Egypts' recent developments in preparation for the next population Census
Central Agency for Public Mobilization And Statistics(CAPMAS)

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Agenda

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1-Introduction CAPMAS

- **Main tasks of CAPMAS are:**

  - statistical data gathering.
  - processing of data.
  - Analysis.

- **The latest census was undertaken at 2006.**

- **The next census will be held the year 2016.**

- **Preparation should start three years before the census starting date.**

- **CAPMAS used the scanner (ICR) technology to reduce the time and speed the data entry process for 2006 census .**

- **CAPMAS planed to use Internet Data collection(IDC) for 2016 census.**
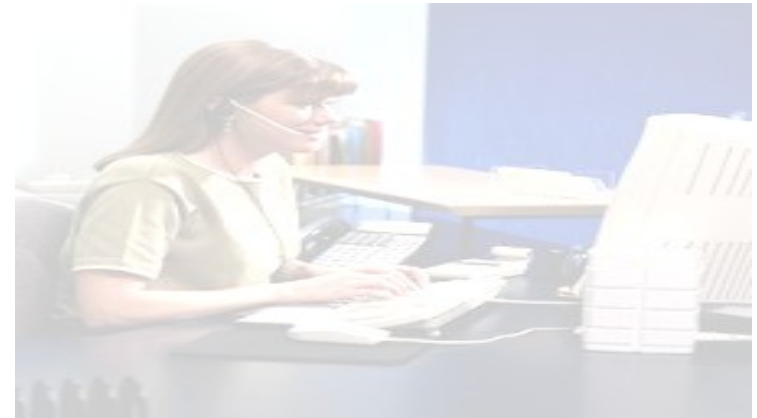
2-2006 census

Recent development in data processing took place in several directions simultaneously:

A-Data entry processes.

B-Decentralization.

C-Automatic coding .

D-Establishment of Data Warehouse.

2-2006 census

- **Data entry processes**

   * Data entry by kiers wastes too much time and money

   * Automatic Data Capture technology is faster, provides better data0

   * Automatic Data Capture is available for Latin numbers0

   using Scanners with Arabic Numerals

* Automatic Data Capture was available for Latin numbers 0

* CAPMAS developed the software to capture Arabic(Hindu) numerals

   and separate alphabet

2-2006 census

- **Decentralization**

  * **Previously,**

    All data processing operation were done at the headquarters.

  * **Recently,**

    CAPMAS established local offices capable of automatic

    data processing.

- **Automatic coding**

  * **Manual coding needs time and includes errors due to human**

    intervention.

  * **Automatic coding reduce time and achieve more accurate results.**

A-Trail Census (pretest and pilot census)

Three trail census was carried out.

• The trail census provides information on :

* Design of the census forms.

* Average time needed for training.

* Estimate manpower needed.

* Field enumeration.

* Data capture.

* Data processing.

B-Data Processing

The aim was making the right data available to users in the shortest time.

- **Phase one:**

  Studying various methods of data entry modules.

- **Phase two:**

  Deciding which Data Base will be used.

- **Phase three:**

  Creating application programs needed for data processing.

- **Phase four:**

  Training on computer processing activities.

- **Phase five:**

  The tabulation strategy and output.

C-Documents Specifications

There were four major questionnaires :

- Population

- Housing

- Establishments

- Public house

* Documents Design :

- Regular standard paper size.

- Using the two sides of the documents.

- Kind of papers 80 gm ,100 gm.

D-The use of Scanner

The software for processing consists of :

- **Module for scanning.**

- **Module for recognition.**

- **Module for correction.**

- **Module for verification and editing.**

- **Module for tabulation.**

E-Challenges

Several Problems came up during the preparation and implementation.

1.Designing documents.

2.Selecting the scanner.

3.Choosing the image software.

4.Variation in handwriting.

E-Challenges

1. Designing documents.

- Paper quality
- Printing quality
- Dropout color.

2. Selecting the scanner.

Types of scanners depends on :

- Speed.
- Ability to handle multiple page.
- Thickness of papers.

E-Challenges

3. Choosing the image software

- Many types of image software engines has different accuracy.

- Using two different software's to choose the best one

- Application programs to be adapted with the census data processing.

4. Variation in handwriting

- Differences in hand-writing of the enumerators.

- Improve the recognition process.

- Using dictionary with different shapes of hand written.

F- The roll of GIS in census 2006

- GIS played a unique and integrated role in census 2006 ,as it participated in all census phases ,starting from planning and preparing phase going through the working in the field and displaying the final results.
- GIS has prepared all the maps available for urban area needed in the preparation phase and determined all the areas concerns the observers and inspectors working in 2006 the field to prevent any overlap between their areas.

F- The roll of GIS in census 2006

• Displaying the final results phase has highlighted the role of GIS, as we joined the census data in two ways .

the first : was joining the summarized data with the administrative boundaries .

the second : was joined the detailed data with a detailed digital maps with scale 1:500,as by just clicking on any building on the map we can know all its characteristics and all the units this building is consists of, all the establishment ,all the households and each individual lives in the building.

• So these two ways have helped us to produce a rich spatial and graphical analysis producing many comparisons between census 2006 and census 1996 and producing Egypt population Atlas.

3-2016 Census

A.Using Internet Data collection(IDC)

1ˢᵗ Pretest 2016 census is running now .

CAPMAS planned For using internet Data Collection (IDC) for the

following advantages .

• Save time and efforts .

• Respondent can provide information for the household at his own
  time and convenience .

• for NSO the IDC reduces manpower effort for Data entry ,Data Editing.

• Time Saving for Data collection .

CAPMAS hope to get good results from using IDC for 2016 census.

3-2016 Census

B-The Role of GIS in census 2016

After the success of using GIS in census 2006 we decided to enhance its role and avoid all problems occurred in census 2006. First : we decided to use the Enumeration Areas (EA) technique instead of numbering the streets(tree Technique)which was used to distribute the working areas among the supervisors whose role was numbering the building and gets their data.

3-2016 Census

B-The Role of GIS in census 2016

Second : we decided to make the use GIS maps for all the urban and rural areas all over the country because we used it in urban areas only in census 2006.

So to achieve these two points we started working on preparing and updating our detailed maps and making a survey to build the First country that will be used in the EAs layer for the whole census 2016. field phase in

This (EA) technique will make the census results more accurate and will make the analysis reach a smaller level than we reached before in census 2006 which was only the administrative boundaries , and also joining census data with detailed maps Scale 1:500;also it will helps us to create a Geocoding system in Egypt.

Thank you for your attention