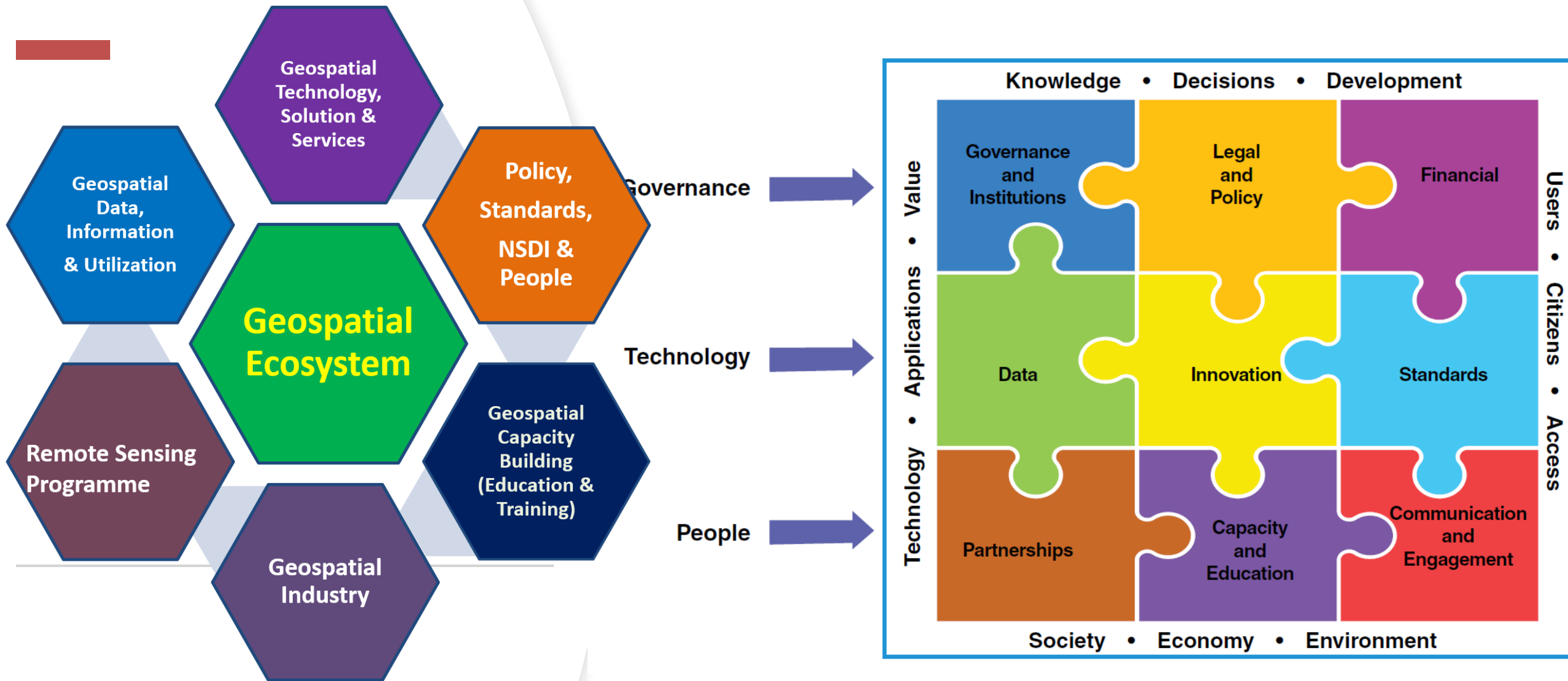


# India's Geospatial Ecosystem – An Overview



**Dr. DEBAPRIYA DUTTA**  
SCIENTIST "G" and Head  
SEED-SSTP and Assoc. Head  
NGP DIVISION,  
DEPARTMENT OF SCIENCE AND TECHNOLOGY.  
GOVERNMENT OF INDIA.  
NEW DELHI.



Aligning with Strategic Pathways of the UN-IGIF

# SP1: Governance and Institutions

- **Governance Model:** Geospatial Guidelines, 2021 – a strategic framework for a new way of thinking and working with Geospatial data
- **Leadership:** Formation of Geospatial Data Promotion and Development Committee (GDPDC) constituting representatives from all relevant departments & mandated to promote activities related to collection, generation, preparation, dissemination, storage, publication, updating and/or digitization of Geospatial Data.
- **Institutional Structures:** National Spatial Data Infrastructure (NSDI) has been established through a cabinet resolution in 2006.
- **Value Proposition:** Geospatial investments in India are being optimized and bring a harmonized approach of guaranteed geospatial products for the Government, Private Sector, NGOs, Civil Societies, and citizens.

