Project 1: Monitoring of Infrastructure Facilities for Judiciary Using Geospatial Technology – Nyaya Vikas Project for Ministry of Law and Justice

Nyaya Vikas is a geospatial g-Governance initiative developed by RRSC-North, NRSC for the Department of Justice, Ministry of Law and Justice, aimed at monitoring judicial infrastructure projects across India. The system includes a mobile app and Web GIS portal for tracking the progress of over 2,500 projects under a Centrally Sponsored Scheme. Phase III MoU was signed in Oct 2024, following the successful completion of Phase I & Phase 2. As part of capacity building, 25 training programs were conducted, training nearly 1,500 state officials. Nyaya Vikas exemplifies the integration of geospatial technology in public infrastructure governance.
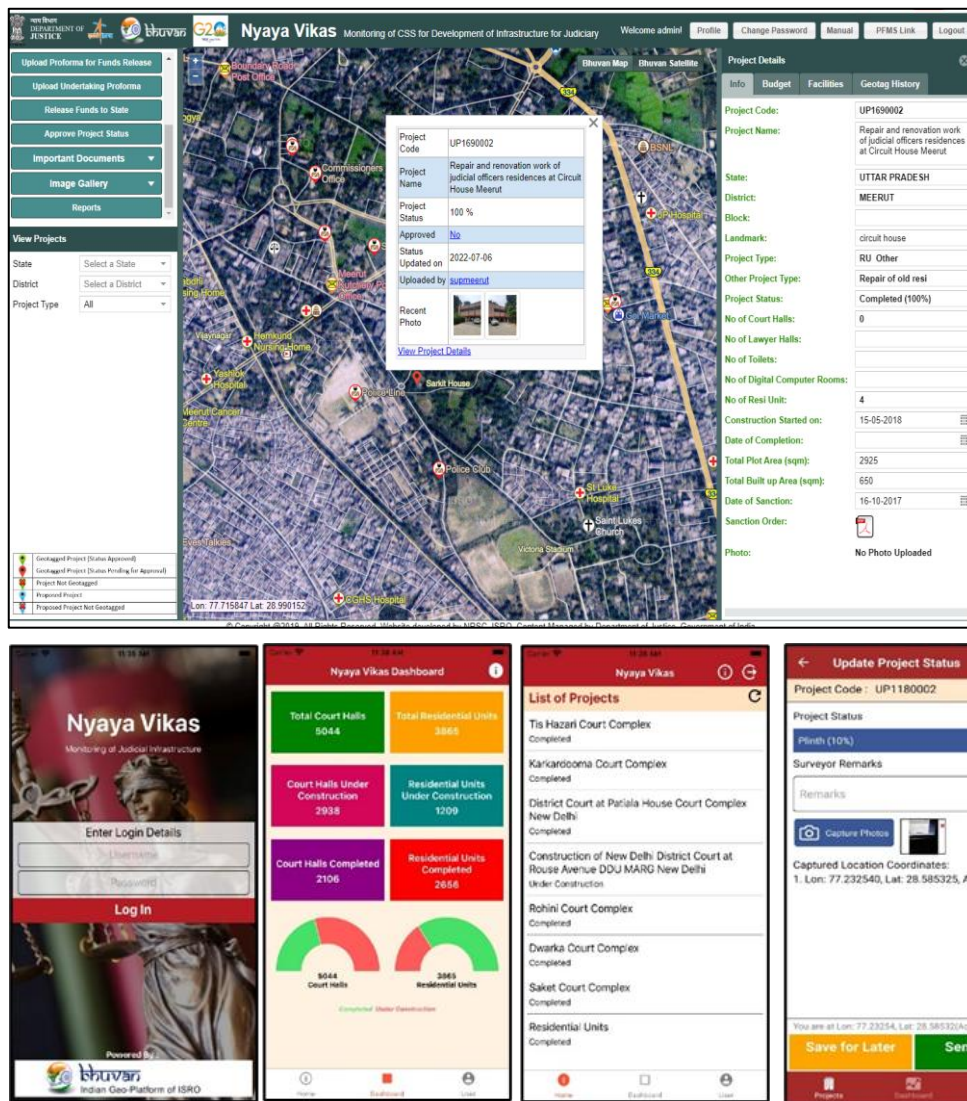

Figure: Nyaya Vikas portal for monitoring the status of Judicial infrastructure projects
https://bhuvan-nyayavikas.nrsc.gov.in

Project 2: SDSS for Managing Transmission Towers of Power Grid Corporation of India Limited (POWERGRID) Ltd

RRSC-North, NRSC has signed an MoU with POWERGRID and initiated the development of a Spatial Decision Support System (SDSS) to enhance monitoring and management of transmission infrastructure using satellite data. The system aims to mitigate risks from natural disasters and vegetation encroachment by enabling real-time monitoring of vulnerable tower locations. A Proof of Concept will demonstrate satellite-based monitoring of tall vegetation within the Right of Way (RoW). Capacity building and technology transfer will empower POWERGRID officials to effectively use the system, strengthening the resilience of India's power transmission network.

