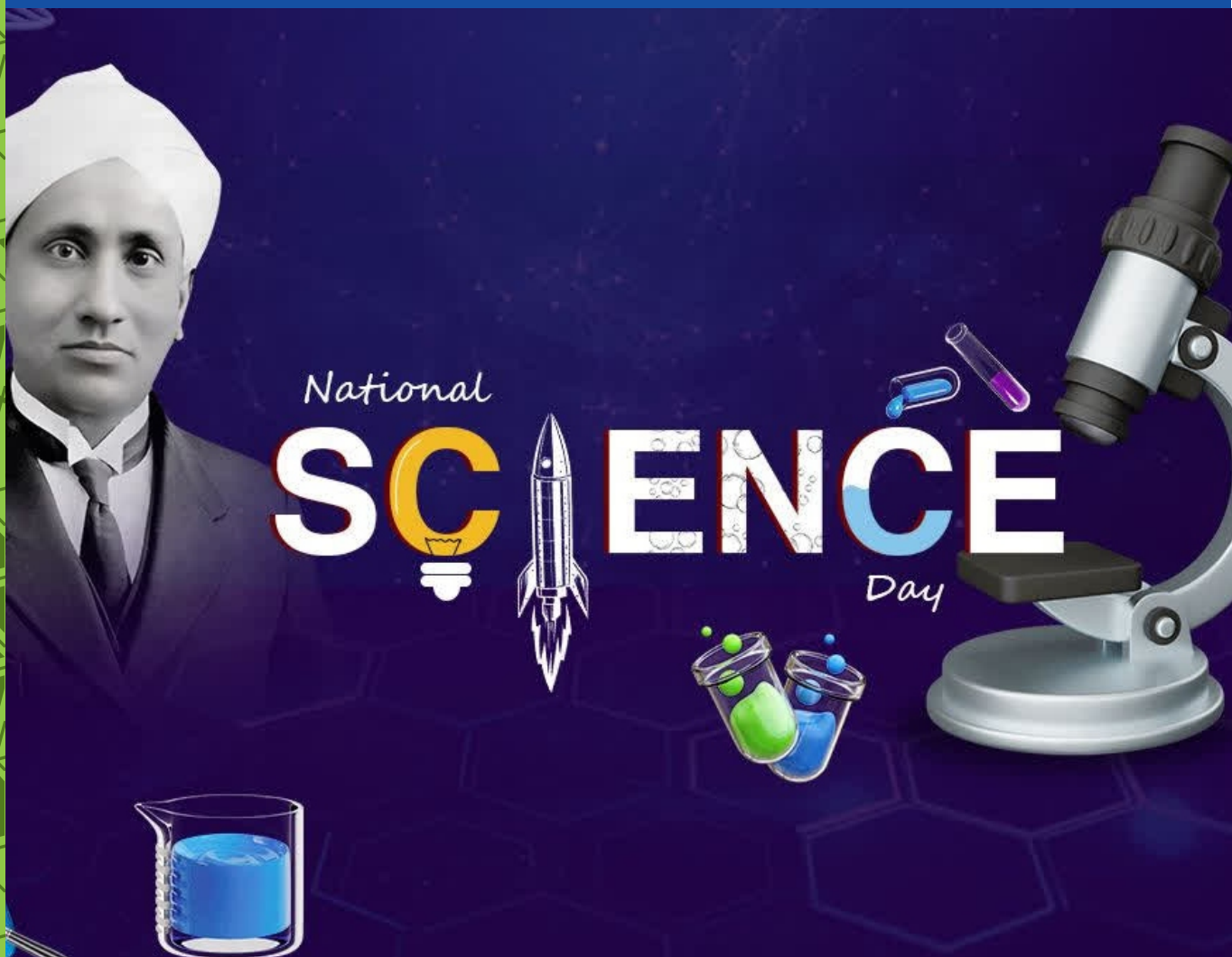## HOW AG GROUP RESOURCES CAN HELP YOU
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03

INDIA CELEBRATES NATIONAL SCIENCE DAY 2025 TO DRIVE SCIENTIFIC AND TECHNOLOGICAL PROGRESS FOR VIKSIT BHARAT

On February 28, 2025, India celebrated National Science Day, commemorating the 97th anniversary of Sir C.V. Raman's groundbreaking discovery of the 'Raman Effect' in 1928—a milestone that earned him the Nobel Prize in Physics in 1930. This annual event, first observed in 1987, serves as a platform to promote scientific inquiry, research, and innovation across the nation.