## SP2: Legal and Policy

- Through **Geospatial Guidelines, 2021** and **Drone Rules, 2021**, India deregulated and liberated collection of Geospatial data, promoting privatization & giving a regulatory role to the government.
- **Draft Remote Sensing Policy, 2020, Draft Geospatial Policy, 2021 and the Draft Indian Satellite Navigation Policy, 2021** also promote geospatial industry and markets by enabling Ease of Doing Business.
- Several other policies in place that ensure safe storage, use and management of Geospatial data executed in the country.


# SP3: Financial

- Well-established financial models with central funding through annual budgets and projects

Annual Budget Estimates		
	2021-22	2022-23
<b>Department of Space</b>	\$1.75B	\$ 1.72B
<b>Ministry of Electronics and Information Technology</b>	\$ 1.22B	\$ 1.79B
<b>Department of Science and Technology</b>	\$ 760M	\$ 752.54M

- Large multilateral banks, like the World Bank, Asia Development Bank or Japan International Cooperation Agency also provide some funds for the large project's execution.
- Other than this, state governments also have budgets for the execution of projects that require Geospatial data and technologies.

# Indian Geospatial Market

  
Geospatial Economy  
**USD 2.8 Billion**

  
Employment  
**2,51,300**



Domestic Market  
**USD 1.1 Billion**



Government Sector  
**USD 0.9 Billion**

Private Sector  
**USD 0.2 Billion**

Export of Services  
**USD 0.9 Billion**



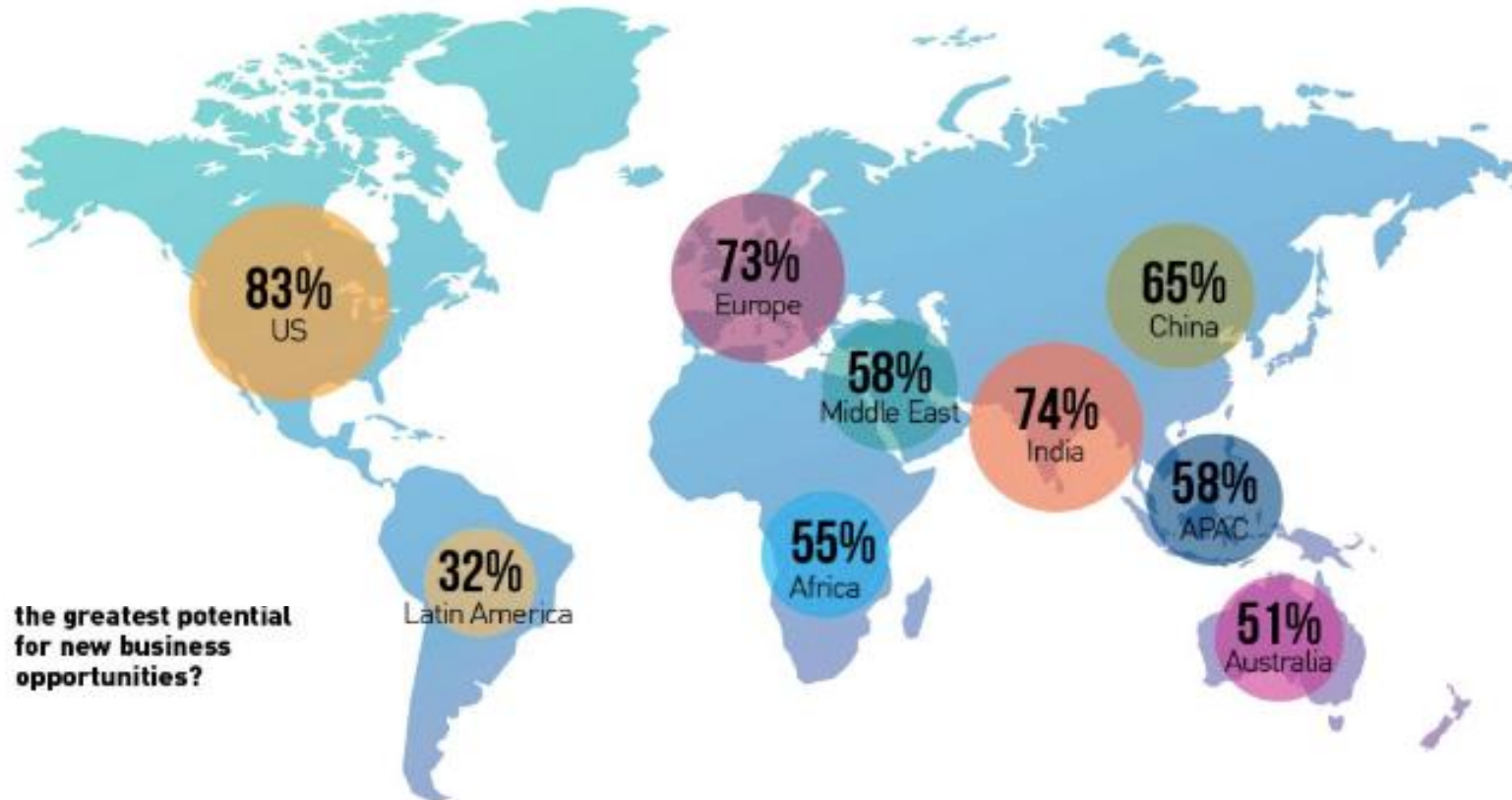
Government Expenditure  
on National Geospatial  
Agencies

