



सत्यमेव जयते

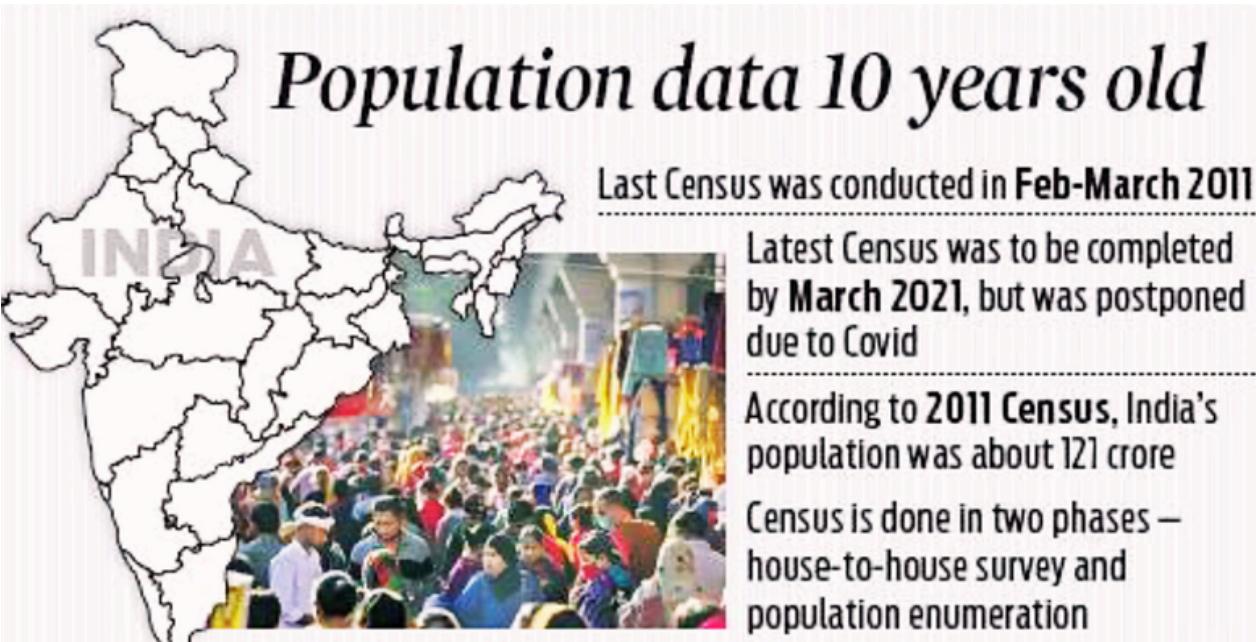


CensusEase

"Digitizing India's Demographic Future"

Understanding the problem

Census of India 2021



Census is the most credible source of information on demography, education, housing and household amenities, urbanisation, fertility, etc.

Programmes and policies for food distribution, education, sample selection for housing etc are based on Census data

How is Census 2021 Different from Earlier Ones?

- First Census to use **mobile applications for data collection**. Enables **offline data entry** with **faster processing** and **immediate results**, unlike earlier censuses that took years for data analysis and report publication.
- No documents** required; information based on **self-declaration** is required.
- Data can be collected **offline on paper** if required and **later uploaded digitally**.
- A centralized **Census Monitoring & Management Portal** for all Census activities, offering multi-language support for seamless coordination.
- Does **not include caste-based data**, unlike the Socio-Economic Caste Census (SECC) conducted alongside Census 2011.
- First time **recognizing households headed by transgender persons**, moving beyond the earlier binary gender options.



Importance of Census

Mapping Population Dynamics

- Tracks **demographic changes** since 2011, including urbanization, migration, and an ageing population.
- Provides critical data on **fertility** and **migration rates** to support resource distribution and planning.

Electoral Planning and Governance

- Critical for **delimitation of Parliamentary constituencies** and fair representation.
- Supports implementation of measures like **women's reservation in Parliament**.

Evidence-Based Policy Making

- Guides **infrastructure development, healthcare facilities, vaccination programs, and education reforms** based on accurate population data.
- Ensures **efficient policy design** for underserved areas and addresses enrollment and literacy gaps.

Progress Towards SDGs

- Supplies key metrics on **poverty, health, and education** for monitoring progress toward national and global **SDGs**.
- Ensures **data-driven tracking** of developmental outcomes.