National Science Day 2025 was based on the theme "Empowering Indian Youth for Global Leadership in Science & Innovation for Viksit Bharat." It emphasized the significant role of young minds in accelerating India's journey of becoming a self-reliant and developed nation by 2047. This focus aligns with the vision of *Viksit Bharat 2047*, aiming to position India at the forefront of global scientific and technological advancements.

KEY OBJECTIVES UNDERLINED

To widely spread a message about the significance of scientific applications in the daily lives of people

To display all the activities, efforts, and achievements in the field of science for the welfare of human beings

To discuss all the issues and implement new technologies for the development of science

To encourage the people as well as popularize science and technology

The central event took place at Vigyan Bhawan in New Delhi, featuring insightful lectures by distinguished personalities from various scientific and technological fields. Their discussions revolved around the same, emphasizing the importance of nurturing young talent to achieve global leadership in science and innovation. Throughout the country, various institutions organized events such as lectures, quizzes, exhibitions, and open house sessions to engage students and the public, fostering a culture of scientific curiosity, creativity, and awareness.

These activities aimed to highlight the significance of science in daily life and inspire the next generation to pursue careers in research, development, and technology.

01 SCIENTIFIC MILESTONES OF 2024 IN VARIOUS DOMAINS

GLOBAL INNOVATION AND INTELLECTUAL PROPERTY

- Ranked 39th in the Global Innovation Index 2024
- 6th in Global Intellectual Property filings

ANUSANDHAN NATIONAL RESEARCH FOUNDATION (ANRF)

- PM Early Career Research Grant (PMECRG) to support young researchers
- EV Mission to drive innovation in electric vehicle technology
- Inclusivity Research Grant (IRG) to promote diversity in research

NATIONAL QUANTUM MISSION (NQM)

- Investment of Rs 6003.65 Crore over 8 years
- Involves 152 researchers from 43 institutions

NATIONAL SUPERCOMPUTING MISSION (NSM)

- Expanded computing power to 32 PetaFlops
- Plans to reach 77 PetaFlops using indigenous technology

ARTIFICIAL INTELLIGENCE AND CYBER-PHYSICAL SYSTEMS

- BhartGen Initiative to develop India's first multimodal, multilingual Large Language Model (LLM) for Generative AI

National Science Day 2025 not only celebrated past achievements but also set the stage for future innovations. It emphasized the empowerment of youth as catalysts for scientific and technological progress in the country. By investing in education, research, digital transformation, and infrastructure, India aims to harness the potential of its young population to achieve its ambitious quest for scientific and technological advancements to realize the vision of a developed and self-reliant India by 2047.

04

NORTH-EASTERN INDIA EMPOWERING ITSELF WITH TRANSFORMATIVE POWER OF BIOTECHNOLOGY

Northeastern India, known for its rich biodiversity, cultural heritage, indigenous knowledge, and unique ecosystems, is increasingly leveraging biotechnology to drive economic growth, infrastructure advancements, and agricultural sustainability. In recent years, biotechnology is transforming sectors like agriculture, healthcare, and environmental conservation in the region.

Since 2010, the Department of Biotechnology (DBT) has allocated 10% of its budget to specialized programs in the NER, aiming to harness bioresources, promote biotech education, and foster entrepreneurship. A key effort is the Twinning R&D Programme, which has facilitated collaborations between 65 NER institutions and leading institutes across India. This program has supported 650 projects, benefiting 450 researchers and 2,000 scholars.

