



2020 Round of population and housing censuses: Why geography matters

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**Global Forum on the Integration of Statistical and Geospatial Information
United Nations Headquarters, New York, 4-5 August 2014**



Outline....

- ❑ International guidelines for the 2010 census round
- ❑ Capacity building activities related to use of geospatial tools
 - Regional Workshops
 - CensusInfo
- ❑ Country experiences during 2010 census round
- ❑ Towards the 2020 census round



International Guidelines

- ❑ UN Principles & Recommendations for Population and Housing Censuses, Rev.2
- ❑ Handbook on Geospatial Infrastructure in Support of Census Activities



UN Recommendations



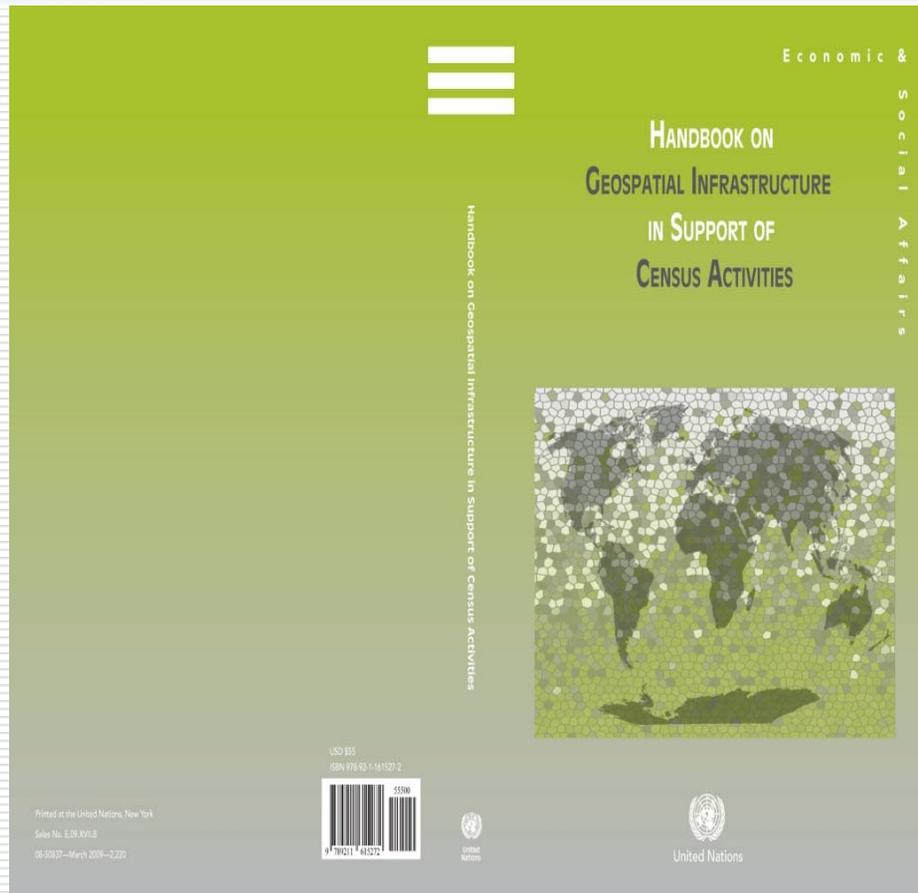
- ❑ UN *Principles and Recommendations for Population and Housing Censuses, Rev.2*, **recommends the use of geospatial technologies for improving traditional methods of census mapping** (adopted by UNSC in 2007).

