PAKISTAN BUREAU OF STATISTICS
Government of Pakistan

# Census Project Management Unit (CPMU)


## 7th Population and Housing Census–2023 (Digital Census)

**Pakistan Bureau of Statistics**
**Ministry of Planning Development and Special Initiative.**

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# Acknowledgement

I extend my heartfelt gratitude and appreciation to the entire team for the successful conduct of the Digital Census, a monumental endeavor that required dedication, coordination, and innovative solutions. The success of this significant exercise is a testament to the collective efforts of a committed and capable team.

First and foremost, I would like to express my sincere thanks to Mr. Muhammad Sarwar Gondal, Member (SS/RM), our IT Head along with overseeing the resource management, whose technical expertise and strategic vision were instrumental in the implementation of cutting-edge technologies for the census. His leadership played a pivotal role in ensuring the seamless integration of IT solutions and the overall success of the digital census. I also want to acknowledge the invaluable contributions of Miss Rabia Awan, Deputy Director General (CPMU/CP&C), who demonstrated unwavering commitment and exceptional leadership throughout the entire census project. Her guidance and dedication were instrumental in steering the core team toward excellence.

I express my deepest gratitude to the entire Core Team of the Census Project Management Unit. Their tireless efforts, coordination, and meticulous planning were fundamental in shaping the success of the digital census. Each member of the team played a crucial role, and their collective commitment did not go unnoticed.I would also like to appreciate the Procurement Team for their diligence in managing the procurement process. Their efforts in acquiring state-of-the-art multimedia resources, enumerator gear, IT essentials, and other necessities were crucial in ensuring that the census workforce was well-equipped for the digital operations.

To the DP, Sample Design, GIS, and Field Services teams, their collective efforts have not only upheld the standards of the census but have also set a benchmark for future endeavors. The success of the Digital Census is a testament to the dedication and professionalism displayed by each member of these teams.I want to express my gratitude to every individual involved in this monumental task. Their hard work, dedication, and collaborative spirit have made the Digital Census a resounding success. This achievement marks a historic milestone for our organization and for Pakistan. Thank you for unwavering commitment and exceptional contributions.

**Dr. Naeem Uz Zafar**
Chief Statistician
Pakistan Bureau of Statistics
Islamabad

# CPMU Core Team

## Project Lead: Mr. Muhammad Sarwar Gondal

## Member (SS/RM)

Section Incharge : Ms. Rabia Awan DDG(CPMU/CP&C)

| S# | Names | Designation |
|---|---|---|
| 1 | Dr. Naveed Iqbal | JACC |
| 2 | Ms. Rumana Sadaf | Chief Statistical Officer |
| 3 | Ms. Ayesha Sajid | Chief Statistical Officer |
| 4 | Mr. Saeed Ahmed | ACC |
| 5 | Ms. Sana Habib Chaudhry | Statistical Officer |
| 6 | Ms. Hina Kanwal | Statistical Officer |
| 7 | Mr. Javed Ahmed | ACC |
| 8 | Mr. Zubair Ahmed | Data Processing Officer |
| 9 | Mr. Asif Khawaja | Data Processing Officer |
| 10 | Syed Farhan Ali | Data Processing Officer |
| 11 | Mr. Sabahat Nadeem | Data Processing Officer |
| 12 | Mr. Zameer Ahmed | System Analyst |
| 13 | Ms. Momina Babar | System Analyst |
| 14 | Ms. Tayyaba | System Analyst |
| 15 | Mr. Ali Raza | System Analyst |
| 16 | Mr. Umair Saeed | System Analyst |
| 17 | Mr. Fakher Hashmi | Librarian/TW |
| 18 | Ms. Bushra Warsi | Statistical Assistant |
| 19 | Ms. Raheela Shareef | Statistical Assistant |
| 20 | Ms. Nadia Khanum | Statistical Assistant |
| 21 | Mr. Muhammad Ishfaq | Statistical Assistant |
| 22 | Hafiz Muhammad Ramzan | Statistical Assistant |
| 23 | Mr. Abdul Mannan Butt | Statistical Assistant |
| 24 | Ms. Shaista Zahir | Statistical Assistant |
| 25 | Ms. Faiza Islam | Statistical Assistant |

Internally, the CPMU core team undertook coordination with various sections, including Field Services, Sample Design, GIS, and Data Processing, to ensure the execution of their distinct roles in the digital census. Externally, the CPMU efficiently managed consulting agencies such as NADRA, NTC, and SUPARCO, while also fostering crucial coordination with the Armed Forces and Provincial Governments.

## CP&C Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Ayazuddin | Member (C&S) |
| 2 | Dr. Arshad Mehmood | CSO |
| 3 | Mr. Muhammad Awais | SA |

## DP Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Muhammad Ehtesham | Director |
| 2 | Ms. Sobia Munawar | Director |
| 3 | Mr. Muhammad Yasir Ishfaq | Director |
| 4 | Mr. Asif Usman Khattak | CSA |
| 5 | Mr. Tahir Mahmood | CSA |
| 6 | Mr. Mudassir Akhtar | CSA |
| 7 | Mr. Arsalan Bashir | DPO |

## FS Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Rafiq Hussain Talpur | Director |
| 2 | Mr. Farukh Jalees | Director |
| 3 | Mr. Sayyad Anwar | CSO |
| 4 | Ms. Kanwal Murtaza | CSO |

## GIS Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Qazi Ismatullah, | JCC (G) |
| 2 | Muhammad Nadeem Baig | GA |

| | | |
|---|---|---|
| 3 | Syed Akbar Ali | GA |
| 4 | Rafaqat Mehmood | GA |
| 5 | Kanwar Ikram | GA |

## Sample Design Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Ms. Rumana Sadaf | CSO |
| 2 | Ms. Madiha Amjed | SO |

## PSLM Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Saqib Sultan Khawar | SO |

** The Entire PSLM section was involved in the census activity

## CP&L Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Imran Saleem | Director |

## Field Operation Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Mr. Muhammad Saleem | ACC |
| 2 | Mr. Tariq Mustafa Awan | Statistical Officer |

## Administration Section Core Team

| S# | Name | Designation |
|---|---|---|
| 1 | Dr. Amjad Javed Sandhu | DDG Admn |
| 2 | Qazi Saeed ul Hassan, | Deputy Director Admn |
| 3 | Mr. Dildar Hussain | DCC |

# 1. Introduction

## 1.1 Background

The Population and Housing Census is a crucial nationwide activity in Pakistan. It plays a significant role in understanding the population's characteristics, strengths, and weaknesses, that provide guidance for future planning. It provides essential data for critical decisions on development, political representation, and resource allocation, which have far-reaching consequences. Recognizing its importance, the Government of Pakistan formed a Committee of Experts, comprising top professionals in relevant fields, with a comprehensive mandate to recommend and adopt best practices for the 7$^{th}$ Population & Housing Census.

The committee conducted a thorough examination, scrutinizing all aspects of the census process. A key issue identified in the review of the 2017 census process was a widespread "Trust Deficit," mainly due to non-transparent processes, inadequate communication, and the absence of a Post Enumeration Survey. Given the significance of this exercise, it was essential to involve all stakeholders, including elected representatives, to build trust, promote ownership, and enhance transparency. To achieve this, the proposal was to establish the National Census Coordination Center (N3C), with representation from all stakeholders, to oversee coordination and management and make informed policy decisions for wider acceptance of the results.

Moreover, to improve data quality, coverage, and timeliness, the recommendation was to adopt UN guidelines and best practices used regionally and globally, while ensuring alignment with the local context for credibility and comparability. Additionally, a robust communication strategy backed by a comprehensive plan involving universities, academia, provincial departments, and other relevant stakeholders is crucial to raise awareness and educate the public about the census's objectives and concepts.

The previous census suffered from manual data collection and a weak monitoring system. Consequently, the committee suggested to conduct the first-ever "Digital Census" with real-time monitoring and geotagging of all structures to ensure comprehensive coverage and reliable, timely results. Furthermore, the involvement of universities and colleges across the nation is proposed to provide an educated workforce for enumeration and promote widespread awareness of the census process. Finally, it was recommended to adopt a project-based approach to ensure the census's timely completion and systematic execution of all phases, including monitoring, evaluation, and third-party validation.

## 1.2 Purpose of the Report

This report serves as an introduction to the census project, explaining why it is important due to factors like population changes. It highlights what the Census Project Management Unit (CPMU) has achieved and the challenges faced while conducting the census. It emphasizes the importance of sharing what we have learned with policymakers and the public, and provides recommendations for future projects. It is all about being transparent and accountable in managing public data. This report is a record of how we did the census and aims to help others plan similar projects in the future. It is for everyone, from government officials to common people, who want to understand the census and its impact.

## 1.3 Scope and objectives of the Report.

The objectives of the report on the Census Project Management Unit (CPMU) can be outlined as follows:

1. **Inform and Educate**: To provide clear and accessible information about the census project, its goals, and its significance to a wide audience, including government officials, researchers, and the general public.
2. **Document Achievements and Challenges**: To document the achievements of the CPMU in successfully planning and executing the census, as well as to candidly address the challenges faced during the project.
3. **Share Insights and Knowledge**: To emphasize the importance of sharing knowledge and insights gained from the census project with relevant stakeholders, enabling informed decision-making and research opportunities.
4. **Offer Recommendations and Lessons Learned**: To present valuable recommendations and lessons learned from the project that can guide future census efforts and similar data collection initiatives.
5. **Ensure Accountability and Transparency**: To demonstrate the CPMU's commitment to accountability and transparency in managing public data and resources, thereby building trust among stakeholders.
6. **Facilitate Communication**: To facilitate effective communication with key stakeholders, including government agencies, funding organizations, and the public, by

providing a comprehensive overview of the project's outcomes and its impact on the community.

7. **Serve as an Official Record**: To function as an official document that records the project's methodology, results, and conclusions, ensuring compliance with legal and regulatory requirements.
8. **Guide Future Projects**: To serve as a valuable reference for future census projects and similar data collection initiatives, assisting project managers, policymakers, and researchers in making informed decisions and avoiding challenges.
9. **Comply with Legal and Reporting Obligations**: To fulfill any legal or regulatory requirements for reporting on the census project, ensuring adherence to established standards.
10. **Tailor Content to Diverse Audiences**: To ensure that the report's content is tailored to the needs and interests of its primary audience, which may include government officials, researchers, or the general public.

# 1. Project Overview

A census project is a comprehensive endeavor aimed at gathering detailed information about a population within a specific geographic area. This effort is of paramount importance as it offers a thorough snapshot of a country's or region's demographic, social, and economic characteristics at a specific point in time. The goals of a census project are diverse, encompassing objectives like accurately counting the population, profiling demographics, collecting socioeconomic data, guiding resource allocation, informing policymaking, aiding infrastructure planning, providing valuable data for research and analysis, and supporting legislative redistricting to ensure equitable representation in government. Through the census, governments and organizations gain critical insights to shape policies, allocate resources effectively, and make informed decisions that impact the well-being and development of communities and nations. Overall, the census project is a crucial tool for governments and organizations to understand their populations, allocate resources efficiently, and make informed policy decisions that impact the well-being and development of communities and the nation as a whole.

The census project in Pakistan covers the entire nation, including four provinces (Punjab, Sindh, KP, Balochistan) and two autonomous territories (AJK and GB). These regions comprise a diverse population, and the census aims to collect comprehensive data for demographic, social, and economic planning and policymaking.

## 2. Census Project Management Unit

The Census Project Management Unit (CPMU) was a dedicated and specialized section responsible for planning, coordinating, and overseeing all aspects of a census project. It acted as the central management hub that ensures the successful execution of the census, from initial planning to data collection, analysis, and reporting. The CPMU played a critical role in resource allocation, vendor coordination, training, quality control, and communication with stakeholders. The Census Project Management Unit (CPMU) played a central and multifaceted role in the execution of a census project. Its responsibilities encompassed a wide range of tasks crucial to the project's success. Here are the key roles and responsibilities/function of the CPMU in a census project:


**Figure 1: Main Functions or responsibilities of CPMU**

1. **Planning and Coordination**: The CPMU was responsible for developing a comprehensive plan for the census project, including defining objectives, timelines, and resource requirements. It coordinates activities among various stakeholders, such as government agencies, provincial government, armed forces and internally with various PBS sections like GIS section, DP/support services section, field services/field

operation section, census planning and coordination section, administration section etc. for successful execution of census activities.

2. **Communication and Public Awareness**: The CPMU developed and implemented communication and public awareness campaigns to inform the public about the census, its purpose, and the importance of participation. It also managed media relations and public inquiries related to the census

3. **Resource Management**: The CPMU managed the budget of Rs. 34 Billion and its allocation. It managed 'allocation of financial, human, and technical resources required for the census, ensuring that these resources are used efficiently and effectively.

4. **Technical Expertise**: It oversaw the recruitment and training of technical experts and field staff who will conduct the census. This includes ensuring that data collection methods and technologies are up to date and appropriate for the project's goals.

5. **Technology and Data Management**: The CPMU was responsible for the coordination of implementing technology solutions for data collection, processing, and storage. It ensured the acquisition of an ERP solution along with the procurement of tablets and ensured the secure management of census data through the development of databases and systems for data analysis.

6. **Quality Control**: It established quality control mechanisms to verify the accuracy and reliability of census data. This includes conducting regular checks, audits, and evaluations throughout the census process.

7. **Logistics and Field Operations**: It managed the logistics of deploying field teams to gather census data, including the distribution of materials and equipment, transportation, and the establishment of enumeration areas.

8. **Data Analysis and Reporting**: The CPMU oversaw the analysis of census data and the preparation of reports and publications that summarize key findings. It ensured that data is made available to policymakers, researchers, and the public.

9. **Security and Risk Management**: It assessed potential risks to the census project, such as security threats or data breaches, and developed contingency plans to address these risks.

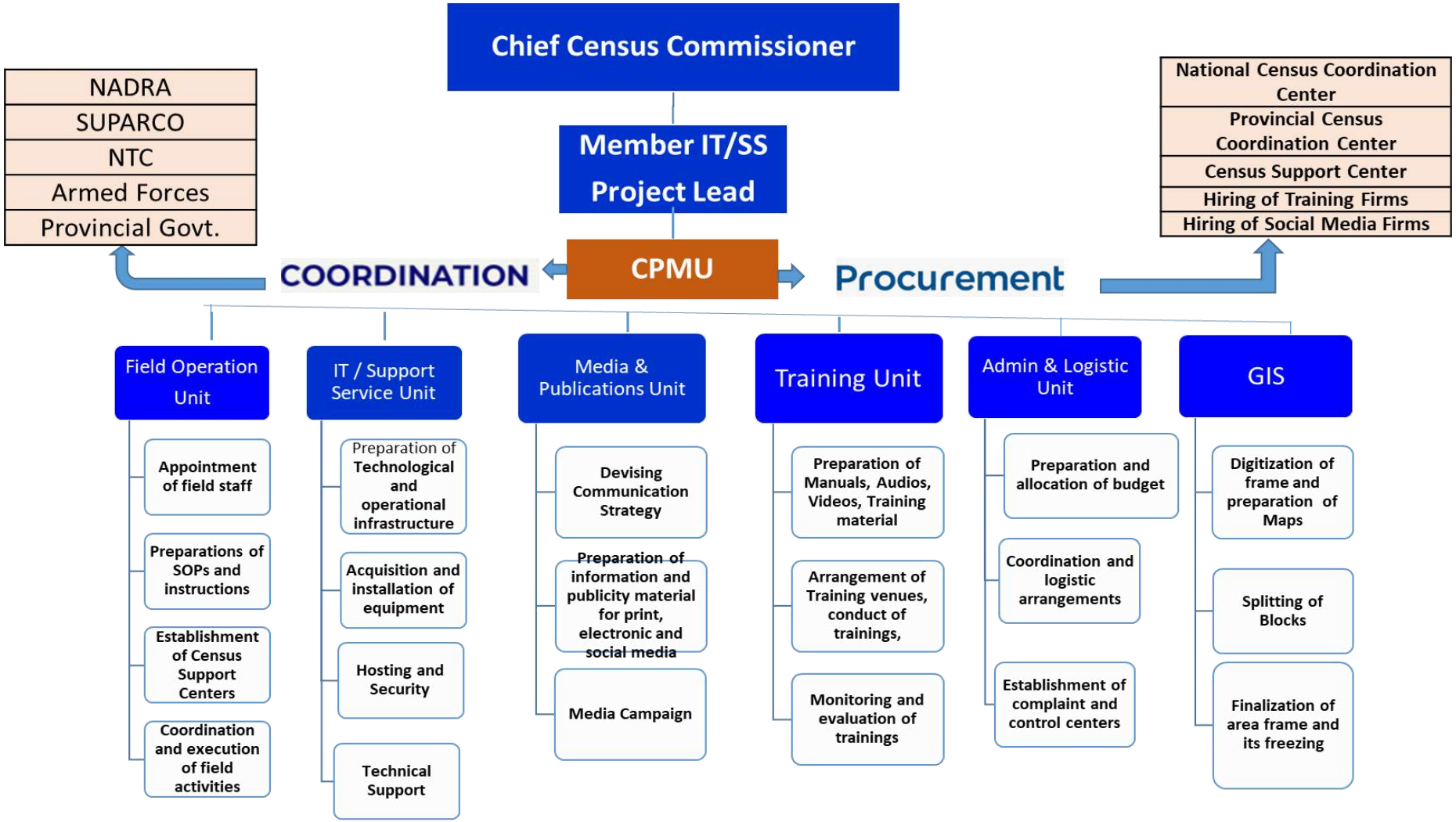
10. **Stakeholder Engagement**: The CPMU facilitated engagement with various stakeholders, including government agencies, non-governmental organizations, and international partners, to gather support and cooperation for the census.

11. **Monitoring and Evaluation**: It established monitoring and evaluation mechanisms to assess the progress and effectiveness of the census project, making adjustments as needed to ensure its success.

12. **Documentation and Knowledge Management**: The CPMU maintained records and documentation related to all aspects of the census project, creating a knowledge base for future reference and improvement.

The functions of CPMU are critical for the successful planning, execution, and completion of a census project, ensuring that it produces accurate and valuable data for policy formulation, resource allocation, and decision-making.

## 3. Integrated Census Project Management Structure



The "Integrated Census Project Management Structure" flowchart delineates the hierarchical and collaborative framework established for the successful execution of the census project. Leading the initiative was the esteemed Chief Census Commissioner, serving as the visionary leader guiding the overall strategy and direction of the project.

Under the direct purview of the Chief Census Commissioner, the Project Lead of IT, Mr. Muhammad Sarwar Gondal Member (SS/RM) assumed a crucial role in ensuring the seamless integration of cutting-edge information technology throughout the census project. This encompasses the strategic use of digital tools, data management systems, and technological solutions to enhance overall efficiency.

The central mission of the Census Planning Management Unit (CPMU) revolved around its dual pillars of coordination and procurement. The CPMU, headed by Deputy Director General Ms. Rabia Awan, spearheaded strategic procurement efforts, overseeing the acquisition of essential resources through entities like National Census Coordination Centre (N3C) and Provincial Census Coordination Centers (P3C). Her leadership at the helm of the CPMU played a crucial role in ensuring the efficient coordination and management of procurement processes, contributing to the successful acquisition of vital resources for various strategic initiatives. With a meticulous focus on collaboration, the CPMU adeptly engaged key stakeholders, including NADRA, SUPARCO, NTC, Armed Forces, and provincial governments, fostering open communication channels and strategic alignment to achieve shared objectives. Internally, the CPMU ensured seamless coordination among diverse sections, such as Field Operation, IT Support Services, Media, Training, Admin and Logistic, and GIS units, promoting an integrated approach to project management. Simultaneously, this dual function underscored the unit's commitment to efficient collaboration and strategic resourcing, ultimately driving the success of the Digital Census initiative.

### 4.1 System Flow

In preparation for the commencement of the inaugural digital census, a thorough and detailed system flow was intricately crafted. This involved a meticulous examination and definition of each step involved in the entire process, ensuring a comprehensive understanding of the workflow.

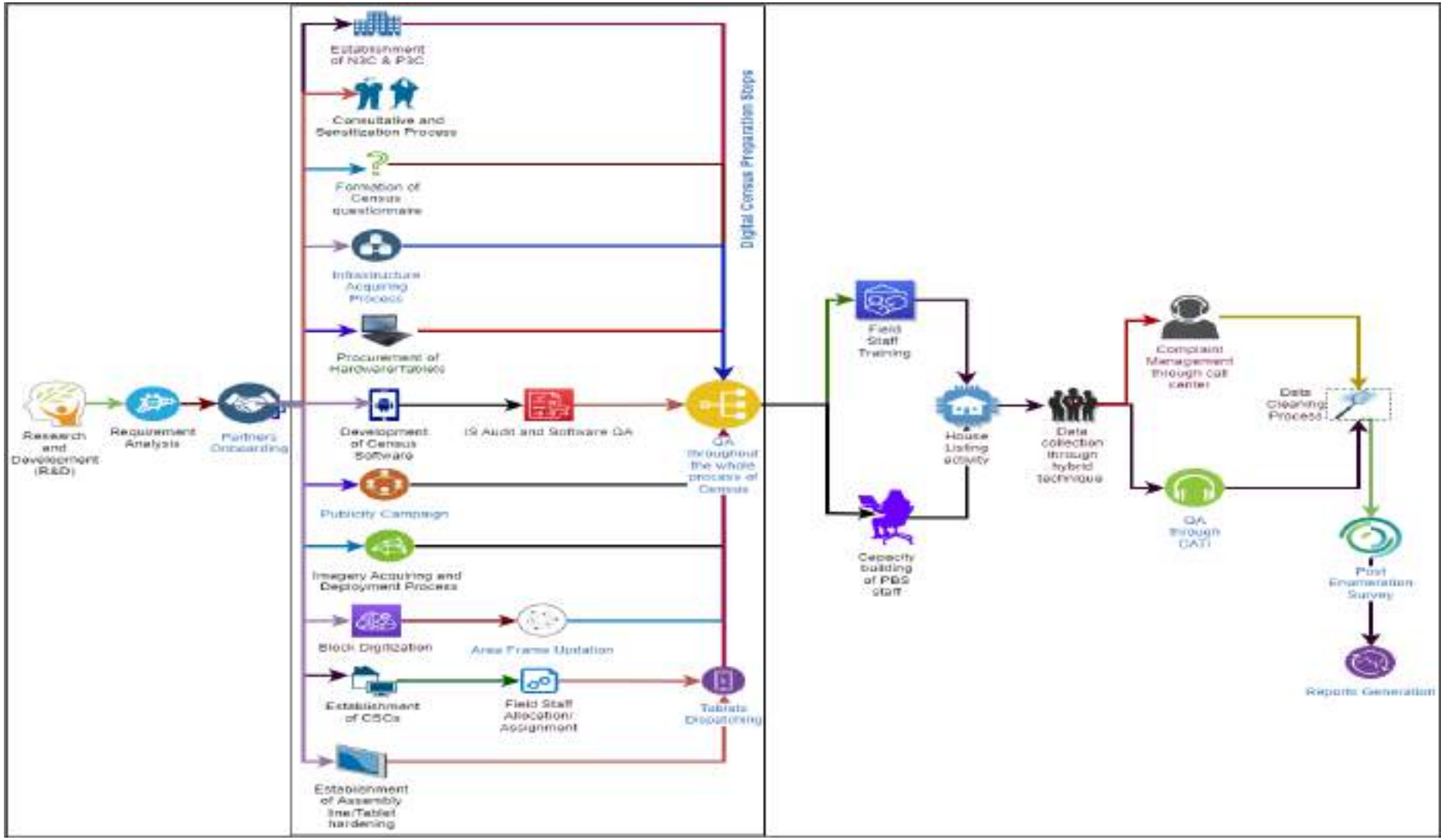
The procurement phase, a critical component of this undertaking, was approached with utmost diligence. All necessary resources, technologies, and services were carefully identified and

acquired to meet the specific requirements of the digital census. This encompassed the acquisition of hardware, software, and any other essential tools needed for a robust and efficient system.

