



# Sustainable Development Indicators for the Arab Region

## Guiding Principles and Methodologies Part 1 Social Development Indicators

January 2011



Abu Dhabi Global  
Environmental Data Initiative

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Guiding Principles and Methodologies

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# Methodological Structure

<b>THEME/SUBTHEME</b>
<b>1- INDICATOR</b>
Name
Brief Definition
Unit of Measurement
Placement in the CSD Indicator set
<b>2- POLICY RELEVANCE</b>
Purpose
Relevance to Sustainable/Unsustainable Development (theme/sub-theme)
International Conventions and Agreements
International Targets/Recommended Standards
Linkages to Other Indicators
<b>3- METHODOLOGICAL DESCRIPTION</b>
Underlying Definitions and Concepts
Measurement Methods
Limitations of the Indicator
Status of Methodology
Alternative Definitions/Indicators
<b>4- ASSESSMENT DATA</b>
Data Needed to Compile the Indicator
National and International Data Availability and Sources
Data References
<b>5- AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR</b>
Lead Agency
Other Contributing Organizations
<b>6- REFERENCES</b>
Readings
Internet site

## THEME 1: Poverty

SUB THEME/ ISSUE	Indicators
<b>Income poverty</b>	Percent of population living below national poverty line
	Proportion of population below international poverty line (\$1 or \$2)
<b>Income Inequality</b>	Ratio of share in national income of highest to lowest quintile
<b>Sanitation</b>	Proportion of population with access to improved sanitation, urban and rural
<b>Drinking Water</b>	Proportion of population with access to safe drinking water
<b>Access to Energy</b>	Share of households without access to electricity or commercial energy
<b>Living Conditions</b>	Proportion of population living in slums

**Theme 1: Poverty**

**Sub-Theme: Income Poverty**

**Indicator 1: Percent of Population Living below National poverty line**

PROPORTION OF POPULATION LIVING BELOW NATIONAL POVERTY LINE		
Core indicator	Income poverty	Poverty

**1. INDICATOR**

(a) **Name:** Proportion of population living below national poverty line, also known as national poverty rate.

(b) **Brief Definition:** The national poverty rate is the proportion of the population living below the national poverty line.

(c) **Unit of Measurement:** Percentage

(d) **Placement in the CSD Indicator Set:** Poverty/Income poverty

**2. POLICY RELEVANCE**

(a) **Purpose:** Poverty is the most important defining characteristic of underdevelopment. National poverty rate is one of the core measures of living standards and it draws attention exclusively towards the poor. National estimates are based on population-weighted subgroup estimates derived from household surveys like family expenditure and income survey.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Poverty reduction is one of the key goals of the international community's sustainable development strategy. Many countries give priority to poverty reduction in their national strategies of economic development. Measuring and monitoring the current level as well as the trend in poverty rates provides useful information for the policy makers to plan and implement pro-poor growth strategies and ultimately contributes to the betterment of human lives. Moreover, poverty statistics are important for analyzing the relationship of income or consumption poverty to other dimensions of human development such as education, health, labor skills and other measures of living standards. National poverty rates use a country specific poverty line, designed to better reflect the country's economic and social circumstances.

(c) **International Conventions and Agreements:** None.



**(d) International Targets/Recommended Standards:** None

**(e) Linkages to Other Indicators:** This indicator is closely linked with other measures of human development (education attainment, literacy, health status, mortality etc) and domestic economic development.

### **3. METHODOLOGICAL DESCRIPTION**

**a) Underlying Definitions and Concepts:** Poverty has many dimensions. The proportion of the population below national poverty line measures poverty by the level of income/consumption available to an individual. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". What is necessary to satisfy basic needs varies across time and societies. Therefore, poverty lines vary in time and place, and each country uses lines which are appropriate to its level of development, societal norms and values.<sup>1</sup>

**b) Measurement Methods:** Information on consumption and income is obtained through sample surveys in which households are asked to answer detailed questions on their spending habits and sources of income. Individual income or consumption levels are calculated as total household income or consumption divided by household size or "effective" household size in some cases. An "effective" household size is calculated based on household composition to reflect assumed efficiencies in consumption; adjustments may also be made to reflect the number of children in a household. However, the World Bank's preferred methodology is to make no such adjustments.

National poverty rates use a country specific poverty line, which reflects the country's economic and social circumstances. In some cases, the national poverty line is adjusted for different areas (such as urban and rural) within the country, especially when prices or the availability of goods and services differs. National poverty lines tend to have higher purchasing power in rich countries, where more generous standards are used, than in poor countries. In some countries the urban poverty line in common use has a higher real value—meaning that it allows the purchase of more commodities for consumption—than does the rural poverty line.

**c) Limitations of the Indicator:** National poverty lines are set to reflect the country's specific economic and social circumstances, and national poverty rates are not intended for comparisons across countries. Local poverty lines tend to have higher purchasing power in rich countries, where more generous standards are used, than in poor countries. Issues also arise when comparing poverty measures within countries when

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<sup>1</sup> For further discussion on poverty lines, refer to *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

urban and rural poverty lines represent different purchasing powers.<sup>2</sup>

The national poverty rate is a “headcount” measure, which is by far the most commonly calculated measure of poverty. But it fails to reflect the fact that among poor people there may be wide differences in income levels, with some people located just below the poverty line and others experiencing far greater shortfalls. Policymakers seeking to make the largest possible impact on the headcount measure might be tempted to direct their poverty alleviation resources to those closest to the poverty line (and therefore least poor).<sup>3</sup>

Lastly, this income/consumption based poverty indicator does not fully reflect the other dimensions of poverty such as inequality, vulnerability, and lack of voice and power of the poor.<sup>4</sup>

d) **Status of Methodology:** The methodology is generally well developed.

e) **Alternative Definitions/Indicators:** There are other useful indicators of measuring poverty: the poverty rate at the international poverty line, which is more suitable for assessing poverty level worldwide; the poverty gap, which takes into account the distance of poor people from the poverty line; and the squared-poverty gap, which take into account the degree of income inequality among poor people.<sup>5</sup> Moreover, quantitative methods of measuring income/consumption poverty are increasingly being complemented by participatory methods, where people are asked what their basic needs are and whether such needs are met. Interestingly, new research shows a high degree of concordance between poverty lines based on objective and subjective assessments of needs.<sup>6</sup>

#### **4. ASSESSMENT OF DATA**

(a) **Data Needed to Compile the Indicator:** Poverty estimates are calculated from nationally representative household surveys.

(b) **National and International Data Availability and Sources:** The World Bank produced its first global poverty estimates for developing countries for World Development Report 1990 using household survey data for 22 countries (Ravallion, Datt, and van de Walle1991). Incorporating survey data collected during the last 17 years, the database has expanded considerably and now includes more than 550 surveys

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<sup>2</sup> For further details, refer to the *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).

<sup>3</sup> More information is available at the World Bank’s website: [www.worldbank.org/poverty](http://www.worldbank.org/poverty)

<sup>4</sup> For further discussions on different dimensions of poverty, refer to *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

<sup>5</sup> Source: *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

<sup>6</sup> Source: *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).

representing about 100 developing countries. Some 1.1 million randomly sampled households were interviewed in these surveys, representing 93 percent of the population of developing countries. The surveys asked detailed questions on sources of income and how it was spent and on other household characteristics such as the number of people sharing that income. Most interviews were conducted by staff of government statistics offices. Along with improvements in data coverage and quality, the underlying methodology has also improved, resulting in better and more comprehensive estimates. In the last 25 years there has been enormous progress in designing, implementing and processing such surveys for developing countries – thanks in large part to the efforts of national statistics agencies throughout the world, and the support of the donor community and international development agencies.<sup>7</sup>

(c) **Data References:** Data on national poverty rate are included in the World Development Indicators (WDI) publications and WDI Online database of the World Bank, see <http://go.worldbank.org/3JU2HA60D0> and <http://go.worldbank.org/6HAYAHG8H0>.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

(a) **Lead Agency:** The lead agency is the World Bank. The contact point is Data Help Desk: [data@worldbank.org](mailto:data@worldbank.org)

(b) **Other Contributing Organizations:**

## **6. REFERENCES**

(a) **Readings:**

The World Bank, World Development Report 1990, 2000-2001, and 2006 editions  
The World Bank, World Development Indicators, various years

(b) **Internet site:**

The World Bank: [www.worldbank.org/poverty](http://www.worldbank.org/poverty)  
World Development Report: [www.worldbank.org/wdr](http://www.worldbank.org/wdr)  
World Development Indicators: [www.worldbank.org/data](http://www.worldbank.org/data)

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<sup>7</sup> Source: *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).

**Theme 1: Poverty**

**Sub-Theme: Income Poverty**

**Indicator 2: Proportion of Population below International Poverty Line (\$1 and/or \$2)**

PROPORTION OF POPULATION BELOW 1 \$ A DAY		
Core indicator	Income poverty	Poverty

**1. INDICATOR**

**(a) Name:** Proportion of population below 1 \$ day, also known as poverty rate at \$1 a day.

**(b) Brief Definition:** The poverty rate at \$1 a day is the proportion of the population having per capita consumption of less than \$1.08 a day, measured at 1993 international prices.

**(c) Unit of Measurement:** Percentage

**(d) Placement in the CSD Indicator Set:** Poverty/Income poverty

**2. POLICY RELEVANCE**

**(a) Purpose:** Progress against absolute poverty is now a widely accepted yardstick for assessing the overall performance of developing economies. The population below \$1 a day provides a uniform measure of absolute poverty for the developing world, using data from nationally representative household surveys. This indicator is used for monitoring progress towards the achievement of Goal 1 of the Millennium Development Goals - to eradicate extreme poverty and hunger.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Poverty reduction is one of the key goals of the international community's sustainable development strategy. Many countries give priority to poverty reduction in their national strategies of economic development. Measuring and monitoring the current level as well as the trend in poverty rates provides useful information for the policy makers, the international development agencies and the donor community to plan and implement pro-poor growth strategies and ultimately contributes to the betterment of human lives across the globe. Moreover, poverty statistics are important for analyzing the relationship of income or consumption poverty to other dimensions of human

development such as education, health, labor skills and other measures of living standards.

**(c) International Conventions and Agreements:** None.

**(d) International Targets/Recommended Standards:** Goal 1 Target 1 of the Millennium Development Goals sets a goal of reducing by half the rate of extreme poverty between 1990 and 2015.

**(e) Linkages to Other Indicators:** This indicator is closely linked with other measures of human development (education attainment, literacy, health status, mortality etc) and economic development.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** The population below \$1 a day measures poverty by the level of consumption (or, in some case, income) available to an individual. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line." What is necessary to satisfy basic needs varies across time and societies. Therefore, poverty lines vary in time and place, and each country uses lines that are appropriate to its level of development, societal norms, and values.<sup>8</sup> when estimating poverty worldwide, a uniform poverty line has to be used and expressed in a common unit across countries. Therefore, for the purposes of global aggregation and comparison, the World Bank uses poverty lines set at \$1 and \$2 per day the Poverty is set at an income of \$2 a day or less, and extreme poverty is set at \$1 a day or less. This line was first created in 1990 when the World Bank published its World Development Report and found that most developing countries set their poverty lines at \$1 a day (more precisely \$1.08 and \$2.15 in 1993 Purchasing Power Parity terms).<sup>9</sup>

**(b) Measurement Methods:** Information on consumption and income is obtained through sample surveys in which households are asked to answer detailed questions on their spending habits and sources of income. Individual income or consumption levels are calculated as averages of total household income or consumption. In some cases, an "effective" household size is calculated from the actual household size to reflect assumed efficiencies in consumption; adjustments may also be made to reflect the number of children in a household. However, the World Bank's preferred methodology is to make no such adjustments.

Poverty measures based on an international poverty line attempt to hold the real value of the poverty line constant across countries, as is done when making comparisons over

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<sup>8</sup> For further discussion on poverty lines, refer to *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

<sup>9</sup> Source: The World Bank website: [www.worldbank.org/poverty](http://www.worldbank.org/poverty).

time. The \$1-a-day standard, measured in 1985 prices and adjusted to local currency using purchasing power parities (PPPs), was chosen for the World Bank's World Development Report 1990: Poverty, because it is typical of the poverty lines in low-income countries. Early editions of World Development Indicators used PPPs from the Penn World Tables. Recent editions use 1993 consumption PPP estimates produced by the World Bank. Recalculated in 1993 PPP terms, the original international poverty line of \$1 a day in 1985 PPP terms is now about \$1.08 a day. The 2005 round of the International Comparison Program will provide new consumption PPPs in the coming year.

**(c) Limitations of the Indicator:** International comparisons of poverty estimates entail both conceptual and practical problems. A key building block in developing income and consumption measures of poverty is the poverty line—the critical cutoff in income or consumption below which an individual or household is determined to be poor. Countries have different definitions of poverty, and consistent comparisons across countries can be difficult. Local poverty lines tend to have higher purchasing power in rich countries, where more generous standards are used, than in poor countries. The internationally comparable lines are useful for producing global aggregates of poverty. In principle, they test for the ability to purchase a basket of commodities that is roughly similar across the world. But such a universal line is generally not suitable for the analysis of poverty within a country. For that purpose, a country-specific poverty line needs to be constructed, reflecting the country's economic and social circumstances. Similarly, the poverty line may need to be adjusted for different locations (such as urban and rural areas) within the country, if prices or access to goods and services differs.

The international poverty line uses 1993 consumption PPP estimates produced by the World Bank. Any revisions in the PPP of a country to incorporate better price indexes can produce dramatically different poverty lines in local currency. PPP exchange rates, such as those from the Penn World Tables or the World Bank, are used because they take into account the local prices of goods and services not traded internationally. But PPP rates were designed for comparing aggregates from national accounts, not for making international poverty comparisons. As a result, there is no certainty that an international poverty line measures the same degree of need or deprivation across countries.<sup>10</sup>

The national poverty rate is a “headcount” measure, which is by far the most commonly calculated measure of poverty. But it has decided disadvantages. It fails to reflect the fact that among poor people there may be wide differences in income levels, with some people located just below the poverty line and others experiencing far greater shortfalls. Policymakers seeking to make the largest possible impact on the headcount measure might be tempted to direct their poverty alleviation resources to those closest to the

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<sup>10</sup> For further details, refer to the *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).

poverty line (and therefore least poor).<sup>11</sup>

Lastly, this indicator measures income/consumption based poverty and does not take into account other dimensions of poverty such as inequality, vulnerability, and lack of voice and power of the poor.<sup>12</sup>

**(d) Status of Methodology:** The methodology is generally well developed.

**(e) Alternative Definitions/Indicators:** There are other useful indicators of measuring poverty: the poverty gap at international poverty line, which takes into account the distance of poor people from the 1\$ a day poverty line; and the squared-poverty gap, which take into account the degree of income inequality among poor people.<sup>13</sup> Moreover, quantitative methods of measuring income/consumption poverty are increasingly being complemented by participatory methods, in which people are asked what their basic needs are and what poverty means for them. Moreover, quantitative methods of measuring income/consumption poverty are increasingly being complemented by participatory methods, where people are asked what their basic needs are and whether such needs are met. Interestingly, new research shows a high degree of concordance between poverty lines based on objective and subjective assessments of needs.<sup>14</sup>

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Poverty estimates are calculated from nationally representative household surveys. Another important indicator need for estimating absolute poverty is the consumption Purchasing Power Parity (PPP) rate.

**(b) National and International Data Availability and Sources:** The World Bank produced its first global poverty estimates for developing countries for World Development Report 1990 using household survey data for 22 countries (Ravallion, Datt, and van de Walle 1991). Incorporating survey data collected during the last 17 years, the database has expanded considerably and now includes more than 550 surveys representing about 100 developing countries. Some 1.1 million randomly sampled households were interviewed in these surveys, representing 93 percent of the population of developing countries. The surveys asked detailed questions on sources of income and how it was spent and on other household characteristics such as the number of people sharing that income. Most interviews were conducted by staff of government statistics offices. Along with improvements in data coverage and quality, the underlying

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<sup>11</sup> More information is available at the World Bank's website: [www.worldbank.org/poverty](http://www.worldbank.org/poverty).

<sup>12</sup> For further discussions on different dimensions of poverty, refer to *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

<sup>13</sup> Source: *World Development Report 2000/2001: Attacking Poverty*, The World Bank (2000).

<sup>14</sup> Source: *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).

methodology has also improved, resulting in better and more comprehensive estimates. In the last 25 years there has been enormous progress in designing, implementing and processing such surveys for developing countries – thanks in large part to the efforts of national statistics agencies throughout the world, and the support of the donor community and international development agencies. Purchasing power parity (PPP) rates are calculated by the World Bank using price data from International Comparison Program.

The problems of estimating poverty and comparing poverty rates do not end with data availability. Several other issues, some related to data quality, also arise in measuring household living standards from survey data. One relates to the choice of income or consumption as a welfare indicator. Income is generally more difficult to measure accurately, and consumption comes closer to the notion of standard of living. And income can vary over time even if the standard of living does not. But consumption data are not always available. Another issue is that household surveys can differ widely, for example, in the number of consumer goods they identify. And even similar surveys may not be strictly comparable because of differences in timing or the quality and training of survey enumerators. Comparisons of countries at different levels of development also pose a potential problem because of differences in the relative importance of consumption of nonmarket goods. The local market value of all consumption in kind (including own production, particularly important in underdeveloped rural economies) should be included in total consumption expenditure. Similarly, imputed profit from the production of nonmarket goods should be included in income. This is not always done, though such omissions were a far bigger problem in surveys before the 1980s. Most survey data now include valuations for consumption or income from own production. Nonetheless, valuation methods vary. For example, some surveys use the price in the nearest market, while others use the average farmgate selling price. Whenever possible, The World Bank uses consumption data in deciding who is poor and income surveys only when consumption data are unavailable.<sup>15</sup>

(c) **Data References:** Data on global poverty is included in the World Development Indicators (WDI) publications and WDI Online database of the World Bank, see <http://go.worldbank.org/3JU2HA60D0> and <http://go.worldbank.org/6HAYAHG8H0>

The World Bank Research Group compiles and maintains a Global Poverty Monitoring Database: <http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp>.

Global Monitoring Reports (GMR) also publishes data on global poverty, see <http://go.worldbank.org/UVQMEYED00>.

The UN Millennium Development Goals website also contain data on global poverty: <http://www.un.org/millenniumgoals/>

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

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<sup>15</sup> For further details, refer to the *About the data* section of the Table 2.6 in *World Development Indicators 2007*, The World Bank (2007).



(c) **Lead Agency:** The lead agency is the World Bank. The contact point is Data Help Desk: [data@worldbank.org](mailto:data@worldbank.org)

(d) **Other Contributing Organizations:**

## **6. REFERENCES**

### **(a) Readings:**

The World Bank, World Development Report 1990, 2000-2001, and 2006 editions

The World Bank, World Development Indicators, various years

The World Bank, Global Monitoring Report, various editions

Shaohua Chen and Martin Ravallion, "How Have the World's Poorest Fare since the early 1980s?", The World Bank Research Observer, Vol. 19. No. 2, 2004

Shaohua Chen and Martin Ravallion, "Absolute Poverty Measures for the Developing World, 1981-2004", 2007

### **(b) Internet site:**

The World Bank: [www.worldbank.org/poverty](http://www.worldbank.org/poverty)

PovcalNet: <http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp>

World Development Reports: [www.worldbank.org/wdr](http://www.worldbank.org/wdr)

World Development Indicators: [www.worldbank.org/data](http://www.worldbank.org/data)

Global Monitoring Reports: <http://go.worldbank.org/UVQMEYED00>

The UN Millennium Development Goals website: <http://www.un.org/millenniumgoals>

**Theme 1: Poverty**

**Sub-Theme: Income inequality**

**Indicator 3: Ratio of Share in National Income of Highest to Lowest Quintile.**

RATIO OF SHARE IN NATIONAL INCOME OF HIGHEST TO LOWEST QUINTILE		
Core indicator	Inequality	Poverty

**1. INDICATOR**

**(a) Name:** Ratio of share in national income or consumption of highest to lowest quintile

**(b) Brief Definition:** Ratio of the share in national income (or consumption) accruing to the highest 20 percent of the population to the share accruing to the lowest 20 percent.

**(c) Unit of Measurement:** Dimensionless ratio, with higher values indicating a more unequal distribution of income or consumption.

**(d) Placement in the CSD Indicator Set:** Poverty/Inequality

**2. POLICY RELEVANCE**

**a) Purpose:** The indicator shows the extent of inequality in income distribution within a country.

**b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Inequality in outcomes such as income or consumption and inequality in opportunities hinder human development and are detrimental to long-term economic growth. Poor people generally have less voice, less income, and less access to services than wealthier people. When societies become more equitable in ways that lead to greater opportunities for all, the poor stand to benefit from a “double dividend.” Empirical studies suggest that the impact of growth on poverty reduction is greater when initial income inequality is lower.<sup>16</sup>

**c) International Conventions and Agreements:** None.

**d) International Targets/Recommended Standards:** None

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<sup>16</sup> For further discussions on correlation between growth, inequality and poverty, refer to the World Bank website: [www.worldbank.org/poverty](http://www.worldbank.org/poverty) and the *World Development Report 2006: Equity and Development*, The World Bank 2005.

**e) Linkages to Other Indicators:** This indicator is closely linked with other measures of poverty, inequality, human development and domestic economic development.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** The ratio of the share in national income (or consumption) of the highest to lowest quintile measures the extent of inequality between the tails of the distribution of income or consumption. The higher this ratio, the larger the share of the country's total income or consumption belonging to the richest quintile, compared to the poorest quintile.

**(b) Measurement Methods:** This indicator is constructed by dividing the income (or consumption) accruing to the richest quintile of population by the income (or consumption) accruing to the poorest quintile of population. Data on the distribution of income or consumption come from nationally representative household surveys. Where the original data from the household survey are available, they can be used to directly calculate the income or consumption shares by quintile. Otherwise, shares can be estimated from grouped data. The distribution data may be adjusted for household size, providing a more consistent measure of per capita income or consumption. Adjustments for spatial differences in the cost of living within countries are not made, because the data needed for such calculations are generally unavailable.

