الديوان الوطني للإحصائيات

National Office of Statistics

Use of New Technology in data collection for general census of population and housing in Algeria RGPH2018

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Summary

Introduction

▶ **Algeria is preparing to realize his sixth population and housing census, after those realized in 1966,1977,1987,1998 and 2008.**

▶ **The country covers an area of almost 2382 000 km² (ranked 10th in the world), and a volume of population estimated at 42.5 millions in 2018.**

▶ **Administratively, the territory is divided into 48 wilaya (departments) and 1541 municipalities .**

▶ **New approach in 2018 Census : use of tablets in data collection**

Main phases of Algerian census

Preparatory phase: cartographic preparatory work , preparation of data collection documentation, questionnaires, training, test census,….

Execution phase : data collection .
(50 000 enumerators during two weeks)

Data exploitation and dissemination phase :
Processing data
Preliminary results
Final results

Main phases of Algerian census

Preparatory phase

Cartographic preparatory work . (18 months)

Objective : division of national territory to enumerators area.

- **Phase 1**: cartographic up date .
- **Phase 2**: Division into EA.
- **Phase 3**: Building's numeration in the field
- **Phase 4**: preparing EA notebook.

- 2600 municipal delegate
- 61 ide wilaya engineer,
- 200 supervisor of NSO .