Furthermore, beyond the procurement phase, every other prerequisite was rigorously scrutinized and finalized. This included ensuring the availability of skilled personnel, establishing secure data storage solutions, implementing effective communication channels, and addressing any regulatory or compliance considerations.

The overarching goal throughout this preparatory phase was to create a well-defined and cohesive framework that would not only facilitate the successful execution of the digital census but also ensure accuracy, security, and efficiency in the collection and processing of data. The emphasis on a comprehensive system flow and meticulous procurement practices aimed to lay a solid foundation for the smooth and effective implementation of the groundbreaking digital census initiative**.**

## System Flow


Establishment of N3C & P3C
Consultative and Sensitization Process
Formation of Census questionnaire
Infrastructure Acquiring Process
Procurement of Hardware/Tablets
Development of Census Software
IS Audit and Software QA
Publicity Campaign
Imagery Acquiring and Deployment Process
Block Digitization
Area Frame Updation
Establishment of CSCs
Field Staff Allocation/ Assignment
Tablets Dispatching
Establishment of Assembly line/Tablet hardening
Digital Census Preparation Steps
Research and Development (R&D)
Requirement Analysis
Partners Onboarding
QA throughout the whole process of Census
Field Staff Training
Capacity building of PBS staff
House Listing activity
Data collection through hybrid technique
Complaint Management through call center
QA through CATI
Data Cleaning Process
Post Enumeration Survey
Reports Generation

### 4.1.1 Research and Development (R&D) Process

Research and Development (R&D) played a pivotal role in the Census Project Management Unit's (CPMU) activities. The CPMU spearheaded R&D initiatives to generate new knowledge and brainstorm effective methods for conducting the census. The following diagram (Figure 4.1) illustrates the R&D process flow, highlighting the contributions of the CPMU.

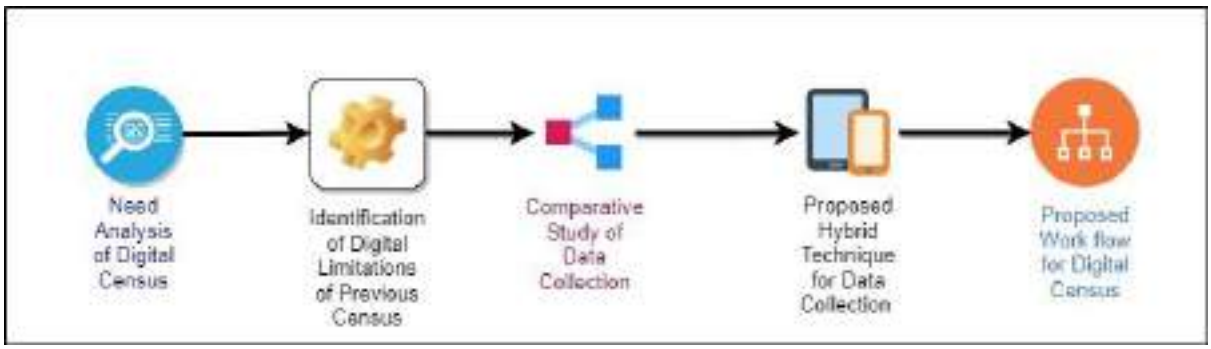



**Figure 2: R&D Process Flow**

**1. Need Analysis of Digital Census**

The shift from the pen-and-paper era to the digital age was imperative in today's fast-paced digital world. Recognizing this need, PBS analyze the requirements for a Digital Census in Pakistan. The CPMU's role in the process was integral to compete on a global scale.

Additionally, the Government of Pakistan established a Committee for Recommendations and Adoption of Best Practices for the Population Census. The CPMU's main role within this committee was to review the census process, devise a strategy for seamless census operations, and enhance the reliability and credibility of census results.

**2. Identification of Digital Limitations of Previous Census**

Having thoroughly assessed the need for a digital census, the CPMU, in conjunction with the committee, identified the following issues and limitations faced during previous census. The CPMU actively participated in the identification and resolution of these challenges:

- **Manual Data Collection:** The enumeration in previous census was manually conducted.
- **Lack of Pilot Census:** Previous census lacked a pilot phase before the actual enumeration.
- **Phased Census:** Previous census was conducted in multiple phases.

- **Use of Old Questionnaires:** The 6th Population and Housing Census 2017 used outdated questionnaires.
- **Traditional Monitoring:** Previous censuses relied on traditional monitoring mechanisms.
- **Lack of GIS Technology:** Traditional manual methods were employed, with no use of Geographic Information System (GIS) technology.
- **No Post Enumeration Survey:** Post-enumeration surveys were not conducted.
- **Public Awareness:** There was a lack of public awareness regarding the census objectives due to limited social media and print/electronic media campaigns.
- **Stakeholder Involvement:** Insufficient involvement of stakeholders throughout the census process.
- **Inadequate Training:** Field staff training programs were conducted with limited use of modern technologies.

### 3. Comparative Study of Data Collection Methodology

The census committee, conducted a comparative study of global best practices for data collection, field operations, monitoring/supervision, data processing, and communication strategies. The committee reviewed the practices of several countries, including Iran, Turkey, Egypt, Bangladesh, and Australia.

This comparative study was instrumental in recommending the best methodologies and strategies for conducting digital census activities in Pakistan, taking into account the country's unique context and ground realities.

| Country Name | Population (Mil) | Areas (Mil sq. KM) | Literacy Rate (%) | Enumeration Methods | | | | Field Staff | Time Duration (Days) | Usage of Registers |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Self. Enumeration | Tablet Based | PAPI | OCR/ICR | | | |
| Iran (2016) | 79.9 | 1.65 | 85.5 | √ | √ | √ | √ | 40,300 | 60 | - |
| Turkey (2011) | 82.0 | 0.78 | 94.11 | - | √ | √ | √ | 3,600 | 90 | √ |
| Egypt (2017) | 40.0 | 1.01 | 71.2 | √ | √ | √ | √ | 35,000 | 60 | - |
| Bangladesh (2011) | 161.7 | 0.15 | 58.8 | - | - | √ | √ | ? | 15 | - |
| Australia (2016) | 23.4 | 7.69 | 99.0 | √ | √ | - | - | ? | 45 | √ |

## 4. Proposed Hybrid Technique for Data Collection

The committee, proposed a hybrid approach for data collection, emphasizing the de-jure method for enumeration. This choice was based on several factors:

- **Majority Adoption:** Many countries were successfully using the de-jure method.
- **Comparability:** The method ensured comparability with previous censuses.
- **Concept Clarity:** It provided clarity of concepts and comprehensive training.

Furthermore, the committee recommended a multi-mode data collection model, which included:

i. **Self-Enumeration (Phase-I)**: CPMU was instrumental in launching a secure web-based self-enumeration portal 15 days before field enumeration. This portal was extensively tested through a pilot census.

ii. **Tablet-Based Enumeration (Phase-II)**: The CPMU played a significant role in collecting data electronically through tablets, both online and offline, by field enumerators.

iii. **Paper-Based Enumeration (PAPI)**: Paper and Pencil Personal Interviewing (PAPI) served as a fallback plan for areas with minimal to no internet coverage, low literacy rates, or security concerns.

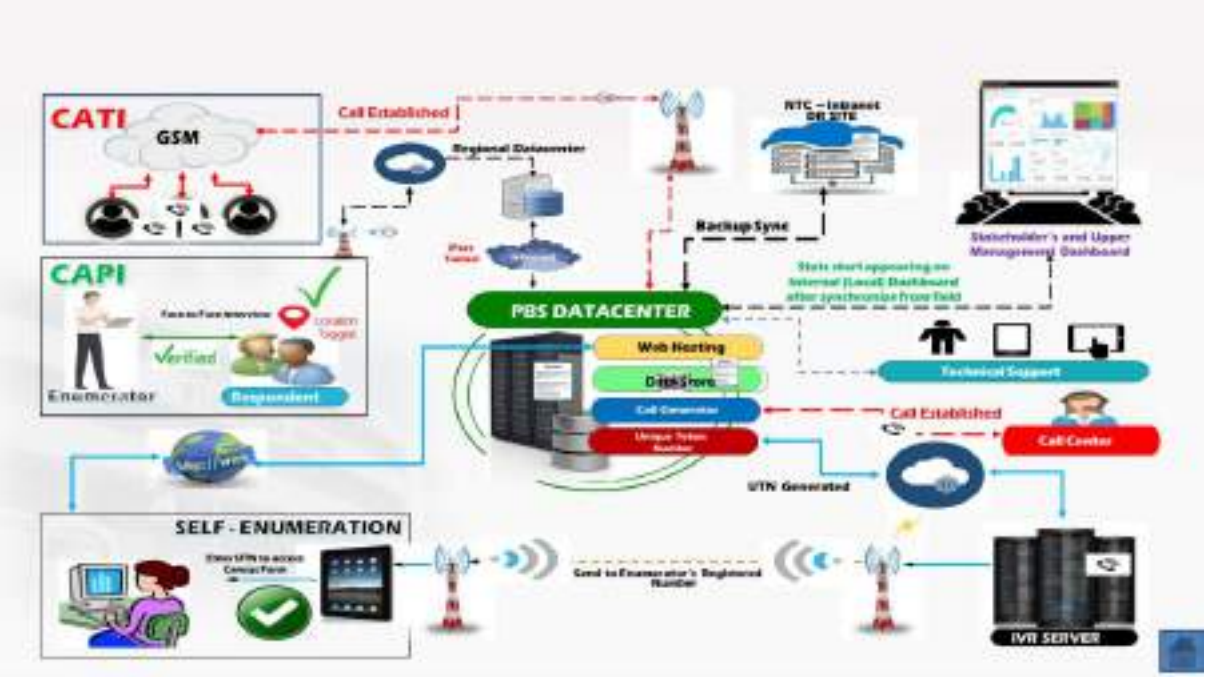



**Figure 3: Process of Self Enumeration**

The CPMU's active involvement in these activities and recommendations greatly contributed to the successful execution of the first-ever digital census in Pakistan.

### 4.1.2. Requirements Analysis

In the requirements analysis phase, PBS determined the exact requirements and specifications for the first-ever digital Census. These requirements, which are quantifiable, relevant, and comprehensive, were instrumental in ensuring the success of the project. CPMU actively participated in documenting, validating, and ensuring the feasibility of these requirements, thereby contributing significantly to the project's overall success.

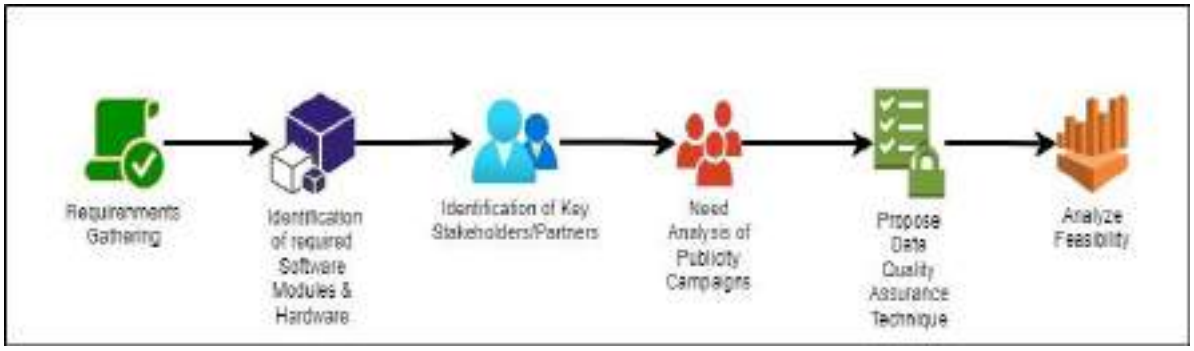



**Figure 4: Process of requirement analysis**

### 1. Requirements Gathering

Building upon the workflow proposed during the R&D phase CPMU, collected essential requirements for the digital census. CPMU played a crucial role in defining, documenting, and ensuring the feasibility of these requirements. Key requirements integral to the Census Process included:

- Infrastructure Requirements
- Specifications of Hardware and Tablets for Census Activities
- List of Census Software Modules
- Strategies for Publicity Campaign
- Selection Criteria for Census Partners
- Improvements/Suggestions for Census Questionnaires
- Tools for Quality Assurance
- Decision on Conducting a Pilot Before the Actual Census

## 2. Identification of Required Software Modules & Hardware

A dedicated team within PBS, actively guided by the CPMU, identified the required software modules and, based on these software modules, determined the necessary hardware specifications needed to meet the software's minimum requirements.

For the First Ever Digital Population and Housing Census, Pakistan Bureau of Statistics (PBS) intended to acquire a complete Census Enterprise Resource Planning (ERP) solution. The selected bidder, under the guidance of the CPMU, was tasked with Requirements Gathering and Analysis, Design and Implementation of the solution, and providing maintenance support for a period of one year, ensuring a complete handover to PBS. The proposed Census ERP solution encompassed several modules, all actively guided by the CPMU:

| S.No | Modules Name |
|---|---|
| 1 | HR and Task Assignment |
| 2 | Inventory Management System |
| 3 | Area Frame Updation Application |
| 4 | CATI Interface |
| 5 | Complaint Management System |
| 6 | Listing Application |
| 7 | Enumeration Application |
| 8 | Centralized Communication Application |
| 9 | Self-Enumeration Application |
| 10 | Trend Analysis / Supervisor Dashboard |
| 11 | Data Dissemination Dashboard |
| 12 | Data Cleaning Module |
| 13 | Tabulation / Reporting Module |
| 14 | Training Management System |
| 15 | GIS Based Monitoring Dashboard |
| 16 | GIS Based Decision Support System |

The tablet hardware procured from NADRA adhered to the following basic specifications, actively managed and guided by the CPMU:

| | |
|---|---|
| CPU | 2.0G Hz Octa core 64bit |
| RAM/ROM | 8GB+128GB EMCP |
| Display | 8-inch IPS/AFFS 1200x1920<br>Industrial 1000 NIT (CD/M2) Sunlight Readable |

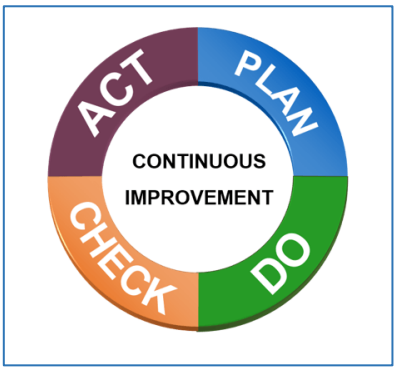
| | |
|---|---|
| Touch Panel | Capacitive / frosted tempered film<br>Support glove touch/spray/A-Capacitive Pen |
| Basic Function | 2G/3G/4G/BT/GPS/WIFI/FM/Axis |
| GPS | GPS + Glonass + AGPS (Optional Beidou) |
| Sensors | Motion, Gravity, Gyro, Acceleration, Opto, Proximity, Rotation Vector |
| Camera | 13 MP (AF) with flash led (Rear)<br>5 MP Sub Camera (Front) |
| WIFI/BT | Dual band (2.4 GHz/5Ghz)<br>802.11a/b/g/n MAC/BB/RF<br>BT v4.0 (LE) |
| Battery | 18,600 mAh |
| SD Card | up to 128GB Micro SD Card |
| Protection | IP67 |
| Rugged | -20 to 55º C Operating Temperature<br>Class 6 (IEC 60529) Waterproof<br>Class 6 (IEC 60529) Dustproof<br>MIL-STD 810G/Method 516.6 drop proof<br>5% to 95% RH (Relative Humidity)<br>Max 15,000 feet operating altitude |
| QR/Barcode Reading | Integrated QR/PDF417 reader |

## 3. Need Analysis of Publicity Campaigns

Recognizing the importance of effective publicity campaigns, the CPMU actively participated in the need analysis of these campaigns. Effective awareness campaigns were deemed crucial for the overall success of the Census, as they improved response rates, facilitated smooth field operations, reduced enumeration costs, and increased data quality. The CPMU, in close collaboration with PBS, actively ensured that the campaign was initiated early in the census implementation phase and sustained throughout the exercise.

## 4. Proposed Data Quality Assurance Technique

The CPMU actively contributed to the proposal of an effective Data Quality Assurance technique. This technique was designed to allow the viewing and rectification of inconsistencies in synchronized data through a set of rules. Quality Assurance (QA) modules were developed, with the CPMU's active involvement, to remove anomalies, inconsistencies, and noise from data synchronization. The QA cycle consisted of four steps: Plan, Do, Check, and Act. Some of the major functionalities of the QA module included the definition and configuration of validation rules, identification of false positives, and auto-correction/imputation support. Quality Assurance, guided by the CPMU, focused on ensuring the entire Census process was fit for use and maintained quality.



### 5. Analyze Feasibility

After the thorough analysis of all the requirements needed to implement the digital census process, PBS, guided by the CPMU, made the critical decision regarding the feasibility of the proposed solution. The feasibility of the Digital Census was determined while keeping the ground realities of the country in mind, and the CPMU actively participated in this analysis.

## 4.2 Formation of Census Questionnaire:

Following extensive deliberations and a comprehensive comparative study, the CPMU, along with its committees, recommended features for the Census questionnaire. This questionnaire, designed for the first-ever Digital Census, aligned strictly with the objectives of the Census. Two distinct questionnaires were proposed: the first, a House listing form (Form-1) with 4 to 6 questions, and the second, a Main Census form (Form-2) with 10 to 12 questions covering demographic and housing characteristics. These include factors such as age, gender, religion, ethnicity, nationality, disability, migration, literacy, education attainments, housing details, and ownership specifics. Noteworthy additions to the census questionnaire encompass Economic Activity, Education Attainments, Migration, Functional Limitation, and the count of individuals residing abroad. The 7th Population and Housing Census adhered to the De-Jure methodology for comparability with previous census data.

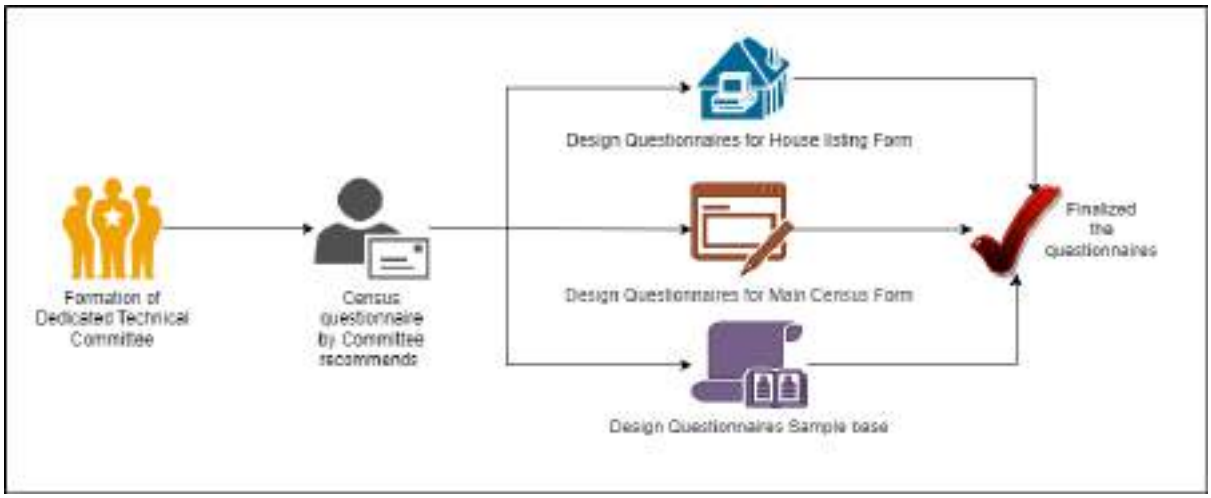



**Figure 5: Process Flow for Census Questionnaire**

## 4.3 Procurement and Contract Management

The CPMU played a crucial role in the tender process, adopting two distinct procurement models for the census project. The first model involved procurement from private parties, where the CPMU actively managed the acquisition of necessary resources and services from

external entities, ensuring they met the project's requirements. Simultaneously, the CPMU implemented a Government to Government Model (G2G) for the second approach. In the G2G model, PBS collaborated with various National Organizations to navigate the unique and challenging landscape of Pakistan's first digital census. This collaborative effort was essential in meeting the paramount requirements of the census project within the specified timelines. The CPMU assumed a multifaceted responsibility, developing and managing the census technology infrastructure while adapting to two distinct procurement models. This approach highlighted the CPMU's crucial role in ensuring a smooth and effective implementation of the census project


**Figure 6: Procurement process of Census**

### 1. Identification of Procurement Needs:

**a) Procurement from Private Parties:** The CPMU identified the specific requirements for goods, services, or construction projects essential for the census operation. The successful conduct of the first-ever digital census in Pakistan necessitated a meticulous identification of essential requirements and needs across various categories. These encompass both hardware and software elements, including a fleet of laptops and desktops, photocopiers for both black

and white and color printing, as well as a substantial number of LaserJet printers. In addition, the acquisition of GIS licensed software was vital for efficient data processing and mapping. To facilitate the census enumeration process, green markers for house listing are imperative, as was the careful consideration of vehicle fabrication to support field operations. Furthermore, harnessing the power of social media was indispensable for effective outreach and awareness building.

The project extended beyond digital assets to the establishment of national census coordination center (N3C) Provincial Census Coordination Centers (P3Cs), census support centers (CSC) each of which requires specific furniture to ensure functional and comfortable workspaces. A Training and social media Firms were also an integral part of the equation, playing a pivotal role in preparing the workforce for the task at hand and publicity and awarness. Lastly, to outfit enumerators adequately, jackets and caps are a requirement to ensure both their comfort and visibility in the field. The comprehensive identification of these requirements forms the cornerstone of a successful digital census, setting the stage for a groundbreaking operation that blends technological innovation with precision and efficiency.