**(c) Limitations of the Indicator:** This ratio merely shows how much more the wealthiest quintile of the population earn or consume compared to the poorest quintile and does not provide a full picture of the income distribution. It does not convey information about the inequality among the poor. Also, this indicator does not assess non-income dimensions of inequality such as inequality in access to health, education, power and voice.<sup>17</sup>

**(d) Status of Methodology:** The methodology is generally well developed.

**(e) Alternative Definitions/Indicators:** Alternative indicators include: the Gini index which measures the extent to which the a distribution deviates from a uniform distribution; Generalized Entropy (or GE) indexes, which measures inequality by applying different weights to distances between observations at different parts of the distribution; Atkinson Coefficients, which explicitly consider society's preference for equality; Percentile Ratios (such as p80/p20, p90/p10 and p90/p50); and Relative Poverty Rates.

### **4. ASSESSMENT OF DATA**

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<sup>17</sup> For further discussions about non-income dimensions of inequality, refer to *World Development Report 2006: Equity and Development*, The World Bank 2005.

**(a) Data Needed to Compile the Indicator:** To calculate this ratio, data on the distribution of income or consumption from nationally representative household surveys is needed.

**(b) National and International Data Availability and Sources:** Data on the distribution of income or consumption come from nationally representative household surveys. Data coverage has been improving in most countries as more and better quality household income/expenditure surveys were fielded in the past two decades.<sup>18</sup>

Because the underlying household surveys differ in method and type of data collected, the distribution data are not strictly comparable across countries. These problems are diminishing as survey methods improve and become more standardized, but achieving strict comparability is still impossible. Two sources of non-comparability should be noted. First, surveys can differ in many respects, including whether they use income or consumption expenditure as the living standard indicator. The distribution of income is typically more unequal than the distribution of consumption. In addition, definitions of income differ more often among surveys. Consumption is usually a better welfare indicator, particularly in developing countries. Second, households differ in size (number of members) and in the extent of income sharing among members. And individuals differ in age and consumption needs. Differences among countries in these respects may bias comparisons of distribution.<sup>19</sup>

**(c) Data References:** Data on income distribution is included in the World Development Indicators (WDI) publications and WDI Online database of the World Bank, see <http://go.worldbank.org/3JU2HA60D0> and <http://go.worldbank.org/6HAYAHG8H0>. Data collection and analysis of income distribution for high income countries are conducted by the Luxembourg Income Study (<http://www.lisproject.org/>) and maintained in Luxembourg Income Study database.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Bank. The contact point is Data Help Desk: [data@worldbank.org](mailto:data@worldbank.org)

**(b) Other Contributing Organizations:** Luxembourg Income Study (<http://www.lisproject.org/>)

## **6. REFERENCES**

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<sup>18</sup> More information on data availability and quality can be found in the *About the data* sections of Table 2.6 and Table 2.7 of *World Development Indicators 2007*, The World Bank, 2007.

<sup>19</sup> For further discussions refer to the *About the data* section of Table 2.7 in *World Development Indicators 2007*, World Bank, 2007.

**(a) Readings:**

The World Bank, World Development Report 1990, 2000-2001, 2004 and 2006 editions

The World Bank, World Development Indicators, various years

Atkinson, A. B., L. Rainwater, and T. M. Smeeding. 1995. Income Distribution in OECD Countries: Evidence from the Luxembourg Income Study (LIS). Paris: OECD.

Barro, R. (2000). "Inequality and Growth in a Panel of Countries", Journal of Economic Growth, 5.

Chen, S. and M. Ravallion (1997), "What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty?" The World Bank Economic Review, 11(2).

Deninger, K. and L. Squire (1996). "A New Data Set Measuring Income Inequality." The World Bank Economic Review, 10(3).

**(b) Internet site:**

The World Bank: [www.worldbank.org/poverty](http://www.worldbank.org/poverty)

PovcalNet: <http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp>

World Development Reports: [www.worldbank.org/wdr](http://www.worldbank.org/wdr)

World Development Indicators: [www.worldbank.org/data](http://www.worldbank.org/data)

Luxembourg Income Study <http://www.lisproject.org/>

**Theme 1: Poverty**

**Sub-Theme: Sanitation**

**Indicator 4: Proportion of Population with Access to Improved Sanitation, Urban and Rural**

PROPORTION OF POPULATION USING IMPROVED SANITATION FACILITIES		
Core indicator	Sanitation	Poverty/Health

**1. INDICATOR**

**(a) Name:** Proportion of population using improved sanitation facilities, urban and rural.

**(b) Brief Definition:** Proportion of population that is regularly using a private sanitary facility for human excreta disposal in the dwelling or immediate vicinity.

**(c) Unit of Measurement:** %.

**(d) Placement in the CSD Indicator Set:** Health/Sanitation.

**2. POLICY RELEVANCE**

**(a) Purpose:** To monitor progress in the accessibility of the population to sanitation facilities.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** This represents a basic indicator useful for assessing sustainable development, especially human health. Accessibility to adequate excreta disposal facilities is fundamental to decrease the faecal risk and the frequency of associated diseases. Its association with other socioeconomic characteristics (education, income) and its contribution to general hygiene and quality of life also make it a good universal indicator of human development. When broken down by geographic (such as rural/urban zones) or social or economic criteria, it also provides tangible evidence of inequities.

**(c) International Conventions and Agreements:** Agenda 21 UNCED (1992) indicates the need for universal coverage and the Second World Water Forum and Ministerial Conference, The Hague, March 2000 established the target of universal coverage by the year 2025, the Millennium Summit, 2000, established the target of halving the proportion of un served by 2015.

**(d) International Targets/Recommended Standards:** International targets for this indicator have been established according to different international events (see above).

**(e) Linkages to Other Indicators:** The indicator is closely associated with other socioeconomic indicators (see section 2(b) above), particularly the proportion of population with access to improved water sources. The indicator represents two of the eight elements of primary health care and is one of the targets of the Millennium Development Goals.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Definitions for sanitary facility:

i) Sanitary facility: "A sanitary facility is a unit for disposal of human excreta which isolates faeces from contact with people, animals, crops and water sources. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. All facilities, to be effective, must be private, correctly constructed and properly maintained".

ii) Population covered: This includes the urban and rural population served by improved sanitation facilities including connections to public sewers, pit privies, pour-flush latrines, septic tank, ventilated improved latrines, latrines with slabs, etc.)

**(b) Measurement Methods:** This indicator may be calculated as follows: The numerator is the number of people with improved excreta-disposal facilities available multiplied by 100. The denominator is the total population.

**(c) Limitations of the Indicator:** The indicator uses a proxy to adequate sanitation facilities as it is not possible at the current stage to define precisely the proportion of population with sanitary facilities strictly according to the conceptual definitions above.

**(d) Status of the Methodology:** The estimates of access to improved sanitation facilities are obtained from the use of existing sample household surveys such as DHS, MICS and national population censuses. Trend lines of urban and rural coverage are build up, which provide estimates for relevant years as required (the last estimates were carried out in 2004 referring to coverage figures for 1990 and 2002).

**(e) Alternative Definitions/Indicators:** An additional indicator dealing with access to toilet facilities flushing to sewerage systems might be relevant. The population that must be used in the numerator is the number of people with access to these facilities.

### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The number of people with access to improved excreta disposal facilities, and the total population.

**(b) National and International Data Availability and Sources:** Routinely collected at the national and sub-national levels in most countries using censuses and surveys. Household surveys used by the JMP include: USAID supported Demographic and

Health Surveys (DHS); UNICEF supported Multiple Indicator Cluster Surveys (MICS); national census reports; WHO supported World Health Surveys; and other reliable country surveys that allow data to be compared.

**(c) Data References:** International data is included in the MDG data base maintained by the United Nations Statistics Division as well as in the World Health Statistics published by WHO.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agencies are the World Health Organization (WHO) and UNICEF through the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP). The contact point is the Coordinator, Water, Sanitation and Health, WHO or the Unit Chief WES at UNICEF.

**(b) Other Contributing Organizations:** Members of the JMP Technical Advisory Group including individual experts from academic institutions and civil society, plus representatives of organizations involved in both water and sanitation and data collection, including UN-Habitat, ORC Macro International, United Nations Environment Programme, the Environmental Health Project of the United States Agency for International Development, the World Bank, the Water Supply and Sanitation Collaborative Council and the Millennium Project.

## **6. REFERENCES**

### **(a) Readings:**

World Health Organization, Development of Indicators for Monitoring Progress Towards Health for All by the Year 2000. Geneva, WHO, 1981, p. 29.

World Health Organization, Global Strategy for Health for All by the Year 2000. Geneva, WHO, 1981.

World Health Organization. National and Global Monitoring of Water Supply and Sanitation. CWS Series of Cooperative Action for the Decade, No. 2, 1982.

World Health Organization. Water Supply and Sanitation Sector Monitoring Report (WSSMR), 1990.

World Health Organization, Ninth General Programme of Work Covering the Period 1996-2001. Geneva, WHO, 1994.

World Health Organization and UNICEF, Meeting the MDG drinking water and sanitation target: the urban and rural challenge of the decade. Geneva, WHO, 2006

### **(b) Internet site:**

World Health Statistics: <http://www.who.int/whosis/en/index.html>

Water, Sanitation and Health: [http://www.who.int/water\\_sanitation\\_health/en/](http://www.who.int/water_sanitation_health/en/)

MDG Indicators: <http://mdgs.un.org/unsd/mdg/Default.aspx>



**Theme 1: Poverty**

**Sub-Theme: Drinking Water**

**Indicator 5: Proportion of Population with Access to Safe Drinking Water**

PROPORTION OF POPULATION USING AN IMPROVED WATER SOURCE		
Core indicator	Drinking Water	Poverty/Health

**1. INDICATOR**

**(a) Name:** Proportion of population using an improved water source, urban and rural.

**(b) Brief Definition:** Proportion of population with access to an improved drinking water source in a dwelling or located within a convenient distance from the user's dwelling.

**(c) Unit of Measurement:** %.

**(d) Placement in the CSD Indicator Set:** Poverty/Drinking Water.

**2. POLICY RELEVANCE**

**(a) Purpose:** To monitor progress in the accessibility of the population to improved water sources.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Accessibility to improved water sources is of fundamental significance to lowering the fecal risk and frequency of associated diseases. Its association with other socioeconomic characteristics, including education and income, makes it a good universal indicator of human development. When broken down by geographic (such as rural/urban zones), or social or economic criteria, it provides useful information on equity issues.

**(c) International Conventions and Agreements:** Agenda 21 of UNCED (1992) indicates the need for universal coverage and the Second World Water Forum and Ministerial Conference, The Hague, March 2000 established the target of universal coverage by the year 2025, the Millennium Summit, 2000, established the target of halving the proportion of un served by 2015.

**(d) International Targets/Recommended Standards:** International targets for this indicator have been established according to different international events (see above).

**(e) Linkages to Other Indicators:** This indicator is closely associated with other

socioeconomic indicators on the proportion of people covered by adequate sanitation. These indicators are among the eight elements of primary health care and are one of the targets of the Millennium Development Goals. It also has close links to other water indicators such as withdrawals, reserves, consumption, or quality. (See section 2(b) above.)

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** This indicator requires definitions for several elements.

i) Population covered: This includes urban and rural population served by house connections, or without house connections but with reasonable access to other sources.

ii) Reasonable access to water: not more than 1000 meters from a house to a public stand post or any other improved drinking water source providing at least 20 liters per capita per day may be considered reasonable access.

iii) Minimum amount of water: The amount of water needed to satisfy metabolic, hygienic, and domestic requirements. This is usually defined as twenty liters of safe water per person per day.

iv) Safe water: The water does not contain biological or chemical agents at concentration levels directly detrimental to health according to WHO's guidelines for drinking water quality or national standards of water quality. It is likely that treated surface waters, and water such as that from protected boreholes, springs, and sanitary wells are safe. Untreated surface waters, such as streams and lakes, should be considered safe only if the water quality is regularly monitored and considered acceptable by public health officials. Water from unimproved sources is likely to be unsafe.

**(b) Measurement Methods:** This indicator may be calculated as follows: The numerator is the number of persons with sustainable access to an improved drinking water source located within a convenient distance from the user's dwelling multiplied by 100. The denominator is the total population.

**(c) Limitations of the Indicator:** The existence of a water outlet within reasonable distance is often used as a proxy for availability of safe water. The existence of a water outlet, however, is no guarantee in itself that water will always be available or safe, or that people always use such sources.

**(d) Status of the Methodology:** The estimates of access to improved drinking water facilities are obtained from the use of existing sample household surveys such as DHS, MICS and national censuses. Trend lines of urban and rural coverage are build up, which provide estimates for relevant years as required (the last estimates were carried out in 2004 referring to coverage figures for 1990 and 2002).

**(e) Alternative Definitions/Indicators:** An additional indicator expressed as the percent of population with access to household connections from a public piped distribution

system would be very relevant.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The number of people with access to improved water sources, and the total population. Data on the source of water, for example, house tap or yard pipe, would provide additional meaning to this indicator.

**(b) National and International Data Availability and Sources:** Routinely collected at the national and sub-national levels in most countries using censuses and surveys. Household surveys used by the JMP include: USAID supported Demographic and Health Surveys (DHS); UNICEF supported Multiple Indicator Cluster Surveys (MICS); national census reports; WHO supported World Health Surveys; and other reliable country surveys that allow data to be compared.

**(c) Data References:** International data is included in the MDG database maintained by the United Nations Statistics Division as well as in the World Health Statistics published by WHO.

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agencies are the World Health Organization (WHO) and UNICEF through the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP). The contact point is the Coordinator, Water, Sanitation and Health, WHO or the Unit Chief WES at UNICEF

**(b) Other Contributing Organizations:** Members of the JMP Technical Advisory Group including individual experts from academic institutions and civil society, plus representatives of organizations involved in both water and sanitation and data collection, including UN-Habitat, ORC Macro International, United Nations Environment Programme, the Environmental Health Project of the United States Agency for International Development, the World Bank, the Water Supply and Sanitation Collaborative Council and the Millennium Project.

#### **6. REFERENCES**

**(a) Readings:**

World Health Organization, Global Strategy for Health for All by the Year 2000. Geneva, WHO, 1981.

World Health Organization, Development of Indicators for Monitoring Progress Towards Health for All by the Year 2000. Geneva, WHO, 1981, p. 40.

World Health Organization. National and Global Monitoring of Water Supply and Sanitation. CWS Series of Cooperative Action for the Decade, No. 2, 1982.

World Health Organization. Water Supply and Sanitation Sector Monitoring Report (WSSMR), 1990.

World Health Organization, Ninth General Programme of Work Covering the Period 1996-2001. Geneva, WHO, 1994.

World Health Organization, Guidelines for Drinking-Water Quality, third edition. Geneva, WHO, 2004

World Health Organization and UNICEF, Meeting the MDG drinking water and sanitation target: the urban and rural challenge of the decade. Geneva, WHO, 2006

**(b) Internet site:**

World Health Statistics: <http://www.who.int/whosis/en/index.html>

Water, Sanitation and Health: [http://www.who.int/water\\_sanitation\\_health/en/](http://www.who.int/water_sanitation_health/en/)

MDG Indicators: <http://mdgs.un.org/unsd/mdg/Default.aspx>

**Theme 1: Poverty**

**Sub-Theme: Access to Energy**

**Indicator 6: Share of Households without Access to Electricity or Commercial Energy**

SHARE OF HOUSEHOLDS WITHOUT ELECTRICITY OR OTHER MODERN ENERGY SERVICES		
Core indicator	Access to energy	Poverty

**1. INDICATOR**

**(a) Name:** Share of households without electricity or other modern energy services

**(b) Brief Definition:** Share of households with no access to commercial energy services including electricity, or heavily dependent on 'traditional' non-commercial energy options, such as fuel wood, charcoal, agricultural wastes and animal dung

**(c) Units of Measurement:** Percentage

**(d) Placement in the CSD Indicator Set:** Poverty/ Access to energy

**2. POLICY RELEVANCE**

**(a) Purpose:** To monitor progress in accessibility and affordability of modern energy services including electricity.

**(b) Relevance to Sustainable Development:** Modern energy services are an essential component of providing adequate food, shelter, water, sanitation, medical care, education and access to communication. Lack of access to modern energy services contributes to poverty and deprivation and limits economic development. Furthermore, adequate, affordable and reliable energy services are necessary to guarantee sustainable economic and human development.

It is estimated that 2.5 billion people, or about one-third of the world's population, depend mainly on traditional biomass sources of energy; 1.6 billion are without electricity. About 300 million people have been connected to electricity grids or have been provided with modern biomass or other forms of commercial energy options since 1993. However, in the absence of adequate measures, the number of people with no access to modern energy services will remain stable or continue to grow as demographic growth outpaces electrification in some parts of the world.

**(c) International Conventions and Agreements:** None.

**(d) International Targets/Recommended Standards:** The Johannesburg Plan of Implementation (JPOI) of the World Summit on Sustainable Development held in 2002 includes the aim of improving access to reliable and affordable energy services. The JPOI also includes the commitment to support Africa's efforts to implement the New Partnership for Africa's Development (NEPAD) objectives on energy, which seek to secure access for at least 35 per cent of the African population within 20 years, especially in rural areas.

**(e) Linkages to Other Indicators:** This indicator is linked to the use of traditional fuels, to energy prices and to several indicators of the social dimension, such as income inequality, share of household income spent on fuel and electricity, energy use relative to income level, urbanization, etc. The indicator might indirectly reflect a related use of forest resources as fuel wood, which in turn could cause deforestation.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Consumption of traditional fuels refers to the consumption of fuel wood, charcoal, agricultural wastes and animal dung. Total household energy use might comprise modern (commercial) energy as well as traditional (non-commercial) fuels.

Households choose among energy options on the basis of fuel accessibility and affordability, the household's socioeconomic characteristics and attitudes, and the attributes of the different fuels. Lack of access to modern energy services implies unsatisfied energy requirements or the use of traditional fuels. If electricity and other commercial fuels are available, income is the main characteristic that appears to influence a household's choice of fuel. Different income groups use different fuels, and the poor in many developing countries to a great extent meet their energy demand using traditional biomass fuels, either because of a lack of access to commercial energy services or because of limited disposable income. National shares of traditional fuel in total energy use do not accurately reflect this indicator, as the average figures may strongly differ from corresponding figures for each income group of the population. Therefore, the preferred indicator is the percentage of households or population with no access to modern commercial energy options, or heavily dependent on 'traditional' non-commercial energy options, such as fuel wood, agricultural wastes and animal dung.

**(b) Measuring Methods:** This indicator is defined by the share of households without access to modern energy or electricity and by the share of households that are heavily dependent on 'traditional' non-commercial energy options. Where possible, the share of households without access to electricity should be calculated separately from the share of households that rely on traditional fuels as their primary energy option for cooking and heating. The indicators should be calculated for both urban and rural households where this is relevant.

**(c) Limitations of the Indicators:** Availability of current and historic data may be a limitation. Heavy dependence on non-commercial energy is defined as relying on traditional fuels as the primary energy option for cooking and heating and is subject to interpretation. The 'access to electricity' could reflect different concepts, like the exact physical access to electricity (connectivity to the grid) or the financial access to electricity (ability to pay the electricity bill).

**(d) Alternative Definitions/Indicators:** An alternative indicator that may be useful is 'Per capita consumption of non-commercial or traditional energy'. However, this does not really capture the essence of the issue. Population rather than households could be used as reference in calculating this indicator.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The number of urban and rural households without access to electricity, those urban and rural households that are heavily dependent on traditional fuels, and the total number of urban and rural households in a specific country or a region.

**(b) National and International Data Availability and Sources:** The most important source of data on commercial and traditional fuel and electricity consumption is household surveys. The results of these surveys can be obtained from reports published by government statistical agencies. About two-thirds of the developing countries have conducted sample household surveys that are representative nationally, and some of these provide high-quality data on living standards. International agencies such as the United Nations Children's Fund (UNICEF) also carry out their own surveys of households.

Data on household fuel and electricity consumption by average population are available from the International Energy Agency (IEA) Energy Balances of OECD Countries and Energy Balances of Non-OECD Countries.

The United Nations Regional Commissions for Asia and the Pacific (ESCAP) and for Latin America and the Caribbean (ECLAC) publish data on access to electricity in their member countries in their electricity surveys (ESCAP) and statistical yearbooks (ECLAC).

#### **(c) Data references**

IEA: <http://www.iea.org/Textbase/stats/prodresult.asp?PRODUCT=Balances>

ESCAP: <http://www.unescap.org/esd/energy/information/electricpower/>

ECLAC: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agencies:** The International Energy Agency (IEA) is the lead agency.

**(b) Other contributing organizations:** International Atomic Energy Agency.

## **6. REFERENCES**

Chen, S., Datt, G., Ravallion, M., 1992. POVCAL: A Program for Calculating Poverty Measures from Grouped Data. Washington DC, USA: World Bank, Poverty and Human Resources Division, Policy Research Department.

IAEA, UN DESA, IEA, EUROSTAT and EEA, 2005. Energy indicators for sustainable development: guidelines and methodologies. Vienna, Austria: International Atomic Energy Agency.

IAEA and UN DESA, 2007. Energy Indicators for sustainable development: country studies on Brazil, Cuba, Lithuania, Mexico, Russian Federation and Thailand. New York, USA: United Nations.

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UNICEF. MICS Household Surveys. New York, USA: United Nations Children's Fund. Available at <http://www.childinfo.org>.

UNSD, 1991. Energy Statistics: A Manual for Developing Countries. New York, USA: United Nations Statistics Division.

WEC, 2000. Energy for Tomorrow's World – Acting Now. London, UK: World Energy Council.

