Digital India Land Records Modernization Programme
Standardizing Land Governance of India

57TH PLENARY MEETING OF ISO/TC 211
GLOBAL SEMINAR, STANDARDS IN ACTION

INDIA HABITAT CENTRE, NEW DELHI
06 DEC 2023

SONMONI BORAH, IAS
JOINT SECRETARY
GOVERNMENT OF INDIA
INDIA at a Glance

Geographic Area: 3.28 Million sq.km
Population: 1.4 Billion
GDP: $3.732 trillion

Federal Structure:
28 States and 08 Union Territories
Administrative Hierarchy

Government of India

- State Government
  - 28
- Union Territory Administration
  - 08

- Divisions
  - 102

- Districts
  - 785

- Blocks (Tehsils)
  - 7256

- Urban Local Bodies (ULBs)
  - 4867

- Villages
  - 6,57,455
Department of Land Resources, MoRD
Government of India

VISION

• To develop an appropriate integrated land information management system, which will inter alia improve real-time information on land, optimize use of land resources and assist in policy/planning

MISSION

• To put in place effective agrarian reforms, including an efficient land use policy, and a transparent Land Records Management System (LRMS) with the aim of to build an Integrated Land Information Management System (ILIMS). This system of integrated land information management will ultimately yield into security of tenancy to citizen, reduced land disputes, simplified procedure for transfer of properties title, fraudulent free landed properties transactions, etc.

FUNCTIONS

• Guide and facilitate States to modernize land record management & build up a land information system
• Facilitate States efforts to usher in conclusive titling system
• Administration of Land Acquisition Act, 1894 (1 of 1894) and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and matters relating to acquisition of land for purposes of the Union and Registration Act, 1908
• Facilitate adoption of policy for Rehabilitation & Resettlement of displaced people
• Land reforms, land tenure, land records, consolidation of holdings and other related matters
• Land - *finite natural resource* – Not only main source of livelihood of majority of rural population, but also connected with their pride, emotions and socio economic value

• Various welfare services and benefits of *government schemes* primarily depend on land records even to certify a person landless

• To avail *services/benefits* based on land rights, and also for transaction of land (Sale/purchase/mutation etc.) a prospector has to visit various office / places

• *Single source* of authentic information about land (encumbrances, disputes etc) required
Land, Land Records and Digitization  (Contd.)

- Land Administration and management is *diverse* - language, culture, regions, topography, nomenclature, socio-economic status
- Inter-sectoral/departmental/services *significance* (Revenue, Registration, Banks, Courts etc.)
- In this backdrop, *digitisation of land records* with accurate and updated information and its easy online access to the public becomes very important
- Though land and its management (Entry Nos. 18 and 45 of State List) fall in the domain of the States, Central Government through DILRMP is extending financial and technical support to States/UTs for digitisation of land records
Historical Legacy and concerns:
Different practices of land records management system with asymmetrical practices, un-surveyed records and measurement units. Indian States and Societies have different customary laws, different property recording system, hill region and especially North Eastern Region have different land governing system like traditional village chiefs, different collectively land owned by clan and mixed type of ownership, different land record formats, different private and communal land records administration.
Journey Milestones

- Manual
- Computerization
- Digitization
  - ROR integration with Cadastral Map/FMB
  - SRO Integration with Land Records
- Georeferencing
- GIS Ready Land Governance
Digital India Land Records Modernization Programme (DILRMP)
DILRMP: Background

• Erstwhile NLRMP approved by Cabinet on 21.8.2008 as a Centrally Sponsored Scheme.

• Later revamped under the Digital India Initiative; renamed as Digital India Land Records Modernization Programme (DILRMP).

• Central Sector Scheme w.e.f. 01/04/2016 (100% funding by Govt. of India)

• Programme extended up to March, 2026.
Mission

• Pan-India digital initiative to integrate land information and management systems, to empower the citizens of India, irrespective of caste, creed, religion, region, rural or urban, poor or rich, farmers or labourers or entrepreneurs, so on and so forth, through the benefits of computerization & digitization of land records in the first place.

