



## Geospatial Sector

This editorial is based on [“Zooming in on The Potential of India’s Geospatial Sector”](#) which was published in The Hindu 15/02/2022. It talks about the Geospatial Sector of India.

**For Prelims:** Geospatial sector of India, Remote Sensing, GIS (Geographic Information System), GNSS (Global Navigation Satellite System), 3D modelling, New guidelines for the Geo-Spatial Sector in India.

**For Mains:** Geospatial sector of India - Challenges and Opportunities, Significance of Liberalisation in the Geospatial Sector.

February 15, 2021 can be regarded as a watershed moment when new guidelines took effect to completely de-regulate the [geospatial sector](#) for Indians.

India has a robust ecosystem in geospatial, with the Survey of India (SoI), [ISRO](#), remote sensing application centres (RSAC)s, and the [National Informatics Centre \(NIC\)](#) in particular, and all ministries and departments, in general, using geospatial technology.

However, the lack of awareness within the public and private sector is one of the major roadblocks to harnessing full benefits of the sector.

## Geospatial Sector of India

### What is Geospatial Technology?

- Geospatial technologies is a term used to **describe the range of modern tools contributing to the geographic mapping** and analysis of the Earth and human societies.
  - The term 'geospatial' refers to a collection of technologies that help to collect, analyse, store, manage, distribute, integrate, and present geographic information.
- Broadly, it consists of the following technologies:
  - [Remote Sensing](#)
  - [GIS \(Geographic Information System\)](#)
  - [GNSS \(Global Navigation Satellite System\)](#)
  - **Survey**
  - [3D modelling](#)
- It **enables better measurement, management, and maintenance of assets, monitoring of resources** and even providing predictive and prescriptive analysis for forecasting and planned interventions.

### What was the Liberalisation of the Geospatial Sector?

- The Ministry of Science and Technology, in February 2021, released [new guidelines for the Geo-Spatial Sector in India](#), which deregulated the previous protocol and **liberalised the sector to**

**a more competitive field.**

- The policy **granted open access to the geospatial data and services**, including maps, **for all Indian entities**, with the exception of sensitive defence or security-related data.
- Indian corporations and innovators are **no longer subject to restrictions** nor do they require prior approvals before generating or updating digital geospatial data and maps within the territory of India.
- There is also **no requirement for security clearance, licence** or any other restrictions.

### What is the Significance of Revised Guidelines?

- The declaration of the guidelines followed by the mention of geospatial in the [Union Budget 2022-23](#) have created the necessary hype about the sector.
- The growth in the net-worth of the sector has been projected to be about **₹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.
- The liberalisation of the guidelines has brought in a **response from the private industry which is no more apprehensive** and conservative like it was in previous years.

### What are the Underlying Challenges?

- Among the most prominent hurdles is the **absence of a sizable geospatial market** in India.
  - There is **no demand for geospatial services** and products on a scale linked to India's potential and size.
- This lack of demand is mainly a consequence of the **lack of awareness among potential users** in government and private sectors.
- The other hurdle has been the **lack of skilled manpower** across the entire pyramid.
- The **unavailability of foundation data**, especially at high-resolution, is also a constraint.
  - The **lack of clarity on data sharing** and collaboration prevents co-creation and asset maximisation.
- Additionally, there are still **no ready-to-use solutions** especially built to solve the problems of India.
- Though India has many who are trained in geospatial this is mostly either through a master's level programme or on-job training.
  - Unlike the West, **India lacks a strata of core professionals** who understand geospatial end-to-end.

### What Can Be The Way Forward?

- **Increasing Awareness:** India needs to be aggressive to make a leapfrog; special attention is required as far as the geospatial 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**.
  - The Government needs to **invest in developing standards** and must **mandate the adoption of standards**.
- **Availability of Data:** 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**.
  - 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.
- **Role of Start-Ups:** 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.

- **Localisation of Data:** 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.
  - The Environment Ministry can host a complete suite of [Geographic Information Systems \(GIS\) applications](#) like working plan, wildlife corridor mapping, social forestry, etc.
  - National organisations like **Soi and ISRO should be entrusted with the responsibility of regulation** and the projects related to the nation's security and scientific significance.
- **Academic Backing:** India should start a **bachelor's programme in geospatial** also in the Indian Institutes of Technology (IITs) and the National Institutes of Technology (NITs). 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

The geospatial sector in the country is rightly positioned for investment. However, clarity on the issues discussed and the creation of an enabling ecosystem are essential. By the time India celebrates the 10th anniversary of the liberalisation of this sector, it should have achieved the projected market volume and have Indian entrepreneurs stand out internationally.

### ***Drishti Mains Question***

Discuss the roadblocks to harnessing full benefits of India's geospatial sector and suggest measures to overcome these challenges.

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