Case Study

Official Statistics

User

Arab Republic of Egypt, Central Agency for Public Mobilization and Statistics (CAPMAS)

Partner

Esri North East Africa,
WFP – World Food Programme

Challenge

Transformation from a paper to a digital census system enabling the Egyptian government's ability to monitor social trends and mitigate disaster.

Solution

Implement an enterprise GIS platform so that government, industry, and the private sector can easily access and analyze data.

Results

Completed the digital census project in 4 years giving Egypt the foundation to complete other statistic projects and meet sustainability goals.

Geospatial Tools in Census: Egypt Case Study

The Egypt 2017 national census for population, housing, and facilities is the country's first census completed electronically. The transformation from a paper to a digital census system enables Egyptians to see census data in a geographic context. Moreover, the modernization of the process introduces technology that is a gateway to information at a greater depth and scale than ever before.

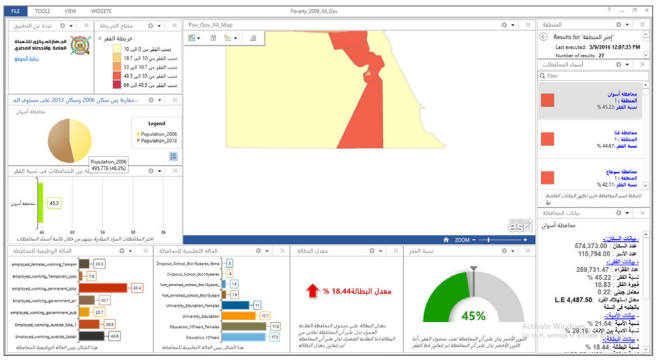
Challenge

Understanding the country's data strengthens the Egyptian government's ability to monitor social trends and mitigate disaster. Egypt's statistical office—the Central Agency for Public Mobilization and Statistics (CAPMAS)—implemented an enterprise GIS platform so that government, industry, and the private sector can easily access and analyze data. The central technology for disseminating census data is the CAPMAS geospatial portal Egy-GeoInfo, which gives officials and citizens alike access to the nation's statistics

Solution

Project planning

To plan the project, CAPMAS worked with the H.E. Minister of Planning and the World Food Programme (WFP) to evaluate the system's business goals and anticipate user requirements. The partners worked with a team of economists and statisticians to determine how people could use geospatial national statistics for investment, economic development, building policies, and so forth. They also took into consideration the Sustainable Development Goals (SDGs) for Egypt 2030.



Dashboard - CAPMAS Egypt

CAPMAS, which was responsible for executing the plan, called on Esri to provide the GIS platform and technical direction. WFP offered technical support and its international knowledge of best practices to guide the system's design. The partners carefully considered all aspects of census activities and determined if and how GIS could support them.

Data planning

The 2017 census plan included bringing all statistical data into a geospatial database. The team implemented a new geospatial database repository for organizing geospatial and nongeospatial data. It also added big-data management capabilities to the system. The 2017 census geodatabase now manages one-half billion records.

The team knew that data is more valuable if it can be harmonized with other data. Therefore, the team specified that data be open so that it can be used by other organizations and systems. The metadata would include time and GPS location. They also devised a strategy for keeping data updated.

Enumeration planning

To train surveyors, CAPMAS developed agile-training activities for everyone from top management to enumerators. It also developed a faster training course to get new recruits up to speed if they joined the enumeration after it started. Training was included in the census budget.

The 2017 e-census covers more than ninety million capita over approximately one million square kilometers. Administrators used GIS to monitor forty thousand enumerators and synchronize forty thousand tablets.

CAPMAS created high-quality maps for surveying activities and made live updates to them reflecting field data collection. The system updated digital maps for all urban and rural areas in Egypt.

Dissemination planning

CAPMAS set goals for census data distribution. The dissemination mechanism had to be built on a decision support system. The system needed to be easy to use and easy to update. Also, the data needed to be anonymous. The ArcGIS platform's portal technology met these requirements, and CAPMAS used it to build the Egyptian Geospatial Information Portal, or Egy-GeoInfo.

Egy-GeoInfo (geoportal.capmas.gov.eg) provides transparency to census data by allowing citizens to see all census and other statistics produced by the national official statistical system. The secure system aggregates data to the village level but does not disclose statistical information at the address level. People needing the most updated statistics, from high-level decision makers to common Egyptian citizens, can use it. In addition, Egy-GeoInfo provides the evidence-based regional info-structure to monitor and evaluate Egypt Vision 2030 activities for meeting the country's SDGs.

The portal accesses cross-discipline information that expands the system's research capabilities. In addition, geoanalytic tools help users manage much of their own research. For instance, they can see clusters of unemployment, trends for home ownership, and education levels by area. They can also see population growth over time and analyze changes in population patterns and location. Because the data is on the ArcGIS platform, decision-makers can combine different statistics, such as income levels and education, to research sales and investment potential.

Results

From planning to execution to dissemination, Egypt completed the digital census project in four years. It now has the foundation to complete other statistic projects that will move the country toward meeting its sustainability goals. Egy-GeoInfo is an award-winning technology and has been highlighted at the UN GIS conference. It also received a smart government award for the best Arab smart application.

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