

Role of Private Sector in the Indian Space Industry

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Context - Principal Scientific Adviser stated earlier this month that the government would soon come up with a new space policy that could initiate the rise of India's own "SpaceX-like Ventures".

Prospects of the proposed Space Policy

- The final version of the policy would soon be referred to the Empowered Technology Group for further examination.
- The proposed move would increase private sector participation in the industry. The policy document recognizes that India has not tapped into its complete potential in the space sector.

Importance of Development in Space Sector

(1) Climate Change

- Satellites provide more accurate information on weather forecasts and assess (and record) long-term trends in the climate and habitability of a region.
- By monitoring the long-term impact of climate change at regional, territorial, and national scales, governments would be able to devise more pragmatic and combative

plans of action for farmers and dependent industries.

Additionally, they can also serve as real-time monitoring and early-warning solutions against natural disasters such as earthquakes, tsunamis, floods, wildfires, mining etc.

- Real-time tracking can also serve multiple purposes in defence.

(2) Connectivity

- In this light, it must be noted that satellite communications, which are used to facilitate telecommunication services, are among the major categories for investment in the space technology sector.
- Satellite communication can reach more remote areas where conventional networks would require a heavy complimenting infrastructure.
- Additionally, as to reliability, the World Economic Forum had stated that satellite communication can help connect 49% of the world's unconnected population.
- Other prominent categories include spacecraft and equipment manufacturing.
- What essentially needs to be remembered is that the strategic space avenue is an integration of the aerospace, IT hardware and telecom sectors.

India's Position in Global Space Market

- As per SpaceTech Analytics, India is the sixth-largest player in the industry internationally having 3.6% of the world's space-tech companies (as of 2021).
- The US holds the leader's spot housing 56.4% of all companies in the space-tech ecosystem.
- Other major players include the UK (6.5%), Canada (5.3%), China (4.7%) and Germany (4.1%).
- The Indian Space Industry was valued at \$7 billion in 2019 and aspires to grow to \$50 billion by 2024.
- The country's standout feature is its cost-effectiveness. India holds the distinction of being the first country to have reached Mars' orbit in its first attempt and at \$75 million — way cheaper than Western standards.

Future prospects of India's private 'Space'

- Almost 60-odd start-ups had registered with the Indian Space Research Organization (ISRO) this year. A majority of them were dealing in projects related to space debris management.
- As space becomes more congested with satellites, the technology would thus help in managing 'space junk' (debris of old spacecraft and satellites).

Challenges and Issues

- The US and Canada were the highest receivers of space-related investment in 2021.
- The US's space budget was \$41 billion in 2021, \$23.3 billion of which was focused on NASA.
- India's total budgetary allocation for FY 2022-23 towards the Department of Space was ₹13,700 crore (\$172 million).

- Further, as per Tracxn data, funding into the sector's start-ups (in India) nearly tripled to \$67.2 million on a year-over-year basis in 2021.

Regulation of Private Sector Involvement in India

- In June 2020, the Union government announced reforms in the space sector enabling more private players to provide end-to-end services.
- The central idea was to bring forth a predictable policy and regulatory environment for them and additionally provide access to ISRO facilities and assets to improve their capacities.

(1) Establishment of IN-SPACe

- An announcement for the establishment of the Indian National Space Promotion and Authorisation Centre (IN-SPACe) was made.
- It was mandated the task of promoting, authorizing and licensing private players to carry out space activities.
- As an oversight and regulatory body, it is responsible for devising mechanisms to offer sharing of technology, expertise, and facilities free of cost to promote non-government private entities (NGPEs).
- IN-SPACe's Monitoring and Promotion Directorate oversees NGPE's activities as per prescribed regulations and reports back in case any corrective actions or resolutions are required.
- ISRO shares its expertise in matters pertaining to quality and reliability protocols, documentation, and testing procedure through IN-SPACe's 'interface mechanism'.

(2) Establishment of NSIL

- Additionally, constituted in March 2019, New Space India Ltd (NSIL), is mandated to transfer the matured technologies developed by the ISRO to Indian industries.
- All of them are under the purview of the Ministry of Defence.
- Private sector's involvement in the long term, as with other commercial sectors, is believed to help spur investment and expertise in the realm which is capital-intensive and demands high technology.