

## "Gujarat plans to build a world class biotech cluster"

07 March 2007 | News



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*Narendra Modi, chief minister, Gujarat*

*India's leading industrialized state, Gujarat, is also home to some of the country's leading pharmaceutical companies. However, the transition from core pharmaceuticals to biopharma and biotechnology has been somewhat slower than in other leading Indian states like Maharashtra, Karnataka and Andhra Pradesh. The state, under the visionary leadership of its charismatic chief minister, Narendra Modi, is now leaving no stone unturned to catch the biotechnology wave. Gujarat has set up a special agency, the Gujarat State Biotechnology Mission (GSBTM) to push the state into the frontiers of biotechnology in a systematic way.*

*Modi has courted investors from around the world in various sectors to make Gujarat their home and particular attention was bestowed on biotech leaders last January. A number of innovative initiatives have been planned by the state to become a leader in biotechnology sector in a very short time. Industry leaders and technocrats speak highly of the chief minister's personal attention to the biotech sector.*

*In between setting the agenda for his government at the ongoing Assembly session and wooing investors and criss-crossing the state preparing to seek yet another mandate from the people to rule the state for five more years, a relaxed Modi outlined his biotech vision for the state in an exclusive interview with BioSpectrum editors, Narayanan Suresh and Narayan Kulkarni. There was jubilation all around. The results of the Punjab and Uttarakhand elections had just come in with the CM's party, Bharatiya Janata Party (BJP), making stunning victories in these states. Sweets were being distributed to all visitors and there was an endless stream of visitors who had thronged his office in the Assembly building to celebrate the occasion. Instead of getting sidetracked by the jubilation around him, Modi spoke clearly about India's inherent strengths in acquiring and handling specialized knowledge, and how the state and the country will set an example to the world in utilizing the fruits of biotechnology for a greater common good and usher in a healthy society. Excerpts:*

**You have coined the term BT+BT = BT (Bharat Today + Biotechnology =Bharat Tomorrow). Considering this, what could be the contribution of Gujarat one can expect in Bharat Tomorrow?**

Gujarat has been the one of biggest contributors to Bharat Tomorrow. The lead entrepreneurs in biotechnology from Gujarat, have been making their mark nationally and internationally. Gujarat has been amongst the first few to adopt the agro-biotechnology and emerge as a major cotton producer. The lead taken by Gujarat is being replicated by other states. The proven success of cotton in India owes a great deal to Gujarat. The biotechnology industry is going to make tremendous contribution towards better health care products, more nutritious food and cleaner environment. In the coming times, the emphasis would be on producing life saving biotech drugs for which patents have already expired. Such drugs are in abundance but are very costly. Gujarat has a history of producing drugs at affordable prices and in consonance with this tradition Gujarat would take lead in this area. Gujarat, with its favorable geographic location, diverse climatic conditions, rich marine and microbial biodiversity, would like to make drugs and therapeutic products for the country and human society at affordable prices. Better yielding groundnut, value added products from castor, biotechnology based vaccine, both for human as well as animal healthcare, higher availability of dairy based products, trendsetting technologies and practices in medical and solid waste treatment, are few of the areas in which Gujarat expects to contribute to Bharat Tomorrow.

**Gujarat has been a late starter in IT but is gaining momentum. How are you placed as far as biotechnology is concerned?**

There is cultural and traditional background for every economy and adaptation to change takes some time. Gujarat is certainly picking up momentum in IT. The recent IT summit, which evinced high interest is indicative of it. The commitment of investments to the tune of Rs 11, 000, crore in IT is an encouraging sign.

As far as biotechnology is concerned, Gujarat has been in biotechnology for many years. Alembic was established here long back in early 1970s. The biggest diagnostic company of the country-SPAN, is in Gujarat. Think of the biggest vaccine producer and supplier, Chiron, it is located in Gujarat, think of upcoming company coming up with recombinant products-INTAS, it is here, think of company working in enzymes-Concord, it is here since the last six years. Probably with more than 45-50 BT companies and turnover of around Rs 450-500 crore, Gujarat would rank among top five states of the country. Gujarat is determined to build further from this base.

