UN-GGIM
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Sustainable Development

Regional Seminar
on Integration of Geo-spatial & Statistical
Information,
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Session 2: **Discussion on Tools, Technologies, and Capacity Building for Data Integration**

Disseminating Census data through integrated geospatial data platform

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Topics ahead

❖ **Embedding** Geospatial data in ORGI work process

❖ **Integrating** Spatial and Non-Spatial data systems

❖ **Addressing** data quality, standardization, and sharing issues

❖ **Capacity building** - Regional collaboration opportunities

Embedding Geospatial data in ORGI work process

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1. **Georeferenced Census Frame**

   - **Geospatial foundational data for all administrative levels**

   - **Creating Ward level boundaries for all ULBs**

   - **Aiding field operational requirements**

2. **Increasing Coverage**

   - **Geo-referencing of Census Enumeration Blocks**

   - **Creating Built-Up Area data**

   - **Adding / updating spatial features of all ancillary layers**
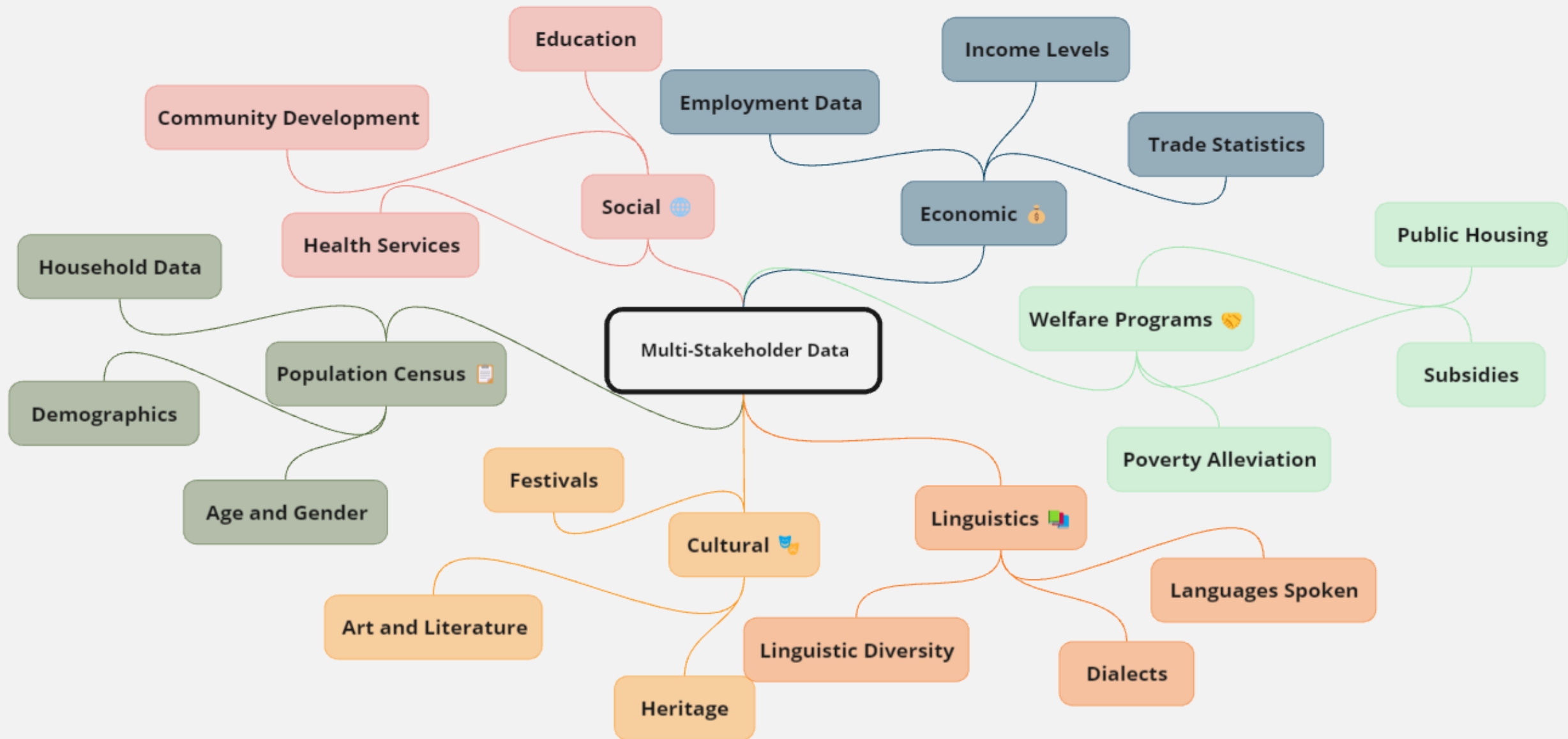
3. **Leveraging GIS potential**

   - **Digital map products**

   - **Location sharing with Enumerators for identification and navigating to Block area**

   - **Geo-fencing of field operational units**

   - **Adding GIS capabilities in field operation**

   - **Optimizing field workers deployment**

Integrating Spatial and Non-spatial Data Systems

Geospatial data threads connects everything in public data ecosystem
Weave your part well!

