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The Big Picture: ISRO-New Frontiers

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The **Indian Space Research Organisation (ISRO)** is working on building smaller launch vehicles that can carry satellites weighing 500 to 700 kg to up to 500 kilometers from the earth's surface. ISRO chief K Sivan said the demand for small satellites is growing and urged the industry to come forward and share ISRO's load as the agency would need 50-60 such vehicles every year. He said the agency is planning to open incubation centers at six places in the country to encourage innovation and startups.

Meanwhile, India and France signed an agreement to collaborate on Gaganyaan, ISRO's first human space mission. French space agency CNES and ISRO signed agreements in the field of space medicine, astronaut health monitoring, life support,

radiation protection, space debris protection, and personal hygiene systems. The decision to work together in the field of space was taken during French President Emmanuel Macron's visit to India in March.

Role of Industries

- Indian space programme has a massive contribution from the industries. **Up to 50% of the satellites and 70% to 80% of rockets are made by industrial sector of India.**
- **IRNSS 1H and IRNSS 1I both were made by Alpha Design Technologies Private Limited.**
- ISRO also wants to capture the growing market in launching foreign satellites and therefore it wants to double its launching capacity from present 8 to 20. Hence, to realize such phenomenal increase in its capacity it has to share the burden with the private industry.
- However, the biggest hurdle is that India doesn't have a proper legislation which can boost the manufacturing industry concerned with space.
- However, the **final launch will still remain with ISRO**, as satellite launching is considered as a strategic asset.
- Till now it is ISRO which strictly followed the rigid specification that ensured safety, security and overall quality.
- If the responsibility is given to the private industry for manufacturing, it has to categorically make sure about the specifications. Therefore, another challenge will be about the quality of manufactured goods.

Need For Smaller Satellites

- Heavy satellites like the communication satellites that weigh thousands of kilograms have become the mainstay of the space industry, but, nowadays smaller satellites are becoming an attractive option for many countries and business houses.
- Smaller satellites are launched for some specific purposes such as monitoring climate change issues, research, and development, etc. And this is where the new startups are featuring in and contributing immensely.
- ISRO features in the scenario where there are a lot of foreign companies who want to launch small satellites and minisatellites. Recently ISRO launched 104 satellites which became a record.
- However, privately launched satellites in India are still not a reality.

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- **Out of the five United Nations treaties relating to activities in outer space, India has ratified four and signed one.**
 - The "Outer Space Treaty"
 - The "Rescue Agreement"
 - The "Liability Convention"
 - The "Registration Convention"
 - The "Moon Agreement"
- The only legal regime governing the space industry in India is determined by the Constitution of India, 1950, the Satellite Communications Policy, 2000 and the revised Remote Sensing Data Policy, 2011. There is no separate space law.
- Article 51 and Article 73 of the Constitution foster respect for international law and treaty obligations in consonance with the Vienna Convention of the Law of Treaties, 1968 and strives for the promotion of international peace and security.

Why India needs a robust space law?

- **In India, the only government entity has hold over the space sector, i.e., ISRO.** Outsourcing only involves a certain degree of supply and manufacture of components by some commercial industries. Outsourcing would ultimately help reduce ISRO's time spent on satellite and launch vehicle building and let it focus research to enhance India's sorties in outer space.
- A detailed and **user-friendly framework would ensure smooth functioning** between ISRO and the private sector and avoid conflict among them and protect the operator and the government when any liability arises in the case of damage.
- The advent of commercialisation, calls for revising of domestic laws, such as the laws of contract, transfer of property, most importantly, **intellectual property rights, to contemplate space-related issues.**
- As a signatory to the Convention on International Liability for Damage Caused by Space Objects, 1972, India is liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight. However, with no national space law and policy, so, it is tough for India to determine the quantum of damages owed.
- **It's the time for domestic laws to get geared up towards regulating the reuse of launch systems and 'space junk'.**

Way Forward

- First and foremost, the **private sector should be involved** in research and development.
- Launching vehicles and rockets manufacturing can be allocated to private industry.
- The governance part of the whole process should be given to ISRO.

- Appointment of **efficient officers and proper regulation** would further build the prospect of this industry.