Dissemination and Utilization of Population and Housing Census products : Emerging trends and lessons learned

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Outline

- *What is Dissemination ?*
- *Importance of census data*
- *Census Dissemination Strategy*
- *Population and housing census products*
- *Online dissemination*
- *Geography products*
- *Visualization of census data*
- *Census microdata files*
- *Metadata*
- *Utilization of census data*
- *Conclusion and recommendations*

1. What is dissemination ?

- Dissemination is a Process, not a Product
- Dissemination is an ongoing process subject to change and evolution
- Census Dissemination is not just generating new data
- Dissemination means getting the right data and information to the right people at the right time in a right format , so they can take the right decisions
- Timing is crucial !

What is dissemination ? (cont.)

- *Dissemination is the release of data obtained from a population and housing census to users through various media.*
- *For each data release there is also a need to effectively communicate the data to data users and a requirement to make known the availability of the release.*

2. Importance of census data

- Census data are an important input in policy planning and academic analysis in many fields.
- Census data are very important input in monitoring and evaluation of the SDGs 2030
- In health service provision,
- Educational resource allocation,
- Design of utilities and infrastructure,
- For electoral planning are some applications where government agencies require spatially referenced small area population statistics.
- Commercial users employ such data for marketing applications and location-based decisions.
- For statistical applications

3. Dissemination Strategy

Census dissemination is a customer-centric approach

Principles

- *Responding to user needs when developing and disseminating data and metadata;*
- *increasing access to information by disseminating directly and through other organizations; and*
- *providing maximum access to information of broad interest, free of charge,*
- *Innovative in supplying the needs of the censuses users on time and in different formats*

Strategy vision and good practices

- *To Achieve the widest possible dissemination and use of census data by better utilising the Web and associated technologies, and by adopting consistent data and metadata formats and standards.*
- *The dissemination practices of other countries can inspire developments in our own techniques. Sites from, Finland, Canada, UK, US , Sweden, Poland , and Australian Bureau of Statistics are acknowledged to be some of the best in disseminating census data.*

Strategy vision and good practices (cont.)

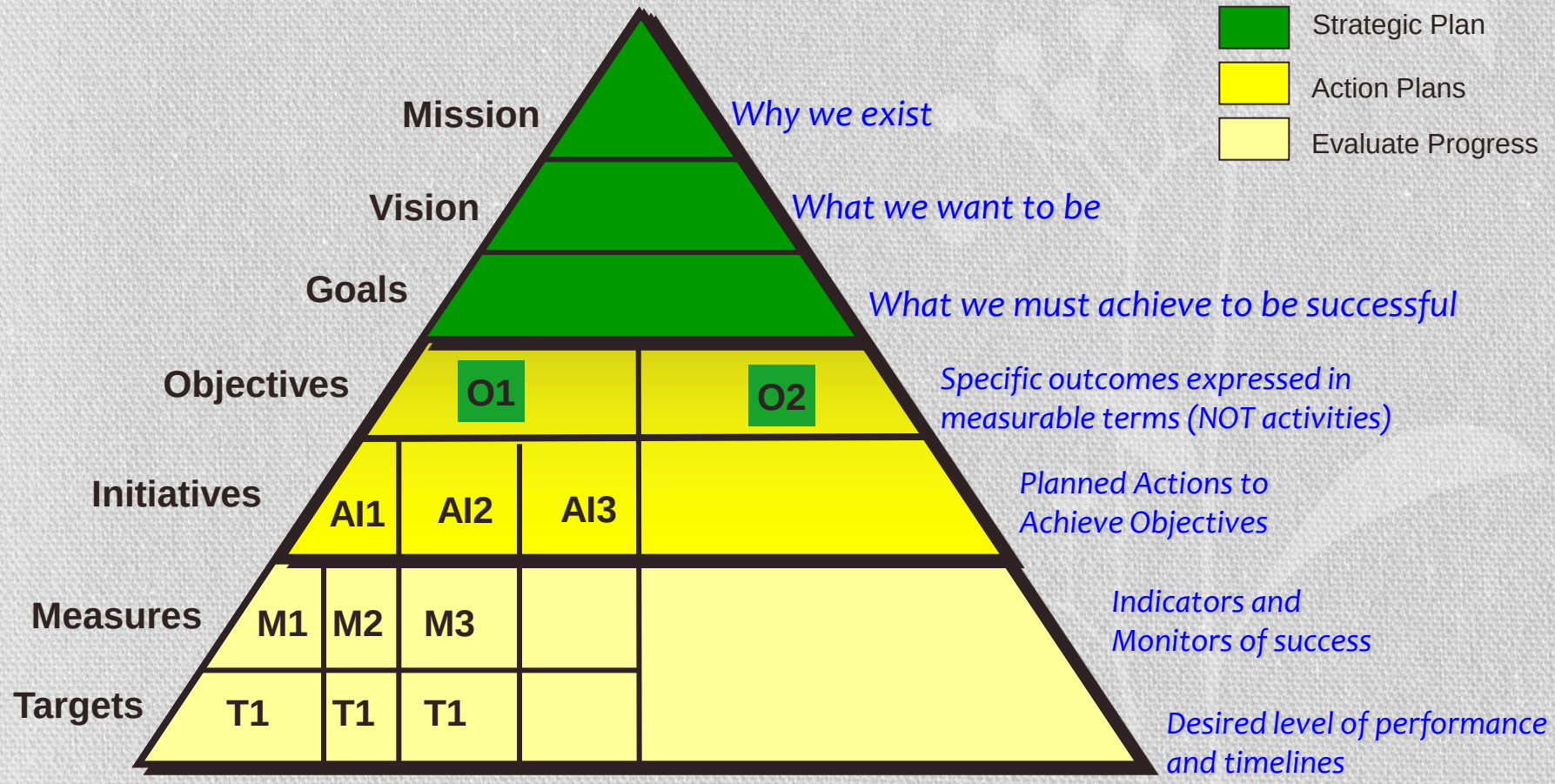
- Involve the end-users to design the census product sharing process
- *Create interesting stories and relate your findings to those with similar problems*

Census Strategy : Situation Analysis

1. Assessment of the present strategy based on performance.
2. Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.
3. Assessment of competitive strength and identification of competitive advantage.
4. Conclusions concerning competitive position.
5. Determination of the strategic issues and problems that need to be addressed through the strategic planning process.

Major Components of the Dissemination Strategic Plan

Components



Matt H. Evans, matt@exinfm.com

4. Broad Census products

- *Preliminary results*
- *Final results*
- *Basic reports*
- *Thematic reports*
- *population profiles*
- *Quantitative Analytical reports*
- *Qualitative studies to understand the reaction of the users with the dissemination plan*

Census products (cont.)

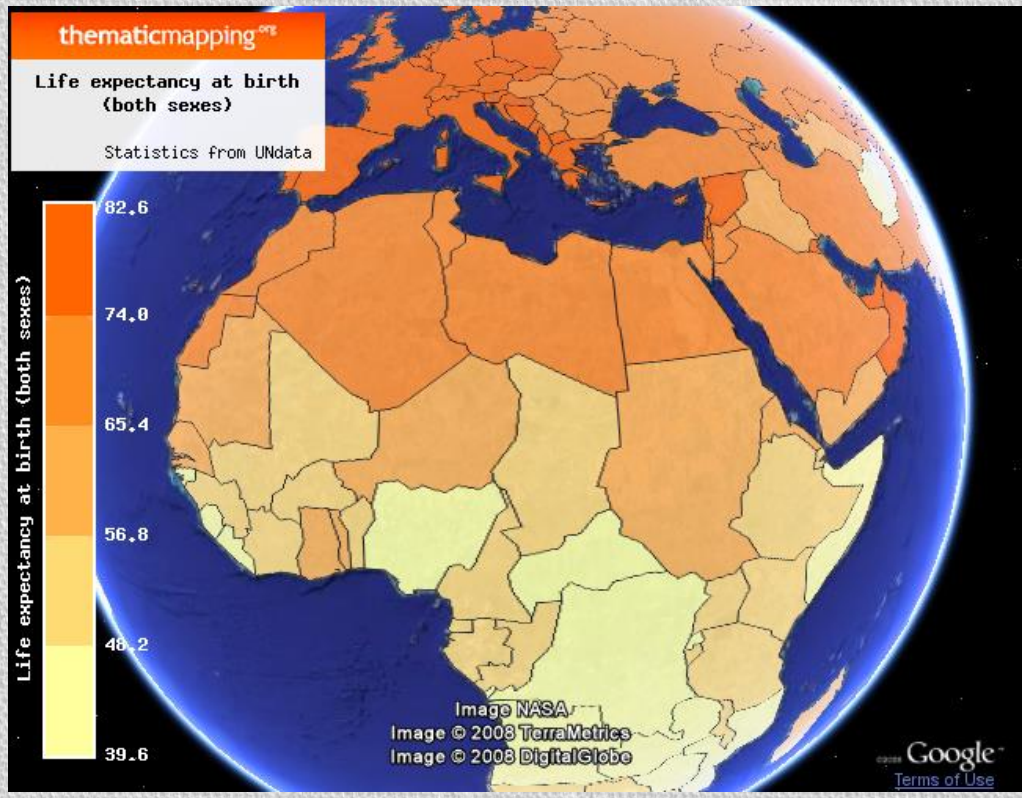
- *Educational materials*
- *Census at school*

1. *http://ww2.amstat.org/CensusAtSchool/pdfs/CAS.Project.2011.pdf*
2. *http://www.censusatschool.ca/*

- *Social Media*
- *Personal contacts*
- *Mashups*

What is a Mashup?