- ❑ Other recommendations derived from UN EGM on GIS and Census Mapping emphasized:
 - the need for countries to consider the **census geography programme as a continuous process**
 - the use of and application of geospatial technologies and information is **beneficial at all stages of population and housing census process** (GIS improves the efficiency in the preparatory, enumeration, processing and dissemination phases of the census)



Handbook on Geospatial Infrastructure in Support of Census Activities

United Nations Statistics Division



- Audiences: ~~managerial and technical~~
- “Cook-book” to illustrate the role of geospatial technology in each step of the census process
- Each country has to find its own best possible solution
- Available in the six UN official languages

<http://unstats.un.org/unsd/demographic/standmeth/handbooks/default.htm>

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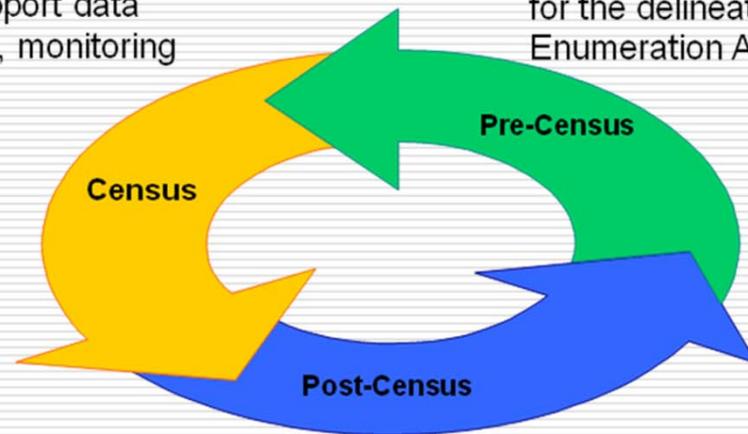
Use of Geospatial tools During Census Cycle

Enumeration

Maps support data collection, monitoring

Pre-enumeration

Maps provide cartographic basis for the delineation of Enumeration Areas



Post-enumeration

Maps make it easier to analyze, display and disseminate; also support survey projects during the decade after the Census

Survey Samples
Rolling Census

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National Capacity Building Activities

- ❑ Regional Workshops on the use of geospatial tools
- ❑ CensusInfo



Regional Workshops on Census Mapping with GIS

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- English-speaking African countries: Lusaka, Zambia, 8-12 October 2007: 30 participants from 14 countries
 - ESCAP: Bangkok, Thailand, 15-19 October 2007: 31 participants from 16 countries
 - CARICOM: Port-o-Spain, Trinidad, 22-27 October 2007: 28 participants from 16 countries
 - French-speaking African countries: Rabat, Morocco, 12-16 November 2007: 48 participants from 10 countries
 - SPC: Noumea, New Caledonia, 4-8 Feb. 2008: 30 participants from 10 countries and two territories
 - ESCWA: Doha, Qatar, 18-22 May 2008: 44 participants from 12 countries
 - Latin America: Santiago, Chile, 24-27 November, 2008: 47 participants from 17 countries
 - CIS: Minsk, Belarus, 8 - 12 December 2008, 41 participants from 11 countries
(300 participants from 106 developing countries and two territories)
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2010 World Population and Housing Census Programme

[Introduction](#) | [Statistics](#) | [Standards and methods](#) | [Meetings](#)

Global CensusInfo

Global CensusInfo is an application of CensusInfo implemented by the UNSD presenting data from national censuses. [More...](#)

[Global CensusInfo Database](#)

National Applications

CensusInfo applications developed by national statistics offices:

www.censusinfo.net

Training

The United Nations Statistics Division organizes CensusInfo training workshops to enhance the national capacity in the use of the CensusInfo to disseminate their census data.

[More...](#)



What is CensusInfo

The United Nations Statistics Division, in partnership with UNICEF and UNFPA, has developed a software package, CensusInfo to help countries disseminate their census data on CD-ROM and on the web. [More...](#)

Main Features

- CensusInfo is a tool to disseminate data on the web and on CD-ROM.
- CensusInfo includes census topics and a suggested list of census indicators with accompanying metadata. [More ...](#)
- CensusInfo can be customized to meet country-specific census indicators.
- CensusInfo presents indicators by time period, and geographic area, up to sub-national level, with extensive metadata.
- CensusInfo generates user-defined tables, graphs, maps and reports.
- CensusInfo can import data from other software applications, such as CPro, SAS, SPSS and Redatam.