• To achieve optimal service delivery by way of integration with several services/agencies/schemes/programmes under various Ministries of Government of India and States/ UTs.

• To develop an appropriate integrated land information management system, which will inter alia improve real-time information on land, optimize use of land resources and assist in policy/planning.
DILRMP and Its Objectives

To develop a modern, comprehensive and transparent Integrated Land Information Management System in order to:

- Prevent fraudulent & benami property transactions
- Enhance Ease of Doing Business
- Increase ease of living for citizens
- Provide all land related information at one place
- Share information among different organization/agencies
- Minimise physical interface of citizen with officials for availing services in land governance through integration
Digital India Land Records Modernization Programme (DILRMP) targets to create a Modern, Transparent & Integrated Land Information Management System for Land Governance for ensuring Ease of Living for citizens and Ease of Doing Business.

- **31.98 crore** Record of Rights (RoRs) computerized in 6.57 Lakh Villages (95.04%)
- **1.96 crore** Cadastral Maps/FMBs digitized in 6.57 Lakh Villages (80.18%)
- **4.50 Lakh** Villages RoRs linked to cadastral map (68.54%)
- **3.22 Lakh** Villages Cadastral Maps/FMBs georeferenced (49.00%)
- **4.16 Lakh** Villages have access to digitally signed RORs through online/CSCs/Kiosks (63.32%)
- **5050** Sub Registrar Offices Computerized (94.68%)
- **4590** Registration offices integrated with land records/revenue offices (86.05%)

(As per DILRMP MIS)
2nd Generation Reforms in Land Governance in India
Bhu-Aadhar or Unique Land Parcel Identification Number (ULPIN)

- This is a 14 digits – Alpha–numeric unique ID for each land parcel based on Geo referenced Geo-coordinates of vertices of the parcel.
- This is of international standard, complies with Electronic Commerce Code Management Association (ECCMA) standard and Open Geospatial Consortium (OGC) standard.
- Based on general geometry of boundary principle.
- A new alpha-numeric number is generated at partition of parcels.
- Technical architecture of ULPIN is compatible with any open source software applications of geographical location.
- It is displayed with / or without geo coordinates based on security protocol and sensitivity.
- Unique number can be generated for multiple units of a single property.
Bhu-Aadhar or Unique Land Parcel Identification Number (ULPIN)

• Implemented in 27 States/UTs viz. Andhra Pradesh, Jharkhand, Goa, Bihar, Odisha, Sikkim, Gujarat, Maharashtra, Rajasthan, Haryana, Tripura, Chhattisgarh, Jammu & Kashmir, Assam, Madhya Pradesh, Nagaland, Mizoram, Tamil Nadu, Punjab, Dadra and Nagar Haveli & Daman and Diu, Himachal Pradesh, West Bengal, Uttar Pradesh, Uttarakhand, Kerala, Ladakh and Chandigarh
Benefits of ULPIN

- Standardization of Cadastral Data across States/UTs
- Provides an open, transparent and efficient process for the development, maintenance and distribution of electronic commerce codes over the internet
- A link of all property transactions gets established
- Sharing of land records data across various stakeholders
- Unique Number, no duplicity
- Sharing of land records data across departments, financial institutions and all stakeholders
- Cross validation of land records data across departments through APIs becomes seamless
- Delivery of citizen services of land records through single window,
- Enforce uniqueness of all transactions, up-to-date land records, auto-update on Registration / mutation
## Implementation Status : ULPIN or Bhu-Aadhar

<table>
<thead>
<tr>
<th>Status</th>
<th>States/UTs</th>
<th>Total Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolled Out</td>
<td>Andhra Pradesh, Jharkhand, Goa, Bihar, Odisha, Sikkim, Gujarat, Maharashtra, Rajasthan, Haryana, Tripura, Chhattisgarh, Jammu &amp; Kashmir, Assam, Madhya Pradesh, Nagaland, Mizoram, <strong>Tamil Nadu</strong>, Punjab, Dadra and Nagar Haveli &amp; Daman and Diu, Himachal Pradesh, West Bengal, Uttar Pradesh, Uttarakhand, Kerala, Ladakh and Chandigarh</td>
<td>27</td>
</tr>
<tr>
<td>Pilot</td>
<td>Karnataka, Puducherry, Andaman &amp; Nicobar, Manipur, Delhi, Telangana</td>
<td>6</td>
</tr>
<tr>
<td>Under Process</td>
<td>Arunachal Pradesh</td>
<td>1</td>
</tr>
<tr>
<td>Yet to Take Up</td>
<td>Meghalaya and Lakshadweep</td>
<td></td>
</tr>
</tbody>
</table>
1. Regular parcel of land
2. Irregular land parcel
3. Embedded plots