**USD 0.9 Billion**



Source : Indian Geospatial Economy Report, 2018

## India - the Second most preferred market for global geospatial companies



Source : Geospatial World Magazine, Annual Edition , 2019.

# SP4: Data

- **National Data Sharing and Accessibility Policy (NDSAP)** facilitate access to Govt of India-owned shareable data and information in both human-readable and machine-readable forms.
- **Liberalized policies** made it mandatory for all data created using public funds to be made available for free by all these agencies.
- **NSDI** facilitates data access and cataloguing.
- **Data accessibility nodes** - data.gov.in (Gov's open data portal) Bhuvan (Indian Geo Platform of ISRO), Bhukosh (Geological Survey of India's portal), Bhoomi (Govt of Karnataka's land records portal), National Data & Analytics Platform (NDAP of NIIT Aayog) etc. along with State SDI Data Node services operational in 10 states.
- **India Geo-Portal** – a single window access mechanism of National Data Registry.



# SP5: Innovation

- **Innovative process changes** facilitating adoption of Geospatial data and technologies found in
  - SVAMITVA scheme by using drones for mapping village habitat areas
  - Unique collaborative models for National Mission for Clean Ganga
  - Breaking departmental silos with the launch of the PM-Gati Shakti, etc.
- **Accelerating ICT landscape** another boost to Geospatial sector – More no. of ICT companies, entrepreneurs, and innovators leveraging Geospatial innovations across sectors.
- Quality incubators, accelerator programmes, nationwide Geospatial technology challenges, and early-age tech support **enabling startup ecosystem.**

# SP6: Standards

- India supports the use and development of Findable, Accessible, Interoperable and Reusable (FAIR) data with geospatial standards for better interoperability of data, products, and services.
- **BIS and OGC** – primary institutions responsible for development and adoption of Geospatial Standards.

