POPULATION GROWTH RATE		
Demographics	**Population Change**	**Core indicator**

1. INDICATOR

(a) Name: Population growth rate

(b) Brief Definition: The average annual rate of change of population size during a specified period.

(c) Unit of Measurement: Usually expressed as a percentage.

(d) Placement in the CSD Indicator Set: Demographics/Population.

2. POLICY RELEVANCE

(a) Purpose: The population growth rate measures how fast the size of population is changing.

(b) Relevance to Sustainable/ Unsustainable development (theme/sub-theme): Agenda 21 identifies population growth as one of the crucial elements affecting long-term sustainability (see especially paragraphs 5.3 and 5.16). Population growth, at both national and sub-national levels, represents a fundamental indicator for national decision-makers. Its significance must be analyzed in relation to other factors affecting sustainability. However, rapid population growth can place strain on a country's capacity for handling a wide range of issues of economic, social and environmental significance, particularly when rapid population growth occurs in conjunction with poverty and lack of access to resources, or with unsustainable patterns of production and consumption, or in ecologically vulnerable zones (paragraphs 3.14, 3.25 and 3.26 of the Programme of Action of the International Conference on Population and Development (ICPD)).

The dramatic growth of urban populations is of concern in many countries. Between 2005 and 2030, almost all of the population growth expected for the world will be concentrated in the urban areas of the less developed regions (United Nations, 2003). The causes of rapid urban growth include high rates of natural increase (excess of births over deaths) in urban areas as well as migration from rural to urban areas and the transformation of rural settlements into urban places. The speed and scale of this growth continue to pose serious challenges to both countries and the world community. Monitoring these developments and creating sustainable urban environments remain crucial issues on the international development agenda.

Although rural populations have in general grown more slowly than urban populations, rural growth has been robust in many developing countries, particularly in Africa and Asia, and in most of the least developed countries. As was recognized by the Commission on Sustainable Development during its 14th session (E/CN.17/2006/2),

protecting and managing the natural resource base is an essential requirement for sustainable development. In settings where the conditions for sustainable agricultural and rural development are not in place, high rates of rural population growth could negatively affect the use of land, water, air, energy and other resources.

(c) International Conventions and Agreements: None

(d) International Targets/Recommended Standards: International agreements do not establish national or global targets. However, a number of Governments have adopted numerical targets for the rate of population growth. In 2005, 19 per cent of Governments considered their rates of population growth to be too low, 42 per cent were satisfied with their rate of growth and 39 per cent considered it to be too high (United Nations, 2006b). Over half of Governments of developing countries regarded their rates of population growth as too high, and 80 per cent of Governments of the least developed countries did so. In addition, over 80 per cent of all Governments reported some degree of dissatisfaction with the spatial distribution of their populations. Developing countries are more likely than developed countries to report dissatisfaction in this regard (86 per cent vs. 63 per cent).

(e) Linkages to Others Indicators: There are close linkages between this indicator and other demographic and social indicators, as well as all indicators expressed in per capita terms (for example, GDP per capita). Population growth usually has implications for indicators related to education, infrastructure and employment. It is also related to human settlements and the use of natural resources.

3. METHODOLOGICAL DESCRIPTION

(a) Underlying Definitions and Measurements Methods: The rate of population growth, r, between two time points, t_1 and t_2, is calculated as an exponential rate of growth, conventionally expressed in percentage units per year:

$$r = 100 \ln (P_2/P_1)/(t_2 - t_1)$$

Where P_1 and P_2 are the number of persons at times t_1 and t_2, respectively, and the time interval (t_2-t_1) is expressed in years. Besides referring to the total population, this indicator can also be calculated separately for the urban and rural populations. In the case of the urban population growth rate, P_1 and P_2 in the above formula would refer to the number of persons in urban areas. Similarly, P_1 and P_2 would refer to the number of persons in rural areas in the case of the rural population growth rate.

For a country, the indicator is generally based on either: (i) the population enumerated at two consecutive censuses, each of them adjusted for incompleteness; or (ii) the components of population growth (births, deaths and migrants) during a specific period, adjusted for incompleteness when necessary. Population growth rates can also be calculated for sub-national areas.

(b) Limitations of the Indicators: In calculating the urban and rural population growth rates, the United Nations relies on data from national sources reflecting the definitions of urban and rural places established by each country. These definitions vary

widely across countries and sometimes over time for a given country. Furthermore, as the process of urbanization proceeds, the number and extension of the areal units qualifying as urban generally expand, so that keeping an urban versus rural division of the territory constant over time would be inappropriate and would likely result in a major underestimation of the actual proportion of the population living in areas with urban characteristics.

4. ASSESSMENT OF DATA

(a) Data needed to compile the Indicator: As indicated above, the population growth rate can be calculated either from census data or from civil registration data (births and deaths) together with information on migration. The United Nations recommends that countries take censuses every 10 years and these data are most commonly the source used to calculate intercensal population growth rates.

(b) National and International Data Availability and Sources: In recent decades, most countries have carried out population censuses that distinguish the populations of urban and rural areas. Data on births and deaths may be derived from civil registration systems or from special questions in demographic surveys and censuses. Data on migration comes from very varied sources. In most countries, national and sub-national census data and data on births and deaths are available from national sources and publications. These data are compiled by the Statistics Division of the Department of Economic and Social Affairs (DESA) of the United Nations Secretariat from reports submitted by national statistical offices. For all countries, census and vital registration data are evaluated and, if necessary, adjusted for incompleteness by the Population Division of DESA as part of the preparation of the United Nations population estimates and projections.

(c) Data references: Past, current and projected total, urban and rural population growth rates are estimated for all countries by the Population Division, DESA, and appear in the biennial reports *World Population Prospects* and *World Urbanization Prospects*.

5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR

(a) Lead Agency: The lead agency is the United Nations Department of Economic and Social Affairs (DESA). The contact point is the Director, Population Division, DESA; fax no. (1 212) 963 2147.

(b) Other Contributing Organizations: None

6. REFERENCES

(a) Reading:

United Nations (1983). *Manual X: Indirect Techniques for Demographic Estimation*. United Nations Sales No. E.83.XIII.2, New York.

_____ (2003). *MORTPAK for Windows - The United Nations Software Package for Demographic Measurement,* CD-ROM (United Nations, New York).
_____ (2004). *Demographic Yearbook 2001.* United Nations publication, Sales No. 03.XIII.1.
_____ (2007). *World Population Prospects: The 2006 Revision*, CD-ROM Edition.

_____ (2006a). *World Urbanization Prospects: The 2005 Revision,* CD-ROM Edition – Data in digital form (POP/DB/WUP/Rev.2005).

_____ (2006b). *World Population Policies 2005* (United Nations publication, Sales No. E.06.XIII.5, New York).

(b) Internet site: http://www.un.org/esa/population/unpop.htm