C7JPKQAF3754H0

C8RAQGF8934H0
# ULPIN or Bhu-Aadhar in Madhya Pradesh

## कार्यक्रम

<table>
<thead>
<tr>
<th>प्रमाण: ब्रजक</th>
<th>पदवी: इकाना/सुनामा</th>
<th>तालिका: वेदनिका</th>
<th>वर्ष: 2023-2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>भूमि के भाग की पुरुषित आईडी</td>
<td>भूमि के भाग का प्रकार (सर्वक्षेत्र संख्या/व्याख्या संख्या)</td>
<td>भू-विधि परिवर्त्तन का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता</td>
<td>कार्य के अंतिमकाल</td>
</tr>
<tr>
<td>1. क्षेत्रवाणि (हेडेंपर्स/वर्ण मीजर में)</td>
<td>2. भूमि उपरोक्त विवरण द्वारा निर्धारित किया गया है</td>
<td>3. भू-संख्या/भू-व्याख्या (र. तौ)</td>
<td>कार्य के आयुक्त</td>
</tr>
<tr>
<td>1. भूमिसंख्या का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता</td>
<td>2. ग्रामस्थीय भूमिका प्रकाशन</td>
<td>3. भूमि पर विवरण का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता</td>
<td>कार्य के अंतिमकाल</td>
</tr>
<tr>
<td>4. भूमि के भाग की पुरुषित आईडी</td>
<td>5. भूमि पर विवरण का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता</td>
<td>6. भू-विधि परिवर्तन का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता</td>
<td>कार्य के अंतिमकाल</td>
</tr>
<tr>
<td>7. क्षेत्रवाणि</td>
<td>8. भूमि के भाग का प्रकार (सर्वक्षेत्र संख्या/व्याख्या संख्या)</td>
<td>9. भूमि के भाग का प्रकार (सर्वक्षेत्र संख्या/व्याख्या संख्या)</td>
<td>कार्य के अंतिमकाल</td>
</tr>
<tr>
<td>10. संख्या 10</td>
<td>11. संख्या 11</td>
<td>12. संख्या 12</td>
<td>कार्य के अंतिमकाल</td>
</tr>
</tbody>
</table>

## Specimen Copy

<table>
<thead>
<tr>
<th>वर्तमान संख्या</th>
<th>नाम का अर्थ</th>
<th>क्षेत्रवाणि</th>
<th>प्रमाणित संख्या</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006055363</td>
<td>5/22 (S) 6</td>
<td>0.7250 इकॉड़ीय</td>
<td>यह जमीन सयरा है</td>
</tr>
<tr>
<td>81LRSJDA86GBH0</td>
<td>5/22 (S) 6</td>
<td>0.7250 इकॉड़ीय</td>
<td>यह जमीन सयरा है</td>
</tr>
</tbody>
</table>

## Notes

- कार्यक्रम का उद्देश्य: भूसंख्या, भूसंख्या संबंधित सूचना निर्धारित करना।
- कार्यक्रम के प्रारंभिक कदम: भू-संख्या के संबंधित सूचना को प्राप्त करना।
- कार्यक्रम के अंतिम कदम: संपूर्ण सूचनाओं का समय पर प्रकाशन करना।

