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The flip side of NBT

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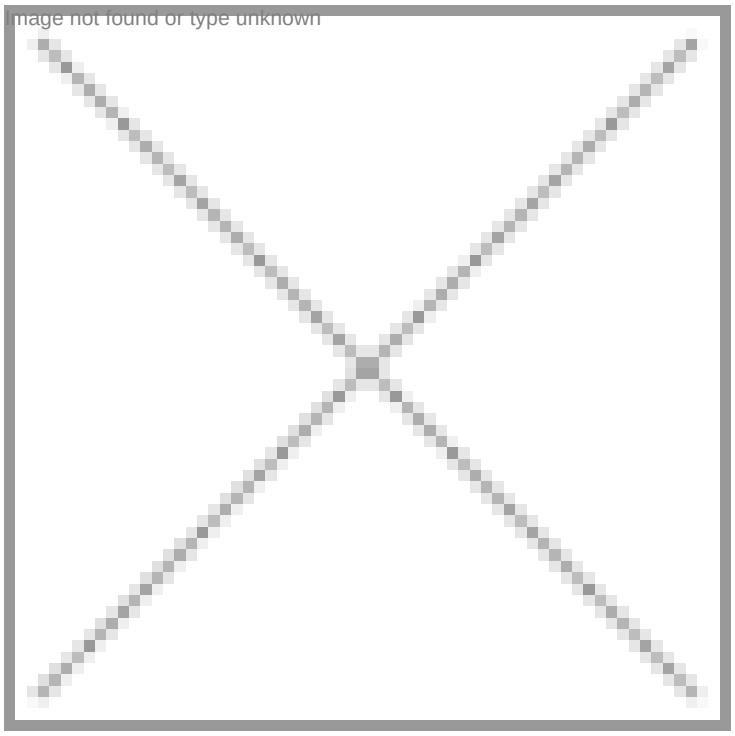

The flip side of NBT

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There is no question that whatever has been stated in the National Biotechnology Policy needs to be done -just as we need to bring secularism back on the rails, remove poverty and realize equity in regard to development, and so on, in the country. The question is, how? In this connection, I would like to offer my comments on the biotech policy.

We do not have an updated science and technology (S&T) policy. The best we have had is the Scientific Policy Statement of 1958 and the Technology Policy Statement of 1982, both of which need to be redone. Biotechnology is closely related to many other areas of science and technology. In the absence of a national S&T policy, any sectoral policy in an area of science is bound to have serious limitations. We have given our view of the components of an appropriate science and technology policy on Pages 134 to 138 of our book, The Saga of Indian Science Since Independence (Universities Press, 2003).

As regards the National Biotechnology Regulatory Authority (NBRA), it is not mentioned as to whom it would report. Would it be like the Atomic Energy Regulatory Board (AERB)? If so, its stated autonomy would be nominal; we should surely learn from the experience of AERB over the years. There is no mention of the structure of the Board, from which Department will the salary of the Board Members and the staff of Board come from? Will it be from the DBT or directly from the Planning Commission? There is no mention of the terms of reference of the Board. Then, the success of the NBRA would depend on the quality of the people who man it, and its leadership. We need people on it with high level of professional knowledge, social concern, public credibility, courage, and lack of bias. Past experience shows that unless it is set up directly by the Prime Minister's office, its members are unlikely to meet the above criteria. The same would be true of the DNA Profiling Board. We must recognize, without any aspersion on the quality of work done by the Centre for DNA Fingerprinting and Diagnostics (CDFD, a constituent lab of the DBT), that the objectives of this lab today are basically different from what they were meant to be when it was set up. It is, as of today, just another laboratory in the area of modern biology rather than being a commercial center for DNA fingerprinting, serving both private and public sector, as it was meant to be. (I had a role in setting it up, and was the chairman of its scientific advisory committee and of its building committee, and a member of its governing board.)

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Ideally, given the circumstances in the country, we need a properly empowered and credible Biotechnology Commission, reporting directly to the Prime Minister or the Cabinet and not to be headed by secretary, DBT. It is this commission that should set up the NBRA and the DNA Profiling Board.

As regards to promoting biotech industry, expanding SBIRI, setting up BIRAC to nurture industry R&D, much would depend on who does it and how it is done. We make far too many wonderful policy statements but end up doing things that contravene the good intentions behind the policy statements. This is a national malice and one would like to have seen some kind of a mechanism stated in the biotech policy which would ensure insulation against this malice.