- *A web application that combines data from more than one source into a single integrated tool*
  - *an example is the use of data from Google Maps to add location information to statistical data, thereby creating a new and distinct web service that was not originally provided by either source*



Census products : Promotional reports and activities (cont.)

- *Website*
- *Posters*
- *Press releases*
- *Mobile phone application*
- *Media campaign*
- *Brochures, flyers and blogs*

2011 Census outputs in Uk

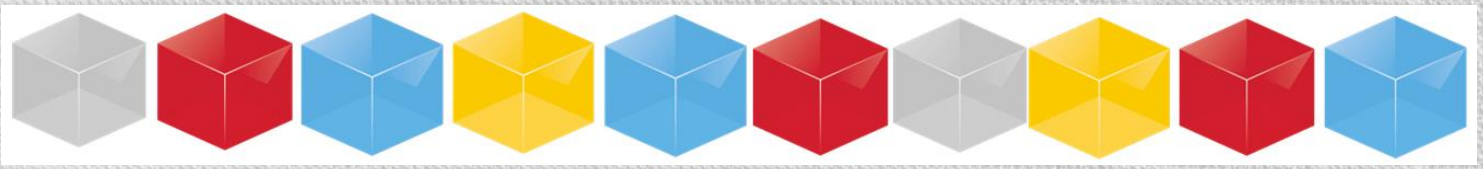
Interactives

Analysis

Key Statistics

Quick Statistics

Local Characteristics



Detailed Characteristics

Commissioned Outputs

A Plan for Products and Resources 2016

- *Communications materials on completing the census and recruitment for census jobs, including:*
  - *Web graphics*
  - *Videos*
  - *Posters*
  - *Brochures*
  - *Fact sheets*
  - *Articles*
  - *Social media posts*

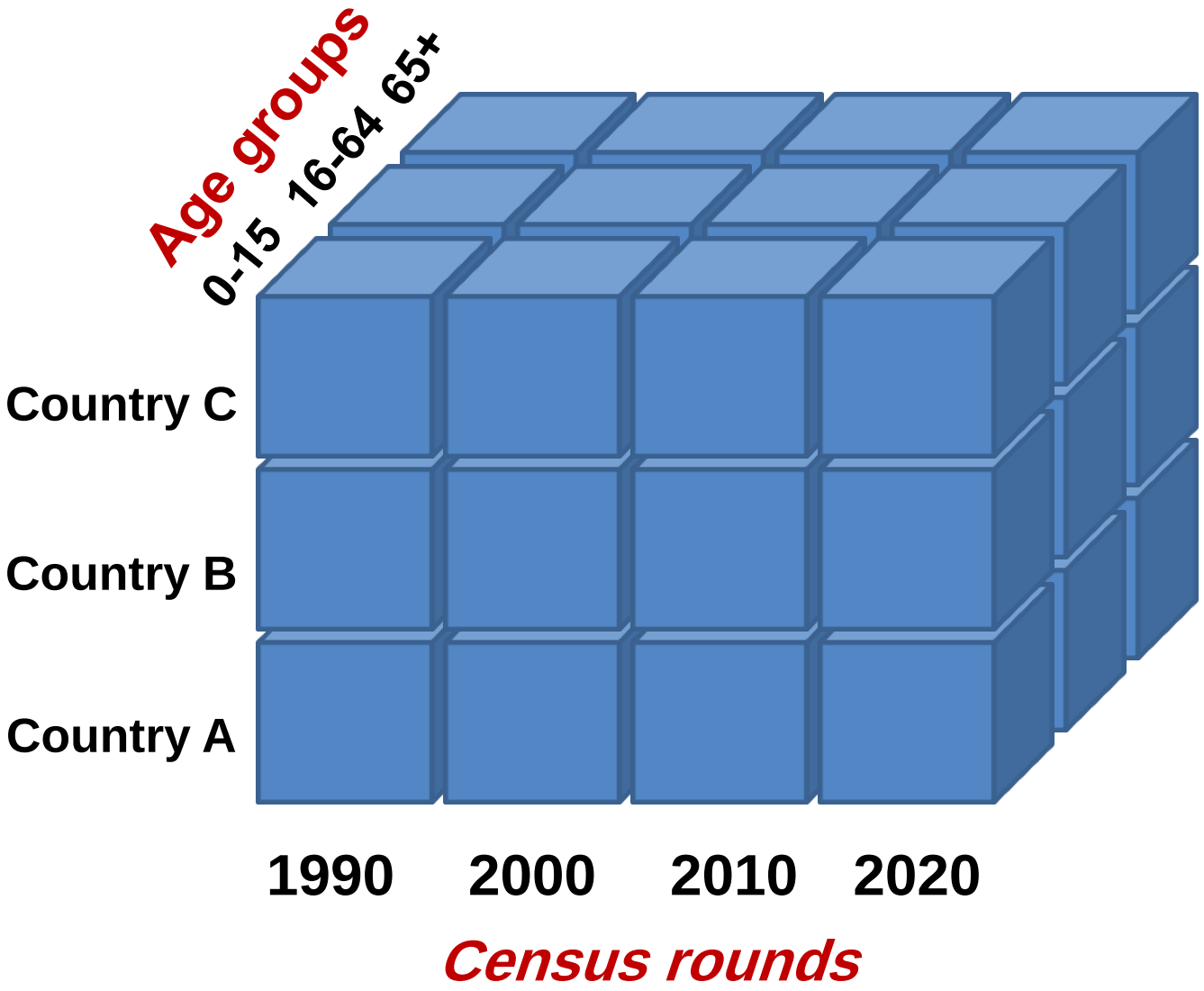
5. Developing Interactive –OLAP data warehouse

- **Data Warehouse**

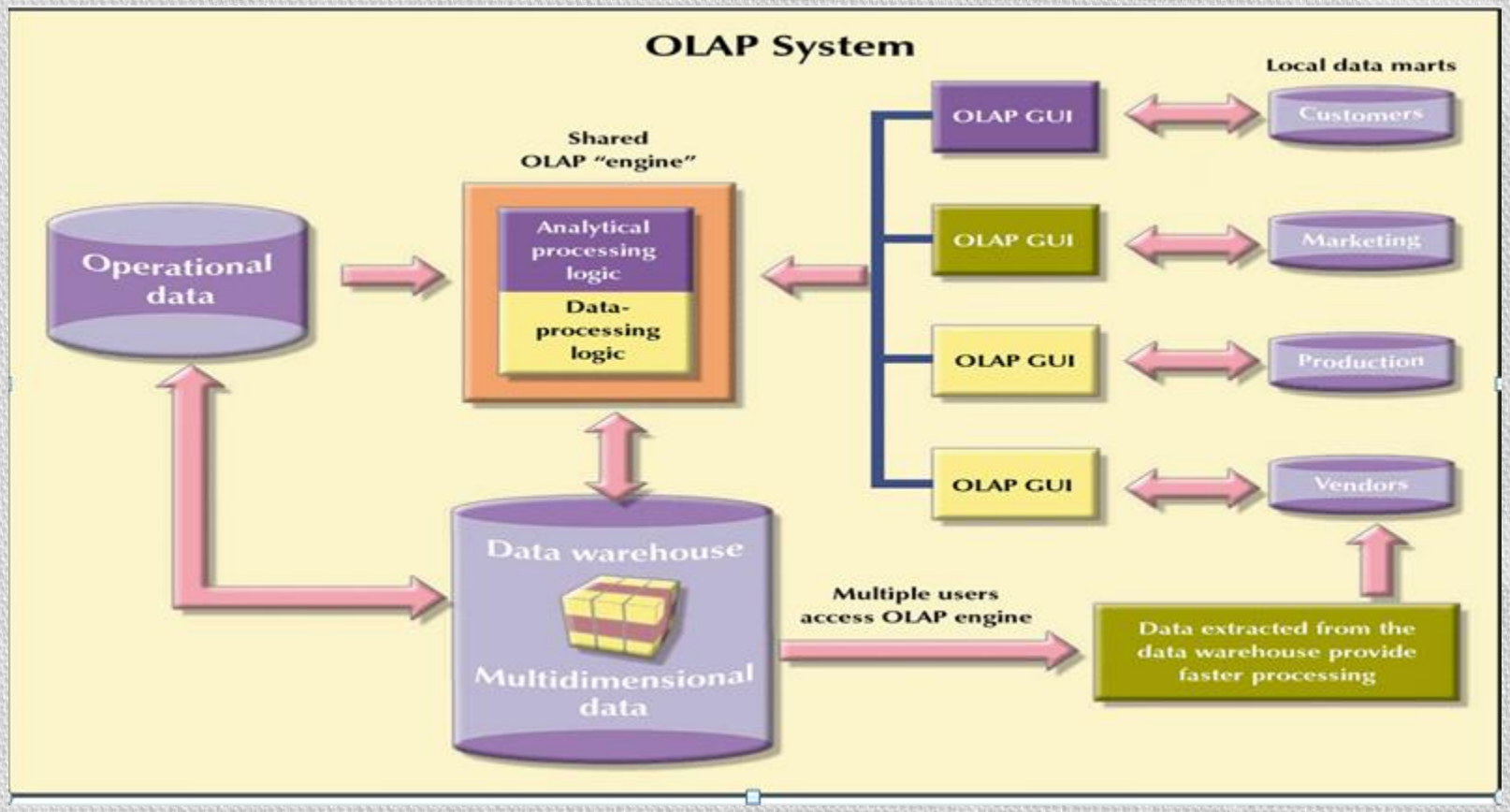
  Data from different data sources is stored in a relational database for end use analysis. Data organization is in the form of summarized, aggregated, non volatile and subject oriented patterns. It Supports the analysis of data but does not support data of online analysis.