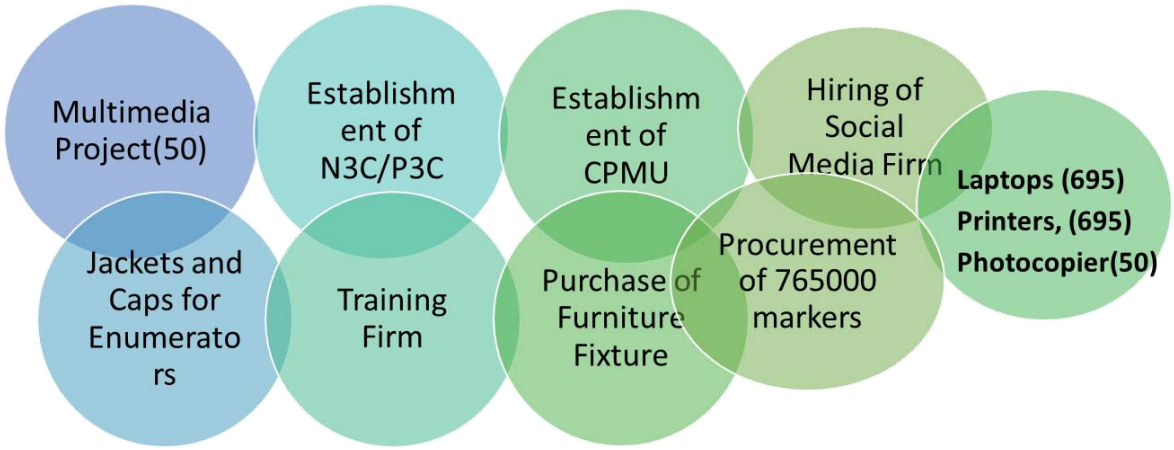



**Figure 7: Requirements for Procurement from Private Parties**

### b) Procurement by Government to Government Model (G2G)

The adoption of a Government-to-Government (G2G) model for a comprehensive census initiative necessitated meticulous planning and strategic procurement by the government organization. At the core of this endeavor was the acquisition of 126,000 secure tablets, each equipped with advanced security features, to serve as essential tools for efficient data collection in the field. Complementing this technology, the implementation of a specialized Census Enterprise Resource Planning (ERP) system was a critical component of the procurement strategy, ensuring seamless data management throughout the entire census process.

The strategic foresight extended beyond devices to encompass the establishment of a robust data infrastructure. This involved procuring storage facilities capable of handling the substantial volume of collected data, computing resources for efficient data processing, and the creation of a dedicated call center to manage inquiries and provide support related to the census. This comprehensive infrastructure formed the backbone of the initiative, facilitating the organization and processing of data on a large scale.

A distinctive feature of the procurement strategy was the acquisition of high-resolution imagery tailored to different geographical settings. With resolutions of 0.3 meters for urban areas and 0.98 meters for rural regions, this imagery played a pivotal role in accurate digital mapping, contributing to precise enumeration and real-time monitoring—the cornerstones of a successful census.

In recognition of the need for a well-coordinated and capable workforce, provisions were made for 121,000 field and supervisor staff. This extended beyond the procurement of devices and infrastructure to include comprehensive training programs, ensuring the readiness and effectiveness of the workforce in executing on-the-ground operations.

Furthermore, the procurement strategy incorporated a strong emphasis on security measures. Physical security measures were implemented to safeguard the well-being of census field staff, while robust data security measures were put in place to protect the sensitive information collected during the census. This holistic and technology-driven approach to procurement, under the umbrella of the G2G model, underscored the commitment to ensuring accuracy, efficiency, and the security of both personnel and data in the successful execution of the census initiative.

The CPMU, simultaneously with these efforts, oversaw the development of specialized census software that caters to the unique needs of the Digital Census. This software facilitated data collection, management, and real-time monitoring, supporting multiple data collection modes, such as self-enumeration and tablet-based methods, to ensure transparency and accessibility for the population.


**Figure 8: Requirements for procurement for G2G model**

**2. Preparation of Comprehensive Tender Documents:** The CPMU was tasked with creating comprehensive tender documents or request for proposal documents. These documents detailed technical specifications, quality standards, delivery schedules, and other specific requirements for potential suppliers or contractors. The requirement documents prepared with the detailed input of the requirements of the relevant section, keeping in view the PPRA rule 2019.

**3. Advertisement and Invitation:** Collaborating with appropriate authorities, the CPMU advertised the tender opportunities through various means, including public notices, and online procurement portals, to reach a wide range of potential suppliers.

**4. Management of Bid Submissions:** The CPMU managed the submission process of bids or proposals from interested suppliers/contractors. These submissions included detailed information on pricing, technical capabilities, and other relevant details.

**5. Evaluation of Bids:** The CPMU oversaw the formation of a tender evaluation committee or team, responsible for reviewing and assessing all submitted bids. The evaluation process

followed predefined criteria, emphasizing factors like price, quality, and compliance with specifications.

**6. Supplier/Contractor Selection:** Based on the evaluation results, the CPMU, in coordination with relevant sections, selected the supplier/contractor that offered the best value for the census project while meeting its specific requirements as per the RFP and in the light of PPRA rules.

**7. Notification and Feedback:** The CPMU ensured timely notification to all participating suppliers/contractors, including both successful and unsuccessful bidders. Unsuccessful bidders may have received feedback to enhance their understanding of why their bids were not selected.

**8. Contract Negotiation:** For the selected supplier or contractor, the CPMU engaged in contract negotiation, discussing and finalizing the terms and conditions, which might have included further negotiations on pricing and delivery schedules.

**9. Awarding of Contracts:** Once negotiations were successfully concluded, the CPMU formally awarded contracts to the selected suppliers/contractors based on the agreed-upon terms.

**10. Ongoing Contract Management:** The CPMU continued to play a pivotal role in managing awarded contracts. This encompassed ensuring adherence to contract terms and conditions, monitoring supplier/contractor performance, and addressing any emerging issues or concerns during the census project.

In summary, the CPMU's responsibilities in the census project included overseeing and facilitating the entire tender process, from identifying procurement needs to managing awarded contracts, with a commitment to transparency, competition, and fairness in supplier/contractor selection.

## a) Procurement from Private Parties:

### 1. Establishment of CPMU

The establishment of the CPMU was a critical response to the monumental nationwide task of conducting the census. This demanding activity, requiring simultaneous implementation throughout the entire country and substantial human and financial resources, emphasized the need for a robust mechanism to administer and monitor field activities. The Census Advisory

Committee, responsible for recommending and adopting best practices, proposed the creation of the CPMU, a proposal subsequently approved by the Cabinet on 5th October 2021.

In response to this approval, the Pakistan Bureau of Statistics initiated the establishment of the CPMU by renovating existing space on the second floor at Statistics House. This transformed facility served as the central hub for all planning and administration related to census activities. The CPMU, designed as a specialized unit with dedicated staff including IT experts, subject specialists, GIS experts, coordinators, and statisticians, functioned as a centralized policymaking, monitoring, and coordination unit for field operations.

Simultaneously, the CPMU team, comprised of experts in various fields, played a crucial role in managing a meticulous and transparent tendering process to select a suitable contractor for the initiative. They documented all aspects, including the Request for Proposals (RFP) and the tendering process.

Through tendering process, a renowned firm, securing the contract for establishing the CPMU. The selection of firm was based on their competitive proposal and demonstrated capacity to meet the specific requirements outlined in the RFP.

This transparent tendering process not only ensured the selection of a qualified and capable contractor but also fostered confidence in the effectiveness and efficiency of the CPMU. The CPMU team's involvement in every step of the process, from drafting the RFP to evaluating bids, underscored their commitment to a thorough and accountable approach in realizing the vision of a successful Census Planning Management Unit.

## 2. Establishment of N3C

The foremost work and accomplishment of the Census Planning Management Unit (CPMU) was the establishment of the National Census Coordination Center (N3C). This pivotal initiative aligned with the recommendations of the Census Advisory Committee (CAC), which had recognized the need for a centralized decision-making hub to effectively coordinate and oversee the digital census project. The N3C secured as secretariat of census monitoring committee constituted by council of common interest that oversaw the census operation. The N3C served as the nerve center, equipped with cutting-edge technologies, including audio-video conferencing and real-time monitoring capabilities, to facilitate prompt decision-making and ensure coordinated efforts for the successful conduct of the Digital Census. It connected seamlessly with provincial headquarters and 495 Census Support Centers (CSCs) at the

district/tehsil level, enabling progress reviews, trend analysis, and geographical reach assessment around the clock.

The significance of N3C extended to its ability to engage IT experts and demographers for insightful data analysis, contributing to informed decision-making throughout the census process. In essence, the establishment of N3C represented a pivotal milestone in directing the complex and groundbreaking endeavor of conducting Pakistan's first-ever digital census. This accomplishment by the CPMU reflected a proactive approach in implementing the recommendations of the CAC and showcased the unit's dedication to leveraging advanced technologies for efficient and coordinated census operations.

**Figure 9: Some of the pictures of N3C**

## 3. Establishment of P3C

One significant accomplishment of the CPMU was the establishment of Provincial Census Coordination Centers (P3Cs). These P3Cs served as vital governmental bodies entrusted with the coordination of census activities within their respective provinces (Punjab and Sindh). Their primary objective was to ensure the efficient and accurate execution of the census process, with an unwavering commitment to counting every resident. Collaborating closely with local authorities, community organizations, and various stakeholders, the P3Cs engaged in comprehensive community outreach efforts to raise awareness about the census and underscore its importance. Furthermore, they provided essential support and guidance to census

enumerators who were responsible for collecting data from households and individuals. This, in turn, contributed significantly to upholding the accuracy and reliability of the census data.

## 4. Establishment of Census Support Centers/Control Room

Following the establishment of the National Census Coordination Center (N3C) and Provincial Census Coordination Center (P3C), another significant work and accomplishment of the CPMU was the creation of 495 Census Support Centers (CSCs) and the Control Room. These CSCs played a crucial role as the backbone of the census field operations. Their responsibilities encompassed various vital functions, including the handling and distribution of handheld devices, the installation and configuration of census-related applications, and the provision of essential technical support services in the field.

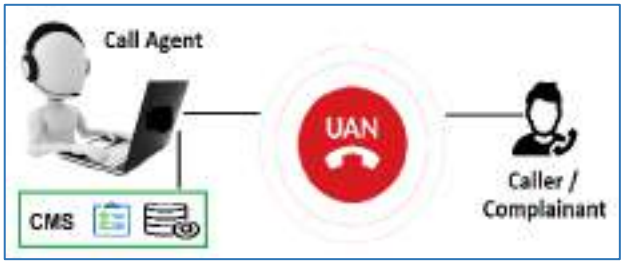
These centers were strategically located at the Tehsil/Census District level, ensuring proximity to the census districts and tehsils where the actual enumeration takes place. This geographical distribution facilitates efficient logistics and support, contributing to the seamless execution of the census.

Moreover, they served as a central hub for coordinating and monitoring census-related activities. It acted as a center where real-time information flows in, allowing for prompt responses to any challenges or issues that may arise during the census process. These centers were also designated as comprehensive hubs for the registration and resolution of any issues raised by the public concerning non-enumeration and related matters.

The establishment of CSCs and the Control Room was integral to ensuring the availability of the system 24/7, which was particularly crucial for the success of Pakistan's first-ever Digital Census. These centers not only streamlined operations but also foster effective coordination between census districts and the Pakistan Bureau of Statistics (PBS) headquarters, ultimately contributed to the accuracy and efficiency of the census data collection process

## 5. Establishing a Public Interface Call Center

One of the pivotal responsibilities and achievements of the CPMU was the establishment of a




Public Interface Call Center with UAN (0800 57574) at PBS in collaboration with the National Telecommunication Corporation (NTC), aligning with the recommendations of the Census Advisory Committee.

Functioning as a versatile platform, the 24/7 Call Center served as a critical nexus, enabling individuals to register and resolve complaints related to various facets of statistical activities. It addressed issues encountered by respondents, enumerators, and other stakeholders engaged in the data collection process.

The call center was created to facilitate the registration and resolution of complaints, with all complaints recorded using a specialized complaint management software. Subsequently, these complaints were directed to specific working groups responsible for their resolution. NADRA took the lead in developing the Complaint Management System application, and through collaboration with PBS and NTC, the system was seamlessly integrated to ensure its functionality. This strategic approach guaranteed an organized and efficient process for addressing and resolving complaints raised by complainants. Serving as the primary entry point, the call center ensured that each complaint is promptly and appropriately addressed by the relevant working group.

Notably, the Call Center played a key role in upholding the quality assurance standards of data collection. By employing advanced Computer-Assisted Telephone Interviewing (CATI) techniques, it ensured that information gleaned through telephone interviews adhered to the requisite benchmarks of accuracy and reliability. The integration of CATI systems significantly streamlined interview processes and facilitated the meticulous recording of responses.

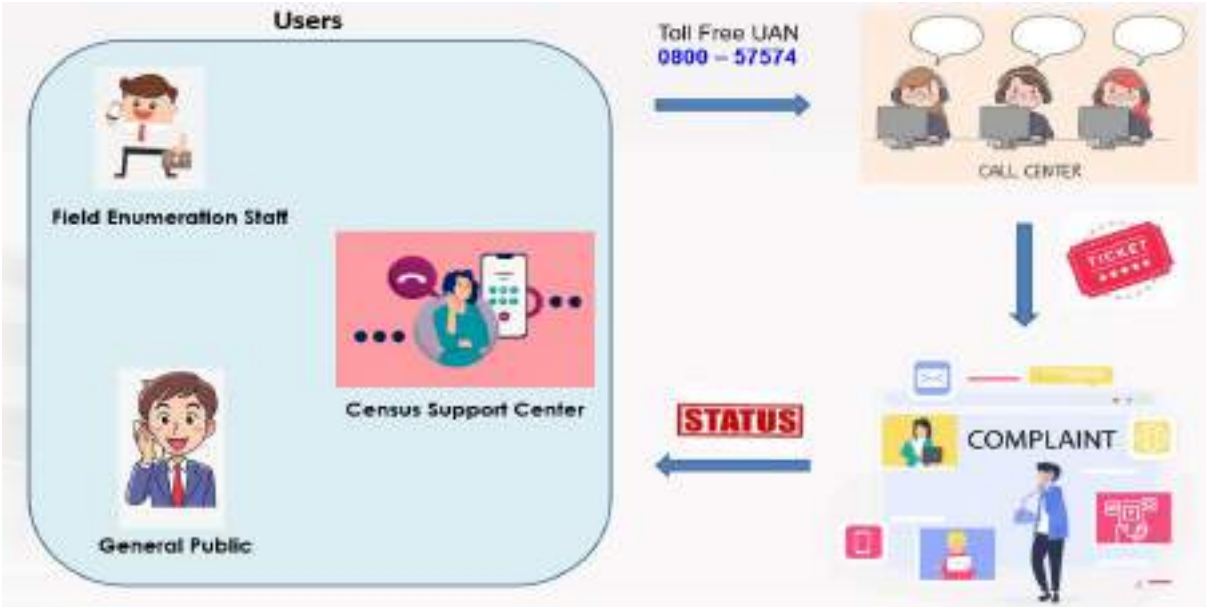



**Figure 10: CATTI Approach for QA**

Moreover, the Call Center functioned as a central hub for providing assistance and managing queries related to census activities. This proactive approach empowered respondents and the

general public to seek clarification, guidance, or support on various aspects of the census. The result was an enhancement in communication and understanding, leading to more precise and reliable data collection.

**Figure 11: Some of the pictures of Call Center**

In addition to its primary role in handling individual queries, the Call Center assumed a pivotal position in coordinating diverse aspects of census activities. This encompassed scheduling for enumerators, logistical management of data collection, and ensuring the smooth flow of information across different levels of the statistical organization. Recognizing effective coordination as integral to the overall success and efficiency of data collection efforts, the Call Center became a requirement in the census operation.

The operational effectiveness of the Call Center was further ensured by the deployment of 80 well-trained call agents operating in three shifts, providing continuous 24/7 coverage. This flexible approach accommodated the diverse schedules of respondents and stakeholders. The training provided to the call agents was thorough, covering not just the technical aspects of data collection but also placing emphasis on fostering communication skills, problem-solving capabilities, and a detailed understanding of census.

In summary, the establishment of the 24/7 Call Center in collaboration with NTC, orchestrated by the CPMU, stands as a testament to a comprehensive and strategic approach. This initiative significantly enhanced the efficiency, quality, and accessibility of data collection of census, in line with the recommendations of the Census Advisory Committee and contributing substantively to the success of the census operations.

## Integrated Procurement: Multimedia, Gear, Furniture, and IT Essentials

### 1. Multimedia Resources: Technological Excellence in Documentation

In the procurement phase, a rigorous tendering process was executed to acquire cutting-edge multimedia resources, specifically focusing on audio-visual equipment. The emphasis was on securing technologically advanced tools crucial for documenting and recording census-related activities. The evaluation criteria prioritized state-of-the-art solutions to meet the evolving technological demands of the census operation. These multimedia resources were utilized in the training of the digital census, where presentations were played to enhance the learning experience.

### 2. Enumerator Gear: Caps and Jackets for Field Comfort

The procurement process extended to specialized gear for enumerators, specifically caps and jackets. Beyond functional considerations, the tendering process emphasized the durability and standardized appearance of this gear. The goal was to provide field enumerators with comfortable and reliable attire suitable for diverse census environments, acknowledging the importance of a uniform and professional appearance.


### 3. Furniture Sourcing: Enhancing Workflow Efficiency

Addressing logistical needs, the procurement initiative covered the sourcing of furniture designed to optimize workflow efficiency. This phase prioritized the selection of ergonomic

and functional furniture to create a conducive working environment. The focus was on supporting both field enumerators and administrative staff, recognizing the significance of a well-equipped infrastructure in facilitating seamless census operations.

**4. IT Equipment: Laptops, Printers, Photocopiers - Technological Empowerment**

The procurement process meticulously addressed the technological needs of the census operation, encompassing IT equipment such as laptops, printers, and photocopiers. Through a tendering procedure, the selection of these assets prioritized quality standards and technological advancements. The overarching goal was to empower the census workforce with cutting-edge tools, ensuring they are well-equipped to execute their duties seamlessly in the digital realm.

This strategic segmentation in the procurement process reflects a commitment to excellence in acquiring diverse essentials for the census operation, each category tailored to specific needs and considerations.

## 6. Hiring of Print, Electronic and Social Media firms

The process of involving media partners in the Census 2023 publicity campaign in Pakistan was carried out in several steps. The initiative aimed to garner public support through Print, Electronic, and Social Media. Advertising agencies were hired based on Press Information Department (PID) policies. A selection committee, including representatives from the Pakistan Bureau of Statistics (PBS), PID, and an external media expert, evaluated proposals from agencies.

**1. Hiring of Print & Electronic Media Advertisement Agency**

The hiring process for Print and Electronic Media Advertisement Agencies for the Census-2023 campaign followed Press Information Department (PID) policies. Advertising agencies were selected through a committee, including representatives from PBS, PID, and an External Media Expert. The agencies submitted proposals encompassing various elements such as the Census logo, slogans, jingles, and campaign strategies. Emphasis was placed on community awareness programs, handling false information, merchandising, and continuous campaign monitoring.

Twenty-three companies participated, and after a thorough review, 17 were approved for further evaluation. Ten companies were shortlisted for final presentations, with three—M/s Creative Junction Pvt. Ltd., M/s Adage Communications Pvt. Ltd., and M/s Midas Pvt. Ltd.—selected based on their creative work. Work distribution involved announcing competitions for

each assignment, with the winning agency receiving 50%, and the second and third positions receiving 30% and 20%, respectively. This approach aligned with PID and Pakistan Bureau of Statistics practices, ensuring a comprehensive and effective media campaign for the Census-2023.

The Print Media Campaign for the Census-2023 spanned 21 days with 420 insertions in 12 National (English & Urdu) and 16 Regional Newspapers, reaching a daily readership of 4788K. All colored advertisements were strategically placed on the front pages, selected based on Audit Bureau of Circulation (ABC) Certification for maximum coverage. Additionally, over 50 press releases highlighting crucial census activities were published in various National and Regional Newspapers during the campaign. Chief Census Commissioner and official spokesperson interviews were featured in different newspapers.

The Radio Campaign comprised 961 spots over 25 days, totaling 5 hours and 57 minutes. PBS sponsored the Pakistan Super League (PSL) transmission on Radio Pakistan, reaching 98% of the population and 80% of Pakistan's area. Apart from spots, census participation announcements were broadcasted on all Radio Pakistan frequencies, including interviews and podcasts of Chief Statistician and the Official Spokesperson. Unpaid announcements during PSL matches contributed to the campaign, especially in remote areas. A specialized effort targeted low-response areas, repeatedly announcing a UAN number for complaints about unvisited areas by enumerators. This campaign remained active on different FM and MW frequencies for three days before the end of Field Enumeration.


## 2. Hiring of Social Media Firm

Recognizing the pivotal role of social media in rapid message dissemination, the Census Advisory Committee (CAC) recommended hiring a social media firm for the 7th Population and Housing Census publicity campaign. To implement this, a comprehensive Request for Proposal (RFP) was prepared, outlining criteria, requirements, and deliverables. The RFP process, approved by the Chief Statistician, led to the selection of M/s Mindmap Communications Pvt. Ltd. for the Social Media Campaign. The contract between PBS and Mindmap Communications was signed on March 18, 2022. The evaluation process, overseen by a committee chaired by Mr. Ayazuddin, involved four participating companies, with the selected firm chosen after a thorough review and adherence to formalities. The contract spans one year.

Mind Map's role encompasses comprehensive social media coverage for the Digital Census initiative, ensuring a strategic and impactful online presence. This includes engaging with influential figures, encouraging public participation through relevant hashtags, and managing the dissemination of recorded messages from notable personalities on official Social Media Handles.


**Figure 12: Involvement of Celebrities/Influencers**

In line with this, Mind Map created dedicated pages on Twitter, Facebook, YouTube, Instagram, and Snapchat. Across these platforms, they strategically posted videos and content aimed at enhancing publicity and awareness for the Digital Census initiative. This comprehensive approach underscores the commitment of the CPMU to employ specialized expertise in navigating the digital landscape for the successful promotion and communication of the census endeavor.


**Figure 13: Social Media pages of PBS**

## 7. Hiring of Training Firm

To ensure the success of Pakistan's 7th Population and Housing Census, the Census Advisory Committee recognized the crucial role of a robust training strategy. This recognition led to the recommendation of a modernized approach, leveraging the expertise of training specialists and technology. The pivotal responsibility of executing this strategy fell on the Census Project CPMU, which played a key role in overseeing the transparent tendering process for hiring a training firm for the digital census.

Under the meticulous supervision of the CPMU, the tendering process aimed to solicit proposals, evaluate bids, and select a qualified training firm. The outcome of this process marked a historic milestone, as the consultancy firm 'SEBCON Pvt Ltd' was chosen for the first-ever engagement of external expertise in the history of the Census program. SEBCON was entrusted with providing comprehensive training materials and organizing Master trainers' training at NIBAF.


**Figure 14: Some screenshots taken from manuals of instruction**

The adopted standardized training mechanism, guided by the CPMU, utilized digital formats distributed via USB drives and online accessibility to ensure consistency across all training levels. Emphasizing transparency, PBS, under the oversight of the CPMU, uploaded training materials to its website, ensuring widespread access.

The comprehensive training framework, developed in collaboration with SEBCON, included the creation of a Manual of Instructions in multiple languages. This manual covered conceptual, ethical, and IT software guidelines, as well as a Field Operational Plan. The training firm played a vital role in this process, emphasizing the importance of a well-structured and interactive approach.

Recognizing the evolving needs of effective training, audio-visual tutorials and presentations were incorporated into the program. These multimedia tools, facilitated by the expertise of the training firm, covered various aspects of the census process and were crucial in enhancing understanding.

