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How Telangana is Targeting Innovation Beyond Generics

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In the ever-evolving landscape of life sciences, experts in Telangana are emphasising the need for a shift from merely replicating past successes to fostering groundbreaking discoveries and inventions in drugs and medical technologies. The state has earned recognition for its robust foundation in life sciences, marked by a dominant presence led by research institutions like Centre for Cellular and Molecular Biology (CCMB), Indian Institute of Chemical Technology (IICT), National Institute of Nutrition (NIN), and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) In addition to a strong base for generic pharmaceuticals and vaccine manufacturing industries like Bharat Biotech, Biological-E and Indian immunological Limited, industry leaders stress the importance of transitioning towards a future centred on innovative drug development.



As per the Telangana State Industrial Infrastructure Development Corporation (TSIIDC) report, Telangana is home to over 800 life sciences companies with a combined value of $ 50 billion spread across multiple segments**.** Among them, more than 200 plus sites are US FDA-approved, which is the highest number of such firms located in a region anywhere in the world. As per the Industries department report, in the past 9 years, Telangana has attracted more than Rs 29,000 crore in investment in the life sciences segment and created direct and indirect jobs for more than 4.5 lakh people in the state. Overall, Telangana has witnessed a whopping 23 per cent growth rate compared to India's 14 per cent growth rate in the life sciences segment.

Currently, Telangana boasts of a global vaccine manufacturing hub in India, producing 1/3 of the global vaccine supplied from the state to the world countries. Owing to high demand during the COVID-19 period, the vaccine manufacturing capacity of biotech companies from Hyderabad has been enhanced from 9 billion doses in 2014 to 14 billion doses in 2024.

In addition to this, Hyderabad has more than 20 Life Sciences and Medtech incubation centres which is the highest for any city in India. In the year 2022-23, Telangana achieved the distinction of having direct centres of four among the top global life sciences companies which include Novartis, BMS, Roche, and Sanofi.

According to **Ajay Kallam, Principal Secretary of Industries Department, Government of Telangana**, the state has the best ecosystem for establishing the life sciences companies. "There's a need to attract investors in the innovator and new product development segment, which will pave the way for attracting more small and big research-based institutions aligning with the needs of big players", says Kallam.

Despite these achievements, the one big thing that is missing in the life sciences sector in the state is companies investing in discoveries and inventions of innovative drug molecules to treat complex diseases threatening global healthcare.

Dr S V Krishna Prasad, CEO of Cito Healthcare, says, "Although Telangana currently leads the nation in generic pharmaceuticals and contributes significantly to India's pharmaceutical exports, the real growth lies in cultivating a robust base for manufacturing and marketing innovative drugs globally". Dr Prasad urges a departure from the prevalent practice of copying off-patented drugs and emphasises the critical need for continuous research and development to discover new molecules that can effectively address a variety of global health challenges. "Except for Dr. Reddy Laboratories, not a single entity from Telangana has dared to carry out clinical trials for the new molecule. Even for Dr. Reddy's, the molecule which it was working on had to face failure in the phase-3 trials, ever since then, there is no major entity that has taken any notable steps towards finding out new drugs," adds Dr Krishna Prasad.

Expressing similar sentiments, **Laxmi Prasanna, Executive Director of Regulatory Affairs at Pharmaceutical Export Promotion Council of India (Pharmexcil),** points out that despite the financial strength of many pharmaceutical firms in Telangana, there is a reluctance to invest in the discovery or invention of new drug molecules. While the state boasts over 400 US FDA-approved manufacturing units producing generic medicines and vaccines worth $4.5 billion, Laxmi Prasanna notes a lack of confidence to innovate, positioning the life sciences sector behind its Western counterparts. "No doubt India has emerged as the Pharmacy of the World in producing and supplying affordable and good quality medicines to the world, but real recognition comes only from the original work that we can deliver. Our life sciences industry must move beyond our conventional practices and take advantage of technology and try to develop new medicines to treat diseases that have no cure to date," observed Laxmi Prasanna.