"Building world-class human capital" should not be the responsibility of or a part of the biotech policy. This should be a part of our education policy. For example, with the school system in the country in shambles and devoid of any equity, with more than 80 percent of our children deprived of a reasonable school education, and with the dominating sea of mediocrity, the educational sector is a drag on development of excellence and can we dream of producing a cadre of world-class scientists? I should also add that when I was a member of the scientific advisory committee of the DBT, I had asked for an analysis of the number of people who were trained in the biotechnology departments in various universities set up and supported by the DBT, and those who joined the Indian biotech industry. The position in this regard turned out to be dismal. Surely, the present biotech policy should have called for an updated study in this regard to assess the value of the DBT's support to biotechnology education from the point of view of the biotech industry in the country. In fact, the courses in the various departments of biotechnology supported by the DBT across the country, are no different from the courses in modern biology, sometimes in the same university, and the people who come out of these departments of biotechnology are no better suited to be employed in the industry than people who come out from other departments of modern biology, say biochemistry or molecular biology. In fact, what we need are biotechnology technicians, and I would have liked to see a set of courses in various techniques used in biotechnology, leading to a one or two year diploma (or even degree) after intermediate or BSc. Examples of such areas would be genetic engineering, tissue culture, enzyme and protein-based technologies, immunotechnologies, rational drug design, nanobiotechnology, marine biotechnology, peptide synthesis, and DNA technologies such as DNA fingerprinting. As an analogy, the country today needs far more electricians than electrical engineers.

As regards to attracting scientists from abroad, we must recognize that good scientists working abroad are not looking for money alone in India. They are looking for facilities and an appropriate institutional culture and environment which is sadly lacking in the country - except in a handful of research institutions, most of which are outside of the ambit of DBT. Shouldn't

there have been a clause in the biotech policy, emphasizing the need for identifying the elements of - and creating - the above culture and environment?

Centers of Excellence (CoEs) are not established by just wishing them to be there. I have some experience in this regard, both in government and in industry. Shouldn't the biotech policy have explained the need to identify the criteria that a Center of Excellence would need to satisfy and the steps that would need to be taken to satisfy these criteria? The same would be true of the proposed clusters, and the program of beefing up biotechnology infrastructure. Instead of merely putting together a wish list, the policy should have stated what it would involve to translate such a wish list into reality: what sub policies, what kind of people, what order of funds and so on. In our above-mentioned book, we have stated what an ideal biotechnology park in the country should have. None of our biotech parks satisfy these criteria. We have learnt no lessons from successful parks elsewhere: be they in Leipzig, Lund or Stockholm.

There is a prime need in the country of a seed testing laboratory using DNA fingerprinting, to ensure that farmers have the seeds they are supposed to have. There is no mention of such a laboratory.

The policy does not take into account what has already been done or is in the process of being done, both in the private and the public sector. For example, there is a superb P-4 facility in the High Security Animal Laboratory of the ICAR in Bhopal. Why can't that be used more extensively? There is already an approval of funds for another P-4 facility as well as a Translation Research Laboratory to be set up in Hyderabad.

One would have liked to see the biotech policy making a visionary statement: for example, in regard to what the nature of medical and health care would be, say, in 2047 (the centenary of Indian Independence), and how the policy intends to contribute to the compulsions of the new scenario that is bound to emerge. Agriculture used to contribute over 40 percent of India's GDP. This contribution today is less than 18 percent. What steps should we take to have biotechnology increase this contribution? An analysis of major national problems where biotechnology can be of help should have been done in the policy. Agriculture security would surely be one of them. It is an important item on the agenda of major national bodies concerned with our security. Shouldn't our biotechnology policy have stated as to how it envisages to ensure our agriculture security?

It is easy to say that we are going to set up many new institutions. But have we made any effort to define as to what goes into setting up a first-rate institution? The DBT's record in setting up new institutions is not enviable (NII was not set up by the DBT).

Shouldn't the national biotechnology policy have had a statement which would call for assessment of the performance of the DBT in the last 21 years - DBT being the apex biotechnology organization in the country - against the objectives with which it was set up. I had the privilege of drafting the original note that led to the setting up of, first, the NBTB (National Biotechnology Board) and then the DBT, and I have reasons to believe that the objectives with which the DBT was set up have not been met. We need to identify objectively both the successes and the deficiencies of the DBT, so that we may build on its successes and also work out mechanisms to take care of the deficiencies.

I do not for a moment doubt the good intentions of those who are responsible for the National Biotechnology Policy and, as a wish list, it looks impressive with the few outstanding omissions I have mentioned above. However, there is nothing to convince me that it is better than any of the government's (central or state) promises to people at the time of elections. What happens to these promises after the elections is well known. We all would need to work hard within a framework of concern, commitment, objectivity and lack of bias keeping the interests of our people and the country above everything else to reach where the policy wants us to reach. How do we achieve this, is the question that the biotech policy does not answer.