**Figure 15: Some screenshots of training presentation**


**Figure 16: Some of the screenshots from training videos**

In essence, the sequence of events underscores the meticulous planning and execution led by the CPMU, involving the transparent tendering process, selection of SEBCON Pvt Ltd, and collaborative efforts to create a comprehensive training framework. This approach, guided by the commitment to transparency and effectiveness, aimed to ensure the success of the training program and, consequently, the overall success of the 7th Population and Housing Census in Pakistan.

**Figure 17: Pictures from training of master trainers at NIBAF**

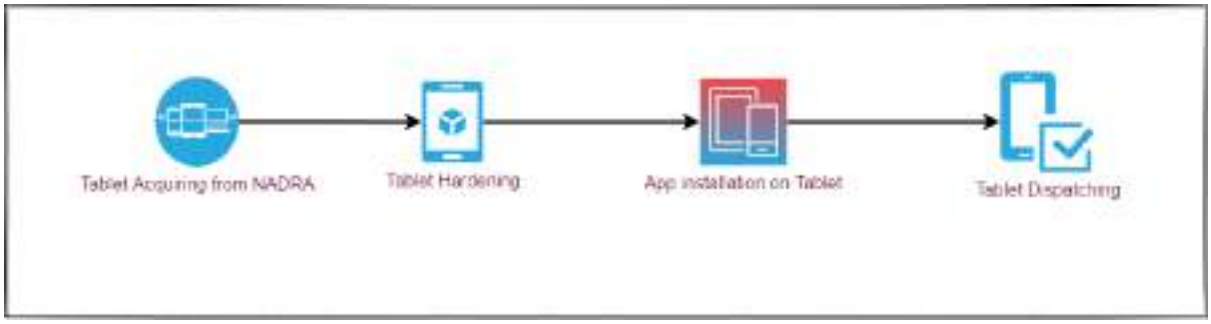
## b) Procurement by Govt to Govt Model

### 1. Procurement and Coordination with NADRA:

The coordination between the Census Project Management Unit (CPMU) and the National Database and Registration Authority (NADRA) was integral to the success of the

Digital Census project. This collaborative effort encompassed various aspects, each contributing to the seamless execution of the census initiative.

NADRA, in its role, assumed responsibility for the procurement and distribution of 126,000 tablet devices and associated accessories essential for the Digital Census. The procurement process involved meticulous planning, preparation, and dispatching of these devices to field staff, ensuring they were equipped with the necessary tools for data collection. Additionally, NADRA facilitated the provision of secure data SIMs for these devices, safeguarding the confidentiality and integrity of the collected data.




Another facet of the collaboration involved NADRA's partnership with the National Telecommunication Corporation (NTC) to establish the required datacenter infrastructure for the census. This included computing, storage, and network resources tailored to meet NADRA's specifications. NTC's role extended to the creation of a primary site in Islamabad and a disaster recovery site in Lahore, establishing intranet and internet connectivity between these locations.

NADRA assumed a pivotal role in the development and deployment of the census software, offering a comprehensive turnkey solution. The software was hosted on the infrastructure provided by NTC, ensuring data synchronization and security. NADRA oversaw the entire software development lifecycle, emphasizing both functionality and security to meet the unique requirements of the Digital Census.

| S.No | Modules Name |
|---|---|
| 1 | HR and Task Assignment |
| 2 | Inventory Management System |
| 3 | Area Frame Updation Application |
| 4 | CATI Interface |
| 5 | Complaint Management System |
| 6 | Listing Application |
| 7 | Enumeration Application |
| 8 | Centralized Communication Application |
| 9 | Self-Enumeration Application |
| 10 | Trend Analysis / Supervisor Dashboard |

| S.No | Modules Name |
|---|---|
| 11 | Data Dissemination Dashboard |
| 12 | Data Cleaning Module |
| 13 | Tabulation / Reporting Module |
| 14 | Training Management System |
| 15 | GIS Based Monitoring Dashboard |
| 16 | GIS Based Decision Support System |

The coordination and testing phase of the project highlighted the collaborative efforts between the PBS and NADRA. PBS focused on requirements implementation testing, while NADRA conducted functional and non-functional testing. This included rigorous assessments such as software requirements testing, design evaluations, penetration testing, load balancing checks, data security validations, and disaster recovery procedure assessments. This joint testing approach ensured that the census software meets the highest standards of functionality, security, and reliability.

In adherence to these collaborative efforts, NADRA formalized its commitment to the Digital Census project by signing a comprehensive contract on June 20, 2022. A Memorandum of Understanding (MOU) was established to delineate the roles, responsibilities, and mutual obligations of the parties involved. This contractual framework solidified the commitment to ensuring the accuracy, security, and efficiency of the census initiative.


**Figure 18: MOU with NADRA 26th June, 2022**

In essence, the coordination between CPMU and NADRA was a crucial element in the successful execution of the Digital Census project, encompassing procurement, infrastructure establishment, software development, and comprehensive testing procedures. This collaboration reflected a commitment to ensuring the accuracy, security, and efficiency of the census initiative**.**

**2. Procurement and Coordination with SUPARCO:**


The collaborative efforts between the Census Project Management Unit (CPMU) and the Space and Upper Atmosphere Research Commission (SUPARCO) played a pivotal role in the effective coordination and procurement of specialized services for the Digital Census project.

Central to this collaboration was SUPARCO's expertise in Geographic Information System (GIS) and space science research. PBS, under the guidance of CPMU, engaged with SUPARCO to procure high-resolution digital satellite imagery tailored to the unique needs and scale of the census project. This collaboration ensured that the acquired imagery meets the project's sensitivity and volume requirements, setting the foundation for accurate and comprehensive spatial data analysis.

SUPARCO, demonstrating its commitment to precision, provided imagery with an impressive 0.3-meter resolution for 18 districts. This high level of detail was crucial for intricate geo-tagging, allowing for precise location identification in densely populated or complex geographical areas. For the remaining regions, SUPARCO supplies imagery with a resolution of 0.98 meters, maintaining a commendable level of accuracy for ground reference purposes. This tailored approach to imagery resolution underscored the meticulous planning and execution in capturing spatial data for the census.


**Figure 19: Imagery Type used Digital Census**

Beyond providing high-resolution imagery, SUPARCO extended its support to PBS in hosting digital enumeration area maps. These maps served as a fundamental component in the census operation, aiding in the organization and visualization of collected data. The collaboration further extended to the coordination for dashboard development, enhancing the project's capacity to present and interpret spatial information effectively. This joint effort reflected the comprehensive nature of the coordination between CPMU and SUPARCO, ensuring that the census project benefits from cutting-edge spatial data capabilities.

To formalize and solidify this collaborative partnership, as of June 1, 2022, CPMU and SUPARCO entered into a contractual agreement. A Memorandum of Understanding (MOU) was established, outlining the specific roles, responsibilities, and commitments of each party. This contractual framework underscored the commitment to precision and innovation in the execution of the Digital Census project, ensuring the seamless and successful implementation of advanced GIS and space science capabilities for accurate data collection and analysis.


**Figure 20: MOU with SUPARCO 1st June 2022**

In conclusion, the coordination and procurement activities between CPMU and SUPARCO exemplified a synergistic partnership dedicated to harnessing advanced GIS and space science capabilities for the success of the Digital Census project. From acquiring high-resolution satellite imagery to supporting digital mapping and dashboard development, this collaboration underscored the commitment to precision and innovation in the execution of the census initiative.

### 3. Procurement and Coordination with NTC:

The collaboration between the CPMU and the National Telecommunication Corporation (NTC) was integral to the success of the Digital Census project, with NTC playing a vital role in providing essential data infrastructure and support services.

One of NTC's key responsibilities was to ensure the acquisition of robust data infrastructure and storage capabilities for the census. This involved the provision of computing, network, and storage resources, establishing a primary site in Islamabad and a disaster recovery site in Lahore. These sites were strategically equipped with the necessary hardware, software licenses, and were backed by 24/7 support, underscoring NTC's commitment to ensuring the security and reliability of the census data.

In addition to infrastructure support, NTC took a proactive role in establishing a dedicated call center at the PBS headquarters for the census operation. This call center served as a central information hub, facilitating communication between the public and various census activities. NTC's contribution extended to handling general complaints, inquiries from the public and enumerators, and addressing frequently asked questions related to the census. Furthermore, NTC transferred the necessary technology to PBS, ensuring that the call center's capabilities could be leveraged beyond the census period, indicating a commitment to the sustained effectiveness of the communication infrastructure.

NTC provided SIMs and internet devices for the census. The selection of telecom services involved evaluating the major five networks available in Pakistan. This process included considerations such as coverage, the Pakistan Telecommunication Authority (PTA) Data, and the enumeration of mobile networks based on Census HR data. Challenges were encountered, including limited data sharing by private telecom companies and the absence of internet accessibility across all regions in Pakistan. Overcoming these challenges required multiple iterations and inputs to ensure the correct selection of services. NTC's provision of SIMs and internet devices played a crucial role in addressing these challenges and facilitating the digital census initiative

The coordination between CPMU and NTC was vital for ensuring the seamless integration of technology and communication services into the Digital Census project. NTC's dual role in providing both infrastructure support and call center services highlights the breadth of its contribution to the project's success. This collaborative effort underscored the importance of a comprehensive and well-coordinated approach. It aimed to leverage NTC's expertise in telecommunications and data management for the efficient execution of the census.

In summary, the coordination and collaboration between CPMU and NTC exemplified a strategic partnership aimed at ensuring the secure and effective implementation of the Digital Census. From infrastructure setup to the establishment of a call center, NTC's multifaceted contributions were essential elements in the comprehensive approach taken by CPMU to conduct a successful and technologically advanced census operation.

## 4.4 CPMU's Working Group Strategy

The establishment of working groups within the Central Project Management Unit (CPMU) for the first-ever digital census represents a strategic and systematic approach to ensure the success of this groundbreaking endeavor. These working groups are designed to focus on specific aspects of the census process, fostering effective coordination, monitoring, and management. Below is an elaboration on the functions and benefits of these working groups:

### I. Operational Software Working Group (SSWP):

*Functions:*

- Efficient management of house listing, enumeration, and self-enumeration processes.
- Seamless coordination with NADRA for technical support and anomaly resolution.
- Generation of daily reports on field operations, providing insights into major challenges.

*Benefits:*

- Ensures the smooth execution of data collection processes.
- Facilitates rapid resolution of anomalies through collaborative technical support.
- Provides real-time information for informed decision-making.

### II. Application Support Team for Administrative Modules:

*Functions:*

- Implementation of essential functionalities for administrative modules.
- Vigilant monitoring and bug fixing for administrative modules.
- Preparation of detailed reports on major field operation challenges.

*Benefits:*

- Supports streamlined administrative processes.
- Ensures the optimal functioning of administrative modules.
- Facilitates timely reporting and issue resolution.

### III. Area Frame Working Group (AFWG):

*Functions:*

- Deployment of high-resolution imagery and relevant polygons.
- Provision of crucial support for field staff concerning digital maps and SOPs.
- Continuous monitoring of fieldwork through GIS-based dashboards.

*Benefits:*

- Enhances enumeration accuracy through advanced digital mapping.
- Ensures effective segmentation and vetting of boundaries.
- Facilitates swift problem identification and resolution.

**IV. Tablets Management Working Group (TMWG):**

*Functions:*

- Development of mechanisms for resolving field-reported problems.
- Rigorous monitoring of tablet distribution, movement, and retrieval.
- Assurance of tablet provision, hardening, and installation of relevant applications.

*Benefits:*

- Facilitates efficient tablet management in the field.
- Ensures the security and functionality of tablets.
- Addresses field-reported issues promptly.

**V. Field Support Working Group (FSWG):**

*Functions:*

- Provision of reserve/extra staff at each census support center for unforeseen issues.
- Deployment of enumerators for significant blocks.
- Ensuring complete kits/materials for enumerators.
- Coordination with PBS staff for the smooth conduct of fieldwork.
- Resolution of issues raised during field operations and timely service provision.
- Preparation of evaluation forms and coordination with evaluators.
- Coordination for logistical support and daily progress reporting.
- Monitoring coverage in high-rise buildings, far-flung areas, Becharag mouzas, and leftover households.
- Login of tablets in adjacent Census Districts with network availability.
- Sync of data in the network area after completing one Enumeration Block (EB) on the 15th day.
- Issuance of additional tablets to enumerators in backup.
- Ensuring security of enumerators through deployment of police or army personnel in distant areas.

- Provision of additional funds to enumerators for travel and remuneration (10% higher allowance).

**VI. Data Center Working Group (DCWG):**

*Functions:*

- Equipping servers and local domains for applications.
- Preparing servers and local domains for spatial number, data warehouse, and publishing.
- Downloading and configuring settings for Mobile Device Management (MDM).
- Preparing databases for applications, spatial number, and data warehouse.
- Performing periodic backups of servers, network devices, security devices, databases, and secure backups.
- Equipping servers and local domains for the census disaster recovery (DR) site.
- Ensuring a secure network connection between the main data center and the DR site.
- Informing the National Telecommunication Corporation (NTC) about DR site preparation and resolving any issues.

**VII. Quality Assurance / Trend Analysis Teams:**

*Functions:*

- Daily monitoring of reports through dashboards generated via CATI random calls.
- Trend monitoring based on selected variables and in-depth analysis with the generation of customized reports.
- GIS based work monitoring and reporting issues to the higher committee for timely decisions.
- Follow-up on cases for data quality assurance and proposing alternate criteria.
- Ensuring the implementation of data consistency and validation rules.

**VIII. Data Quality Assurance & Preparation of Tabulation:**

Functions:

- Analysis and preparation of tables for the Election Commission.
- Highlighting data anomalies.
- Finalizing data cleaning rules in coordination with subject matter experts.
- Ensuring the incorporation of approved rules in the data clearing module.
- Developing reports as per the approved tabulation plan.

- Acting as a liaison between PBS subject matter and NADRA software team

**IX. Media Working Group (MWG):**

*Pre-Census:*

- Preparation of communication strategy.
- Providing material to print/electronic/social media for awareness, information, advertisement, and publicity.
- Phase-wise plan for education, motivation, action, and dissemination.
- Collecting content and videos from media companies for approval.
- Finalizing the media execution plan.
- Selection and training of Census spokesperson.
- Decision on the procedure for allocating and distributing work among agencies.

*Before and During Field Operation:*

- Press releases.
- Archiving event-wise pictures and videos.
- Sending Census-related classified advertisements/notices to PPRA/PID.
- Monitoring the print/electronic/social media for spread of misconceptions.
- Ensuring complete coverage, especially in far-flung areas.
- Campaigns in print/electronic and social media for awareness and motivation.
- Programs at media outlets for clarification regarding the census process.

**X. Training Management Working Group (TMWG):**

*Main Group:*

- Management and monitoring of trainings at all three tiers.
- Provision of training material and facilities at all training centers.
- Coordination with relevant PBS officers for smooth training.
- Provision of testing material for pre and post-training tests.
- Coordination with district administration, NADRA, and stakeholders.
- Preparation of evaluation Performa and control forms.
- Additional staff training on a need basis.
- Attendance tracking.

*Subgroup (Before Training):*

- Preparation of tender documents for hiring firms providing facilities.
- Completing all formalities for equipment supply and installation.
- Ensuring retrieval of equipment after training.
- Ensuring the working condition of equipment and other allied arrangements.

**XI. Internal Coordination Working Group (ICWG):**

*Functions:*

- Preparation of minutes, agenda items, and arrangement of meetings.
- Meetings with service providers.
- Preparing controlled documents for effective monitoring.

**XII. Security and Coordination Group (SCG):**

*Functions:*

- Coordination with all security agencies.
- Deployment of security personnel.
- Rapid response coordination.
- Apprising senior management of last-day security-related issues.
- Ensuring seamless security of enumerators, PBS staff, and assets during field operation.
- Coordination with law enforcing agencies for security plans.
- Updation/sharing of security-related advisories.
- Development of coordination mechanisms with PBS HQ and security agencies.
- Reporting mechanism for rapid response.

**XIII. Call Center Working Group (CCWG):**

*Functions:*

- Coordination with NTC and NADRA for smooth call center implementation.
- Daily reporting to senior management.
- Ensuring a seamless role-based dashboard for senior management.

**XIV. Admin and Logistic Group (ALG):**

*Responsibilities:*

- Transportation arrangements.
- Handling urgent purchases and printing needs.
- Facilitating all working groups.

- Dispatching field materials.
- Printing manuals, questionnaires, and training materials.

**XV. Advocacy Group:**

*Objectives:*

- Tackling non-response and dispute resolution with vigilance committees.
- Coordination with vigilance committees.
- Convincing respondents in case of refusal through enumerator, Advocacy Group, and local influential people.
- Dispute resolution through advocacy in case of adverse situations.
- Identification of areas/people intending to sabotage the census process.
- Preparation of supportive material and FAQs.
- Participation of local communities, faith-based groups, and religious leaders before the census.

**XVI. Lesson Learned Group:**

*Tasks:*

- Recording all events during the census.
- Collecting material for the preparation of an administrative report.

This comprehensive structure of working groups within the Central Project Management Unit (CPMU) reflects a meticulous and well-coordinated approach to ensure the success of the first-ever digital census. Each group is assigned specific functions, responsibilities, and benefits, contributing to effective coordination, monitoring, and management throughout the census process. The outlined tasks and objectives demonstrate a systematic strategy for addressing challenges and ensuring the smooth execution of this groundbreaking endeavor

## 4.5 Coordination and Management for the First Digital Census

One of the pivotal functions undertaken by the CPMU for the first-ever digital census is comprehensive coordination. This coordination extends to both internal and external spheres, serving as a cornerstone in the successful execution of this groundbreaking endeavor.

**1. Internal Coordination:** Effective internal coordination was essential for the smooth operation of the first-ever digital census within the CPMU. The CPMU brought together various sections, each with a distinct role in this pioneering endeavor:

a. **Field Services:** This section was at the forefront of data collection, conducting on-the-ground enumeration and ensuring the accuracy of information gathered.

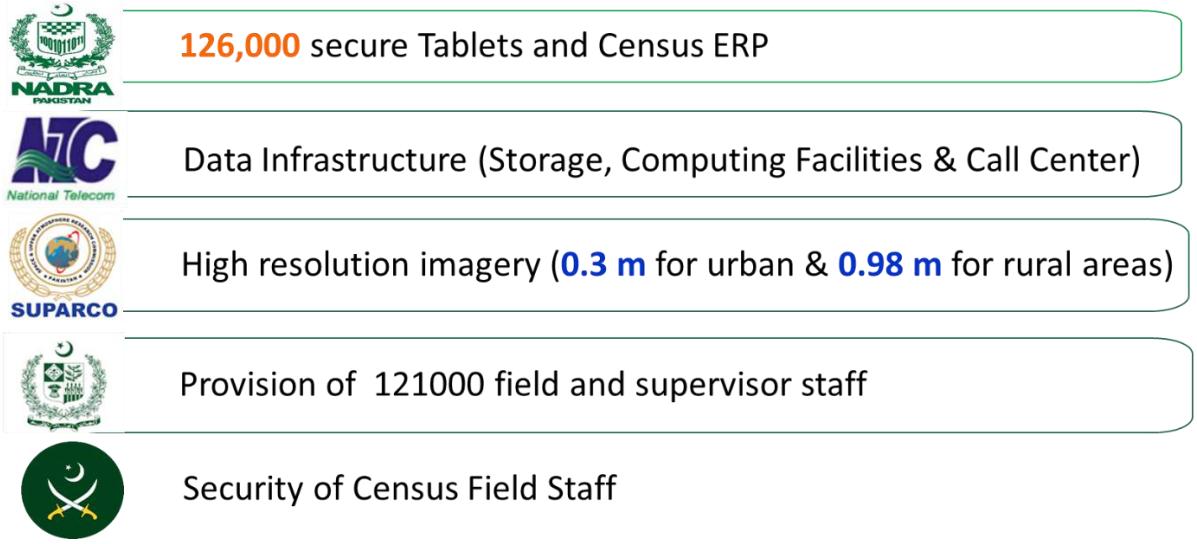
b. **Sample Design:** The Sample Design team was responsible for determining the sampling methodology that will be employed, ensuring that it is statistically sound and representative for pilot census and post enumeration census.

c. **GIS (Geographic Information System):** GIS professionals were instrumental in creating and maintaining accurate digital maps and spatial data, facilitating precise location-based data collection.

d. **Data Processing:** The Data Processing section was responsible for efficiently managing, cleaning, and analyzing the vast amount of census data generated during the enumeration process.

This comprehensive internal coordination approach ensured that all sections work cohesively to achieve a successful digital census, each playing a unique yet interdependent role in this groundbreaking initiative.

**2. External Coordination**: In addition to internal coordination, the CPMU also took on the pivotal responsibility of managing and coordinating the consulting agencies, namely, NADRA, NTC, and SUPARCO, which played crucial roles in providing hardware and software for the Digital Census. This multifaceted responsibility involved various key aspects:




**4. Coordination with Armed Forces:**

The coordination between the CPMU and the Armed Forces was a critical aspect of ensuring the security and overall success of the Digital Census project. This collaboration leveraged the capabilities

and resources of the Armed Forces to enhance the efficiency and effectiveness of various aspects of the census operation.

The Armed Forces played a crucial role in ensuring the safety of both census enumerators and the collected data. Their expertise in security planning and implementation helped safeguard the census process, especially in sensitive or challenging environments. This collaboration was essential to mitigate potential risks and ensure a secure environment for the accurate collection of data.

**5. Coordination with Provincial Governments**

The coordination between the CPMU and Provincial Governments was fundamental to the success of the census, with a well-defined organizational structure ensuring effective communication and implementation of the census plan.

At the provincial level, the Provincial Chief Secretaries served as administrative heads, playing a crucial role in executing the census plan prepared by the Federal Government. The instructions from the Federal Government were disseminated down to the Divisional Commissioners, Deputy Commissioners, Assistant Commissioners, and other relevant government departments through the office of the Chief Secretaries.

Provincial Coordination Committees, headed by the Chief Secretary, include Secretaries of relevant departments, the Provincial Census Commissioner, and a representative from the Military Land and Cantonments Department. These committees provided a platform for strategic planning and coordination at the provincial level, overseeing census activities until completion.

The Secretary of Local Government in each province was appointed as the Provincial Census Coordinator/Focal Person, responsible for monitoring the implementation of instructions from the Federal Government and coordinating with the Pakistan Bureau of Statistics.

At the divisional level, Coordination Committees were led by Divisional Commissioners and consist of key representatives, including the Deputy Inspector General of Police, Deputy Commissioner, Director of Local Government, and a representative from Pakistan Bureau of Statistics. These committees ensure effective coordination within the division.

At the district level, Coordination Committees headed by Deputy Commissioners were formed, involving Census District Officers, District Police Officers, Cantonment Executive Officers, District Education Officers, and representatives from the Pakistan Bureau of Statistics. The committees were responsible for overseeing census activities within administrative districts.

In certain provinces, vigilance and coordination teams at both district and census district levels included key stakeholders such as police officers, education officers, and representatives from the Pakistan Bureau of Statistics. These teams monitor and supervise census activities, ensuring accuracy and completeness.

Overall, the coordination between CPMU and Provincial Governments was facilitated through these hierarchical structures, emphasizing clear lines of communication and responsibility. The collaboration ensured that field staff, drawn from provincial government departments, were effectively deployed as supervisors and enumerators in their respective areas, promoting community acceptance and facilitating accurate data collection. The established committees and focal persons at various levels contributed to the seamless execution of the census operation across different provinces.