OBJECTIVES OF THE NER PROGRAMME

To facilitate biotech based development in the North Eastern Region of India through conceptualization, implementation, mentoring and monitoring of biotechnology intervened R&D programs for holistic developments in the region.

To implement programmes to ensure that human resource development matches the evolving needs of the North East Region.

To initiate Bio-resources based Entrepreneurship programmes in NER to uplift rural income of farmers and small entrepreneurs of the Region.

To establish of Research Resources, Service Facilities and Platforms to provide support to a broad range of multidisciplinary, shared research resources critical for advancing various areas of life sciences and biotechnology in the North East Region.
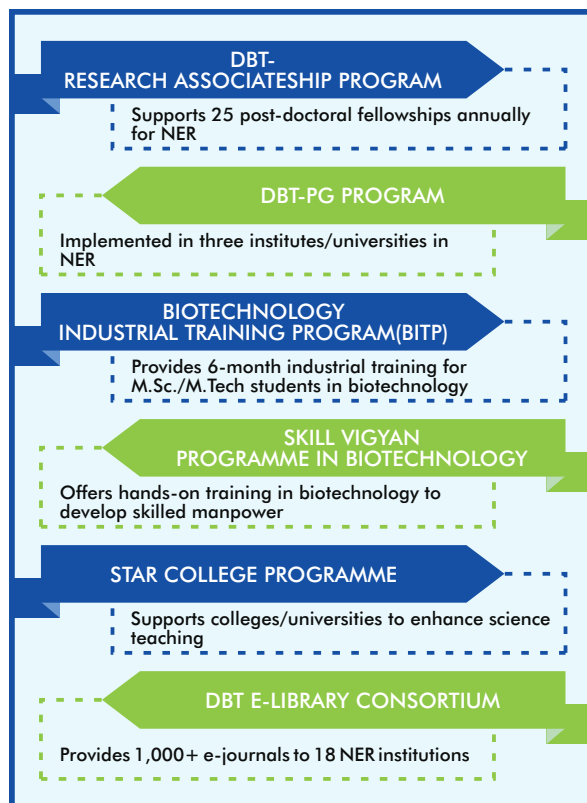
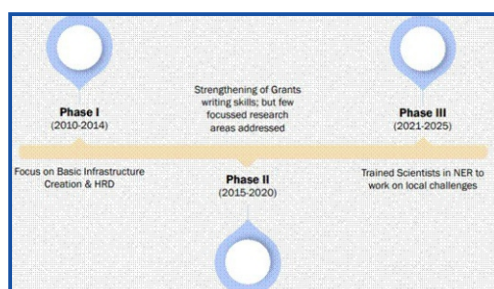# *COLLABORATIONS UNDER THE DBT-TWINNING R&D PROGRAMME*
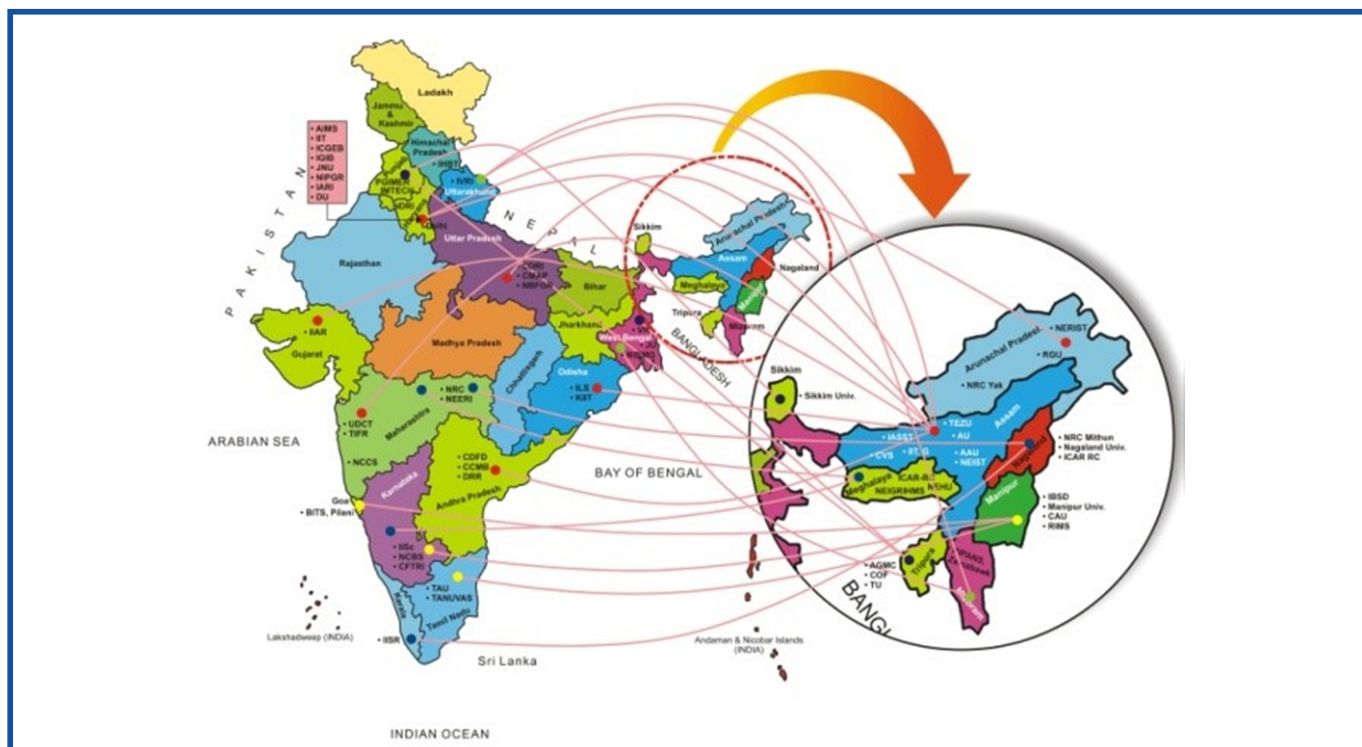
To bolster infrastructure, 126 Biotech Hubs have been established across the NER. These hubs equip universities and institutions with facilities to advance research. In its second phase, 54 hubs have focussed on training tailored to local issues. **Recognizing the importance of education, DBT launched the Biotechnology Labs in Senior Secondary Schools (BLiSS) program in 2014**. This initiative provides students access to laboratories. The Visiting Research Professorship (VRP) program, started in 2015, leverages experts to enhance biotechnology activities in NER institutions.