Resource Allocation and Schemes

- Ensures equitable distribution of resources like funding, food, and services through programs such as **MGNREGA, PM Awas Yojana, and PDS**.
- Serves as a benchmark for **evaluating welfare programs** and ensuring fairness in outreach and access.

Supporting Surveys and Research

- Acts as a reliable **baseline for surveys** like **NFHS or NSSO**, offering unmatched comprehensiveness.
- Provides **indispensable data** for academic and institutional analysis, ensuring accurate policy and program assessments.

Associated Challenges in the current census process

Manual Errors and Overcounting



Data collected through pen and paper is prone to mistakes, inconsistencies, and errors such as overcounting individuals (e.g., college students counted at multiple locations), which affects the accuracy of the census data.

Time-Consuming and Delayed Insights



Aggregating and processing paper-based records takes an extended period, delaying the availability of crucial data that can inform timely policy decisions and development planning.

Data Security Risks and Privacy Concerns



Paper records are vulnerable to loss, damage, and misuse, posing risks to respondent privacy and confidentiality. These concerns can reduce the willingness of individuals to provide accurate data, impacting data integrity.

Connectivity and Accessibility Challenges



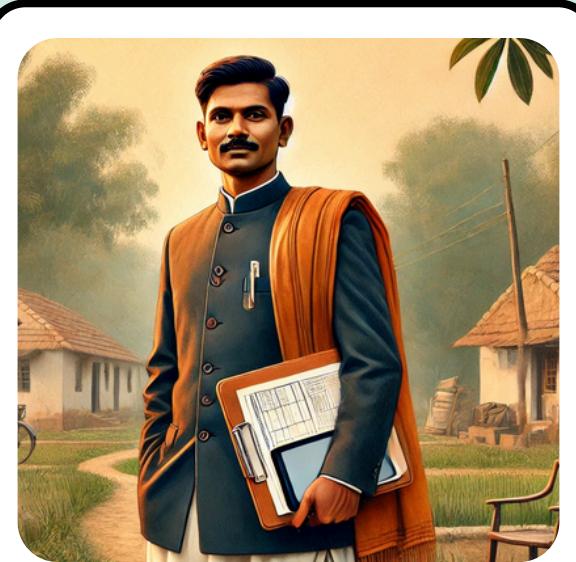
Without a centralized system, it is difficult to quickly access or share data across regions. This limits local authorities' ability to efficiently plan and implement initiatives and hinders real-time monitoring of census progress.

