2010 World Population and Housing Census Programme

Newsletter

Meeting of Countries in the Arab Region

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The meeting was convened by the UNFPA Regional Office for Arab States and the United Nations Statistics Division. It was attended by five countries - Egypt, Jordan, Morocco, Palestine and Oman. The objective of the meeting was to hold discussions with the representatives of national statistical offices of the Arab States on the 2010 round of population and housing censuses and other demographic surveys, as well as the technical assistance needed in the field of population data.

During the general discussion several suggestions for improving the capacity of countries in the region particularly to be able to conduct censuses and utilize the data. These can be summarized as follows:

(i) There is a need to identify a pool of experts in the region that can help countries strengthen institutional capacity. In so doing, it is imperative that quality controls be established for the identified experts as this is linked to the quality of assistance that they render to the countries.

(ii) Provision of assistance will be through identified experts and institutions in the region.

(iii) It is important to identify and share information and experience on best practices particularly in the area of use of information technology for censuses. It was emphasized that assistance is needed in identifying technologies that have been tried and have been successful so as to minimize failure on the part of national statistical offices as they experiment with technology that is new to them.

(iv) A means should be established to identify the needs of countries for assistance as well as the kind of expertise that is available in the countries in the region in order to facilitate south-to-south cooperation in the region.

(v) UNSD, in partnership with UNFPA and ESCWA will work out a mechanism for the way forward.

CensusInfo: A New Interface for Dissemination of Census Information

The dissemination of census results has been one of the weakest points of population and housing censuses in the past rounds, and many countries faced problems to disseminate their results widely and quickly. Consequently, the *United Nations Statistics Division*, in partnership with *UNICEF* and *UNFPA*, has developed a software package, **CensusInfo** to help countries disseminate census data on CD-ROM and on the web. Based on the DevInfo platform, specific functionalities have been added to meet the census dissemination requirements: enhanced performance, template reports for dissemination at any geographical level, and mapping facilities. Although a standard list of indicators will be proposed with the software, countries will be able to customize the list of statistics/indicators to suite national data needs.

There were two presentations: one on DevInfo and the other on CensusInfo. The presentation on DevInfo defined it as a desktop and web-enabled database system that provides a method to organize, store and display data and which can be used to produce tables, graphs and maps. The main point of the presentation was to show DevInfo's ability for drill-down data presentation for maps from global level to regional, sub-regional, national and sub-national down to sub-district and village levels.

The presentation on CensusInfo, on the occasion of the United Nations Statistical Commission, represented an official launch of the software to the international community. Like DevInfo, CensusInfo is an integrated desktop and web-enabled tool that can be used to produce tables, graphs and maps for inclusion in reports, presentations and advocacy materials.

It was mentioned that although CensusInfo is an adaptation from DevInfo database technology, it has special functionalities that meet census data dissemination requirements and is suitable for distribution either on CD or the Intenet. It is important to mention that CensusInfo is compatible with other statistical software packages such as CSPro and Redatam. Furthermore, CensusInfo provides a module that allows for the customization of the system to country -specific requirements, as well as the customization of the content. Also, while the CensusInfo software comes with a standard list of statistical indicators, countries will be able to customize this list to suit their own national data needs.

The mapping capability of CensusInfo can show more than one topic; all polygons have a time reference so as to show time series maps; can drill down to an unlimited number of levels of geographical coverage; and has ability to link to overlay maps on Google Earth.

In the questions and answers session, it was asked if there are synergies between DevInfo and CensusInfo. It was stated, in response that, although DevInfo and CensusInfo have similar features, the latter would broaden ability to use census data. In response to a question on the sustainability of the project especially given the time and resources needed for customization, it was mentioned that there are arrangements to make the project long-term.

For more information on the presentations, see http://unstats.un.org/unsd/statcom/statcom_09/seminars/population_census/CensusInfo.html.

For more information on CensusInfo, go to http://www.devinfo.info/censusinfo/.

Fifth Population and Housing Census of Sudan

The objective of the meeting was to provide an insight into resource mobilization, conduct of the census, technical coordination and support and monitoring. It also highlighted some of the challenges of conducting censuses in a post conflict country.