World Bank, various editions. World Development Indicators. Published annually. Washington DC, USA: World Bank.



**Theme 1: Poverty**  
**Sub-Theme: Living conditions**  
**Indicator 7: Proportion of Population living in Slums**

PROPORTION OF URBAN POPULATION LIVING IN SLUMS		
Core indicator	Living conditions	Poverty

**1. INDICATOR**

**(a) Name:** Proportion of urban population living in slums

**(b) Brief Definition:** The proportion of urban population lacking at least one of the following five housing conditions: Access to improved water; Access to improved sanitation facilities; Sufficient-living area, not overcrowded; Structural quality/durability of dwellings; Security of tenure.

**(c) Unit of Measurement:** Percentage.

**(d) Placement in the CSD Indicator Set:** Poverty/Living conditions

**2. POLICY RELEVANCE**

**(a) Purpose:** This indicator measures the proportion of urban dwellers living in deprived housing conditions. It is a key indicator measuring the adequacy of the basic human need for shelter. An increase of this indicator is sign for deteriorating living conditions in urban areas.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Overcrowding, inadequate housing, lack of water and sanitation are manifestations of poverty. They deprive residents from their human rights, are associated with certain categories of health risks and are often detriments to future development

**(c) International Conventions and Agreements:** to be added

**(d) International Targets/Recommended Standards:** MDG target 11: “By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers”

**(e) Linkages to Other Indicators:** This indicator is closely linked to the indicators on access to improved sanitation, access to safe drinking water, rate of growth of urban population, as well as to other socio-economic indicators.

**3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** The five housing conditions used for this indicator are defined as follows:

Access to improved water: A household is considered to have access to improved drinking water if it has sufficient amount of water for family use, at an affordable price, available to household members without being subject to extreme effort, especially to women and children. A sufficient amount is the availability of at least 20 liters/person/day. The following criteria are used to determine the access to improved water:

- Piped connection to house or plot
- Public stand pipe serving no more than 5 households
- Bore hole
- Protected dug well
- Protected spring
- Rain water collection
- distributed water
- Bottle water (new)

Access to improved sanitation: A household is considered to have access to improved sanitation, if an excreta disposal system, either in the form of a private toilet or a public toilet shared with a reasonable number of people, is available to household members. The following criteria are used to determine the access to improved sanitation:

- Direct connection to public sewer
- Direct connection to septic tank
- Poor flush latrine
- Ventilated improved pit latrine
- Pit latrine with slab (new)

Sufficient-living area, not overcrowded: A dwelling unit is considered to provide a sufficient living area for the household members if there are fewer than four people per habitable room. Additional indicators of overcrowding have been proposed: area-level indicators such as average in-house living area per person or the number of households per area; housing-unit level indicators such as the number of persons per bed or the number of children under five per room may also be viable. However, the number of persons per room has been shown to correlate with adverse health risks and is more commonly collected through household surveys. See UN-HABITAT (1998), "Crowding and Health in Low Income Settlements of Guinea Bissau", SIEP Occasional Series No.

Structural quality/durability of dwellings: A house is considered as 'durable' if it is built on a non-hazardous location and has a structure permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions such as rain, heat, cold, humidity. Durability of housing will manifest itself in various ways in different cities.

For example, in Nairobi a non-durable house may be made of a patchwork of tin, cardboard, plastic sheets; while in Moscow it could be a dilapidated condominium. Considerable variability in local definition is allowed. For the estimation procedure the durability of housing is measured by the building materials for the roof, walls and/or the floor. An earthen floor is an indicator of a slum dwelling.

The following criteria are used to determine the structural quality/durability of dwellings:

- Permanency of Structure
- Permanent building material for the walls, roof and floor
- Compliance of building codes
- The dwelling is not in a dilapidated state
- The dwelling is not in need of major repair
- Location of house (hazardous)
- The dwelling is not located on or near toxic waste
- The dwelling is not located in a flood plain
- The dwelling is not located on a steep slope
- The dwelling is not located in a dangerous right of way (rail, highway, airport, power lines).

Security of tenure: Secure Tenure is the right of all individuals and groups to effective protection by the State against arbitrary unlawful evictions. Secure tenure can be made evident through formal or informal mechanisms in codified law and in customary law. In its most formal presentation secure tenure is based on a cadastral system where title deeds or lease agreements are registered with the authorities. Less formal security of tenure is more commonly found. It is recognized that informal customary secure tenure practice may also offer effective protection against arbitrary eviction.

The following criteria are used to determine security of tenure:

- Evidence of documentation that can be used as proof of secure tenure status
- Either de facto or perceived / protection from forced evictions

**(b) Measurement Methods:** In principle, the indicator can easily be computed if data on all five conditions are contained in household surveys. UN Habitat has developed estimation methods for multiple data sources and missing data on certain attributes.

In the context of monitoring progress towards the MDG target “By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers”, the criterion of tenure security is excluded due to non-availability of internationally comparable data. The following hypothetical example shows the general estimation method used by UN Habitat for computing this indicator in the MDG context:

Cumulative Percent of Households	Indicator	Order of Estimation
20 %	Lack of improved water	Step 1
50 %	Lack of improved sanitation	Step 2 'OR'
60 %	Lack of sufficient living area	Step 3 'OR'
65 %	Lack of durable housing	Step 4 'OR'

The operation is a logical 'OR' condition. If any one, any combination of, or all of the indicator conditions are 'TRUE' then a household is counted only once as a slum dwelling. The TRUE condition means that the household lacks the attribute identified by the indicator. In practice, 'lack of improved sanitation' was the dominant feature identifying slum households.

**(c) Limitations of the Indicator:** The indicator does not cover the spatial dimension of slums. As the indicator cannot take into account how many and to which extent the five conditions of deprived housing are fulfilled, it cannot provide information on the severity of slum conditions.

**(d) Status of the Methodology:** Methodology is applied for monitoring the MDG indicator. Further work on the methodology is ongoing.

**(e) Alternative Definitions:** According to the situation in a specific city the basic definition of a household living in a slum may be locally adapted. For example, in Rio de Janeiro living area is insufficient for both the middle classes and the slum population and is not a good discriminator. It could either be omitted, or it could be formulated as two or more of the conditions such as overcrowding and durability of housing.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Data on number of households with access to improved water, access to improved sanitation, sufficient living area, structural quality/durability of dwellings and secure tenure as well as number of persons per household.

**(b) National and International Data Availability and Sources:** Data availability is general good for access to improved water and access to improved sanitation. For sufficient living area, structural quality/durability of dwellings the data availability is fair, whereas data on tenure security is not available in many countries. Primary data sources include household surveys such as DHS, MICS.

(c) **Data References:** International data is available on the MDG website <http://mdgs.un.org/unsd/mdg/>.

## **5. AGENCIES INVOLVED WITH THE DEVELOPMENT OF THE INDICATOR**

(a) **Lead Agency:** The lead agency is the United Nations Human Settlements Programme (UN-HABITAT).

(b) **Other Contributing Organizations:**

## **6. REFERENCES**

(a) **Readings:**

World Bank. Housing: Enabling Markets to Work. The World Bank, Washington D.C., 1993 (A World Bank Policy Paper).

UN-HABITAT. State of the World's Cities 2006/2007, UN-HABITAT, Nairobi, 2006.

UN-HABITAT. The Global Report on Human Settlements 2003: The Challenge of Slums, UN-HABITAT, Nairobi, 2003.

UN-HABITAT. Improving the lives of 100 Million Slum Dwellers: Guide to Monitoring Target 11, UN-HABITAT, Nairobi, 2003.

UN-HABITAT Global Urban Indicators Database, UN-HABITAT, Nairobi, 2002

(b) **Internet site:**

UN Habitat website: <http://www.unhabitat.org/>

MDG website of the United Nations Statistics Division:  
<http://mdgs.un.org/unsd/mdg/Default.aspx>.

## Theme 2: Governance

<b>SUB THEME/ ISSUE</b>	<b>Indicators</b>
<b>Good Governance</b>	Percentage of population having paid bribes
<b>Crime</b>	Number of Recorded Violent Crimes and Homicides Per 100,000 Population

Theme 2: Governance  
Sub-Theme: Good Governance  
Indicator 1: Percentage of population having paid bribes

PERCENTAGE OF POPULATION HAVING PAID BRIBES		
Core indicator	Corruption	Governance

### **1. Indicator**

- (a) **Name:** Percentage of population having paid bribes
- (b) **Brief definition:** Individuals/households having been asked or having complied to expectation by government officials to pay a bribe for his or her services.
- (c) **Unit of measurement:** Proportion of individuals/households having been asked or having complied to expectation by government officials to pay a bribe for his/her services of the population at a given point in time.
- (d) **Placement in the CSD indicator set:** Governance/Corruption

### **2. POLICY RELEVANCE**

- (a) **Purpose:** The states parties to the United Nations Convention against Corruption have agreed to:
- Promote and strengthen measures to prevent and combat corruption more efficiently and effectively
  - To promote, facilitate and support international cooperation and technical assistance in the prevention of and fight against corruption, including asset recovery
  - To promote integrity, accountability and proper management of public affairs and public property.
  - To adopt such legislative and other measures as may be necessary to establish as criminal offences, when committed intentionally:

(a) The promise, offering or giving, to a public official, directly or indirectly, of an undue advantage, for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties;

(b) The solicitation or acceptance by a public official, directly or indirectly, of an undue advantage, for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme).**

The completion and signing of the UN Convention against Corruption in 2003 represented a major step forward in building effective responses against corruption. An analysis of the relationship between crime and development suggests that poorer countries, in particular those affected by ethnic strife, armed conflict, violence or instability, may be more vulnerable than others to corruption. The vicious circle is completed by the fact that such countries not only are vulnerable, but also have limited capacity to respond to corruption effectively.<sup>20</sup>

**(c) International conventions and agreements:**

By its resolution 58/4 of 31 October 2003,<sup>21</sup> the General Assembly adopted the United Nations Convention against Corruption. It was opened to all States for signature from 9 to 11 December 2003 in Merida, Mexico. In accordance with article 68 (1) of the aforementioned resolution, the United Nations Convention against Corruption entered into force on 14 December 2005.

Pursuant to article 63 of the Convention, a Conference of the States Parties to the Convention is established to improve the capacity of and cooperation between States Parties to achieve the objectives set forth in this Convention and to promote and review its implementation.

**(d) International Targets/Recommended Standards: None**

**(e) Linkages to Other Indicators:** This indicator is linked to other governance indicators (e.g. rule of law, e-governance), indicators of poverty and income disparities (e.g., percent of population living below poverty line, unemployment rate, Gini index of income inequality), population change as well as those on economic performance.

### **3. Methodological description**

**(a) Underlying Definition and Concepts.** Individuals/households having been asked or having complied to expectation by government officials to pay a bribe for his/her services. As defined by the UNCAC, public official shall mean (i) any person holding a legislative, executive, administrative or judicial office of a State Party, whether appointed or elected, whether permanent or temporary, whether paid or unpaid, irrespective of that person's seniority; (ii) any other person who performs a public function, including for a public agency or public enterprise, or provides a public service, as defined in the domestic law of the State Party and as applied in the pertinent area of law of that State Party; (iii) any other person defined as a "public official" in the domestic law of a State Party or who performs a public function or provides a public service as defined in the domestic law of the State Party and as applied in the pertinent area of law of that State Party.

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<sup>20</sup> United Nations, The State of Crime and Criminal Justice Worldwide, Report of the Secretary-General, Eleventh United Nations Congress on Crime Prevention and Criminal Justice, Bangkok, 18-25 April 2005.

<sup>21</sup> Assembly resolution 58/4 of 31 October 2003.



**(b) Measurement methods:**

Over the past few decades, the advent of victim surveys has facilitated a broader understanding of the crime problem as well as a better assessment of its burden on citizens at the international level. While in the past only police and criminal justice data were used to measure crime, it is now widely acknowledged that such information alone is not sufficient and should be integrated with victim surveys results. Surveys of victims of crime are a more comparable tool to assess risks across countries and world regions. More than 150 surveys have been done with comparable methodology in over 80 different countries since 1989.

**(c) Limitations of the indicator:** Response rate, Availability of data trends, Cultural barriers, and Level of tolerance of corruption in the society

**(d) Status of the methodology:**

**(e) Alternative definitions:** Perception of corruption by businesses. Sources: Crime and Corruption Business Survey, UNODC. Corruption Perception Index, Transparency International. BEEPS, World Bank.

#### **4. Assessment of Data**

**(a) Data needed to compile the indicator:** Survey results; Population figures per countries/ cities/ urban-rural / age/ socio-economic group/ gender.

**(b) National and International Data Availability and Sources:** Victim surveys; Corruption/Governance surveys; International Crime Victim Surveys; Regional barometers.

**(c) Data References:** National Statistical Institutes; UNODC; UNICRI.

#### **5. Agencies Involved in the development of the indicator**

**(a) Lead Agency:** The lead agency responsible for crime and corruption indicators is the United Nations Office on Drugs and Crime.

#### **6. References**

**(a) Readings:**

Manual for the conduct of victim surveys. UNODC-UNECE (forthcoming).

Nieuwbeerta, P. (Ed.) (2002). Crime victimization in comparative perspective. Results from the International Crime Victims Survey, 1989-2000. Den Haag: Boom Juridische uitgevers

Kury, H. (Ed.) (2003)

International Comparison of Crime and Victimization: The ICVS Special issue of the International Journal of Comparative Criminology (IJCC), Vol. 2, No. 1

**(b) Internet sites:**

UNODC website on corruption: <http://www.unodc.org/unodc/en/corruption.html>

UNODC webpage on crime victim surveys:

[http://www.unodc.org/unodc/en/research\\_icvs.html](http://www.unodc.org/unodc/en/research_icvs.html)

## Theme 2: Governance

### Sub-Theme: Crime

#### Indicator 2: Number of Recorded Violent Crimes and Homicides per 100,000 Populations

NUMBER OF INTENTIONAL HOMICIDES PER 100,000 POPULATION		
Core indicator	Crime	Governance

#### 1. INDICATOR

- (a) **Name:** Number of intentional homicides per 100,000 populations.
- (b) **Brief definition:** Total number of intentional homicides completed per 100,000 populations.
- (c) **Unit of measurement:** Police recorded cases/100,000 population, per country and per year
- (d) **Placement in the CSD indicator set:** Governance/Crime

#### 2. POLICY RELEVANCE

(a) **Purpose:** The Economic and Social Council, in its resolution 1984/48 of 25 May 1984, requested the Secretary-General to maintain and develop a United Nations crime-related database by continuing to conduct surveys of crime trends and operations of criminal justice systems. The major goal of the United Nations Surveys on Crime and Trends and the Operations of Criminal Justice Systems is to collect data on the incidence of recorded crime and the operations of criminal justice systems with a view to improving the analysis and dissemination of that information globally.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme).** Crime prevention and criminal justice are an integral part of the development process. Upholding the rule of law and good governance and proper management of public affairs and public property at the local, national and international levels are prerequisites for creating and sustaining an environment for successfully preventing and combating crime.<sup>22</sup> Such a stable and secure climate is necessary to support the goals of poverty eradication, economic investment, environmental stewardship, gender equality, participation, and sustainable livelihoods. Crime represents a dimension of growing concern in the framework for CSD indicators. The Secretary-General report "In larger freedom: towards development, security and

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<sup>22</sup> A/CONF.203/18 Bangkok Declaration on Synergies and Responses: Strategic Alliances in Crime Prevention and Criminal Justice, adopted at the high-level segment of the Eleventh United Nations Congress on crime Prevention and Criminal Justice, held in Bangkok from 18 to 25 April 2005.

human rights for all” highlighted that although poverty and denial of human rights may not be the direct cause of civil war, terrorism or organized crime, they all greatly increase the risk of instability and violence.<sup>23</sup> However, measurement of organized crime poses serious methodological limitations. Measurement is more feasible when dealing with “conventional” categories of crime, or “volume” crime, the most serious of which is intentional homicide.

The number of intentional homicides per 100,000 population represents the most widely available and uncontroversial indicator and is included as a measure in the Common Country Assessment Guidelines. Taking into account the seriousness of the crime, thus the almost inevitable statistical recording, this indicator provides reliable information from a large number of countries. Intentional homicide rates were highest in Africa, followed by the Americas, while other regions showed much lower rates. The analysis of homicide trends in the period 1995-2004 suggests that there is an overall decreasing trend.

**(c) International conventions and agreements:** The United Nations Congresses on the Prevention of Crime and Treatment of Offenders, held every five years, formulated non-binding recommendations (The Caracas Declaration of 1980), plans of action (e.g., Milan Plan of Action of 1985) and declarations (e.g. the Bangkok Declaration on Synergies and Responses: Strategic Alliances in Crime Prevention and Criminal Justice of 2005) on the subject.

**(d) International Targets/Recommended Standards:** None

**(e) Linkages to Other Indicators:** As other crime indicators, this indicator is linked to indicators of poverty and income disparity (e.g., percent of population living below poverty line, unemployment rate, Gini index of income inequality), population change, including urbanization and rapid population growth, as well as those on economic performance. Violent crime and homicide are considered to be especially linked to alcohol consumption, drugs (abuse and trafficking), and proportion of youth in the population.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definition and Concepts.** Intentional Homicide may be understood to mean death deliberately inflicted on a person by another person, including infanticide. This indicator refers only to police-recorded homicides.

**(b) Measurement methods:** Questionnaire sent to responsible government agency / official statistical body in each country. The indicator is computed as the number of total homicides recorded by the police in a given year multiplied by 100,000 and divided by the total population of the country in the same year (based on UN Population Division data).

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<sup>23</sup> A/59/2005.

(c) **Limitations of the indicator:** Efficiency of the police systems, Response rate to the questionnaire, and Scope of the definition (inclusion or not of death caused by injuries, euthanasia, help with suicide...)

(d) **Status of the methodology:** Widely used in developed and developing countries. The Tenth UN Survey on Crime Trends and the Operations of Criminal Justice Systems (2007) will collect metadata associated to this indicator from all member States.

(e) **Alternative definitions:** Number of recorded violent crimes per 100,000 populations (including homicides).

a. **Brief definition.** Homicides, Assault, Rape and Robbery crimes recorded in criminal police statistics.

i. **Intentional Homicide:** Death deliberately inflicted on a person by another person, including infanticide.

ii. **Assault.** Physical attack against the body of another person, including battery but excluding indecent assault. It includes aggravated assault and simple assault as maybe classified in some criminal codes.

iii. **Rape.** Sexual intercourse without valid consent.

iv. **Robbery.** Theft of property from a person, overcoming resistance by force or threat of force.

b. **Unit of measurement.** Homicide, Assault, Rape and Robbery police recorded cases per 100,000 populations per country per year.

c. **Limitations.** The disadvantage of such a composite indicator is that the capacity of member States to record statistics on all four categories of crime is uneven, therefore there may be cases of countries with high levels of violent crime that are unable to reflect such incidents into statistics. The potential problem would be that countries with good statistical systems would appear as more affected by violence than others.

#### **4. ASSESSMENT OF DATA**

(a) **Data needed to compile the indicator:** Midyear population figures per country; Police statistics on total intentional homicides.

(b) **National and International Data Availability and Sources:** Data are normally available from local and regional police agencies and are collated by a national agency, often a statistical division within the Ministry or Department of Justice or Interior.

(c) **Data References:** National Statistical Institutes; UN Survey of Crime Trends and Operations of Criminal Justice Systems.

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF INDICATOR**

**(a) Lead Agency:** The lead agency is the United Nations Office on Drugs and Crime.

## **6. REFERENCES**

### **(a) Reading**

United Nations Rules, Norms and Standards

UN Survey of Crime Trends and Operations of Criminal Justice Systems

[http://www.unodc.org/unodc/crime\\_cicp\\_surveys.html](http://www.unodc.org/unodc/crime_cicp_surveys.html)

### THEME 3: HEALTH

SUB THEME	Indicator
Mortality	Mortality Rate Under 5 Year Old
	Life Expectancy at Birth
	Healthy Life Years Expectancies
Health Care Delivery	Percent of Population with Access to Primary Health Care Facilities
	Contraceptive Prevalence Rate (NC)
	Immunization Against Infectious Childhood Diseases
Nutritional Status	Nutritional Status of Children (Percentage of Underweight and Obese Children)
Health Status and Risks	prevalence of major diseases such as HIV/ AIDS, Malaria, Tuberculosis
	smoking prevalence
	prevalence of mental health problems (suicide rates as proxy)

**Theme 3: Health**  
**Sub-Theme: Mortality**  
**Indicator 1: Mortality Rate Under 5 Year Old**

UNDER-FIVE MORTALITY RATE		
Core indicator	Mortality	Health

**1. INDICATOR**

**(a) Name:** Under-five Mortality Rate (U5MR).

**(b) Brief Definition:** The under-five mortality rate refers to the probability of dying before age 5 years per 1,000 newborns.

**(c) Unit of Measurement:** the probability of dying before age 5 years per thousand live births.

**(d) Placement in the CSD Indicator Set:** Health/Mortality.

**2. POLICY RELEVANCE**

**(a) Purpose:** This indicator measures the risk of dying in infancy and early childhood.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** The reduction of child mortality is one of the most strongly and universally supported development goals. In high-mortality settings, a large proportion of all deaths occur before age 5. Despite considerable progress in reducing child mortality, there remains a large gap between developed and developing countries in the risks of dying before age 5: for instance, during 2000-2005, under-five mortality stood at 9 per 1000 in the more developed regions but at 153 per thousand in the least developed countries (United Nations, 2007). The gap between more developed and the less developed regions is larger in proportional terms for death rates in early childhood than for those in adult ages. Under-five mortality levels are influenced by poverty, education, particularly of mothers; by the availability, accessibility and quality of health services; by environmental risks including access to safe water and sanitation; and by nutrition.

