

Summary Report on the Training Seminar on Improving Statistics on Cities and Urbanization: Concepts and Methods

Purpose and format of the Seminar¹

1. The Seminar was organized by the United Nations Statistics Division, in New York, 23 and 24 October 2002. The purpose of the Seminar was to review practices in defining cities, rural/urban and urban agglomerations, and gain insight as to how to improve their classification and measurement. It was conducted in three segments with presentations and discussion on the following issues: (a) how urbanization is defined and measured; (b) improving statistics on cities at the international level; and (c) the potential for using spatial statistics in the study of urbanization. Resource persons included Mr. Richard Forstall (Consultant to the Statistics Division); Mr. Michael Ratcliffe, Mr. James Fitzsimmons and Mr. David Rain, representatives of the United States Bureau of the Census; and Mr. Tony Champion, Chairman of the Working Group on Urbanization, International Union for the Scientific Study of Population (IUSSP). Possible future actions that might be taken by the Statistics Division are outlined in paragraph 14.

How urbanization is defined and measured

2. Defining urban as being simply the complement of rural or the converse, has long been superseded by the several attempts to reflect the characteristics of and ways that urban areas have evolved, and the application of modern tools to distinguish the urban from the rural. Given the multi-dimensional nature of human settlements², the distinction between rural and urban has become blurred. Moreover, in a number of countries there are zones of transition around large urban centres bearing mixed urban and rural features. The tendency to dichotomize the classification of settlement areas into “urban versus rural” is therefore challenged, and “over the years the number of examples of settlement classifications going beyond the simple urban/rural dichotomy has grown, with many of these going well beyond a three-fold division”³.

¹ An internal seminar organized as part of the review of the *Demographic Yearbook*, to plan for further work on this topic.

² “The Measurement of Human Settlement: Reflections from IUSSP Working group on Urbanization”, Anthony Champion, University of Newcastle.

³ *Towards a New Conceptualization of Settlement for Demography: Beyond the Urban/Rural Dichotomy*, Graeme Hugo, Anthony Champion and Alfredo Lattes, ISSUP Working Group on Urbanization Meeting, Rockefeller Foundation’s Study and Conference Centre, Bellagio, Italy, March 2002.

3. A multidimensional approach to characterize an area as urban or rural, that combines features of an area such as the structure, function, and ecology, would provide a better representation of the phenomenon. While such an approach could be adopted at the national level, at the international level, certain preconditions would be necessary. Given that the United Nations covers a large number of countries representing different stages of the evolution of rural/urban sphere, there would need to be a review of national practices and characteristics of urbanization, in order to establish an agreed set of criteria relative to the specified dimensions.

4. Another approach that might provide a better understanding of urbanization is based on small units, i.e., the unit of analysis for the definition of statistical areas, such as city blocks, civil divisions or census tracts/enumeration districts. In this approach, the characteristics of the unit such as density, availability of facilities, public services, proportion of a population in certain types of economic activities, and commuting, are used to classify the unit as urban or rural. The analysis is done unit-by-unit. If the criteria set for urban areas are met, the unit is added to the urban agglomeration, otherwise it is excluded. An example of Tokyo urban agglomeration⁴ was provided, designed in terms of the population density for enumeration districts. For comparison, the agglomeration was also defined on the basis of local municipal units. The total agglomeration population arrived at by the municipality approach was about 10 per cent higher than the population from the enumeration district approach, and the surface area approximately double the area estimated from the enumeration district approach.

5. Although such an approach would provide a good overview of urban, peri-urban, and rural differences, especially with respect to demographic behaviour, there are serious obstacles to applying the small-unit analysis at the international level.

(a) Countries set their own criteria for urban areas, and they can differ significantly from one country to the other;

(b) In many cases, the “small-unit” approach to measuring urbanization may lead to conflicting delineations relative to the more traditional administrative areas of a country;

(c) Few countries would be able to provide the required data—data for the small units are generally available at ten-year intervals, (or in relatively few cases, five-year intervals), i.e., at the time of the population and housing census, and measuring changes in intercensal periods accurately would require elaborate and expensive statistical exercises; and

(d) Having access to such small-area levels of statistical information raises issues about preserving and protecting confidentiality of individuals’ information.

⁴ “Urban Agglomerations of One Million or More in 2000: Review and Comment”, Richard Forstall, New York, October 2002.

6. The level of detail and volume of statistics required for this type of analysis also present a major challenge in adopting this method. Even though the advances in contemporary data processing tools have facilitated the adoption of this approach at country level.

7. Another proposal that was considered, was to develop a definition of urban that would be appropriate to a vast majority of countries and then requesting statistics based on this standard. An example of how the United States defined metropolitan and micropolitan statistical areas⁵ was presented.

8. The Seminar recognized that the actions being taken by the Statistics Division, such as organizing a network of focal points for urbanization in national statistical offices, would help to better evaluate national practices and definitions of urbanization. Other actions might also be needed, such as:

(a) Conducting case studies in several countries, to analyze ways in which national authorities define urbanization; which could be done in cooperation with the International Union for the Scientific Study of Population (IUSSP);

(b) Organizing regional workshops that would bring together national authorities and experts to share their experiences and approaches to defining urbanization; and

(c) Collecting geographical maps and other metadata that would complement the statistical information.