**What proactive role do you envisage for biotechnology to be an early gainer in the next decade?**

The state has taken definite pro-active actions on organizational, planning and implementation front. The Gujarat State Biotechnology Mission (GSBTM) takes care of the organizational part. Developments of long-term vision, biotechnology development strategy, sector specific strategic road maps, are crucial actions from the planning angle. Development of infrastructure, developing skilled human resources, supporting biotechnology research, encouraging biotech entrepreneurship and business are the main priorities from the implementation perspective. Sector specific BT Parks, agro-

BT park, marine BT park, specific facilities like marine resources center, dedicated value addition training programs, both in universities and in collaboration with industries, focus on teachers' training, modern infrastructure for biotech research in universities, establishment of biotechnology venture fund, are few of the pro-active actions of the state government. In coming five years, the state government plans to allocate nearly Rs 200 crore to biotechnology.

The Gujarat government has taken many initiatives in promoting biotechnology. Still most of the investments are coming mainly from the local (Gujarat-based) players for their expansions. What would be your strategy to attract new entrepreneurs to the state?

The growth of entrepreneurship starts from a strong base and Gujarat has a very strong pharma base. It is also a pleasant coincidence that almost 68 percent of biotechnology revenue comes from the pharma biotech or healthcare biotech. It is also a known phenomenon that existing companies diversify into new coming sectors. Therefore, Gujarat being the land of entrepreneurs and having distinct advantages, is bound to have biotech investments from local (Gujarat-based players). It is a positive development, an assured development. Just as the local pharma players made Gujarat a national and global strength, the same is bound to happen in biotechnology as well. This serves to provide a comfort level for global players who would look at it as an ideal playground.

Nevertheless, in times of globalization, the state looks for global investment. While Gujarat has excellent industrial and social infrastructure in terms of roads, airport, connectivity, power availability, labor aspects etc, the strategy is to develop world class infrastructure in terms of BT clusters, BT Parks, research facilities, skilled manpower, required for a wide spectrum of the BT sector.

Although Gujarat has reputed universities, shortage of skilled human resources in terms of quality manpower is a major concern to the biotech community. What will be your strategy to improve the situation?

As I mentioned earlier, the overall tradition and culture of economy dictates the need, quantity and quality of human resources. MSU has been one of the oldest universities, running BT related courses and its alumni are scattered all over the globe. In recent years, other state universities are also coming forward with BT related educational programs. The state has taken stock of the existing scenario of BT education. As a first step, a blueprint of HRD development has been developed. Apart from skills improvement programs for students and the teaching faculty, establishing a few dedicated institutes like the Institute of Biotechnology Education, Institute of Marine Biotechnology, Institute of Clinical Excellence are on the anvil. The state would be establishing these institutes jointly with the Central government and private partners.

The Bt cotton controversy appears to have given a setback to agro-biotech companies. How does Gujarat intend to invigorate the agro-biotechnology sector and the investments therein?

There is always a time gap between understanding the technology and its implications. Bt cotton was one such example, which surfaced as a local high-end desire to achieve excellence through entrepreneurship. While having high regard for regulatory provisions, the state wants to provide a fair playing ground for agro-biotechnology. Gujarat with its specific regional strengths offers a large scope for agro-biotechnology. Being a leading producer of castor, groundnut, pigeon pea, chickpea, isabgol (psyllium seed husks), cumin, tomato, potato and mango, Gujarat offers a huge potential of investment and business through value addition. Incidentally these are also the crops in which biotechnology work is in the advanced stage. Due to the increased water availability through the Narmada canal system, there is vast scope for cultivation of value-added crops. The location cum feasibility study is being conducted for developing an agro-biotech park in the state. The state also plans to establish dedicated incubation facilities, research infrastructure in agri universities to provide support to prospective investors in agri-biotechnology.

Gujarat has huge marine resources. For realizing the potential of marine biotechnology, what is the strategy for development in this field?