Specialized training programs have also been introduced. The Chemical Ecology Programme, launched in 2015 with NCBS, UAS, and IISc, provides interdisciplinary training to Ph.D. students and postdocs. Similarly, **the Genomics-Driven Research in Human Health & Disease program, launched in 2016 by DBT-NIBMG, trains NER scientists and clinicians in biomedical research**.

HRD PROGRAMMES IN NORTH EASTERN REGION

DBT-RESEARCH ASSOCIATESHIP PROGRAM
Supports 25 post-doctoral fellowships annually for NER

DBT-PG PROGRAM
Implemented in three institutes/universities in NER

BIOTECHNOLOGY INDUSTRIAL TRAINING PROGRAM(BITP)
Provides 6-month industrial training for M.Sc./M.Tech students in biotechnology

SKILL VIGYAN PROGRAMME IN BIOTECHNOLOGY
Offers hands-on training in biotechnology to develop skilled manpower

STAR COLLEGE PROGRAMME
Supports colleges/universities to enhance science teaching

DBT E-LIBRARY CONSORTIUM
Provides 1,000+ e-journals to 18 NER institutions

NORTH EASTERN PROGRAMME TIMELINE

Phase I (2010-2014)
Focus on Basic Infrastructure Creation & HRD

Strengthening of Grants writing skills; but few focussed research areas addressed

Phase II (2015-2020)

Phase III (2021-2025)
Trained Scientists in NER to work on local challenges

The DBT-North East Centre for Agricultural Biotechnology (DBT-NECAB) Phase III project enhances agricultural biotechnology. Citrus research facilities have been established at the Institute of Horticulture Technology (IHT) in Mandira, Assam, to generate certified scion material from Khasi mandarin. Through strategic investments and programs, biotechnology is unlocking Northeastern India's unexplored potential. By integrating traditional knowledge with modern science, the region is moving toward sustainable development, economic empowerment, and a vibrant bioeconomy.