**(c) International Conventions and Agreements:** Quantitative goals for the reduction of under-five mortality rates have been adopted by several international conferences and summits including the World Summit for Children (1990), the International Conference on Population and Development (1994) the Fourth World Conference on Women (1995), the World Summit for Social Development (1995), and the United Nations Millennium Summit. The Programme of Action of the International Conference on Population and Development (ICPD) encouraged countries with intermediate mortality levels to achieve



an under-five mortality rate below 60 deaths per 1000 births by 2005, and all countries to achieve an under-five mortality rate below 45 per 1000 live births by 2015. The United Nations Millennium Declaration, adopted in 2000, established the goal of reducing under-five mortality by two-thirds between 2000 and 2015 (A/RES/55/2, para. 19). The under-five mortality rate is one of the indicators included in the Human Assets Index and is therefore one of the quantitative criteria for the identification of least developed countries within the United Nations. Many other international agreements, including Agenda 21, also refer to the general goal of reducing mortality in childhood.

**(d) International Targets/Recommended Standards:** See section 2(c) above.

**(e) Linkages to Other Indicators:** This indicator is closely related to life expectancy at birth. It is more generally connected to many other social and economic indicators, including those listed in section 2b above.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Standard statistical definitions of the terms “live birth” and “death” are set forth in the United Nations Principles and Recommendations for a Vital Statistics System (para. 46):

LIVE BIRTH is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live-born regardless of gestational age.

DEATH is the permanent disappearance of all evidence of life at any time after live birth has taken place (post-natal cessation of vital functions without capability of resuscitation).

**(b) Measurement Methods:** The under-five mortality rate is derived from estimates of births and deaths gathered by vital registration systems, censuses and surveys. Where vital registration data on births and deaths are complete, or adjustments for age misstatement and incompleteness can be made, the under-five mortality rate can be calculated directly from those data. Details on the procedures used can be found in demographic or actuarial references that describe the construction of life tables, for example, Pressat (1972) or Shryock and Siegel (1980). When civil registration systems do not exist, such data may be obtained from maternity history data gathered by demographic surveys or the under-five mortality rate can be calculated using indirect information on mortality in childhood obtained via special questions included in censuses or demographic surveys. For information on the methods used to estimate mortality in childhood from indirect data see United Nations (1983 and 2003).

**(c) Limitations of the Indicator:** There are often problems in the information required

for calculating the under-five mortality rate in less developed countries where routine data collection in the health services may omit many infant and child deaths and where vital registration may be deficient. Some countries do not follow the standard definition given above of “live birth”. However, adjustments can sometimes be made for incomplete registration and age misstatement, and in many developing countries maternity-history data collected by nationally representative sample surveys provide a sound basis for estimating levels and trends of under-five mortality. Sample surveys have been more successful at obtaining estimates of under-five mortality than of adult mortality and, for that reason, information about child mortality is currently more commonly available and is more timely than information about the mortality of adults. If the necessary data are available, the under-five mortality rate can be calculated separately for boys and girls, and for geographic and social subgroups (based on the characteristics of parents). It is also useful to disaggregate the under-five mortality rate into separate rates referring, respectively, to the probability of dying before age 1 and the probability of dying between ages 1 and 4.

**(d) Status of the Methodology:** Well developed and widely employed.

**(e) Alternative Definitions/Indicators:** The infant mortality rate is another indicator of early child mortality for which quantitative goals have been set at recent international conferences. The infant mortality rate is the number of deaths under 1 year of age during a period per 1000 live-births during the same period.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The under-five mortality rate is derived from data on births and deaths occurring under the age of 5 years, as described in section 3(b) above.

**(b) National and International Data Availability and Sources:** Data allowing the estimation of under-five mortality are currently available for most countries thanks to demographic surveys using representative samples in countries where vital registration systems are deficient or unavailable. Surveys that rely on maternity histories, in which women are asked to provide the date of birth and age at death (if applicable) of each child they have borne alive, are common but demand well trained interviewers to ensure that the data collected are of good quality. In addition, retrospective questions about the number of children ever born and the number surviving by women enumerated in censuses or surveys provide indirect information from which estimates of under-five mortality can be derived.

**(c) Data References:** Data sources include vital registration, sample registration systems, surveillance systems, censuses, and demographic and health surveys. Information needed to calculate this indicator from vital registration data is compiled by the Statistics Division of the Department of Economic and Social Affairs of the United

Nations Secretariat on a regular basis. Data generated by vital registration systems, censuses and surveys are evaluated and, if necessary, adjusted for incompleteness by the Population Division of the Department of Economic and Social Affairs (DESA) as part of the preparation of the United Nations population estimates and projections. Past, current and projected estimates of under-five mortality are prepared for all countries by the Population Division of DESA and appear in the biennial World Population Prospects reports. Estimates by the United Nations Children's Fund (UNICEF) are published in the annual State of the World's Children reports. Monitoring by national statistical offices often entails the preparation of child mortality estimates for small geographical units within countries. Surveys, if appropriately designed, may provide estimates for major regions within countries as well as at the national level.

## **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. The contact point is the Director, Population Division, fax no. (1 212) 963 2147.

**(b) Other Contributing Organizations:** United Nations/DESA/Statistics Division; United Nations Children's Fund (UNICEF); and World Health Organization (WHO).

## **6. REFERENCES**

### **(a) Readings:**

Hill K. (1991). Approaches to the measurement of childhood mortality: A comparative review. *Population Index* 57(3):368-382, Fall.

Pressat, R. (1972). *Demographic Analysis: Methods, Results, Applications*. London, Edward Arnold; Chicago, Aldine Atherton.

Shryock, H. S, and J. S. Siegel (1980). *The Methods and Materials of Demography*. U.S. Government Printing Office, Washington, D.C.

United Nations (1973). *Principles and Recommendations for a Vital Statistics System*. United Nations publication, Sales No. E.73.XVII.9.

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

\_\_\_\_\_ (1990). *A Step by Step Guide to the Estimation of Child Mortality*. United Nations publication, Sales No. E.89.XIII.9, 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*.

United Nations Children's Fund (2005). *The State of the World's Children*. UNICEF, New York.

**(b) Internet sites:**

Statistics are available at:

<http://www.un.org/esa/population/unpop.htm>

[http://millenniumindicators.un.org/unsd/mi/mi\\_goals.asp](http://millenniumindicators.un.org/unsd/mi/mi_goals.asp)

**Theme 3: Health**  
**Sub-Theme: Mortality**  
**Indicator 2: Life Expectancy at Birth**

LIFE EXPECTANCY AT BIRTH		
Core indicator	Mortality	Health

**1. INDICATOR**

**(a) Name:** Life Expectancy at Birth.

**(b) Brief Definition:** The average number of years that a newborn could expect to live, if he or she were subject to the age-specific mortality rates of a given period.

**(c) Unit of Measurement:** Years of life.

**(d) Placement in the CSD Indicator Set:** Health/Mortality.

**2. POLICY RELEVANCE**

**(a) Purpose:** The indicator measures how many years a new-born baby is expected to live on average given current age-specific mortality rates. Life expectancy at birth is an indicator of mortality conditions and, by proxy, of health conditions.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Mortality, with fertility and migration, determines the size of human populations, their composition by age and sex, and the population's potential for future growth. Life expectancy, a basic indicator, is closely connected with health conditions, which are in turn an integral part of development. The Programme of Action of the International Conference on Population and Development (ICPD) notes that the unprecedented increase in human longevity reflects gains in public health and in access to primary health-care services (paragraphs 8.1 and 8.2), which Agenda 21 recognizes as an integral part of sustainable development and primary environmental care (paragraph 6.1). The ICPD Programme of Action highlights the need to reduce disparities in mortality and morbidity among countries and between socio-economic and ethnic groups. It identifies the health effects of environmental degradation and exposure to hazardous substances in the work-place as issues of increasing concern. Life expectancy is included as a basic indicator of health and social development in, among others, the Minimum National Social Data Set endorsed by the United Nations Statistical Commission at its 29th session in 1997, the Human Development Index, the UNDG-CCA indicator set and the OECD/DAC core indicators.

**(c) International Conventions and Agreements:** The Declaration of Alma Ata (1978) set

a target of life expectancy greater than 60 years by the year 2000; the World Summit for Social Development (WSSD) also included this goal. The ICPD Programme of Action specified that: life expectancy should be greater than 65 years by 2005 and 70 years by 2015 for countries that currently have the highest levels of mortality; and 70 years and 75 years, respectively, for the other countries (ICPD Programme of Action, paragraph 8.5).

**(d) International Targets/Recommended Standards:** See above.

**(e) Linkages to Other Indicators:** This indicator reflects many social, economic, and environmental influences. It is closely related to other demographic variables and is related to human health and the environment as well as to economic indicators.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Calculation of life expectancy at birth is based on age-specific mortality rates for a particular calendar period. Mortality rates are commonly tabulated for age groups 0 to 1, 1 to 5 years and for five-year age groups thereafter until an open-ended interval starting at age 80 or above.

**(b) Measurement Methods:** Several steps are needed to derive life expectancy from age-specific mortality rates; details on the methodology to follow can be found in demographic or actuarial references that describe the construction of life tables including Pressat (1972) or Shryock and Siegel (1980). For a description of the methodology implemented in computer programs, see United Nations (2003).

**(c) Limitations of the Indicator:** Where data on deaths by age are of good quality, or adjustments for age misstatement and incompleteness can be made, the life expectancy at birth can be calculated directly from registered deaths and population counts, which are usually based on census enumerations. When data on deaths by age are not available because vital registration is deficient, the life expectancy at birth can be estimated using methods that derive indicators of mortality from indirect information on the risks of death obtained from special questions included in censuses or demographic surveys. For information on these indirect methods, see United Nations (1983 and 2003).

**(d) Status of the Methodology:** Well developed and widely employed.

**(e) Alternative Definitions/ Indicators:** Another indicator of general mortality in common use is the Crude Death Rate (CDR), which is the number of deaths in a period (commonly a one-year period) divided by the mid-period population; it is usually expressed in deaths per 1,000 population. The CDR can be calculated from data that have less detail than those needed to calculate the life expectancy at birth, but it has the drawback of being influenced to a substantial degree by age structure of the population. That is, two populations with the same CDR could be subject to markedly different

mortality risks at each age.

Life expectancy may be calculated separately for males and females, or for both sexes combined. If the underlying data permit, life expectancy may also be calculated for sub-national populations. Life expectancy can also be presented for particular ages after birth. For instance, life expectancy at age 60 represents the number of additional years a person aged 60 would expect to live, on average, given current age-specific mortality rates for ages 60 and over.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Age-specific death rates are the basic information for the calculation of the indicator. Some data sources yield estimates of age-specific mortality for only some age groups, so that it may be necessary to employ data from different sources, each adjusted independently, to arrive at a complete and consistent set of rates for a given period. Countries may tabulate data derived from death registration systems at the sub-national level. The under-five mortality rate is more readily available for sub-national populations than life expectancy at birth.

**(b) National and International Data Availability and Sources:** Data on deaths classified by age are compiled by the Statistics Division of the Department of Economic and Social Affairs (DESA) of the United Nations Secretariat on a regular basis but they are reported only by countries with functioning civil registration systems. For all countries, data allowing the estimation of mortality, including those derived from vital registration systems, censuses or demographic surveys are evaluated and, if necessary, adjusted by the Population Division of the Department of Economic and Social Affairs (DESA) as part of the preparation of the United Nations population estimates and projections.

**(c) Data References:** Past, current and projected estimates of life expectancy at birth are prepared for all countries by the Population Division, DESA, and appear in the biennial World Population Prospects reports.

#### **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 (UN/DESA). The contact point is the Director, Population Division, fax no. (1 212) 963 2147.

**(b) Other Contributing Organizations:** United Nations/DESA/Statistics Division; United Nations Children's Fund (UNICEF); and World Health Organization (WHO).

#### **6. REFERENCES**

**(a) Readings:**

Pressat, R. (1972). *Demographic Analysis: Methods, Results, Applications*. London, Edward Arnold; Chicago, Aldine Atherton.

Shryock, H. S, and J. S. Siegel (1980). *The Methods and Materials of Demography*. U.S. Government Printing Office, Washington, D.C.

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

\_\_\_\_\_ (1994). *Report of the International Conference on Population and Development. Programme of Action of the International Conference on Population and Development*. United Nations Document A/CONF. 171/13. Cairo, Egypt, September 5-13.

\_\_\_\_\_ (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*.

**(b) Internet site:**

Statistics and substantive reports are available at:

<http://www.un.org/esa/population/unpop.htm>



**Theme 3: Health**  
**Sub-Theme: Mortality**  
**Indicator 3: Healthy Life Years Expectancies (NC)**

HEALTHY LIFE EXPECTANCY AT BIRTH		
Core indicator	Mortality and morbidity	Health

**1. INDICATOR**

- (a) **Name:** Healthy Life Expectancy at Birth.
- (b) **Brief Definition:** The average equivalent number of years of full health that a newborn could expect to live, if he or she were to pass through life subject to the age-specific death rates and ill-health rates of a given period.
- (c) **Unit of Measurement:** Years of life.
- (d) **Placement in the CSD Indicator Set:** Health/Mortality.

**2. POLICY RELEVANCE**

- (a) **Purpose:** Measures how many equivalent years of full health on average a new-born baby is expected to have, given current age-specific mortality, morbidity and disability risks. Healthy life expectancy at birth is an indicator of health conditions, including the impacts of mortality and morbidity.
- (b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Healthy life expectancy (HALE) provides a summary of overall health conditions for a population, which are in turn an integral part of development. The ICPD Programme of Action highlights the need to reduce disparities in mortality and morbidity among countries and between socio-economic and ethnic groups. It identifies the health effects of environmental degradation and exposure to hazardous substances in the work-place as issues of increasing concern. While communicable diseases such as HIV/AIDS, tuberculosis and malaria continue to cause substantial loss of health and mortality in developing countries, particularly African countries, non-communicable diseases and injuries are responsible for more than half of all lost years of healthy life in developing as well as developed countries. HALE thus provides a more complete picture of the impact of morbidity and mortality on populations, than simple life expectancy alone.
- (c) **International Conventions and Agreements:** The World Health Organization has published HALE estimates for Member States as part of WHO's regular annual reporting on the health for Member States (World Health Reports from 2000 to 2004). Apart from general inspirational statements, HALE has not been specifically used in

international conventions or agreements to date.

**(d) International Targets/Recommended Standards:** See above.

**(e) Linkages to Other Indicators:** This indicator reflects many social, economic, and environmental influences. It is closely related to other demographic variables, particularly life expectancy at birth, and it is related to human health and the environment as well as economic indicators.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Calculation of healthy life expectancy at birth is based on age-specific death rates for a particular calendar period together with severity-adjusted health state prevalence by age.

**(b) Measurement Methods:** The World Health Organization has developed methods for calculation of HALE that combine standard life table information on mortality together with age-sex-specific prevalence data for health states using Sullivan's method. Since comparable health state prevalence data are not available for all countries, a four-stage strategy has been used by WHO:

1. Data from the WHO Global Burden of Disease (GBD) study are used to estimate severity-adjusted prevalence by age and sex for all countries.
2. Data from the WHO Multi-Country Survey Study (MCSS) are used to make independent estimates of severity-adjusted prevalence by age and sex for survey countries.
3. Prevalence for all countries is calculated based on GBD and MCSS estimates.
4. Life tables constructed by WHO are used with Sullivan's method to compute HALE for countries

More detailed information on the methods are provided by Mathers et al (Mathers et al. 2004; Mathers, Murray, and Salomon 2002). A number of countries have also carried out HALE calculations based on either population survey data or national burden of disease analyses.

**(c) Limitations of the Indicator:** Health expectancy estimates based on self-reported health status information are generally not comparable across countries due to differences in survey instruments and cultural differences in reporting of health (Romieu and Robine 1994). Comparability problems with self-report health status data relate not only to differences in survey design and methods, but more fundamentally to unmeasured differences in expectations and norms for health ref. Even when reliability and within population validity have reached acceptable levels, the meaning that different populations attach to the labels used for each of the response categories, such as mild, moderate or severe, in self-reported questions can vary greatly. In order to improve the methodological and empirical basis for the measurement of population

health, WHO has initiated a data collection strategy with Member States consisting of household and/or postal or telephone surveys in representative samples of the general populations using a standardized instrument together with new statistical methods for adjusting self-reported health measures to comparable scales (Ustun et al. 2003b). Healthy life expectancy estimates for all countries are based on a mix of survey data for some countries (with its own uncertainty due to sampling and systematic biases) and analyses of disability prevalence in the Global Burden of Disease project, which draws on a wide range of epidemiological and demographic data of varying degrees of uncertainty. These methods are not easily replicated for single national estimates.

**(d) Status of the Methodology:** Developmental. Methods have been developed drawing on self-report survey data on functioning in core health domains (such as mobility, usual activities, affect, pain, cognition), and on estimated health state prevalence's from burden of disease analysis using the Disability Adjusted Life Year (or DALY). Both of these approaches require relatively complex analyses and are data-demanding. A number of issues remain to be resolved around cross-population comparability and methods for dealing with morbidity in the DALY-based approach (King et al. 2003).

**(e) Alternative Definitions/ Indicators:** Other summary measures in common use include the Disability Free Life Expectancy (DFLE) and measures of health expectancy based on self-reported global health questions (with response categories such as excellent, very good, fair, poor). Both these forms of indicator suffer from intractable problems of cross-population comparability, and a level of arbitrariness in the choice of threshold for definition of poor health or disability. Additionally, such indicators are insensitive to differences in severity distribution of health or disability beyond the threshold. Both these indicators require less detailed data and analysis for their calculation than does HALE, and are reported by a number of organizations including OECD.

As with life expectancy, HALE may be calculated separately for males and females, or for both sexes combined. If the underlying data permit, HALE may also be calculated for sub national regions, or for other population subgroups. HALE can also be presented for particular ages after birth, and age 60 is a common choice for a second age to be reported.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Mortality data as required for calculation of period life expectancy together with comprehensive prevalence estimates for health states in the population and a health state valuation function to enable computation of equivalent years of full health lived at each age. Alternately, HALE may be calculated from DALY estimates for burden of disease by cause, age and sex. A prevalence-based analysis is normally required for the calculation of prevalence YLD (Years Lived with Disability) and a method for dealing with morbidity.

**(b) National and International Data Availability and Sources:** Data on health states in populations have been collected by the World Health Organization in its Multi country Study (Ustun et al 2003b) and in the World Health Survey in 2003-2004 (Ustun et al. 2003a).

**(c) Data References:** Estimates of healthy life expectancy at birth have been prepared for all WHO Member States and appear in the World Health Reports for years 2000 to 2004.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization. The contact point is the Coordinator, Country Health Information, Evidence and Information for Policy, fax no. (41 22) 7914328. (Mathers et al. 2003; Robine et al. 2003)

## **6. REFERENCES**

### **(a) Readings:**

1. King, G., C. J. L. Murray, J. A. Salomon, and A. Tandon. 2003. Enhancing the validity and cross-cultural comparability of measurement in survey research. *American Political Science Review* 93, no. 4:567-583.
2. Mathers, C. D., K. Iburg, J. Salomon, A. Tandon, S. Chatterji, B. Ustun, and C. J. L. Murray. 2004. Global patterns of healthy life expectancy in the year 2002. *BMC Public Health* 4, no. 1:66.
3. Mathers, C. D., C. J. L. Murray, and J. Salomon. 2002. Methods for measuring healthy life expectancy. In *Health systems performance assessment: debate, new methods, new empiricism, and future directions*, edited by Murray, C. J. L and D. Evans (Geneva: World Health Organization).
4. Mathers, C. D., J. Saloman, C. J. L. Murray, and A. Lopez. 2003. Alternative Summary Measures of Average Population Health. In *Health systems performance assessment: debates, methods and empiricism*, edited by Murray, C. J. L and D. Evans (Geneva: World Health Organization).
5. Robine, J. M., C. Jagger, C. D. Mathers, E. M. Crimmins, and R. M. Suzman. 2003. *Determining health expectancies*. Chichester: John Wiley & Sons.
6. Romieu, I. and J. M. Robine. 1994. World atlas of health expectancy calculations. In *Advances in health expectancies*, edited by Mathers, C. D., J. McCallum, and J. M. Robine (Canberra: Australian Institute of Health and Welfare).
7. Ustun, T. B., S. Chatterji, A. Mechbal, Murray C.J.L, and WHS Collaborating Groups. 2003a. The World Health Surveys. In *Health systems performance assessment: debates, methods and empiricism*, edited by Murray, C. J. L and D. Evans (Geneva: World Health Organization).
8. Ustun, T. B., S. Chatterji, M. Villanueva, L. Bendib, C. Celik, R. Sadana, N. Valentine, J. Ortiz, A Tandon, J Saloman, Y. Cao, J. Xie Wan, E. Ozaltin, C. D. Mathers, and

Murray C.J.L. 2003b. The WHO Multicountry Household Survey Study on Health and Responsiveness 2000-2001. In Health systems performance assessment: debates, methods and empiricism, edited by Murray, C. J. L and D. Evans (Geneva: World Health Organization).

**(b) Internet sites:**

Statistics are available at: <http://www.who.int/healthinfo/statistics/indhale/en/>

**Theme 3: Health**  
**Sub-Theme: Health Care Delivery**  
**Indicator 4: Percent of Population with Access to Primary Health Care Facilities**

PERCENT OF POPULATION WITH ACCESS TO PRIMARY HEALTH CARE FACILITIES		
Core indicator	Healthcare Delivery	Health

**1. INDICATOR**

- (a) Name:** Percentage of Population with Access to Primary Health Care Facilities.
- (b) Brief Definition:** Proportion of population with access to primary health care facilities.
- (c) Unit of Measurement:** %.
- (d) Placement in the CSD Indicator Set:** Health/Healthcare Delivery.

