





#### THE THEMATIC SEMINAR

## Integrating Statistical and Geospatial Information Issues and Challenges

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KINTEX, Gyeonggi-do
Republic of Korea

Egypt-Best Practices in integrating statistical and geospatial data

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Central Agency for Public Mobilization And Statistics



- Introduction
- Best Practices in integrating statistical and geospatial data:
  - 1. Using GIS in Census 2006.
  - 2. The Release of Population Atlas.
  - 3. National Project of Egypt's Health Map.
  - 4. Egyptian Education Initiative Project.
  - 5. National Map Project of Development Unsafe Areas (Slums).

## Introduction

Central Agency for Public Mobilization and Statistics (CAPMAS) is the official authority for collecting, processing and dissemination of data and statistical information. One of CAPMAS objectives is keeping up with rapid developments in all fields, especially in Information Technology. Within this framework, the general department of Geographic Information Systems (GIS) was established in 1989 to perform all tasks, applications and consultancy related to spatial data.

Best Practices in integrating statistical and geospatial data:

# 1 - Using GIS in Population, Housing and Establishments Census 2006.

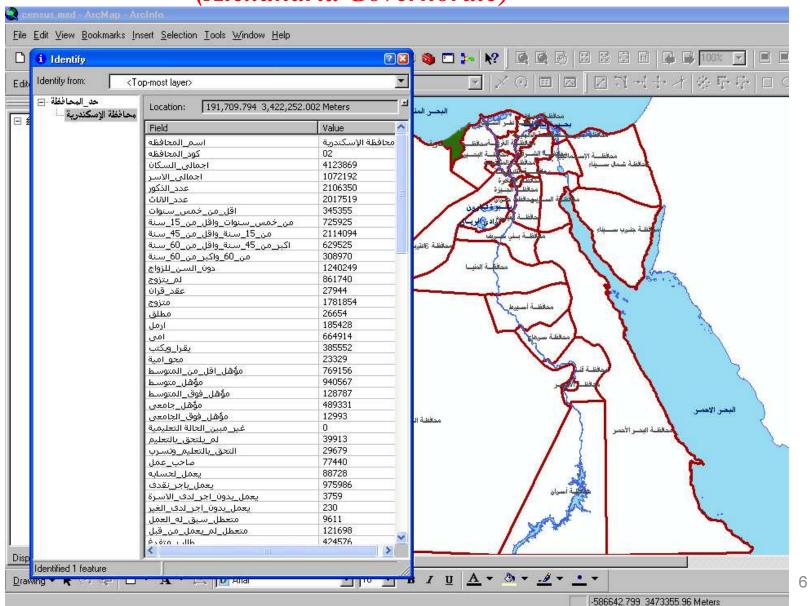
## The Methodology of using GIS in Census

- 1. Using the recent techniques of Geographic Information Systems represented in the software packages Arc GIS, Arc SDE and Oracle databases.
- 2. Using the recent techniques of Information Technology for data warehouse to link the census data (population, housing and establishments) with digital maps of Three Levels Administrative Boundaries and also with detailed base maps at Level of Buildings in Urban of Republic.
- 3. Presenting data either on maps, detailed tables or graphs.

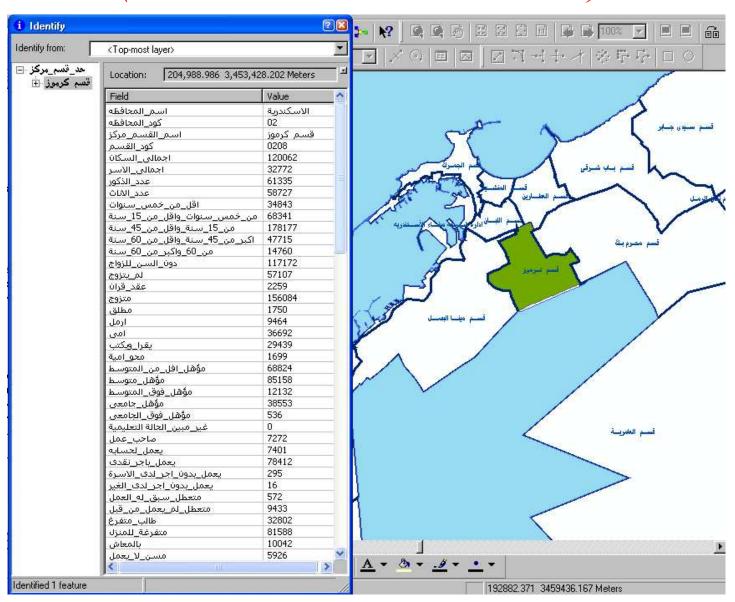
Presenting the census Application for Alexandria Governorate

## The Linkage of Total Statistical Census Data 2006 with Digital Maps of Administrative Boundaries at Governorate Level

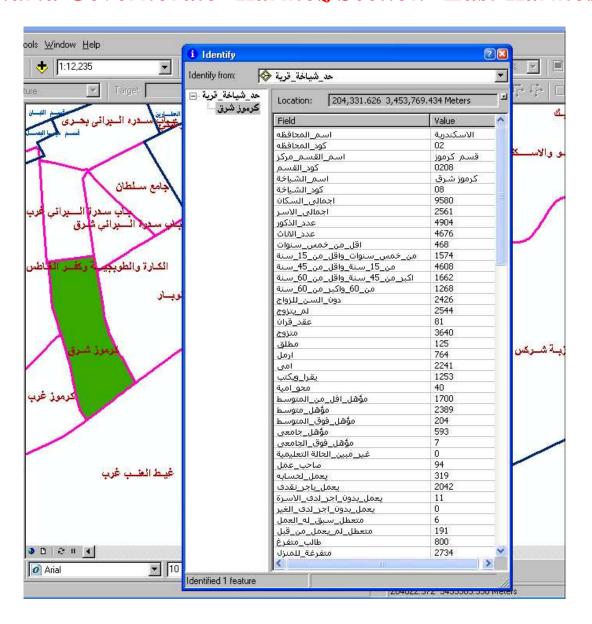
(Alexandria Governorate)



