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EDITORIAL

Supporting Science

'In the half century since Independence, India has been committed to the task of promoting the spread of science. The key role of technology as an important element of national development is also well recognized. The Scientific Policy Resolution of 1958 and the Technology Policy Statement of 1983 enunciated the principles on which the growth of science and technology in India has been based over the past several decades. These policies have emphasized self-reliance, as also sustainable and equitable development. They embody a vision and strategy that are applicable today and would continue to inspire us in our endeavours.'

Preamble – Science and Technology Policy – 2003
Ministry of Science and Technology

Statements of policy signify the long-term commitments of a government. When endorsed by Parliament they assume the dimensions of a statement of national intent and purpose. This year marks the unveiling of the new Science and Technology Policy – 2003. The year began with a Prime Ministerial pronouncement, at the Science Congress, on the need to 'debureaucratize' our scientific institutions. Indeed, one of the policy objectives of our new S&T Policy is: 'To vigorously foster scientific research in universities and other academic, scientific and engineering institutions; and attract the brightest young persons to careers in science and technology, by conveying a sense of excitement concerning the advancing frontiers and by creating suitable employment opportunities for them. Also to build and maintain centres of excellence, which will raise the level of work in selected areas to the highest international standards.'

The new S&T policy differs from its predecessors; the high-sounding phrases of the policy document are followed by a section outlining a 'Strategy and Implementation Plan'. For the practitioners of science in academia, some statements of intent may sound particularly encouraging: 'A concerted strategy is necessary to infuse a new sense of dynamism in our science and technology institutions. The science departments, agencies and other academic institutions including universities, i.e. the science

and technology system as a whole, would be substantially strengthened, given full autonomy and flexibility and de-bureaucratized'. A clear statement regarding 'New Funding Mechanisms for Basic Research' will certainly draw the attention of academic scientists: 'The setting up of more efficient funding mechanisms will be examined, either by creating new structures or by strengthening or restructuring the existing ones, for promotion of basic research in science, medical and engineering institutions. In particular, administrative and financial procedures will be simplified to permit efficient operation of research programmes in diverse institutions across the country.'

In reading these sections of the S&T Policy 2003, it may be instructive to reflect on the history of organized government funding of science in India. The Department of Science and Technology (DST), which is the nodal agency for the promotion and support of science in India came into being only in 1971. The DST's major funding arm for supporting projects in all areas of science and technology, the Science and Engineering Research Council (SERC) came into existence in 1974. The SERC's mandate was to support basic research in new and emerging areas of science and engineering. Meeting three or four times a year, the SERC quickly became the driving force for funding a large number of individual investigator initiated projects all across the country. The 'thrust areas' program formulated in the early 1980s, following meetings of large groups of scientists at Baroda (now Vadodara) in the precincts of the then vibrant Indian Petrochemicals Corporation, was influential in directing funding towards chosen areas of basic science. The concept of Program Advisory Committees (PACs) introduced the organized peer review system on a broad scale, for the first time in India. Decisions on projects were now made by representative groups of researchers in specific disciplines. The PACs also assumed responsibility for evaluating the progress on projects which had been funded by the DST. The first 'group-monitoring workshops' were held in 1985; it is now hard to imagine that this mechanism of monitoring projects is less than twenty years old. The SERC has been extraordinarily influential, particularly in the first twenty years of its existence. This

body has provided funding for hundreds of investigators across disciplines and institutions; through specific programs, the SERC has been responsible for the creation of several major facilities, operated as national resources. In addition to funding research projects, the SERC mechanism has encouraged the participation of a sizable section of academic researchers in its various programmes. In the first week of July the SERC will hold its 100th meeting. While a centenary of meetings by a committee can hardly be a cause for celebration, the occasion undoubtedly provides an excuse for looking back and ahead. In over a quarter of a century, the SERC has provided an undeniable impetus for scientific research in India. Its mechanisms have been adopted by other funding agencies like the Department of Biotechnology (DBT) and the Council of Scientific and Industrial Research (CSIR), in its extramural programmes. However, as the scientific enterprise has grown, the time may be opportune to ask whether new mechanisms are needed to ensure the continued support of academic science and fundamental research.

The need to 'debureaucratize' (a word which does not roll pleasantly off the tongue) our science and technology institutions has been emphasized explicitly in the S&T Policy – 2003. Clearly, there is an implicit recognition, even in government circles, that our agencies for funding and promoting science are becoming enmeshed in bureaucratic problems. The time scales for funding individual investigator projects have slowly increased; the response times at agencies when questions or clarification arise are uncomfortably long; finance sections appear to hold sway, sometimes impeding the flow of funds to academic institutions, even after the approval of scientific committees. In some agencies, the malaise is deep rooted; others struggle to hold the line. The science agencies follow the rigidly laid down procedures of government; but their client institutions often have stubborn administrators, who follow an entirely different set of norms. In the clash of bureaucracies, the individual scientist is often a bemused and helpless observer. There are prolonged battles on 'utilization certificates', with agencies and institutions in permanent conflict over the format and the figures. The number of young and enthusiastic administrators at the science departments is diminishing; aging and retirements in an era of limited recruitments have taken an inevitable toll. The ambience

in the science ministries provides little scope for rewarding administrators who perform; those who act as obstacles in the execution of projects can hardly be touched. The idea of administrative autonomy does not apply to the major funding arms of science, like the Departments of Science and Technology and Biotechnology. Instead, these agencies are enmeshed in a ministerial culture in which bureaucracy has acquired a stranglehold, despite the best efforts of many able and dedicated individuals, who have spent their careers in promoting and nurturing scientific activity.

Funding research projects or institutions is not the only activity in which the Ministries and agencies play a major role. For example, the fixation of scholarships to attract the best of students to science is an issue which concerns all academic institutions. While the initiative for the recent enhancement in PhD scholarships emanated from the DST, the uncoordinated moves at the University Grants Commission (UGC) and the All India Council of Technical Education (AICTE), leave an impression that government bodies often seem to work at cross-purposes. Although the UGC and AICTE maintain a measure of autonomy, it is the Ministry of Human Resources Development (MHRD), which has increasingly called the shots. Despite the best of intentions all around, bureaucracy quickly gains a stranglehold.

The Prime Minister's statement at the Science Congress, the unambiguous enunciation of intent in the Science and Technology Policy – 2003 and the centenary of meetings of the Science and Engineering Research Council, provide a rationale for a critical examination of the structure of agencies, charged with the promotion and support of science. The time may be opportune to revive the idea of an autonomous National Science Foundation, which can operate out of a corpus generated through both government and private contributions. Those adept in financial matters will have little difficulty in envisaging scenarios, where a corpus of Rs 1000 crores or more can be generated. In this era of changing mores of financing, it may be worthwhile to think of new ways of recharging the scientific enterprise. Any new initiative will supplement and complement the existing mechanisms for supporting science.

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