## 4.6 Training for 7th Population and Housing Census

In addition to selecting the training firm, the CPMU developed a comprehensive work plan that outlined the entire training process. This plan was meticulously designed to specify the number of training tiers that would be implemented, the quantity of training batches required, and the necessary resources such as trainers and enumerators to be trained in each tier. This level of detailed planning was instrumental in ensuring that the training process would be efficient and well-organized.

It is important to emphasize that conducting a digital census on such a large scale was an intricate and challenging undertaking. This made it imperative to have a clear and well-structured approach to training. The CPMU's efforts in this regard played a pivotal role in making this extensive training exercise possible. By hiring a capable training firm and creating a detailed work plan, they effectively laid the groundwork for ensuring that the personnel involved in the census were well-prepared and equipped with the necessary skills to carry out their duties effectively. This approach not only contributed to the success of the digital census but also highlighted the CPMU's commitment to meticulous planning and execution

## 4.7 Distribution of Census Material

Distribution of census material was a vital activity undertaken by the CPMU to ensure the successful execution of the census. Prompt transmission and meticulous record-keeping were emphasized for the nationwide operation, aiming to save time, resources, and efforts. The Pakistan Bureau of Statistics (HQ) Islamabad coordinated the distribution process, dispatching

census materials, including tablets, forms, and enumeration support materials, to Census District Officers. These materials were subsequently forwarded to Supervisors and Enumerators through Statistical Assistants during field staff training. The distribution process utilized efficient means of transportation, such as trucks, trains, or air, as deemed suitable at the time of dispatch. By streamlining this distribution channel, the CPMU played a pivotal role in ensuring that field staff had the necessary materials to carry out their enumeration duties effectively and efficiently.






**Figure 21: Tablet Dispatch for the Digital Census 2023**

### 4.8 Retrieval of Census Material

The CPMU oversaw the crucial activity of retrieving census material, particularly the used tablets, as an integral part of the census operation. Enumerators were mandated to return the used tablets on the day following the completion of their census enumeration work. This retrieval process was conducted under the supervision of the appointed Supervisor in the presence of the respective enumerator. A thorough check of the tablets was performed to ensure their functionality and condition. Once verified, the tablets were returned to the National Database and Registration Authority (NADRA), and a receipt was issued by a NADRA representative as a formal record of the tablet's return. Furthermore, the CPMU ensured that completion certificates, provided by supervisors, and field use documents necessary for the census operation were appropriately supplied, further contributing to the efficient and organized management of census materials. Embracing modern technology and electronic data collection methods streamlined this retrieval process, enhancing the overall efficiency and accuracy of the census enumeration.

## 4. Project period and progress tracking

The census advisory committee recommended conducting the census in project mode and closely monitoring its progress. The successful execution of a census project relies heavily on efficient project management and the ability to closely monitor progress throughout its lifecycle. In this context, the project period plays a vital role in establishing the timeline for the entire endeavor. It is a critical component of the project management plan, clearly specifying the commencement and conclusion dates. Accurate definition of the project period is essential

to ensure the project stays on track. Furthermore, the implementation of project management software, such as Primavera, significantly enhances the precision and control of the project timeline and its associated activities. This period also serves to outline key milestones and phases, providing transparency and clarity to stakeholders regarding the project's temporal scope.

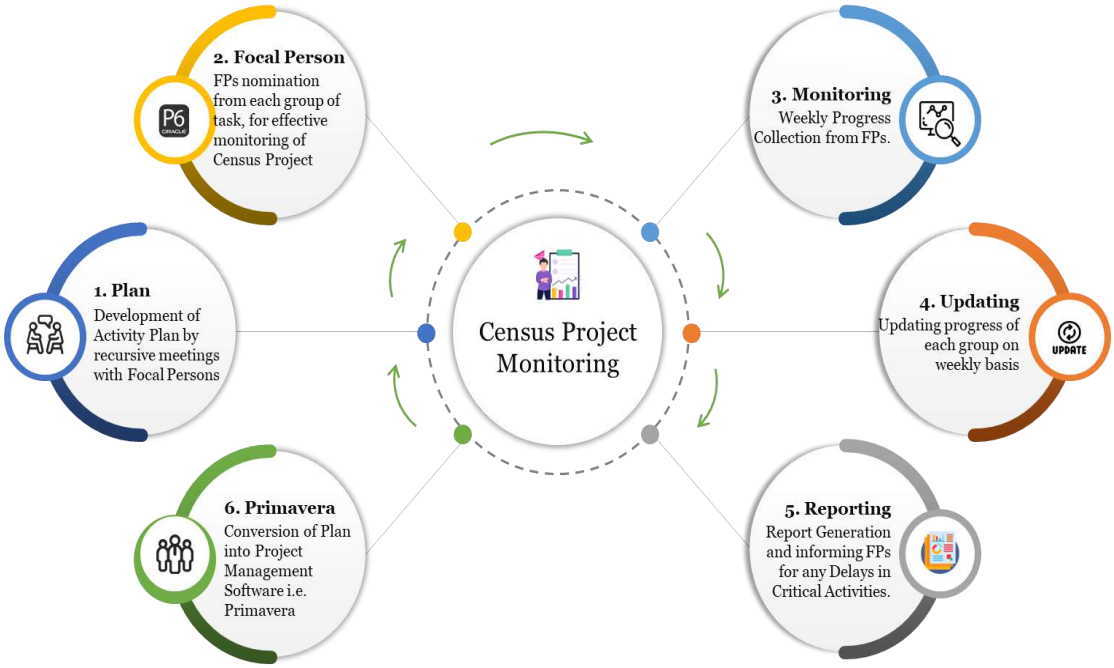



**Figure 22: Monitoring activities of Census Project**

## 5.1 Utilizing Primavera for Progress Tracking

A hallmark of modern project management is the integration of advanced software tools to streamline tasks and ensure project goals are met on time and within budget. The Census Project Management Unit has adopted Primavera, a renowned project management software, to effectively track and manage the progress of the census project.

Primavera offers a range of advantages that significantly enhance project management efficiency. This renowned project management software enables detailed scheduling, allowing teams to create comprehensive project schedules and allocate resources with precision. It excels in critical path analysis, highlighting tasks with the most impact on project duration and providing valuable insights for informed decision-making to keep the project on track. Primavera facilitates resource management by ensuring the right resources are available at the right time, optimizing efficiency. Real-time updates on project progress enable swift identification and resolution of delays or issues. Additionally, it empowers project teams with

comprehensive reporting and analytical tools, facilitating data-driven decisions and keeping stakeholders well-informed. Moreover, the software aids in identifying potential risks and developing mitigation strategies, contributing to the maintenance of project timelines and quality. By integrating Primavera into the census project management process, the Census Project Management Unit ensures efficient control and adherence to the project period, resulting in increased accountability, transparency, and precision, ultimately contributing to the overall success of the census project.

## 5.2 The Project Process in Seven Steps

**1. Engaging and Gathering Input from Internal Stakeholders:** The census initiative commenced by actively involving all internal stakeholders. This initial phase entailed identifying and establishing contact with key personnel from various sections of PBS, such as budget, training, and CPMU. These stakeholders played a crucial role in shaping the census process. Initially, individual meetings were held with each section's Focal Person to delineate their roles and responsibilities throughout the entire census process. Subsequently, their responsibilities were broken down into specific tasks, and timelines were finalized in collaboration with the Focal Persons.

**2. Developing the Preliminary Design of the Census Process:** Following the engagement of stakeholders, we crafted a comprehensive preliminary design for the census process. This design provided a clear outline of each section's roles and responsibilities within PBS. It also encompassed the overall framework of the census, including activities, sub-activities, start and end dates, dependencies, task durations, and more. This preliminary design essentially served as the blueprint for the entire process.

**3. Validating the Design with Focal Persons:** The preliminary design was then shared with all Focal Persons for their input and validation. Their feedback and suggestions were carefully collected and integrated into the design to ensure its alignment with the organization's overarching goals and objectives.

**4. Implementing the Design using Primavera:** With the validated preliminary design in hand, the next step involved the implementation of the design in Primavera, a robust project management software. This phase encompassed configuring the project structure, defining tasks and milestones, establishing task dependencies, identifying critical paths, and resource allocation.

**5. Designing Custom Reports in Primavera:** Simultaneously with the implementation, customized reports were created within the Primavera software. These reports were tailored to offer real-time insights into the progress of the census process, providing information on task completion, potential delays, and the impact of any delayed tasks on the census as a whole.

**6. Collecting and Updating Progress Statistics Weekly from All Stakeholders:** Throughout the census process, our team diligently collected progress statistics on a weekly basis from all stakeholders. These statistics included updates on task completion, reasons for any delays, and any challenges encountered during the process. We maintained regular communication with stakeholders to promptly address issues and make necessary adjustments.

**7. Generating and Submitting Weekly Progress Reports:** Weekly progress reports were generated using the Primavera software. These reports featured a summary of completed tasks, upcoming milestones, and any deviations from the original schedule. They were then shared with all stakeholders and submitted to higher management on a weekly basis.

**In Conclusion:** The successful execution of the census process was the result of meticulous planning and execution. The active involvement of internal stakeholders, validation of the design, and the utilization of Primavera software for project management and reporting played pivotal roles in ensuring the accuracy and efficiency of the process. Maintaining regular communication and providing updates to stakeholders were critical components in addressing challenges and upholding transparency throughout the project.

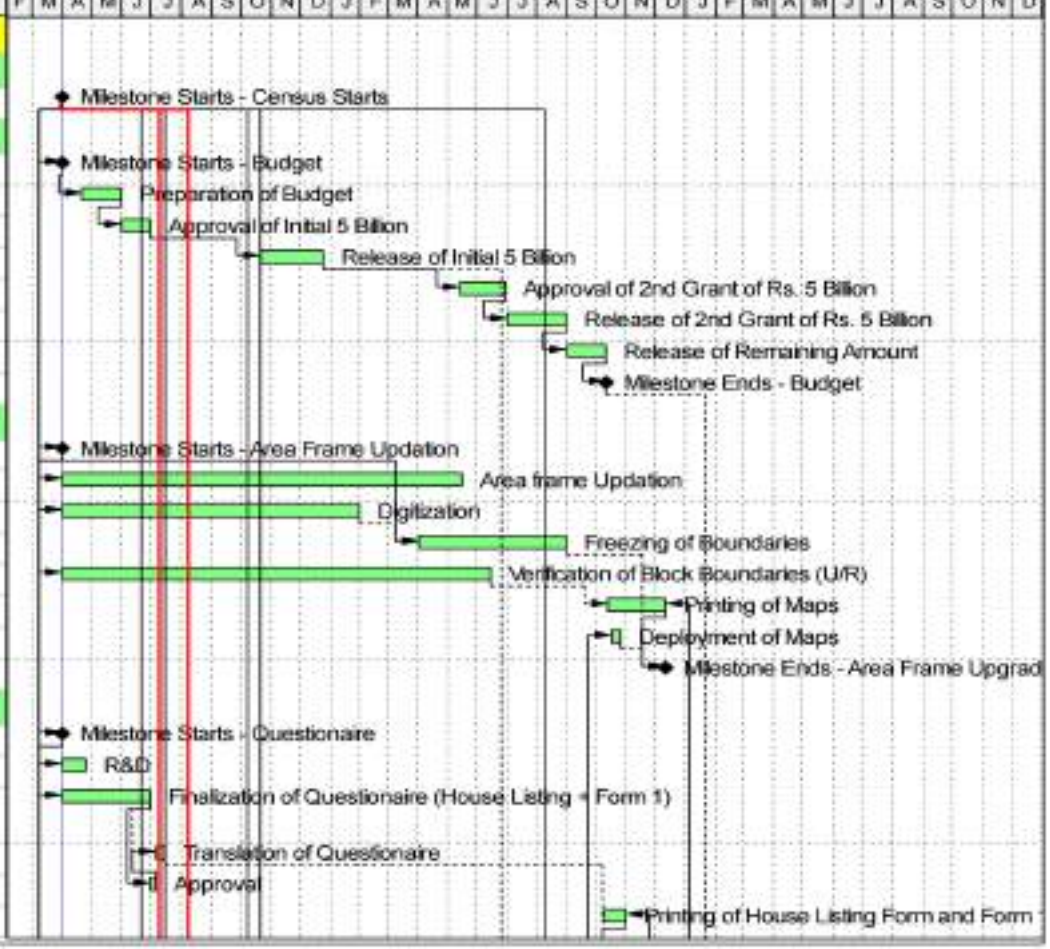
## 5.3 List of Focal Persons from Each Section

1. Ms. Sobia Munnawar, Director (DP).
2. Mr. Yasir Ishfaq, Director (DP)
3. Mr. Muhammad Ehtisham, Director (DP).
4. Mr. Naveed Iqbal, JACC.
5. Mr. Rafique Talpur, Director (FS).
6. Qazi Ismatullah Khan, DCC (GIS).
7. Mr. Muhammad Sarfaraz, CSO.
8. Ms. Kanwal Murtaza, CSO.
9. Ms. Rumana Sadaf, CSO.
10. Ms. Ayesha Sajid, CSO.
11. Ms. Hina Kanwal, SO.
12. Mr. Zubair Ahmed, DPO CPMU.
13. Syed Farhan Ali, DPO CPMU.
14. Mr. Umair Saeed, SA CPMU.

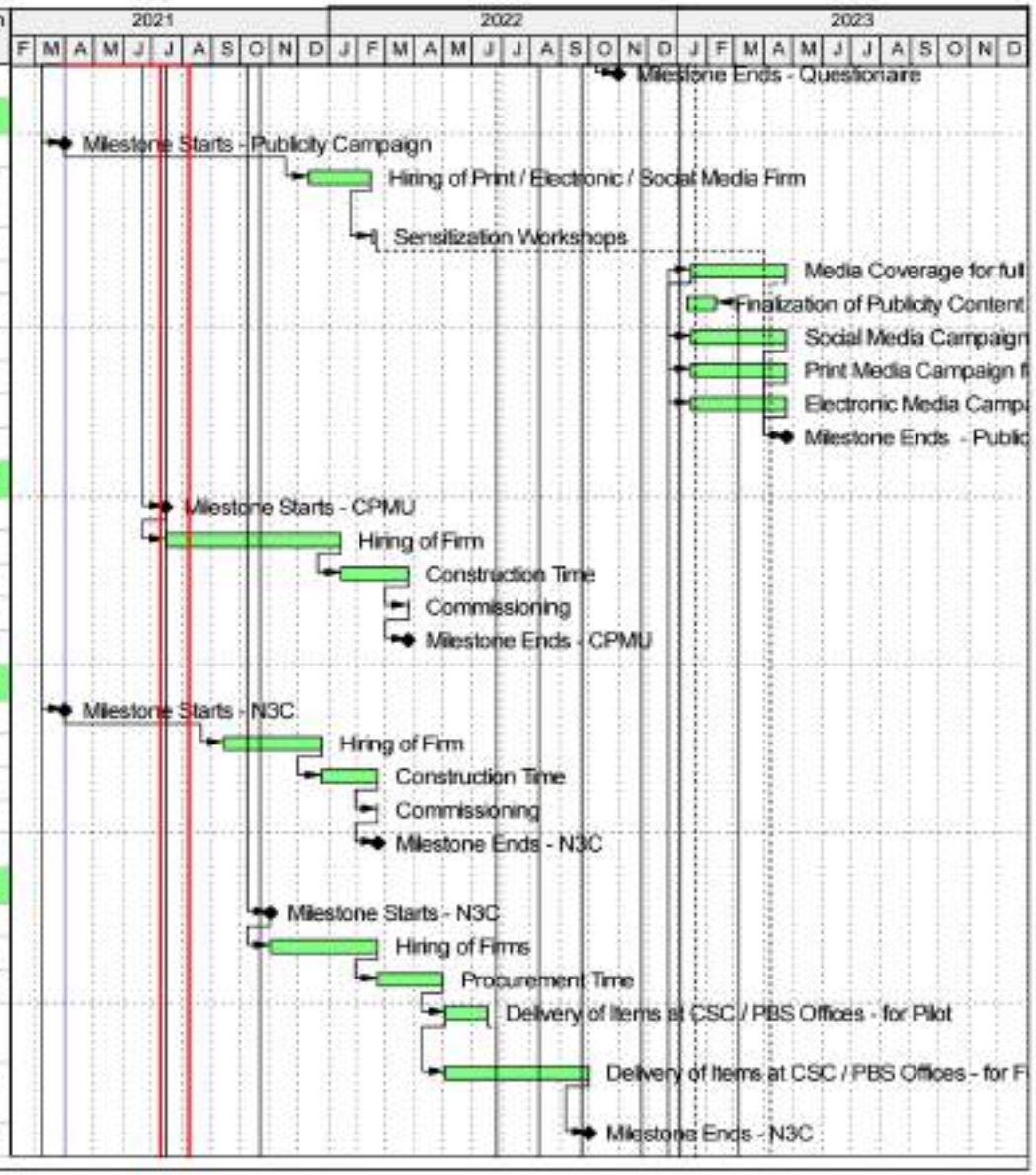
## 5.4 Census Activity Plan

**Population & Housing Census 2023 (First Ever Digital Census)**
**Acitivity Wise Plan**

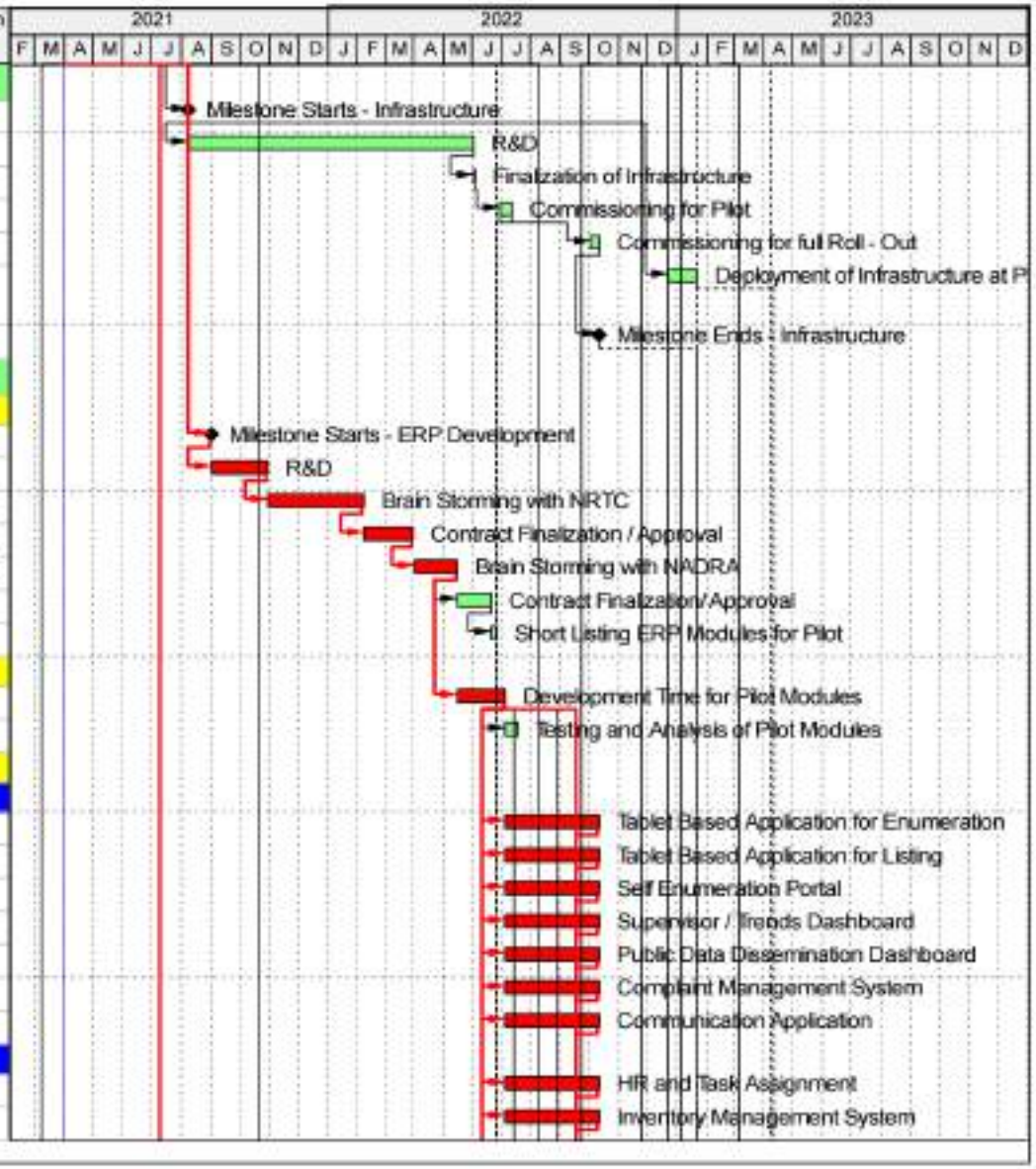
| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| **PHC-4 - B3 PnHCensus2022 - B3** | 01-Apr-21 | 06-May-23 |
| **PHC-4 - B3.1 Start of Census 2022** | 01-Apr-21 | 01-Apr-21 |
| Milestone Starts - Census Starts | 01-Apr-21 | |
| **PHC-4 - B3.01 Budget** | 01-Apr-21 | 10-Oct-22 |
| Milestone Starts - Budget | 01-Apr-21 | |
| Preparation of Budget | 21-Apr-21 | 31-May-21 |
| Approval of Initial 5 Billion | 01-Jun-21 | 30-Jun-21 |
| Release of Initial 5 Billion | 21-Oct-21 | 25-Dec-21 |
| Approval of 2nd Grant of Rs. 5 Billion | 15-May-22 | 30-Jun-22 |
| Release of 2nd Grant of Rs. 5 Billion | 01-Jul-22 | 31-Aug-22 |
| Release of Remaining Amount | 01-Sep-22 | 10-Oct-22 |
| Milestone Ends - Budget | | 10-Oct-22 |
| **PHC-4 - B3.2 Area Frame** | 01-Apr-21 | 12-Dec-22 |
| Milestone Starts - Area Frame Updation | 01-Apr-21 | |
| Area frame Updation | 01-Apr-21 | 15-May-22 |
| Digitization | 01-Apr-21 | 31-Jan-22 |
| Freezing of Boundaries | 01-Apr-22 | 31-Aug-22 |
| Verification of Block Boundaries (U/R) | 01-Apr-21 | 15-Jun-22 |
| Printing of Maps | 13-Oct-22 | 12-Dec-22 |
| Deployment of Maps | 16-Oct-22 | 25-Oct-22 |
| Milestone Ends - Area Frame Upgradation | | 12-Dec-22 |
| **PHC-4 - B3.3 Questionaire** | 01-Apr-21 | 31-Oct-22 |
| Milestone Starts - Questionaire | 01-Apr-21 | |
| R&D | 01-Apr-21 | 25-Apr-21 |
| Finalization of Questionaire (House Listing + Form 1) | 01-Apr-21 | 30-Jun-21 |
| Translation of Questionaire | 06-Jul-21 | 15-Jul-21 |
| Approval | 01-Jul-21 | 05-Jul-21 |
| Printing of House Listing Form and Form 1 | 10-Oct-22 | 31-Oct-22 |



