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EDITORIAL

Science Needs Sustainable Funding

Key Points of the Article/Editorial

Background

- The 2024 theme for National Science Day, which India celebrates every year on February 28, is “Science for Sustainable Development”. Science and technological developments are key drivers of India’s journey towards becoming a developed country by 2047.
- India is committed to making this progress through sustainable means, as evidenced by its commitments under the Paris Agreement, participation in global fora for sustainable development, and reinforced in this year’s theme for Science Day.
- The role of science in driving sustainable development doesn’t need emphasis, but any conversation on science is incomplete without setting one key expectation: for science to transform India, it has to be sustainably and consistently funded.

India’s Spending on Research & Development (R&D)

- Funding for fundamental research in India is amongst the world’s lowest, particularly for a country with high science and technology ambitions.
- In the recent past, India’s R&D expense has dropped to the current 0.64% of GDP from 0.8% in 2008-2009 and 0.7% in 2017-2018. This reduced expenditure is worrying considering government agencies themselves have issued several calls to double this spending.
- Most developed countries spend between 2% and 4% of their respective GDPs on R&D. In 2021, member-countries of the Organisation for Economic Co-operation and Development (OECD) on average spent 2.7% of GDP on R&D.
- The U.S. and the U.K. have consistently spent more than 2% of their GDPs on R&D for the past decade. So, many experts have called for India to spend at least 1%, but ideally 3%, of its GDP every year until 2047 on R&D for science to have a meaningful impact on development.

Ways to Improve India’s R & D

- Science requires consistent, large-scale investment to bear fruit. For India to reach ‘developed nation’ status, it needs to spend more to scale R&D than developed countries spend to maintain that status. This is the foundation of the demand to spend at least 3% of the GDP on R&D annually until 2047.
- In economically developed countries, a major share – 70% on average – of R&D investment comes from the private sector. The hesitancy of private-sector funding may be because of the poor capacity to evaluate R&D in India, ambiguous regulatory roadmaps that can deter investors, lack of clear exit options for investors in sectors such as biotechnology, and fears of intellectual property rights theft.
- Anusandhan National Research Foundation (ANRF), that was meant to solve some of the financial



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issues, its implementation has been delayed. The Rs-2,000-crore annual budget the government earmarked for its implementation in the last budget was revised to Rs 258 crores this year. Strategies for how the remaining budget of INR 7200 crore from the private sector is to be raised have also not been clarified yet.

- So, there is a perceived need to determine the overall quantum of R&D funding and its primary sources, given India's ambition to be a developed country by 2047.

Ways to Utilize India's R & D Budget

- The Union Ministry of Science and Technology has consistently under-utilized its budget, so while the calls for increased funding – through both government and private sources – are legitimate, a strengthened budget utilization is also required to affect science outcomes.
- The phenomenon is also not specific to the Science Ministry; given India generally under-spends on R&D, there will likely be a major impact if the allocated funds are spent optimally.
- The reasons for under-utilization, as with the under-allocation, are unclear and may indicate tedious bureaucratic processes for approving disbursements, lack of capacity to evaluate projects or clear utilization certificates, lack of prioritization for science funding by the Ministry of Finance or inadequate planning or implementation strategy for the requested funds by the Ministry of Science and Technology.
- The lack of capacity also reflects in delays in grant and salary disbursements. Most of these issues can be fixed by proper capacity building within the different governmental agencies.

Essence of Sustainable Funding

- Mitigating the under-spending and under-utilization of funds earmarked for R&D stand out as obvious first steps. This in turn requires the political prioritization of R&D spending and recognition of it as a core, irreplaceable element of India's growth journey.
- This prioritization has to happen not only within the concerned Ministries but also at the Ministry of Finance, which disburses the funds. Incentives for private investment, including relaxation of foreign direct investments, tax rebates, and clear regulatory roadmaps for products will help build investor confidence.
- India also needs the bureaucratic capacity to evaluate science projects and, after allocations, monitor utilization. Building such capacity is a prerequisite for India becoming a science power by 2047. So this National Science Day, as we celebrate science for sustainable development, let's also remember we need sustainable funding for science.
- Therefore, since science has a fundamental role to play in achieving progress towards the implementation of the SDGs by providing evidence for decision-making and informing the development of more sustainable solutions, the sustainable funding for science in India is paramount for fostering innovation, driving economic growth, and addressing societal challenges. By prioritizing long-term investment in research and development, India can propel itself as a global leader in science and technology, ensuring a prosperous and sustainable future for generations to come.