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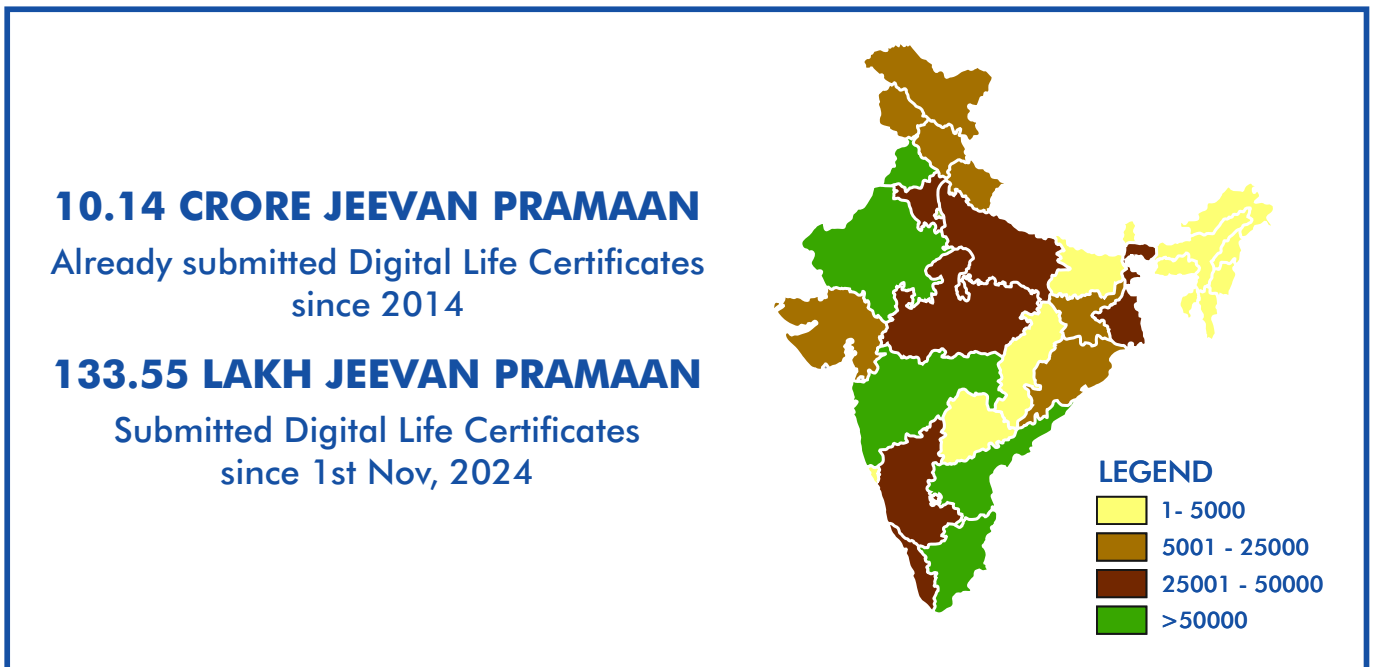
05

