

28th November 2006

Dear Mr. Prime Minister,

Indian scientists made significant contributions to the advancement of science and technology in the 1950s and '60s. This was possible because of the support extended to science education and research by the successive governments. Numerous research and development institutions were established across the country. However, over the years, in spite of continuing government support, both the quality and quantity of the research output from India has been on the decline as has been pointed out by Prof. C.N.R. Rao to you. It is necessary to examine the reasons for this decline and implement remedial measures.

One widening realization of the last few decades has been that knowledge is a continuum and the boundaries between disciplines are increasingly becoming blurred, tenuous and indefinable.

The major causes for the current crisis in Indian research are as follows:

- Lack of interaction: There is very rigid compartmentalization of natural and social sciences; as a result there is little or no interaction between researchers in natural sciences and social sciences.
- Lack of long term vision: Research topics of long term relevance and importance are not taken up as support tends to be for the duration of 3 to 5 years because of our planning process.
- Lack of differential remuneration: The principle of differential remuneration based on performance and output is not followed to reward those who perform well and chastise those who do not.
- Lack of scientific methods: Current teaching methodologies at school, college and university level do not inculcate scientific temper in the students.

We are aware that the Science Advisory Council has recently suggested the establishment of a National Science Foundation to address some of these and other issues confronting research. We support this suggestion with some modifications that will make the solution more comprehensive and practicable.

The National Knowledge Commission feels that in view of the disappearing boundaries between various disciplines of knowledge and knowledge emerging as a continuum, our country should set up a National Science and Social Science Foundation (NS³F) which will look at all knowledge as one seamless entity. We will be the first country to set up such an *avant garde* organization – and rightfully so given our 5000-year-old tradition of

broad-based knowledge.

The objectives of the proposed NS³F will be to:

- (a) Suggest policy initiatives to make India a leader in the creation and use of new knowledge in all areas of natural, physical, agricultural, health, and social sciences, with emphasis on those areas which cut across traditional disciplines;
- (b) Ensure that science and technology are maximally used for betterment of the lives of our people;
- (c) Develop scientific temper;

The Governing Board of the Foundation should have a Chairman, a Vice-Chairman and 8-10 members. The Chairmanship and Vice-Chairmanship of the NS³F should rotate between the sciences and the social sciences, ensuring that if the Chairperson is a scientist, the Vice-Chairperson should be a social scientist and vice-versa.

The Chairman, Vice-Chairman and members of the Governing Board should be appointed by the Prime Minister and should satisfy the following criteria:

- High level of professional competence.
- High national and international reputation.
- Professional and personal integrity and honesty that are beyond reproach.
- Evidence of absence of any bias or prejudice.
- A strong social commitment, loyalty to the country, and concern for others.
- Commitment to social, professional and financial accountability.
- Someone who combines erudition with articulation.
- Courage of convictions.
- Ability to listen to other people's views and modify one's own if reason demands that.

The budget of the NS³F should be Rs.1250 crores a year; which will allow it to fund between 200 and 400 outstanding, long-term (5-10 years), extremely carefully selected projects that have the potential of making India a leader. We should expect at least a 20 percent success rate. The NS³F should work towards having at least three to four Indian scientists and/or social scientists produce work in six years which should be worthy of a Nobel Prize. The NS³F will set up a world-wide review system involving some of the best-known scholars around the world for approval of the projects that it supports. The project-funding activity will, however, be only one (though a major one) of the activities of the NS³F.

Some of the major activities and responsibilities of the NS³F will be to:

- Identify major unsolved problems in various areas of science and social sciences and individuals, groups and / or institutions who can work on them to provide India leadership.
- Identify and set up studies on (a) relationships of science with other areas of human concern such as economics, sociology, politics, art and literature, and vice-versa, and (b) social, economic, political, legal, moral and ethical implications of advances in science and technology.
- Identify and set up studies on futuristic interdisciplinary areas in real time.
- Recommend steps that would help inculcate scientific temper amongst the people of the country as envisioned in the constitution.
- Help the government set up systems that would remove bureaucratic hurdles, increase professional, social and financial accountability; and recognize that creativity in science and social sciences like in all creative endeavors is non-hierarchical.
- Identify and set up studies to find solutions to the problems of the poor and the underprivileged by translating the advances in science and technology.
- Recommend strategies (scientific, technological and social) that would provide additional employment in the rural sector and help set up mechanisms for their implementation with the cooperation of Government, industry and NGOs.
- Recommend steps for optimizing the use of our natural resources (including marine resources).
- Help set up systems for documentation, standardization where necessary, validation and use of our traditional knowledge. Ensure that the custodians and providers of such knowledge and wisdom are identified, are involved in the above process, and share benefits accruing from the use of such knowledge.
- Set up policies for international cooperation in science and social sciences.
- Serve as a platform for the coming together of various departments, organizations and agencies of the Government that are concerned with scientific and social science research and related developmental work, to optimally utilize their collective knowledge and capabilities.
- Set up a mechanism for close interaction between state-funded scientific and social science organizations, private sector and responsible and effective NGOs

- Set up a system that would ensure that appropriate credit comes to India, the Indian institutions and the Indian scientists and social scientists for their work, and that their work is duly publicized in and outside India (e.g. through our embassies and missions).
- Formulate ethical guidelines for administration of science, doing science, communicating science, and using science; and a system of punishment when those guidelines are compromised. Set up similar guidelines for social sciences.
- Recommend setting up of new organizations / institutions that would help advance the above objectives and close down existing institutions which have outlived their utility or are not functioning satisfactorily.
- Prepare and present to the Government of India, periodic reports on the state of science and social sciences in India, in the global context and suggest steps that may be taken to improve it.

We trust this proposal will meet with your approval.

Thank you and warm regards,

Sam Pitroda,
Chairman
The National Knowledge Commission

Copy to:

1. Dr Montek Singh Ahluwalia, Deputy Chairman, Planning Commission
2. Shri Kapil Sibal, Minister for Science and Technology