

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1728
ANSWERED ON 13/03/2025

Promotion and impact of the BIO-E3 policy on country's bio-economy sector

1728 # Shri Sanjeev Arora:

Will the **Minister of SCIENCE & TECHNOLOGY** be pleased to state:

- (a) whether Government has identified specific bio-based industries for promotion under the Bio-E3 Policy;
- (b) the current size of country's bio-economy sector in terms of GDP contribution; and
- (c) the estimated increase in employment opportunities under this Policy?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE MINISTRY OF SCIENCE
AND TECHNOLOGY & EARTH SCIENCES
(DR. JITENDRA SINGH)

- (a) Yes Sir, under the BioE3 Policy six thematic sectors/subsectors of national importance have been identified. These include: (i) Bio-based chemicals and enzymes, (ii) Smart proteins and functional foods, (iii) Precision biotherapeutics, (iv) Climate-resilient agriculture, (v) Carbon capture and utilization and (vi) Marine and space research. The bio-based industries focusing on these thematic sectors/sub-sectors will be promoted through Public Private Partnership (PPP) for innovative research, scale-up and setting up of BioEnablers (BioArtificial Intelligence Hubs, Biofoundry and Biomanufacturing Hubs) under BioE3 policy.
- (b) As per India Bioeconomy Report 2024, India's Bioeconomy has increased to \$150.97 billion in 2023, which accounts for 4.25% of India's GDP of \$3.55 trillion in 2023.
- (c) The increase in employment opportunities has been estimated based on fostering Bio-innovation and Biomanufacturing in the country, under the Policy. Establishment of Biomanufacturing hubs across the country is anticipated to generate employment opportunities in the interdisciplinary field of Biomanufacturing.