- **Online Analytical Processing** : *The ability of OLAP cubes to facilitate multifaceted data analysis in response to complex business queries, will see them maintain some degree of usefulness, as businesses accumulate increasingly large data volumes of increasing complexity. Because OLAP cubes can be made up of more than three dimensions (hypercube), in-depth analysis is enabled, allowing users to gain comprehensive and valuable business insights*

Interactive Databases : Online Analysis Processing
Data Cube (Hypercube)



OLAP Server With Local Mini Data Marts



European Census Hub (Eurostat)

- *Dissemination of the 2011 Census data and housing censuses in the European Union Member States.*
- *agreed hypercubes (tables)*
- *The new tool "Census Hub" constructed for data dissemination is based on the concept of data sharing, where National Statistical Institutes (NSIs) provide access to their data according to standard processes*
- *It should be noted that the census data disseminated here are not microdata; they are aggregated data structured according to the tables agreed with Member States and defined in the legal implementing rules for the census.*
- **https://ec.europa.eu/CensusHub2/query.do?step=selectHyperCube&qhc=false**

http://www.census2011.gov.hk/en/build-your-census-tables.html

What is CensusInfo ?

- *A software based on DevInfo platform with new functionalities*
- *Developed in partnership with UNICEF and UNFPA*
- *Officially launched in February 2009 at the 40th session of the Statistical Commission*
- *Made available on-line for free*
- *Powerful tool for organizing, storing and presenting census data in a structured way*
- *Data shared easily and quickly with national and international users, on CD-ROM and on the web*
- *Supports user-defined tables and indicators*
- *Customizable by country*

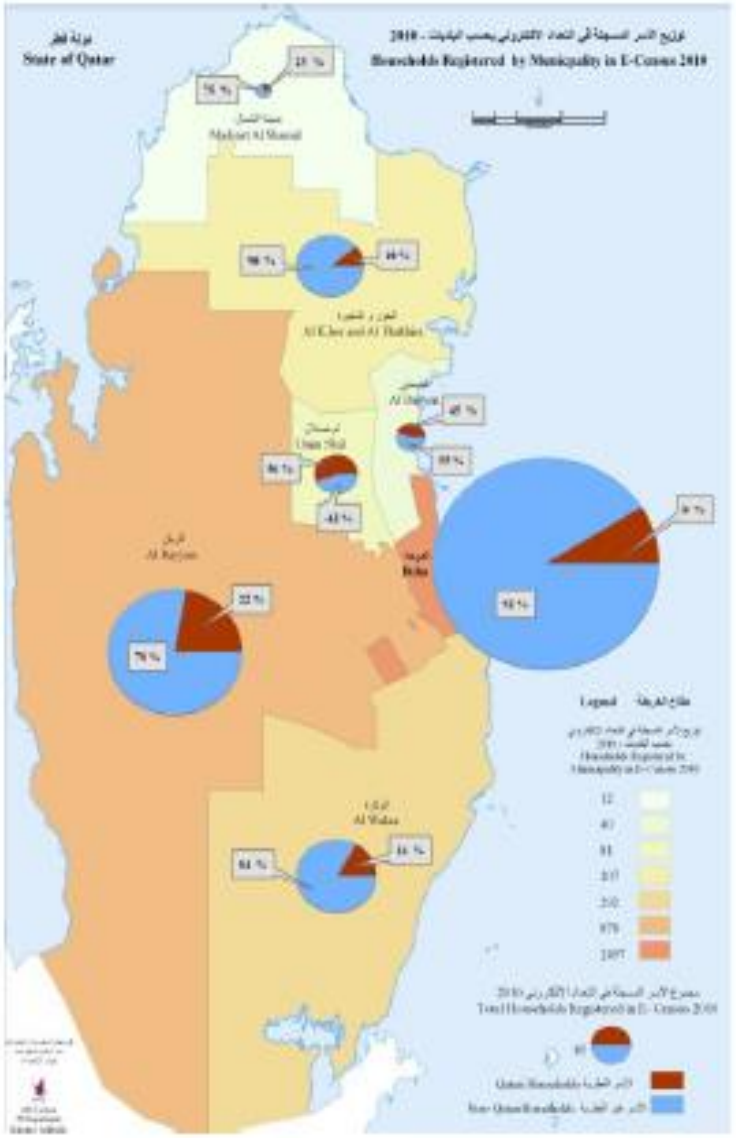
6. Geography products

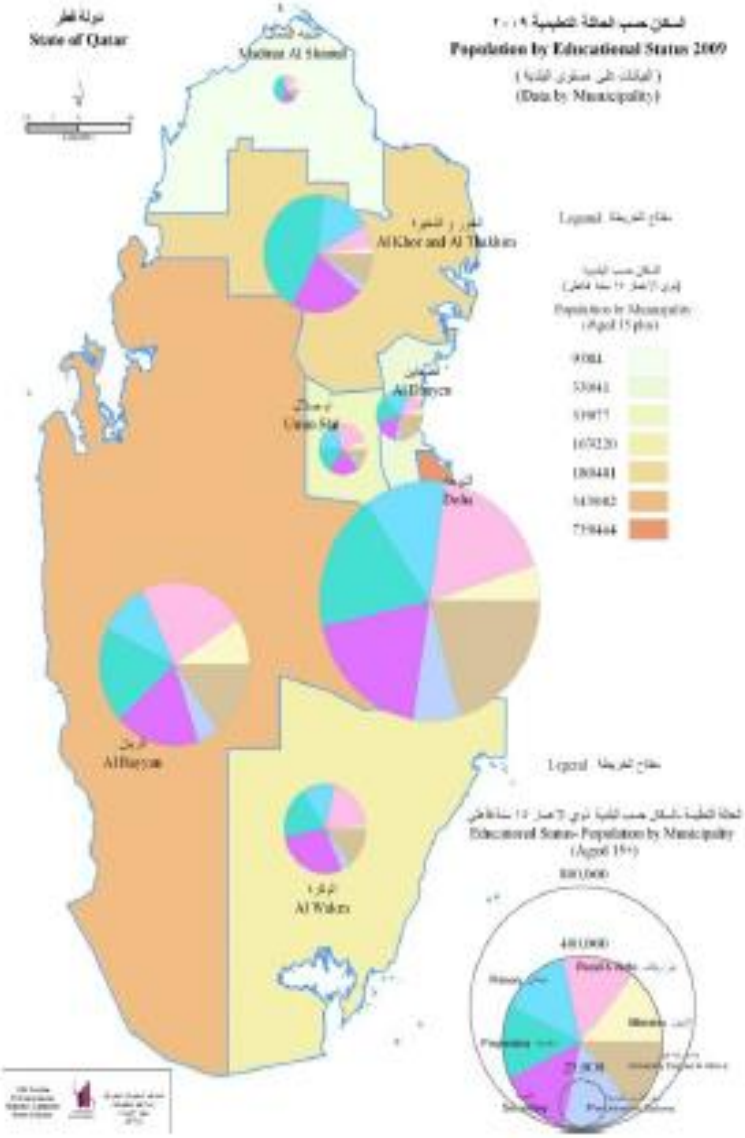
- *Reference maps : show the boundaries, names and codes of standard geographic areas on a background of selected road and water features.*
- *Thematic maps: show the spatial distribution of one or more specific data themes for standard geographic areas*
- *Static atlas*
- *Dynamic atlas*

Geography products (cont.)

