

Strategic Vision: Enhancing Geospatial Planning in Gram Panchayats

1. Strategic Vision

To transform all the Gram Panchayats into geospatially empowered and digitally enabled institutions, capable of making data-driven, transparent, and participatory decisions manifested by the use of geospatial and space-based tools, drone & satellite data, and digital platforms for gram panchayat development planning, asset maintenance and real-time monitoring.

2. Strategic Objectives

Objectives	Description
Spatial Empowerment	Ensure every Gram Panchayat has access to updated geospatial data and the tools to utilize it.
Capacity Building	Build local capacity to interpret and act on geospatial insights.
Institutional Integration	Embed geo-spatial planning into GPDP (Gram Panchayat Development Plans) and other flagship rural programs through enhancement of Gram Manchitra Platform, and Institutional Arrangements for exchange/sharing of space-based data, product, technology, methodology and API/services, as per requirements with Interface for GPs to requisition of specialized geographical information and obtaining it from State Remote Sensing Application Centres.
Interoperability & Standards	Align with India's National Geospatial Policy – 2022, ensuring interoperability, data standards, and security as well as mandate assigned to MoPR to capture Physical Infrastructure and Settlement & Building and Addresses (Lead Agency is Department of Post) Data in Rural Areas, Share data with PM Gati Shakti.

3. Priority Actions

A. Create large scale mapping framework for rural planning:

- **Short Term (0-2 years)**
 - Expand the Gram Manchitra spatial database by incorporating the Large-Scale Mapping (LSM) data from Haryana, Andhra Pradesh and Karnataka.
 - Provision of funds for creation of Geo-Spatial Cell with GIS resources at State/UT and District level for technical support and better utilization of Gram Manchitra in Gram Panchayats.
- **Medium-Term (2-5 years)**
 - Scaling up the Large-Scale Mapping for other States/UTs in India from other resources (Satellite/Drone Data)
 - Cover all GPs in aspirational districts and tribal areas using remote sensing and drone data where feasible.
 - Creation of 1m DEM (Digital Terrain Model) in collaboration with Sol
 - Use cases of SVAMITVA data for planning in Gram Panchayats
- **Feature Enhancements in Gram Manchitra Application:**

- Integrate layers such as land ownership (SVAMITVA), cadastral data (wherever geo-referenced), Village & GP boundary, watershed boundaries, transportation (Road, Rail network), housing schemes, etc.
- Create Panchayat-level information of assets and indicators.
- Integrate crowdsourcing tools to capture attribute that enrich village maps, contributing to better management.
- Enhance Spatial Analysis Tools: Expand the spatial analysis tools using the latest geospatial datasets and technologies like AI/ML.
- Peri-Urban Area Data integration from the NAKSHA Web GIS portal in Gram Manchitra.
- Integrate State/UT level GIS data of Gram Panchayats with Gram Manchitra.

- **Technology Roadmap:**

Enable mobile application access (with offline mode) for field officers to carry out various survey activities.

- Provide an open API and geospatial tool for use by multiple agencies.
- Creation of easily usable applications using Gram Manchitra and mobile-based game to generate interest.

B. Scale-Up of Geo-spatial Development Plans

- **Short-Term (0 – 2 years):**

- Scale up the initiative from 14 States (36 GPs) and spread across all the States/UTs of the country using a centralized and distributed model with planning institutions (e.g., SPAs, IITs, NITs).
- Develop model templates and toolkits based on learnings from pilot GPs.
- Provision of funds for creation of Geo-Spatial Cell with spatial planning experts at State/UT and District level for technical support and spatial planning in Gram Panchayats.

- **Medium-Term (2 – 5 years):**

- Re-purpose the State Application Centre to function as a provider of specialized geospatial data to interested Panchayats.
- Developing States/UTs capacity for geospatial development plan implementation.
- Integrating Panchayat geospatial development plans with Gram Manchitra.

C. Capacity Building and Knowledge Partnerships

- Partner with **NIC GIS, NRSC, ISRO, PM Gati shakti, Survey of India, National Centre for Rural Spatial Planning and Development (SPA-Bhopal), National Institute of Rural Development and Panchayati Raj SIRD & State Remote Sensing Application**
- **Centres** for:
 - Capacity Building in SIRD/PRITs (hardware/software).
 - Training of trainers (ToT) at the district/block level to disseminate the Gram

Manchitra application training for use in the planning, till the GP Level (Panchayat functionaries).

- Building Foundation Training Courses & Creation of a certified curriculum on “Geo-spatial Planning for Gram Panchayats”.
- Provisioning of Multi-Language support to State/UTs for Gram Manchitra training material.
- Deploy village-level “Panchayati Raj Associates” through internship programs from Planning Colleges for handholding the GPs.
- Community engagement in Mapping, Surveying and Planning activities .
- Monitoring through thematic mapping plan data and observed use of Gram Manchitra in GPs through Dashboards.
- Incentivization of Panchayats for early adoption of GIS interventions in planning process and implementation of spatial plans.
- Knowledge partnership for the exchange and sharing of space-based data, products, technologies, methodologies, and APIs/services, as per requirements, along with an interface for Gram Panchayats to requisition specialized geographical information.

D. Data Governance and Policy Alignment

- **Establish standardized protocols for Panchayat geospatial data:**
- Define resolution standards of Drone Data/Satellite Imagery, in line with Geospatial Policy (i.e. On-site spatial accuracy shall be one meter for horizontal or Planimetry and three meters for vertical or Elevation)
- Standardize Map Scale, Schema, and Symbols.
- Ensure security, privacy, and version control of spatial datasets.
- Open-data formats for non-sensitive datasets to enable innovation.

4. Key Strategic Recommendations

Policy & Governance

- Over the period 2025-2030, mandate Geospatial Data Integration into the **Annual GPDP Process**.
- Institutionalize a **National Rural Spatial Planning Mission (NRSPM)** under the Ministry of Panchayati Raj.
- **Funding envisaged for the implementation of the Spatial Plans**
Leverage convergence with:
 - Central Government & State Government Schemes, like MGNREGS, PMAY-G, Jal Jeevan Mission, Digital India Land Records, etc.
 - Enable CSR funds for localized digital mapping and community engagement.

- **Monitoring & Impact Evaluation**

Define KPIs such as:

- Percentage of GPs with geospatial development plans.
- Usage metrics of Gram Manchitra platform at Panchayat level.

5. Expected Outcomes (By 2030)

1. Empowered and trained Atmanirbhar Panchayat functionaries and elected

representatives utilizing the Gram Manchitra application for better decision-making through integrated SVAMITVA and other spatial data sets, supported by training materials available in regional languages; enhanced use in GPDP formulation.

2. Gram Manchitra made more user-friendly by incorporating multi-lingual options, introducing more use-cases and making the tool device independent; devising an app
3. GIS-training capability up to district level for PERs and Panchayat functionaries with open-source GIS Software for utilization of Gram Manchitra platform.
4. Creation of basemaps using high-resolution LSM data for Haryana, Andhra Pradesh and Karnataka for visualization on Gram Manchitra Portal.
5. Establishing institutional integration through standardized data-sharing by combining National and State/UT GIS databases.
6. In line with the National Geo-Spatial Policy, exchange of Geospatial data to PM Gati Shakti Platform, other Ministries and government platforms.
7. Scaling up the preparation and implementation of GP Spatial Development Plans to 250 Gram Panchayats and developing 3D analysis application in the next 5 years.
8. Creation of 1m DEM (Digital Terrain Model) in collaboration with Sol and in alignment with National Geospatial Policy.
9. Standardization and Uniformed Data Schema and Symbolization of Geospatial data.