Comparison with other software solutions

CensusInfo is specifically designed for census data dissemination. It combines a set of features which can not be found as such in most other software solutions. To help users, a comparison with other software packages in the context of data dissemination can be found [here](#).



How to Get

[Software and Manuals](#)

[Technical Support](#)

For further information, contact:

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Objectives of CensusInfo

- ❑ Develop a software solution to facilitate the dissemination of census results fulfilling following minimum criteria:
 - Easy to implement and easy to use
 - Free to use
 - **Dissemination of census data at any geographical level**
 - Able to generate census-specific outputs
 - Customization for country-specific requirements
 - Dissemination on the web and CD-ROM





CensusInfo Training

- ❑ Four regional workshops training 89 data managers from 67 national statistical offices
 - Caribbean
 - English-speaking African countries
 - French-speaking African countries
 - Asia

- ❑ 11 national in-house training on the implementation of the CensusInfo software, training a total of 149 data managers





Country Experiences

- Use of geospatial technology
 - Pre-collection/compilation
 - Data collection/compilation
 - Dissemination of results

Sources:

Surveys conducted by UNSD to review experiences for 2010 round

Presentations by countries at workshops/conferences



Use of Technology in 2010 Round

	No.	Per cent
Internet (data collection)	26	33
Laptop computers	31	26
Hand-held/pocket computers	10	9
Tablet computers	4	3
Geographical information systems (GIS)	75	64



Use of technology - Cartography

- ❑ Census cartography one of census domains that have benefited the most from technological innovations
- ❑ In 2010 census round:
 - 58% use digitized maps
 - 74% use GPS/GIS
 - 25% aerial photography
 - 24% satellite imagery



Data Dissemination Methods

- ❑ 2010 round witnessing more use of Internet for dissemination and dissemination of micro-data
- ❑ Static web-pages – 95% of countries
- ❑ **On-line interactive databases – 53%**
- ❑ **GIS web-based tools – 59%**
- ❑ Disseminate micro-data – 59%
- ❑ Cater to customized requests for data – 76%
 - Provide customized data free of charge – 27%
- ❑ System for archiving – 73%
- ❑ Use of social media for dissemination
- ❑ 5 developed countries will not disseminate via print publications



Use of Geospatial Technology - National Examples

- Pre-enumeration phase
 - Satellite imagery
 - Aerial photography
 - GPS
 - GIS

-
 - Georeferencing and geocoding
 - Digital maps
 - EA delineation



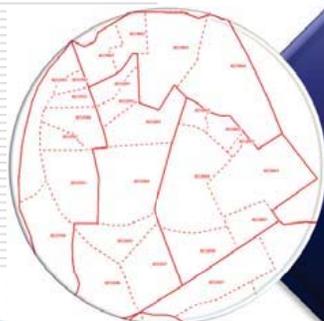
Poland

Spatial data collected and maintained within official statistics



Statistical address points database

- address points for residential buildings



Statistical distribution boundaries

- statistical regions
- census enumeration areas



Data Collection

- Use of geospatial technology to collect more accurate and timely information
 - Use of hand-held devices with geo-referenced maps
 - Tracking and management of field operations



Data Collection

□ Hand-held devices, e.g., PDAs

- Oman
- Brazil
- Cape Verde
- Senegal



□ Monitoring and management of field work

- Poland



Dissemination of Results

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Select examples....

