India Bio-Economy Report

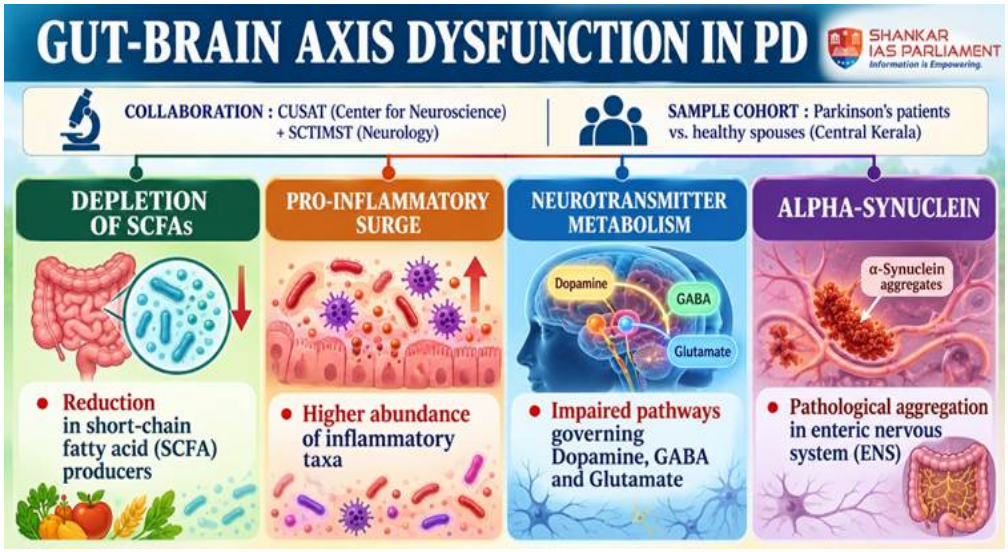
Prelims (GS - I) – *Economic and Social Development-Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives, etc.*

Mains (GS - III) – *Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.*

Why in News?

India Bio-Economy report has pegged the value of India's bioeconomy in 2024 at more than $165 billion, accounting for over 4.2% of the country's GDP.

- **Bio-economy** – Refers to the industrial use of biological resources (plants, animals, and microorganisms), and the replication of natural biological processes in the production of goods and services.
- **Released by** – Department of Biotechnology.
- **Key findings** – The report shows that the value of India's bioeconomy nearly doubled in the last 5 years, from 2020 to 2024.



- The number of companies operating in the bioeconomy has gone up by almost 90% in the last 3 years, from 2021 to 2024.
- This number is projected to double again by 2030, by which time such companies would employ close to 35 million people.
- Nearly half the value of the bioeconomy was generated in the industrial sector, for the *development and use of biofuels and bioplastics*, among other things.
- The pharma sector accounted for another 35% of the total value, with vaccines the major contributor.
- But the fastest growing segment in 2024 was research and IT, which includes biotech software development, clinical trials, and bioinformatics that helps in areas such as

drug research.

- The report showed that only 5 states — Maharashtra, Karnataka, Telangana, Gujarat and Andhra Pradesh, accounted for more than two-thirds of the value generated in the bioeconomy.
- The entire eastern and northeastern region generated less than 6% of the total value.
- **Achievements in Bioeconomy** – India is among the *top producers of vaccines globally* and developed the world's first DNA COVID-19 vaccine.
- Ethanol blending largely increased from 2014 to 2024, with a target of 20% by 2025.
- The sector contributes **4.25%** to GDP with a compound annual growth rate (CAGR) of **17.9%** over the past four years.
- While the 4.2% share in the overall GDP was comparable to figures in the *United States and China*, the bioeconomy of countries like Spain and Italy accounts for more than 20% of their GDP.

Government Initiatives and Key Programmes
• **BioE3 policy (Biotechnology for Economy, Environment and Employment)** – Aims to establish India as a global hub for bio-manufacturing, and a major centre for research and development in biotechnology. • The idea is to incentivise and promote the setting-up of a network of universities, research institutions, start-ups and industries to facilitate bio-manufacturing. • **National Biopharma Mission (NBM)** – Innovate in India (i3), is a government-approved initiative led by the *Department of Biotechnology (DBT) and implemented by BIRAC.* • It aims to boost India's capabilities in biopharmaceuticals, vaccines, biosimilars, medical devices, and diagnostics by fostering collaboration between industry and academia. • **Biotech-KISAN** – It is a scientist-farmer partnership programme launched to empower farmers, especially women and those in rural and tribal areas, through agricultural innovation and scientific interventions. • It follows a ***hub-and-spoke model*** and is active across ***115 Aspirational Districts*** in India.

Reference

The Indian Express | India Bio-Economy Report