Language, Cultural Barriers, and Technological Limitations



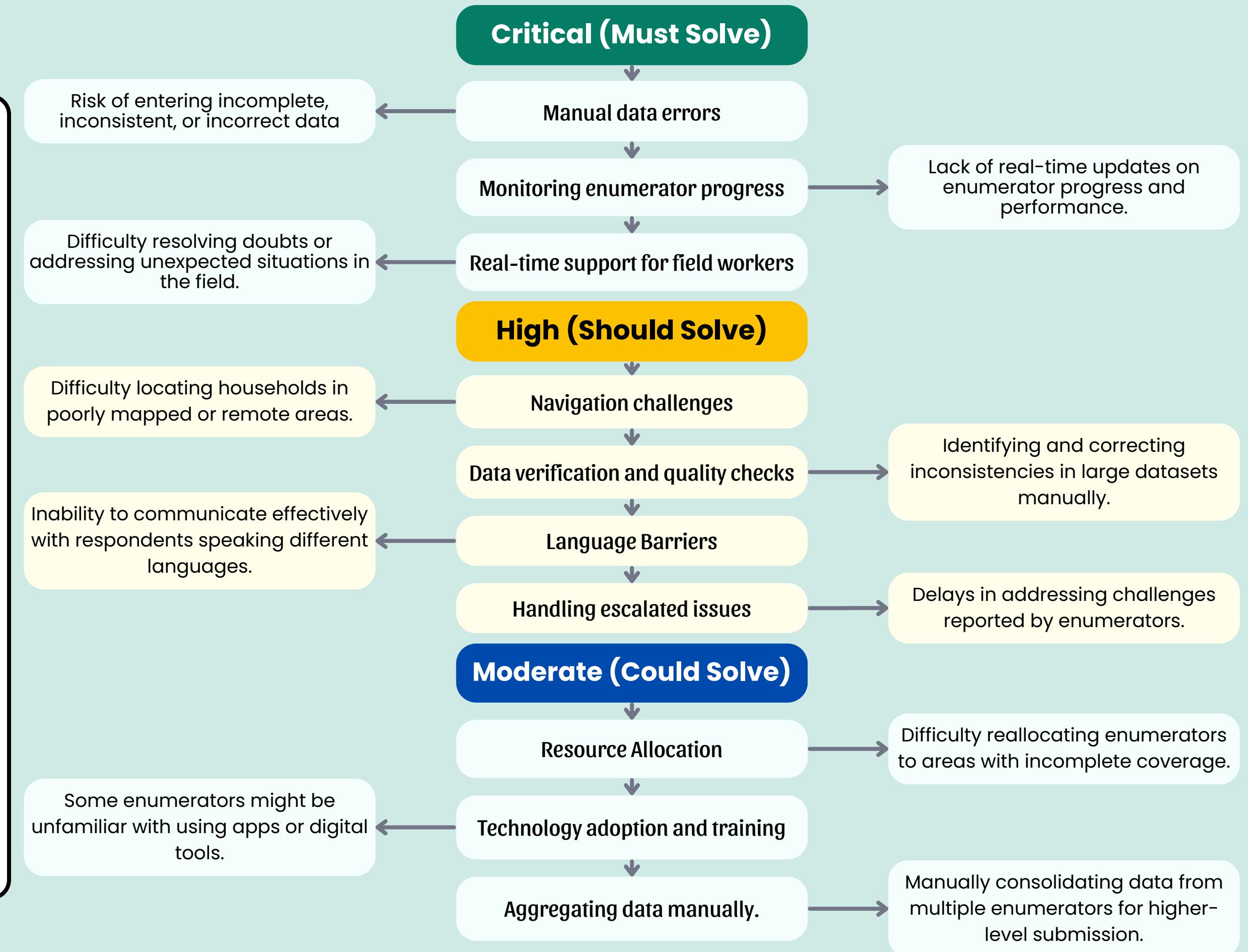
India's linguistic and cultural diversity creates challenges in accurately communicating questions, while technological and infrastructure limitations, especially in remote areas, hinder the effective adoption of digital data collection methods.

User persona and Pain Points



Rajesh Kumar: The Enumerator

Rajesh is a 35-year-old **government worker** tasked with **collecting census data door-to-door** in rural areas of Uttar Pradesh. He has been doing this job for the last two census cycles and is comfortable with the community but struggles with the inefficiencies of the manual process.



Priya Sharma: The Supervisor

Priya is a 40-year-old **district-level supervisor** responsible for overseeing 25 enumerators in an urban region of Maharashtra. She coordinates their activities, monitors their progress, and ensures data accuracy.

App Interface for Enumerator

- Multilingual interface for enumerators to handle diverse respondents.
- Preloaded translations for common questions.

