



Making India A Biotech Hub

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This article is based on **“Making of a biotech hub”** which was published in The Indian Express on 20/11/2020. It talks about how India can play the lead role in a global biotech ecosystem.

Over the last few decades, India has made huge strides to emerge as one of the medical hubs in the world. The country has seen an immense improvement in the number and quality of its healthcare facilities, reduction in pregnancy-related deaths, improvement in sanitation and immunisation coverage and has successfully averted several preventable disease epidemics.

Continuing on this trend, be it on attaining self-sufficiency in PPE kits or leading global effort in the development of a potent vaccine, India has carried out a robust response to **Covid-19 pandemic**.

Moreover, the pandemic has provided an opportunity for India to play the lead role in a global biotech ecosystem. By leveraging existing strengths in the medical sector, India can enter the next stage, from being the pharmacy of the world to being the biotech hub in the world.

Potential of Biotechnology

- **Recognising the Potential:** In 1986, much before any other country in the world, the Government of India recognised the **enormous potential of biotechnology** and established a separate department committed to this branch of science.

- **Multi-Faceted Domain:** Biotechnology is a multi-faceted domain encompassing applications in agriculture, pharmaceuticals, scientific discoveries, etc. The biotech sector can be broadly divided into five major segments:
 - Biopharma
 - Bio-agriculture
 - Bio-services
 - Bio-industrial Applications
 - Bioinformatic
- **Current Economic Status:** Currently, India accounts for approximately 3% of the global biotech industry.

The biotechnology sector in India has grown from \$1.1 billion in 2003 to a mammoth **\$64 billion sector in 2019** and by 2024, it is expected to be a \$100 billion industry.
- **Growing Biotech Start-ups:** India's pioneering achievements in biotechnology is the primary reason why the sector employs the best of minds and contributes to the development of generic and affordable medicare.

Currently, there are over 2,700 biotech start-ups and are expected to touch the 10,000-mark by 2024.
- **Role of BIRAC:** Biotechnology Industry Research Assistance Council (BIRAC), established under the Department of Biotechnology in 2012, continues to play a crucial role in the development of the biotech sector in India.

BIRAC brings innovators and funders on to a common table, enabling ideas to become a reality and facilitate technological advances that make human progress possible.

Government Initiatives

- Make in India, Skill India, Start-up India programmes are aimed to develop India as a world-class biotechnology and bio-manufacturing hub.
- The government's aspirational goal of developing the country into a \$100-billion biomanufacturing hub by 2024 is certainly going to give a fillip to the biotechnology sector as well.
- Biotech has been recognised as the sunrise sector among 14 champion sectors under the 'Make in India' programme which has the potential to contribute to the \$5-trillion economy goal of India.

Associated Challenges

- **Structural Issues:** Considering that manufacturing in the biopharma sector is capital intensive, such investments have been suboptimal in India due to limited access to capital, inadequate infrastructure and complex and ever-evolving regulatory framework.
 - As Biotechnology products and solutions often require ethical and regulatory clearance, making the process long, expensive and cumbersome.
 - Further, low remuneration of scientists (compared to the developed economies) and a few institutional research bases have not helped create more jobs in biotechnology.
- **Heavily Public Sector Dominated:** Compared to the developed economies (the United States), biotechnology research in India is mainly funded by the public exchequer.
 - Unless the private sector starts supporting applied research and engages with academic institutions, the innovation in applied and translational biotechnology will be minimal.
- **Lack of Innovation:** In terms of innovation, entrepreneurship, and technology creation, the biotechnology sector requires years of experience in the domain, access to labs with sophisticated instruments, sustained and long-term funding to innovate.
 - However, India has not done well enough in improving innovation culture.
 - India is currently ranked at 52nd on the **Global Innovation Index (GII) 2019**, with a jump of five places since last year, and 29 places in the past five years.

Way Forward

- **Need for Active Government Support:** Some of the opportunities to enhance growth and innovation within the biotechnology sector in India are:
 - Government policies to attract global talent.
 - Government investment in new areas, eg. new vaccines for human and veterinary use, biosimilars.
 - Enforcement of strong IP regime in India.
 - Faster regulatory approvals; transparent and consistent drug approval process
 - Building legal and institutional infrastructure for conducting clinical trials in India.
 - The adequate reward for innovation.
 - Promotion of private sector investment to substitute imports.

- **Favourable Industrial Location:** The favourable location of the biotech hubs will depend on critical factors like research and technology development competence, market, industry policies, infrastructure, investments.

Setting up the integrated biotech hubs will facilitate Foreign Direct Investments (FDIs), build the confidence of investors, enhance Indian export potential for quality products, boost in-house capacity towards import substitution, and nurture and support innovations to generate more IP for India.

Conclusion

Biotechnology occupies a strategic position in the socio-economic advancement and development of the nation and the world at large. It provides an answer to various current and future challenges not only for India but the entire world.

In this context, India should leverage the never before seen collective ownership for a global crisis presented by Covid-19 pandemic.

Drishti Mains Question

By leveraging existing strengths in the medical sector, India can enter the next stage, from being the pharmacy of the world to being the biotech hub in the world. Comment.
