

## Biotech for a billion people ...

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## Biotech for a billion people ...

*The biotechnology industry is slowly but surely coming into its own.*

Biotechnology is no longer just a "buzz-word"; its impact has started touching the lives of ordinary people of our country. Medicines and vaccines for human and animal health, produced through recombinant DNA technology, are now increasingly available here. Almost two-thirds of all the cotton grown here is Bt-cotton, the transgenic variety that has the ability to resist damage from the most serious group of cotton-pests, the boll worms. There are a large number of institutions, both in the public and the private sector, involved in research and development in this sunrise sector. The nascent biotechnology industry is slowly but surely coming into its own; the annual turnover from this sector in 2006-07 touched over Rs 8,300 crore, clocking an annual growth rate of close to 32 percent.

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As our nation comes out of its throes of poverty and underdevelopment, fuelled by a double digit growth of its economy, affordability, equity or inclusiveness, and sustainability have to be the watch words. A biotechnology-led growth (which I must emphasize is not to undermine the importance of any of the other sectors) easily satisfies these conditions. The developments in the area of vaccine production in this country in the last decade have made recombinant vaccines within easy reach of the common man. The prices of say, the Hepatitis B vaccine, have fallen by over 10 times with the emergence of local competition in its manufacture. Biotechnology now offers options to develop vaccines for diseases that are scourges, particularly for the tropical and developing countries. This would be an important approach for countries like ours, seeking cost-effective solutions in health care through prevention rather than cure.

The major complaint we hear today is about the present economic boom bypassing the rural hinterlands of the country. Obviously, a service-sector led growth has to be focused around urban infrastructure. This is true to some extent for the manufacturing sector as well. However, biotechnology, through its impact on crop productivity and quality can directly improve farm incomes thus bettering the lives of over two-thirds of our population, who happen to be in rural areas. The last five years have seen a remarkable success story in Bt-cotton. From nothing in 2001, today, the Bt-cotton is grown in over 5.5 million ha, the largest in the world! The total cotton production in the country has grown from a little over 14 million bales (of 170 kg) in 2002 to almost 30 million bales, while the area has remained almost constant.

We have overtaken the US in total production and in the last two years, India has become a net exporter of cotton--we even export to China, which is the only country that produces more cotton than us! The country will export 7-8 million bales of cotton in 2007-08. The bottomline in all this is the tangible monetary benefits accruing to the cotton farmers who have adopted this technology at an unprecedented rate.

Biotechnology based solutions are environment friendly and often, resource and scale neutral. The transgenic crops that ward off the insect pests have resulted in a significant reduction in the consumption of environmentally harmful agricultural chemicals. The resource inputs needed in this sector are usually renewable and the end products environmentally degradable. Take bio-energy for instance. With the depleting scenario of petroleum resources, large, growing economy like ours, which are energy deficient but are blessed with large tracts of land and year-round crop growing seasons, have much to gain by investing in this area.

In short, biotechnology offers potent solutions to the many problems that we face in the areas of health, food and nutritional security and environmental protection; all extremely important for the sustainable development of our country. Though we have made some significant, first steps in this direction, there is still a long way to go.

Uninformed opposition and needless controversies only result in unnecessary delays in utilizing this technology for the welfare of citizens and growth of India, which we can ill afford at this moment. In fact, given our natural resources and the latent talent pool, we could be significant global players in this sector, serving humanity much beyond our borders.

The National Biotechnology Policy was announced a few weeks ago, after a rather long gestation period of wide-ranging consultations and some avoidable dithering. In the end, it makes all the right statements and lays out an unambiguous action plan considering the priorities for India. The success of this policy, however, would depend on its diligent implementation. It's time therefore to "walk the talk".

Note: Starting this issue, Dr Narayanan will write a regular column on biotech policy, industry and other related areas and respond to issues raised by the readers of BioSpectrum.