Preparations for the 5th Sudan Population and Housing Census began in 2005, and the field enumeration was carried out during 22nd April to 6th May 2008. The census programme was implemented by the Central Bureau of Statistics (in the North) and by the Southern Sudan Commission for Census, Statistics and Evaluation (in Southern Sudan) at a cost of about $140 million. UNFPA both provided and coordinated technical support in both the northern and southern parts of the country to ensure that the census met national and international standards and provided credible and acceptable results. In addition, UNFPA procured material and also coordinated logistics support for the census. A Census Technical Working Group was constituted to coordinate and harmonize all technical aspects of the census, including census methodologies. Furthermore, a Monitoring and Observation Committee (MOC) comprised of a diverse array of organizations at the national, regional and international levels. The MOC was responsible for monitoring the entire census process to ensure transparency and the use of internationally established standards and procedures for census taking.

For cartographic work there was use of computers and GPS coordinates to produce digitized maps which were used for the first time for enumeration in the Sudan. In both the north and the south, the enumeration area size was about 150 to 200 households per enumerator in urban areas, and about 100 to 150 for the rural areas. A pilot census was conducted in April 2007 to test questionnaires, maps, logistics, data processing, accessibility, etc.

Census enumeration was on a *de facto* basis. Two types of questionnaires were used - the long (10% of EAs) and short (90% of EAs) questionnaires .

Data capture was by scanning using Optical Mark Recognition (OMR) at two data processing centres – one for the north and the other for the south. The design and printing of the census questionnaires were also undertaken by the same company from which the scanning equipment was procured. Data from the two processing centres has been merged to form a Sudan Dataset which is now undergoing consistency editing.

Some of the lessons learnt include the importance of early development of comprehensive work plan, timely mobilization of resources, learning from the experience of other countries, an aggressive advocacy and publicity campaign, as well as political commitment and support.

A question was asked during the questions and answers session on the census coverage of the Darfur region and on the enumeration of internally displaced persons, as well as one on whether criteria have been set for the acceptance of the merged data set. In response to the latter, it was stated that a technical committee is responsible for examining the census results in the merged dataset.

For more information on the presentations, see http://unstats.un.org/unsd/statcom/statcom_09/seminars/UNFPA/sudan-seminar.html.

Innovations in Population Census Data Collection and Archiving: 2010 Oman Census

For census listing Oman has acquired satellite images from a company and converted them into digital maps. For census purposes, the country has been divided into 20 locations which are responsible for updating of the digital maps and downloading the information onto handheld computers. Field staff go from house to house taking basic information on the establishment or housing unit. Calling Centers have been set up to validate the listing information by calling some of the listed units to cross-check the accuracy of what has been collected by the field staff. The listing stage will last six months.

Two weeks before the actual census field staff will again go from house to house to update the information as needed and if there have been changes between the initial and the second listing, and indicate discrepancies between the two. A Quality Control unit has been set up to reconcile the information between the two listings.

Prior to the census enumeration which is schedule to start on 4 April 2010, all information collected at the listing stage will be loaded onto the handheld devices. It is anticipated that around 3500 to 4000 enumerators will be used and all enumeration will be by the handheld devices. There will not be any coding of information in the field. Based on the most population categories of industry and occupation from the 2003, a list will be developed and pre-coded onto the handheld devices. It is anticipated that about 20 per cent of industry and occupation categories will not be part of this list and will be coded after the census.

The switch to paperless enumeration is expected to speed up the whole census operation as other activities such as logistics monitoring and general management of the census will be automated as well. In addition automation will speed up data capture and processing and also improve the quality of the information obtained especially given the logic controls for data collection that built into the software on the handheld devices.

Enumeration will last 10 days, and each day, some of the information that has been collected will be checked for accuracy. This will be done on either a sample basis but could also be up to 100 per cent of the information collected. From Calling Centers, calls will be made to select households to verify the information obtained by the enumerators. Although this task will be outsourced, it will still be under the supervision of the NSO. At a Quality Control Center, information from the field and that from Calling Centers will be compared and in case of a discrepancy, the Crew Leader will be contacted to verify the information.

