

4. New Space Age- ISRO

Prelims Level: Space Technology

Mains Level: GS-III Awareness in the Fields of IT, Space, Computers, Robotics, Nano-Technology, Bio-Technology and Issues Relating to Intellectual Property Rights

Context:

- The Indian Space Research Organisation (ISRO) has recently announced that, nearly 20 space missions will be launched in the near future.

About ISRO's planned Space Projects:

- The government has proposed a manned space flight (Gaganyaan) before 2022. ISRO would be undertaking many prolonged space exploration projects and sending many astronauts into space.
- It has declared its intention to build a permanent space station for itself, possibly in the next five to seven years.
- Aditya-I will be India's first solar mission scheduled to be launched in 2020. Similar project is planned for Venus.

Development of Private Capacity in Space:

- A policy framework to enable private participation in this sector would have to be formulated by the government.
- A strong private sector in space will help India to tap into this lucrative commercial space launch market.
- Globally, Small satellite revolution is underway, that are expected to be launched between 2020 and 2030.
- Space tourism is one of the several opportunities that Indian businesses may be keen to explore.

The Increase in competitiveness over Space:

- Singapore is offering itself as a hub for space entrepreneurship based on its equatorial location, availability of skilled manpower and legal environment.
- New Zealand is positioning itself as a location for private rocket launches. China has changed its rules to allow private commercial space activity.
- ISRO has been a genuine global pioneer of aero spatial cost compression on several fronts. Cost-effectiveness has given the agency a distinct edge in the commercial arena of satellite launch services.

The Benefit of Becoming a Space Power:

- Space is emerged as the fourth arm of the country's defence setup. Its power has the ability to use space while denying reliable use to any foe.
- With US, China and Russia already in pursuit of becoming a Space power, India will need to equip itself appropriately to meet emerging security challenges.
- India, has only a handful of military satellites in operation, compared to over 40 civilian ones. Our first dedicated military satellite was launched only in 2013.
- Recently, Mission Shakti has demonstrated India's capability to target enemy satellite.
- Newly instituted DSA (defence space agency) will be supported by a defence space research organization (DSRO) has the mandate to create weapons to "degrade, disrupt, destroy or deceive an adversary's space capability".

Way Forward:

- India needs to structurally separate the regulatory, commercial and scientific research elements of the space programme.
- It needs a new space policy, that aims to harness space as a growth sector for the economy, attracts private investment and creates jobs, even as it promotes scientific breakthroughs and helps leapfrog developmental challenges.
- It must have reliable and accurate capabilities to track space objects, from debris and spacecraft to celestial bodies.
- It must acquire a minimum, credible capacity across the various types of space weapons, physical, electronic and cyber to have an effective space defence.
- There is need to establish an independent regulator that governs both ISRO and new space operators on a level playing field.
- The Funding on Space Research and development must be enlarged and ISRO & private research institutions should work be encouraged to work in tandem.
- The developments in Artificial Intelligence (AI) and big data analytics have led to the emergence of the new space age, India's space programme needs to take two additional leaps i.e. foster a private space industry and start work on a space force.
- Losses in space missions can seriously impact the future of cooperation between space powers. Therefore, in the new space age, India's space policy must acquire a new seriousness that can tap into the creative energies of private entrepreneurs and bolster India into a space power.