Guidelines on Use of Electronic Data Collection in Censuses:

*Systems for Management and Monitoring Field Operations*
Management and Monitoring Systems

- Establish a centralized system for an effective management, monitoring and controlling operational activities
- On-site monitoring and tracking the risks and making right decisions
- Integrated systems with field operations and should be available to different level of field staff/managers and staff/managers of headquarters
Management and Monitoring Systems

- Whatever census methodology/technology used in conducting censuses:
  - Management and monitoring of field enumeration should be maintained by information systems and support mechanisms
  - Careful planning is required for determining:
    - what systems will be used,
    - what information will be collected,
    - who are users
    - What are responsibilities/duties of users
    - what technology will be used and how the system will be integrated with census technology
Management and Information Systems

Management and Information Systems should focus on aspects of the operation that matter most, in particular:

- understanding the status of recruitment of field staff;
- understanding the status of logistical issues;
- understanding the status of the progress of the field enumeration, ensuring that the field operation proceeds according to schedule and identifying levels of non-response or under-coverage;
- status of data transfer;
- identifying trouble spots;
- responding to public concerns and issues;
- evaluating the effectiveness and efficiency of the operation, communication between field staff/head quarters.
Management and Information Systems

- Management and monitoring systems can be created in different ways depending on the hierarchical structure of the management and supervision of field staff and the respective roles and responsibilities of headquarter, regional and local offices.

- A number of software solutions can be developed for management and monitoring which can be classified into two groups:
  - Data collection management and monitoring for field staff
  - Management and information system (MIS) for operational control
Data collection management and monitoring modules for field staff

- Number of applications can be developed for field staff
  - Fieldwork management systems for the field staff
    - Regional coordinator
    - Supervisors
    - IT Supervisors
    - Enumerators
    - ...

Data collection management and monitoring modules for field staff

- Number of modules for each level of field staff can be developed
  - **User management:** through which the regional coordinator can identify enumerators and their immediate supervisors according to hierarchical structure. It should also provide information on the handheld devices - type and features - used by each member of the field staff.
  - **Tasks distribution:** through which the work is assigned from the regional coordinator to the local supervisors and then to the enumerators according to the various tasks assigned to them.
Data collection management and monitoring modules for field staff

- Number of modules for each level of field staff can be developed
  - Data transmission: through this module, the authorized staff (usually coordinators and supervisors) can view data transmission between the handheld devices and the central database.
  - Work approval and review: this module is used to review and approve the work submitted by the enumerators. If the supervisor refuses to approve the work, then the work is returned to the enumerator to make any appropriate changes.
  - GPS tracking: this module allows the supervisors to monitor each enumerator’s progress in his/her area, tracking their daily movement.
A view of filling the questionnaire out of the EA, Brazil
Data collection management and monitoring modules for field staff

- **Regional coordinator`s module**
  - Assigning the enumeration areas to the field supervisors and to ensure all EAs are covered by the field staff;
  - Monitoring daily progress of the enumeration based on operational performance indicators and reports generated by the system;
  - Monitoring the changes in the number of the enumerators and supervisors and electronic devices to ensure there are no problems that may affect the performance;
  - Good communication with headquarters and field staff on urgent issues;
  - Ensuring timely payments of the field staff;
Data collection management and monitoring modules for field staff

- **Supervisor`s module**
  - Assigning the EAs to the enumerators and to ensure complete coverage with no overlapping or omission;
  - Monitoring the daily progress of the enumeration in terms of the number of housing units visited and each enumerator`s assignments and their status;
  - Approving or rejecting the completed questionnaires submitted by enumerators;
  - Following-up non-response and refusals;
  - Providing information for specific cases or situations or possible risks;
  - Communicating with enumerators, other supervisors and coordinators at the local and central level;
  - Displaying the entered data at aggregate and individual levels for checking purposes;
  - Controlling data transmission to headquarters
Data collection management and monitoring modules for field staff

- Enumerator`s module
  - Data transmission
  - Information about approved and rejected enumeration (and reason for rejection)
  - Results of enumeration for each unit in EA
    - Completed,
    - Refused,
    - No contact,
    - Interview rescheduled (including information on reason and appointment time/date),
    - Vacant dwelling,
    - Addresses/buildings not used for residential purposes
    - Other explanation
Management Information System for operation control (MIS)

- This system is fundamental for identifying problems and taking appropriate actions

- **Tools for operation control**
  - Performance indicators
  - Alerts for identifying potential risks
  - Geospatial information for monitoring
  - Geo-tracking tool
Management Information System for operation control (MIS)

- Performance indicators
  - Key indicators
    - Status of enumeration – Completed, Refused, Interview rescheduled, No contact, Non-residential, Vacant, etc.
    - Enumerated population by sex, age
    - Average number of population/housing unit per day
    - Number of data transmissions per day by geographical area
    - Number and percentage of devices that have to be renewed (CAPI)
    - Counts of submitted completed questionnaire/incomplete questionnaires
    - Comparisons between actual return and planned returns
    - Housing units enumerated by mode of data collection for timely monitoring non-response
Management Information System for operation control (MIS)

- Alerts for identifying potential risks
  - Other information that can be potentially useful in monitoring the field enumeration is what might be termed ‘supervision alerts’, created from a comparison of data actually collected during the enumeration with what might be expected, such as:
    - Population count below/above expected
    - Male population proportion below/above expected
    - Proportion of population under X years and above Y below/above expected
    - Housing units count below/above expected
Management Information System for operation control (MIS)

- Geospatial information for monitoring
  - It is suggested that advantage should be taken of GIS tools for presenting data collected for monitoring the field enumeration. In particular, the data on performance indicators and alerts can be integrated with GIS that make it easier to recognise problematic geographic areas and to get a better view of regional performance.

- Geo-tracking tool
  - The MIS could make use of geo-referenced information on the location where the enumerator has started an interview (captured by the device’s GPS), thus identifying possible enumerator fraud attempts.
Management Information System for operation control (MIS)

- Centrally managed sub-systems for operational control
  - **Field Management and Control System:** This system enables the fieldwork administration and the headquarters administration to review the data at both levels (individual and aggregate)
    - It provides reports on productivity and performance indicators through tables, charts and electronic maps. This system may also provide interactive reports to keep regional coordinators/supervisors and headquarters informed about problematic areas.
  - **Call Center System:** This system can be used for monitoring data quality control by re-calling a sample of households whose data were collected during the census to verify the validity of the data entered, and can be used also to collect the incomplete data for some households.
2017 Census of Palestine

Snapshot screen explains achievement follow up per enumeration area per building through different colors:

i) Blue means unvisited;

ii) Green means completed;

iii) Red means deleted buildings;

iv) Orange means non-census building; and,

v) Yellow means incomplete
THANK YOU...