Oman plans to have all the data and metadata available on-line, with full documentation, so that users can run tabulations without having to go through the NSO.

For the future, Oman plans to conduct a mini census annually until 2015 by which time, it is expected that the registration system will be fully functional and can replace censuses which are generally costly undertakings requiring, among other things, the training of large numbers of field staff.

Innovations in Population Census Data Collection and Archiving: Archiving Microdata – Standards and good practices

M ost statistical agencies seek to reduce the cost of producing data. As important, but less prevalent, is the concern to increase the value of these data. Survey and census microdata may have considerable value beyond the specific purpose for which they were originally collected. *Repurposing* datasets by allowing secondary analysts to exploit them provides a quick and cost-effective solution to diversify and increase the use of data. But this requires that proper *microdata archiving* practices be put in place for the documentation, dissemination and preservation of data.

Good **documentation** (or metadata) is a prerequisite to microdata dissemination, crucial to reduce the risk of misunderstanding and misuse. Rich metadata also increases the credibility of the derived indicators, allows replication of analysis, and build institutional memory which in turn may foster consistency of data across sources and over time. This is however not a trivial exercise, and in practice most datasets remain poorly documented. International metadata standards (such as the *Data Documentation Initiative* –DDI- and *Dublin Core*) have been developed to assist data producers and curators in generating comprehensive and quality documentation.

Dissemination of microdata in developing countries is often ad-hoc and limited, despite the growing demand from the research community. Dissemination requires an enabling legislation, formal policies and procedures compliant with the fundamental principles of statistics and national laws, and technical expertise and adequate infrastructure to implement these procedures.

The long-term **preservation** of data and metadata is another issue in developing countries. Data and metadata are often lost, or may be stored on outdated media or in outdated formats which make them unusable or put them at risk of being lost.

In Europe, US and Canada, specialized data centers provide data archiving (or data "curation") services. These centers have a high level of expertise and adequate IT infrastructure, comply with data documentation and cataloging standards, and establish formal policies and procedures for the dissemination and long-term preservation of the data. In most developing countries, where such data centers do not exist, data producers themselves are expected to archive their datasets. But until recently this was not seen as a priority. Ad-hoc practices, lack of expertise and formal policies, and inadequate infrastructure have resulted in many datasets being "locked" or lost.

In the past 4 years, the **International Household Survey Network** has worked with lead data centers on the development of tools and guidelines to promote better microdata archiving in developing countries. These tools, which make use of international standards, are now used by a fast-growing number of agencies (statistics offices and line ministries). Although these agencies cannot be expected to provide all services typically provided by specialized data centers, data archiving is (or must be) part of their mandate. International good practices are relatively easy and inexpensive to implement and contribute to increase the quality, use and value of data, as already demonstrated by multiple countries.

More information is available at **www.ihsn.org**.

Advances in the Application of Geographical Information Systems (GIS)

The objective of the seminar was to provide perspectives on the advances in the application of geographical information systems and their use in statistics.

The main presentation was by ESRI on Advances in the Application of Geographic Information Systems (GIS). The presentation focused on the advances in the use of GIS for census and statistical applications and presented and discussed different innovative software solutions used in statistics offices. It highlighted the various applications of GIS in our world, including in the area of census, to visualize and analyze spatial data in different dimensions.

The presentation presented examples of GIS platforms – desktop GIS, web GIS, and mobile GIS. With regard to desktop GIS, the presentation showed how GIS on personal computers can be used to display, query, and analyze geo-referenced data. Web GIS, on the other hand, allows use of Internet programming tools in combination with GIS software to interactively overlay spatial data and query this data and generate reports. It also discussed mobile GIS applications such as the use of GPS or PDAs.

The presentation showed how GIS application can be used for data sharing, analysis and dissemination in different formats, including on CD, by e-mail, and on-line.

In terms of census applications, it was recommended that consideration be given to appropriate GIS technology for each phase of the census. For instance, desktop GIS would be appropriate for preparations to develop enumeration areas, allocate assignments, office-based data collection, as well as data and statistical analysis. Mobile GIS, on the other hand, integrates with GPS and is appropriate for field data collection as it can be used for geographic location verification and navigation. Server GIS is suitable for data dissemination including for web map publishing and for geo-visualization tools.