## Contact Information

- जलवात: संपर्क 81LRSJDA86GBH0
- ईमेल: संपर्क 81LRSJDA86GBH0
- वेबसाइट: भू-विधि परिवर्तन का नाम, उसकी माता/पिता/पति का नाम तथा निवास का पता
Technologies used for Survey/Resurvey under DILRMP

a) Pure ground method using Electronic Total Station (ETS) and Differential Global Positioning System (DGPS): This model may be adopted for survey/re-survey of the areas for which the ortho-photos from aerial photography or high-resolution satellite imagery (HRSI) are not available, or it is decided to carry out the survey work using ETS+DGPS and without going for aerial photography or HRSI.

b) Hybrid methodology using aerial photography and ground truthing by ETS and DGPS: In this methodology, aerial photos covering the entire village are ortho-rectified, mosaiced and printed on bromide/coated paper. These printed photos are handed over to the field survey team. The field team will mark boundaries of the land parcels on the bromide/coated paper prints, as shown by the concerned owner(s)/enjoyer(s) in the presence of the owner(s)/enjoyer(s) of the adjacent land parcels.

c) High Resolution Satellite Imagery (HRSI) and ground truthing by ETS and DGPS: In this methodology, the high-resolution satellite imagery is geo-coded using precise ground control survey performed with the help of DGPS. The GPS coordinates for each ground control point (GCP) are collected and processed in a precise manner.

(Use of Continuous Operating Reference Station for Survey/Resurvey is encouraged)
e – Registration or National Generic Document Registration System (NGDRS)

- National level innovation towards “One Nation-One Software”
- A common, generic, configurable software to cater to the requirements of registrations of documents and deeds
- Citizens empowered to calculate stamp duty, registration fees and other fees applicable from the property valuation module
- Developed on open source platform, reducing cost of proprietary software.
- Reduction in visits to SRO and greater transparency. EoDB – Reduction in number of processes, time and cost.
- It got Digital India Award 2020 and “The Prime Minister’s Awards for Excellence in Public Administration” 2021.
- Implemented in 30 states/UTs: Andaman & Nicobar Island, Goa, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Ladakh, Punjab, Tripura, Maharashtra, Mizoram, DNH & DD, Manipur, Assam, Bihar, Chhattisgarh, Meghalaya and Uttarakhand. Andhra Pradesh, Haryana, Chandigarh, NCT Delhi, Gujarat, Madhya Pradesh, Odisha, Sikkim, Tamil Nadu, Uttar Pradesh, Puducherry, Telangana and West Bengal have started sharing registration related data with national portal of NGDRS- www.ngdrs.gov.in through API/UI
Transliteration of Land Records

- The linguistic barriers pose serious challenges for access of information and usage in understandable form.

- Transliteration initiative to translate land records in local language into any of the languages mentioned in Schedule VIII of the constitution has been adopted with the technical support of C-DAC.

- Pilot tests (in 8 States - Bihar, Maharashtra, Gujarat, Puducherry, U.P., Tamil Nādu, Tripura and J&K).

- Pan-India launch by April 2022 (rollout in phased manner).

- This initiative will enable the Central Government and State Governments:
  - Informed policy decisions for the benefit of citizens and farmers
  - Citizens and Stakeholders especially potential start-ups, investors, industry etc. to get benefits of an open national economy conveniently
  - Facilitate access of information to the prospective individuals in their understandable language
  - Ease in Data Analytics for policy decision
Transliteration of Land Records to break linguistic barriers

Readiness of States / UTs for rollout of Transliteration Tools:

The transliteration tool is available on the respective websites on land records of Jammu and Kashmir, Maharashtra, Gujarat, Bihar, Puducherry, Haryana, Goa, Chandigarh, Uttar Pradesh, Madhya Pradesh, Tripura and Chhattisgarh. (12 States/UTs).