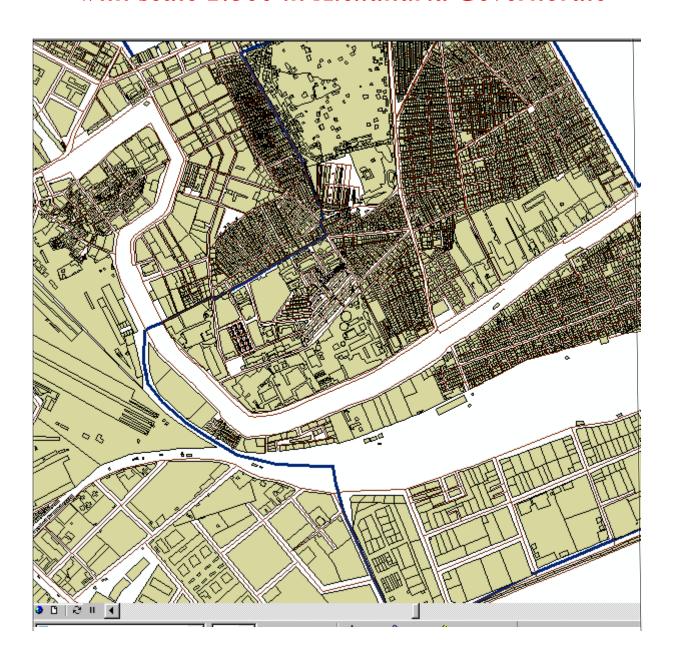
## The Linkage of Total Statistical Census Data 2006 with Digital Maps of Administrative Boundaries at Section Level (Alexandria Governorate- Karmoz Section)



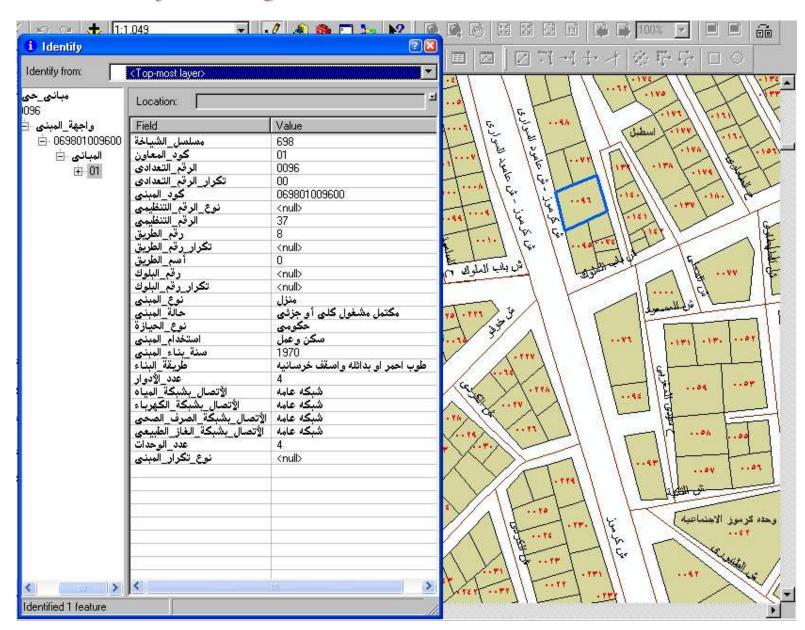
# The Linkage of Total Statistical Census Data 2006 with Digital Maps of Administrative Boundaries at Subsection Level (Alexandria Governorate- Karmoz Section- East Karmoz Subsection)



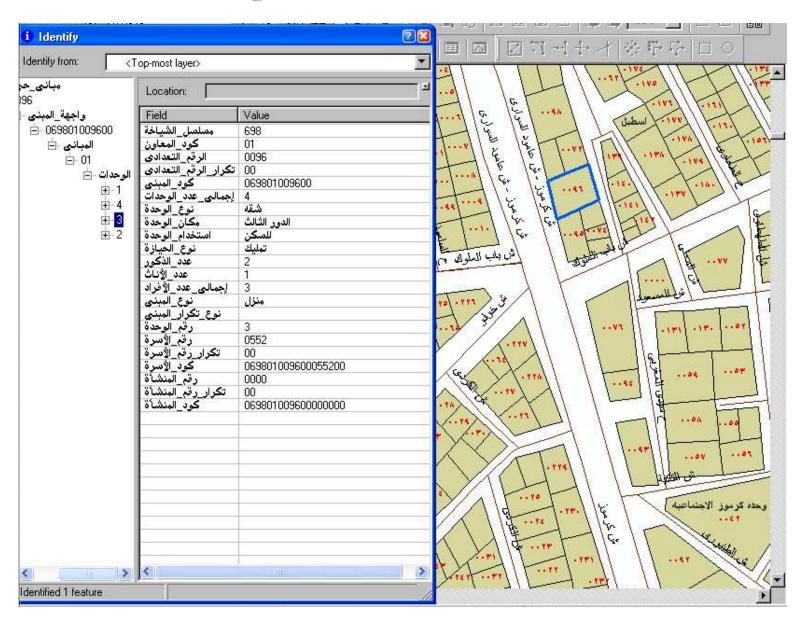
## The Detailed Base Map of East Karmoz Subsection at level of buildings with scale 1:500 in Alexandria Governorate