NATIONAL CONFERENCE ON CYBERSECURITY, AI, AND BLOCKCHAIN HIGHLIGHTED THESE TECHNOLOGIES AS ONLY CHOICES, NOT AN OPTION
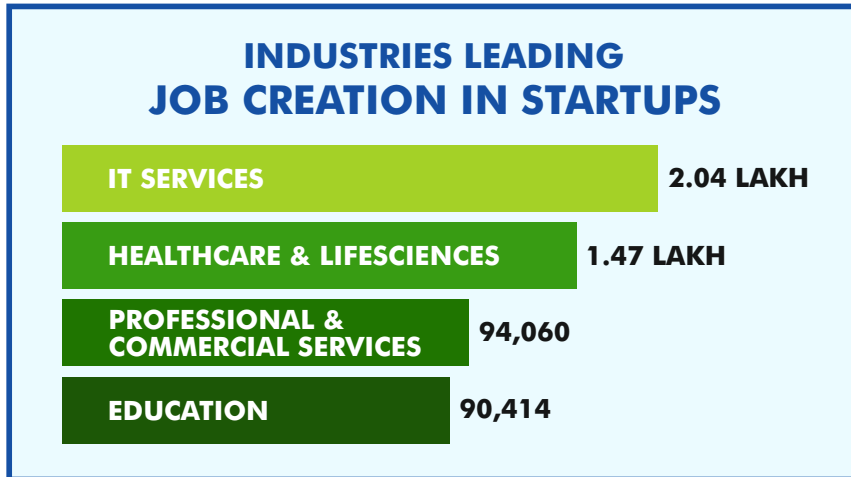
At **the National Conference on Cybersecurity, Artificial Intelligence (AI), and Blockchain held on January 8, 2025, at the PHD Chamber of Commerce and Industry, experts emphasized that AI and blockchain have become essential tools for future development**. The focus is now on leveraging these technologies effectively for societal benefit.

The conference underscored the rapid pace of technological advancement, driven by a vision of innovation. However, technology can be misused by malicious actors, necessitating a proactive approach to cybersecurity and ethical deployment. **A key initiative highlighted was the use of face recognition technology by the Department of Pensions for issuing Digital Life Certificates,** allowing pensioners to obtain them remotely. This innovation enhances public service efficiency.