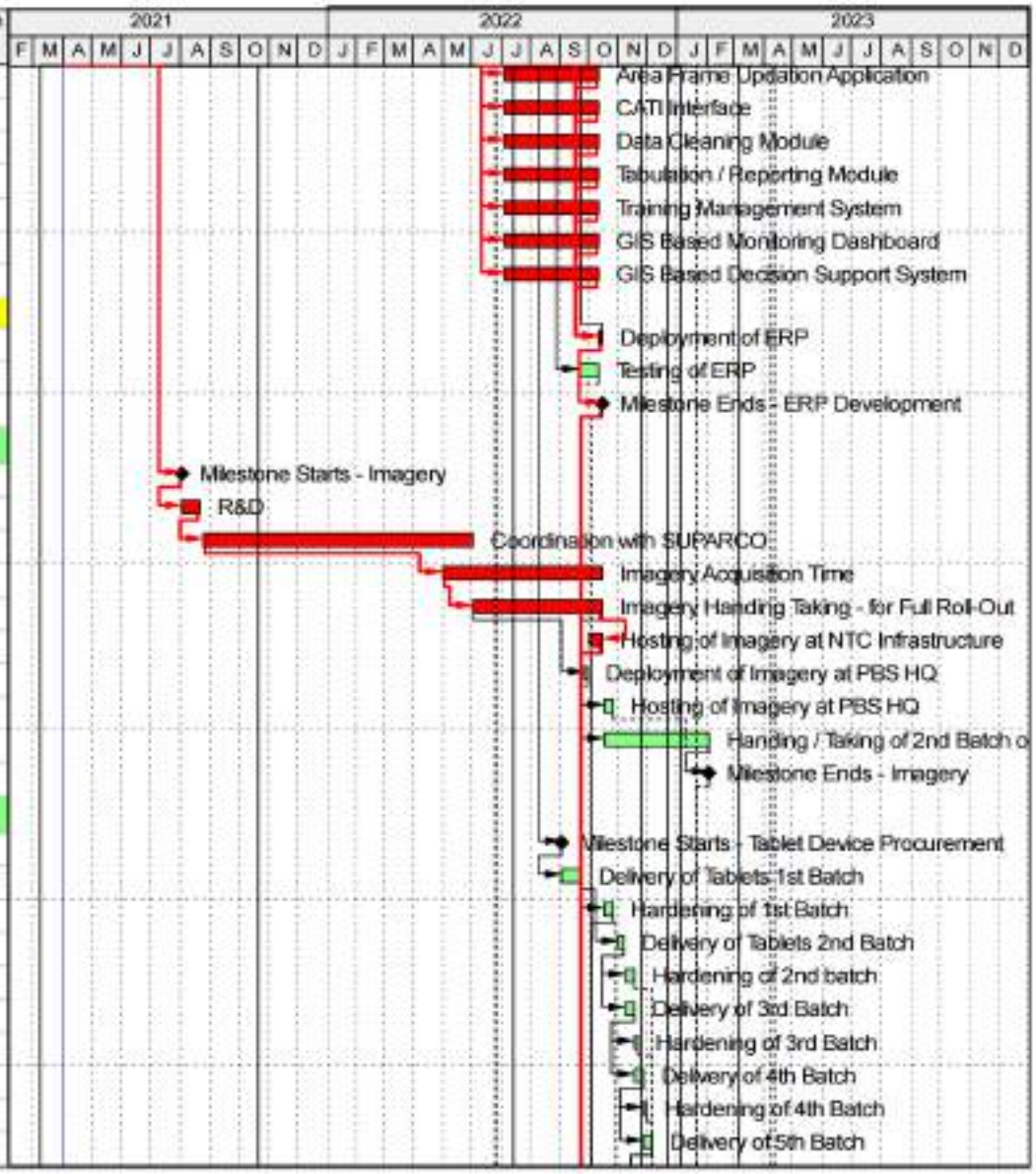
| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| Milestone Ends - Questionaire | | 31-Oct-22 |
| **PHC-4 - B3.4 Publicity Campaign** | 01-Apr-21 | 24-Apr-23 |
| Milestone Starts - Publicity Campaign | 01-Apr-21 | |
| Hiring of Print / Electronic / Social Media Firm | 12-Dec-21 | 15-Feb-22 |
| Sensitization Workshops | 16-Feb-22 | 20-Feb-22 |
| Media Coverage for full Roll-Out | 15-Jan-23 | 24-Apr-23 |
| Finalization of Publicity Content | 11-Jan-23 | 10-Feb-23 |
| Social Media Campaign for full Roll-Out | 15-Jan-23 | 24-Apr-23 |
| Print Media Campaign for full Roll-Out | 15-Jan-23 | 24-Apr-23 |
| Electronic Media Campaign full Roll Out | 15-Jan-23 | 24-Apr-23 |
| Milestone Ends - Publicity Campaign | | 24-Apr-23 |
| **PHC-4 - B3.5 Census Planning & Mar** | 15-Jul-21 | 26-Mar-22 |
| Milestone Starts - CPMU | 15-Jul-21 | |
| Hiring of Firm | 15-Jul-21 | 14-Jan-22 |
| Construction Time | 15-Jan-22 | 25-Mar-22 |
| Commissioning | 26-Mar-22 | 26-Mar-22 |
| Milestone Ends - CPMU | | 26-Mar-22 |
| **PHC-4 - B3.6 National Census Coordi** | 01-Apr-21 | 22-Feb-22 |
| Milestone Starts - N3C | 01-Apr-21 | |
| Hiring of Firm | 15-Sep-21 | 24-Dec-21 |
| Construction Time | 25-Dec-21 | 21-Feb-22 |
| Commissioning | 22-Feb-22 | 22-Feb-22 |
| Milestone Ends - N3C | | 22-Feb-22 |
| **PHC-4 - B3.7 Census Support Center** | 01-Nov-21 | 30-Sep-22 |
| Milestone Starts - N3C | 01-Nov-21 | |
| Hiring of Firms | 01-Nov-21 | 21-Feb-22 |
| Procurement Time | 22-Feb-22 | 02-May-22 |
| Delivery of Items at CSC / PBS Offices - for Pilot | 03-May-22 | 17-Jun-22 |
| Delivery of Items at CSC / PBS Offices - for Full Roll-out | 03-May-22 | 30-Sep-22 |
| Milestone Ends - N3C | | 30-Sep-22 |



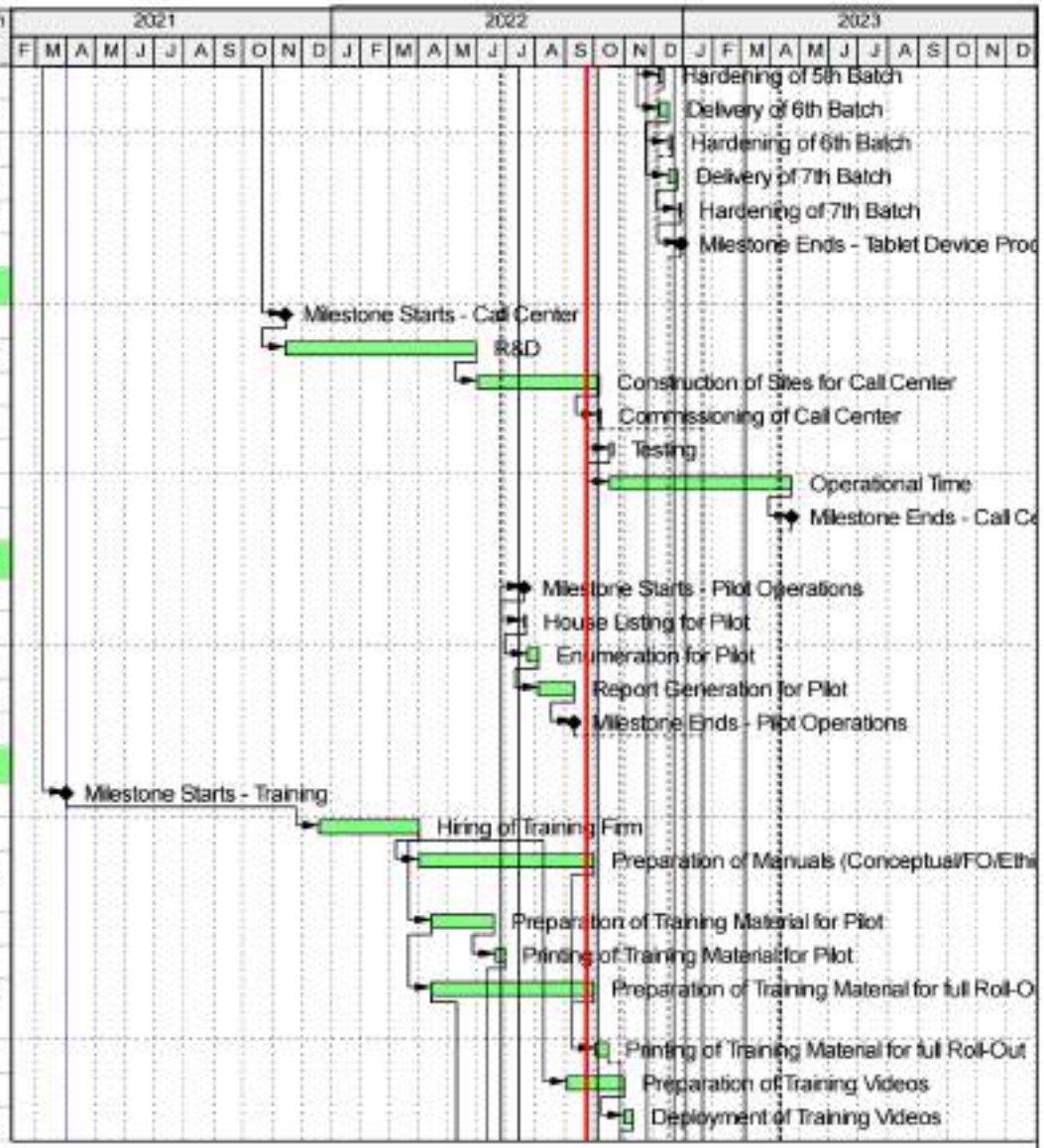
| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| **PHC-4 - B3.8 Establishment of IT Infra** | 09-Aug-21 | 20-Jan-23 |
| Milestone Starts - Infrastructure | 09-Aug-21 | |
| R&D | 09-Aug-21 | 01-Jun-22 |
| Finalization of Infrastructure | 02-Jun-22 | 03-Jun-22 |
| Commissioning for Pilot | 29-Jun-22 | 13-Jul-22 |
| Commissioning for full Roll - Out | 01-Oct-22 | 10-Oct-22 |
| Deployment of Infrastructure at PBS Premises | 22-Dec-22 | 20-Jan-23 |
| Milestone Ends - Infrastructure | | 10-Oct-22 |
| **PHC-4 - B3.9 Census ERP Developm** | 01-Sep-21 | 15-Oct-22 |
| **PHC-4 - B3.9.1 Phase I - PRE Development** | 01-Sep-21 | 25-Jun-22 |
| Milestone Starts - ERP Development | 01-Sep-21 | |
| R&D | 01-Sep-21 | 30-Oct-21 |
| Brain Storming with NRTC | 31-Oct-21 | 07-Feb-22 |
| Contract Finalization / Approval | 08-Feb-22 | 31-Mar-22 |
| Brain Storming with NADRA | 01-Apr-22 | 15-May-22 |
| Contract Finalization/ Approval | 16-May-22 | 20-Jun-22 |
| Short Listing ERP Modules for Pilot | 21-Jun-22 | 25-Jun-22 |
| **PHC-4 - B3.9.2 Phase II - Pilot Modules Develo** | 16-May-22 | 17-Jul-22 |
| Development Time for Pilot Modules | 16-May-22 | 04-Jul-22 |
| Testing and Analysis of Pilot Modules | 05-Jul-22 | 17-Jul-22 |
| **PHC-4 - B3.9.3 Phase III - ERP Development** | 05-Jul-22 | 10-Oct-22 |
| **PHC-4 - B3.9.3.1 Team A - Lead By Miss Sobia Mu** | 05-Jul-22 | 10-Oct-22 |
| Tablet Based Application for Enumeratio | 05-Jul-22 | 10-Oct-22 |
| Tablet Based Application for Listing | 05-Jul-22 | 10-Oct-22 |
| Self Enumeration Portal | 05-Jul-22 | 10-Oct-22 |
| Supervisor / Trends Dashboard | 05-Jul-22 | 10-Oct-22 |
| Public Data Dissemination Dashboard | 05-Jul-22 | 10-Oct-22 |
| Complaint Management System | 05-Jul-22 | 10-Oct-22 |
| Communication Application | 05-Jul-22 | 10-Oct-22 |
| **PHC-4 - B3.9.3.2 Team B - Lead By Mr. Yasir Ishfa** | 05-Jul-22 | 10-Oct-22 |
| HR and Task Assignment | 05-Jul-22 | 10-Oct-22 |
| Inventory Management System | 05-Jul-22 | 10-Oct-22 |



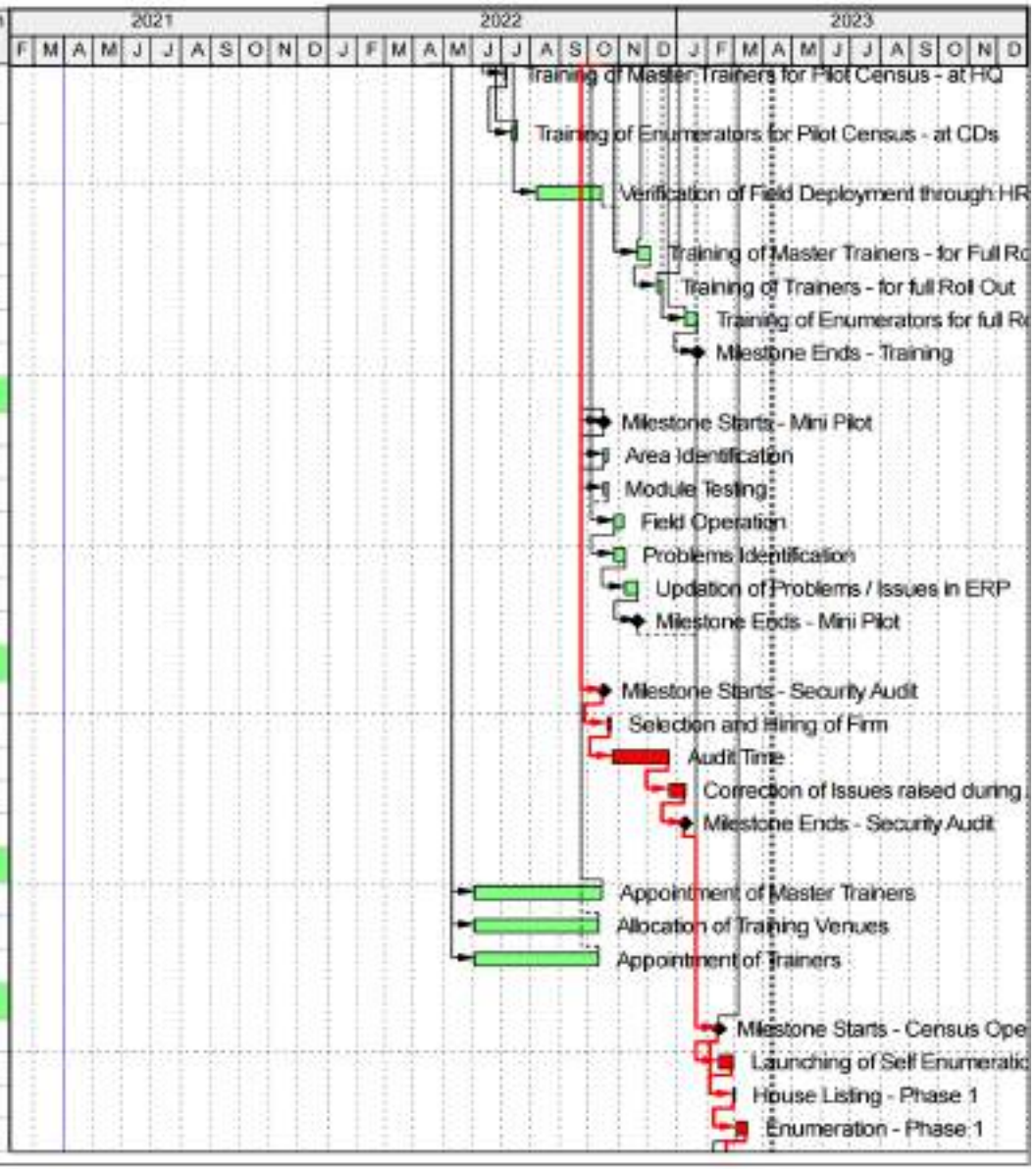
| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| Area Frame Updation Application | 05-Jul-22 | 10-Oct-22 |
| CATI Interface | 05-Jul-22 | 10-Oct-22 |
| Data Cleaning Module | 05-Jul-22 | 10-Oct-22 |
| Tabulation / Reporting Module | 05-Jul-22 | 10-Oct-22 |
| Training Management System | 05-Jul-22 | 10-Oct-22 |
| GIS Based Monitoring Dashboard | 05-Jul-22 | 10-Oct-22 |
| GIS Based Decision Support System | 05-Jul-22 | 10-Oct-22 |
| PHC-4 - B3.9.4 Phase IV - POST Development | 20-Sep-22 | 15-Oct-22 |
| Deployment of ERP | 11-Oct-22 | 15-Oct-22 |
| Testing of ERP | 20-Sep-22 | 10-Oct-22 |
| Milestone Ends - ERP Development | | 15-Oct-22 |
| **PHC-4 - B3.12 Imagery Acquisition** | 02-Aug-21 | 02-Feb-23 |
| Milestone Starts - Imagery | 02-Aug-21 | |
| R&D | 02-Aug-21 | 20-Aug-21 |
| Coordination with SUPARCO | 25-Aug-21 | 01-Jun-22 |
| Imagery Acquisition Time | 01-May-22 | 15-Oct-22 |
| Imagery Handing Taking - for Full Roll-Out | 01-Jun-22 | 15-Oct-22 |
| Hosting of Imagery at NTC Infrastructure | 01-Oct-22 | 15-Oct-22 |
| Deployment of Imagery at PBS HQ | 26-Sep-22 | 30-Sep-22 |
| Hosting of Imagery at PBS HQ | 16-Oct-22 | 25-Oct-22 |
| Handing / Taking of 2nd Batch of Imagery | 16-Oct-22 | 02-Feb-23 |
| Milestone Ends - Imagery | | 02-Feb-23 |
| **PHC-4 - B3.10 Tablet Devices** | 03-Sep-22 | 30-Dec-22 |
| Milestone Starts - Tablet Device Procurement | 03-Sep-22 | |
| Delivery of Tablets 1st Batch | 03-Sep-22 | 22-Sep-22 |
| Hardening of 1st Batch | 17-Oct-22 | 26-Oct-22 |
| Delivery of Tablets 2nd Batch | 01-Nov-22 | 06-Nov-22 |
| Hardening of 2nd batch | 07-Nov-22 | 16-Nov-22 |
| Delivery of 3rd Batch | 07-Nov-22 | 16-Nov-22 |
| Hardening of 3rd Batch | 17-Nov-22 | 20-Nov-22 |
| Delivery of 4th Batch | 17-Nov-22 | 26-Nov-22 |
| Hardening of 4th Batch | 27-Nov-22 | 30-Nov-22 |
| Delivery of 5th Batch | 27-Nov-22 | 06-Dec-22 |



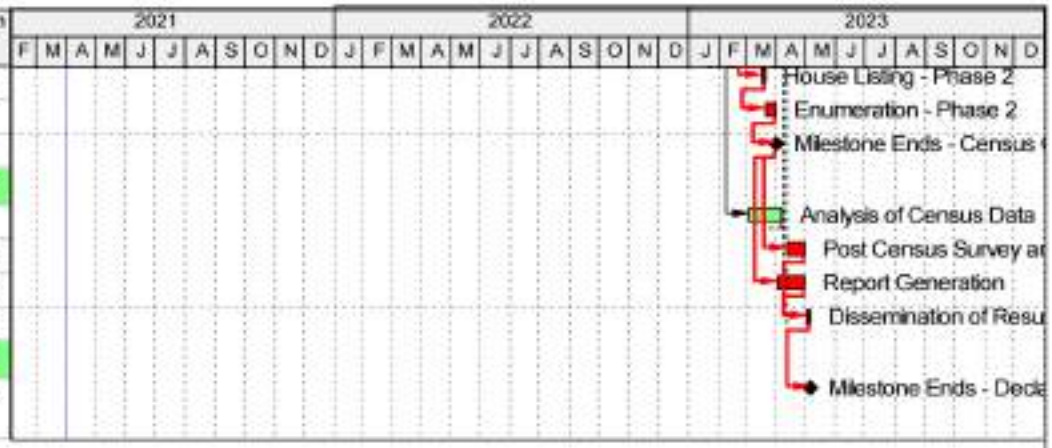
| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| Hardening of 5th Batch | 07-Dec-22 | 10-Dec-22 |
| Delivery of 6th Batch | 07-Dec-22 | 16-Dec-22 |
| Hardening of 6th Batch | 17-Dec-22 | 20-Dec-22 |
| Delivery of 7th Batch | 17-Dec-22 | 26-Dec-22 |
| Hardening of 7th Batch | 27-Dec-22 | 30-Dec-22 |
| Milestone Ends - Tablet Device Procurement | | 30-Dec-22 |
| **PHC-4 - B3.13 Call Center** | 15-Nov-21 | 23-Apr-23 |
| Milestone Starts - Call Center | 15-Nov-21 | |
| R&D | 15-Nov-21 | 31-May-22 |
| Construction of Sites for Call Center | 01-Jun-22 | 05-Oct-22 |
| Commissioning of Call Center | 06-Oct-22 | 07-Oct-22 |
| Testing | 16-Oct-22 | 20-Oct-22 |
| Operational Time | 16-Oct-22 | 23-Apr-23 |
| Milestone Ends - Call Center | | 23-Apr-23 |
| **PHC-4 - B3.16 Pilot Operations** | 20-Jul-22 | 09-Sep-22 |
| Milestone Starts - Pilot Operations | 20-Jul-22 | |
| House Listing for Pilot | 20-Jul-22 | 22-Jul-22 |
| Enumeration for Pilot | 23-Jul-22 | 03-Aug-22 |
| Report Generation for Pilot | 04-Aug-22 | 09-Sep-22 |
| Milestone Ends - Pilot Operations | | 09-Sep-22 |
| **PHC-4 - B3.15 Training** | 01-Apr-21 | 23-Jan-23 |
| Milestone Starts - Training | 01-Apr-21 | |
| Hiring of Training Firm | 19-Dec-21 | 01-Apr-22 |
| Preparation of Manuals (Conceptual/FO/Ethical) | 02-Apr-22 | 30-Sep-22 |
| Preparation of Training Material for Pilot | 15-Apr-22 | 18-Jun-22 |
| Printing of Training Material for Pilot | 21-Jun-22 | 30-Jun-22 |
| Preparation of Training Material for full Roll-Out | 15-Apr-22 | 30-Sep-22 |
| Printing of Training Material for full Roll-Out | 01-Oct-22 | 15-Oct-22 |
| Preparation of Training Videos | 02-Sep-22 | 31-Oct-22 |
| Deployment of Training Videos | 01-Nov-22 | 10-Nov-22 |



| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| Training of Master Trainers for Pilot Census - at HQ | 05-Jul-22 | 07-Jul-22 |
| Training of Enumerators for Pilot Census - at CDs | 13-Jul-22 | 17-Jul-22 |
| Verification of Field Deployment through HR Module Linked with Area Frame | 08-Aug-22 | 15-Oct-22 |
| Training of Master Trainers - for Full Roll Out | 20-Nov-22 | 03-Dec-22 |
| Training of Trainers - for full Roll Out | 12-Dec-22 | 17-Dec-22 |
| Training of Enumerators for full Roll-Out | 09-Jan-23 | 23-Jan-23 |
| Milestone Ends - Training | | 23-Jan-23 |
| **PHC-4 - B3.20 Mini Pilot** | 16-Oct-22 | 21-Nov-22 |
| Milestone Starts - Mini Pilot | 16-Oct-22 | |
| Area Identification | 16-Oct-22 | 20-Oct-22 |
| Module Testing | 16-Oct-22 | 20-Oct-22 |
| Field Operation | 27-Oct-22 | 05-Nov-22 |
| Problems Identification | 27-Oct-22 | 07-Nov-22 |
| Updation of Problems / Issues in ERP | 08-Nov-22 | 21-Nov-22 |
| Milestone Ends - Mini Pilot | | 21-Nov-22 |
| **PHC-4 - B3.14 Security Audit** | 16-Oct-22 | 10-Jan-23 |
| Milestone Starts - Security Audit | 16-Oct-22 | |
| Selection and Hiring of Firm | 20-Oct-22 | 24-Oct-22 |
| Audit Time | 25-Oct-22 | 23-Dec-22 |
| Correction of Issues raised during Audit | 24-Dec-22 | 10-Jan-23 |
| Milestone Ends - Security Audit | | 10-Jan-23 |
| **PHC-4 - B3.31 Other Activities** | 04-Jun-22 | 15-Oct-22 |
| Appointment of Master Trainers | 04-Jun-22 | 15-Oct-22 |
| Allocation of Training Venues | 04-Jun-22 | 10-Oct-22 |
| Appointment of Trainers | 04-Jun-22 | 10-Oct-22 |
| **PHC-4 - B3.17 Census Operation** | 14-Feb-23 | 01-Apr-23 |
| Milestone Starts - Census Operation | 14-Feb-23 | |
| Launching of Self Enumeration Portal | 14-Feb-23 | 28-Feb-23 |
| House Listing - Phase 1 | 01-Mar-23 | 03-Mar-23 |
| Enumeration - Phase 1 | 04-Mar-23 | 15-Mar-23 |



| Activity Name | Planned Start | Planned Finish |
|---|---|---|
| House Listing - Phase 2 | 18-Mar-23 | 20-Mar-23 |
| Enumeration - Phase 2 | 21-Mar-23 | 01-Apr-23 |
| Milestone Ends - Census Operations | | 01-Apr-23 |
| **PHC-4 - B3.18 Post Census Operatior** | 04-Mar-23 | 06-May-23 |
| Analysis of Census Data | 04-Mar-23 | 07-Apr-23 |
| Post Census Survey and Analysis | 12-Apr-23 | 01-May-23 |
| Report Generation | 02-Apr-23 | 01-May-23 |
| Dissemination of Results | 02-May-23 | 06-May-23 |
| **PHC-4 - B3.19 End of Census 2022** | 06-May-23 | 06-May-23 |
| Milestone Ends - Declaration of End of Census | | 06-May-23 |




Second Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Milestone

## 5.5 Weekly Progress Reports - Sample

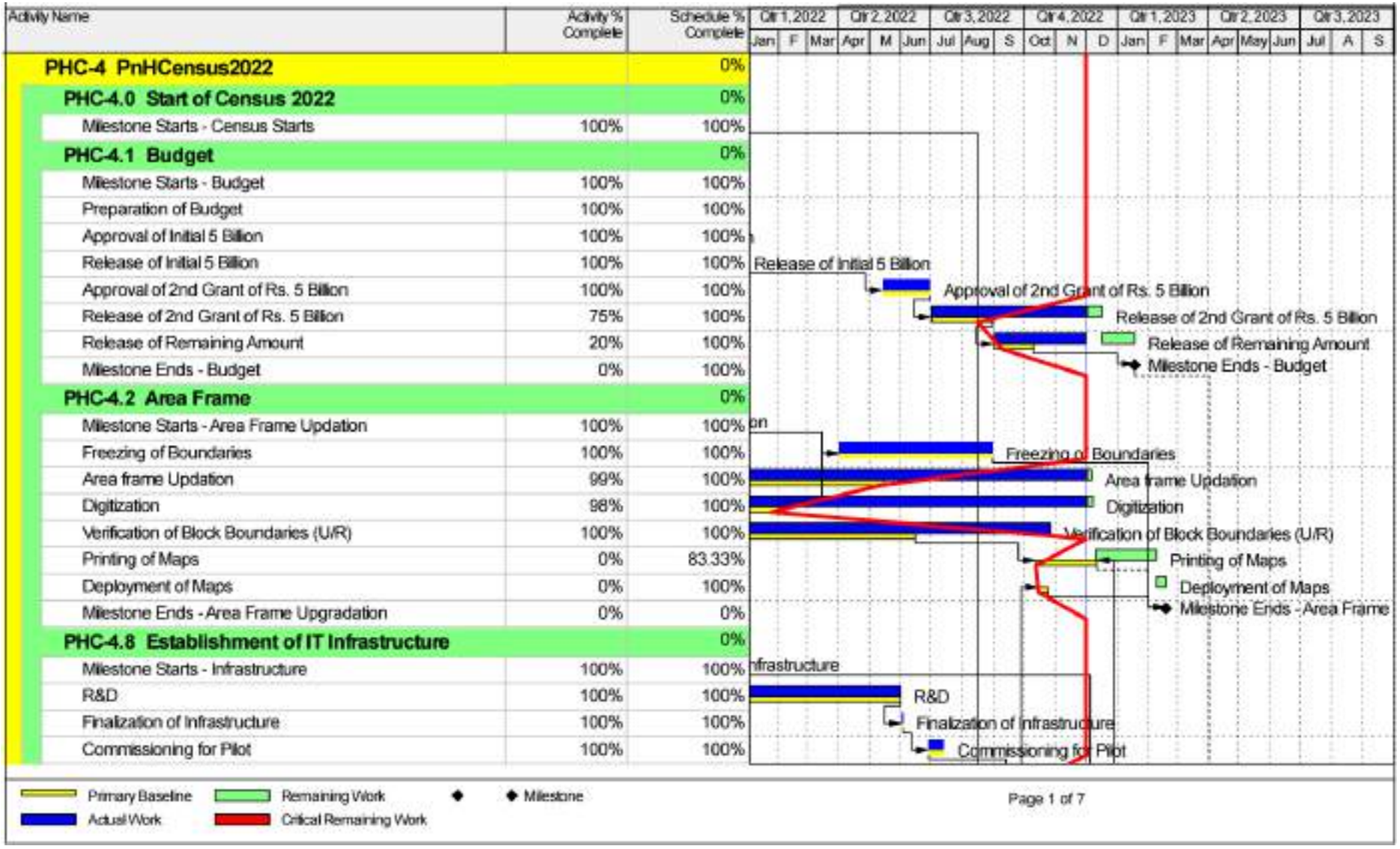
### Activity Wise Progress of Census Project

CPMU, Pakistan Bureau of Statistics

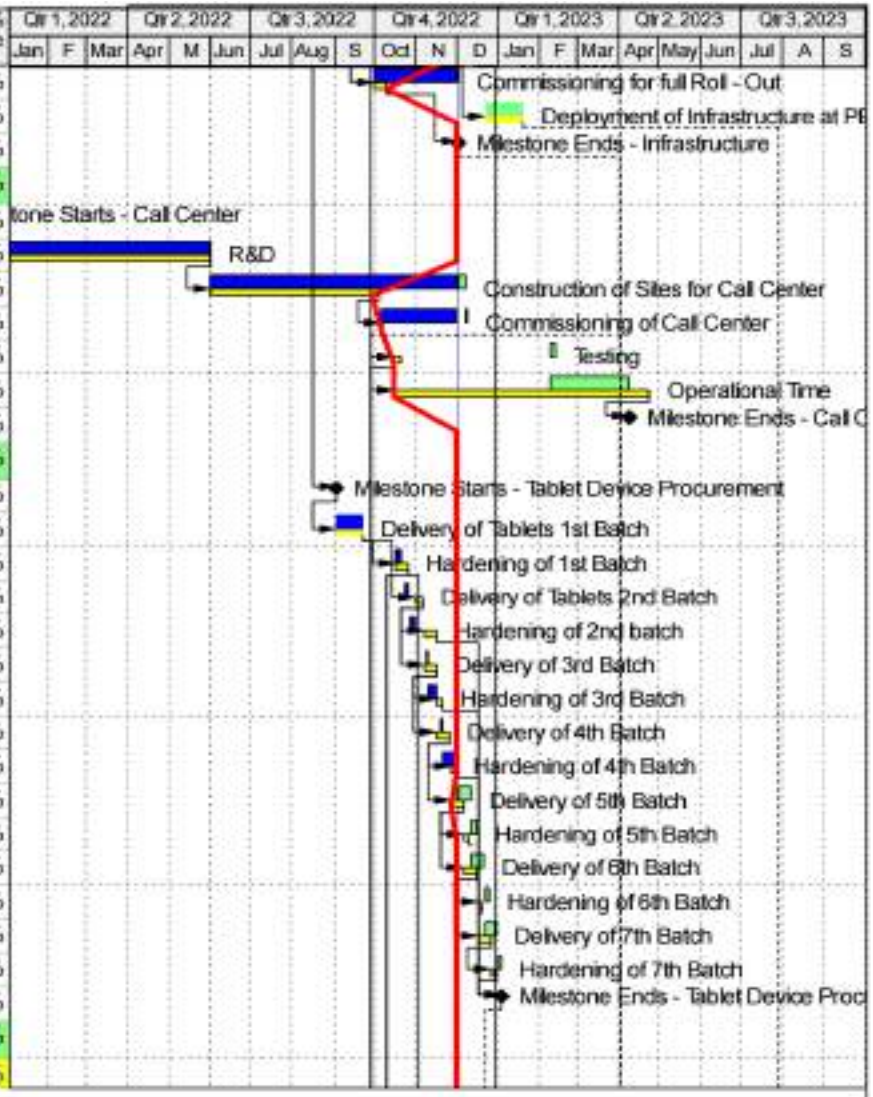
| WBS Code | WBS Name | Total Activities |
|---|---|---|
| PHC-2 | PnHCensus2022 | 152 |

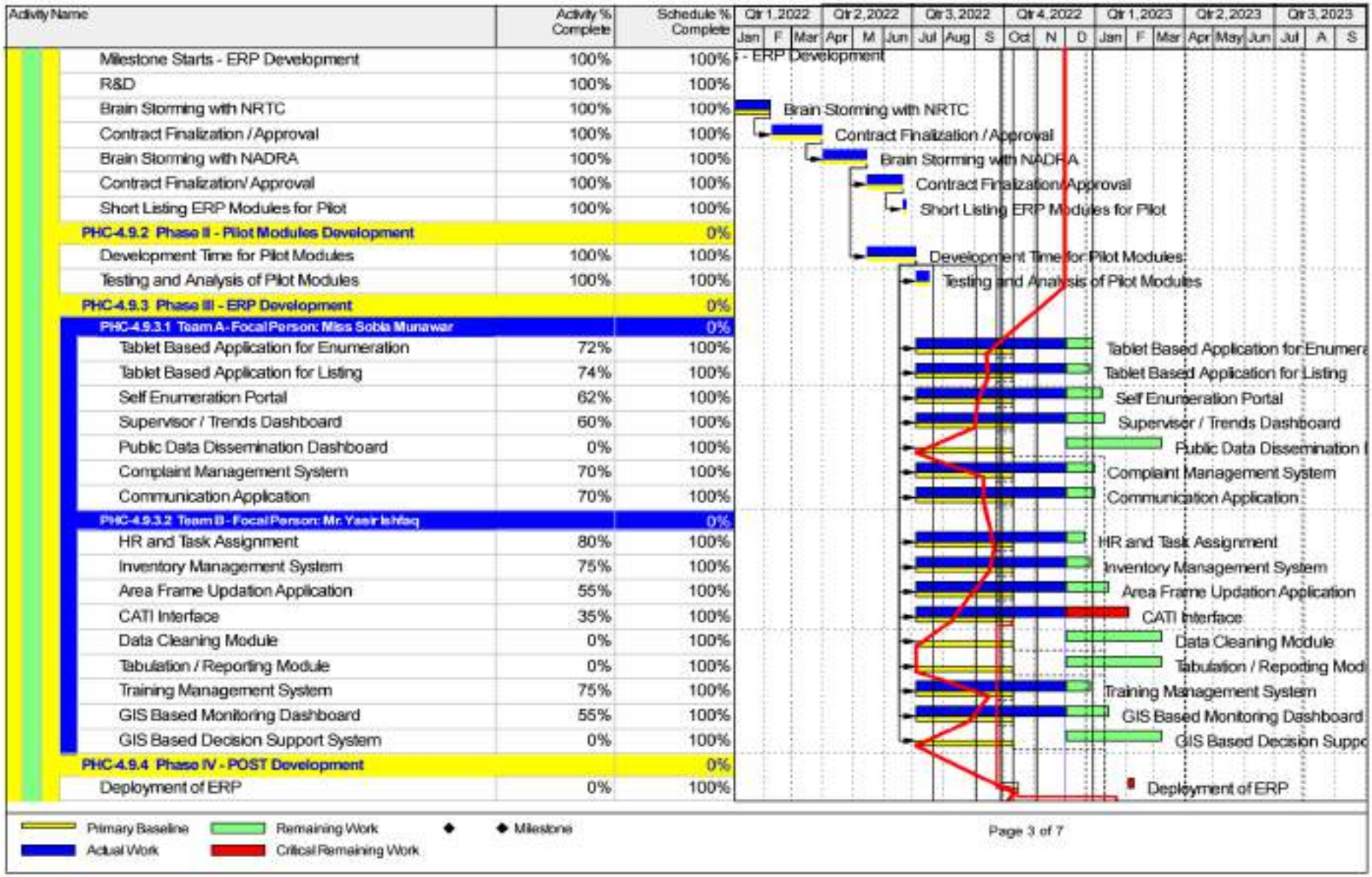
| Activity ID | Activity Name | Activity % Complete | Activity Status | Plnd. Start | Actual Start | Variance - Plnd. Start Date | Plnd. Finish | Actual Finish | Variance - Plnd. Finish Date | Plnd. Duration | Actual Duration | Variance - Plnd. Duration |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PHC-2.0** | **Start of Census 2022** | | **1** | | | | | | | | | |
| C0000 | Start of Pre Census Operations | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | | | 0.0d | 0.0d | 0.0d | 0.0d |
| **PHC-2.1** | **Budget** | | **7** | | | | | | | | | |
| C10010 | Preparation of Budget | 100% | Completed | 21-Apr-21 | 21-Apr-21 | 0.0d | 31-May-21 | 31-May-21 | 0.0d | 41.0d | 41.0d | 0.0d |
| C10020 | Approval of Initial 5 Billion | 100% | Completed | 01-Jun-21 | 01-Jun-21 | 0.0d | 30-Jun-21 | 30-Jun-21 | 0.0d | 30.0d | 30.0d | 0.0d |
| C10030 | Release of Initial 5 Billion | 100% | Completed | 21-Oct-21 | 21-Oct-21 | 0.0d | 25-Dec-21 | 25-Dec-21 | 0.0d | 66.0d | 66.0d | 0.0d |
| C10040 | Approval of 2nd Grant of Rs. 5 Billion | 100% | Completed | 15-May-22 | 15-May-22 | 0.0d | 30-Jun-22 | 30-Jun-22 | 0.0d | 47.0d | 47.0d | 0.0d |
| C10050 | Release of 2nd Grant of Rs. 5 Billion | 30% | In Progress | 01-Jul-22 | 01-Jul-22 | 0.0d | 31-Aug-22 | | -76.4d | 62.0d | 95.0d | -76.4d |
| C10070 | Release of Remaining Amount | 10% | In Progress | 01-Sep-22 | 01-Sep-22 | 0.0d | 10-Oct-22 | | -72.4d | 40.0d | 33.0d | -72.4d |
| C10080 | Milestone Ends - Budget | 0% | Not Started | | | -72.4d | 10-Oct-22 | | -72.4d | 0.0d | 0.0d | 0.0d |
| **PHC-2.2** | **Area Frame** | | **8** | | | | | | | | | |
| C20000 | Milestone Starts - Area Frame Updation | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | | | 0.0d | 0.0d | 0.0d | 0.0d |
| C20010 | Area frame Updation | 55% | In Progress | 01-Apr-21 | 01-Apr-21 | 0.0d | 15-May-22 | | -145.1d | 410.0d | 551.0d | -145.1d |
| C20020 | Digitization | 66% | In Progress | 01-Apr-21 | 01-Apr-21 | 0.0d | 31-Jan-22 | | -251.1d | 306.0d | 551.0d | -251.1d |
| C20030 | Freezing of Boundaries | 100% | Completed | 01-Apr-22 | 01-Apr-22 | 0.0d | 31-Aug-22 | 31-Aug-22 | 0.0d | 153.0d | 153.0d | 0.0d |
| C20040 | Verification of Block Boundaries (LRC) | 53% | In Progress | 01-Apr-21 | 01-Apr-21 | 0.0d | 15-Jun-22 | | -317.3d | 441.0d | 551.0d | -317.3d |
| C20050 | Printing of Maps | 0% | Not Started | 14-Oct-22 | | -197.3d | 15-Dec-22 | | -197.3d | 63.0d | 0.0d | 0.0d |
| C20060 | Deployment of Maps | 0% | Not Started | 16-Oct-22 | | -51.8d | 25-Oct-22 | | -51.8d | 10.0d | 0.0d | 0.0d |
| C20080 | Milestone Ends - Area Frame Upgradation | 0% | Not Started | | | -197.3d | 15-Dec-22 | | -197.3d | 0.0d | 0.0d | 0.0d |
| **PHC-2.3** | **Questionaire** | | **8** | | | | | | | | | |
| C10000 | Milestone Starts - Budget | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | | | 0.0d | 0.0d | 0.0d | 0.0d |
| C30000 | Milestone Starts - Questionaire | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | | | 0.0d | 0.0d | 0.0d | 0.0d |
| C30010 | R&D | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | 25-Apr-21 | 25-Apr-21 | 0.0d | 25.0d | 25.0d | 0.0d |
| C30020 | Finalization of Questionaire (House Listing + Form 1) | 100% | Completed | 01-Apr-21 | 01-Apr-21 | 0.0d | 30-Jun-21 | 30-Jun-21 | 0.0d | 91.0d | 91.0d | 0.0d |
| C30030 | Translation of Questionaire | 100% | Completed | 06-Jul-21 | 06-Jul-21 | 0.0d | 15-Jul-21 | 15-Jul-21 | 0.0d | 10.0d | 10.0d | 0.0d |
| C30040 | Approval | 100% | Completed | 01-Jul-21 | 01-Jul-21 | 0.0d | 05-Jul-21 | 05-Jul-21 | 0.0d | 5.0d | 5.0d | 0.0d |
| C30070 | Printing of House Listing Form and Form 1 | 0% | Not Started | 10-Oct-22 | | -116.0d | 30-Oct-22 | | -116.0d | 21.0d | 0.0d | 0.0d |
| C30080 | Milestone Ends - Questionaire | 0% | Not Started | | | -116.0d | 31-Oct-22 | | -116.0d | 0.0d | 0.0d | 0.0d |

## 5.6 Primavera Project Structure along with Progress charts - Sample

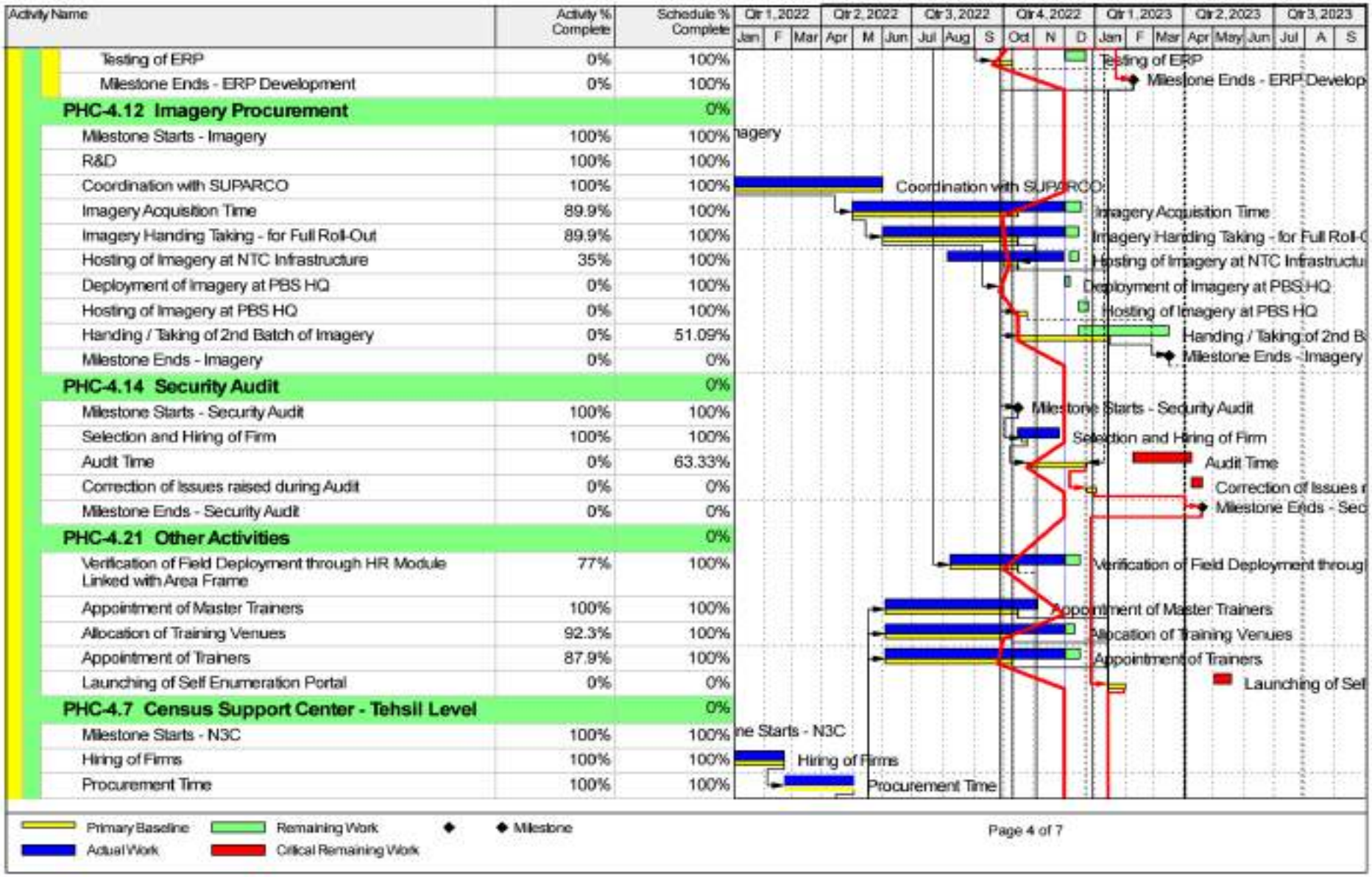


| Activity Name | Activity % Complete | Schedule % Complete |
|---|---|---|
| Commissioning for full Roll - Out | 90% | 100% |
| Deployment of Infrastructure at PBS Premises | 0% | 0% |
| Milestone Ends - Infrastructure | 0% | 100% |
| **PHC-4.13 Call Center** | | 0% |
| Milestone Starts - Call Center | 100% | 100% |
| R&D | 100% | 100% |
| Construction of Sites for Call Center | 95% | 100% |
| Commissioning of Call Center | 20% | 100% |
| Testing | 0% | 100% |
| Operational Time | 0% | 24.74% |
| Milestone Ends - Call Center | 0% | 0% |
| **PHC-4.11 Tablet Devices** | | 0% |
| Milestone Starts - Tablet Device Procurement | 100% | 100% |
| Delivery of Tablets 1st Batch | 100% | 100% |
| Hardening of 1st Batch | 100% | 100% |
| Delivery of Tablets 2nd Batch | 100% | 100% |
| Hardening of 2nd batch | 100% | 100% |
| Delivery of 3rd Batch | 100% | 100% |
| Hardening of 3rd Batch | 100% | 100% |
| Delivery of 4th Batch | 100% | 100% |
| Hardening of 4th Batch | 100% | 100% |
| Delivery of 5th Batch | 0% | 50% |
| Hardening of 5th Batch | 0% | 0% |
| Delivery of 6th Batch | 0% | 0% |
| Hardening of 6th Batch | 0% | 0% |
| Delivery of 7th Batch | 0% | 0% |
| Hardening of 7th Batch | 0% | 0% |
| Milestone Ends - Tablet Device Procurement | 0% | 0% |
| **PHC-4.9 Census ERP Development** | | 0% |
| **PHC-4.9.1 Phase I - PRE Development** | | 0% |