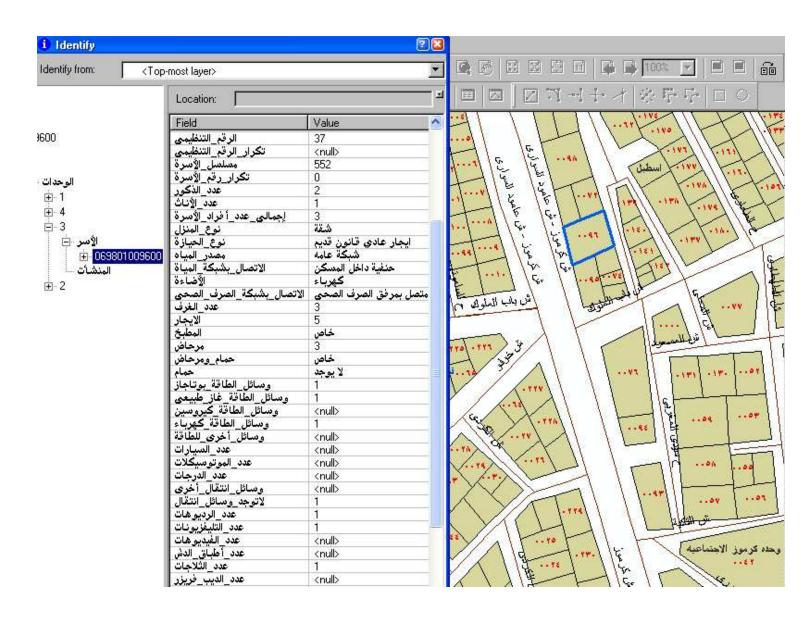
## The linkage of detailed census data with the details base maps at the level of building in Alexandria Governorate



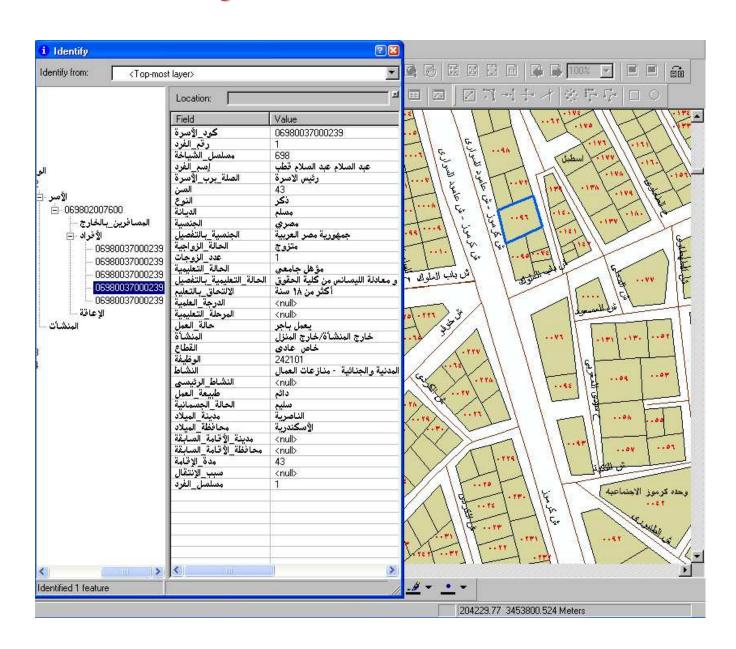
## Presenting the detailed census data for the level of the unit inside That building in Alexandria Governorate



## Presenting the housing conditions of the family dwelling unit inside that building in Alexandria Governorate

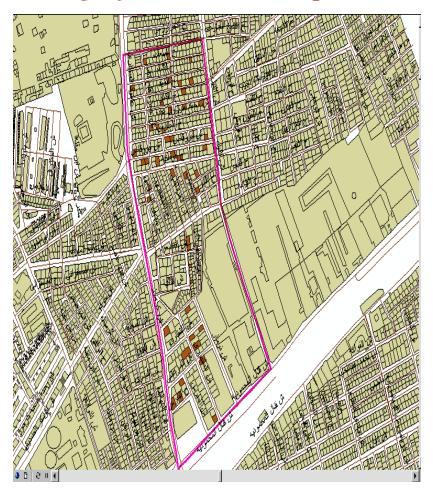


## Presenting the personal data of the family members of that unit inside that building in Alexandria Governorate

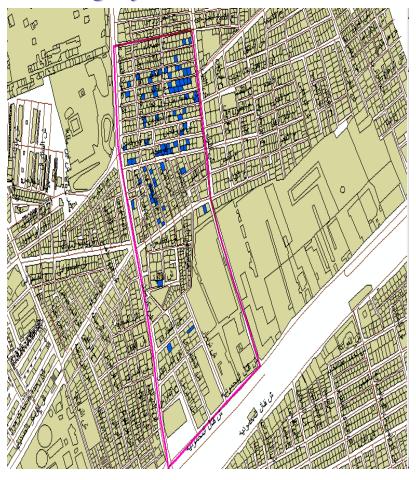


## Examples of spatial analysis in East Karmoz Subsection in Alexandria Governorate,

#### Buildings by individuals with special needs



Buildings by individuals don't work



Total no. of population 8830

individuals with special needs 51person

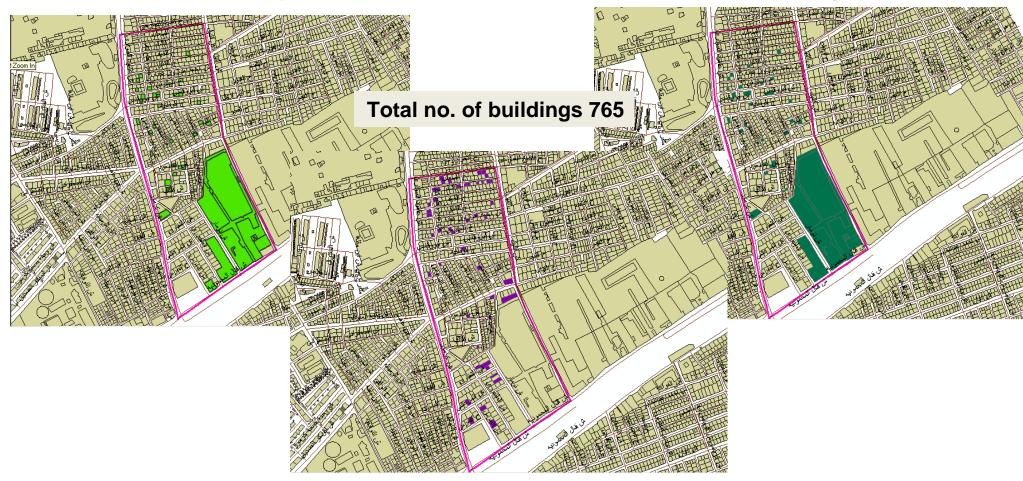
Individuals don't work 180 person

## Examples of spatial analysis in East Karmoz Subsection in Alexandria Governorate

Buildings is 't connected with sewage network

53 buildings

Buildings is 't connected with electricity network 49 buildings



Buildings is 't connected with water network 49 buildings

Best Practices in integrating statistical and geospatial data:

# 2 - Presenting the Census Results on maps 'the release of Population Atlas'



#### **Population Atlas aims at:**

Presenting spatial and data analysis on the different administrative maps clarified by some demographic characteristics.

