

Propelling Indian Biotech



Kiran Mazumdar-Shaw

Being one of the pioneering business leaders in the biotech sector Kiran Mazumdar-Shaw has been interacting with DBT on variety of platforms. She shares her insights and views on DBT's efforts to promote biotech-based enterprises in India.

The Department of Biotechnology, celebrates its silver jubilee this year and it is only befitting that we reflect on the DBT's contribution to the emerging success of India's Biotechnology sector and evaluate its role in the coming years.

Over these 25 years, the development of the DBT has mirrored the evolution of Biotechnology in India, matching every inflection in its journey from a nascent sector to a sunrise industry. When I began my own entrepreneurial journey in 1978, sowing the seeds of the country's first biotechnology company, the DBT was not in existence. Up until the mid 1980s, I was a loner, pursuing critical R&D while needing to import every research consumable, constrained by red

tape and inadequate infrastructure. However, as I built Biocon step by step, the sector was evolving in India around me and the business environment was becoming more biotechnology-friendly.

Recognizing the need to support Biotechnology in India, the government set up a 'National Biotechnology Board' in 1982 with Dr S Ramachandran as member secretary with a mandate to identify areas of priority development areas. As the need for a separate Department grew, the government established the Department of Biotechnology in 1986 with Dr. S. Ramachandran as founder secretary. As a pioneer in the industry, I was privileged to be invited to DBT's launch. The focus in this phase – through Dr. S. Ramachandran's nearly seven-year-long tenure

– was on creating an academic ecosystem for Biotechnology and thereby start generating the required human capital to support this emerging sector through a number of Departments of Biotechnology at select universities – including Anna University, Madurai Kamaraj University, Jawaharlal Nehru University, MS University, CCMB, and IMTECH Chandigarh. The DBT was also focusing on helping the sector overcome the type of challenges faced by Biocon during its formative years – the dire need for infrastructure for both research and development and manufacturing, along with a facilitating regulatory environment.

By the 1990s, the sector started growing in depth and scope; several enzyme companies sprung up across the country



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25 YEARS OF DBT

► and a cluster effect was seen in Bangalore which soon became India's pre-eminent biotech city. Localization was the start of a new phase for the sector, speeding up the Indian biotechnology industry. As the industry grew, DBT's focus expanded to include the building of industry-academic linkages that were critical to enhancing the sector's value. The phase, which spanned Dr. Manju Sharma's nine-year stint as DBT secretary – saw the birth of Hyderabad start-up Shantha Biotech and Bharat Biotech which developed India's vaccine sector based on seed technology developed at CCMB and IISc.

India has now become a Biotechnology hot spot with the promise of becoming a high-value, low-cost innovator in biotherapeutics. The West, hit by high drug development costs, a drying pipeline and patent expiration, is looking to India for affordable innovative and licensing alliances to leverage symbiotic advantages, and expansion into emerging markets. We have entered a new phase in Biotechnology and, as a result, the DBT is now focusing on building global scale and enabling India's stature as a global hub for vaccines, biosimilars and research services.

Under the able stewardship of Dr. M.K. Bhan, DBT has created a strong platform to foster close collaboration between all key stakeholders – individuals from Industry and Academia who have understood the potential of Biotechnology and are committed to promoting it in our country as a science and as an industry. Under his visionary leadership, DBT has drawn up a Strategy Document for Biotechnology, introduced funding initiatives such as BIPP (Biotechnology Industry Partnership

Program), SBIRI (Small Business Innovation Research Initiative), and has recently implemented an innovative funding and mentoring initiative, BIRAC (Biotechnology Industry Research Assistance Council) to provide support to this budding sector. DBT is now working with the Planning Commission to plan for the 12th 5-Year Plan as a BIO-ECONOMY, an economy that will veer away from Chemicals and Petrochemicals towards Bio-materials and Bio-fuels.

However, going forward, the DBT needs to take several steps if India is to realize its true potential in biotechnology. These include addressing the following requirements:

- **PROMOTE INNOVATION:** R&D must be given top priority as it is imperative that India must add value through product and business innovation.
- **STREAMLINE REGULATIONS:** India has multiple regulatory bodies which introduce complexity and delays. We need to act now to write enabling regulations and enhance mutual recognition between international regulators.
- **ESTABLISH STRONG INDUSTRY-ACADEMIA LINKAGES:** A systematic exchange of

knowledge between academics and industry can help bolster the sector. We need to encourage and incubate Academic spin-offs and scientist entrepreneurs.

- **DEVELOP HIGH END SPECIALIZED SKILLS:** Industry and Academia need to work closely to provide the right inputs to develop Human Capital for the Biotech sector that makes us globally adequate. Today we have an enormous deficit of high end skills.
- **ENHANCE FISCAL SUPPORT:** With venture capital firms adopting a low-risk funding mentality, innovative funding is the need of the hour. BIPP and BIRAP need to provide seed and mezzanine funding.

The DBT has been a strong supporter of the Biotech industry. Having already made its mark in Biotechnology, India has the potential to become a global leader. However, the DBT, scientific community and industry will need to work together and evolve policies and methodologies that augment R&D as well as the skill base to take Indian Biotechnology to the next level. ■