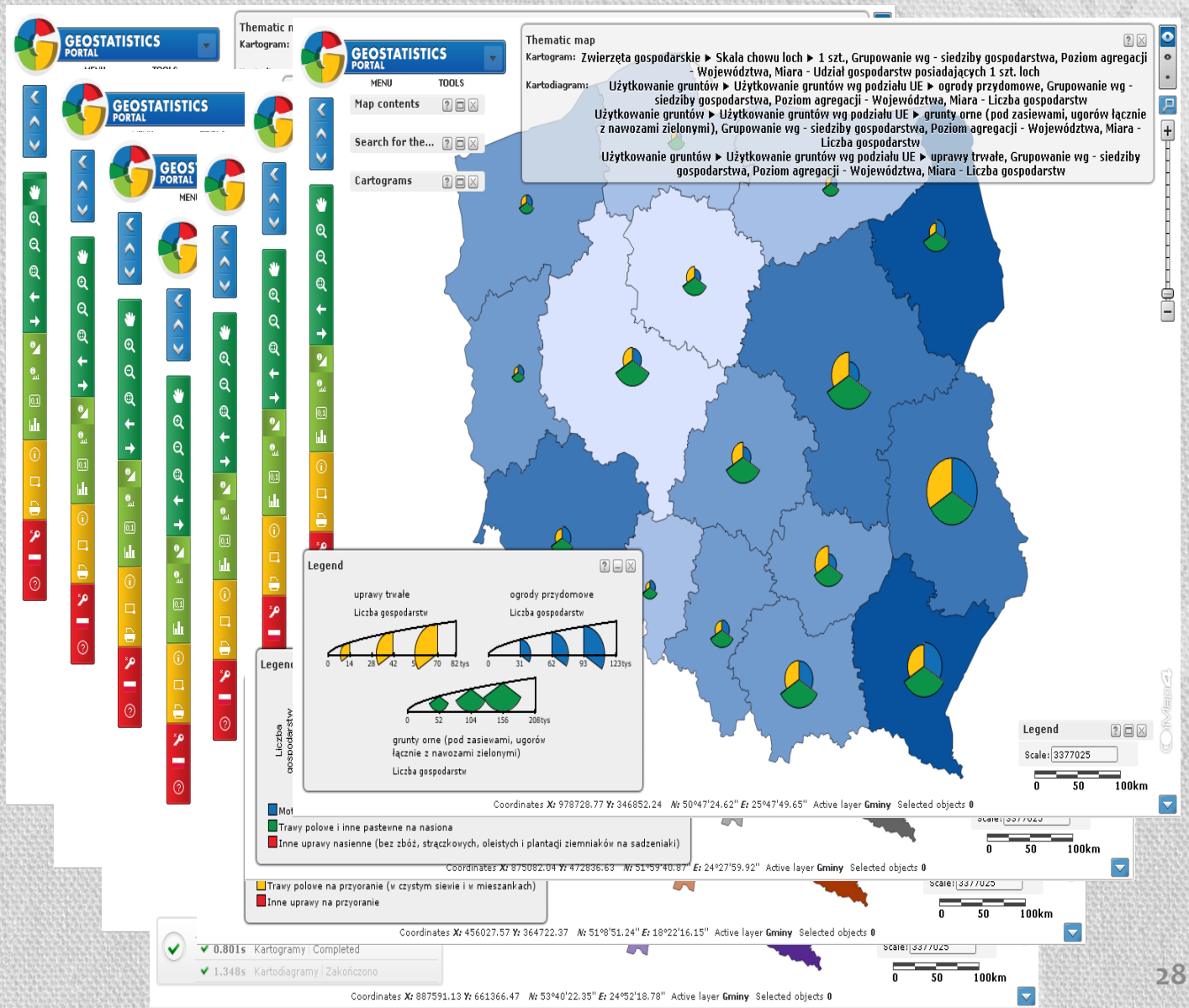
- *static census atlas*
- *Dynamic census atlases: Publishing of a digital map and database together with mapping software can allow users to produce custom maps of census indicators. It normally includes digital boundary files at a lower resolution than the full census database to allow fast drawing and low disk usage*