10.14 CRORE JEEVAN PRAMAAN

Already submitted Digital Life Certificates since 2014

133.55 LAKH JEEVAN PRAMAAN

Submitted Digital Life Certificates since 1st Nov, 2024

LEGEND
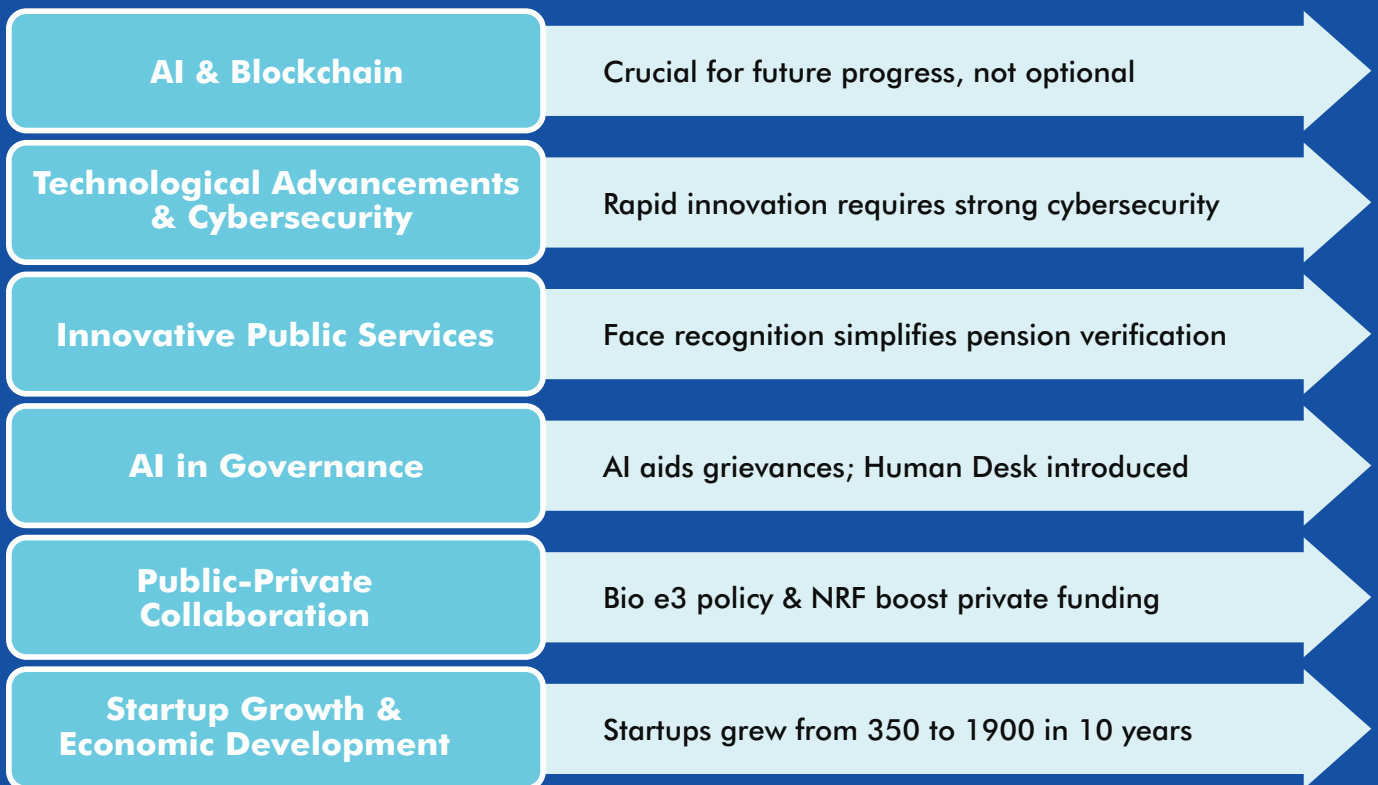
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The event also emphasized AI's role as an assistant to humans rather than a dominant force that is also redefining the employment space through innovators. **The Department of Administrative Reforms and Public Grievances (DARPG) has integrated AI to enhance grievance resolution, achieving a 95% disposal rate**. However, a Human Desk was introduced in December 2023 to ensure emotional intelligence in addressing citizen concerns. The government's willingness to collaborate with private entities on technological challenges was also highlighted.

INDUSTRIES LEADING JOB CREATION IN STARTUPS

Industry	Jobs
IT SERVICES	2.04 LAKH
HEALTHCARE & LIFESCIENCES	1.47 LAKH
PROFESSIONAL & COMMERCIAL SERVICES	94,060
EDUCATION	90,414

Additionally, the Anusandhan National Research Foundation (NRF) has reduced reliance on government funding, with 60-70% now sourced privately. **The conference noted India's startup growth, increasing from 350 to nearly 1,900 over the past decade**. This reflects the nation's readiness to embrace technological advancements.

KEY HIGHLIGHTS FROM THE CONFERENCE

AI & Blockchain	Crucial for future progress, not optional
Technological Advancements & Cybersecurity	Rapid innovation requires strong cybersecurity
Innovative Public Services	Face recognition simplifies pension verification
AI in Governance	AI aids grievances; Human Desk introduced
Public-Private Collaboration	Bio e3 policy & NRF boost private funding
Startup Growth & Economic Development	Startups grew from 350 to 1900 in 10 years

The event called for collaboration among all stakeholders to combat cyber threats and contribute to India's vision of becoming a developed nation by 2047. In conclusion, the conference served as a crucial platform for discussions on technology's role in shaping India's future, emphasizing collaboration and innovation as key drivers of progress.

06

EXPERT INSIGHT

" The Budget is strong enabler of tech-driven growth, but cybersecurity, AI , and semiconductor manufacturing need more structured incentives to compete with global leaders. The government's focus on self-reliance, digital infrastructure, and R&D is promising, but execution will be key. "

Dr Yusuf Hashmi Technology Leader and CISO Jubilant Bhartia Group

RESOURCES

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