Link of the State / UT websites are given below:

<table>
<thead>
<tr>
<th>State</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>J&amp;K</td>
<td><a href="https://landrecords.jk.gov.in/Reports/JMReport">https://landrecords.jk.gov.in/Reports/JMReport</a></td>
</tr>
<tr>
<td>Maharashtra</td>
<td><a href="https://bhulekh.mahabhumi.gov.in">https://bhulekh.mahabhumi.gov.in</a></td>
</tr>
<tr>
<td>Gujarat</td>
<td><a href="https://anyror.gujarat.gov.in">https://anyror.gujarat.gov.in</a></td>
</tr>
<tr>
<td>Bihar</td>
<td><a href="http://biharbhumibihar.gov.in/Biharbhumi/">http://biharbhumibihar.gov.in/Biharbhumi/</a></td>
</tr>
<tr>
<td>Puducherry</td>
<td><a href="https://nilamagal.py.gov.in/">https://nilamagal.py.gov.in/</a></td>
</tr>
<tr>
<td>Haryana</td>
<td><a href="https://jamabandi.nic.in/land%20records/NakalRecord.aspx">https://jamabandi.nic.in/land%20records/NakalRecord.aspx</a></td>
</tr>
<tr>
<td>Goa</td>
<td><a href="https://dslr.goa.gov.in/">https://dslr.goa.gov.in/</a></td>
</tr>
<tr>
<td>Chandigarh</td>
<td><a href="https://revenue.chd.gov.in/Nakal.aspx">https://revenue.chd.gov.in/Nakal.aspx</a></td>
</tr>
<tr>
<td>UP</td>
<td><a href="https://upbhulekh.gov.in/public/public_ror/Public_ROR.jsp">https://upbhulekh.gov.in/public/public_ror/Public_ROR.jsp</a></td>
</tr>
<tr>
<td></td>
<td><a href="https://upbhulekh.gov.in/public/public_ror/Public_ROR_Ansh_new.jap">https://upbhulekh.gov.in/public/public_ror/Public_ROR_Ansh_new.jap</a></td>
</tr>
<tr>
<td>MP</td>
<td><a href="https://mpbhulekh.gov.in">https://mpbhulekh.gov.in</a></td>
</tr>
<tr>
<td>Tripura</td>
<td><a href="https://jami.tripura.gov.in/EODB/citizen_search.aspx">https://jami.tripura.gov.in/EODB/citizen_search.aspx</a></td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td><a href="https://bhuiyan.cg.nic.in">https://bhuiyan.cg.nic.in</a></td>
</tr>
</tbody>
</table>
Linkage of e-Courts with Land Record / Registration Database

• An Innovation under DILRMP to depict litigation position in land records and reduce the burgeoning litigation load in the Courts

• Pilot test for linking of e-Courts with land record and registration data base was undertaken successfully in three States, namely, Haryana, Maharashtra and Uttar Pradesh in association with Department of Justice

• Linkages are done through APIs

• The benefits, inter alia, include: (i) the court will have first-hand information on substantive and authentic evidence of Record of Rights, Cadastral map including Geo referenced and legacy data, (ii) the information will be advantageous to a great extent to the courts in deciding admission as well as disposal of the disputes, (iii) courts will be able to easily know whether any case relating to a particular property is pending in any court (though an affidavit is given by the petitioner to this effect), (iv) prospectors will know the dispute status in respect of a property to enable them to take an informed decision after considering risk factor in transacting such property, (v) litigants will have access of status of the case online in place of visiting courts/lawyers

• 26 States/UTs have received necessary clearances from the concerned High Courts for integration of e-courts Application Software with the land records application software and registration database in a short span of two years. These States are Tripura, Madhya Pradesh, Rajasthan, Assam, Arunachal Pradesh, Mizoram, Nagaland, Himachal Pradesh, Bihar, Uttar Pradesh, Manipur, West Bengal, Andaman & Nicobar Islands, Telangana, Jharkhand, Delhi, Sikkim, Meghalaya, Punjab, Haryana, Chandigarh, Karnataka, Chhattisgarh, Tamil Nadu, Puducherry and Andhra Pradesh
Linkage of e-Courts with Land Record / Registration Database
Scope for Collaboration for Standards

ISO / TC 211 Geographic Information / Geomatics

Open Geospatial Consortium (OGC)

International Federation of Surveyors (FIG)
LADM Readiness of DILRMP

• Cadastral maps (vector data), digital land records (non-spatial) available and web-accessible from State Government Portals

• ISO/ OGC/ ECCMA Standards based Unique Parcel (2D) Identification implemented in 27 States/UTs (ULPIN) (OIDs for spatial Units), 3D ULPIN in process