**2. POLICY RELEVANCE**

- (a) Purpose:** To monitor progress in the access of the population to primary health care.
- (b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Accessibility of health services, going beyond just physical access, and including economic, social and cultural accessibility and acceptability, is of fundamental significance to reflect on health system progress, equity and sustainable development. It should, however, be supplemented by indicators of utilization of services, or actual coverage, and quality of care. In addition, accessibility is an instrumental goal, a means to an end, to achieving the final intrinsic goals of the system. The more accessible a system is the more people should utilize it to improve their health.
- (c) International Conventions and Agreements:** World Health Assembly Resolution WHA34.36, Global Strategy for Health for All by the Year 2000.
- (d) International Targets/Recommended Standards:** International targets have been outlined in the Global Strategy for Health for all and more recently in the Ninth General Programme of Work. In addition, many countries have established national targets.
- (e) Linkage to Other Indicators:** This indicator is associated with other socioeconomic indicators on the proportion of people covered by other essential elements of primary health care. It should also, as indicated above, be linked with indicators of utilization of

services and quality of care.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:**

(i) Primary health care: is essential health care made accessible at a cost the country and community can afford, with methods that are practical, scientifically sound and socially acceptable.

(ii) Population covered: All the population living in the service area of the health facility.

(iii) Access: Definition of accessibility may vary between countries, for different parts of the country and for different types of services.

**(b) Measurement Methods:** The numerator - the number of persons living within a convenient distance to primary care facilities; the denominator - the total population.

**(c) Limitations of the Indicator:** The existence of a facility within reasonable distance is often used as a proxy for availability of health care. If the existing primary care facility, however, is not properly functioning, provides care of inadequate quality, is economically not affordable, and socially or culturally not acceptable, physical access has very little value as this facility is bypassed and not utilized. Therefore, other factors, as mentioned in 3(e) have to be taken into account.

**(d) Status of the Methodology:** Not Available.

**(e) Alternative Definitions/Indicators:** In the light of 3(c) the indicator must be supplemented by indicators of availability of services, quality of services, acceptability of services, affordability of services, or utilization of services.

### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The number of people with access to primary health care facilities, total population in service areas of health facilities.

**(b) National and International Data Availability and Sources:** No routinely available data. Information has to be acquired through surveys like primary and comprehensive health care and health statistics survey. Data Sources include Ministries of Health and National Statistical Offices.

**(c) Data References:** Not Available.

### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization (WHO). The contact point is the Director, Health System Policies and Operations, fax: 41 22 791 4747.

**(b) Other Contributing Organizations:** None.

## **6. REFERENCES**

**(a) Readings:**

HIS Development Strategy and Catalogue of Health Indicators, Geneva 2000 (EIP/OSD/00.12)

WHO, The World Health Report 2000; Health Systems: Improving Performance, Geneva, 2000.

El-Bindari-Hammad, Smith, DL, Primary Health Care Reviews, Guidelines and Methods, WHO, Geneva, 1992.

WHO, Development of Indicators for Monitoring Progress towards Health for All by the Year 2000, Geneva, 1981.

WHO, Evaluating the Implementation of the Strategy for Health for All by the Year 2000, Common Framework: Third Evaluation, Geneva, 1996.

WHO, Health Centres: the 80/20 Imbalance; Burden of Work Vs Resources, Geneva, 1999.

**(b) Internet site:** World Health Organization: <http://www.who.int>



**Theme 3: Health**  
**Sub-Theme: Health Care Delivery**  
**Indicator 5: Contraceptive Prevalence Rate (NC)**

CONTRACEPTIVE PREVALENCE RATE		
Core indicator	Healthcare Delivery	Health

**1. INDICATOR**

**(a) Name:** Contraceptive Prevalence Rate (CPR).

**(b) Brief Definition:** This indicator is generally defined as the percent of women of reproductive age (15-49 yrs) using any method of contraception at a given point in time. It is usually calculated for married women of reproductive age, but sometimes for other base population, such as all women of reproductive age at risk of pregnancy.

**(c) Unit of Measurement:** %.

**(d) Placement in the CSD Indicator Set:** Health/Healthcare Delivery.

**2. POLICY RELEVANCE**

**(a) Purpose:** The measure indicates the extent of people's conscious efforts and capabilities to control their fertility. It does not capture all actions taken to control fertility, since induced abortion is common in many countries.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Increased contraceptive prevalence is, in general, the single most important proximate determinant of inter-country differences in fertility, and of ongoing fertility declines in developing countries. Contraceptive prevalence is also an indicator of access to reproductive health services one of the eight elements of primary health care (Ref: WHO/RHR/04.011). Agenda 21 discusses reproductive health programmes, which include family planning, as among the programmes that promote changes in demographic trends, factors towards sustainability and development... Health benefits include the ability to prevent pregnancies that are too early, too closely spaced, too late, or too many. By preventing unintended pregnancies, contraception reduces resort to induced abortion - as well as avoiding potential complications of pregnancy including maternal morbidities and mortality. Current contraceptive practice depends not only on people's fertility desires, but also on availability, functioning, and quality of family planning services; social influences that affect contraceptive use; and other factors, such as marriage patterns and traditional birth-spacing practices, that independently influence the family planning and total fertility rate.

**(c) International Conventions and Agreements:** Family planning is included and discussed in the broader context of reproductive, sexual health, and reproductive rights by Chapter VII of the Programme of Action, International Conference on Population and Development (ICPD); and Strategic Objective C of the Platform for Action adopted at the Fourth World Conference on Women.

**(d) International Targets/Recommended Standards:** International agreements do not establish specific national or global targets for contraceptive prevalence. Recent international conferences have strongly affirmed the right of couples and individuals to choose the number, spacing and timing of their children, and to have access to the information and means to do so. The ICPD Programme of Action states that "Governmental goals for family planning should be defined in terms of unmet needs for information and services. Demographic goals, while legitimately the subject of government development strategies, should not be imposed on family-planning providers in the form of targets or quotas for the recruitment of clients" (paragraph 7.12).

**(e) Linkages to Other Indicators:** The level of contraceptive use has a strong, direct effect on the total fertility rate (TFR) and, through the TFR, on the rate of population growth. Use of contraception to prevent pregnancies that are too early, too closely spaced, too late, or too many has benefits for maternal and child health. This indicator is also closely linked to access to primary health care services particularly those pertaining to reproductive health care. Furthermore, it has broader and predictive implications for many other sustainable development indicators and issues, such as rate of change of school-age population, woman's participation in the labor force, and natural resource use.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** The standard indicator is the percentage currently using or whose partner is using any method of contraception among married (or in a stable union) women aged 15-49 or 15-44. In this context, the married group usually includes those in consensual or common-law unions in societies where such unions are common. Contraceptive prevalence is also frequently reported for all women of reproductive age at risk of pregnancy, and statistics are sometimes presented for men instead of, or in addition to, women (see attached document).

Users of contraception are defined as women who are practicing, or whose male partners are practicing, any form of contraception. These include female and male sterilization, hormonal methods (injectable and oral contraceptives, implants), intrauterine devices, diaphragms, spermicide, condoms, rhythm, withdrawal and abstinence, lactation amenorrhea, among others.

For this indicator, too early is defined as under age 15. Such adolescents are 5 to 7 times more likely to die in pregnancy and childbirth than women in the lowest risk group of 20-24 years. Too closely spaced means women who become pregnant less than two years after a previous birth. Greater adverse consequences to women and their children

are experienced under such circumstances. Women who have had five or more pregnancies (too many) or who are over 35 (too late), also face a substantially higher risk than the 20-24 year old group.

When presenting information about contraceptive use, it is useful to show the data according to specific type of contraception; by social characteristics such as rural/urban or region of residence, education, marital status; by 5-year age group, including specific attention to adolescents aged under 18 years; and by family size.

**(b) Measurement Methods:** Measurements of contraceptive prevalence come almost entirely from representative sample surveys of women or men of reproductive age. A fertility survey is one of the important surveys that provides the required data. Current use of contraception is usually assessed through a series of questions about knowledge and use of particular methods.

**(c) Limitations of the Indicator:** For surveys, under-reporting can occur when specific methods are not mentioned by the interviewer. This can be the case with the use of traditional methods such as rhythm and withdrawal, and use of contraceptive surgical sterilization. The list of specific methods is not completely uniform in practice, but in most cases is sufficiently consistent to permit meaningful comparison. "Current" use is often specified in surveys to mean "within the last month", but sometimes the time reference is left vague, and occasionally longer reference periods are specified. With statistics from family planning programmes, the accuracy of the assumptions is often difficult to assess. The derived estimates obviously omit contraceptive users who do not use the programme's services, and thus tend to underestimate the overall level of use. Service statistics maintained by family planning programmes are also sometimes used to derive estimates of contraceptive prevalence. In such cases it is necessary to apply assumptions in order to derive estimates of numbers of current users from the records of numbers of family planning clients. Base population statistics (numbers of women or of married women) are in this case usually derived from census counts, adjusted to the reference date by the Population Division of the Department of Economic and Social Affairs (DESA), as part of its preparations of the official United Nations population estimates and projections.

**(d) Status of the Methodology:** The methodology is widely used in both developed and developing countries.

**(e) Alternative Definitions/Indicators:** None.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Number of women of reproductive age at risk of pregnancy using family planning methods. Number of women of reproductive age at risk of pregnancy. Both data sets are frequently limited to married women, and those in stable union.

**(b) National and International Data Availability and Sources:** The most recent United Nations review of contraceptive prevalence includes statistics for 119 countries and areas with information dating from 1975 or later. These countries include 90 per cent of world population. This review includes contraceptive prevalence measures for all women of reproductive age in 64 countries and areas and for samples of men in 27 countries and areas.

Contraceptive prevalence is one of the few topics for which data coverage is more complete and more current for developing than for developed countries. Most surveys provide estimates for major regions within countries as well as at the national level. Less frequently the sample design permits examining prevalence at the state, provincial, or lower administrative levels. In addition to those with national or near-national coverage, surveys covering this topic are sometimes available for particular geographic areas. Data are much less widely available for population groups other than married women, although such information has increased in recent years.

**(c) Data References:** Executing agencies for surveys covering this topic vary. National statistical offices and ministries of health are the most common source, but other governmental offices, non-governmental voluntary or commercial organizations are frequently involved. Many surveys are conducted in collaboration with international survey programmes'. The Population Division, DESA regularly compiles information about contraceptive prevalence and publishes it in the annual World Population Monitoring report.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization (WHO). The contact point is the Director, Reproductive Health and Research, fax no. (41 22) 791 3111.

**(b) Other Contributing Organizations:** The United Nations Department of Economic and Social Affairs (DESA), with the contact point as the Director, Population Division, fax no. (1 212) 963 2147.

## **6. REFERENCES**

### **(a) Readings:**

Levels and Trends of Contraceptive Use as Assessed in 1988 (United Nations, Sales No. E.89.XIII.4).

Levels and Trends of Contraceptive Use as Assessed in 1994 (United Nations, ST/ESA/SER.A/146, forthcoming).

Programme of Action of the International Conference on Population and Development, Report of the International Conference on Population and Development, Cairo, Egypt, September 5-13, 1994. (United Nations Document - A/CONF. 171/13).

World Population Monitoring, 1993 (Sales No. E.95.XIII.8, New York).

World Population Monitoring, 1996 (ESA/P/WP.131).

**(b) Internet site:** World Health Organization. <http://www.who.int>

### Theme 3: Health

#### Sub-Theme: Health Care Delivery

#### Indicator 6: Immunization against Infectious Childhood Diseases

IMMUNIZATION AGAINST INFECTIOUS CHILDHOOD DISEASES		
Core indicator	Healthcare Delivery	Health

### 1. INDICATOR

(a) **Name:** Immunization against Infectious Childhood Diseases.

(b) **Brief Definition:** The percent of the eligible population that have been immunized according to national immunization policies. The definition includes three components: (i) the proportion of children immunized against diphtheria, tetanus, pertussis, measles, poliomyelitis, tuberculosis and hepatitis B before their first birthday; (ii) the proportion of children immunized against yellow fever in affected countries of Africa; and (iii) the proportion of women of child-bearing age immunized against tetanus.

(c) **Unit of Measurement:** %.

(d) **Placement in the CSD Indicator Set:** Health/Healthcare Delivery.

### 2. POLICY RELEVANCE

(a) **Purpose:** This indicator monitors the implementation of immunization programs.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Health and sustainable development are intimately interconnected. Both insufficient and inappropriate development can lead to severe health problems in both developing and developed countries. Addressing primary health needs is integral to the achievement of sustainable development. Particularly relevant is the provision of preventative programmes aimed at controlling communicable diseases and protecting vulnerable groups. Good management of immunization programmes, essential to the reduction of morbidity and mortality from major childhood infectious diseases, is a basic measure of government commitment to preventative health services.

(c) **International Conventions and Agreements:** See sections 2(d) and 6.

(d) **International Targets/Recommended Standards:** In 2005, the WHO Assembly adopted the Global Immunization Vision and Strategy. In the Global Strategy for Health and the Ninth General Programme at Work, all children and 90% of children respectively, should be immunized against diphtheria, tetanus, pertussis, measles, poliomyelitis, tuberculosis and hepatitis B (see section 6 below). The 1992 World Health

Assembly agreed that all children should be immunized against hepatitis B as part of expanded national programmes of immunization. In addition, all children in affected countries of Africa should be immunized against yellow fever. At the World Summit for Children it was resolved that all pregnant women should be immunized against tetanus.

The indicator is one of three indicators used to measure progress towards the Millennium Development Goal Nr. 4 (Reduction of childhood mortality) and the associated target "Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

**(e) Linkages to Other Indicators:** This indicator is linked to other health indicators, particularly those associated with the young, such as infant mortality and life expectancy. It is influenced by such indicators as health expenditure and the proportion of population in urban areas.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** A child is considered adequately immunized against a disease when he or she has received the following number of doses: tuberculosis (1 dose); diphtheria, tetanus and pertussis (DTP) (2 or 3 doses according to the immunization scheme adopted in the country); poliomyelitis (3 doses of live or killed vaccine); measles (1 dose); hepatitis B (3 doses); and yellow fever (1 dose). A pregnant woman is considered adequately immunized against tetanus if she has received at least 2 doses of tetanus toxoid during pregnancy or was already previously immunized.

#### **(b) Measurement Methods:**

i) Infant population: The numerator is the number of infants fully immunized with the specified vaccines x 100, while the denominator is the number of infants surviving to age one. For immunizations against tuberculosis the denominator is the number of live births. If the national schedule provides for immunization in a different age group, such as measles in the second year of age, the value should be the percentage of children immunized in the target age group. For the proper management of immunization programmes, it is however essential to be able to break down the data in such a way as to show the percentage covered in the first year of life (or second year for measles immunization).

ii) Women of child-bearing age: The numerator is the number of women immunized with two or more doses of tetanus toxoid during pregnancy x 100, while the denominator is the number of live births.

**(c) Limitations of the Indicator:** It is useful to have a composite indicator of adequate coverage by immunization. However, it is easier to collect data on the global coverage of a population against one disease than on the immunization of each child against all target diseases at the same time. This is why in most countries only the former data are easily available and collected.

The percent of pregnant women immunized with two or more doses of tetanus toxoid during pregnancy is rather easy to monitor through routine data collection in the health

services. However, it underestimates the percent of pregnant women actually immunized against tetanus. It does not take into account women who are already adequately immunized when becoming pregnant and therefore do not require new doses of tetanus toxoid during pregnancy. Women in this category are not numerous in countries where neonatal tetanus is still an issue and where, accordingly, this indicator is mainly used. But in some countries in transition, with long-standing child immunization programmes, the percent of pregnant women receiving tetanus toxoid is misleading as a significant number of them may be already immunized at the moment of pregnancy.

The indicator does not reflect other health preventative measures, such as education, diet, and pollution prevention. The international targets are not very meaningful for many countries.

**(d) Status of the Methodology:** Not Available.

**(e) Alternative Definitions/Indicators:** Not available.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The number of infants fully immunized against: DTP; poliomyelitis; measles; the number of infants surviving to age one year; against tuberculosis; the number of births; the number of infants living in African countries exposed to yellow fever; the number of pregnant women immunized against tetanus; and the number of live births.

**(b) National and International Data Availability and Sources:** Data is readily available from national immunization programmes of most countries, at least at the national level. Reporting of vaccinations performed annually or nation-wide surveys are the most common data sources.

**(c) Data References:** Data on immunization against DTP, measles and Hepatitis B is included in the WHO Core Health Indicators, see [http://www3.who.int/whosis/core/core\\_select.cfm](http://www3.who.int/whosis/core/core_select.cfm)

Data on immunization against measles is available at the MDG website, see <http://mdgs.un.org/unsd/mdg/>

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization (WHO). The contact point is the Director, Office of Global and Integrated Environmental Health, WHO; fax no. (41 22) 791 4123.

**(b) Other Contributing Organizations:** The United Nations Children's Fund is a cooperating agency.



## 6. REFERENCES

### **(a) Readings:**

- WHO. Global Strategy for Health for All by the Year 2000. Geneva, WHO, 1981.
- WHO. Ninth General Programme of Work Covering the Period 1996-2001. Geneva, WHO, 1994.
- WHO. World Health Assembly Resolution. WHO45.19, 1992.
- WHO. WHO Vaccine Preventable Diseases Monitoring System; 1999 Global Summary. WHO/V&B/99.17,1999.
- WHO. WHO-Recommended Standards for Surveillance of Selected Vaccine-Preventable Diseases. WHO/EPI/GEN/99.012,1999.
- UNICEF. World Summit for Children. Paris, UNICEF, 1990.

### **(b) Internet sites:**

- World Health Organization. <http://www.who.int>
- WHO website on immunization: <http://www.who.int/topics/immunization/en/>

### Theme 3: Health

#### Sub-Theme: Nutritional Status

#### Indicator 7: Nutritional Status of Children (Percentage of underweight and obese children)

NUTRITIONAL STATUS OF CHILDREN		
Core indicator	Nutritional Status	Health

#### 1. INDICATOR

(a) **Name:** Nutritional Status of Children.

(b) **Brief Definition:** Percentage of underweight (weight-for-age below -2 standard deviation (SD) of the WHO Child Growth Standards median) among children under five years of age; percentage of stunting (height-for-age below -2 SD of the WHO Child Growth Standards median) among children under five years of age; and percentage of overweight (weight-for-height above +2SD of the WHO Child Growth Standards median) among children under five years of age.

(c) **Unit of Measurement:** %.

(d) **Placement in the CSD Indicator Set:** Health/Nutritional Status.

#### 2. POLICY RELEVANCE

(a) **Purpose:** The purpose of this indicator is to measure long term nutritional imbalance and malnutrition resulting in under nutrition (assessed by underweight and stunting) and overweight.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Health and development are intimately interconnected. Meeting primary health care needs and the nutritional requirement of children are fundamental to the achievement of sustainable development. Anthropometric measurements to assess growth and development, particularly in young children, are the most widely used indicators of nutritional status in a community. The percentage of low height-for-age reflects the cumulative effects of under-nutrition and infections since birth, and even before birth. This measure, therefore, should be interpreted as an indication of poor environmental conditions and/or long term chronic restriction of a child's growth potential. The percentage of low weight-for-age may reflect the less common wasting (i.e. low weight-for-height) indicating acute weight loss, and/or the much more common stunting. Thus, it is a composite indicator which is more difficult to interpret.

(c) **International Conventions and Agreements:** The United Nations World Summit for

Children and the Millennium Development Goals represent international agreements relevant to this indicator.

**(d) International Targets/Recommended Standards:** To half the prevalence of underweight among children younger than 5 years between 1990 and 2015. This target of the Millennium Development Goal No. 1 to "eradicate extreme poverty and hunger" has been established at the Millennium Summit in 2000, where representatives from 189 countries committed themselves to give highest priority to sustaining development and eliminating poverty.

**(e) Linkages to Other Indicators:** This indicator is closely linked with adequate birth weight. It is also associated with such socioeconomic and environmental indicators as squared poverty gap index, access to safe drinking water, infant mortality rate, life expectancy at birth, national health expenditure devoted to local health care, Gross Domestic Product (GDP) per capita, environmental protection expenditures as a percent of GDP, and waste water treatment coverage.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** An international standard (i.e. the WHO Child Growth Standards) is used to calculate the indicator prevalence for low weight-for-age, low height-for-age, and high weight-for-height (1, 2). The International Pediatric Association (IPA), the Standing Committee on Nutrition of the United Nations System (SCN), and the International Union of Nutritional Sciences (IUNS), have officially endorsed the use of the WHO standards describing them as an effective tool for detecting and monitoring both under nutrition and overweight, thus addressing the double burden of malnutrition affecting populations on a global basis (3-5). The WHO standards may be used for all children up to five years of age, since the influence of ethnic or genetic factors on young children is considered insignificant (6). Low weight-for-age and low height-for-age are defined as less than two standard deviations below the median of the WHO Child Growth Standards (1, 2). High weight-for-height is defined as more than two standard deviations above the median of the WHO Child Growth Standards (1, 2).

**(b) Measurement Methods:** The proportion of children under five with low weight-for-age and low height-for-age can be calculated by using the following formula:

$$\% \text{ underweight children} = (\text{Numerator} / \text{denominator}) \times 100$$

Numerator: number of children under five with weight-for-age below -2 SD

Denominator: total number of children under five weighed.

$$\% \text{ stunted children} = (\text{Numerator} / \text{denominator}) \times 100$$

Numerator: number of children under five with height-for-age below -2 SD

Denominator: total number of children under five measured.

The proportion of children under five with high weight-for-height can be calculated by using the following formula:

$$\% \text{ overweight children} = (\text{Numerator} / \text{denominator}) \times 100$$

Numerator: number of children under five with weight-for-height above +2 SD

Denominator: total number of children under five measured.

For height, supine length is measured in children under two years of age, and standing height in older children (7).

**(c) Limitations of the Indicator:** Lack of specificity when using anthropometry to assess nutritional status, as changes in body measurements are sensitive to many factors including intake of essential nutrients, infections, altitude, stress and genetic background.

In some countries, the age of children is difficult to determine. It is also difficult to measure the length of young children, particularly infants, with accuracy and precision.

