Transforming India into a Global Biopharma Hub

Mains: *GS – III – Economy*

Why in News?

The Union Budget 2026–27 marks a decisive shift in India's approach to pharmaceuticals by placing biopharma and biologic medicines at the centre of its healthcare and manufacturing strategy.

What is Biopharma?

- **Definition** – Biopharma/biopharmaceuticals refers to the part of the pharmaceutical industry that focuses on developing and manufacturing medicines using living biological systems, rather than relying solely on chemical synthesis.
- **Moving Beyond Traditional Drugs** – In recent years, medicines are moving beyond traditional chemical drugs toward biology-based therapies, bringing biopharma to the forefront of modern healthcare.
- **Working –** Biopharma medicines are created by working with
  - Human or animal cells
  - Microorganisms like bacteria or fungi
  - Other biological platforms used to grow or produce therapeutic substances.
- Using biotechnology-based research methods, these living systems are guided to produce medicines that can prevent, diagnose or treat disease.
- **Targeted Action** – They are designed to *target specific, complex* underlying disease mechanisms rather than just treating symptoms.
- **Administration** – Because they are complex proteins or molecules, they are typically *administered via injection or infusion*, not orally.
- Some widely used biopharma medicines include vaccines, therapeutic proteins, biosimilars and other advanced biologic therapies.
- **Examples –** Common examples include insulin, monoclonal antibodies (e.g., for cancer or arthritis), blood components, and cell therapies.

What is India's Role & Status of Biopharma Industry?

- **Rapid Expansion** – Biopharma is rapidly expanding, with 5 of the top 10 selling drugs being biologics as of 2020, these therapies are crucial for treating formerly untreatable conditions.
- **Global Position** – India is known as the "Pharmacy of the World", supplying ***about 20% of global generic medicines***.

***India** is the 3rd largest producer by volume and 11th by value, supplying affordable, high-quality medicines worldwide.*

- **Current Market Size** – India's pharma industry had a turnover of Rs. 4.71 lakh crore in FY 2024–25, growing around 10% annually.
- **Goal –** With a goal of *capturing 5% of the global market*, supporting the government's vision to make India a leading biopharma hub.
- **Vaccine Leadership –** India is the largest supplier of low-cost vaccines worldwide, a strong foundation for biopharma expansion.
- **Strategic Priority** – Biopharma is treated as a national industrial priority, with long-term capital and policy support to make India globally competitive.

What are the key Announcements for Biopharma in the Budget 2025-2026?

- **Biopharma SHAKTI Initiative** – A dedicated national initiative with an outlay of Rs.10,000 crore over five years to build India's end-to-end ecosystem for biologics and biosimilars.
    - **Focus on** – Domestic development, reducing import dependence, and boosting global competitiveness.
- **Strengthening Education & Research** – Establishment of 3 new National Institutes of Pharmaceutical Education and Research (NIPERs) and upgradation of 7 existing NIPERs to create a skilled workforce for biopharma research, manufacturing, and regulation.
- **Clinical Research Expansion** – Development of 1,000+ accredited clinical trial sites to enhance India's capacity for advanced biologics and biosimilars trials, making the country a preferred global destination for ethical, high-quality research.
- **Regulatory Framework Upgrade** – Strengthening the CDSCO with specialised scientific and technical staff to improve efficiency, align approval timelines with global standards, and enable faster evaluation of complex biopharma products.

What are the Government Initiatives to Strengthen India's Biopharma Sector?

- **National Biopharma Mission (NBM) – "Innovate in India (i3)"**
- **Launched** – May 2017, aims to transform India into a $100 billion biotech industry by 2025 and capture 5% of global pharma share.
- **Co-funded by** – World Bank
- **Implemented by** – Biotechnology Industry Research Assistance Council (BIRAC) under the Department of Biotechnology (DBT).
- **Focus –** New vaccines, bio-therapeutics, diagnostics, medical devices; making drugs more affordable and accessible.
- **Impact –** It supports 101 projects, 150+ organisations, 30 MSMEs and generated 1,000+ jobs, including 304 scientists.
- **BIRAC-led Innovation Support**
- **Established in** – 2012 under DBT, provides funding, incubation, mentorship through 95 bio-incubation centres.
- **Key schemes**
    - Biotechnology Ignition Grant (BIG) - Up to Rs. 50 lakh for early-stage startups.

    - SEED Fund - Rs. 30 lakh equity support for proof-of-concept stage startups.
    - LEAP Fund - Rs. 100 lakh equity support for commercialisation-ready innovations.
- **Manufacturing & Industrial Strengthening Measures**
- **Key schemes** – PLI Scheme, SPI Scheme, Bulk Drug Parks focus to enhance manufacturing, reduce import dependence, upgrade MSMEs, and build common infrastructure.
- **Aim** – To improve supply chain resilience, quality standards, and boost domestic/export production.
- **Promotion of Research & Innovation in Pharma-MedTech (PRIP)**
- **Launched in** – 2023 by the Department of Pharmaceuticals, to
- The scheme supports R&D in new drugs, biosimilars, complex generics, precision medicine, medical devices.
- It also encourages industry–academia collaboration through Centres of Excellence at NIPERs.
- **BioE3 Policy** – It focus on biomanufacturing, Bio-AI hubs, Biofoundry for sustainable growth.
- **Strategic areas** – Biobased chemicals, smart proteins, precision biotherapeutics, climate-resilient agriculture, carbon capture, marine & space research.
- **Bio-RIDE Scheme**
- **Bio-RIDE** – Biotechnology Research Innovation and Entrepreneurship Development'
- **Launched in** – September 2024 to promotes bio-entrepreneurship, industry-academic collaboration, sustainable biomanufacturing, and support for researchers and students.
- **Components** – R&D, Industrial & Entrepreneurship Development, Biomanufacturing & Biofoundry.

What lies ahead?

- All these measures signal a deliberate and coordinated policy approach by the government to build a resilient biopharma ecosystem in India, spanning research, innovation, manufacturing and entrepreneurship.
- This alignment is increasingly vital as India's disease burden shifts toward non-communicable conditions such as diabetes, cancer and autoimmune disorders, where access to biologic therapies is essential for long-term health outcomes.

Reference

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