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Poland

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GEO.STAT.GOV.PL

START: JULY 2013

Census results: *Choropleth maps, Diagram maps*

Local Data Bank

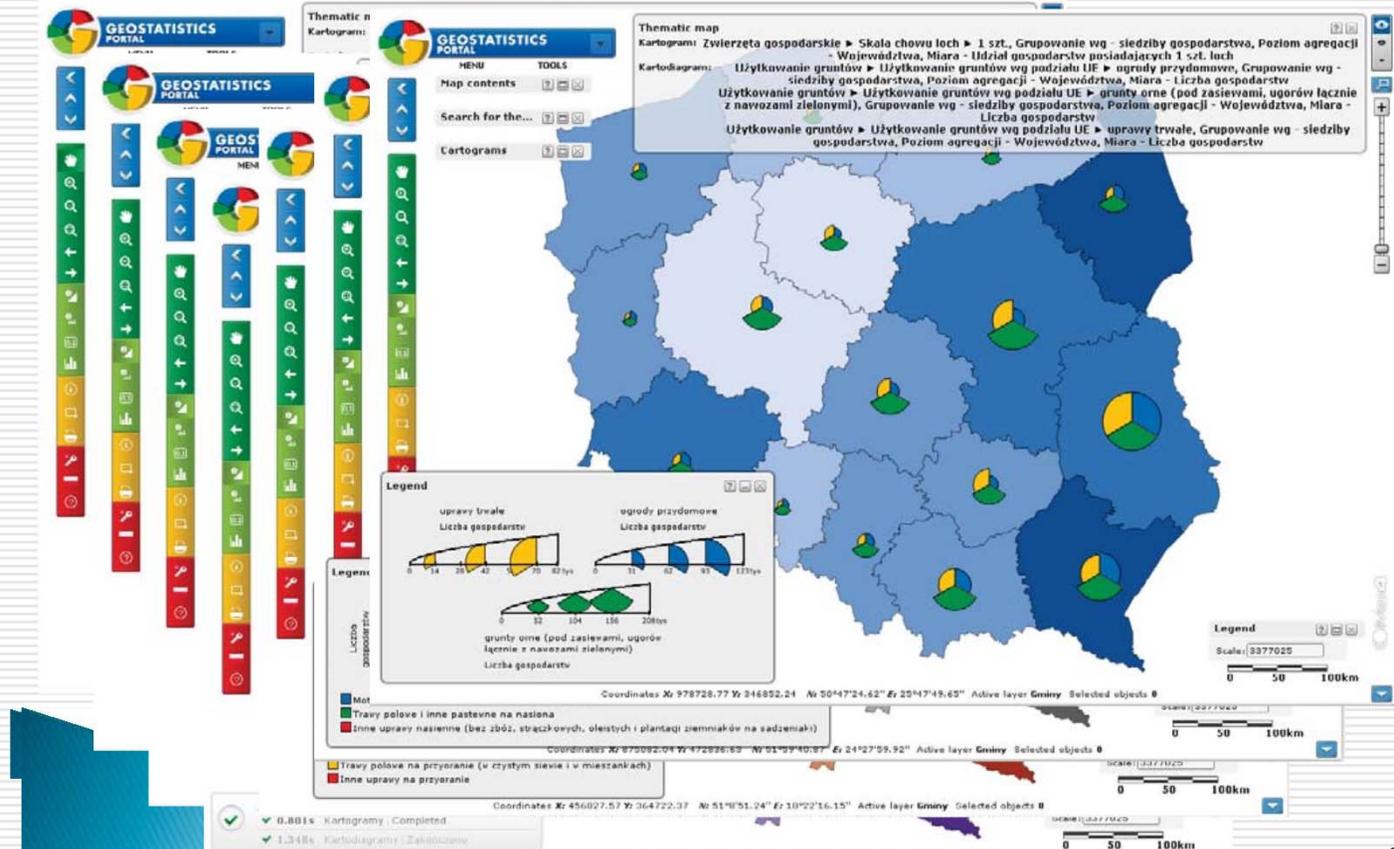