Figure: MoU signing for development of SDSS for Managing Transmission Towers of POWERGRID

Project 3: Postal Digital Address Code

The Department of Posts (DoP), Ministry of Communications, is working towards the development of a Digital Public Infrastructure (DPI) for a standardized, geo-coded addressing system in India. One of the central components of this digital address ecosystem is a national-scale grid, known as Digital Postal Index Number (DIGIPIN), which is used to assign a unique 10-digit alpha-numeric code to a ~ 4m x 4m location. The Dept. of Posts partnered with NRSC under the Postal Digital Address Code (PDAC) project wherein RRSC-N is tasked with improvement in DIGIPIN design, development of PDAC, and their use-cases for different sectors.

Towards this, NRSC provided technical suggestions for refining existing DIGIPIN framework which was originally developed jointly by DoP and IIT-Hyderabad. The final DIGIPIN grid aligns with SoI Toposheet Indexing System (1:50K scale) while enacting the original factors mooted for its development. Currently, RRSC-North is working towards an algorithm for PDAC generation for providing unique identity to each address. Additionally, development of mobile and web applications for collection of address attributes at field and project monitoring, respectively, are in progress. The project also includes training and capacity building of DoP officials, along with transferring technology to ensure smooth implementation and future operations.

Figure: MoU Signing between NRSC and Dept. of Posts, Ministry of Communications on 22nd August 2024

Project 4: Mobile Application for House Hold (HH) Survey- Gram Panchayat Spatial Development Planning (GPSDP)

Ministry of Panchayati Raj launched a pilot project on Gram Panchayat Spatial Development Planning (GPSDP), covering 34 Gram Panchayats across 12 states. RRSC-North, NRSC in collaboration with other ISRO centres and academic partners, took the lead in implementing this initiative. As part of the project, RRSC-North developed a mobile app to carry out household-level surveys, initially featuring 12 forms with 175 data fields.

In response to further requirements from the Ministry, an upgraded version of the app with 16 forms and 250 attributes was developed in 2024 and officially handed over to MoPR. Notably, the app has also been granted a copyright, recognizing its innovation and original design. The data collected through the app is accessible on the Bhuvan Panchayat portal, providing tools for visualization, analysis, and integration into planning processes. By enabling better data-driven decision-making at the grassroots level, this effort marks a major step forward in strengthening local governance through geospatial technology.
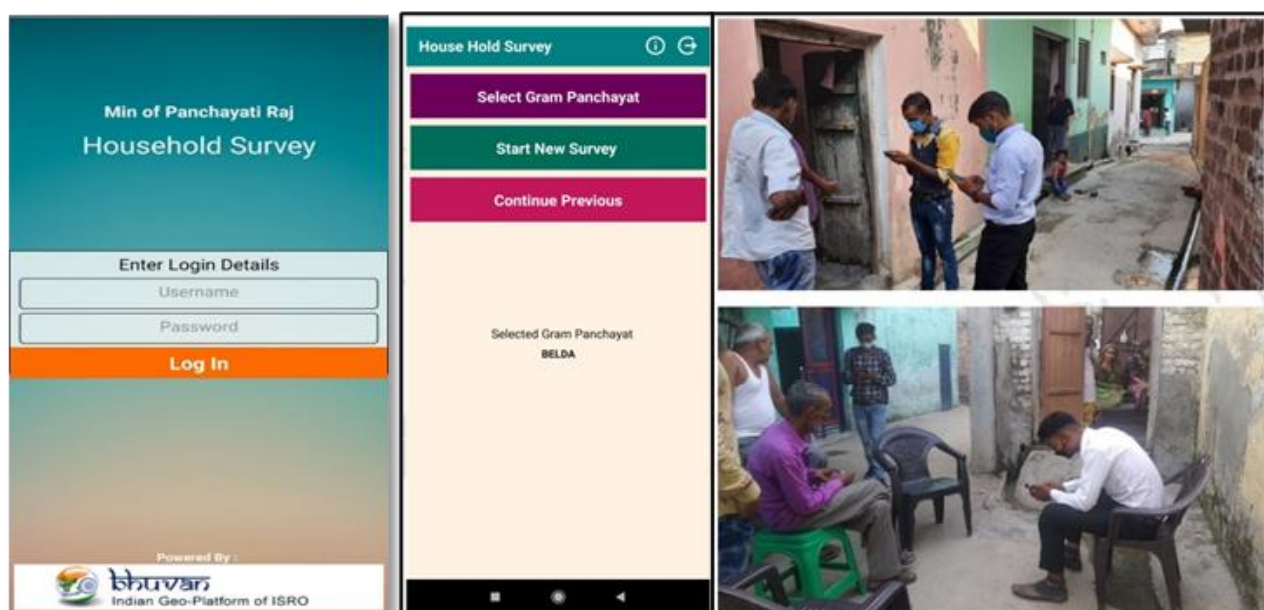

Figure: GPSDP Mobile Application
https://bhuvanpanchayat.nrsc.gov.in/gpsdp/index.html