Other tasks .
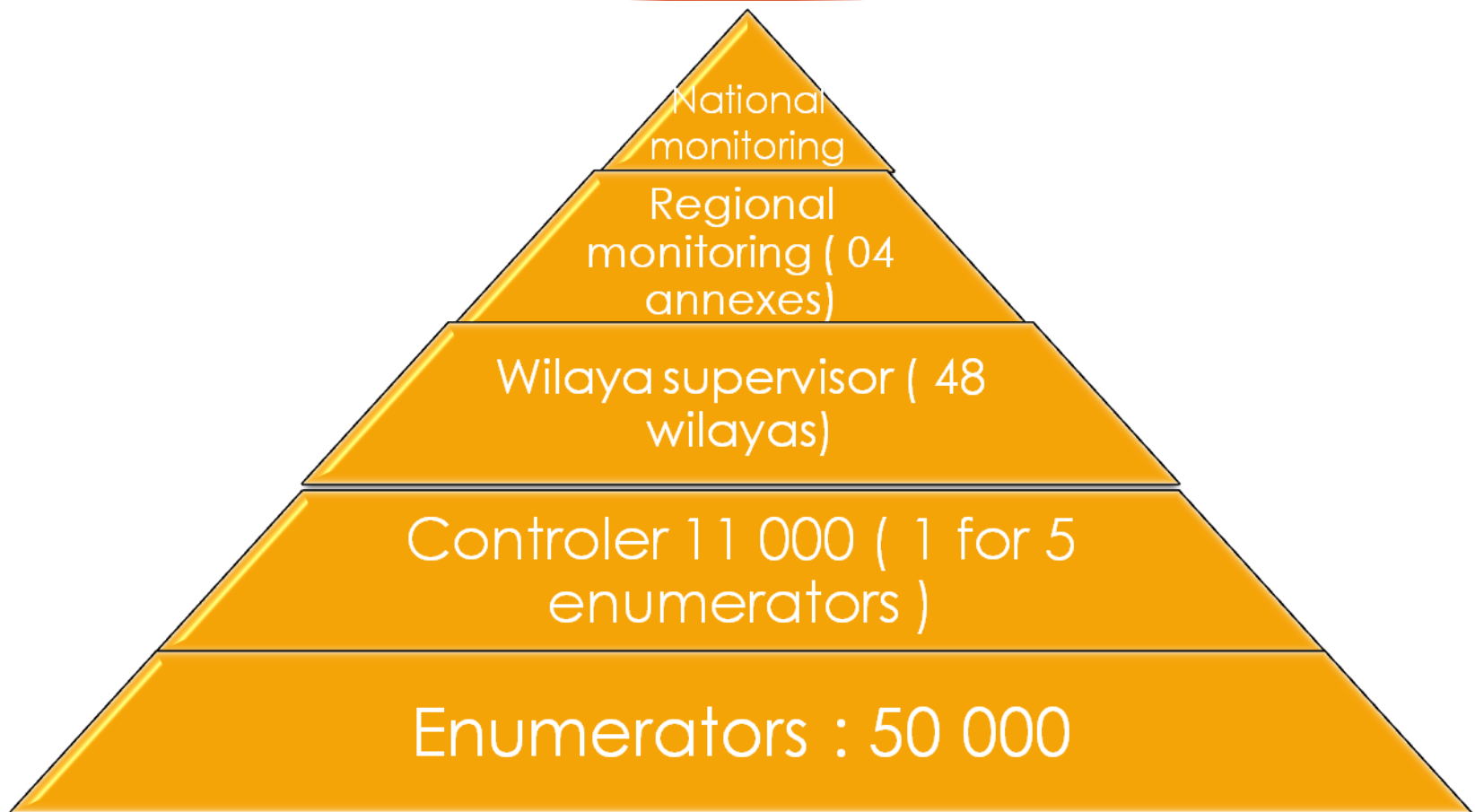
Design and methodology

Training:
- Cartography,
- Municipal delegates
- Trainers.

Test Census

Design and implementation of software and hardware for data collection

Monitoring

Field Work Organisation

National monitoring

Regional monitoring (04 annexes)

Wilaya supervisor (48 wilayas)

Controler 11 000 (1 for 5 enumerators)

Enumerators : 50 000

Use of technology for data collection (03 dimensions to explore)