Presenting also the detailed maps for the level of governorate, Kism / Markaz and Shiakha / Village.



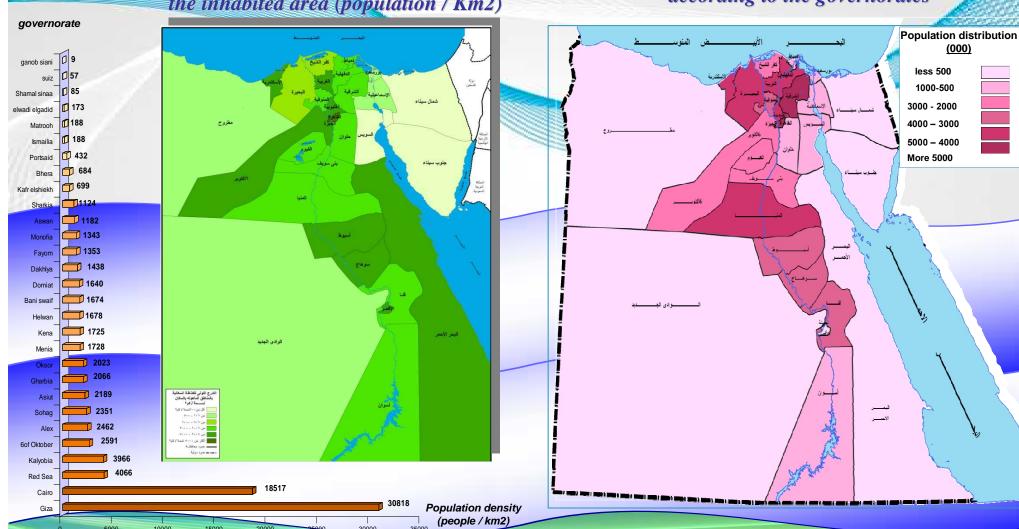




Population distribution according to the governorates

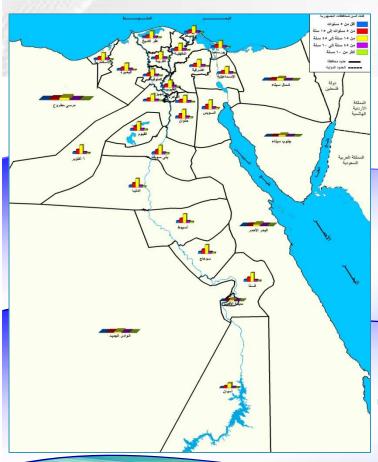
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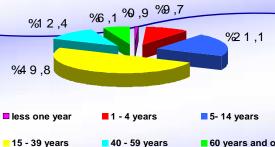




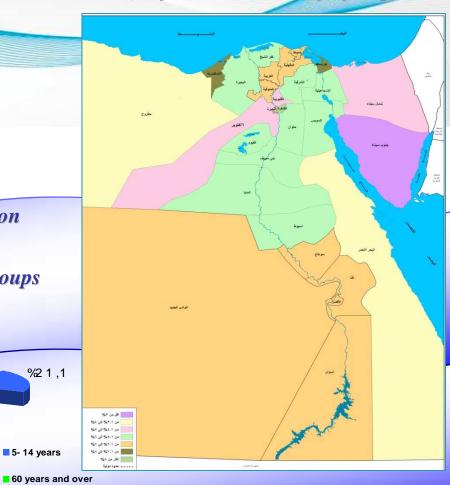
Population distribution according to Age groups



Percent distribution
for Population
according to Age groups



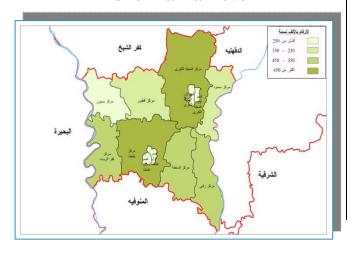
Population distribution according to (60 years and over) Age group



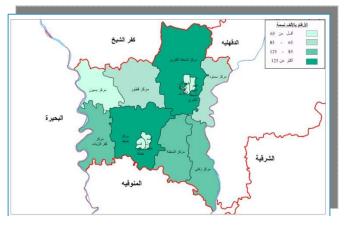


#### Gharbia Governorate

#### Population distribution according to Kism/ Markaz level

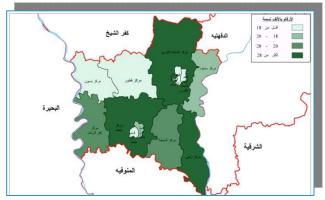


Families distribution according to the Kism/ Markaz level

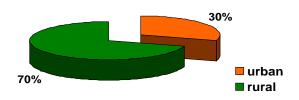




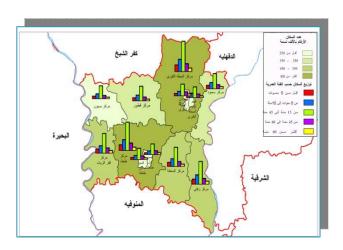
Population distribution according to (60 years and over) Age group in Kism/ Markaz level