Other statistical databases



Poland

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Diagram maps GEOSTATISTICS



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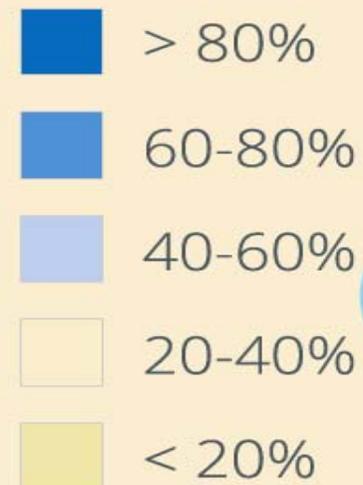
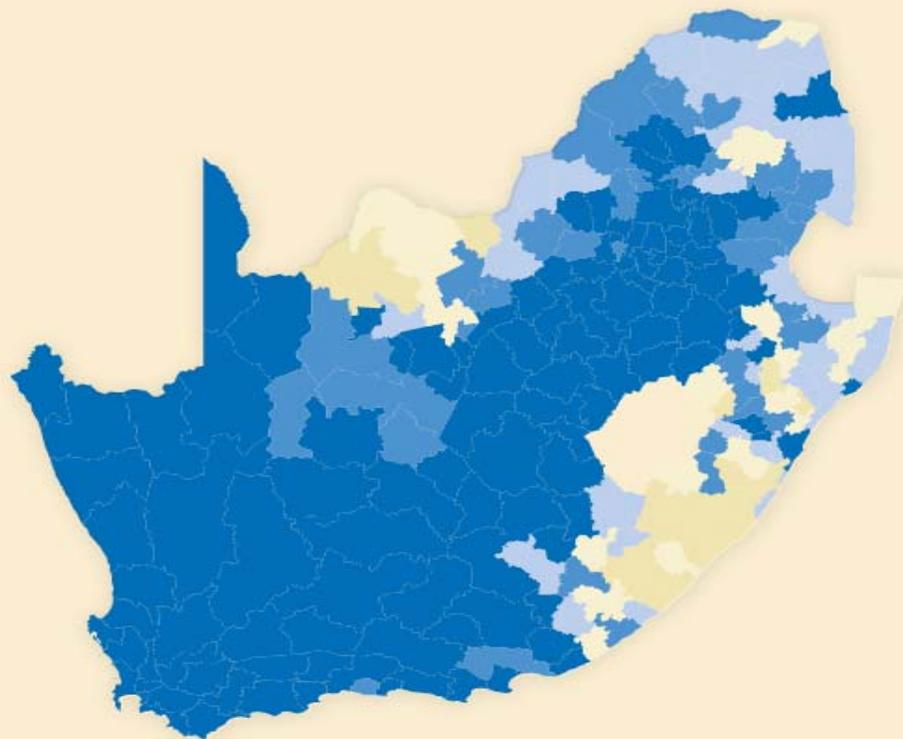