**(d) Status of the Methodology:** well-established methodologies for the compilation and standardized analysis of nutritional surveys, as well as robust methods for deriving global & regional trends and forecasting future trends, have been published (8-10).

**(e) Alternative Definitions/Indicators:** Not Available.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** The data needed to compile this indicator are the weight, length/height, age and sex of the children in the index populations.

**(b) National and International Data Availability and Sources:** The data are routinely collected by ministries of health at the national and sub national levels for most countries. Other sources are: Demographic and Health Surveys (DHS, [www.measuredhs.com](http://www.measuredhs.com)); Multiple Indicators Cluster Surveys (MICS, [www.childinfo.org](http://www.childinfo.org)); Living Standards Measurement Surveys (LSMS, [www.worldbank.org/lms/](http://www.worldbank.org/lms/)). All data from these four sources are being collected and standardized by the WHO Department of Nutrition and disseminated via the WHO Global Database on Child Growth and Malnutrition web site [www.who.int/nutgrowthdb](http://www.who.int/nutgrowthdb).

**(c) Data References:** Available via the WHO Global Database on Child Growth and Malnutrition web site [www.who.int/nutgrowthdb](http://www.who.int/nutgrowthdb)

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization (WHO). At WHO, the contact point is the Director, Department of Nutrition for Health and Development; fax no. (41 22) 791 3111.

**(b) Other Contributing Organizations:** UNICEF.

## **6. REFERENCES**

### **(a) Readings:**

1. de Onis M, Garza C, Onyango AW, Martorell R, editors. WHO Child Growth Standards. *Acta Paediatrica Suppl* 2006; 450:1-101.
2. WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006.
3. International Pediatric Association Endorsement. The New WHO Growth Standards for Infants and Young Children.  
[http://www.who.int/childgrowth/Endorsement\\_IPA.pdf](http://www.who.int/childgrowth/Endorsement_IPA.pdf)
4. Standing Committee on Nutrition of the United Nations System. SCN Endorses the New WHO Growth Standards for Infants and Young Children.  
[http://www.who.int/childgrowth/endorsement\\_scn.pdf](http://www.who.int/childgrowth/endorsement_scn.pdf)
5. International Union of Nutritional Sciences. Statement of Endorsement of the WHO Child Growth Standards. [http://www.who.int/childgrowth/endorsement\\_IUNS.pdf](http://www.who.int/childgrowth/endorsement_IUNS.pdf)
6. WHO Multicentre Growth Reference Study Group. Assessment of differences in linear growth among populations in the WHO Multicentre Growth Reference Study. *Acta Paediatrica Suppl* 2006; 450:56-65.
7. WHO. Physical Status: The Use and Interpretation of Anthropometry. Report of a WHO Expert Committee. Geneva, World Health Organization, 1995 (WHO Technical Report Series, No. 854).
8. de Onis M and Blössner M. The WHO Global Database on Child Growth and Malnutrition: methodology and applications. *International Journal of Epidemiology* 2003; 32:518-26.
9. de Onis M, Blössner M, Borghi E, Morris R, Frongillo EA. Methodology for estimating regional and global trends of child malnutrition. *International Journal of Epidemiology* 2004; 33:1260-70.
10. de Onis M, Blössner M, Borghi E, Frongillo EA, Morris R. Estimates of global

prevalence of childhood underweight in 1990 and 2015. JAMA 2004; 291:2600-6.

**(b) Internet sites:**

1. WHO Global Database on Child Growth and Malnutrition. <http://www.who.int/nutgrowthdb>
2. WHO Child Growth Standards. <http://www.who.int/childgrowth/en>

### Theme 3: Health

#### Sub-Theme: Health Status and Risks

#### Indicator 8: Prevalence of Major Diseases such as HIV/AIDS, Malaria, Tuberculosis

PREVALENCE OF MAJOR DISEASES SUCH AS HIV/AIDS, MALARIA, TUBERCULOSIS		
Core indicator	Health status and risks	Health

#### 1. INDICATOR

- (a) **Name:** Morbidity of major diseases such as HIV/AIDS, malaria, tuberculosis
- (b) **Brief Definition:** Prevalence and/or incidence related to major diseases.
- (c) **Unit of Measurement:** Cases of prevalence or incidence per 100 000 people.
- (d) **Placement in the CSD Indicator Set:** Health/Health status and risks.

#### 2. POLICY RELEVANCE

- (a) **Purpose:** The indicator measures the morbidity caused by major diseases. It also provides important information on the success of measures to fight major diseases.
- (b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** The goals of sustainable development can only be achieved in the absence of a high prevalence of debilitating diseases. HIV/AIDS, malaria, tuberculosis and other diseases are major impediments to sustainable development, especially in many developing countries.
- (c) **International Conventions and Agreements:** not available
- (d) **International Targets/Recommended Standards:** Under Millennium Development Goal 6 “Combat HIV/AIDS, malaria and other diseases”, both target 7 “have halted by 2015 and begun to reverse the spread of HIV/AIDS” and target 8 “have halted by 2015 and begun to reverse the incidence of malaria and other major diseases” are relevant for this indicator.
- (e) **Linkages to Other Indicators:** This indicator is closely related to other health indicators as well as to indicators on poverty and economic development.

#### 3. METHODOLOGICAL DESCRIPTION

**(a) Underlying Definitions and Concepts:** Diseases are classified according to the International Statistical Classification of Diseases and Related Health Problems (ICD). Incidence of diseases refers to the number of cases arising in a given time period. Prevalence refers to the number of people suffering from the disease at a given point of time.

The indicator is computed separately for each relevant disease by dividing the number of cases arising in a given time period (incidence), the number of people suffering from the disease at a given point of time (prevalence), and then multiplying the result by 100 000. The indicator can be calculated separately for men, women and both sexes. It can also be broken down by age group.

**(b) Measurement Methods:**

Exact measurement methods depend on the diseases chosen. Prevalence data of HIV/AIDS is obtained through national HIV surveillance systems, which may include national population surveys with HIV testing. In concentrated and low level epidemics, surveillance focuses on high-risk populations. Standardized tools and methods of estimation developed by UNAIDS and WHO are used to estimate overall, gender and age-specific prevalence rates. Prevalence of tuberculosis can be estimated based on population-based surveys. In the absence of such surveys, prevalence can be estimated based on incidence estimates. Incidence of tuberculosis is estimated based on notified cases, prevalence surveys and/or information from death (vital) registration systems. Details of all these estimation methods are available through WHO. Similar methods exist for other diseases.

**(c) Limitations of the Indicator:** Limitations in reporting mechanisms and estimation methods may lead to underreporting of certain diseases or imprecise indicator values. This also limits the comparability of data across countries. Changes in reporting mechanism and estimation methods may affect changes in the data of morbidity of diseases over time.

**(d) Status of the Methodology:** Methodologies for most diseases are under constant review by the WHO.

**(e) Alternative Definitions/ Indicators:** The indicator could be calculated separately for children. On a global level, diarrheal diseases, pneumonia, malaria, neonatal causes, measles and HIV/AIDS are among the most deadly diseases for children.

In addition to morbidity, disease specific mortality rates provide important information on the impact of major diseases in form of death toll. Death rates associated with malaria and tuberculosis are included in the MDG Indicators. Death rates associated with HIV/AIDS, tuberculosis, non-communicable diseases, cardio-vascular diseases and cancer are included in the WHO Core Health Indicators, as well as death rates for children associated with diarrheal diseases, pneumonia, malaria, neonatal causes, measles and HIV/AIDS.



Complementary indicators on responses by health systems to major diseases provide important information. Indicators used in the context of MDG monitoring include “Percentage of population with advanced HIV infection with access to antiretroviral drugs” (Recommended as alternative to “Population with access to essential drugs”), “Proportion of children under 5 sleeping under insecticide-treated bednets and proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs” and “Proportion of tuberculosis cases detected and cured under directly observed treatment short course”. These indicators are also included in the WHO Core Health Indicators, together with indicators on treatment of children with acute respiratory syndromes (ARI) and with diarrhea.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Administrative data, household surveys, data from death (vital) registration systems and/or national estimates for the nominator and population data from censuses or other sources for the denominator. International data may include estimation techniques ensuring the comparability of data across countries and is typically based on internationally agreed population estimated provided by the United Nations Population Division.

**(b) National and International Data Availability and Sources:** Coverage of diseases varies across countries due to variations in relevance of diseases and in quality of health information systems. WHO regularly publishes data on all major diseases.

**(c) Data References:** Data on all MDG indicators on HIV/AIDS, Malaria and Tuberculosis is available from the MDG database, available at <http://mdgs.un.org/unsd/mdg/>

Death rates, prevalence and incidence rates for a number of diseases are included in the WHO Core Health Indicators, see [http://www3.who.int/whosis/core/core\\_select.cfm](http://www3.who.int/whosis/core/core_select.cfm)  
Estimates on death rates by cause for all WHO member states are included in WHO’s Global Burden of Disease Estimates, available at <http://www.who.int/healthinfo/bodestimates/en/index.html>

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization. The contact point is the Director, Measurement & Health Information and/or Co-coordinator, Health Statistics and Evidence.

#### **6. REFERENCES**

**(a) Readings:**

World Health Organization (WHO), The World Health Report, Geneva, various years.

WHO, World Health Statistics, Geneva, various years.

WHO, International Statistical Classification of Diseases and Related Health Problems -

10th Revision, Second edition, Geneva, 2005.

**(b) Internet sites:**

<http://www.who.int/whosis/en/index.html>

<http://mdgs.un.org/unsd/mdg/Default.aspx>

**Theme 3: Health**  
**Sub-Theme: Health Status and Risks**  
**Indicator 9: Smoking Prevalence (NC)**

PREVALENCE OF TOBACCO USE		
Core indicator	Health status and risks	Health

**1. INDICATOR**

**(a) Name:** Prevalence of tobacco use (smoking)

**(b) Brief Definition:** Prevalence of current daily tobacco smoking among adults aged 15 years and older.

**(c) Unit of Measurement:** %.

**(d) Placement in the CSD Indicator Set:** Health/ Health status and risks

**2. POLICY RELEVANCE**

**(a) Purpose:** Prevalence of current daily tobacco smoking among adults is a measure useful to determine of the economic and future health burden of tobacco use, and provides a primary basis for evaluating the effectiveness of tobacco control programmes over time.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Tobacco is an undisputable health threat causing 5.4 million deaths in 2005, and representing the second risk factor for mortality worldwide. The death toll is expected to reach 8.3 million by 2030, with the majority of deaths occurring in developing countries.<sup>24</sup> Tobacco consumption is costly and contributes to poverty and associated health inequalities at the individual and national levels. Studies have shown that prevalence is higher among the poor illustrating a negative association between prevalence and household income and/or wealth. The cost of treatment of tobacco-caused diseases is high and falls heavily on the finances of poor households and countries. Premature deaths from tobacco-related diseases also lead to productivity losses.

In relation to the different UN Millennium Development goals, tobacco use and production undermine efforts to improve primary education, gender equality promotion and maternal and children's health. Money spent by the poor on tobacco use is money diverted from nutrition and education, with especially detrimental consequences for

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<sup>24</sup> Mathers, C. and D. Loncar (2004). "Projections of Global Mortality and Burden of Disease from 2002 to 2030", PLoS Medicine. Available at [http:// medicine. plosjournals](http://medicine.plosjournals).

mothers and children. In addition, children are employed in the developing world for the growing and manufacturing of tobacco. Moreover, passive smoke disproportionately affects infants and children and increases respiratory and other ailments in them. Women are currently targeted by tobacco industry marketing in developing countries encouraging them to smoke as a sign of increased gender equality, independence and success. Women who use tobacco have smaller babies who are weaker and more likely to die in infancy.

Tobacco use can also be linked with some communicable diseases. Smoking and exposure to passive smoke most affect those who are ill and whose immune systems are weak, due to HIV infection for example. Smoking is also implicated in large numbers of tuberculosis deaths.

Additionally, tobacco growing has negative environmental implications. The firewood used to cure and process tobacco increases deforestation. Tobacco growing also requires heavy use of pesticides which can poison people, water and land. The heavy fertilizing of the land in order to grow tobacco leads to soil degradation.

Finally, the large scale illicit trade in tobacco products, which has been linked with organized crime, threatens the security of countries but also increases internal instability and affects human security by increased crime and violence.

**(c) International Conventions and Agreements:** The WHO Framework Convention on Tobacco Control (WHO FCTC) is the first global health treaty negotiated under the auspices of the WHO. "Reflecting the concern of the international community about the devastating worldwide health, social, economic and environmental consequences of tobacco consumption and exposure to tobacco smoke" and "Seriously concerned about the increase of the worldwide consumption and production of cigarettes and other products, particularly in developing countries, as well as about the burden this places on families, on the poor, and on national health systems", the WHO FCTC redefines the role of international law in preventing disease and promoting health. Among its many measures, the treaty requires countries to impose restrictions on tobacco advertising, sponsorship and promotion; establish new packaging and labeling of tobacco products; establish clean indoor air controls; and strengthen legislation to clamp down on tobacco smuggling. The WHO FCTC was adopted unanimously by the 56th World Health Assembly on 21 May 2003 and entered into force on 27 February 2005. The final text of the treaty is available at: <http://www.who.int/tobacco/framework/text/final/en/index.html> .

**(d) International Targets/Recommended Standards:** The core demand reduction provisions in the WHO FCTC are contained in Articles 6-14, which detail the price, tax, and non-price measures necessary to reduce the demand for tobacco. The core supply reduction provisions are contained in Articles 15-17. Mechanisms for scientific and technical cooperation and exchange of information are set out in Articles 20-22. Guidelines are being developed on Articles 8 Protection from exposure to tobacco smoke, 9 Regulation of the contents of tobacco products and 10 Regulation of tobacco product disclosures. Draft template protocols are being elaborated on Articles 13

Tobacco advertising, promotion and sponsorship and 15 Illicit trade in tobacco products. For further details, please refer to <http://www.who.int/tobacco/framework/text/final/en/index.html>.

**(e) Linkages to Other Indicators:** The indicator is closely associated with other poverty, health, education, environment (atmosphere and land), governance and economic development indicators (see 2.b).

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Tobacco products are defined in the WHO FCTC as "products entirely or partly made of the leaf of tobacco as raw material which are manufactured to be used for smoking, sucking, chewing or snuffing." However, for the purposes of the present indicator, and based on the availability of data, the definition will be confined to smoking tobacco products only. The definition of tobacco smoking may include the following tobacco products: manufactured and hand-rolled cigarettes, kreteks, bidis, cigars, cheroots, cigarillos, pipes including water pipes, and any other smoked tobacco products.

**(b) Measurement Methods:** The prevalence of tobacco use is calculated from the responses to individual or household surveys that are nationally representative. The numerator is the number of adults aged 15 years or older that reported to be currently daily smokers of any tobacco product in surveys, multiplied by 100. The denominator is the adult population aged 15 years or older that was surveyed, adjusted for non-responses. See 6.d for further guidance on conducting surveys. Prevalence rates can be age-standardized according to the WHO world standard population to enhance comparability over time and across populations.

**(c) Limitations of the Indicator:**

- Information is available through self-reported questionnaires difficult to verify.
- There is a 30 to 40 year time lag between the exposure to tobacco and incidence of tobacco-related disease, i.e. the prevalence of current tobacco use is not a good proxy to assess cumulative effects of tobacco use.
- Adult prevalence rates do not reflect the gender influence on tobacco smoking, particularly in developing countries, a difference between the rates of males and females which can be substantive (see 3.e).
- Smokeless tobacco products constitute a significant burden in several countries and regions. While a more general measure of tobacco use, including both smoked and smokeless tobacco products would be ideal, many countries do not yet collect data on smokeless tobacco (see 3.e).
- Occasional or non-daily tobacco smoking constitutes a significant risk factor for tobacco-related disease, however it is typically not consistently defined across surveys and countries (see 3.e).
- Nationally representative data are available for a majority of countries,

although the definitions are somewhat different, which make the comparison across countries difficult. Where data is for a subpopulation or is non-comparable across countries and over time, models may need to be applied to arrive at comparable estimates (see 4.a).

**(d) Status of the Methodology:** There are many different survey instruments available for collecting data on health behaviors, including tobacco use. While each has advantages and limitations, differences can lead to results that are not comparable. Surveys that have collected tobacco prevalence in the past include the WHO STEP wise approach to chronic disease risk factor Surveillance (STEPS) and the World Health Survey (WHS) (for further details, see the reference in part 6.b). There is an urgent need for a standardized module to assess prevalence of tobacco use and WHO is taking a leadership role to coordinate and harmonize survey modules.

**(e) Alternative Definitions/Indicators:** In countries where smokeless tobacco products are used extensively and data is available for the prevalence of current daily adult smokeless tobacco use, this may be provided in a footnote. When possible, tobacco use prevalence, whether smoked or smokeless tobacco, may also be provided in disaggregated form by sex, age and socio-economic characteristics, in a footnote. In particular, it can be argued that the prevalence of smoking among youth (typically defined as those aged 13-15 years), as an indicator of longer-term adult prevalence (prevention of youth uptake and reduction of youth prevalence are an important tool to reduce future burden of disease and exacerbation of poverty), is a stronger measure of sustainable development. Household surveys of tobacco use prevalence often include questions related to the quantity of tobacco consumed; reporting countries may consider tracking consumption alongside the prevalence figures, to capture the depth as well as the scope of tobacco use. Countries may also consider reporting the prevalence of current non-daily tobacco use, if it comprises a significant proportion of tobacco use and/or if the patterns of non-daily use are thought to differ significantly from daily use.

#### **4. ASSESSMENT OF DATA**

##### **(a) Data Needed to Compile the Indicator:**

- Data: The number of adults aged 15 years or older that currently smoke any tobacco product daily; the total adult population aged 15 years or older, preferable disaggregated by gender.
- Model: When the available empirical data does not conform to the definition of the prevalence of tobacco use indicator, models may need to be applied to standardize definitions and create comparable estimates across countries or over time. The WHO Global Infobase (see 4.b) employs regression models to adjust country-reported prevalence to a standard set of definitions, age groups and reporting years (see the reference in 6.b for further information).

**(b) National and International Data Availability and Sources:** The WHO Global InfoBase collects on an on-going basis all country-level survey information for eight risk factors for non-communicable diseases, including tobacco use.

**(c) Data References:** Detailed metadata is contained in the WHO Global Infobase Online, see [http://www.who.int/ncd\\_surveillance/infobase/web/InfoBaseCommon/index.aspx](http://www.who.int/ncd_surveillance/infobase/web/InfoBaseCommon/index.aspx).

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization (WHO). The contact point is the Director, Tobacco Free Initiative (TFI), WHO. Email: [tfi@who.int](mailto:tfi@who.int)

**(b) Other Contributing Organizations:** WHO has collaborated/continues to collaborate with the Centers for Disease Control and Prevention (CDC), the United Nations Children's Fund (UNICEF), the World Bank and the Canadian Public Health Association (CPHA), amongst others.

## **6. REFERENCES**

### **(a) Readings:**

World Health Organization. WHO Framework Convention on Tobacco Control. Geneva, World Health Organization, 2003. Available at: <http://www.who.int/tobacco/framework/download/en/index.html>.

World Health Organization. The Millennium Development Goals and Tobacco Control: An opportunity for global partnership. Geneva, World Health Organization, 2004. Available at: <http://www.who.int/tobacco/research/economics/publications/>.

### **(b) Internet sites:**

Global InfoBase Online: [http://www.who.int/ncd\\_surveillance/infobase/web/InfoBaseCommon/index.aspx](http://www.who.int/ncd_surveillance/infobase/web/InfoBaseCommon/index.aspx)

STEPwise approach to surveillance (STEPS): <http://www.who.int/chp/steps/en/>

The World Health Survey: <http://www.who.int/healthinfo/survey/en/index.html>

Tobacco Free Initiative: <http://www.who.int/tobacco/en/>

Tobacco Free Initiative, Economics: <http://www.who.int/tobacco/research/economics/>

### Theme 3: Health

#### Sub-Theme: Health Status and Risks

#### Indicator 10: Prevalence of Mental Health Problems (Suicide rate as proxy) NC

SUICIDE RATE		
Core indicator	Health status and risks	Health

### 1. INDICATOR

(a) **Name:** Suicide rate

(b) **Brief Definition:** The number of deaths from suicide and intentional self-harm per 100 000 people.

(c) **Unit of Measurement:** Deaths per 100 000 people.

(d) **Placement in the CSD Indicator Set:** Health/Health status and risks.

### 2. POLICY RELEVANCE

(a) **Purpose:** The indicator measures the suicide rate, which is an important proxy for the prevalence of mental health disorders in a country. Moreover, in many countries suicide is a major cause of death, especially among adolescents and young adults, and, therefore, a major public health concern in its own.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** The goals of sustainable development can only be achieved in the absence of a high prevalence of debilitating diseases. Mental health disorders are a major impediment to the well-being of populations in developed and developing countries. Mental health disorders, especially depression and substance abuse, are associated with 90% of all suicides. People with these disorders are often subjected to social isolation, poor quality of life and increased mortality. These disorders are the cause of staggering economic and social costs. Consequently, there is a need for preventing and curing mental disorders as part of the efforts to strengthen the capacity of health-care systems.

(c) **International Conventions and Agreements:** None

(d) **International Targets/Recommended Standards:** None.

(e) **Linkages to Other Indicators:** This indicator is closely related to other health indicators as well as to indicators on poverty and social exclusion.

### 3. METHODOLOGICAL DESCRIPTION



**(a) Underlying Definitions and Concepts:** Suicide mortality statistics are collected under the international classification of diseases under the international classification of diseases and related health problems, ‘Suicide and intentional self-harm’ (ICD-10 codes X60-X84).

