

## Deemed university status to national laboratories: Need for a national debate

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The recent emerging trend in the government to accord deemed university status to national laboratories did not receive the attention and debate it deserves, despite its immense public interest value, especially for higher education and research in science and technology (S&T) in India. National laboratories include those under the Union Government's Council of Scientific and Industrial Research (CSIR), Indian Council of Medical Research (ICMR), Department of Atomic Energy (DAE), Defence Research and Development Organization (DRDO), Department of Space (DOS), etc. Some DAE institutions have already obtained deemed university status, and the University Grants Commission (UGC) has already recommended the case of CSIR for its approval. It is not clear whether all the national laboratories are under consideration for this status, but it is most likely that all of them would eventually like to seek such a status, as they find the current practice of 'affiliating' themselves to mainstream universities to register their Ph D students inconvenient. This opinion examines the various aspects of this trend and its impact on national laboratories, universities and more importantly, on the pursuit of S&T by the scientific manpower in the country, whether employed or seeking employment, and on the social values and expectations attached to research and education.

Why do national laboratories/institutes want to become deemed universities? One needs to look back at history to understand the foundations of the university-institute dichotomy. In the early years after Indian independence, there were several debates among prominent scientists and national leaders about the role of higher education and research for national reconstruction and the most appropriate institutional structure that would suit the perceived needs of the nation. While it was recognized that higher education and research were related activities, the policy eventually adopted sought to separate universities from research and development (R&D) laboratories. In recent decades, it has been repeatedly acknowledged in Indian scientific circles that this dichotomy

neither helped the universities nor national laboratories. Yet, the current proposal to accord deemed university status to national laboratories only deepens this dichotomy further.

What is this dichotomy all about? Universities were entrusted with the task of teaching and setting standards in higher education through curriculum development, affiliation and examination, as well as award of research degrees such as M Phil, Ph D and D Sc to accomplished researchers. Gradually, even research degrees became courses for which pupils took admission, worked under the supervision of a university faculty, submitted a thesis which was peer-reviewed and degrees awarded. This was a part of an international trend, driven by the increasing role played by S&T in modern socio-economic development and the growing need for well-trained scientists to be employed in R&D activities in government institutions or industries. The worth of a Ph D degree gradually came to be measured not merely by the thesis submitted or the name of the university/department or the 'guide/supervisor', but by the number of papers published in professionally recognized peer-reviewed journals.

The national laboratories, on the other hand, were established with the specific aim of making more direct contributions to the technological needs of the country in chosen areas such as medicine, agriculture, petroleum, metallurgy, energy, defence, space, etc. It was expected that these national (or regional) laboratories would employ selected scientific manpower generated from the colleges/universities and nurture their talents towards specific applied goals. A mixed economy model, driven by a strong public sector and a highly regulated private sector, was expected to take up the technologies developed in the national laboratories and translate them into various marketable products, processes and services. However, barring a few successes in strategic sectors such as defence, space and atomic energy, in which the institutions that developed or adapted technologies were also 'users' of those technologies, technology transfer between 'developers' and

'user industries' did not grow in an expected manner, except in certain areas such as drugs and chemicals. Development which determines the eventual success of any prototype technology in the market and demands most of the investment in terms of money, time and manpower, was not taken up to the required level, as scientists in national laboratories did not find them sufficiently intellectually challenging or rewarding. Indian industries preferred to take up fully developed, scaled-up and tested 'ready to use' technologies rather than work with prototypes and ideas. With the willingness of foreign companies to transfer such technologies, the primary preoccupation of the Indian industry was to look for collaborations and technology transfers from abroad. This suited the foreign firms to make whatever money they could, for their (often outdated) technologies in a protected Indian market, which had huge barriers for direct entry of foreign companies, direct sale of imported goods or foreign direct investments for local manufacture (the situation has now changed to the other extreme). On their part, the scientists in national laboratories were content with research which is again best measured in terms of publications, as patents were not particularly popular or relevant in the Indian situation at that time.