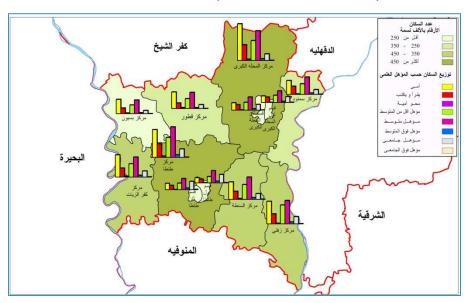
## Population Percent distribution according to Urban / Rural



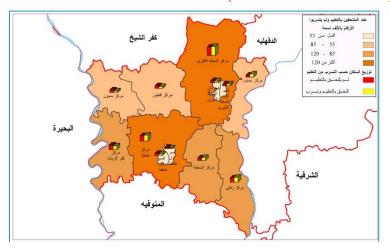
### Population distribution according to Age groups for Kism/ Markaz level



Population distribution according to educational level (Kism/ Markaz level)

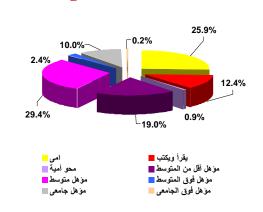


Population distribution according to education enrolled and non-enrolled (Kism/ Markaz level)



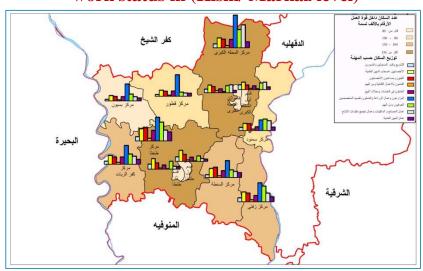
#### Gharbia Governorate







### Population distribution according to work status in (Kism/ Markaz level)



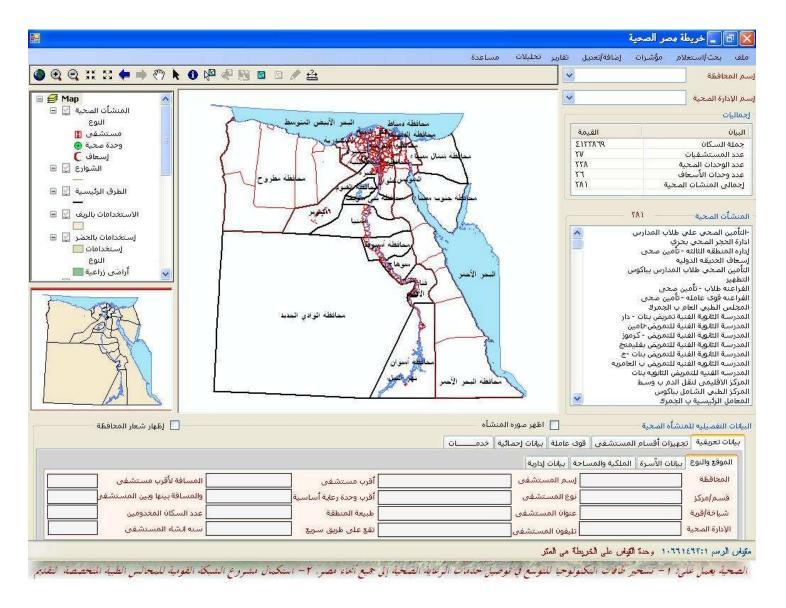
#### Best Practices in integrating statistical and geospatial data:

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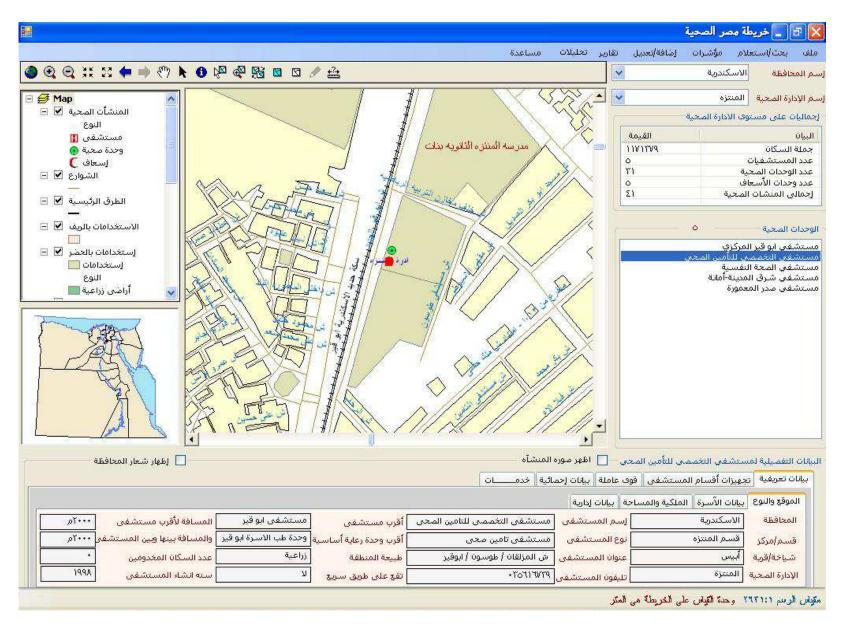
# **Geographic Information System for the Minstry of Health**