Thematic Mapping- Census 2010 Results- Publications

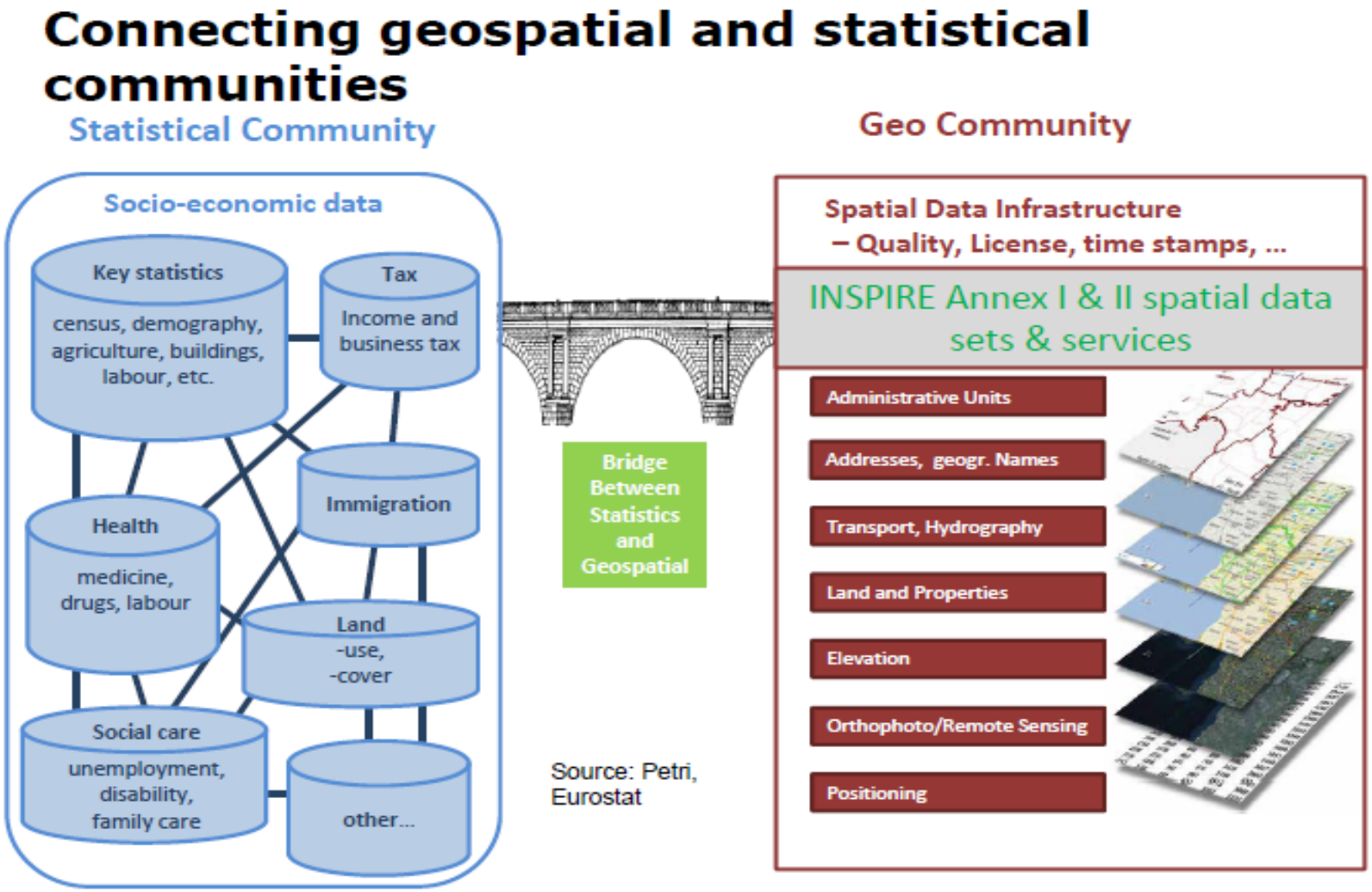




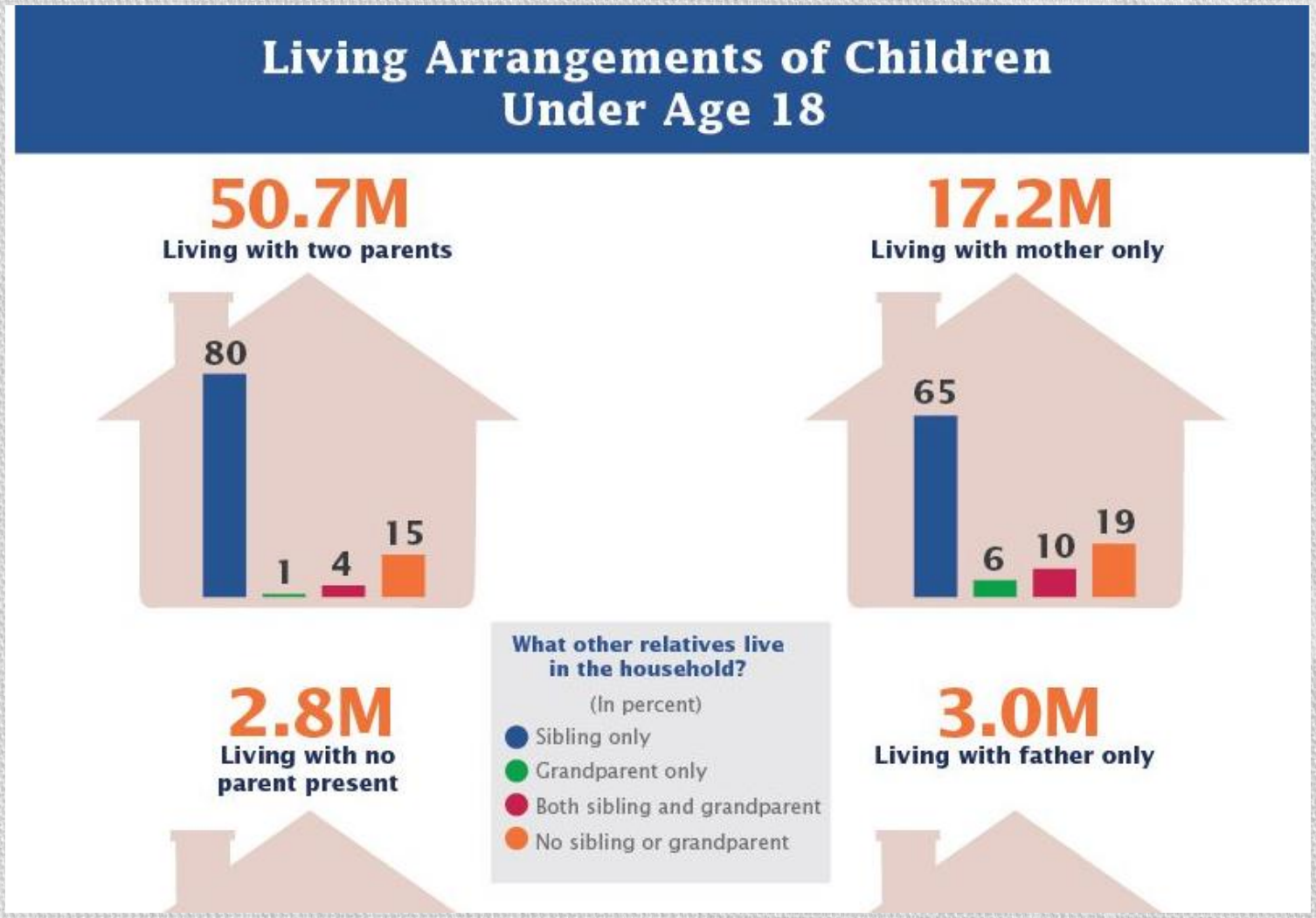
Polish diagram maps



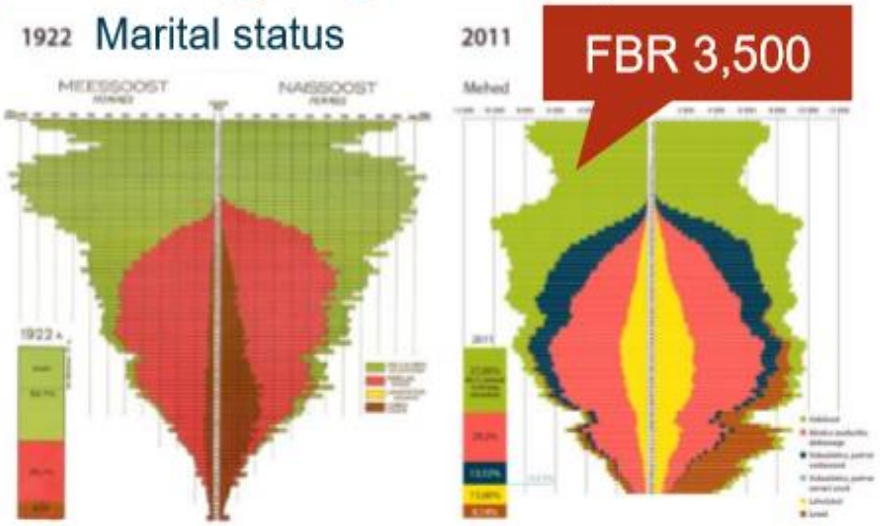
Connecting geospatial and statistical communities



7. Visualization and infographics of census data



Infographs (1)



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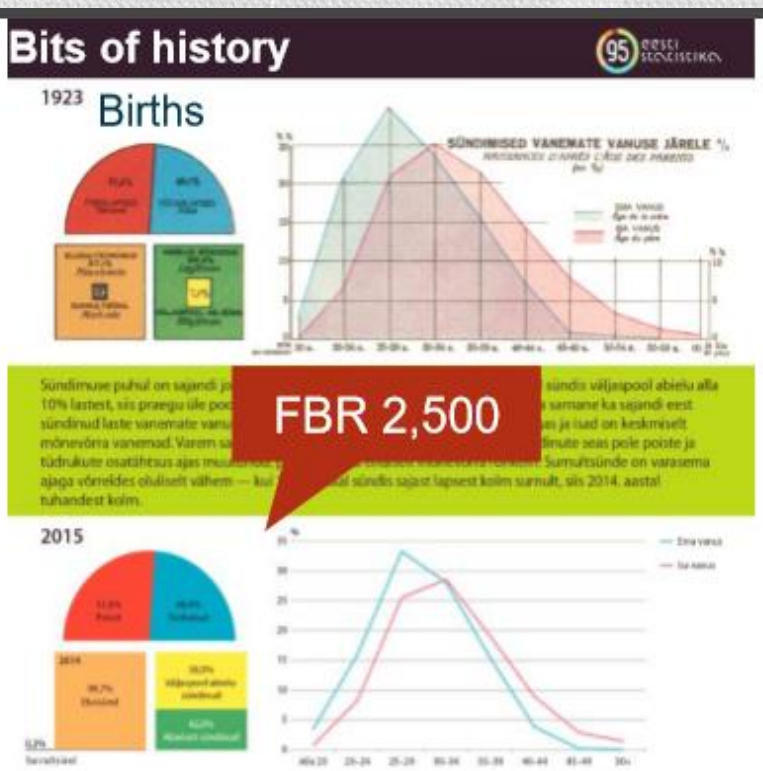

Data visualisation

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16 July 2012 Last updated at 12:48

277 Share

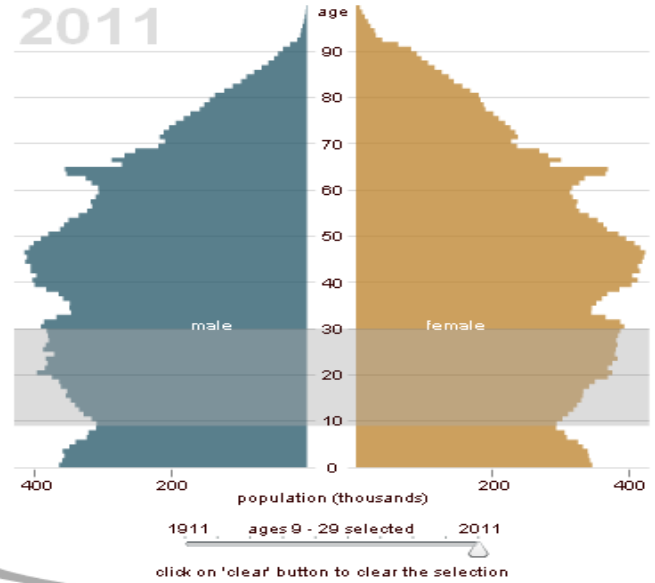
England and Wales population up

Latest news | At a glance | Optimum population? | Census animation

England and Wales now has a population of 56.1 million people, an increase of 3.7 million since 2001. The graphic below, from the ONS Data Visualisation Centre, tells the story of how this population has grown, through periods of war, disease, depression and immigration.

100 years of census

England and Wales 1911-2011



On 29 April 2011, Prince William and Catherine Middleton are married at Westminster Abbey, London. They become Duke and Duchess of Cambridge.