Over the past four decades, the Telangana life sciences sector has indeed achieved notable milestones, with more than 800 large Indian and global pharma companies setting their bases in and around Hyderabad, Telangana state has set its target of enhancing its drug manufacturing capacity from the current $4.8 billion to $19.1 billion by the end of 2030.

Genome Valley: The Global Hub for Life Sciences

Telangana holds the distinction of being the pioneering state in India to establish the country's first systematically developed life sciences Research and Development (R&D) cluster, known as Genome Valley. It stands as India's premier organised cluster dedicated to Life Sciences R&D and Clean Manufacturing endeavours. The cluster is equipped with state-of-the-art infrastructure, including Industrial/Knowledge Parks, Special Economic Zones (SEZs), Multi-tenanted dry and wet laboratories, and incubation facilities.

With over 200 companies calling it home, Genome Valley has cultivated a scientific workforce exceeding 15,000 professionals. Its occupants include renowned global entities such as Novartis, GlaxoSmithKline, Ferring Pharma, Chemo, DuPont, Ashland, United States Pharmacopeia, Lonza, and numerous others. The cluster's success lies in its commitment to fostering innovation and collaboration in the field of life sciences.

In FY 2017-18, Genome Valley was accorded with Industrial Area Local Authority (IALA) status. The IALA status enables single-point administration of the cluster, which will allow companies in Genome Valley a single-point contact for all Government approvals and further facilitate infrastructure development.

Encompassing an expansive area of 120 acres, Genome Valley hosts numerous prominent global companies spanning 18 countries worldwide. Notably, it accommodates three of India's largest vaccine manufacturers: Bharat Biotech, Biological E, and Indian Immunologicals.

Distinguished as the European hub of India, Genome Valley serves as the operational base for major European corporations, including Novartis, Sandoz, Lonza, Ferring, Chemo, GSK, and others. The cluster features over 2.5 million square feet of multi-tenanted laboratory facilities, with a 500,000-square-foot facility available for lease by March 2021 and an additional 1.5 million square feet currently under development.

Acknowledged as the premier cluster in India, Genome Valley secured the top rank in the ‘Life Sciences Real Estate – Opportunities & Hotspots in India’. Furthermore, an additional 120 acres of land is earmarked for industries as part of Genome Valley Phase 3 in Siddipet of Medak district.

Dr SP Vasireddi, Non-Executive Chairman and founder of Vimta Labs noted that despite pharma and life sciences players having deep pockets it is sheer reluctance and fear of loss that is acting as a big hindrance for life sciences players to invest in new drug molecule discovery. He stressed that the state and central governments must support funding in this direction and bring in innovative policy decisions to encourage more and more players to venture into new drug development projects.

Vinay Kumar Nandicoori, Director of the Centre for Cellular and Molecular Biology (CCMB) also highlighted that the private pharma players who are keen on new drug discovery can foster partnerships with CCMB and utilise the vast research data available and use the services of lead scientists at the same time they could use and take advantage of new and emerging technologies like data analysis and Artificial Intelligence.

Highlighting the historical struggles to lay the foundation for the life sciences ecosystem, **R K Agarwal, National President, the Bulk Drug Manufacturers of India (BDM)** acknowledges the challenges faced by associations in the early 1990s. The concerted efforts of various pharma and life sciences associations, despite hurdles such as tough environmental regulations and financial burdens, have resulted in the creation of a strong life sciences ecosystem in both Telangana and Andhra Pradesh.

As Telangana envisions becoming a state-of-the-art hub for life sciences in India by 2030, industry experts assert that the true measure of success will be the state's ability to transition from a focus on generic drugs to pioneering innovative solutions. The future of life sciences in Telangana lies not in replication but in the pursuit of groundbreaking discoveries and inventions that will shape the landscape of global healthcare.

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