### What is Egypt health map?

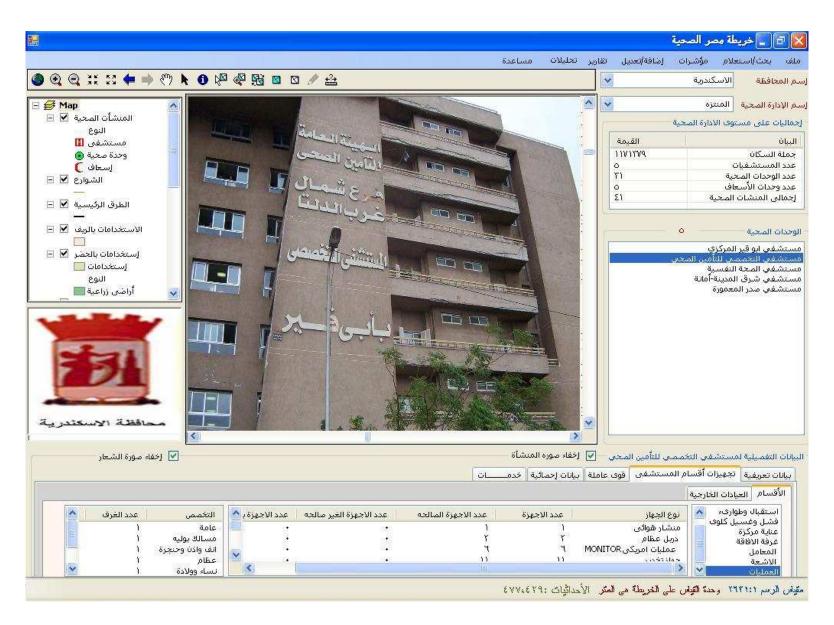
It is a geographical information system contains the health facilities of the health ministry located on detailed digital map of Egypt. The health map is linked to the population census databases as well as the descriptive data for the health facilities (the sets and equipments - the employment - ....)



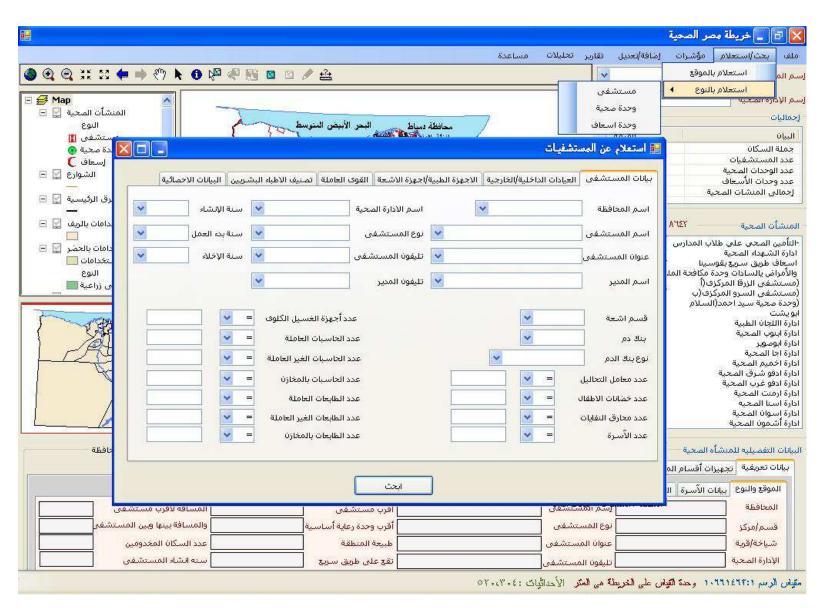
The main screen, contains the layers that make up the digital map. It allows the user to search and present the detailed data.



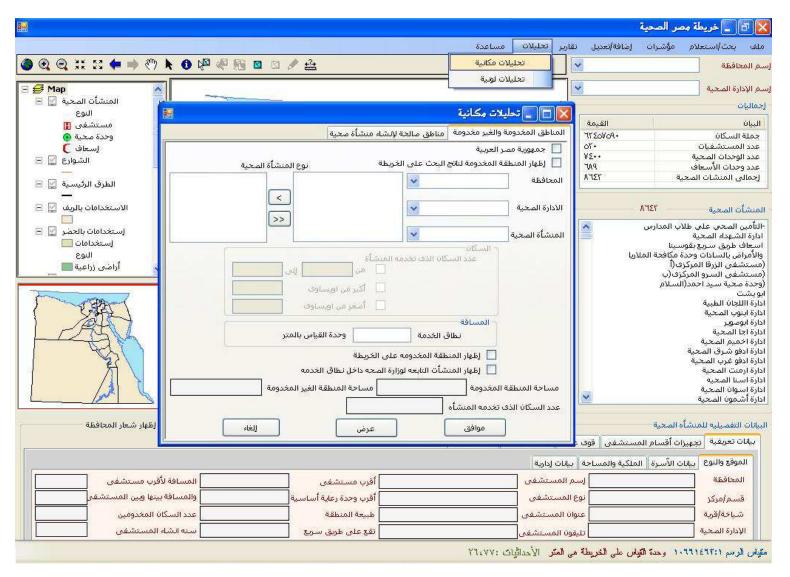
Illustrate the location of the hospital on the map, in addition to the detailed data about the hospital



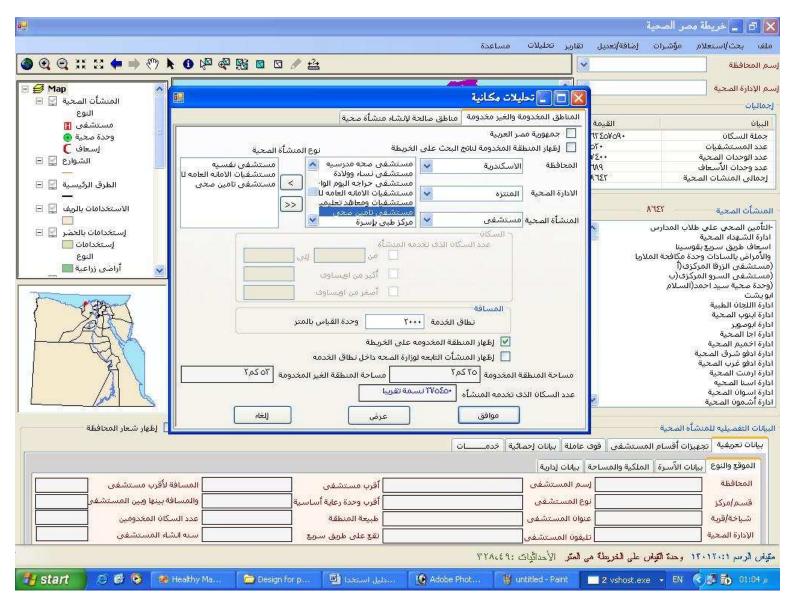
The possibility to display the hospital image, the sections' equipments and outpatient clinics in the hospital