- Monarch: Queen Elizabeth II
- Prime Minister: David Cameron
- Read more about 2011 in Wikipedia

stories | events | audio

Aged 9-29 in 2011

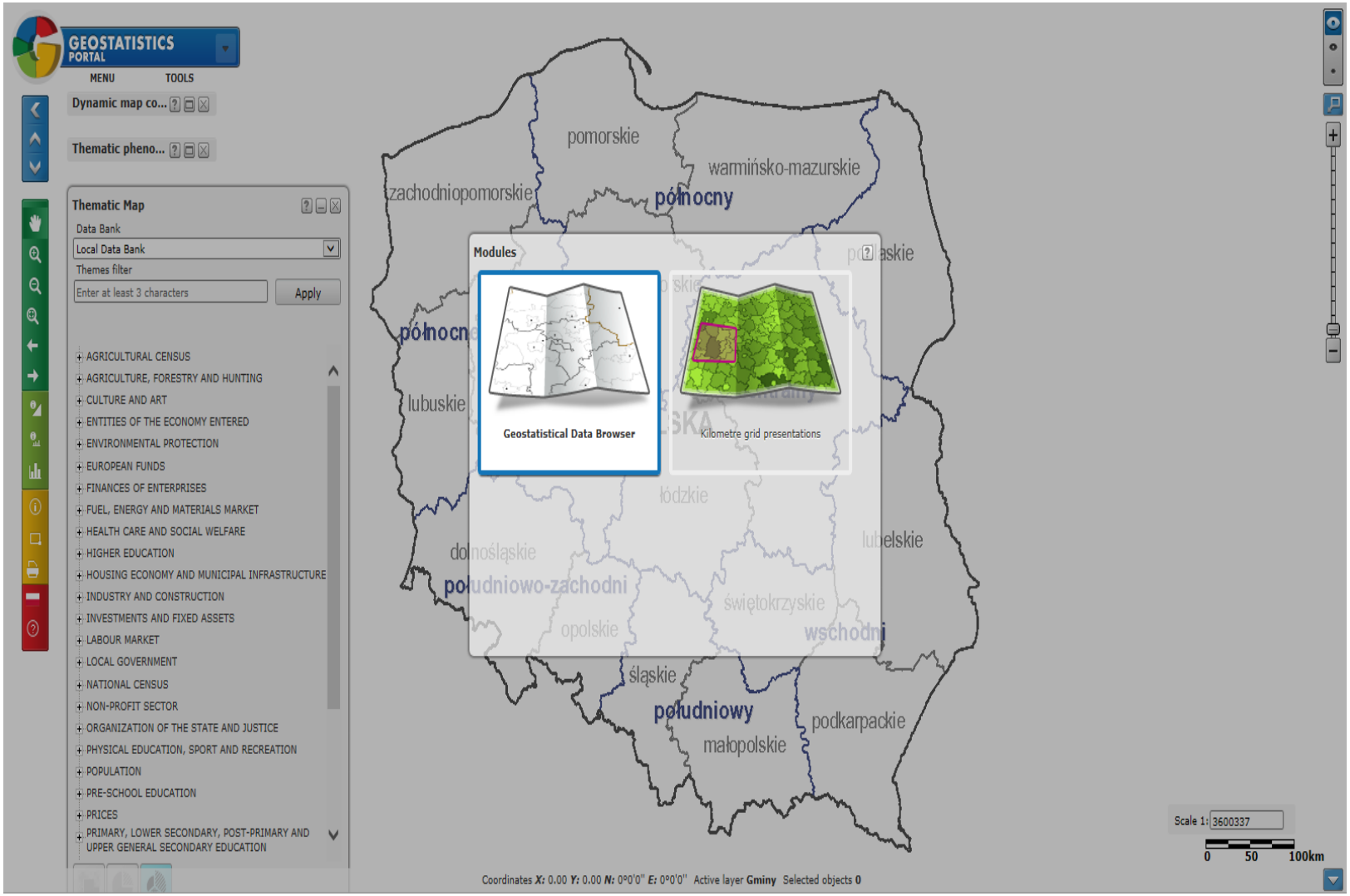
Born:	1981-2002
Males:	7,619,300
	50.6%
	49.4%
Females:	7,427,000
Combined:	15,046,300
% of Total:	26.8

2011
56.1 million

< 2001 | > 1911 | clear

Source: Census
Graphic by ONS Data Visualisation Centre

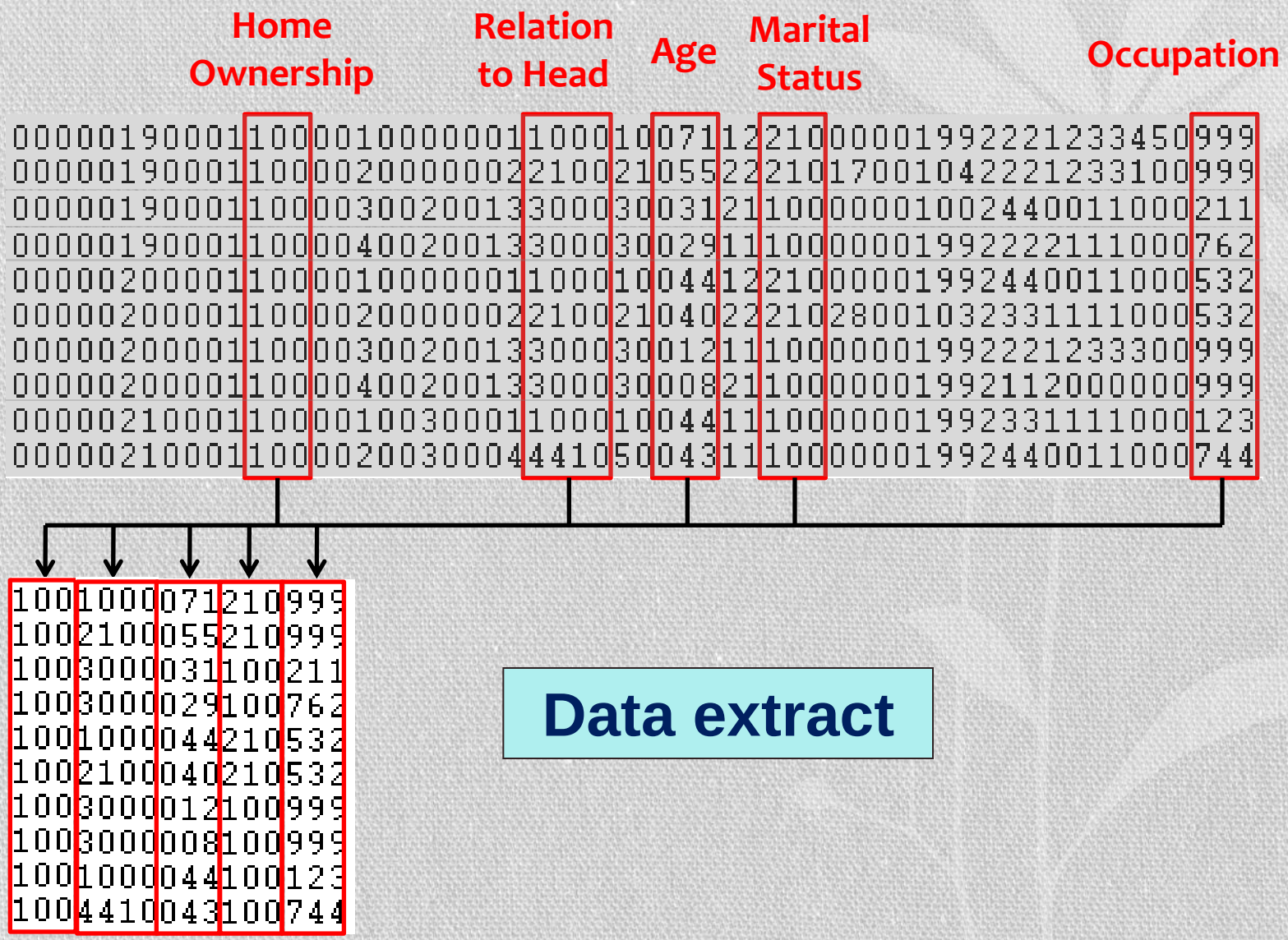
Census portals



8. Dissemination of census microdata files

- *The Demand : The demand for microdata is growing and becoming more diverse. This diversity is visible in a broadening of the audience but also in the way in which the microdata are being used*
- *The supply : The benefits of microdata dissemination are well known and broadly accepted. Sharing microdata fosters diversity of research, increases transparency and accountability, and can mitigate duplication of data collection work and increase the quality of data through feedback received from data users.*
- *Authorize the release of microdata files for public use when the release substantially enhances the analytic value of the data collected*

IPUMS Customizable Data Extract System



Key principles and organizational best practices for disseminating microdata files

- *Openness*
- *Transparency*
- *Legal conformity and protection of privacy*
- *Protection of intellectual property*
- *Interoperability*
- *Quality*
- *Security*
- *Accountability*

