R&D IN INDIA - GS III MAINS

Q. The potential for R&D in India is huge but there are ground level challenges. Critically analyse (15 marks, 250 words)

News: *Budget 2024: Research & innovation corpus needs clarity of modalities involved*

What's in the news?

- The Union Budget proposal to create a corpus of ₹1 lakh crore for the benefit of private sector research and innovation, with a 50-year interest-free loan cushion, has raised more questions than answers.
- Since there are no details provided or any modalities offered, the industry is likely to adopt a wait-and-watch approach on the proposal.

Key takeaways:

- India's R&D spending is significantly lower than not just the US or China, but also Japan & some other emerging nations.

Research and Development in India:

- Research and development (R&D) is at the core of economic growth.
- It leads to innovation and innovation in turn leads to economic growth.
- It allows scientists, technologists, and researchers to develop new methods, techniques, and knowledge points so as to enhance the quantity and quality of output with the same resources.

A favourable R&D environment in India:

- With a burgeoning of the aspiring middle class, there is a huge market for a host of products. This should be a good starting point for innovation and R&D.
- India boasts of a large pool of English-speaking manpower, which is hard to find in most countries. That makes execution of R&D plans much easier.
- The government has a catalytic R&D policy and the upgraded infrastructure in India is at par with most nations.
- There are adequate regulatory and tax incentives. In many cases, India offers R&D super deductions to the tune of 200%, which is at par with the best in the world.
- From a direct tax perspective, R&D spending offers tax breaks and incentives for R&D contribution in the form of accelerated depreciation.

Reasons for low R&D spending in India:

1. Poor private sector R&D:

- In the recent past, private R&D has shown signs of improving but the growth has either come from public sector companies or from MNCs.
- In fact, it is MNCs that accounted for 90% of the patents filed in India.

2. Weak linkages:

- India has a weak linkage between universities, institutes of higher learning, and industry.
- That linkage is a lot more robust in countries like the US, UK, Germany, and Israel.
- Most Indian universities have not been able to modify their curriculum with changing times.

3. Funding issues:

- Most R&D by the private sector depends on the quality of finance available.
- While a lot of funding goes into software, e-commerce, and digital payment networks, not much is dedicated to genetics, molecules, clinical research etc. That is a big gap.

4. No focus on application:

- One of the shortcomings of the Indian university system has been the focus on basic research rather than application research.
- That has limited its value to industry and hence the support is lacking.

5. Weak IPR:

- The most important issue is the weak IPR regime.
- Any investment in R&D pre-supposes a strong intellectual property rights (IPR) regime to protect the IPs.
    a. In most areas, R&D IPs are either too weak structurally or are very hard to enforce.

WAY FORWARD:

- Steps should be taken to improve math and cognitive skills at the school level.
- Investigator led research should be encouraged.
- National labs to universities should be linked so that R&D can initiate from every basis.
- A new knowledge eco-system to improve science and R&D in the country should be created.
- Private sector should be encouraged to focus more on R&D and spending CSR funds on R&D.

Therefore, it is clear that the potential for R&D in India is huge but there are ground level challenges. Its importance, however, cannot be underplayed. R&D spending in India is low as a percentage of GDP but has also stagnated at the same level since the 90s. During this period, not only large economies but also small economies from Eastern Europe and Central Asia are moving ahead in the R&D stakes. Thus a more positive attitude is required to boost R&D.