For more information on the presentation, go to http://unstats.un.org/unsd/statcom/statcom_09/seminars/population_census/GIS-seminar.html.
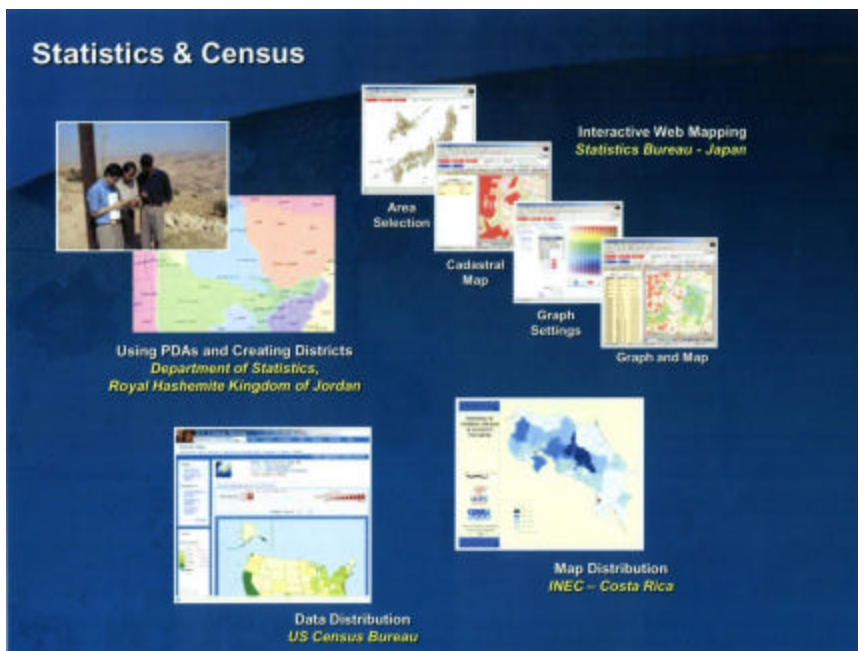
Perspectives on Global Spatial Data Infrastructure

There were two presentations – one by the Instituto Brasileiro de Geografica e Estatistica (IBGE) gave a presentation on "National Spatial Data Infrastructure in Brazil" and the second on by the World Health Organization on "Global Spatial Data Infrastructure (GSDI): from the national to the global level".

According to the presentation on the experience of Brazil, most information used by the public sector around the world can be geo-referenced as fast evolving geo-technologies make geospatial data increasingly available and fuel the demand by end users for these data. The National Spatial Data Infrastructure (NSDI) includes many different components such as policies, laws, rules, standards, agreements, human resources as well as technological and financial resources and others which facilitate the production, access and use of governmental geospatial data contributing to policy decisions and the country's development. Integrating statistical data into the NSDI and in particular when correlating these data with other data layers can provide new insights in important national issues such as natural resources, environment, education, health, etc.

A representative of the World Health Organization (WHO) gave a presentation on "Global Spatial Data Infrastructure (GSDI): from the national to the global level". In the WHO presentation on "Global Spatial Data Infrastructure (GSDI): from the national to the global level", it was pointed out that global spatial data infrastructure is an important and necessary approach since many of today's global challenges such as climate changes, natural disaster, health threats (for example pandemics) have an essentially border crossing character. In a time when most countries are developing their own National Spatial Data Infrastructure (NSDI) which aims at ensuring data compatibility within the country itself it does not necessarily allows to build a consistent regional or global picture. The presentation showed how it is possible to get this global picture without disturbing the NSDI process through the example of the Second Administrative Level Boundaries data set project (SALB).

Questions raised by the audience related to the following issues: a) filters like those generated as part of the Second Administrative Level Boundaries data set project (SALB) and the data contribution by stakeholders like universities and other institutions; b) classification and accuracy of spatial data provided by stakeholders and other data producers; and c) considerations concerning confidentiality of spatial data and measures of aggregation and randomizations to ensure privacy.