Improving city statistics

9. Two main questions were raised regarding the collection and analysis of city statistics: What is a definition of a city and is it possible to develop taxonomy of world cities? The discussions followed a review of the latest lists of the world's major cities presented in the United Nations *Demographic Yearbook* and in *World Urbanization Prospects*.⁶ The examples offered of China and Japan⁷ demonstrated that national practices differed significantly. The ways in which countries define their cities and urban areas depended on a number of factors —political, economic, and sociological—such as their administrative practices and growth of urban agglomerations, thus reducing the possibility of developing a more complex taxonomy.

10. A city may be defined as a city proper or municipality, an urban agglomeration whose definition might or might not be adjusted to administrative boundaries, or a

⁵ “Standards for Defining Metropolitan and Micropolitan Statistical Areas”, James Fitzsimmons, United States Bureau of Census, Washington D.C., October 2002 (presentation made to the Seminar).

⁶ *World Urbanization Prospects: The 2001 Revision*, United Nations publication Sales no. E.02.XIII.16, United Nations, New York, 2002.

⁷ “Urban Agglomerations of One Million or More in 2000: Review and Comment”, Richard Forstall, New York, October 2002.

metropolitan area. These categories are not, by any means, uniform or straightforward; they include a variety of combinations within a region and even more so at the inter-regional level. As a result, for example, suburban territory may sometimes include a considerable proportion of a rural population while still being defined as a part of an urban agglomeration.

11. The database on cities of the United Nations *Demographic Yearbook*⁸ includes some 4,200 entries from over 230 countries worldwide and it represents a significant international collection of city data. This collection is accompanied by metadata that provide additional explanations. The Seminar noted that the Statistics Division, in maintaining and updating this collection, might consider several actions:

(a) Redesign the questionnaire used for collecting city and urban agglomeration data in order to include metropolitan areas;

(b) Pre-fill the questionnaires with existing data, thus informing national statistical offices about the information available on their respective countries and providing an opportunity for the information to be corrected;

(c) Use the Internet more effectively to promote data dissemination and invite countries to comment and complement it;

(d) Organize workshops and regional and sub-regional meetings to share national experience and approaches with respect to definitions and methods of collecting cities data;

(e) Adopt a case-study approach, focusing on countries with a large number of cities of 100,000 or more inhabitants for which additional meta-data are needed, such as China, India, Japan and Indonesia.

12. The taxonomy of world's cities based on general categories, i.e., city proper, municipality, urban agglomeration (adjusted or unadjusted to administrative boundaries), metropolitan area, and the city including administered areas, would be a starting point upon which subcategories and further elaboration could be based. This would require further work in exploring national practices using actions as listed above.

Using spatial statistics in assessing urbanization

13. The introduction of new technologies and techniques that combine geographical and statistical information into spatial assessment of settlements and population, offers new possibilities in monitoring urbanization and size of settlements. A presentation on the experience of using imagery and geographic information systems for assessing

⁸ *United Nations Demographic Yearbook 1999*, United Nations publication Sales no. E/F.01.XIII.1, United Nations, New York, 2001 and accompanying databases, some available on-line at <http://unstats.un.org/unsd>.

population distribution in countries for which reliable information is lacking⁹ illustrated the potential for this application. This approach provides the number and location of settlements, and gives an approximate population count in them. It could be useful for countries where collection of data may be challenge by natural disasters or civil wars, and there was thus a need to evaluate the comparative costs and benefits of these new technologies and of the more traditional collection of statistics, primarily population and housing censuses.

Possible future actions

14. The Seminar concluded that among the courses of action that the Statistics Division might consider in the field of urbanization and city statistics, were to:

(a) Develop and maintain an international database of national definitions of urban and rural areas, based on replies to questionnaires, case studies, regional and sub-regional workshops and meetings, with the ultimate goal of proposing a uniform set or sets of criteria applicable to the majority of countries or areas of the world;

(b) Maintain and update the database on cities and urban agglomerations, with the appropriate metadata, from replies to questionnaires, case studies, regional and sub-regional workshops and meetings with the ultimate goal of producing a taxonomy of world cities;

(c) Use the findings of these preceding activities to review and propose amendments to the current United Nations *Principles and Recommendations for Population and Housing Censuses*¹⁰ in order to improve on the reporting of urban and rural areas;

(d) Learn more about users' needs by maintaining contacts with a wide range of user groups (for example, decision-makers at national and international level, media, academia, business, and lay public);

(e) Build on the outcome of this Seminar in the ongoing review of the *Demographic Yearbook*.

⁹ "Deriving Place Population Estimates Using Imagery and Geographic Information Systems", David Rain, Washington D.C., October 2002.

¹⁰ *Principles and Recommendations for Population and Housing Censuses, Revision 1*, United Nations publication, Sales no. E.98.XVII.8, United Nations, New York, 1998.

Annex

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