South Africa

Households with water

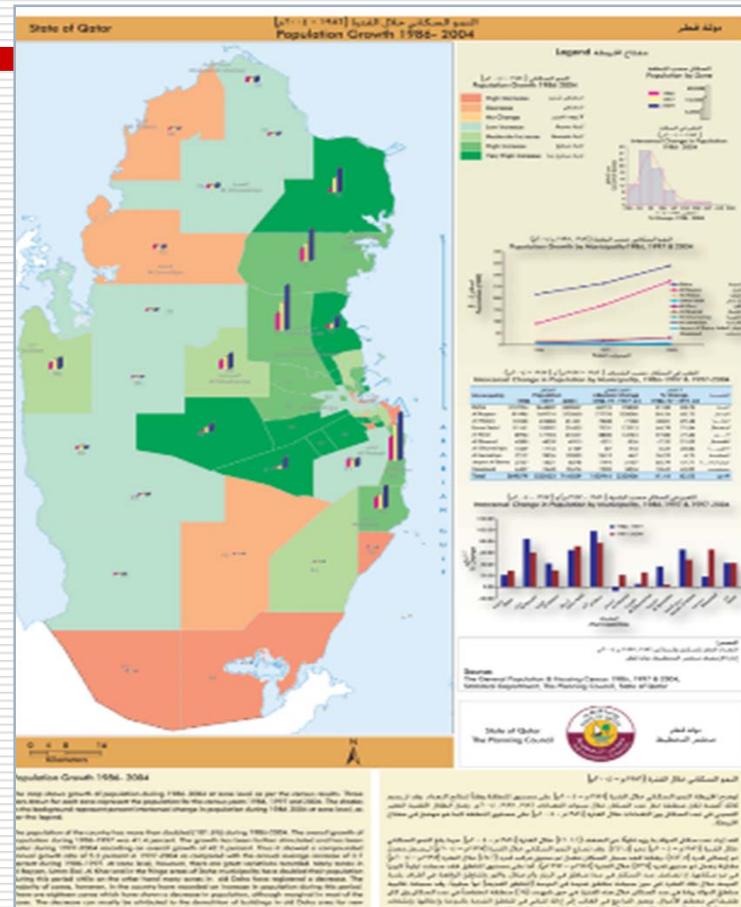
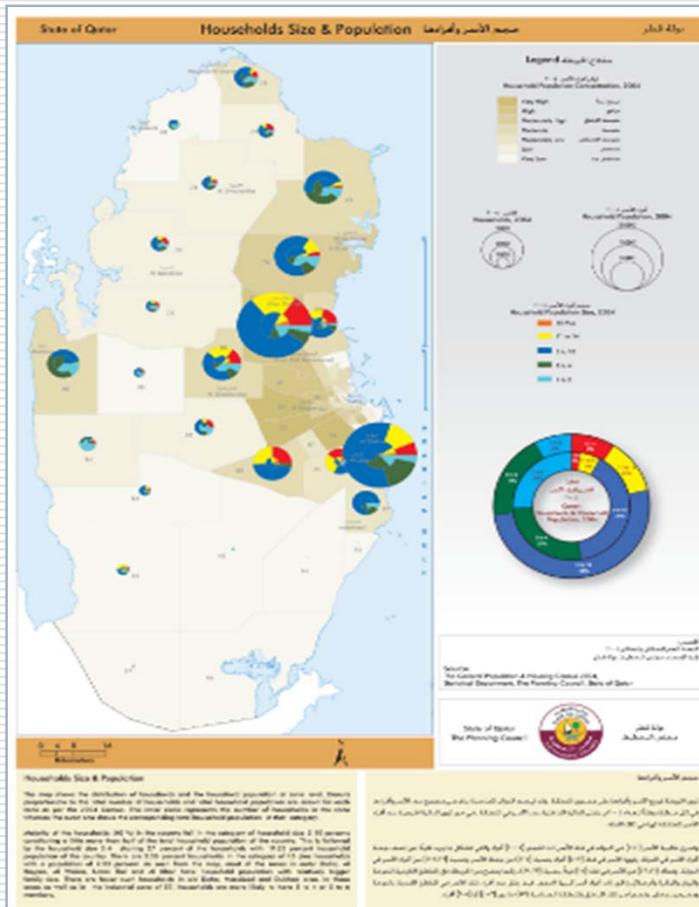
What has happened since 2001?

2011





Qatar



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Recommendations for 2020 round

Draft *Principles and Recommendations for Population and Housing Censuses, Rev. 3*

- ❑ Recognizes availability of wide range of geospatial technological tools for use in census mapping
 - enablers for NSOs to collect more accurate and timely information about their populations

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Recommendations for 2020 round

- ❑ Use and application of geospatial technologies are very beneficial to improve quality of census activities at all stages of census
 - Satellite images
 - Aerial photography
 - GPS
 - Georeferenced address registry
 - GIS for enumeration maps and for dissemination

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Recommendations for 2020 round

- ❑ Adoption of GIS should be a major strategic decision
 - A census GIS database is an important infrastructure to manage, analyze and disseminate census data

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Recommendations for 2020 round

- ❑ Geospatial analysis must become a core competence in any census office
 - Statistical offices should develop GIS applications with population data and other geo-referenced data from other sources for more advanced forms of spatial analysis
- ❑ Use of interactive tools
 - Mapping functionality



Thank You!

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