Integrating Spatial and Non-spatial data systems
-Match your actions with policy initiatives

1. **National Data Sharing & Accessibility Policy, 2012**

- Open access to data generated through government funded data collection programmes
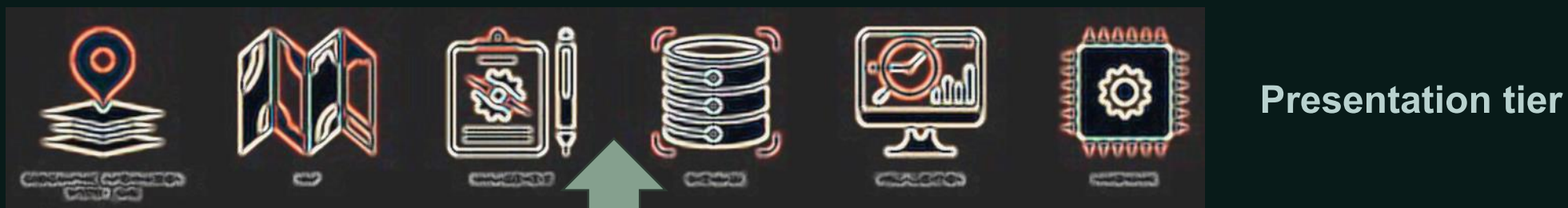
- Disseminate data through Open formats

2. **Digital India, 2015**

- Leveraging Geospatial Information Systems (GIS) for decision support systems & development

- Universally accessible digital resources

3. **National Geospatial Policy, 2022**

- Create integrated Geospatial data with Population Distribution dataset

- Ensure interoperability of data systems across platforms

Integrated Multi-Tier Architecture
for the Dissemination of Census Data
(High level schematic representation of Enterprise GIS)

Presentation tier

Envisioned to be part of openly accessible geospatial data networks
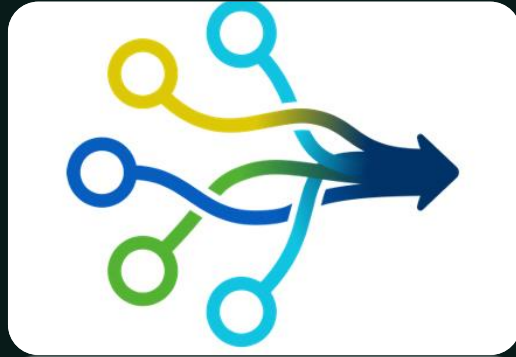
Business Logic and Rules

Application tier

Database tier

- **Geospatial dataset of Harmonized Administrative boundaries**

- **Interoperability with Survey of India Functional Boundaries and LGD Codes**
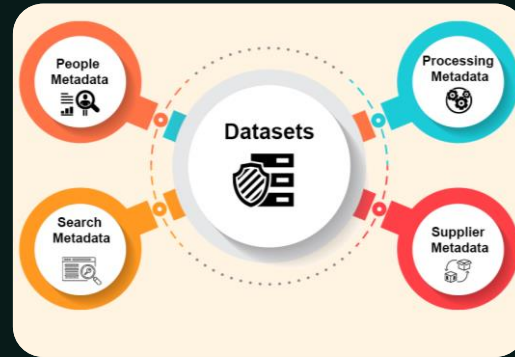
- **Census of India attributes** (National, State/UT, District, Sub-district, Village/Town, Ward, EB levels)

- **Synchronized with LGD codes** (Upto Village/Town level)

ORGI path for Geospatial integration in the making

Harmonizing

- Fully compatible foundational geospatial data of administrative units
- Continuous update cycles

Cataloguing

- Efficient metadata management
- Ensure findable dataset through RESTful API services

Open access

- Classification of dataset as Open & restricted as per dissemination policy
- Transparent & authentic data delivery

Empower the user

- Meet user needs and demands
- Evolve map products & services as per user demand
- Provide efficient & user friendly tools

Data Lifecycle Management

Addressing data quality, standardization, and sharing issues

Addressing the essentials of data quality and sharing issues through **Standardization**

Data Production

- Enforcing attribute rules and consistency checks
- Validation and quality checks
- Automated reporting and Monitoring

Interoperability

- Essential metadata
- Data always available for open formats
- Unique coding using LGD structure

Sharing

- Serving Geospatial data through OGC complaint services
- Secure data sharing by adapting to FAIR principles

Standardization

- Ensures data compatibility, interoperability and facilitates adaption of FAIR practices
- Helps in Data cataloguing and aggregation

Key challenges

1. Standards in Data Production

- Lack of Awareness
- Resource and Time Constraints
- Interoperability Issues
- Resistance to Change

2. Breaking the Silos

- Fragmented Data Ownership
- Lack of Common Platforms
- Data Privacy Concern
- Technical Incompatibilities

3. I am the Aggregator

- Aggregate data without actively contributing to the larger ecosystem
- Prioritize proprietary advantage over collaboration
- Lack of understanding on the mutual benefits of open data sharing or collaborative geospatial initiatives

Capacity building –
Regional collaboration opportunities

What we are doing within ORGI

1. Integration of GIS and Non-GIS Work Spaces

- GIS Knowledge transfer to about 2000 (Internal)+10000 Non-GIS workforce to use Geospatial applications and mobile apps
- They have been involved in data capture, editing and QC operations in geospatial data production

2. Infusing GIS capabilities in decision making

- GIS integration across organizational functions eg. Implementing Geo-coordinate sharing for navigation to sample units and enforcing Geo-fencing
- GIS applications are used for allocation of Field Operational units

3. Making Geospatial data part of Critical infrastructure

- Building strong integration with Non-spatial data systems for enabling spatial analysis to meet quality assessment of field data
- Increasing level and coverage of geospatial dataset to widen the scope and usability

Together we can build better Geospatial ecosystem

1. Best practices

- Standardization
- Ethical Data Use
- Capacity Building
- Process Optimization

2. Networking

- Conferences and Webinars
- Community Building
- Industry-Academia Collaboration
- Diversity and Inclusion

3. Share Success stories

- Sharable Knowledge Repositories
- Case Studies
- Awards and Recognition

4. Exchange Programmes

- Institutional Partnership
- Skill Transfer
- Internships and Fellowships

SMART

(Simple **M**apping **A**pplications for **R**ealtime **T**ransformation**)**

approach

Thank you

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