1. Design dimension ;

3. Implementation of a scheme for data flow

2. Logistic dimension ;
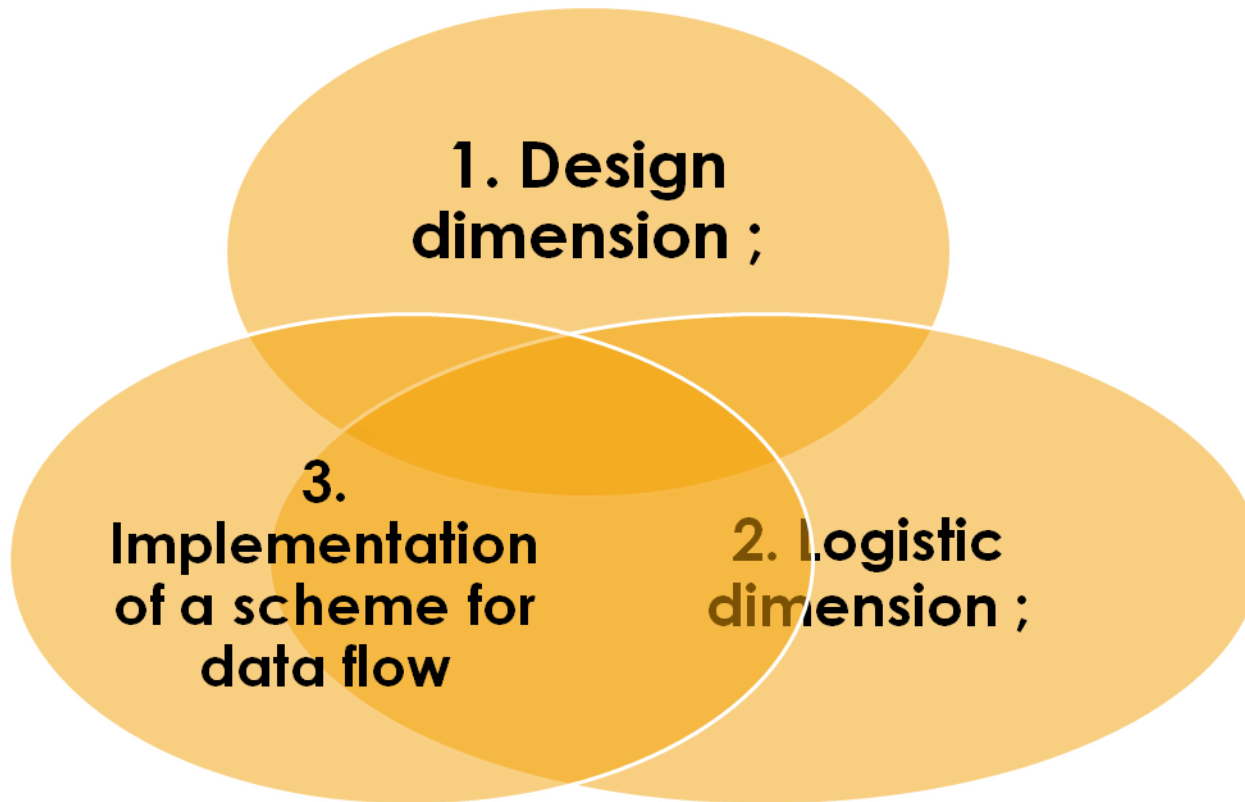
Use of technology for data collection

▶ **Design dimension ; implementation of a software adapted fore mobile technology use in data collection . Adopt a package of programs that ensure data entry, verification of data quality and ensure monitoring for census data collection at different levels of control (in the field, at regional and national level).**

Use of technology for data collection

Logistic dimension ; Acquire a hard platform with appropriate equipments in the NSO to ensure data collection process ;

▶ *data center,*

▶ *Specialized connection,*

▶ *Design a Data transmission scheme*

Use of technology for data collection

▶ **Design a Data transmission scheme: taking into account the use of a secure national cloud during data collection and other technics for data storage before validation, encryption and data security….**

Data collection software

A supervision program for supervisors that verify daily performance, daily report, regional report, data quality indicators, ….

A control and validation data program for controllers that verify field work for 05 enumerators per controller

A Data entry program for enumerators with appropriate controls and logic rules.

Implementation of Data collection software
Equipment used for data collection

1. Enumerator

   Enumerators will have a PDA for data entry, a Notebook in paper format that resume all building in the EA and a sketch map of his EA

   that he must visit it

   2. Controller

   Will have a Notebook more bigger for a complete overview of questionnaires . Every controller must verify data and performance of 5 enumerators

Implementation of Data collection software
Enumerator Program

Connected to program with cell phone using 3G and a personal login

Data entry for a new questionnaire , complete or correct a preview one . Only enumerator can modify data collected

Questionnaire will be put in a state of validation

Implementation of Data collection software
Enumerator Program (at the end of the interview)

In case the 3G is available : a direct secured transfer to Data base located in the regional data center

Encrypted asynchrony backup on tablets SD card is established in a transfer queue that will be done automatically

If the interview is not complete , partial saving is possible and recorded on data base

Implementation of Data collection software
Controller Program

Access to his application by entering his login

Read and verify questionnaires

If the questionnaire is complete and coherent it will be considered (by the app)as "validate questionnaire", if else it will be "On waiting validation"

Implementation of Data collection software
Supervisor program
At department levels: regional and national level

Daily reports progress of data collection field

Elaborate quality and monitoring indicator at required level of aggregation

Implementation of Data collection software :
Practical implementation

NSO

- Design of the IT solution architecture
- Monitoring of works
- Ensure the adaptation with difficulties of fieldwork
- Set up the necessary infrastructures and equipment

Mobile phone operator

- Engineering of different programs and software
- Accompaniment during all stages of process
- Training sessions for NSO staff
- Transfer of technology to NSO staff

National committee

- Ensure inter sectorial coordination related to the use of ICT : Ministry of posts and telecommunications, l'ARPT (regulation agency of posts and telecommunications)
- Ministry of interior and local collectivities network ….

Challenges and constraints

- Training of staff at all levels

- Take account of linguistic aspects in Data Entry application

- Take account to reserve sufficient time for testing all applications and programs

- Need of fast intervention for technical problems during field work (two week of data collection)

- Data security

- Need of sufficient number of IT coordinators during data collection (bridging the deficit through other partners or institutions)

- Using paper questionnaires (20% of total need) in case of technical problems in tablets or internet connection

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Thank You