



NITI Aayog launches a ten-year roadmap to build India into a leading bioeconomy powerhouse by 2035

NITI roadmap sets a pathway to establish India as a \$2.6 trillion Bio Economy by 2047

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NITI Aayog launched the “Roadmap for Building India as a Leading Bioeconomy Powerhouse by 2035” at the National Media Centre, New Delhi. Developed by NITI Frontier Tech Hub in consultation with the Department of Biotechnology, Association of Biotechnology Led Enterprises (ABLE), industry, academia and other stakeholders, the roadmap sets out a mission-mode strategy to position India as a leading global bioeconomy powerhouse by 2035.

The roadmap was launched by Dr. Jitendra Singh, Minister of State (Independent Charge), Ministry of Science & Technology, in the presence of Prof. Gobardhan Das, Member, NITI Aayog; Smt. Nidhi Chhibber, CEO, NITI Aayog; Shri Rajesh S. Gokhale, Secretary, Department of Biotechnology; Ms. Debjani Ghosh, Distinguished Fellow, NITI Aayog; and Mr. G. S. Krishnan, President, ABLE.

Biotechnology is emerging as one of the most important engines of India’s next phase of growth. Just as digital technologies transformed information, biotechnology is now beginning to transform how the world produces medicines, food, fuels, chemicals, materials and climate-resilient solutions. India has a time-bound opportunity to move from being a trusted global supplier of affordable healthcare products to becoming a leading global bioeconomy powerhouse.

India enters this decade with strong foundations. The country’s BioEconomy has expanded from \$10 billion in 2014 to \$195.3 billion in 2025, contributing 4.8% to national GDP. The roadmap lays out a strategy to scale this to \$691 billion by 2035 and \$2.6 trillion by 2047, while creating over 30 million high-value jobs and positioning India among the world’s leading biotechnology powers.

Speaking on the occasion, Dr. Jitendra Singh said: “India’s bioeconomy has grown from about \$10 billion in 2014 to over \$195 billion today, reflecting the strength of our scientists, entrepreneurs and biotechnology ecosystem. The next phase of this journey must be about translating innovation into impact at scale—through high-performance biomanufacturing, stronger industry linkages and new opportunities across healthcare, agriculture, climate solutions and sustainable manufacturing. This Roadmap provides a timely pathway to build on the vision of the BioE3 Policy and strengthen India’s emergence as a global biotechnology and biomanufacturing hub.”

Prof. Gobardhan Das, Member, NITI Aayog observed: "The coming decade will determine whether India shapes the global bioeconomy or is shaped by it. With world-class scientific talent, proven manufacturing capabilities, and a bold national roadmap, India is uniquely positioned to lead the biological century.

Realizing this vision will require a strong partnership between government, industry, academia, and investors to transform innovation into global impact.”

Shri Rajesh S. Gokhale, Secretary, Department of Biotechnology emphasised: “India's next bioeconomy leap must go beyond incremental innovation. The real opportunity lies in creating entirely new technologies, products and industries, and taking them from discovery to deployment at scale. By combining entrepreneurship with advanced biomanufacturing, India can build globally competitive enterprises and help define the future of the biological age.”

Ms. Debjani Ghosh, Distinguished Fellow, NITI Aayog noted: “Artificial intelligence has emerged as one of the most disruptive general-purpose technologies of our time. But alongside it, another transformation of equal and perhaps even greater significance is taking shape: the rise of programmable biology. We believe the Bio Century will be one of the defining shifts of the next decade. India now has a historic opportunity to move early and help shape the rules, markets and platforms of this emerging biological age.”

A central recommendation is the creation of six National BioMissions as focused execution platforms for India's next phase of bioeconomy growth. GeneIndia, AgriBio 2.0, BioX Foundry, One Health Grid, Marine Biotechnology and BioPharmaNext are designed to convert India's scientific and manufacturing strengths into scalable national capabilities across health, agriculture, industrial biotechnology, pandemic preparedness, blue economy and next-generation biopharma. Together, they aim to advance affordable cell and gene therapies, climate-resilient crops and bio-inputs, AI-enabled biofoundries, integrated disease surveillance, marine bio-products and advanced biomanufacturing of biologics, biosimilars, vaccines and next-generation therapeutics.

A major thrust is the convergence of AI and biology. The roadmap highlights the need for computational biology, biofoundries, digital twins, biosensor networks, robotics and AI-driven Design-Build-Test-Learn platforms to accelerate discovery, reduce costs and enable India to compete in next-generation biotechnology and biomanufacturing.

A key proposal is to carve out a ₹50,000 crore BioEconomy Growth Fund from within the existing ₹1 lakh crore RDI framework. The proposed fund would support scale-up, commercialization, biomanufacturing infrastructure, advanced therapeutics, fermentation platforms, biomaterials, diagnostics and synthetic biology.

The launch event was attended by senior officials from Government of India, representatives from industry, academia, startups, research institutions and other stakeholders from the biotechnology ecosystem.

The full roadmap can be accessed here: <https://niti.gov.in/sites/default/files/2026-07/Roadmap-for-Building-India-as-a-Leading-Bioeconomy-Powerhouse.pdf>

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