Operational Definitions of Urban, Rural and Urban Agglomeration for Monitoring Human Settlements

By

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Abstract

The United Nations Human Settlements Programme (UN-HABITAT) is responsible for monitoring the Target 11 of Goal 7 of the Millennium Development Goals (MDG's) in addition to its mandate to monitor and report on the progress made in implementation of the Habitat Agenda. The paper will discuss the problems and difficulties in collecting data with common operational definition of urban/rural and urban agglomerations in various regions as well as reliability of information provided by reporting authorities. The various opinion on the issue of how to define the cities boundaries for future data collection and concept of built-up and densely populated area's role in it will also be discussed for future data collection.
A. Introduction and Objectives

1. The United Nations Human Settlements Programme (UN-HABITAT) is responsible for monitoring the Target 11 of goal 7 of the Millennium Development goals (MDG’s) in addition to its mandate to monitor and report on the progress made in the implementation of the Habitat Agenda.

   
   **Goal 7: Ensure environmental sustainability**
   
   Target 11: By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers
   
   Indicator 31: Proportion of urban population with access to improved sanitation (UNICEF)
   
   Indicator 32: Proportion of households with secure tenure (UN-HABITAT)

2. The Global Urban Observatory of UN-HABITAT in its Urban Indicators Programme Phase III (2004-2005) devised the strategy to collect the urban indicators by organizing workshops together with UN Economic and Social Commissions, UNFPA, UNSD and other partners. The Urban Experts and statisticians from line ministries of the countries of various regions that are part of the global sample of cities were invited for discussion.

3. The Urban Experts discussed the demarcation of city boundaries and operational definitions of urban/rural and urban agglomerations. They elaborated on the problems and difficulties as well as reliability of information they have to provide.

4. The Expert Group Meeting (EGM) discussed and came out with the operational definition of urban and rural areas. The EGM also contributed to better defining Urban Agglomerations and deciding on the city boundaries for future data and indicators collection at the city level. The concept of build-up and densely populated areas were also the issues discussed.

5. The overall **objectives** of the Expert Group Meeting were:

   (a) The **long term objective** was to strengthen capacity of countries to collect, compile and analyse urban indicators, in order to do comparisons based on harmonized definitions and classifications at national and city level.

   (b) The **immediate objective** was to discuss and come out with the operational definitions of urban and rural areas for collection of comparable indicators as well as establishing the criteria for defining city boundaries of the Urban Agglomerations.
B. Background and Justification

6. The dichotomy of urban and rural is not new. This is just like two faces of a coin. For data collection to study the socio-economic, cultural and demographic trends of the population, any areas or settlements are categorized in either urban or rural. The United Nations also uses the criteria of urban and rural based on the definitions used by the countries for the reporting of the official statistics on world urbanization trends and projections. Urban and rural is defined based on some characteristics of population and the settlements. The countries designate the urban areas by using one or more of the characteristics as follows:

   i) Population size threshold
   ii) Population density
   iii) Contiguity of build-up area
   iv) Political status
   v) Proportion of the labor force engaged in non-agricultural work
   vi) Presence of particular services and activities

7. In the 21st Century, the world is becoming urbanized while the global urban transition is accomplished. It is expected that by 2007 about 50 percent of the world’s population will live in urban areas and by 2030, 60 percent will be urban. The World’s urban population reached 2.9 billion in 2000 and it is expected that it will reach to 5 billion by 2030. It is expected that world urban population will increase by 2.1 billion during 2000-2030 and reach to 5 billion by 2030, just below the 2.2 billion persons that will be added to world population.¹

8. Almost all the growth of the world’s total population between 2000 and 2030 is expected to be absorbed by the urban areas of the less developed regions. Less developed countries will experience rapid population growth in the urban areas, averaging 2.3 percent per year during 2000-2030. Most important determinants of the high urban population growth anticipated in less developed regions are through migration from rural areas and the transformation of rural settlements into urban places.²

9. By 2017, the number of urban dwellers will equal the number of rural dwellers in the less developed regions. In contrast the urban population of the more developed regions is expected to increase very slowly, from 0.9 billion in 2003 to 1 billion in 2030. The average annual growth rate of this population is expected to be 0.5 per cent between the 2000 and 2030, compared to 1.5 per cent recorded during the previous half-century.³
Figure 1. Urban and rural population of the world, 1950-2030


Figure 2. Percentage of population residing in urban areas by major areas of the world, 1950, 1975, 2003 and 2030

10. In the more developed regions, nearly 40 per cent of the population lived in small urban settlements. This is about twice that in the less developed regions, where just over 20 percent of the population lived in small urban settlements.