The abundance of resources is one thing and having capabilities, technologies and its conversion into products and processes is something different. The marine resources sector is one such sector which has potential, but is in its nascent stages. While many European countries are going in a big way, India is also making a beginning and Gujarat, having the longest coast line, is also eyeing it with interest. However, it needs resource database, skilled manpower, dedicated research and above all- technologies for business.

Gujarat is taking strategic initiatives like establishing a marine resources center, supporting dedicated PG programs in marine biotechnology, marine incubator, and its extension into a marine biotechnology park. The project of the marine resources center and incubator has been submitted to the Central government and is expected to be included in the 11th Five Year Plan. Though support from the Central government has been sought, the state would also take initiatives from its own

resources. As the first step, the state government has supported the development of a Center of Excellence in Marine Biotechnology, which is focusing on seaweed cultivation, having backward linkages with industry.

Gujarat being one of the leading pharmaceutical bases of the country is now losing investments to other north Indian states because of their offerings to the entrepreneurs. How do you wish to address this issue?

The key parameters for industrial development and industrial investments are urban, social and industrial infrastructure. Gujarat has been providing it since long and that is why it has been in forefront of industrial development. However, the entire country and all its states offer options and choice. Gujarat, while welcoming the pro-active role of different states, stands committed to provide the facilities, which are key for sustained operations and business in the long term. Gujarat with its industrial infrastructure, power availability, labor and employment, investor-friendly business environment, would continue to attract industries.

Better infrastructure base, assured power supply, social infrastructure would continue to be the state's offering for future and prospective BT investors. And in this respect, the state's government vision of developing a mega city is one such initiative to attract investors from different parts of the world.

Gujarat has many biopharma companies with manufacturing facilities, but not as core R&D companies. How does the government intend to promote research-based biotech initiatives in the state?

The state is already providing funding support to biotech research. The state has developed a dedicated action plan for promoting biotech research. It has identified sector-specific facilities, and institution-specific facilities, which would be developed alone or through collaborative funding. The state plans to make universities and educational institutes into a hub of biotech research, develop modern biotech research and incubation facilities in different universities, encourage researchers and faculties to undertake collaborative projects. Active research by existing teaching faculty is one of the priorities. The state plans to take stock of the present research scenario and would work out the priorities.

Gujarat is the first amongst the first few states to witness the establishment of Clinical Research Organizations (CROs) in India in the late 1990s. But the current strength of CROs is not very impressive as would have been expected in the state. What would be your strategy to attract CROs to the state?

In the last few years, new CROs have come to Gujarat. Paraxcel has collaborated with Gujarat-based Synchron. UK based VEEDA has landed in Gujarat through Gujarat-based Clinsearch. I have been told that Gujarat-based company JRF provides dedicated facilities for CROs. The existing units have undertaken expansion. This indicates that Gujarat still continues to attract CROs. The CROs need basic facilities for operation and the state government is committed to provide them. I am told that animal house is one such important facility. We shall be developing the same in the BT Park at Savli, as part of the BT Park plan. The state has developed Healthcare System Wide Area Network (HSWAN), which has linked the government hospitals virtually. The state government has developed a dedicated program for manpower development in CROs, which is under consideration by the Central government. The state would also take initiative from its own resources.

As a visionary chief minister, what is your perception about biotechnology's role in building a healthy society?

The role of modern technology should be to address certain aspects, which are otherwise not possible through existing technologies. Genetic disorders, blood related disorders are few of the serious diseases, which need specific tools, both for prevention as well as treatment. Thalassaemia, sickle cell anaemia and other genetic disorders are serious diseases. Their diagnosis, treatment and prevention, are possible through a biotechnology-based approach. Diseases needing organ transplants are on the rise. The state government desires to see a healthy society free of such disorders and to be able provide affordable treatment options and facilities. Probably, facilities for genetic diagnosis, providing organ compatibility testing facilities, stem cell therapy, are few of the globally available options. The state government would focus on providing such facilities, which would address these aspects.