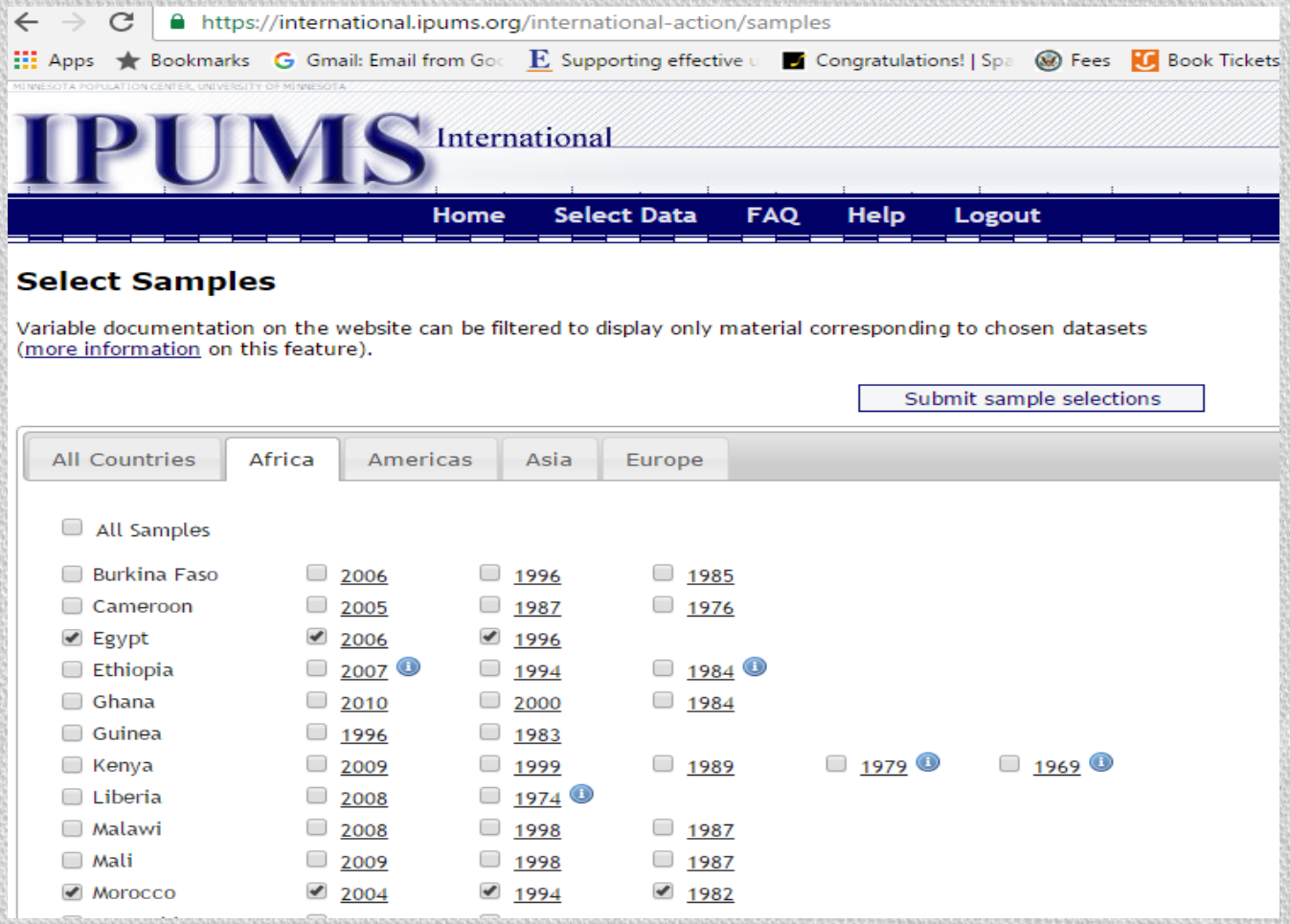
Technical Standards and best practices of microdata files documentation

- Documentation, Compliance with international metadata standards is crucial for ensuring exchangeability of metadata and for promoting collaboration or coordination in the development of microdata curation tools
- Cataloguing. Publishing detailed metadata in on-line searchable catalogs is important to make data discoverable .Compliance with the DDI standard makes it considerably easier. Open source DDI compliant cataloging applications already exist such as the open source National Data Archive (NADA) developed by the IHSN or DataVerse developed by Harvard University.
- Anonymization of the data

Standards of microdata files documentation

- *Dissemination : Typically, five levels of accessibility are considered: open access (no restriction), direct access or Public Use Files (some restrictions on use, but no screening Files, or Licensed Files), availability only in an enclave, and no access authorized.*
- *Preservation: Organizations which disseminate microdata and the related metadata are also often responsible for their long term preservation. Preserving digital content is not a trivial exercise. Procedures and infrastructures must be put in place to protect data against hardware and software obsolescence migration of datasets to new media and format.*

(3rd march CCSA meeting 2014)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Home
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Logout
Select Samples
Variable documentation on the website can be filtered to display only material corresponding to chosen datasets (more information on this feature).
Submit sample selections
All Countries
Africa
Americas
Asia
Europe
All Samples
Burkina Faso 2006 1996 1985
Cameroon 2005 1987 1976
Egypt 2006 1996
Ethiopia 2007 1994 1984
Ghana 2010 2000 1984
Guinea 1996 1983
Kenya 2009 1999 1989 1979 1969
Liberia 2008 1974
Malawi 2008 1998 1987
Mali 2009 1998 1987
Morocco 2004 1994 1982

9. *Metadata*

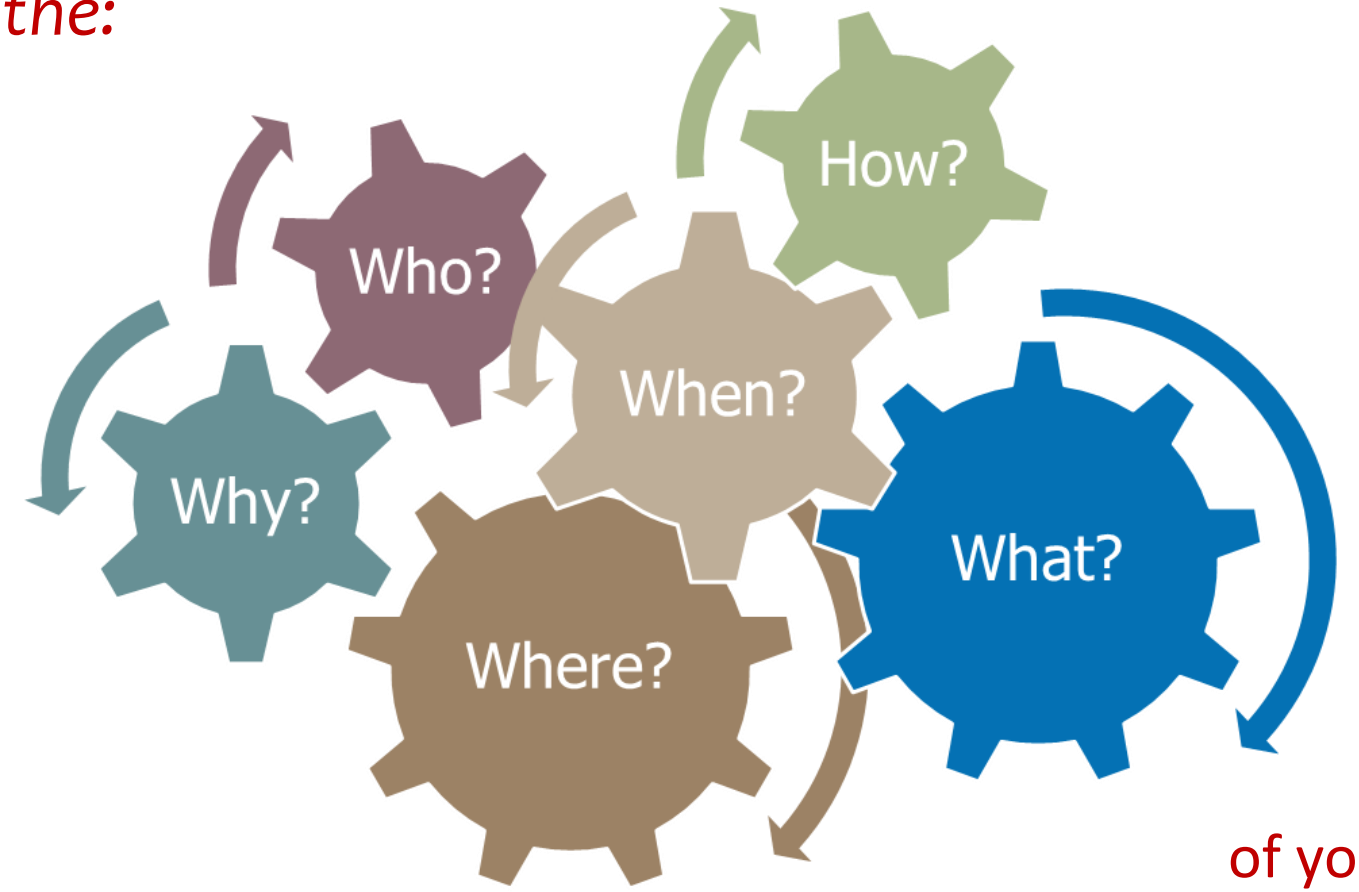
What is census metadata?

