

**EXPERT GROUP MEETING ON CONTEMPORARY PRACTICES IN CENSUS
MAPPING AND USE OF GEOGRAPHICAL INFORMATION SYSTEMS
New York, 29 May - 1 June 2007**

**STATEMENT OF DR. PAUL CHEUNG
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Dear colleagues,

It is my pleasure to welcome you to this Expert Group Meeting. I would like to thank you for taking the time out of your busy schedules and travelling to New York to participate in this meeting. This meeting is fully dedicated to one critical aspect of the census operation: the use of geo-coding and the integration of geospatial technologies with census mapping operations.

This Expert Group Meeting is one of a series of activities of the 2010 World Programme on Population and Housing Censuses that the United Nations Statistics Division is organizing for this year, 2007. In March of this year, the Statistical Commission adopted the second revision of the *Principles and Recommendations for Population and Housing Censuses*. This revision presents a more detailed description of census mapping activities. Furthermore, the United Nations Statistics Division, last year, conducted two workshops in Africa on the *Principles and Recommendations for Population and Housing Censuses*, in which participants expressed the necessity for countries to take into account the technological advances made, since the previous round, especially in the area of Geographical Information Systems (GIS) and Global Positioning System (GPS). Our colleagues requested us to focus on these issues and to prepare specific guidelines, including best practices and the strategies for evaluation of different contemporary practices.

Dear colleagues,

I think that it is useful to consider some key trends and important shifts which influence the development of digital census mapping programmes and help to address the issues included in your agenda.

First:

Mapping is one the most critical activities of a census. The accuracy of the delineation of enumeration areas and the quality of their representation on a map have a crucial impact on the quality of the data collected. The analysis and utilization of the census data also requires the facilitation of geographic information systems to display the full dimensions of the data.

Coding census information on a geographic basis has been a tedious and intensive task. The long address books that many census operations used have been replaced in some countries by computerized address codes which have greatly facilitated the geo-coding of census information. The recent technological developments, especially the use of Global Positioning Systems (GPS) for location codes and the Geographical Information Systems (GIS) for display of census information have improved census mapping in fundamental ways.

More specifically, census takers around the world find themselves facing important questions referring to the use of contemporary tools, especially geo-coding devices. What are the advantages and disadvantages of geocoding by direct collection and address matching? Is it more useful to geo-code buildings or enumeration areas? What are the long-term consequences, beyond the census itself, of doing one or the other? In the past several years we witnessed the development of powerful tools for segmentation of satellite imagery. This segmentation allows for precise geo-coding of buildings, roads, open areas and geographical features, such as water

bodies. How best to use these tools for census mapping, collection and dissemination? In few very recent censuses the delineation of enumeration areas and the production of census maps were based on satellite imagery and very little field work. How costly such an approach would be? How portable is it?

In addition, we know that geographical data are now more easily collected, disseminated, accessed and manipulated by multiple providers and users. Their integration with a variety of other data, including demographic and socio-economic data, help create relevant information for better decision-making. We hope this meeting will be able to advise the statistical community on the use of these new technologies and their integration and to provide answers to some of the questions above.

Second:

Most studies show that the collection and management of geographic data can be costly. Moreover, the development and maintenance of geographic databases is often not only expensive but time consuming. It is, therefore, necessary to minimize duplication of effort and data redundancy by encouraging the sharing of basic data.

Historically, there has always been strong cooperation between the census office and the geographic information unit of the country. We hope that this traditional, solid basis of cooperation will continue as we explore new technologies and new methods of data collection and dissemination. We hope that national mapping Agencies, land Survey Departments, national Statistical Offices and others will continue to work together.

Third:

I would like to mention a situation that exemplifies the importance of the integration of census data with geographic data. This is in the area of disaster management. Following a major natural disaster, some of the early questions asked include: which villages are affected? What is the size of their population? How many people were killed, injured and made homeless? What is the status of infrastructure, particularly roads and bridges, health centres, schools, water supply systems and government buildings, etc.? If digital maps of population distribution and housing characteristics could be easily linked with geographic information of the affected area by the disaster, it is possible to generate reliable estimates of the number of people affected, their needs in terms of medical aid, food and shelter, and particularly their location. For immediate disaster response, it is imperative to make sure that basic information is available immediately. In this regard, we will be working with the developers of EmergencyInfo to fully utilize geo-coded census information for disaster preparation.

Dear colleagues,

This meeting is designed to produce not one, but several outputs that will anchor the United Nations Statistics Division work for the rest of this year related to the support in the area of census mapping for the 2010 World Programme on Population and Housing Censuses. These expected outputs include:

- Clear and unambiguous recommendations on the optimal approach to the use of contemporary technologies for census mapping, enumeration and dissemination of data, with the emphasis on their compatibility and efficiency.
- Agreed definition of the Geocoding concept and practical guidelines on how to geocode information in Population and Housing Censuses.

- Description of best practices in the past round of the population and housing censuses and the ones for the 2010 round to provide guidance and sharing of national experiences.
- Comprehensive input for the review and update of the current *Handbook on Geographic Information Systems and Digital Mapping* which will provide a theoretical framework and practical, hands-on guidelines in this fast-evolving field. We plan to finalize the updated version of this handbook by the end of this year.
- An overview of the use of different technologies that are now available and in use for the purposes of census mapping, including their complexity, training requirements, costs, efficiency, experiences and prior use.

The outcomes of this meeting will also form the basis for five training workshops the United Nations Statistics Division is planning to organize on Census Mapping and GIS, *Principles and Recommendations for Population and Housing Censuses*, and Census Management around the world.

I believe that the current meeting, bringing together specialists from many parts of the world, provides a unique opportunity to review and assess the different methods for the integration of these geospatial technologies with the census mapping operations and look at the different options for an optimal solution. It also gives all of us an opportunity to identify the impediments and barriers that still constrain the implementation of a digital census mapping program, with a view to suggesting appropriate solutions in order to overcome the constraints.

Let me conclude by expressing, once again, my appreciation for your participation and assuring you that my staff and I are committed to assisting you to make this meeting a success. I wish you a very productive and successful meeting.

Thank you