• State Spatial Data Infrastructures (SDIs) have implemented ISO/ OGC-standards based Geospatial Data Services – technical capacity built

• State Revenue (SS&LR) Teams geared towards implementation and delivery of geospatial services (DoLR’s Matribhoomi Initiative)
LADM (source: ISO 19152) – Purpose and Goals

• Land Administration (2012) vs Geo-regulation (2023) – ‘creation of a multitude of geographical spaces serving multiple functions’

• ‘Can be potentially used for delegating powers regionally, controlling accessibility to a territory for security or health reasons; organising circulation of goods, information and people…’ – juxtaposition or overlap of geographical spaces produces complex legal spatial configuration throwing up management challenge

• LADM presents fundamental notions, defines basic components and relations shared by all objects created by LA/GR
LADM (ISO 19152) – Purpose and Goals (contd...)

• Enabling involved parties (governments, financial institutions, citizens, other stakeholders etc.) to communicate based on a shared vocabulary

• does not aim to replace existing systems, but rather to provide a formal language (the Unified Modelling Language, UML) for describing them, so that their similarities and differences can be better understood

• provide an extensible basis for the development and refinement of efficient and effective land administration system
Advantages/ opportunities of LADM Standard for DILRMP

- Minimises barriers to sharing of Land Information amongst stakeholders using a set of standardised notions, concepts, basic components and relations provided by LADM standard
- Helps build up a formal and extensible technology platform (e.g. Matribhoomi) for the development of the Land Administration System towards adoption of Land Titling and avoidance of court cases
- Enhances Revenue Departments’/ DoLR’s abilities to share land information across States/ Districts/ Panchayats and to cooperatively address issues of common importance e.g. development of infrastructures, laying down utility networks, and managing disasters
- Improves efficiencies in land data production and updation towards saving efforts, time and cost in reusing and repurposing the same data
Underlying Challenges to be addressed

• Framing and adopting the cadastral data content and other related standards (specific to India) based on LADM specifications (with the involvement of the Thematic Working Group (TWG) - Standards on ‘Land Parcel’ constituted by DoLR)

• Re-engineering of the existing/legacy land data available in various States/UTs for standardising them as per LADM specifications

• Engaging consultants for design and implementation of databases, systems, procedures using hardware, software, and communication networks as per LADM requirement

• Building technical capacity of personnel and staff at the field level and system management/maintenance levels through extensive training programmes
### Cadastral Features from States/UTs
(work done by LITD-22, BIS)

