

A. Strategic Priorities: Beyond Incrementalism - Engineering the 10x Breakthrough

We are not promoting routine R&D and incremental improvements, we are seeking fundamental shifts in technological capability. Proposals must articulate a **High Delta Change**—a significant, non-linear leap in performance, cost, or efficacy that renders current solutions obsolete.

Preference shall be given to **First-in-Class** innovations that offer a **3x to 10x "Delta Change"** in performance, cost-efficiency, or environmental footprint over current global benchmarks.

- **Designer Enzymes & Functional Proteins:** We challenge applicants to move beyond standard fermentation. We seek **AI-engineered designer enzymes** capable of 10x faster catalysis or extreme-temperature stability for industrial applications. Similarly, we prioritize the development of **recombinant therapeutic or nutritional proteins** that offer significantly higher bioavailability or a 5x reduction in production costs, replacing expensive animal-derived imports.
- **Deep Tech & Synthetic Biology Platforms:** We are looking for foundational "Platform Technologies"—such as cell-free synthesis or CRISPR-based metabolic engineering—that can be pivoted across sectors to create a cascade of high-value products. Your innovation should aim to be the **global gold standard**, creating IP that positions India as a primary exporter of technology rather than a consumer.
- **High-Value IP Generation:** Projects must aim for the creation of robust, globally defensible Intellectual Property (IP). We seek to transition India from a user of global patents to a **primary architect of global standards**.
- **Indigenous High-Value Reagents & Equipment:** We seek to break the "Import Dependency Trap." We invite proposals for the indigenous manufacturing of **high-value reagents, viral vectors, complex media, and sophisticated laboratory/bioprocessing equipment**. If your project secures the supply chain for other researchers, it is a priority. This includes **sequencing reagents, high-fidelity polymerases, viral vectors, and sophisticated laboratory/bioprocessing equipments** that are currently imported. The goal is 10x supply-chain resilience for the Indian bio-innovation ecosystem.

B. National Impact: Driving the Bio-Revolution

The success of your proposal will be judged by its potential to transform the Indian landscape. We are prioritizing projects that deliver a radical shift in how we utilize our bioresources and protect our environment.

- **Bio-Energy & Carbon Neutrality:** We aspire to see **4th-generation biofuels and bio-hydrogen** production systems that deliver a **5x increase in energy yield** from agricultural waste compared to traditional biogas. We seek innovations that turn carbon from a liability into an asset through high-efficiency biological carbon capture and utilization.
- **Clean Environment & Bioremediation:** We need "Deep Tech" solutions for a clean India. This includes **engineered microbial consortia** or enzymatic systems that can degrade complex industrial pollutants or microplastics at **10x the speed of natural processes**, restoring our water bodies and soil health while recovering precious nutrients.
- **Healthcare Access & Precision Nutrition:** Your R&D may bridge the gap between "Elite" and "Mass" healthcare. We seek products that enhance the **quality of life for the common public**—from affordable personalized therapies to bio-fortified foods that multiply nutritional value without increasing costs, directly contributing to a healthier, more productive nation.
- **Multiplier Effect on Rural Economy:** We seek R&D that directly translates to the field. This includes climate-resilient crops, bio-stimulants that reduce chemical dependency. We prioritize innovations that utilize **abundant local bioresources** to convert into high-value industrial feedstock, create high-tech jobs in Tier-2, Tier-3 cities and rural clusters. By converting agri-residue into high-value proteins or energy, your project should aim to **double or triple farmer income** through value-addition at the source.

Merit and Impact are our only filters. An enzyme that converts sugar into ethanol is as valuable as a protein that treats cancer, provided the "Delta Change" is profound.