Statistics on mental and behavioral disorders are also collected under the international classification of diseases and related health problems (ICD -10 codes F00-F99). However, in many cases the data does not allow for meaningful aggregation across disorders and does not allow for meaningful comparisons across time and across countries. Therefore, suicide rate as proxy may provide a more reliable and robust indicator.

**(b) Measurement Methods:** The indicator is derived by dividing the number of deaths caused by suicide and intentional self-harm by the number of people, and then multiplying the result by 100 000. The indicator can be calculated separately for men, women and both sexes. In order to allow for international comparisons as well as for comparisons across sexes, standardized death rates are often used. These rates are adjusted by using a ‘standard’ population as defined by WHO.

**(c) Limitations of the Indicator:** The indicator provides only limited information about the prevalence of mental disorders. It cannot provide information on the causes of these disorders. Procedures for recording a death as a suicide are not uniform across countries. Cultural and social norms also play a role in determining suicide as cause of death. These factors limit the comparability of suicide rates across countries. Changes in procedures and in cultural and social norms may also affect changes in suicide rates over time.

**(d) Status of the Methodology:** Well established.

**(e) Alternative Definitions/ Indicators:** Indicators on the prevalence of mental disorders would provide an alternative or complementary measure.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Death registration data for the nominator and population data from censuses (or ‘standardized’ population data from the WHO) for the denominator.

**(b) National and International Data Availability and Sources:** Most countries maintain centralized or decentralized death registers and report them to the WHO, even though coverage greatly varies across countries.

**(c) Data References:** Time series data on suicide rates in 99 countries is available on the WHO website at:

[http://www.who.int/mental\\_health/prevention/suicide/country\\_reports/en/index.ht](http://www.who.int/mental_health/prevention/suicide/country_reports/en/index.ht)

[ml](#)

Estimates on self-intentional death rates for all WHO member states are included in WHO's Global Burden of Disease Estimates, available at

<http://www.who.int/healthinfo/bodestimates/en/index.html>

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the World Health Organization.

## **6. REFERENCES**

### **(a) Readings:**

World Health Organization (WHO), The World Health Report 2002 - Reducing Risks, Promoting Health Life, Geneva, 2002.

WHO, Mental Health Atlas 2005, Geneva, 2005.

WHO, International Classification of Diseases and Health Related Problems - 10th Revision, Second edition, Geneva, 2005.

### **(b) Internet sites:**

[http://www.who.int/mental\\_health/en/](http://www.who.int/mental_health/en/)

<http://www.who.int/healthinfo/bod/en/index.html>

## THEME 4: Education

SUB ISSUE	THEME/ ISSUE	Indicators
	Education Level	Gross Intake into Last Year of Primary Education, by sex
		Net Enrolment Rate in Primary Education
		Adult Secondary (tertiary) Schooling Attainment Level, by sex
		Life Long Learning (Proportion of Working Age Population Receiving Learning or Training) NC
Literacy		Adult Literacy rate, by sex

## Theme 4: Education

### Sub-Theme: Education Level

#### Indicator 1: Gross Intake into Last Year of Primary Education, By Sex

GROSS INTAKE RATIO TO LAST GRADE OF PRIMARY EDUCATION		
Core indicator	Education Level	Education

#### 1. INDICATOR

(a) **Name:** Gross Intake Ratio to Last Grade of Primary Education (GIRLG), Also called Primary Completion Rate (PCR).

(b) **Brief Definition:** The total number of new entrants in the last grade of primary education (according to ISCED9725), regardless of age, expressed as percentage of the total population of the theoretical entrance age to the last grade of primary.

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

(d) **Placement in the CSD Indicator Set:** Education/Education Level.

#### 2. POLICY RELEVANCE

(a) **Purpose:** Gross Intake Rate to Last Grade of Primary Education is considered to be a measure of primary completion in a country's education system.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Education is a process by which human beings and societies reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues. It is also critical for achieving environmental and ethical awareness, values, and skills consistent with sustainable development and effective public participation in decision-making. Policy-makers concerned with children's access and participation in education would find this indicator particularly useful. It reports the current final grade intake at primary level stemming from previous years of schooling and past education policies on entrance to primary education.

(c) **International Conventions and Agreements:** Indirect link to Millennium Development Goals (MDGs), the Dakar Framework for Action for Education for All (EFA) – see next two sections (d) and (e) for further elaboration.

(d) **International Targets/Recommended Standards:** The MDG goal 2 is “to ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling”. The goal for EFA is similar. Progress towards this goal is

monitored by the indicator School Survival Rate to Grade 5 with a view that the general target should be 100% for every country of the world. Current discussions emerging from the MDG Interagency Expert Working Group suggest that this indicator should be complemented by the indicator GIRLG - see rationale in next section on Linkages.

**(e) Linkages to Other Indicators:** Currently, one of the indicators used to monitor MDG goal 2 on universal primary education is School Survival Rate to Grade 5. This is defined as the number of pupils belonging to a school-cohort who reached grade 5 divided by the number of pupils in the school-cohort, i.e., those originally enrolled in the first grade of primary education, and multiply the result by 100. It has been suggested that a better indicator to monitor MDG goal 2 would be the indicator GIRLG. The rationale is: while School Survival Rate to Grade 5 is important in assessing the internal efficiency of a school system for children who have effective access to school through inclusion of repetitions and drop outs, it gives no idea on the magnitude of coverage of the eligible school population. For instance, one might have a 100% School Survival Rate to Grade 5 but have only 25% of children in school. This is because the denominator of the School Survival Rate to Grade 5 is based on the number of children who have entered school and not the number who are eligible to enter school. The suggested supplement indicator, GIRLG combines two dimensions to assess UPE: it addresses whether or not the entire eligible school age population has access to school and whether or not they complete the full primary cycle.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Gross Intake Ratio to Last Grade of primary education is the total number of new entrants in the last grade of primary education (according to ISCED97), regardless of age, expressed as percentage of the total population of the theoretical entrance age to the last grade of primary.

**(b) Measurement Methods:** Determine the population of the theoretical entrance age to the last grade of primary by reference to the theoretical starting age and duration of ISCED97 Level 1 (primary education) as reported by the country.

Divide the number of new entrants in last grade of primary education, irrespective of age, by the population of the theoretical entrance age to the last grade of primary, and multiply the result by 100.

This method requires information on the structure of education (i.e. theoretical entrance age and duration of ISCED97 Level 1), enrolment and repeaters in the last grade of primary education and population of the theoretical entrance age to the last grade of primary.

$$\text{GIRLG}^t = \frac{N^t}{P_a^t} * 100$$

Where,

**GIRLG**<sup>t</sup> = Gross Intake Ratio to Last Grade in school-year t

**N**<sup>t</sup> = Total number of new entrants in the last grade of primary education (enrolments minus repeaters), in school-year t

**P**<sub>a</sub><sup>t</sup> = Population of the theoretical entrance-age a to last grade of primary, in school-year t

**(c) Limitations of the Indicator:** The Gross Intake Ratio to Last Grade of primary reports on the current primary access to last grade stemming from previous years' of schooling and past education policies on entrance to primary education. It is a measure of first-time completion of primary education as it excludes pupils repeating the last grade. A high Gross Intake Ratio to Last Grade denotes a high degree of completion of primary education.

As this calculation includes all new entrants to last grade (regardless of age), the Gross Intake Ratio may exceed 100%, due to over-aged or under-aged pupils entering the last grade of primary school for the first time. It is measuring the capacity of the education systems regarding primary completion rather than a proportion of a specific group.

Country figures may differ from the international ones because of differences between the national education system and ISCED97; or differences in coverage (i.e. the extent to which different types of education – e.g. private or special education – or different types of programmes e.g. adult education or early childhood care and education - are included in one rather than the other) and/or between national and UNPD population data.

**(d) Status of the methodology:**

**(e) Alternative Definitions:** Three other indicators of primary completion have been proposed by the UNESCO Institute for Statistics (UIS) alongside GIRLG:

#### **Enrolment-based completion indicators**

**Expected Gross Intake Ratio to the Last Grade of Primary (E-GIRLG).** It predicts the effect on last grade intake of current education policies on entrance to primary education and future years of schooling

*Apparent (gross) Intake rate × Survival rate to the last grade*

#### **Graduation-based completion indicators**

**Gross Primary Graduation Ratio (GPGR).** It reports the current primary outputs stemming from previous years of schooling and past education policies on entrance to primary education.

*Number of graduates*

*Population of the theoretical primary graduation age*

**Expected Gross Primary Graduation Ratio (E-GPGR).** It predicts the effect on primary outputs of current education policies on entrance to primary education and future years of schooling.

*Apparent Intake rate* × *Survival rate to last grade* × *Probability for graduation*

$$\text{Probability for graduation} = \frac{\text{Graduates}}{\text{New entrants to last grade}}$$

All these indicators are GROSS measure of completion. This means that they are measuring the **volume** of completion with regard to the eligible school age population. Therefore the figures may exceed 100% for some countries. This is the case for several countries where children complete primary education after multiple repetition and even re-enrolment after drop-out. Their interpretation should be completed along with other indicators of intake and progress (i.e. Intake and enrolment rates).

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Basic data required to derive this indicator include number of enrolled and number of repeaters for the last grade of primary education (as determined by the country and in accordance with the ISCED97 definition). Corresponding demographic age related data is required for students in the last grade of primary, again as determined by the country and in accordance with the ISCED97 definition.

**(b) National and International Data Availability and Sources:** At the national level, data on enrolment and repetition by grade in primary school are generally available in most countries. For sound measurement, this indicator should be supported by consistent data for gender and area (such as rural/urban zones). At the international level the UNESCO Institute for Statistics (UIS) undertakes an annual data collection of the latest available enrolment and repetition data from each country of the world. It then combines these with demographic age data from UN Population Division to form the indicator. Gross Intake Ratio to Last Grade of primary is available for around 140 countries.

**(c) Data References:**

The UNESCO Institute for Statistics web site: <http://www.uis.unesco.org>

UNESCO Institute for Statistics (UIS) Global Education Digest (GED), 2003, 2004, 2005, 2006.

The Education for All (EFA) Global Monitoring Reports (GMR), UNESCO.

The Millennium Development Goals Report 2006, United Nations.

The Human Development Reports, UNDP.

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the United Nations Educational, Scientific and Cultural Organization (UNESCO). The contact point is the Director, UNESCO Institute for Statistics (UIS); email: [uis.unesco.org](mailto:uis.unesco.org); fax: (1-514) 343-5740.

**(b) Other Contributing Organizations:** The UN Population Division in New York provides the population counts that comprise the denominator of this indicator.

## **6. REFERENCES**

### **(a) Readings:**

UNESCO Institute for Statistics (UIS) Global Education Digest (GED), 2003, 2004, 2005.

The Education for All (EFA) Global Monitoring Reports (GMR), UNESCO.

The Millennium Development Goals Report 2006, United Nations.

The Human Development Reports, UNDP.

The World Development Indicators Reports, the World Bank.

World Education Report (UNESCO), 1995, 1998.

International Standard Classification of Education 1997, UNESCO

**(b) Internet site:** <http://www.uis.unesco.org> (UNESCO Institute for Statistics)



## Theme 4: Education

### Sub-Theme: Education Level

#### Indicator 2: Net Enrolment Rate in Primary Education

NET ENROLMENT RATE IN PRIMARY EDUCATION		
Core indicator	Education Level	Education

#### 1. INDICATOR

(a) **Name:** Net Enrolment Rate in Primary Education.

(b) **Brief Definition:** The number of children of official primary school age (according to ISCED9726) who are enrolled in primary education as a percentage of the total children of the official school age population.

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

(d) **Placement in the CSD Indicator Set:** Education/Education Level.

#### 2. POLICY RELEVANCE

(a) **Purpose:** Net Enrolment Rate is considered to be a measure of the education coverage in a specific level of a country's education system.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Education is a process by which human beings and societies reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues. It is also critical for achieving environmental and ethical awareness, values, and skills consistent with sustainable development and effective public participation in decision-making.

Policy-makers concerned with children's access and participation in education would find this indicator, alongside the Gross Enrolment Ratio or GER (defined later in "Linkages to Other Indicators"), particularly useful. A sharp discrepancy between the GER and the NER indicates that enrolled children enter late to the first grade or do not progress regularly through the grades and that the system's internal efficiency could be improved. Appropriate policies and measures could then be adopted to address problems of grade repetition and drop-out as well as bottlenecks with regard to retention in school.

(c) **International Conventions and Agreements:** Millennium Development Goals (MDGs), the Dakar Framework for Action for Education for All (EFA),

(d) **International Targets/Recommended Standards:** The MDG goal 2 is "to ensure that,

by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling". The goal for EFA is similar. Progress towards this goal is monitored, amongst other indicators but principally, by the NER with a view that the general target should be 100% for every country of the world.

**(e) Linkages to Other Indicators:** This indicator is often analyzed alongside the Gross Enrolment Ratio for Primary Education (GER). This is defined as the number of pupils (of any age) who are enrolled in primary education as a percentage of the total children of official school age population (according to ISCED97).

Gross Enrolment Ratio is widely used to show the general level of participation in a given level of education. It indicates the capacity of the education system to enroll students of a particular age-group at a specific level of education. It can be a complementary indicator to NER by indicating the extent of over-aged and under-aged enrolment. GER can be over 100% due to the inclusion of over-aged and under-aged pupils/students because of early or late entrants, and grade repetition. In this case, a rigorous interpretation of GER needs additional information to assess the extent of repetition, late entrants, etc.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** Net primary enrolment rate in primary education is the number of pupils of official primary school age (according to ISCED97) who are enrolled in primary education as a percentage of the total children of the official school age population. Where more than one system of primary education exists within the country the most widespread or common structure is used for determining the official school age group.

**(b) Measurement Methods:** Determine the population of official school age by reference to the theoretical starting age and duration of ISCED97 Level 1 (primary education) as reported by the country.

Divide the number of pupils enrolled in primary education who are of the official school age by the population for the same age-group and multiply the result by 100. This method requires information on the structure of education (i.e. theoretical entrance age and duration of ISCED97 Level 1), enrolment by single years of age and population of the age-group corresponding to the given level of education.

$$NER_h^t = \frac{E_{h,a}^t}{P_{h,a}^t} * 100$$

Where :

$NER_h^t$  = Net Enrolment Ratio at level of education  $h$  in school-year  $t$

$E_{h,a}^t$  = Enrolment of the population of age-group  $a$  at level of education  $h$  in school-year  $t$

$P_{h,a}^t$  = Population in age-group  $a$  which officially corresponds to level of education  $h$  in school-year  $t$

**Example:** If the entrance age for primary education is 7 years with a duration of 6 years then  $a$  is (7-12) years.

**(c) Limitations of the Indicator:** A high NER denotes a high degree of enrolment in education by the official school-age population. The theoretical maximum value is 100%. NERs below 100 percent provide a measure of the proportion of primary school age children who are not enrolled at the primary level. This difference does not necessarily indicate the percentage of students who are not enrolled at all in education, since some children may be enrolled at other levels of education. When the NER is compared with the Gross Enrolment Ratio (GER) the difference between the two ratios highlights the incidence of under-aged and over-aged enrolment.

Net Enrolment Rates may exceed 100% due to inconsistencies between population and enrolment data. In this case the indicator is adjusted by the UNESCO Institute for Statistics (UIS) using a capping factor so that the Gender Parity Index<sup>27</sup> of the new set of values remains the same as for the original values but setting the higher of the male and female NERs to 100% and adjusting the other values proportionately.

Nationally-published figures may differ from the international ones because of differences between national education systems and ISCED97; or differences in coverage (i.e. the extent to which different types of education – e.g. private or special education – or different types of programmes e.g. adult education or early childhood care and education - are included in one rather than the other) and/or between national and UNPD population data.

**(d) Status of the methodology:**

**(e) Alternative Definitions:** The UNESCO Institute for Statistics (UIS) estimates the number of out-of-school children using an adaptation of NER. (Note that there is no internationally agreed upon title for this adaptation of NER as of yet.) The adaptation uses an alternative numerator calculation which includes the number of children enrolled in either primary or secondary school. This is felt to be a more “honest” measure since children who are enrolled in secondary school but are of primary school age should not be considered a failure of the system and so should be included in the count.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Basic data required to derive this indicator include enrolment by single year of age for at all ages that are encompassed in the official definition of primary school level (in accordance with ISCED97) in a country. Corresponding demographic age related data is required for all ages encompassed by the definition of primary school level.

**(b) National and International Data Availability and Sources:** At the national level, data on enrolment by age in primary school are available in about 140 countries. For sound measurement, this indicator should be supported by consistent data for gender and area (such as rural/urban zones). At the international level the UNESCO Institute for Statistics (UIS) undertakes an annual data collection of the latest available enrolment data from each country of the world. It then combines these with demographic age data from UN Population Division to form the indicator.

**(c) Data References:**

The UNESCO Institute for Statistics web site: <http://www.uis.unesco.org>  
UNESCO Institute for Statistics (UIS) Global Education Digest (GED), 2003, 2004, 2005, 2006.

The Education for All (EFA) Global Monitoring Reports (GMR), UNESCO.

The Millennium Development Goals Report 2006, United Nations.

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the United Nations Educational, Scientific and Cultural Organization (UNESCO). The contact point is the Director, UNESCO Institute for Statistics (UIS); email: [uis.unesco.org](mailto:uis.unesco.org); fax: (1-514) 343-5740.

**(b) Other Contributing Organizations:** The UN Population Division in New York provides the population counts that comprise the denominator of this indicator.

#### **6. REFERENCES**

**(a) Readings:**

UNESCO Institute for Statistics (UIS) Global Education Digest (GED), 2003, 2004, 2005, 2006.

The Education for All (EFA) Global Monitoring Reports (GMR), UNESCO.

The Millennium Development Goals Report 2006, United Nations.

The Human Development Reports, UNDP.

The World Development Indicators Reports, the World Bank.

World Education Report (UNESCO), 1995, 1998.

International Standard Classification of Education 1997, UNESCO

(b) Internet site: <http://www.uis.unesco.org> (UNESCO Institute for Statistics)

## Theme 4: Education

### Sub-Theme: Education Level

#### Indicator 3: Adult Secondary (Tertiary) Schooling Attainment Level, By Sex

ADULT SECONDARY (TERTIARY) SCHOOLING ATTAINMENT LEVEL		
Core indicator	Education level	Education

#### 1. INDICATOR

(a) **Name:** Adult Secondary (Tertiary) Schooling Attainment Level.

(b) **Brief Definition:** Adult Secondary Schooling Attainment Level is defined as the proportion of the population of working age (25-64 years) which has completed at least (upper) secondary education. Adult Tertiary Schooling Attainment Level is defined as the proportion of the population of working age (25-64 years) which has completed at least the first stage (as defined by the International Standard Classification of Education or ISCED) tertiary education.

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

(d) **Placement in the CSD Indicator Set:** Education/Education Level.

#### 2. POLICY RELEVANCE

(a) **Purpose:** These indicators provide measures of the quality of the human capital stock within the adult population of approximately working age. For instance, those who have completed upper secondary education can be expected either to have an adequate set of skills relevant to the labor market or to have demonstrated the ability to acquire such skills. The indicator corresponding to secondary attainment can be made more dynamic by presenting the results in 10-year age bands (25-34, 35-44, 45-54, 55-64) in order to give an indication of changes over time in actual secondary education completion rates. Nevertheless, one should not assume that differences between age groups correspond to progress over time, because individuals are not always necessarily schooled at the "appropriate" age, especially in developing countries. This may even underestimate progress if older cohorts have returned to school in recent years, which seems plausible.

(b) **Relevance to Sustainable/Unsustainable Development:** Education is a process by which human beings reach their fullest potential. It is critical for promoting and communicating sustainable development and improving the capacity of people to address environment and development issues. It facilitates the achievement of environmental and ethical awareness, values, and skills consistent with sustainable

development and effective public participation in decision-making.

**(c) International Conventions and Agreements:** None.

**(d) International Targets/Recommended Standards:** International agreements do not establish specific national or global targets for this indicator.

**(e) Linkages to Other Indicators:** Education is closely linked to indicators reflecting basic needs such as literacy, capacity-building, information and communications and the role of major groups. These indicators also give a broad measure of the quality of the human capital stock within countries (and hence, an indication of the potential for future sustained development).

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** The International Standard Classification of Education (1997) defines levels of education (pre-primary, primary, lower secondary, upper secondary etc.) in an internationally comparable manner.

**(b) Measurement Methods:** To calculate the adult secondary education attainment level, divide the number of adults aged 25-64 years who have completed at least upper secondary education by the corresponding total population aged 25-64 years and multiply by 100. To calculate the adult tertiary education attainment level, divide the number of adults aged 25-64 years who have completed at least first stage (as defined by the International Standard Classification of Education or ISCED) tertiary education by the corresponding total population aged 25-64 years and multiply by 100.

**(c) Limitations of the Indicator:**

Schooling attainment levels are mostly based on self-declaration or declaration of the head of household, which may give rise to concerns about data reliability and consequently comparability, especially for females in many developing countries. Some countries determine completion of upper secondary (or tertiary) education by making inference using data on the number of years of schooling received rather than qualifications obtained. In some cases, the available data only indicate whether an individual has studied at the upper secondary (or tertiary) level as opposed to having completed upper secondary (or tertiary) education.

**(d) Status of the methodology:**

These indicators have the status of an international recommendation since the basic data elements to derive them are included in the Revised Recommendation concerning the International Standardization of Education Statistics adopted by the UNESCO General Conference at its twentieth session, Paris, 1978. In the latest revised Principles and Recommendations for Population and Housing Censuses in 1999, the concerned UN agencies co-operated with international experts in upgrading the methodology used in

collecting statistics on literacy and educational characteristics.

**(e) Alternative Definitions:**

Where relatively small numbers of the population have completed upper secondary education, alternative indicators are either the Adult Primary Education Attainment Level (although this may be closely correlated with the Adult Literacy Rate) or the Adult Lower Secondary Education Attainment Level.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Data on the number of people of the relevant age (recommended being 25-64) who have completed at least upper secondary (or tertiary) education and the corresponding population of the same age.