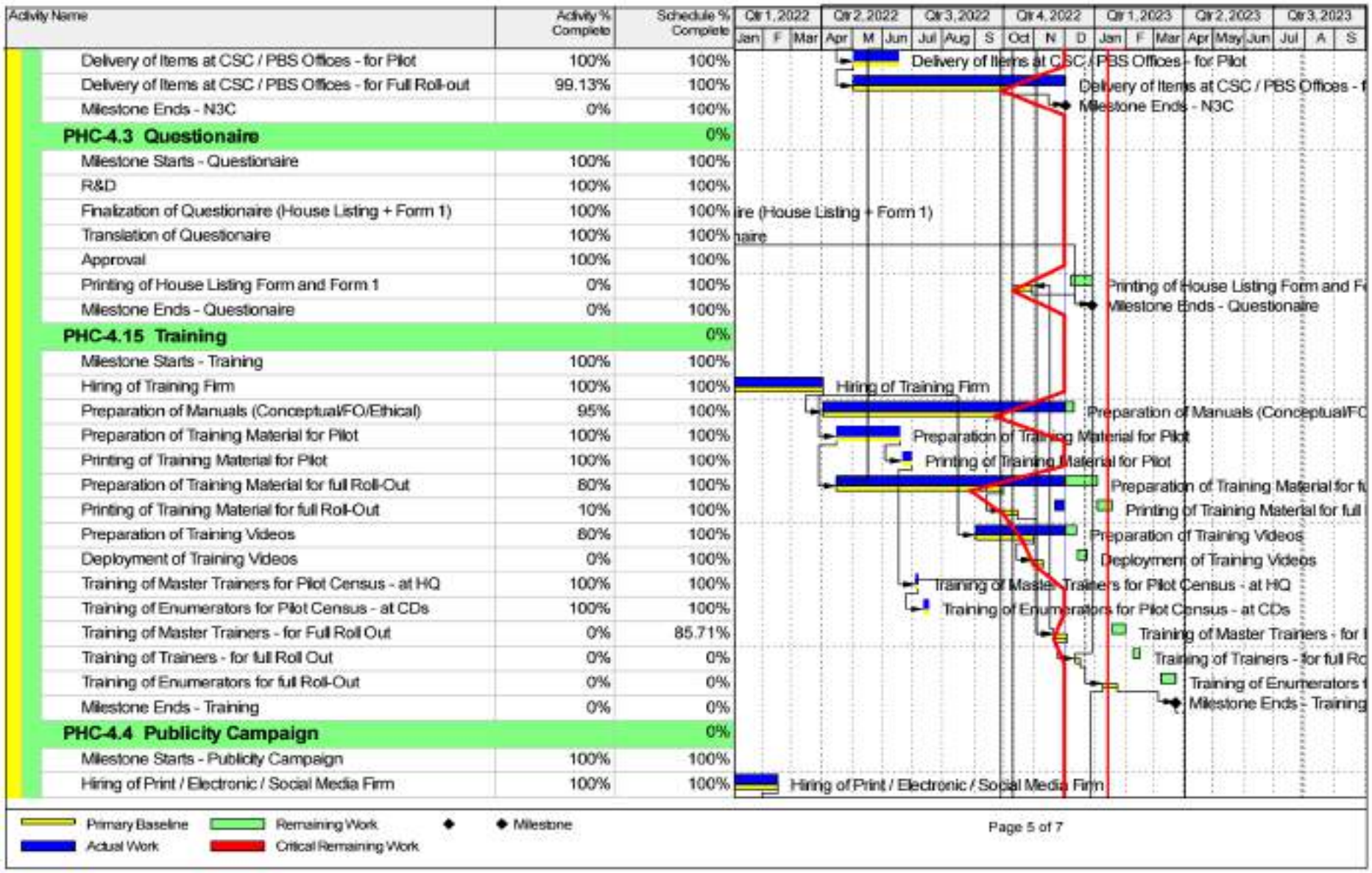




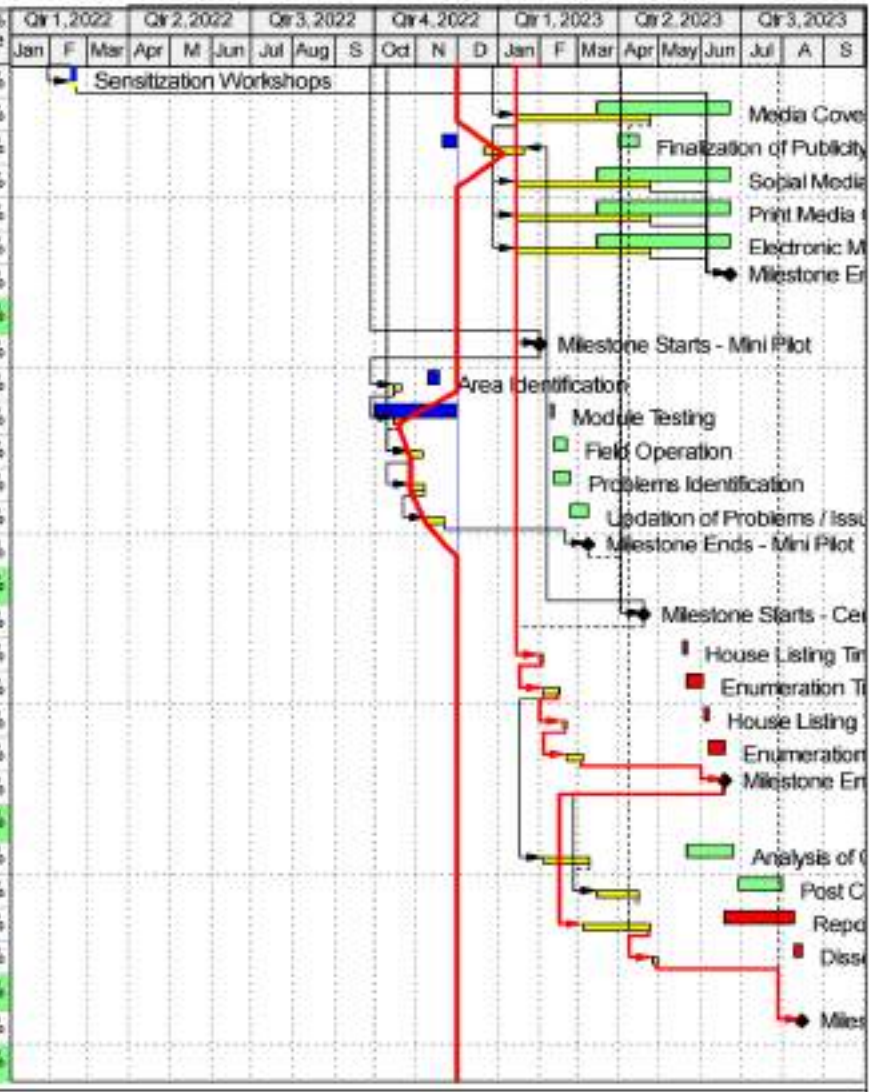
| Activity Name | Activity % Complete | Schedule % Complete |
|---|---|---|
| Milestone Starts - ERP Development | 100% | 100% |
| R&D | 100% | 100% |
| Brain Storming with NRTC | 100% | 100% |
| Contract Finalization / Approval | 100% | 100% |
| Brain Storming with NADRA | 100% | 100% |
| Contract Finalization/ Approval | 100% | 100% |
| Short Listing ERP Modules for Pilot | 100% | 100% |
| PHC-4.9.2 Phase II - Pilot Modules Development | | 0% |
| Development Time for Pilot Modules | 100% | 100% |
| Testing and Analysis of Pilot Modules | 100% | 100% |
| PHC-4.9.3 Phase III - ERP Development | | 0% |
| PHC-4.9.3.1 Team A - Focal Person: Miss Sobia Munawar | | 0% |
| Tablet Based Application for Enumeration | 72% | 100% |
| Tablet Based Application for Listing | 74% | 100% |
| Self Enumeration Portal | 62% | 100% |
| Supervisor / Trends Dashboard | 60% | 100% |
| Public Data Dissemination Dashboard | 0% | 100% |
| Complaint Management System | 70% | 100% |
| Communication Application | 70% | 100% |
| PHC-4.9.3.2 Team B - Focal Person: Mr. Yasir Ishfaq | | 0% |
| HR and Task Assignment | 80% | 100% |
| Inventory Management System | 75% | 100% |
| Area Frame Updation Application | 55% | 100% |
| CATI Interface | 35% | 100% |
| Data Cleaning Module | 0% | 100% |
| Tabulation / Reporting Module | 0% | 100% |
| Training Management System | 75% | 100% |
| GIS Based Monitoring Dashboard | 55% | 100% |
| GIS Based Decision Support System | 0% | 100% |
| PHC-4.9.4 Phase IV - POST Development | | 0% |
| Deployment of ERP | 0% | 100% |



| Activity Name | Activity % Complete | Schedule % Complete |
|---|---|---|
| Testing of ERP | 0% | 100% |
| Milestone Ends - ERP Development | 0% | 100% |
| **PHC-4.12 Imagery Procurement** | | 0% |
| Milestone Starts - Imagery | 100% | 100% |
| R&D | 100% | 100% |
| Coordination with SUPARCO | 100% | 100% |
| Imagery Acquisition Time | 89.9% | 100% |
| Imagery Handing Taking - for Full Roll-Out | 89.9% | 100% |
| Hosting of Imagery at NTC Infrastructure | 35% | 100% |
| Deployment of Imagery at PBS HQ | 0% | 100% |
| Hosting of Imagery at PBS HQ | 0% | 100% |
| Handing / Taking of 2nd Batch of Imagery | 0% | 51.09% |
| Milestone Ends - Imagery | 0% | 0% |
| **PHC-4.14 Security Audit** | | 0% |
| Milestone Starts - Security Audit | 100% | 100% |
| Selection and Hiring of Firm | 100% | 100% |
| Audit Time | 0% | 63.33% |
| Correction of Issues raised during Audit | 0% | 0% |
| Milestone Ends - Security Audit | 0% | 0% |
| **PHC-4.21 Other Activities** | | 0% |
| Verification of Field Deployment through HR Module Linked with Area Frame | 77% | 100% |
| Appointment of Master Trainers | 100% | 100% |
| Allocation of Training Venues | 92.3% | 100% |
| Appointment of Trainers | 87.9% | 100% |
| Launching of Self Enumeration Portal | 0% | 0% |
| **PHC-4.7 Census Support Center - Tehsil Level** | | 0% |
| Milestone Starts - N3C | 100% | 100% |
| Hiring of Firms | 100% | 100% |
| Procurement Time | 100% | 100% |


Activity Name
Activity % Complete
Schedule % Complete
Qtr 1, 2022
Qtr 2, 2022
Qtr 3, 2022
Qtr 4, 2022
Qtr 1, 2023
Qtr 2, 2023
Qtr 3, 2023
Jan F Mar Apr M Jun Jul Aug S Oct N D Jan F Mar Apr May Jun Jul A S
Delivery of Items at CSC / PBS Offices - for Pilot 100% 100%
Delivery of Items at CSC / PBS Offices - for Full Roll-out 99.13% 100%
Milestone Ends - N3C 0% 100%
PHC-4.3 Questionaire 0%
Milestone Starts - Questionaire 100% 100%
R&D 100% 100%
Finalization of Questionaire (House Listing + Form 1) 100% 100%
Translation of Questionaire 100% 100%
Approval 100% 100%
Printing of House Listing Form and Form 1 0% 100%
Milestone Ends - Questionaire 0% 100%
PHC-4.15 Training 0%
Milestone Starts - Training 100% 100%
Hiring of Training Firm 100% 100%
Preparation of Manuals (Conceptual/FO/Ethical) 95% 100%
Preparation of Training Material for Pilot 100% 100%
Printing of Training Material for Pilot 100% 100%
Preparation of Training Material for full Roll-Out 80% 100%
Printing of Training Material for full Roll-Out 10% 100%
Preparation of Training Videos 80% 100%
Deployment of Training Videos 0% 100%
Training of Master Trainers for Pilot Census - at HQ 100% 100%
Training of Enumerators for Pilot Census - at CDs 100% 100%
Training of Master Trainers - for Full Roll Out 0% 85.71%
Training of Trainers - for full Roll Out 0% 0%
Training of Enumerators for full Roll-Out 0% 0%
Milestone Ends - Training 0% 0%
PHC-4.4 Publicity Campaign 0%
Milestone Starts - Publicity Campaign 100% 100%
Hiring of Print / Electronic / Social Media Firm 100% 100%
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Page 5 of 7

| Activity Name | Activity % Complete | Schedule % Complete |
|---|---|---|
| Sensitization Workshops | 100% | 100% |
| Media Coverage for full Roll-Out | 0% | 0% |
| Finalization of Publicity Content | 50% | 0% |
| Social Media Campaign for full Roll-Out | 0% | 0% |
| Print Media Campaign for full Roll-Out | 0% | 0% |
| Electronic Media Campaign full Roll Out | 0% | 0% |
| Milestone Ends - Publicity Campaign | 0% | 0% |
| **PHC-4.10 Mini Pilot** | | 0% |
| Milestone Starts - Mini Pilot | 100% | 100% |
| Area Identification | 100% | 100% |
| Module Testing | 50% | 100% |
| Field Operation | 0% | 100% |
| Problems Identification | 0% | 100% |
| Updation of Problems / Issues in ERP | 0% | 100% |
| Milestone Ends - Mini Pilot | 0% | 100% |
| **PHC-4.17 Census Operation** | | 0% |
| Milestone Starts - Census Operation | 0% | 0% |
| House Listing Time - Phase 1 | 0% | 0% |
| Enumeration Time - Phase 1 | 0% | 0% |
| House Listing Time - Phase 2 | 0% | 0% |
| Enumeration Time - Phase 2 | 0% | 0% |
| Milestone Ends - Census Operations | 0% | 0% |
| **PHC-4.18 Post Census Operations** | | 0% |
| Analysis of Census Data | 0% | 0% |
| Post Census Survey and Analysis | 0% | 0% |
| Report Generation | 0% | 0% |
| Dissemination of Results | 0% | 0% |
| **PHC-4.19 End of Census 2022** | | 0% |
| Milestone Ends - Declaration of End of Census | 0% | 0% |
| **PHC-4.5 Census Planning & Management Unit** | | 0% |




Primary Baseline | Remaining Work | Milestone
Actual Work | Critical Remaining Work

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# 5. Fundamental Elements in Census Success

1. **Establishment of CPMU: A Cornerstone for Coordination and Oversight:** The creation of the Census Project Management Unit (CPMU) within the Pakistan Bureau of Statistics (PBS) marked a foundational element in ensuring the success of the Digital Census. With the monumental task of conducting a nationwide census, the establishment of the CPMU was a strategic response to the need for a centralized and specialized unit. The CPMU became the nerve center for all planning and administration related to census activities, comprising a dedicated team of experts in various fields. Its role in coordinating and monitoring field operations, including a transparent tendering process for contractor selection, underscored its commitment to a thorough and accountable approach.
2. **Proactive Follow-Up Meetings: Timely Resolutions for Success:** A key element contributing to the success of the Digital Census was the proactive approach adopted by the CPMU in conducting follow-up meetings. These meetings served as a crucial mechanism for timely discussions and resolutions of any challenges encountered during the census activities. By facilitating open communication and quick decision-making, the follow-up meetings ensured that issues were addressed promptly, preventing potential setbacks. The CPMU's commitment to coordination and its proactive follow-up mechanisms played a pivotal role in overcoming obstacles, contributing significantly to the efficiency and success of the overall census operation in Pakistan.
3. **Effective Planning for Census Success: A Proactive Approach:** The success of the census can be attributed to a crucial factor—the proactive approach adopted by the team. This approach involves pre-determining an alternative plan to be executed in the event of any failures or challenges encountered during the implementation of the primary plan. This foresighted strategy ensures that the census operations remain resilient and adaptable, contributing significantly to the overall success of the undertaking.
4. **Strategic Workforce Management: Enhancing Census Success:** Another critical determinant for the success of the census lies in the implementation of an effective working group strategy. This strategic approach plays a pivotal role in ensuring seamless management of complaints and smooth execution of field operations. This implies that the working group strategy is instrumental in managing and addressing any complaints that may arise during the census process

# 6. Lesson learnt

1. **Enhanced Vendor Diversity:** While the procurement process was transparent and fair, there is room for improvement in encouraging a more diverse pool of vendors. Exploring mechanisms to involve a broader range of suppliers could enhance competition and bring in innovative solutions.

2. **Flexibility in Contract Negotiations:** The negotiation phase highlighted the need for flexibility. Introducing more flexible terms in contracts could facilitate smoother negotiations and better alignment with the evolving needs of the project

3. **Advisory Panel for Strategic Guidance:** To establish a dedicated procurement advisory panel that provide invaluable strategic guidance, involving experienced procurement professionals to enhance decision-making, ensuring alignment with best practices, regulatory compliance, and strategic objectives.

4. **Continuous Capacity Building:** Regular training for procurement staff is crucial for staying abreast of evolving best practices and legal frameworks. This ongoing capacity building ensures that the team can apply the latest knowledge to enhance the efficiency and effectiveness of the census procurement process.
5. **Independent Review for Assurance:** An independent review by external experts should be essential. This process helps identify potential improvements, ensures compliance, and validates the integrity of procurement decisions, instilling confidence in the transparency of the process.
6. **Enhanced Budget Transparency:** To provide a comprehensive breakdown of the budget, as it enhances transparency and accountability. Clearly specifying allocations for different procurement categories, such as technology infrastructure, training, logistics, and security measures, is essential for effective budget management.
7. **Informed Decision-Making Through Cost-Benefit Analysis:** To incorporating a cost-benefit analysis into the budget section, as it facilitates informed decision-making. Evaluating the value derived from each procurement activity ensures optimal resource allocation, maximizing the impact of the census initiative.
8. **Flexibility Through Contingency Planning:** To allocate a contingency budget is crucial for flexibility. Unforeseen circumstances or changes in project scope can be addressed without disrupting the procurement timeline, ensuring adaptability to changing conditions.

9. **Robust Monitoring and Reporting:** To implementing robust monitoring mechanisms is crucial. Tracking budget utilization throughout the procurement process and regularly updating stakeholders ensures transparency and provides an opportunity to address variations or adjustments promptly.
10. **Continuous Improvement Through Procurement Efficiency Metrics:** To develop metrics to measure the efficiency of the procurement process is vital. Evaluating factors such as the time taken for procurement cycles, cost-effectiveness of supplier selections, and adherence to budget constraints guides continuous improvement efforts.
11. **Data Accuracy and Quality Control:** There is a need to involve strict quality control measures during collection of data, digitization of frame and validation process.
12. **Training and Capacity Building**: There is a need to invest more in training and capacity building of GIS resources to make the census process more efficient. Secondly, the field staff is also required to be trained more to efficiently use the maps in tablet to acquire more accurate co-ordinates in the field.
13. **Synchronization of Imagery during Field Operations:** Integrating and synchronizing GIS data accurately with central database was a great challenge, especially pushing the imagery from server to the tablets at run time in the areas where network coverage was not so good. The lesson learned in this situation to avoid (or discourage) any such activity during the field operation (especially in weak network zones).
14. **Latest Imagery acquisition & Setup:** One of the biggest challenge during the acquisition of imagery was to acquire latest imagery in a very short time. Because imagery acquisition is time taking process due to cloud cover and other factors. The lesson learned was despite investing in acquiring imagery and it's setup, the organization should use online imagery facilities that will definitely be inexpensive and definitely maintained and updated on daily basis by the provider.
15. **Geo-referencing Error:** As we know that the development of digital frame of the entire country is a time taking activity, that may spans over several years. During the said activity the department may have to use imageries from different resources (i.e. Paid or Open Source). There is a need to keep checking whether the imagery, being used during the whole digitization process, is properly geo-referenced or not spatially misaligned. Otherwise it will require to invest more time and resources to remove the geo-referencing error, because the frame developed over spatially mis-aligned imagery

may create issues in rectifying the exact jurisdiction of census block during the census operations.

16. **Use services of Online Imagery Providers:** Setting up own infrastructure to host imagery and acquire complete imagery adds a very big cost element in Census Budget. The lesson learned over here is to acquire services from online imagery providers rather than setting up your own infrastructure. This will definitely save imagery acquisition time, resources, investment in security, backup, recovery, establishment of disaster recovery sites and above all it would definitely saves the considerable amount of budget.
17. **Preloading Imagery in Local Storage:** As the network coverage may vary across the country, therefore, using imagery through APIs at runtime may not be a suitable option in enumerator's tablet. It will take considerable time to load imagery in enumerator's tablet at run-time. And serving Imagery via API at runtime will also add considerable data cost. Therefore, it is better to push the imagery into tablets before rushing toward field. In-case of imagery requirement at runtime, due to any uncertain reason, there may be a facility to push imagery on user's request.

Incorporating these lessons into future census initiatives will contribute to a more streamlined, transparent, and effective procurement process


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