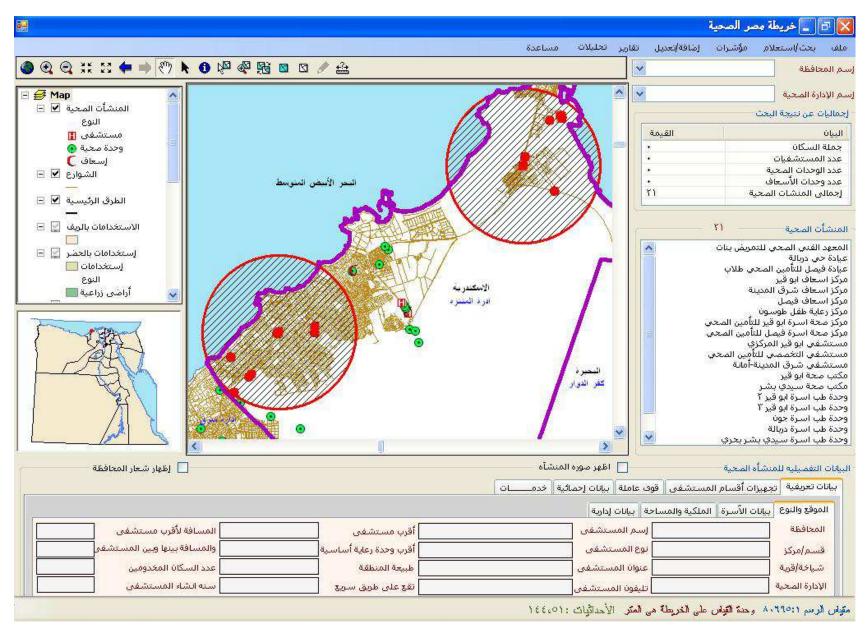
The system provides the possibility of querying the hospital either type or site and view data as well as hospital



The system provides the spatial analysis to show the areas served and un served at the level of health administration



Show the spatial analysis of the scope of service by(meter) for the hospitals belong to the health administration, the output is the size of the area served and the names of health units and the population served by established



Presenting the health facilities within the scope of service that is located on the map and present a list of the health facilities

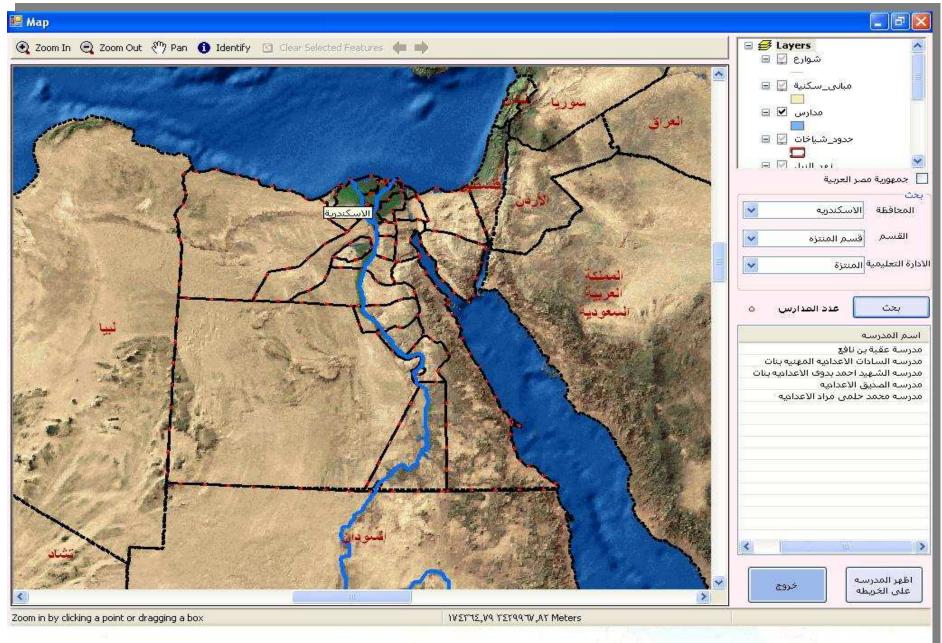
#### Best Practices in integrating statistical and geospatial data:

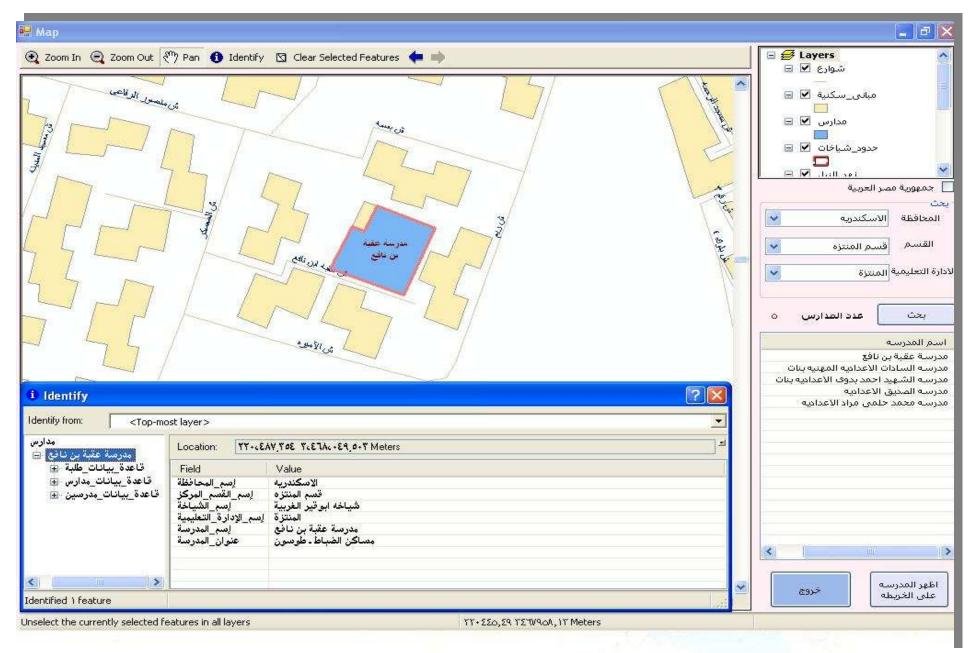
# 4 - The Egyptian Education Initiative

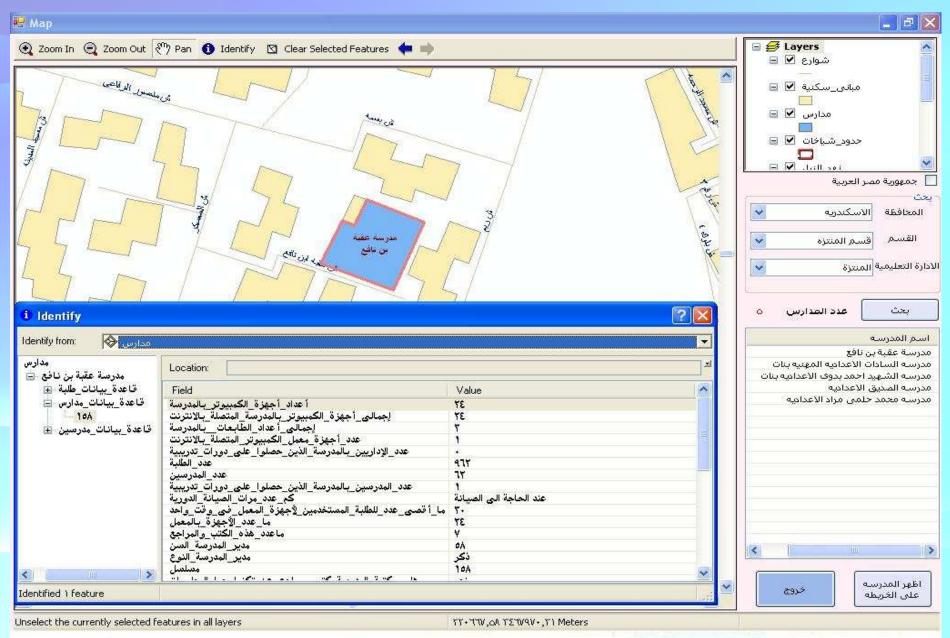
## The Egyptian Education Initiative

- The Egyptian Education Initiative has established Under the cooperation with the communication ministry to measure the effect of using Information Technology on education.
- This project has been applied on 2000 school. Detailed data were collected for (the teachers the pupils the schools) by using the Geographic Information System.









Best Practices in integrating statistical and geospatial data:

# 5 - Development of Unsafe Areas(SLUMS)

## National Map Project of Development Unsafe Areas(SLUMS)

In cooperation with the Information and Decision Support Center in the Egyptian Cabinet, The department is currently implementing geographical information system of unsafe areas.

#### The objective of project:

Surveying of unsafe areas for all governorates of Egypt to:

Design the plan for re- planned residential and supplying them with basic utilities ofwater and Sewage and electricity.

- In addition to the development of civilization and provide jobs for residents.

#### The unsafe areas are classified according to:

- 1- Areas of life-threatening danger, which lies under the rock masses or storm water drains or inside the campus of the railway
- 2 Inconvenient Areas, a housing, which is building remnants of building materials
- 3 Areas that threaten public health, namely:
  - Areas that lack clean drinking water and sanitation
  - Areas which are held under high-voltage electricity networks
- 4 Areas that have been built on state property

## National Map Project of Development Unsafe Areas(SLUMS) Continued

#### The tasks of project are:

- 1-Survey of unsafe areas by using satellite images to locate the boundaries of unsafe areas.
- 2-Survey of unsafe areas by using detailed maps at the level of building scale 1:500.
- 3-Collecting the data of housing and buildings for unsafe areas.
- 4-Taking photos for the status of buildings in unsafe areas.
- 5-Join the statistical data base of housing and buildings by the geographical data base at the level of building, in addition to link the photo for each building on map.





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خريطة تحزيم المنطقة الغير آمنة بزرزارة



عينات من مبانى المنطقة غير الامنة

Field

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دائم مطلق یقرآ ویکتب بدون مؤطل یعمل خاص ایستثماری عامل تشغیل ماکینة اینتاج عامل تشغیل ماکینة اینتاج الملابس خارج المنطقة

## **Future Programs**

- 1- The department is currently implementing the Project of Egyptian information society indicators in the form of WEB APPLICATION for Communication ministry.
- 2- Developing the web site of department by publishing Electronic Atlas on the site of department and other applications.
- 3-Completing the base maps of the countryside for the republic to ensure full coverage of the Republic. (The base maps of the urban is full coverage)
- 4- Establishing GIS Training Center to build the capacity of people interested in the field of geographical information systems.
- 5- Establishing Census 2016 by using detailed maps 1:500 at the level of buildings for all urban of the republic and also using the base maps 1:5000 at the level of the block of the rural of republic

## The Issues and Challenges

- 1-The department has great representation in National Committee of Geographic Information systems. It is planned to become a national mapping center to manage, provide and exchange the national spatial data infrastructure between the relevant.
- 2- The department is preparing to get ISO in digital maps.
- 3- The department has been a leader in geographical information system at the local level and Middle East.
- 4- The department Provided technical support and established special workshops on the use of GIS in census to the statistical agencies in Arab countries : Iraq-Sudan-Syrian.
- 5-The department received four awards as following:

## Awards

## GIS department has obtained several international awards, such as:



The best cartography in the Fifth Annual Middle East, GIS ESRI User Conference, 1999.



The best Cartographic Design in the ESRI European Middle Eastern and African User Conference 2000.

## Awards



The best Geographic Information System for Census 2006 in the Sixth Arab Conference for GIS.



The best Statistical Arab Work in 2008 for "Measuring the Effect of Using Information Technology on Education".