The above background has made these national laboratories more sophisticated versions of university departments, drawing better monetary and infrastructural support. Their original purpose of making direct technological contributions to the economy and society got diluted, but their relative opulence attracts research students, who cannot be retained and tapped, unless they are promised research degrees. With higher education becoming the best escape route from unemployment and underemployment, the country produces several thousand Ph Ds every year, most of whom migrate abroad as postdocs. With research becoming increasingly capital and technology-intensive, national laboratories are often better equipped than universities to do more fashionable research, often dictated by the Western trends. Students naturally tend to flock to these

institutes for their Ph Ds, as they are better launching pads for their careers in India and abroad. The present demand for seeking deemed university status could therefore be interpreted as an exercise to legitimize the current situation of the national laboratories and redefine their original goals.

One of the main arguments of national laboratories in favour of deemed university status is that they need younger workforce for their research, and that they are better equipped to attract them by offering research degrees. There is nothing wrong in awarding degrees and publishing papers, as long as it remains a small component of the activities of national laboratories/institutes, and affiliation with universities is good enough to meet this limited purpose. What is wrong is shifting focus from technology development to degrees and publications, especially at a time when the country is witnessing gaping gaps in development, and Indian firms are not able to get technology from abroad any longer. Following the liberalization and globalization of the Indian economy, foreign firms no longer need to sell their technology, as they can sell their finished products in India. It is also wrong to seek university status for a limited purpose of awarding Ph Ds, without fulfilling the other roles of a university, such as teaching at the undergraduate and postgraduate level, as well as curriculum development, examination and affiliation. If institutes fulfil all these roles, they may as well become full-fledged universities and work with comparable budgets, leaving the pretension of being national laboratories created for a different purpose.

Another common argument of the national laboratories is that whatever the uni-

versities do, the institutes can only do better and that therefore, the latter would not like to depend on universities and share credit with them as co-guides and co-authors. If this argument is true, it needs to be established by a comparison of number of papers published per person per lakh of intramural investment in national institutes and central universities. If institutes are better, it is mainly because of better intramural funding and infrastructure, more scientists working in areas related to the mandate of the institute, elite recruitment and promotional mechanisms and more functional autonomy. If all these are provided to Indian universities, they may actually do better, when one considers that university faculty also do a lot of teaching and administrative work. As far as sharing credits is concerned, if universities can be made to give research degrees to deserving young scholars based on the quality of their theses, without insisting on involving a co-guide, the problem of credit appropriation can be eliminated and the need of institutes for young workforce can be fulfilled without altering their basic goals. In fact, credit appropriation is a far more serious problem in the national laboratories/institutes, where directors, divisional heads and team leaders often take authorship or other forms of credit with little or no contribution to the published work or technology developed.

One also hears the argument that institutes provide more focused research training in mandated research areas of national relevance, whereas universities do everything under the sun. There is also the danger of national laboratories using the above argument to justify inbreeding and favouritism, and deny employment opportunities to Ph Ds. from universities. Moreover, the country needs to decide whether

it wants to develop glorified technicians and sycophants or make versatile scientists and conscious citizens. Barring a few exceptions, the monolithic hierarchy of national laboratories does not provide enough opportunity to young researchers to relate their research to broader social and national values. The more open intellectual environment of universities, which include natural and social sciences, is essential for interdisciplinary learning, personality development, national values and better citizenship.

It has now become fashionable for our scientist-managers to argue that universities have gone down the drain, so let us at least save research quality at the institutes. However, one can also argue that we have anyway given up on improving the university system, so let us downgrade the national laboratories to degree-awarding institutions. Thus, the issue of deemed universities is just one of the many facets of the growing dichotomy between universities and national laboratories/institutes. The country is almost on the verge of according brahminical supremacy to the institutes and condemning the universities as untouchables that will only produce college science teachers and social scientists. We need an open national debate to deal with these trends, as they have major implications for our higher education and research in S&T.

The views expressed are the author's own.

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