



Food of the Future

[Source: LM](#)

Recently, the Indian government approved the [Biotechnology for Economy, Environment, and Employment \(BioE3\) Policy](#), prioritising the production of "smart proteins" as a key focus area.

▪ About Smart Proteins:

- Alternative or smart proteins refer to **proteins derived from unconventional sources** such as [algae](#), [fungi](#), or [insects](#), or **produced using advanced methods** like fermentation and lab-grown cells.
- The term also encompasses **plant-based proteins**, which have been available for decades, and are designed to replicate the taste and nutritional value of animal products without the need for breeding livestock.
- As per data, alternative protein production reduces environmental impact, using **72-99% less water, 47-99% less land, causing 51-91% less water pollution**, and emitting 30-90% fewer [greenhouse gases](#) compared to conventional meat production.

▪ Safe and sustainable:

- As incomes rise, people consume more protein, with **India's protein intake increasing from 9.7% of calories in 1991 to 11% in 2021**.
- Alternative proteins enhance food safety by mitigating the risk of [zoonotic diseases](#) and fostering ethical consumption but also align with Indian dietary habits

▪ BioE3 Policy:

- It is aimed at fostering high-performance [biomanufacturing](#), with broader **national goals such as achieving a 'Net Zero' carbon economy** and promoting sustainable growth through a [circular bioeconomy](#).

Read More: [BioE3 Policy and Biotechnology in India](#)

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