11. The number of cities with 5 million or more inhabitants is projected to rise from 46 in 2003 to 61 in 2015. Among these, the number of mega-cities (with 10 million inhabitants or more) will increase from 20 in 2003 to 22 in 2015. Most of these large cities are in developing countries, and by 2015, 45 out of 61 cities are expected to be from the less developed regions. Large urban agglomerations are not necessarily experiencing fast population growth. Of the 20 mega-cities identified in 2003, almost half experienced population growth below 1.5 per cent between 1975 and 2000 and just 6 grew at rates above 3 percent: Dhaka in Bangladesh (6.2 per cent per year); Lagos in Nigeria (6.1); Delhi (4.1), Karachi (3.7) and Mumbai (Bombay) (3.1) in India; and Jakarta in Indonesia (3.3). During 2000-2015, 11 mega-cities are projected to experience population growth below 1.5 per cent and five will remain with population growth rates above 3 percent.

12. Urbanization is inevitable. The world has witnessed a dramatic growth of its urban population over the last 50 years. The speed and the scale of this growth, especially concentrated in the less developed regions, continue to pose formidable challenges to the individual countries as well as to the world community. Monitoring these developments and creating sustainable urban environments remains crucial issues on the international development agenda.

13. The first and the foremost step to monitor urbanization are to understand the phenomenon starting from the holistic concept of the urban and rural. Everybody understands what is urban and rural but by its own ways and have their definition based on some of the characteristics of urban.

C. Urban and Rural

14. UN-HABITAT has been among the first to recognize and to call for attention to the phenomenon of urbanization as a decisive force in the shaping of the economic and social life of developing countries. No one can fail to observe the sweeping transformation which is under way in those countries—a transformation from predominantly agrarian societies to modern market-oriented societies—highly depending on urban structures and urban rural linkages. In recognition of this, UN-HABITAT, in collaboration with UN Regional Offices and other UN agencies both within and outside the United Nations system, has been actively pursuing programmes of assistance to countries in the management of their urban settlements.

15. In spite of all above quoted figures from the UN Population Division from the Word urbanization Prospect: The 2001 and 2003 Revisions, and all efforts to harmonize the definition of urban/rural, it is interesting to note that to date, there is no common universal definition for urban/rural areas or population. The countries adopt the
definition used for their census to classify urban/rural areas and population. The traditional distinction between urban and rural areas within a country is based on the assumption that urban areas provide a different way of life and usually a higher level of living than is found in rural areas. International comparability of urban-rural distributions is seriously impaired by the wide variation among national definitions of the concept of urban.

16. Overview of the definitions used by the countries reveals that a variety of concepts are employed to define urban. As indicated in point 7, some countries use the number of inhabitants in a locality, some uses the density of the population per square mile, some uses employment in agriculture sector as a criterion, others use the infrastructure and services or the facilities and services in the settlements etc.

Table 1. **National Definitions of urban-rural for some countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Belarus</td>
<td>Urban localities are human settlements that in accordance with legislation have the status of towns</td>
</tr>
<tr>
<td>Canada</td>
<td>Urban areas include all greater metropolitan areas (even though they contain some rural areas) and smaller metropolitan areas. Urban areas have a minimum population concentration of 1000 people and a population density of at least 400 per square kilometer based on the previous census population counts</td>
</tr>
<tr>
<td>Dominica Republic</td>
<td>Urban zones refer to areas in municipalities</td>
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<tr>
<td>Estonia</td>
<td>Urban areas include towns and townships, while rural areas include villages</td>
</tr>
<tr>
<td>Libya</td>
<td>Urban refers to every district of 50000 or more inhabitants</td>
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<tr>
<td>Mexico</td>
<td>Urban refers to localities with population over 2500.</td>
</tr>
<tr>
<td>Sweden</td>
<td>Locality is a group of buildings normally not more than 200 meters apart from each other and having at least 200 inhabitants. In Sweden localities are defined as urban and all areas outside the localities as rural.</td>
</tr>
<tr>
<td>Thailand</td>
<td>Urban refers to municipal areas</td>
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<tr>
<td>Turkey</td>
<td>Urban refers to settlements with population of 20001 and over.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Urban refers to built up area with a population of more than approximately one thousand (1000) based on population as at 1999</td>
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<tr>
<td>United States of America</td>
<td>Census Bureau-defined Urbanized Areas (UAs) are defined to represent human settlements with over 50,000 people. A UA is defined by the Census bureau as an “area consisting of”</td>
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a central place (s) and adjacent urban fringe that together have a minimum residential population of at least 50,000 people and generally an overall population density of at least 1,000 people per square mile of the land area”