**Total Proposed Features=260**  
**Base Map Scale 1:4000**

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>General Term/State</th>
<th>HARYANA</th>
<th>Available</th>
<th>Symbol</th>
<th>Categories</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A map of the fields</td>
<td>Shajara</td>
<td>Text</td>
<td></td>
<td></td>
<td>Field Map is a system for computer-aided field data collection with primary emphasis to forestry.</td>
</tr>
<tr>
<td>2</td>
<td>Airport</td>
<td>Airport</td>
<td>Taken From QGIS SVG</td>
<td>Other Facility</td>
<td></td>
<td>A place from which aircraft operate that usually has paved runways and maintenance facilities and often serves as a terminal.</td>
</tr>
<tr>
<td>3</td>
<td>Anganwadi Center(Urban)</td>
<td>Anganwadi</td>
<td>Created</td>
<td>Building</td>
<td></td>
<td>A centre providing care for mothers and young children in a rural area.</td>
</tr>
<tr>
<td>4</td>
<td>Anganwadi Center(Rural)</td>
<td></td>
<td></td>
<td>Building</td>
<td></td>
<td>A centre providing care for mothers and young children in a rural area.</td>
</tr>
<tr>
<td>5</td>
<td>Arid land</td>
<td>Shushak bhoomi</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Site</td>
<td>Arid regions by definition receive little precipitation—less than 10 inches (25 centimeters) of rain per year.</td>
</tr>
<tr>
<td>6</td>
<td>Barren land</td>
<td>Anurvar bhoomi</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Site</td>
<td>Barren vegetation describes an area of land where plant growth may be sparse, stunted, and/or contain limited biodiversity.</td>
</tr>
<tr>
<td>7</td>
<td>Boundaries of the Land(Urban)</td>
<td>Doli</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Building</td>
<td>Boundary lines (commonly called property lines) define the extent of the legal limits of ownership of any parcel of land.</td>
</tr>
<tr>
<td>8</td>
<td>Boundaries of the Land(Rural)</td>
<td>Doli</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Building</td>
<td>Boundary lines (commonly called property lines) define the extent of the legal limits of ownership of any parcel of land.</td>
</tr>
<tr>
<td>9</td>
<td>Bund</td>
<td>Badh</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Water Distribution</td>
<td>An embankment used especially in India to control the flow of water.</td>
</tr>
<tr>
<td>10</td>
<td>Bus Stand(Urban)</td>
<td>Bus Adda</td>
<td>Yes</td>
<td>Taken From GSDL</td>
<td>Other Facility</td>
<td>A designated parking location where a bus or coach waits out of service between scheduled public transport services.</td>
</tr>
<tr>
<td>11</td>
<td>Bus Stand(Rural)</td>
<td></td>
<td>Yes</td>
<td>Taken From GSDL</td>
<td>Other Facility</td>
<td>A designated parking location where a bus or coach waits out of service between scheduled public transport services.</td>
</tr>
<tr>
<td>12</td>
<td>Bus Stop</td>
<td>Bus-stop</td>
<td>Yes</td>
<td>Taken From GSDL</td>
<td>Other Facility</td>
<td>One of the places where a bus stops for passengers to get on or off.</td>
</tr>
<tr>
<td>13</td>
<td>Bus Stop Shelter</td>
<td></td>
<td>Yes</td>
<td>Taken From <a href="https://ww">https://ww</a></td>
<td>Other Facility</td>
<td>A covered structure at a bus stop providing protection against the weather for people waiting for a bus.</td>
</tr>
<tr>
<td>14</td>
<td>Canal(Urban)</td>
<td>Neher</td>
<td>Yes</td>
<td>Taken From GSDL</td>
<td>Water Distribution</td>
<td>A canal is a human-made waterway that allows boats and ships to pass from one body of water to another.</td>
</tr>
<tr>
<td>15</td>
<td>Canal(Rural)</td>
<td>Nichri</td>
<td>Yes</td>
<td>Taken From GSDL</td>
<td>Water Distribution</td>
<td>A canal is a human-made waterway that allows boats and ships to pass from one body of water to another.</td>
</tr>
<tr>
<td>16</td>
<td>Check-dam</td>
<td>Paka Bandh</td>
<td>Taken From <a href="https://icc">https://icc</a></td>
<td>Water Distribution</td>
<td>A small dam constructed across a drainage ditch, swale, or channel to lower the velocity of flow.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Church</td>
<td>Girajaaghar</td>
<td>Yes</td>
<td>Taken From SOI-SDMS</td>
<td>Building</td>
<td>A church, church building, or church house is a building used for Christian worship services and other Christian religious activities.</td>
</tr>
</tbody>
</table>
UML Class Diagram under preparation by LITD-22
For Cadastral Data Content Standard for implementation under DILRMP
Issues and Challenges

- Community land ownership in North East States
- Survey / Resurvey major issue in most of States
- Geographical and Climate Conditions
- Non Availability of the surveying and digitization expertise (agencies) locally
- Long gestation period, voluminous work, time consuming processes (digitization of maps, survey etc.)
- Continuous support for capacity building required
- Lack of Network Support and low bandwidth
- Requirement of highly skilled manpower, specially IT/GIS professionals
Way Ahead: GIS Ready Land Governance

- E-Registration/ National Generic Document Registration System (NGDRS)
- Assigning of Bhu-Aadhar or ULPIN to each geo referenced Land Parcel
- Integration of Aadhaar with Land Records
- Linkage with Financial Institutions
- Transliteration of RoRs in 22 Languages
- Linkage of Revenue Courts/Land Records with e-Courts
- Blockchain
- National Geoportal for Land Governance - Matribhoomi