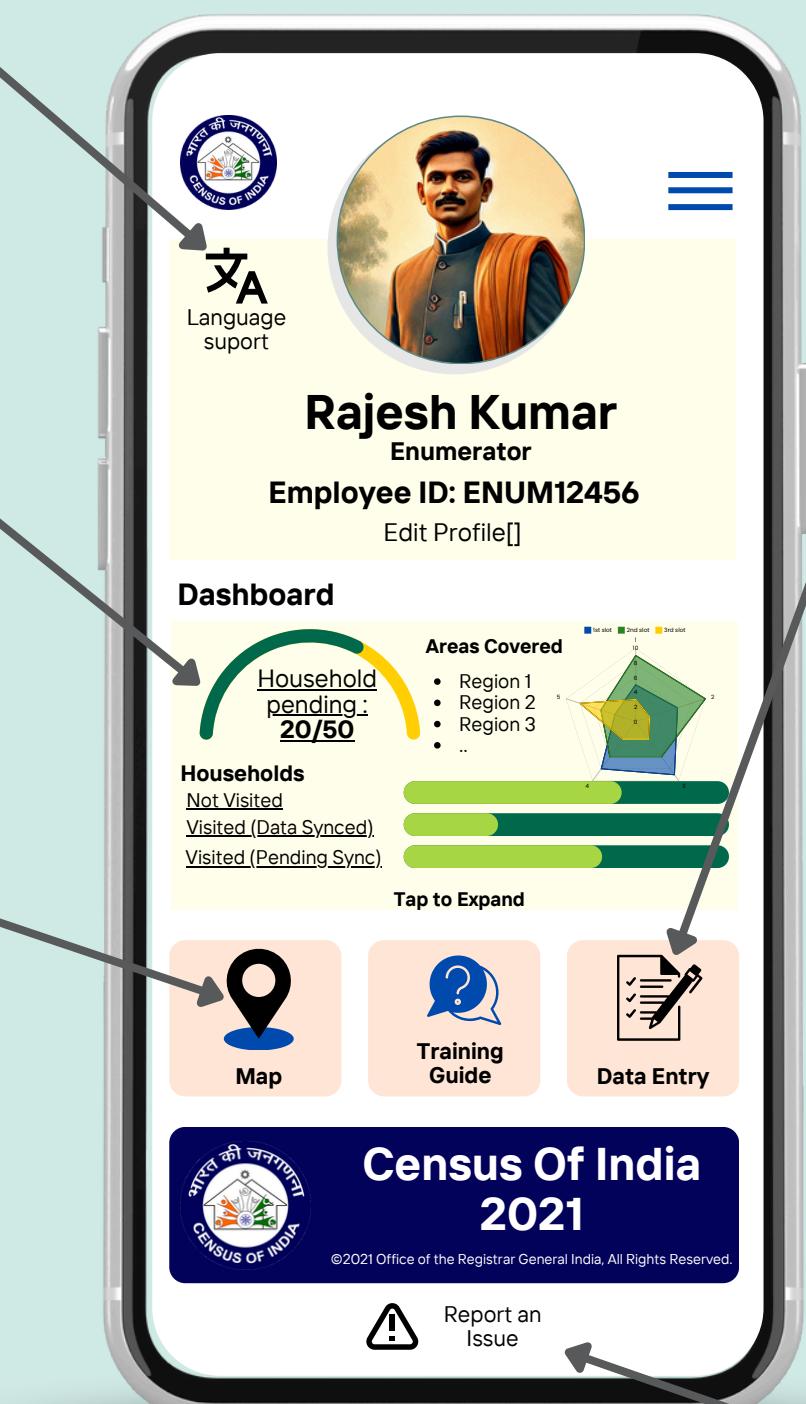
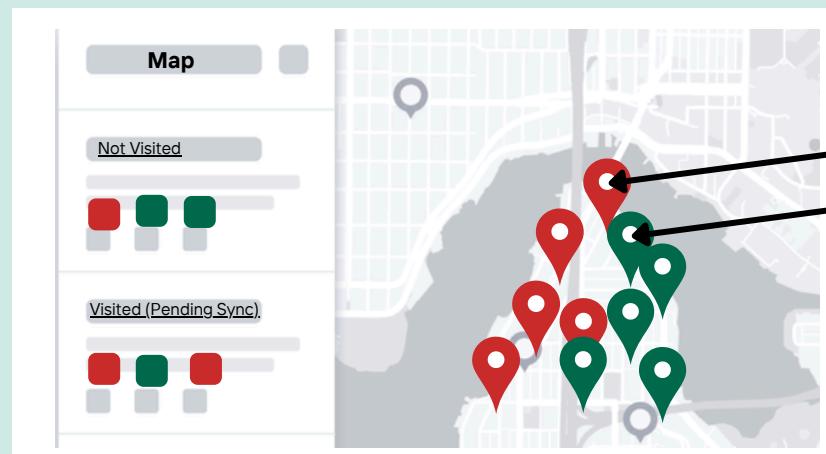
Language Support

- Overview of assigned households, task status, and pending actions.

Dashboard

- GPS integration to locate households.
- Visual marking of visited and unvisited areas.

Mapping & Navigation



Digital Data Collection

- Interactive questionnaire interface with dropdowns, checkboxes, and text fields.
- Real-time data validation to reduce errors (e.g., flagging incomplete fields).
- Offline mode with automatic data sync when internet access is restored.