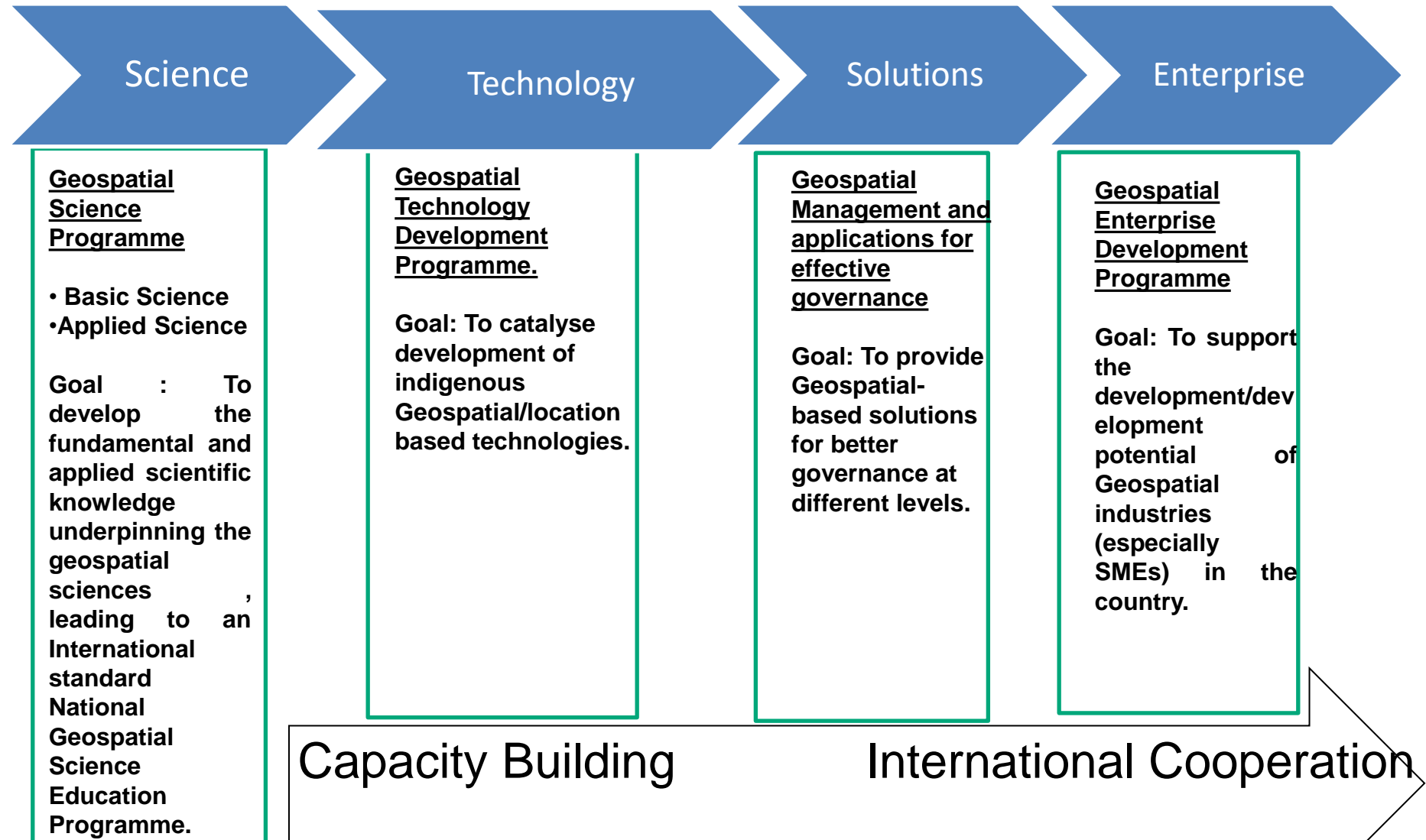
# SP7: Partnerships

- National programmes based on **cross-sectoral partnerships**
  - PM-GATI Shakti National Master Plan for Multi-modal Connectivity hinged on GIS solutions interlinking data of 16 ministries
  - SVAMITVA scheme a collaboration between Ministry of Panchayati Raj, Survey of India, National Informatics Centre and the private Geospatial and Drones industries
- Several other initiatives based on collaboration between various stakeholders, like NSDI, Bhuvan, India-WRIS, India Urban Observatory, etc.
- India also has strong **international partnerships** with CEOS, ISPRS, ICA, FIG, UN-GGIM, etc.

# SP8: Capacity and Education

- Several renowned institutions in the country offer graduate and post-graduate degrees in Geoinformatics, Remote Sensing, and Geospatial Technologies
- **National Education Policy (NEP) 2020** emphasizes inter-disciplinary education and a holistic approach across all sciences
- Other prominent institutes in India – IIST, IIRS, NIGST
- All major government organizations, the private industry, and civil society invest in Geospatial capacity development at various levels
- DST runs a **Geospatial training programme** since 2011 for academic faculty members, government officials and non-government organizations.

# National Geospatial Programme



# SP9: Communication and Engagement

- Key policy-making bodies – DST, DoS, and MoCA actively engage stakeholders for feedback on the relevance of the policies, their impact, and any other suggestions.
- Several industries and professional bodies, private companies, and government bodies organize regular round table meetings, brainstorming sessions, seminars, workshops, training, and outreach initiatives for technology adoption, and capacity development.
- Several journals and publications in the domain available in the country.

**THANK YOU!**

**Contact e-mail:  
ddutta@nic.in**