ISRO's role in India’s private space sector boom

Why in news?

The Indian Space Research Organisation (ISRO) is expanding its missions with private sector involvement boosted by 100% Foreign Direct Investment in the space sector.

ISRO
• Dr.Vikram Sarabhai is known as father of Indian space programme. • Indian Space Research Organisation (ISRO) is the space agency of India. • **Role**- It is involved in science, engineering and technology to harvest the benefits of outer space for India and the mankind. • **Formation** - It was formed on August 15, 1969 and superseded Indian National Committee for Space Research (INCOSPAR), set up in 1962 by Dr. Vikram Sarabhai with an expanded role to harness space technology. • Department of Space (DoS) was set up and ISRO was brought under DoS in 1972. • **Objective-** Development and application of space technology for various national needs. • **Space system**- ISRO has established major space systems for - Communication, television broadcasting and meteorological services - Resources monitoring and management; - Space-based navigation services.

What are the steps taken by India to promote private participation in space sector?

Antrix corporation Ltd.

- **Launch year**- 1992.
- **Administrative control**- It is a wholly owned Government of India Company under Department of Space (DoS).
- **Marketing arm of ISRO-** It is the commercial and marketing arm of ISRO.
- **Primary role**- To promote, market, and deliver ISRO's commercial products to international clients.
- **Responsibility**- It serves as a conduit between ISRO and private industry partners, facilitating technology transfer, assessing financial viability, and developing industrial capabilities within the Indian space sector.

New Space India Limited (NSIL)

- **Launch year**- 2019
- **Administrative control-** It is a schedule A category company under Department of Space (DoS).

- **Role- –** It will be responsible for commercialising space technologies and platforms created through public expenditure.
- **Major business areas-** PSLV production, SSLV manufacturing, launch services, satellite based services, satellite building and subsystems.
- **Commercialisation**- It will help in transferring technologies developed by ISRO to industries for commercialisation.

IN SPACe

- **Launch year-** 2020
- **About-** Indian National Space Promotion and Authorisation Centre is a *single window autonomous body* established under Department of Space.
- **Aim-** To create an eco-system of industry, academia and start-ups and to attract major share in the global space economy.
- **Role**- The Centre is responsible to promote enable authorize and supervise various space activities of the Non- Government Entities (NGEs).

National Geospatial Policy, 2022

- **About-** The policy issued guidelines for private companies to acquire geospatial data and maps from government agencies without licenses, permissions, or clearances, except for certain categories.
- **Aim** - To develop a geospatial ecosystem, democratize data, and strengthen integrated interfaces for digital data with location.
- **Promote private sector**- The policy promotes private sector participation in collecting geospatial data and allows the Survey of India to maintain high-resolution orthoimagery.

India Space Policy, 2023

- **Vision-** To enable, encourage and develop a flourishing commercial presence in space economy.
- **NGEs-** It shall be allowed to undertake end-to-end activities in space sector through establishment and operation of space objects, ground-based assets and related services, such as communication, remote sensing, navigation, etc.,
- **IN-SPACe**- It will be the single window clearance and authorisation agency providing guidelines and regulations for NGEs.

The Centre aims to boost Indian space economy from its current worth of 8 billion dollars (2% of global space economy) to 100 billion dollars by 2040.

Revised FDI guidelines

FDI in %	Allowed for
74%	Satellite manufacturing and operation
49%	Launch vehicles, spaceports, and associated systems.

100%	To manufacture components and systems/sub-systems for satellites, ground, and user segments
Investments beyond the specified limits is allowed via government route	

What are the private players that are involving in space sector?

Private players	About	Successful outcomes
Dhruva space	• It is in Hyderabad which is specialized in designing customized satellites, ground stations, and launch services. • It manufactures satellites for missions in Low Earth Orbit (LEO) and beyond, orbital deployers, ground stations, antennas, and space operations command systems.	• Successfully tested and launched its indigenously developed satellite orbital deployers in ISRO's PSLV missions. • Currently building a spacecraft manufacturing facility in Hyderabad after securing funding
Skyroot	• It is in Hyderabad which focuses on manufacturing space launch vehicles. • It is developing and testing three space vehicles and various rocket engines.	• It became the first private Indian startup to successfully test liquid propulsion engines and a 3D printed cryogenic engine. • It launched India's first private rocket, Vikram-S, in 2022.
Agnikul cosmos	• It is incubated at Indian Institute of Madras. • It specializes in manufacturing space launch vehicles. • It partenerd with ISRO for technology support.	• It tested its single-piece 3D printed engine Agnilet in 2022. • It inaugurated India's first private mobile launchpad and mission control center. • It raised 11 million dollars in Series A funding and established the Agnikul Rocket Factory–1.
Manastu Space	• It is a Mumbai based space startups that specializes in green technology for space, manufacturing green propulsion systems and debris collision avoidance systems for CubeSats. • Offers in-space services such as refueling satellites and removing expired satellites from orbits to reduce space debris.	• It has signed deals with UK and French startups. • In 2023, the company raised 3 million dollars in pre-series A round funding led by Indian Angel Network.

To know more about privatisation of space sector click here

References

1. The Hindu- India private sector boom policy
2. NSIL- What we do
3. ISRO- Antrix corporation

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