A screenshot of the app's data entry form. It includes fields for 'Name', 'Address' (House 23, ward 19, Raxaul, UP), 'Occupation', 'Age' (dropdown), 'Gender' (dropdown), 'Religion', 'Education' (dropdown), 'Marital stat' (dropdown), 'Housing' (dropdown), and 'Language' (dropdown). A callout box highlights the 'Language' field which lists: 'No formal education', 'Primary school', 'Secondary school', 'Undergraduate degree', and 'Postgraduate degree'.

Issue Reporting

- Simple interface for enumerators to report challenges, like refusals or unclear instructions, directly to supervisors.

App Interface for Supervisor

- Live Progress Dashboard:** Real-time updates on enumerator activities, including visited households and collected data.

- Geo-Verification:** Verify enumerators' location via GPS tagging during household visits.

- Task Assignment:** Tools to allocate areas and households to enumerators.

- Scheduling and Deadlines:** Set timelines for task completion with reminders

- Error Detection:** Automated alerts for incomplete, inconsistent, or erroneous data entries.

- Approval and Revisions:** Option to send data back to enumerators for corrections with specific feedback.

Monitoring & Oversight

Planning and Coordination

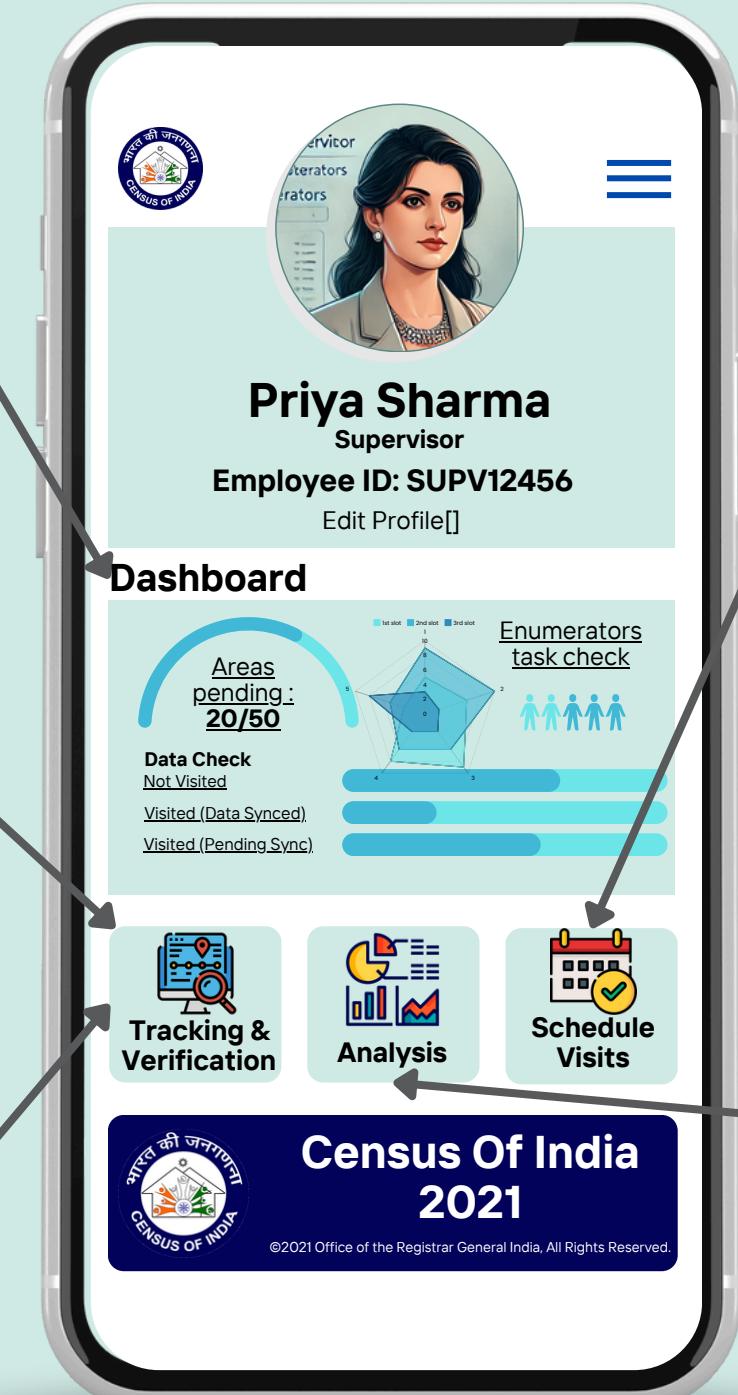
Data Review and Verification

Field Visits and Random Checks

Consolidation and Reporting

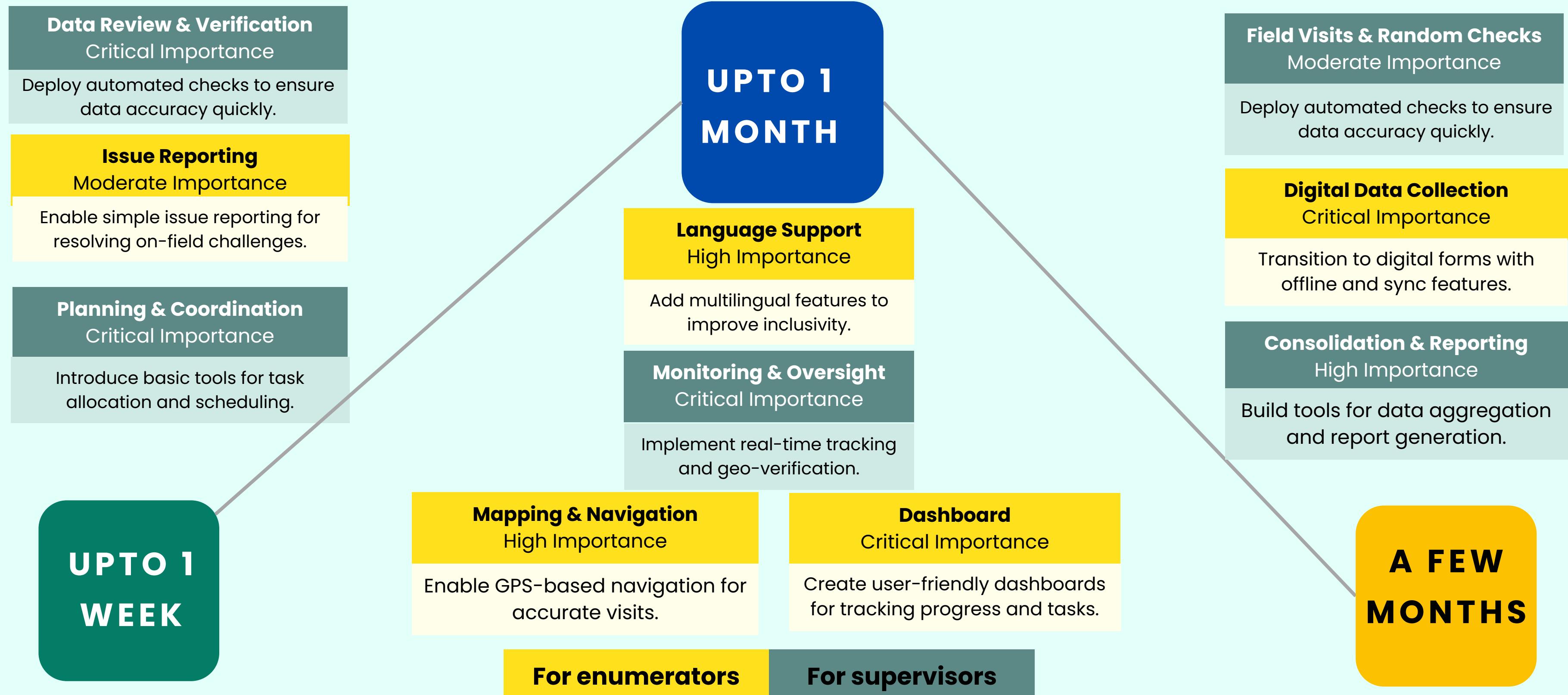
- Inspection Scheduling:** Tool for planning and logging random household checks.
- Field Notes:** Digital space to record observations during visits.

- Data Aggregation:** Automatically compile and summarize collected data for submission to higher authorities.
- Report Generation:** Create and export reports on progress, challenges, and feedback.



Prioritization & Implementation of Solutions

The following implementation timeline is based on the time required for extraction of the required data, compilation, verification and testing of the running codes.



Thank You

Shriyansh Raj

Ishika Mandal

Satvik Choudhary