**Urban and Rural Classification in USA**

For Census 2000, the Census Bureau classifies as "urban" all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of:

- core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile

In addition, under certain conditions, less densely settled territory may be part of each UA or UC.

The Census Bureau's classification of "rural" consists of all territory, population, and housing units located outside of UAs and UCs. The rural component contains both place and nonplace territory. Geographic entities, such as census tracts, counties, metropolitan areas, and the territory outside metropolitan areas, often are "split" between urban and rural territory, and the population and housing units they contain often are partly classified as urban and partly classified as rural.

17. Unfortunately, it is clearly evident that there is no single definition of urban and rural areas till now. Countries have established their own definitions in accordance with their own needs based on the characteristics that distinguish urban and rural areas.
However, an analysis of countries shows that different criteria and methods are currently being used by governments to define “urban”:

- 105 countries based their urban data on administrative criteria, limiting it to the boundaries of state or provincial capitals, municipalities or other local jurisdictions; 83 use this as their sole method of distinguishing urban from rural.
- 100 countries define cities by population size or population density, with minimum concentrations ranging broadly, from 200 to 50000 inhabitants; 57 use this as their sole urban criterion.
- 25 countries specify economic characteristics as significant, though not exclusive, in defining cities—typically, the proportion of the labour force employed in non-agricultural activities.
- 18 countries count the availability of urban infrastructure in their definitions, including the presence of paved streets, water supply systems, sewerage systems, or electric lighting.
- 25 countries provide no definition of “urban” at all.
- 6 countries regard their entire population as urban.

Source: World Urbanization Prospect: The 2003 Revision

18. In many industrialized countries, this distinction has become blurred and principle difference between urban and rural areas in terms of the circumstances of living trends to be a matter of degree of concentration of population. Although the differences between urban and rural ways of life and levels of living remains significant in developing countries, rapid urbanization in these countries has created a great need for information related to different sizes of urban areas.

19. However, density of population may not be a sufficient criterion, particularly where there are large localities that are still characterized by a truly rural way of life. Such countries use some additional criteria in developing classification that are more distinctive than a simple urban rural differentiation. Those additional criteria are the percentage of the economically active population employed in agriculture, the general availability of electricity and/or piped water in living quarters and the ease of access to medical care, school and recreational facilities. For certain countries where the facilities noted above are available in some areas that are still rural since agriculture is the predominant source of employment.

20. Definition of urban and rural should take into account all the characteristics used by countries to define their urban and rural areas. However, care must be taken to ensure that the definition used does not become too complicated for application to the census and for comprehension by the users of the census results. Information from previous censuses and some other external sources can also be obtained for the classification of urban and rural areas such as images obtained by remote sensing may be used for the
demarcation of urban boundaries of urban areas when density of habitation is a criterion. Geo-coding can also be considered as one of the source of information for classification. The urban area should be officially gazette by the government.

D. Urban Agglomeration

22. The definition of urban agglomeration issued by UN is as follows: Urban Agglomeration comprises the city or town proper and also the suburban fringe or thickly settled territory lying outside, but adjacent to, its boundaries. A single urban agglomeration may comprise several cities or towns and their suburban fringes. The administrative city (city proper) as the area of a population centre located within municipal boundaries designated as such by the central government for management, legislative and administrative purposes. Metropolitan area is defined as a politically defined urban area set up for planning or administration purposes which may combine several jurisdictions (municipalities or cities).

