



Science & Technology Indicators, 2019-20

Why in News

According to the latest **Science & Technology Indicators (STI) report** for 2019-20, India performs very dismally in the field science & technology innovation.

- The STI report is released by the [Department of Science and Technology \(DST\)](#).

Key Points

▪ Patent Data:

- Between 2005-06 and 2017-18, a total of 5,10,000 patent applications were filed in India. However, nearly **three-quarters were filed by foreign entities or individuals**.
- In other words, in these 13 years, **just 24% of patent claims came from Indians**.
- Patent filing in India is governed by **Patents Act, 1970**. Recently, the [Office of the Principal Scientific Adviser](#) to the Government of India and the **DST** have jointly initiated the formulation of a new national [Science Technology and Innovation Policy \(STIP 2020\)](#).
 - A **patent** is the granting of a **property right** by a sovereign authority to an inventor.
 - This grant provides the inventor **exclusive rights** to the patented **process, design, or invention** for a **designated period** in exchange for a comprehensive disclosure of the invention.
 - According to the [World Intellectual Property Organisation \(WIPO\)](#), **India** stands at the **7th position on number of patents filed**.
 - **China tops the list**, followed by the USA and Japan.

▪ Reasons for Dismal Performance:

- **Poor investment in research and development (R&D)** by the government, and the private sector.
- The **pathetic state of higher education**.
- **Lack of employable personnel**, who have neither the skills nor the aptitude in a variety of fields.
- **Lack of funds** and a **lack of conducive environment** for start-ups.
 - However, as per a recent report by the IBM Institute for Business Value, most Indian start-ups have failed because they **lack pioneering ideas based on new technologies**.
 - The Indian start-ups also **do not come up with unique business models** and **prefer to copy successful ideas from elsewhere** and focus on creating value merely by fine-tuning these successful concepts to local markets.
 - The **Makeshift solutions or Jugaad** enjoys respectability in India. It has been termed frugal innovation by some peoples.

▪ Suggestions:

- To spark the innovation in India, **research content** at major institutions, especially at universities, **needs to be increased**.
- The **national labs can be linked to universities** to create new knowledge ecosystems.
- Greater **public engagement of the science and research establishment** and **attracting more scientists** from across the world in India.
- Increasing **scientific temper** among students.
- Strengthening **higher education** in India.
- There is a need to **increase funding in R&D** and to create a conducive environment for innovation.
- Participation of the private sector in R&D needs to be increased.

Way Forward

- The makeshift solutions provide short term solutions, but to increase innovation, there is a need for pure research, which can be done when Indians will come up with new and original ideas.
- Experience of developing countries shows that Science & Technology Innovation policies that are well integrated into national development strategies and combined with institutional and organizational changes can help raise productivity, improve firm competitiveness, support faster growth and create jobs.

Source: DTE

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