India March for Science

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To: The Prime Minister of India 9 August 2017

Dear Sir,

On many recent occasions, you have placed high expectations from the scientific community in terms of research output as well as technological innovations. While this in no way goes against the wishes of the scientific community in India, we are very anxious that the funding support for scientific research is sorely inadequate, having remained stagnant in the range 0.8%-0.9% of the GDP for far too long. Other countries with similar aspirations have provided financial support for science exceeding 3% of GDP. For example, South Korea spends 4.15% of its GDP on scientific and technological research; Japan spends 3.47%, Sweden 3.16%, and Denmark 3.08%, when calculated on the basis of purchasing power parity.

Even out of the paltry sum provided for R&D, only 7.5% is allotted to the DST and 7% for the CSIR which account for the greater part of scientific and technological work done in India. With such insufficient financial support, would it be possible to compete with these countries in terms of scientific infrastructure and productivity?

Moreover the financial support for institutions and scientific organizations has not been increased in view of the 7th Pay Commission recommendations, as a result of which most organizations have been pushed into financial crisis as they have hardly any money left for research or to build a strong science ecosystem necessary for consistently high quality research output.

We, the scientific community of India, urge that the financial outlay for research and development be increased to 3% of GDP. Needless to say, we assure you of our moral commitment and accountability for the funds given for R&D.

The education system supplies the scientific manpower of any country, and robust health of the education system is an essential prerequisite for a country's success in science and technology. In India the education system has been seriously neglected, resulting in a large section remaining illiterate or semi-literate even after 70 years of independence. The public school system, where a majority of Indian children get their education, is in a very bad shape, as many schools are without proper buildings, toilets, and playgrounds, have overcrowded classrooms, face acute shortage of teachers and are without laboratory facilities. As a result, a majority of children are deprived of the opportunity of being a part of the scientific manpower of the country.

The college and university system is also reeling under acute shortages of infrastructure, teaching and non-teaching staff, and funds for carrying out research resulting in a lack of atmosphere for pursuit of excellence and in falling standards in the quality of education. Even in the IITs, NITs and IISERs the funding is insufficient, and now they have been asked to raise the

operational expenses from students' fees, thus taking these systems out of reach of students coming from poor and lower middle class families.

The situation is crying out for urgent redressal, and our country's need for support for education should not be compared with that of those countries which have already built up infrastructure to a very large extent and are mainly in 'maintenance' mode. At present the United States spends 6.4%, New Zealand 6.9%, North Korea 6.7%, Norway 6.5%, Israel 6.5%, Denmark 8.7%, Belgium 6.6%, Finland 6.8% and Cuba 12.4% of GDP while India's spending on education hovers around only 3% of GDP.

The scientific community of India urges that the Central and State Governments' combined expenditure on education be raised to 10% of GDP to build the necessary infrastructure to impart quality education to our children until we can also cruise into maintenance mode.

The content of education is another area of concern. We notice that students coming out of the present school and college systems do not acquire a scientific bent of mind, and hence are typically unsuitable for fruitful careers in science. To make things worse, even untested and unscientific ideas are being introduced into the school textbooks and curricula.

We believe that the focus of the education system should be to equip students to think in a rational and scientific way, free from prejudices, rather than cramming them with `information' from various sources. Untested personal beliefs of educational administrators and textbook writers should not be allowed to infiltrate the education system.

In recent times the attempts to spread unscientific beliefs and superstitions are on the rise. Sometimes, unscientific ideas lacking in evidence are being propagated as science, patronised by persons in high positions. This is vitiating the cultural atmosphere of the country.

The scientific community expects the Government to uphold Article 51A of the Constitution, and to restrain the attempts that run counter to the development of scientific temper, human values and spirit of inquiry enshrined in the Constitution.

Science is not a set of beliefs. Science tries to understand the laws governing the material world and society following a well-established methodology where nothing is accepted without evidence. Thus science has created a body of knowledge that has been tested by practice, which provides the basis for advancement of society. That is why it is now an established canon of governance that all decisions that impact people's lives should be based, not on personal beliefs, but on scientific evidence. Therefore, such policy decisions should be taken through consultations with the scientific community, possibly involving the scientific bodies like the Academies. We urge you to follow this practice and to put in place an adequate administrative mechanism to ensure its adherence.

We sincerely believe that your government will take the above measures to ensure a bright future for the country through advancement and utilization of science.

Submitted by the Organizing Committees of the
India March for Science in different cities