

All India Peoples' Science Network

Statement on the National Research Foundation Bill 2023

The “National Research Foundation Bill 2023” shall be re-examined. Remit this bill to the Department Related Parliamentary Standing Committee on S&T, Environment and Forests for a comprehensive assessment. The Committee should invite the development authorities, line departments of the union government and state governments and the representatives of organizations working with the scientific community to submit their views on the Bill.

The National Research Foundation (NRF) Bill, 2023, recently only approved by the Cabinet for introduction in Parliament, has initiated a wide-ranging discussion on the challenges facing the Indian scientific community. India's recent history of policymaking and legislations created by the Union Government on science and technology has been marked by remarkable announcements with results far below the expectations raised through the stated legislative and policy objectives.

In terms of the percentage of GDP, India's spending on research and development is among the lowest in the world. In 2022, India only spent 0.65% of GDP on R&D. The average world expenditure on R&D is 1.8%. Those who have the dream of making India a developed nation need to note that developed nations such as the United States (2.9%), China (2.2%) and Israel (4.9%) spend far higher. Among the BRICS nations India is at the bottom. For more than two decades now, the stated objective of the policies announced has been to allocate at least two per cent of the national GDP on R&D.

During the last two decades, not only was the target of 2% forgotten by the successive governments, the expenditure on research and development (R&D) was allowed to go down, from 0.8% at the start of the 2000s to about 0.65% now. India's GERD at \$43 per capita is one of the lowest in the world. India's BRICS and ASEAN counterparts like Russia (285), Brazil (173), and Malaysia (293) fare much better.

The current status of availability of human resources availability to do R&D is far more troublesome. In 2020, India has just 262 researchers per million inhabitants. China employs ten times more researchers per million inhabitants. Germany employs 6995 researchers per million. In 2020, Republic of Korea topped the list with 8714 researchers per million population in the world followed by Israel (8342), Sweden (7930), Denmark (7692), Finland (7527) and Singapore (7287) during 2020.

The share of GERD in GDP declined from 0.40% (2013) to 0.37% (2018) in the government sector, and from 0.27% (2013) to 0.24% (2018) in the business enterprise sector. Although R&D expenditure increased nominally in the higher education sector (GERD as a percentage of GDP rose from .04% in 2013 to .05% in 2018, but full time equivalent (FTE) researchers in the higher education sector declined from 39.96% in 2015 to 36.48% in 2018.

Researchers employed in the government sector declined from 30.32% in 2015 to 23.13% in 2018. India has nearly 40,000 institutions of higher education and over 1200 of these are full-fledged universities. Only 1% of these engage in active research. The state universities need

to recruit teachers and researchers on permanent posts to strengthen the climate for research and innovation. The NRF will not allow block grants and offer only funds for fixed time research staff.

Among the stated objectives of the NRF, the NRF Bill, 2023 wishes to enhance the funding support to state universities for research in a bigger way than ever before. Presently the state universities account for a mere 3% of research expenditure. IITs have been the major recipients of Science and Engineering Research Board (SERB) funding. The PM in chair won't be able to change the outcome. It can be changed with the participation of state governments. Rashtriya Uchhatar Siksha Abhiyan (RUSA) introduced the state higher education councils to correct the state of health of the state universities.

The NRF has no possibility of involving either the state higher education councils or the line ministries of the Union Government. The PM chairing the governing board cannot ensure joint planning with either the state governments or the line ministries of the Union government. The NRF is centralizing decision making on research. Corporates and elite institutions will have an edge. This will ultimately undermine the possibility of harnessing the energy of multiple sources of initiatives. Joint planning is a more effective way of realizing diversity and plurality of missions in the world threatened by climate change and inequality.

The NRF Bill, 2023 seeks to replace the Science and Engineering Board (SERB) Act, 2008. Like the SERB Act, 2008 the NRF too has been armed with multiple objectives. It wishes to develop funding programmes which connect with needs of our society and identify key scientific questions, both basic science and application that have societal value. It has also claimed to support conceptually new directions, even when risky.

Given the lack of culture of collaboration, societal problems-oriented research is going to be a significant challenge for the universities. As a result, most of the research being carried out in Indian higher education institutions has been of disciplinary orientation rather than of multidisciplinary and inter-disciplinary orientation. Translational research is a challenging task. Innovation is not research. It is more than science and technology. It is connected with the challenge of linking science and technology with the needs of the society.

The NRF will be partly funded by the government and largely by the private sector and philanthropic funding sources. The funding structure will seek the establishment of a stronger intellectual property mechanism of the Bayh-Dole kind which has been resisted by the academic institutions. The executive decisions of the NRF will be guided by a steering committee composed of 15-25 distinguished researchers and professionals. The decision making structure for the NRF has only one distinct difference from the SERB, which is that the Prime Minister will chair the Governing Body.

The NRF needs to bring together the states, line ministry, public sector and private sector through a mechanism capable of promoting joint planning between these important actors without whom the NRF will be again a failure like the SERB.

Adequate investment in R&D is a precondition to India becoming self-reliant in technology and be a future global technology leader. Without a robust indigenous R&D environment, India will not be able to attract investment, both domestic and overseas, that will enable the country to take the lead in cutting-edge technologies which can be put to use in strategic fields including overall socio-economic development. The NRF Bill 2023 suggests that the government is reluctant to provide budgetary support for research. In the allocation of Rs 50,000 crores for R&D through the NRF, 70% of will be financed by the private sector, and only 30% funded by budgetary resources.

The National Research Foundation (NRF) Bill 2023 needs a thorough open scrutiny by the scientific community. It should be sent to the Department Related Standing Committee for S&T, Environment and Forests. The committee should invite the state governments, state universities, state higher education councils, state S&T councils, line ministries, development authorities, and the CEOs of CPSEs and state sector PSUs to make their submissions on the NRF bill, 2023.

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