



Potential of India's geospatial sector

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**(Mains GS 3 : Achievements of Indians in Science & Technology;
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Context:

Last year, new guidelines took effect to completely de-regulate the geospatial sector for Indians so after a year, it is time to look back and assess its impact and identify the bottlenecks so that the full potential of the geospatial sector can be realised.

Yet to percolate:

- India has a robust ecosystem in geospatial, with the Survey of India (Sol), the Indian Space Research Organisation (ISRO), remote sensing application centres (RSAC)s, the National Informatics Centre (NIC), and all ministries and departments, using geospatial technology.
- Since the declaration of the guidelines, there has been a lot of hype and hoopla about the geospatial sector.
- Experts project the geospatial market to some ₹1 lakh-crore by the year 2029 with 13% Compound Annual Growth Rate (CAGR); consequently, the geospatial sector, which was considered taboo by investors, is seeing new interest.
- However, the full benefits have yet to percolate to the public; neither is there much contribution to the nation's GDP.

Understanding the issues:

- The most prominent hurdle is the absence of a sizable geospatial market in India as there is no demand for geospatial services and products on a scale linked to India's potential and size.
- This is mainly due to the lack of awareness among potential users in government and private.
- The other hurdle has been the lack of skilled manpower across the entire pyramid and there are still no ready-to-use solutions especially built to solve the problems of India.
- The unavailability of foundation data, especially at high-resolution, is also a constraint as the lack of clarity on data sharing and collaboration prevents co-creation and asset maximisation.

Not aware:

- The experience has been that despite one year since the new guidelines came into effect, users are still not fully aware of things.
- It is clearly understood that these issues cannot be resolved overnight and that the formulation of guidelines alone is not enough.
- The inertia and the mindset due to decades of restrictions will be difficult to shrug off as the restrictive data policy of yesteryears was the root cause of many of these limiting factors.

Make a leapfrog:

- India needs to be aggressive to make a leapfrog; therefore, special attention is required as far as this sector is concerned.
- First and foremost is the need to publish the entire policy document and make government and private users aware of things.
- The data available with government departments should be unlocked, and data sharing should be encouraged and facilitated as this will only be possible through an open data sharing protocol.
- The Government needs to invest in developing standards and must mandate the adoption of standards.
- There is a need to establish a geo-portal to make all public-funded data accessible through data as a service model, with no or nominal charge. Most important is to inculcate the culture of data sharing, collaboration and co-creation.

Generate foundation data:

- While different types of data will be produced on a project-to-project basis, there is a need to generate foundation data across India.
- This should include the Indian national digital elevation model (InDEM), data layers for cities, and data of natural resources.

- Solution developers and start-ups should be engaged to build solution templates for various business processes across departments.
- Local technology and solutions should be promoted, and competition should be encouraged for quality output.

Geospatial data cloud:

- As the new guidelines prevent high-accuracy data being stored in overseas clouds, there is a need to develop a geospatial data cloud locally and facilitate a solution as service.
- For instance, the Ministry of Environment, Forest and Climate Change can host a complete suite of Geographic Information Systems (GIS) applications like working plan, wildlife corridor mapping, social forestry, etc.
- National organisations like Sol and ISRO should be entrusted with the responsibility of regulation and the projects related to the nation's security and scientific significance.
- These organisations should not compete with entrepreneurs for government business as the latter remains in a disadvantageous position.

Academic programme:

- Though India has many who are trained in geospatial this is mostly either through a master's level programme or on-job training thus unlike the West, India lacks a strata of core professionals who understand geospatial end-to-end.
- India should start a bachelor's programme in geospatial also in the Indian Institutes of Technology and the National Institutes of Technology Besides these, there should be a dedicated geospatial university.
- Such programmes will propel research and development efforts which are crucial for the development of technologies and solutions locally.

Conclusion:

Geospatial technology and geospatial knowledge-base are going to make a significant change in the way India moves forward in adopting this technology.