- *Census metadata are information that describe census statistical data. Census metadata may also describe processes that collect, or produce census data; such metadata are also called process data. "Census metadata" may also be used for descriptions of resources and tools that are instrumental in census production, e.g., statistical classifications and standards, registers, and statistical methods, procedures, and software*
- *Metadata is not confined to writing on paper. Maps, graphs, computer screen shots, computer programs, compiled code, scanned documents, and data bases are all components of metadata.*

Data About Data

Metadata is the data, or information, about the data.

It is the:



of your census

Types of metadata

- Geographical metadata - information on geographical hierarchies used in the Census and the Output Area Production System (OAPS). This type of metadata will be the responsibility of the Output production team.
- Technical metadata - information of a technical nature, such as how to load and run products and the 'platforms' needed.
- Product metadata - information aimed at assisting users get what they want from Census outputs in the most efficient way..
- Census metadata - information on statistical aspects of the Census, providing a background information on the results, clarifying the meaning and context.

Metadata Products:

- *Electronic Census Metadata Warehouse (CMW), should be created and populated*
- *The CMW would be populated with Census metadata in a modular way, over time and updated as information becomes available.*
- *The CMW would form a core product, and be used as the source of material for stand-alone products such as the Census Quality Report.*

Metadata Aids Data Discovery

Metadata enables users to search their own:

Data Management System

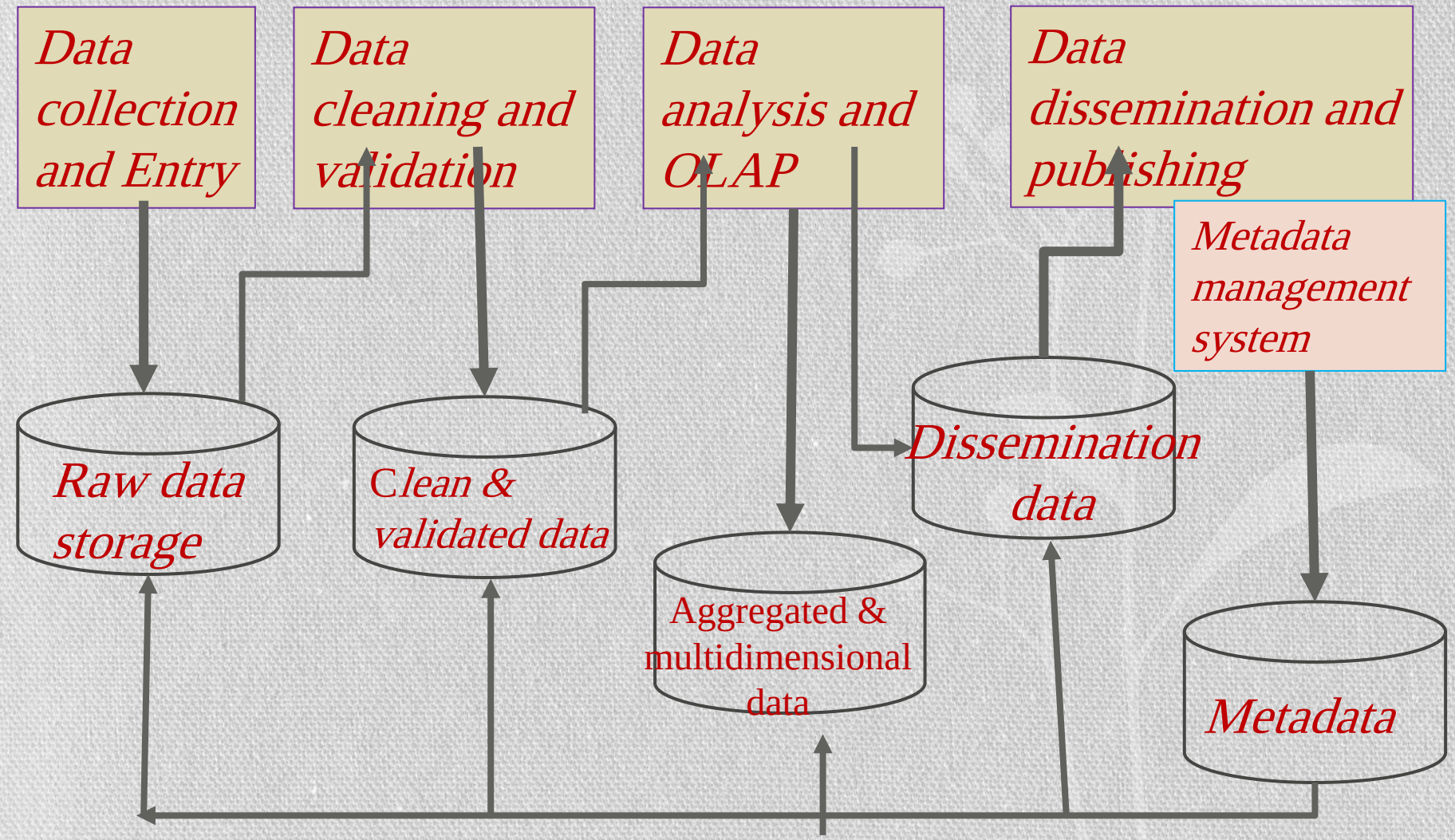
- Geographic Information System (GIS)
- Database Management System (DBMS)
- other…

Metadata enables user to search external:

Data Distribution Systems

- Data Catalogs
- Data Servers
- Web-mapping Applications
- other…

Schematic of Processing System



10. Utilization of census data

- *Reliable, accessible and timely population data are essential for development planning and assessing progress toward the achievement of the new Sustainable Development Agenda,*
- *Reliable information about the size, growth, distribution and characteristics of populations is crucial not only to guide the development policy supporting the implementation of the SDGs, but also to assess progress towards their achievement*

Uses of population censuses

- *Uses for policymaking, planning and administrative purposes: The fundamental purpose of the population census is to provide the facts essential to national policy formulation*
- *planning and administration: Information on the size, distribution and characteristics of a country's population is essential for describing and assessing its economic, social and demographic circumstances and for developing sound policies and programmes aimed at fostering the welfare of a country and its population.*
- *The population census provides indispensable data for the scientific research, analysis and appraisal of the composition, distribution and past and prospective growth of the population, particularly in population estimates*

Uses of population censuses (cont.)

- *Uses for business, industry and labour : Reliable estimates of consumer demand for an ever -expanding variety of goods and services depend on accurate information on the size of the population in subnational areas and its distribution at least by sex and age*
- *Uses for boundary delimitation: One of the basic administrative uses of census data is to support political and administrative mapping. Detailed information on the geographic distribution of the population is indispensable*
- *Use as a sampling frame for surveys*

Uses of housing censuses

- *For development of benchmark housing statistics*
- *for the formulation of housing policy and programme*
- *for transport solutions*
- *for assessment of quality of housing*

11. Conclusion and recommendations

- *The release of data and census products needs to be determined and publicized well in advance of the census itself. This allows users to plan their activities related* to the use of census statistics accordingly and appropriately.
- *development of dissemination strategies should be an integral part of the overall planning process for the census.*
- *Consult with various stakeholders and identify specific needs for data, in order to develop appropriate products and related forms for their dissemination.*
- *It is recommended to diversify the means of dissemination, taking advantage of existing innovations as well as new information and communication technologies (e.g. GIS, interactive websites, social media networks) to enhance the dissemination process and census products to reach a wider audience, including the media and general public.*

Conclusion and recommendations (cont.)

- *Enhancing statistical literacy of the general public, media and potential users is considered crucial for successful dissemination of census results.*
- *Statistical awareness and educational programs on the ways to access, interpret and use census information might be needed for effective outreach*
- *Partnerships with the media are necessary in order to improve the wider dissemination and understanding of statistical information from censuses*

Conclusion and recommendations (cont.)

- *The development of a geospatial data warehouses is a prerequisite for creation of geographic information systems and a basis for spatial analysis which is an emerging trend in the presentation and visualization of census information*
- *It is important for census offices to consult data users in order to identify their needs for the type and format of census products to be produced. This is to ensure that census products are relevant, responsive and add value to the current policy questions and stakeholders' needs.*
- *Principles and Recommendations for Population and Housing Censuses, Revision 3*, para. 3. 247.

Conclusion and recommendations (cont.)

- *A key decision about the quality of census results will be the trade-off between timeliness and quality. This is particularly important in designing the output strategy . Quality thresholds should be explained to users in conjunction with the issue of timeliness.*
- *The effectiveness of the census products phase must be objectively evaluated. The analysis of the information should be used to adjust the program as required. Key areas to be monitored depend on the specific project or activity*
- *Documentation : The census project management should plan for and implement a knowledge management system to assemble complete records on plans, activities, and decisions taken during the entire census operation.*

Thank you

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