23. The data for cities varies based on what definitions are being used. The city population and its growth rate will vary depending on the determination of city boundary. For example, for Tokyo which is considered to be the world largest city with 25 million people in its agglomeration in 1990 but which can also be represented in terms of its administrative city (18.2 million in that year), the Tokyo prefecture (11.9 million), the greater Tokyo metropolitan area (31.6 million) and the National Capital region (39.2 million). Similarly, Colombo population is estimated to be about 600,000 persons in an area of 37 square kilometers, but if its population is measured for the city region of 1800 square kilometers, Colombo would contain 4 million inhabitants. Cities such as Buenos Aires, Mexico City, London, and Tokyo can be correctly said to be declining or expanding in population, depending on how their boundaries are defined.10

24. Mr. Robert McNamara, former president of the World Bank, aptly observed “If cities do not begin to deal more constructively with poverty, poverty may begin to deal more destructively with cities.”

25. Many urban agglomerations (mega-cities) in the developing countries are not functioning well. They are not able to cope with the demand for the services. Slums are growing and quality of life is deteriorating. For monitoring the overall situation and also to monitor Target 11, the first and foremost step is to have harmonization and standardization of definition and classifications of urban agglomeration. In absence of a proper definition of urban agglomeration, comparability of data is not possible. Some of the urban agglomerations include the rural areas also in between two towns or cities under them.

26. A lot has to be done in terms of harmonization and standardization of definitions and classifications for data collection at city/urban and urban agglomeration level.
We have the Principles and Recommendations for Population and Housing Censuses for the national level data collection through censuses for the countries but at the urban /city level it is yet to be done. Lack of adequate and reliable data for forward-looking policy formulation and managing of the city, in both developing and developed countries, is the main characteristic for policy failure.\footnote{11} The reporting authorities should mention that the data provided is for the administrative city or urban agglomeration or for the metropolitan areas.

27. UN-Habitat is the lead agency in the area of urban/city statistics. UN-HABITAT has devised a monitoring system through the Global Urban Observatory (GUO)-a section for production and analysis of quantitative knowledge for the global monitoring and reporting of progress in implementing the Habitat Agenda and MDG. The GUO collects analyses and disseminates information on national as well as at the city statistics on a regular basis through various ways including the two flagship reports of the organization.

28. UN-HABITAT developed the Large Cities Statistics Project (LCSP) Questionnaire together with five partners including UNSD and the questionnaire was disseminated to more than three thousand cities with population of 100 thousand and more. The outcome was the publication of 1000 cities-International Yearbook of Large Cities Statistics.\footnote{12} One of the most significant achievements of this exercise was the harmonization and standardization of definitions and classifications which impacted on roughly 3600 cities through LCSP. Cities may not have returned a filled questionnaire but they might have used the instrument for their own data collection exercises or have given it to other cities and towns. They might have modified or deleted some of the tables as per their requirements but they have a data collection instruments in their hands with globally acceptable definitions and classifications. This process has to continue till all the cities/urban agglomerations have internationally accepted harmonized definitions and classifications.

29. Based on the recommendations of the Expert Group Meeting in 2002 and the Inter-agency group meetings on MDG’s, a global sample of cities was selected. A comprehensive list of 4574 cities and metropolitan areas with population of 100,000 and more was prepared jointly with UNSD. A random sample of 353 cities and metropolitan areas was selected using the technique of Probability Proportionate to Size (PPS). MDG and Urban Indicators will be regularly collected and analyzed for the sample cities for the global, regional and sub-regional estimation of indicators for reporting.

30. For comparative city statistics and indicators, it is important to have an agreement to have defined city boundary. For city level data, the standard area of reference should be the urban agglomeration. When the data for the agglomeration is not available then data for the metropolitan area should be provided with a note. The boundary of the urban agglomeration should be clearly defined with the help of
local authorities. The criteria for defining the urban agglomeration, it should be clearly established as built-up area and density of population etc.

31. Geographical Information System (GIS) was used to map the changes and defining the boundaries of the urban agglomerations and for collecting data for the sample cities. Country database is built from several data sources namely census, household surveys such as DHS, MICS, LSMS, Labour Force Survey, welfare Monitoring Survey, Urban Household Budget Survey, World Health Survey, and child labour Survey as well as administrative records. The results were presented in the State of the World Cities Report 2006/7.

NAIROBI
Green = Continuous Built-up area
NAIROBI, Landsat image, false colour + boundaries of 110 sub-locations
References

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6. Ibid
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