**(b) National and International Data Availability and Sources:** Data are usually collected during national population censuses, or during household surveys such as Labor Force Surveys. Official statistics exist for many countries in the world but are often out-of-date due to censuses taking place every ten years and late census data release. For sound measurement, the ratio must be supported by consistent data by gender and age-group.

**(c) Data References:** The UNESCO Institute for Statistics (UIS) web site: <http://www.uis.unesco.org>

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the United Nations Educational, Scientific and Cultural Organization (UNESCO). The contact point is the Director, UNESCO Institute for Statistics (UIS); e-mail: [uis@unesco.org](mailto:uis@unesco.org) and fax (1-514) 343-5740.

**(b) Other Organizations:** The International Labor Organization (ILO) also collects statistics on educational attainment from national Labor Force Surveys and the Organization for Economic Co-operation and Development (OECD) publishes such data.

#### **6. REFERENCES**

**(a) Readings:**

UNESCO, World Education Report, 1995, 1998.

UNESCO, Statistics of Education in Developing Countries: an Introduction to their Collection and Analysis, 1983.

**(b) Internet site:** <http://www.uis.unesco.org>



**Theme 4: Education**

**Sub-Theme: Education Level**

**Indicator 4: Life Long Learning (Proportion of Working Age Population Receiving Learning or Training) NC**

LIFE-LONG LEARNING		
Core indicator	Education Level	Education

**1. INDICATOR**

**(a) Name:** Life-long learning

**(b) Brief definition:** Percentage of the population aged 25 to 64 in education or training.

**(c) Unit of Measurement:** %

**(d) Placement in the CSD Indicator Set:** Social/Education/Education Level

**2. POLICY RELEVANCE**

**a) Purpose:** The scale and quality of human resources are major determinants of both the creation of new knowledge and its dissemination. Key factors are the constant updating of the knowledge of the workforce, as well as the overall educational level of the working age population and the intensity of lifelong learning activities.

**b) Relevance to Sustainable/Unsustainable Development (theme/subtheme) :**  
Life-long learning is essential to sustainable development. As society shifts towards sustainable production and consumption patterns, workers and citizens will be needed who are willing to develop and adopt new technologies and organization techniques as workers, as well as new attitudes and behavior as citizens and consumers. Life-long learning can contribute to making persons more flexible, open-minded and interested in new developments.

**c) International Conventions and Agreements:** None.

**d) International Targets/Recommended Standards:** None.

**e) Linkages to other indicators:** The indicator 'lifelong learning' is closely linked to indicators reflecting educational needs such as literacy ("adult literacy rate"), numeracy, capacity-building, information and communications. Higher skilled workers have better access to the labor market and are therefore less prone to unemployment ("unemployment rate") and subsequent poverty ("percent of population living below

poverty line”) and social exclusion. In addition, more highly skilled workers should achieve higher labor and resource productivity and therefore contribute to growth in the economic dimension (“GDP per capita”).

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying definitions and concepts:** The indicator refers to the percentage of persons aged 25 to 64 who are in education or training, as part of the total population of the same age group.

Education or training, whether or not relevant to the respondent's current or possible future job, includes all taught activities related to formal and non formal education (regular education, continuing training, training within the company, apprenticeship, on-the-job training, seminars, distance learning, evening classes, etc.). It also includes courses followed for general interest and may cover all forms of education and training as language, data processing, management, art and culture, and health or medicine courses.

**(b) Measurement method:** The indicator is calculated by using the number of persons aged 25 to 64 who answered they received education or training in the four weeks preceding the survey as the nominator,, and as the denominator, the total population of the same age group, excluding no answers to the question ‘participation to education and training’.

A reference period comprising the last four weeks preceding the survey has been chosen for the questions on participation in the education in order to avoid distortion of information due to recall problems.

**(c) Limitations of the Indicator:** As the data for this indicator are based on a sample of the population, the results are subject to the usual types of errors associated with random sampling. Based on the sample size and design in the various countries, basic guidelines should be implemented to avoid publication of figures that are too small to be reliable or to give warning of the unreliability of the figures.

**(d) Status of the Methodology:** not available

**(e) Alternative definitions/Indicators:** Different age groups will be appropriate for different countries and regions and should take account of the normal patterns of working life, education and retirement in each country. For most of Europe and North America the 25-64 age group is the most appropriate. But the 15-24 age group (in combination with other age groups) will also be applicable for countries where the majority of the young people do not continue to participate in formal education beyond the age of 15.

#### **4. ASSESSMENT OF DATA**

**(a) Data needed to Compile the Indicator:** Data on the number of people aged 25 to 64 who are in education or training and the corresponding population of the same age.

**(b) National and International Data Availability and Sources:** Labor force surveys are carried out in most parts of the World, and results are often available online (see <http://www.ilo.org/dyn/lfsurvey/lfsurvey.home> ).

**(c) Data References:** Data for member states of the European Union is included in the Sustainable Development Indicators Database, see [http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1998,47433161,1998\\_47437052&\\_dad=portal&\\_schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1998,47433161,1998_47437052&_dad=portal&_schema=PORTAL)

#### **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is Eurostat (the Statistical Office of the European Communities).

**(b) Other Contributing Organizations:**

#### **6. REFERENCES**

**(a) Readings:**

**(b) Internet site:** <http://europa.eu.int/comm/eurostat>

**Theme 4: Education**  
**Sub-Theme: Literacy**  
**Indicator 5: Adult Literacy Rate, By Sex**

<b>ADULT LITERACY RATE</b>		
<b>Core indicator</b>	<b>Literacy</b>	<b>Education</b>

**1. INDICATOR**

**(a) Name:** Adult literacy rate.

**(b) Brief Definition:** The proportion of the adult population aged 15 years and over that is literate.

**(c) Unit of Measurement:** expressed as a rate (%).

**(d) Placement in the CSD Indicator Set:** Education/Literacy.

**2. POLICY RELEVANCE**

**(a) Purpose:** This indicator provides a measure of the stock of literate persons within the adult population who are capable of using written words in daily life and to continue to learn. It reflects the accumulated accomplishment of education in spreading literacy. Any shortfall in literacy would provide indications of efforts required in the future to extend literacy to the remaining adult illiterate population.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Literacy is critical for promoting and communicating sustainable development and improving the capacity of people to address environment and development issues. It facilitates the achievement of environmental and ethical awareness, values, and skills consistent with sustainable development and effective public participation in decision-making.

**(c) International Conventions and Agreements:** the Dakar Framework for Action on Education for All (EFA), the Millennium Development Goals (MDG), the Literacy Initiative for Empowerment (LIFE) and the United Nations Literacy Decade (UNLD).

**(d) International Targets/Recommended Standards:** The general target is full literacy, i.e., 100% adult literacy rate. This is the goal of most national efforts and international campaigns to eradicate illiteracy. The EFA and MDG goals are to improve the literacy rate by 50% from 2000 levels by 2015.

**(e) Linkages to Other Indicators:** Literacy is closely linked to indicators reflecting basic

needs such as education, capacity building, information and communication, and the role of major groups. The literacy rate indicates the status or stock of literates at a given point in time. It is often linked to the number of out-of-school children representing those that would gain literacy skills unless they are enrolled or attending primary school. School enrolment ratios and the number of pupils reaching grade 5 of primary education, both having an impact on the future stock of literates.

### 3. METHODOLOGICAL DESCRIPTION

**(a) Underlying Definitions and Concepts:** The Revised Recommendation concerning the International Standardization of Educational Statistics suggests the following definitions for statistical purposes:

(i) A person is literate who can with understanding both read and write a short simple statement related to his/her everyday life.

(ii) A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his/her group and community and also for enabling him/her to continue to use reading, writing and calculation for his/her own and the community's development.

Persons who do not fulfill (i) or (ii) are termed illiterates or functional illiterates. Adult literacy measurement applies to the population aged 15 years and over, and data are generally available by sex, age-group, and urban/rural areas.

**(b) Measurement Methods:** To calculate the adult literacy rate, divide the number of literates aged 15 years and over by the corresponding total population aged 15 years and over and multiplied by 100.

**(c) Limitations of the Indicator:** As literacy is a relative concept, no single measure can separate the literate from the illiterate. A cut-off point is not totally appropriate because there are many different forms and degrees of literacy. A person might be literate in numeric terms, but have difficulty with text comprehension. Literacy can be defined in terms of work, school, home, and social spheres. Each area of life requires different types of literacy skills.

Literacy status is mostly based on self-declaration or declaration of the head of household, which gives rise to concerns about data reliability and consequently comparability, especially for females in many developing countries. Some countries estimate literacy rates by making inference using data on educational attainment, such as by equating persons with no schooling or incomplete primary education as illiterates in the absence of theoretical and empirical basis. Increasingly, it is deemed critical that literacy should be determined by actual assessment of reading, writing and numeracy abilities of each person within a social context. Although direct assessment of literacy is time-consuming, costly and operationally complex, the UIS is currently developing the Literacy Assessment Monitoring Programme (LAMP) as an international instrument in order to provide cross-nationally comparable measurements on literacy skills for those countries of the world that participate.

**(d) Status of the methodology:** This indicator has the status of an international recommendation since the basic data elements to derive it are included in the Revised Recommendation concerning the International Standardization of Education Statistics adopted by the UNESCO General Conference at its twentieth session, Paris, 1978. In the latest revised Principles and Recommendations for Population and Housing Censuses in 1999, the concerned UN agencies co-operated with international experts in upgrading the methodology used in collecting statistics on literacy and educational characteristics. Further development of literacy test instruments (such as UIS' LAMP), and their use in spreading the practice of literacy test measurement shall help to improve the quality of international statistics on literacy which in turn will permit targeted policy interventions in those countries where it is needed.

**(e) Alternative Definitions:** To meet the limitations discussed in 4c above, the definition and measurement of functional literacy represents an improved indicator. This is usually measured for three to five components of literacy such as "prose", "document", and "numeracy" domains. The aim is to measure the degree of functionality, rather than the dichotomy literate vs. illiterate. In order to undertake a direct assessment of literacy skills, measurement instruments such as LAMP are required.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** Data on the number of literates or illiterates and the corresponding population aged 15 years and over.

**(b) National and International Data Availability and Sources:** Data are usually collected during national population censuses, or during household surveys or literacy surveys. Official statistics exist for most countries in the world but are often out-of-date due to census taking every ten years and late census data release. The United Nations Educational, Scientific and Cultural Organization (UNESCO), through its Institute for Statistics (UIS), undertakes an annual data collection of the latest available international literacy data. The UIS also makes available forecasted literacy rates that are based on a newly developed demographic projection model. In principle, literacy data are available at both the national and sub-national levels. For sound measurement, the ratio must be supported by consistent data by gender, age-group and area (such as rural/urban zones). The primary data sources are national population censuses and household surveys. International data sources include the UNESCO Institute for Statistics (UIS) and the Statistics Division of the United Nations Department of Economic and Social Affairs (DESA).

**(c) Data References:** The UNESCO Institute for Statistics (UIS) WEB site: <http://www.uis.unesco.org> ; the UIS Global Education Digests (GED), the UNESCO EFA Global Monitoring Reports (see "Literacy for Life" (2006)); the UNDP Human

Development Reports; the World Bank World Development Indicators Reports.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead agency is the United Nations Educational, Scientific and Cultural Organization (UNESCO). The contact point is the Director, UNESCO Institute for Statistics; e-mail: [uis@unesco.org](mailto:uis@unesco.org) and fax (1-514) 343-5740

**(b) Other Contributing Organizations:** The Statistics Division of the United Nations DESA also collects and publishes statistics on literacy from national population censuses, apart from providing the data to UNESCO for processing and dissemination.

## **6. REFERENCES**

**(a) Readings:**

The UIS Global Education Digests (GED), the UNESCO EFA Global Monitoring Reports (see "Literacy for Life" (2006)); the UNDP Human Development Reports; the World Bank World Development Indicators Reports., Compendium of Statistics on Illiteracy: 1995 Edition, UNESCO, Paris. 1995.

**(b) Internet site:** <http://www.uis.unesco.org>

## THEME 5: Demographics

Sub- Theme	Indicator
Population Change	Population Growth Rate, Rural and Urban
	Percent of Urban Population from Total
	Total Fertility Rate (NC)
	Dependency Ratio (Young and Old)
Migration	Rate of Migration from Rural and Urban Areas



**Theme 5: Demographics**  
**Sub-Theme: Population Change**  
**Indicator 1: Population Growth Rate, Rural and Urban**

POPULATION GROWTH RATE		
Core indicator	Population Change	Demographics

**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>

**Theme 5: Demographics**  
**Sub-Theme: Population Change**  
**Indicator 2: Percent of urban Population from Total**

Percent of Urban Population from Total		
Core indicator	Population Change	Demographics

**1. INDICATOR**

**(a) Name: Percent of urban Population from Total**

**(b) Brief Definition:** The percentage of total population of a country or area living in places defined as urban.

**(c) Unit of Measurement:** %.

**(d) Placement in the CSD Indicator Set:** Agenda 21: Chapter 7: Promoting Sustainable Human Settlement Development.

**2. POLICY RELEVANCE**

**(a) Purpose:** This indicator is the most commonly used index of the degree of urbanization. Although national definitions of "urban" vary (see section 4 below), there is sufficient uniformity to permit meaningful comparisons between countries and over time. It is often useful to further classify urban areas by size, since the benefits and problems of cities vary, in part, with their size.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Agenda 21 calls for a balance between urban and rural development patterns. In addition, urbanization is recognized as an intrinsic dimension of economic and social development by the Programme of Action of the International Conference on Population and Development (ICPD). Urban areas have distinctive characteristics reflecting the social fabric and density of their population, and the nature and scale of economic activities. Urbanization has profound social and economic implications that extend beyond the urban boundaries. Although many urban areas have environmental and developmental problems such as housing shortages, traffic congestion, air and water pollution, and waste, Agenda 21 also notes urban societies' potential for sustainable development if properly managed.

**(c) International Conventions and Agreements:** Not applicable.

**(d) International Targets/Recommended Standards:** International agreements have not established specific national or global targets for this indicator.

**(e) Linkages to Other Indicators:** This indicator has close linkages with other demographic indicators, particularly the rate of growth of urban population. Since it does not reflect differences in city size, the indicator of the number of mega-cities adds useful information. Urbanization is also linked to economic indicators such as manufacturing value added in GDP. Some of the environmental indicators of solid waste, sewage and pollution are of particular relevance to urban settings.

### 3. METHODOLOGICAL DESCRIPTION

**(a) Underlying Definitions and Concepts:** By definition, this indicator is calculated as the population of urban areas divided by total population of a country or area, expressed as a percentage.

The demarcation of urban areas is usually defined by countries as part of census procedures, and is usually based on the size of localities, classification of areas as administrative centers, or classification of areas according to special criteria such as population density or type of economic activity of residents. Data on urban population are characterized by the same limitations as total population, for example, under-enumeration of population in censuses (which may differ between urban and rural areas). The Population Division of the United Nations Department of Economics and Social Information and Policy Analysis (DESIPA) evaluates, and adjusts whenever necessary, urban and rural data for under-enumeration and inconsistencies, as part of its biennial revision of the United Nations urban and rural population estimates and projections.

There is no international agreed definition of urban areas, and national definitions vary from country to country. Consistency in the breakdown of what constitutes an urban area is problematic. With growth, the boundaries of urban areas change over time.

**(b) Measurement Methods:** The demarcation of urban areas is usually defined by countries as part of census procedures, and is usually based on the size of localities, classification of areas as administrative centers, or classification of areas according to special criteria such as population density or type of economic activity of residents.

**(c) Limitations of the Indicator:** due to the absence of clear international definition of urban area and no clear boundary between urban and rural area so the indicator is not comparable between countries.

**(d) Status of the Methodology:** not available

**(e) Alternative Definitions/Indicators:** this indicator is integrated with The Percent of population in urban areas which is developed and integrated with urbanization indicators.

### 4. ASSESSMENT OF DATA

**(a) Data Needed to Compile the Indicator:** the total number of population and number of population living in the rural area is required to calculate this indicator.

**(b) National and International Data Availability and Sources:** As indicated above, the percentage urban population can be calculated from censuses, and such data are available for nearly all countries. Such data are available from national sources (country publications) as well as from special country questionnaires sent to national statistical offices from the Statistical Division, DESIPA. The United Nations recommends that countries take censuses every 10 years and these data can be used to calculate the percentage urban. The Population Division, DESIPA prepares the official United Nations population estimates and projections of percentage urban. Past, current and projected percentage urban are prepared for all countries by the Population Division, DESIPA and appear in the United Nations publication, World Urbanization Prospects: The 1994 Revision (see section 7 below).

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead organization is the United Nations Department for Economic and Social Information and Policy Analysis (DESIPA). The contact point is the Director, Population Division, DESIPA; fax no. (1 211) 963 2147.

## **6. REFERENCES**

### **(a) Reading**

DESIPA. World Urbanization Prospects: The 1994 Revision. Population Division. United Nations Sales No. E.95.XIII.12. New York, 1995.

DESIPA. 1993 Demographic Yearbook. Statistical Division. United Nations Sales No.E/F.95.XIII.1. 1995.

United Nations, Population Division: World Urbanization Prospects: the 1996 revision and the World Population Prospects: the 1998 revision.

### **(b) Internet**

<http://esa.un.org/unpp/>

**Theme 5: Demographics**  
**Sub-Theme: Population Change**  
**Indicator 3: Total Fertility Rate (NC)**

TOTAL FERTILITY RATE		
Core Indicator	Population Change	Demographics

**1. INDICATOR**

**(a) Name:** Total fertility

**(b) Brief Definition:** The average number of live births a woman would have by age 50 if she were subject, throughout her life, to the age-specific fertility rates observed in a given year. Its calculation assumes that there is no mortality.

**(c) Unit of Measurement:** Children per woman.

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

**2. POLICY RELEVANCE**

**(a) Purpose:** Total fertility refers to the average number of children per woman.

**(b) Relevance to Sustainable/ Unsustainable development (theme/sub-theme):** Family size and the number of children per woman fell substantially in many countries over the twentieth century, especially after 1960, a trend that is broadly favorable for sustainable development. High fertility is associated with increased risk of maternal morbidity and mortality. In most settings, women who have several children find it more difficult to work outside the home, thus having fewer opportunities to improve their economic and social status and that of their families. Low income households with many children often find it more difficult to get out of poverty than those with less children, and high fertility societies face greater demands for services from their youthful populations.

The changes in the population age distribution resulting from declining fertility are, for a period, beneficial for economic growth. As fertility declines, the proportion of children in the population falls and the proportion of the population of working age increases, resulting in a lower dependency ratio (defined as the number of children and older persons per 100 persons of working age). Provided jobs are available for the increasing population of working age, a country can reap the benefits of increased production and lower the costs associated with the decreasing proportion of dependants. This “demographic bonus” can thus contribute significantly to economic growth and poverty reduction.



Over the long run, however, especially if fertility continues decline, the share of the population of working age also declines and that of older persons increases, leading to rising dependency ratios. In countries experiencing below-replacement fertility (lower than 2.1 children per women), population ageing accelerates and the fact that a generation does not produce enough children to replace itself eventually leads to outright reductions in population. It is not yet clear to what extent declining and ageing populations may have beneficial effects on sustainable development.

**(c) International Conventions and Agreements:** None

**(d) International Targets/Recommended Standards:** International agreements do not establish national or global targets. However, the Programme of Action adopted by the International Conference on Population and Development (ICPD) recognizes the usefulness of reducing population growth by lowering fertility levels as early as possible. It notes that, in many countries, slower population growth has bought more time to adjust to future population increases, improving the ability of those countries to combat poverty, protect and repair the environment, and set the conditions for sustainable development (para. 3.14). In 2005, only 36 per cent of national Governments considered their total fertility to be satisfactory. In 2005, 54 per cent of developing countries considered that their fertility was too high and over four-fifths of the least developed countries did so. Conversely, about two-thirds of the countries in Europe considered that their fertility levels were too low and more than three-quarters of these countries had policies to boost fertility.

**(e) Linkages to Others Indicators:** There are close linkages between total fertility and other demographic and social indicators. Fertility change directly affects population growth and dependency ratios. In fact, during the past century fertility has been the most important determinant of population growth, far exceeding the contributions of migration and mortality. Increased infant and child survival, greater access to education and health services, especially for women, together with the advances made in empowering women and improving their participation in the labor force have contributed to postpone childbearing and to reduce number of children women have over their lifetimes. Decreasing fertility has also contributed to improve maternal health, reduce child mortality, combat poverty and enhance economic growth.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Measurements Methods:** Total fertility refers to the average number of children that a hypothetical cohort of women would bear over the course of their reproductive life if they were subject to the age-specific fertility rates estimated over a given period and were not subject to mortality. Total fertility is therefore a period measure constructed by summing the age-specific fertility rates (ASFR) and multiplying by the length of the age groups used.

Age-specific fertility rate: Annual number of births per woman in a particular age group expressed per 1000 women in that age group.

High fertility: Total fertility levels above 5 children per woman.

Replacement-level fertility: Total fertility levels of about 2.1 children per woman. This value represents the average number of children a woman would need to have to reproduce herself by bearing a daughter who survives to childbearing age. If replacement level fertility is sustained over a sufficiently long period, each generation will exactly replace itself in the absence of migration.

Below-replacement fertility: Total fertility levels below 2.1 children per woman.

Very low fertility: Total fertility levels below 1.3 children per woman.

**(b) Limitations of the Indicators:** Data allowing the estimation of total fertility has become widely available thanks to demographic surveys that gather retrospective information on the fertility histories of women. The number of countries lacking current information on total fertility has been decreasing over time.

**(c) Status of the Methodology:** Well developed and widely employed.

**(d) Alternative Definitions/Indicators:** The underlying age-specific fertility rates used to calculate total fertility provide useful information about the level and timing of childbearing among women in particular age groups. In particular, it is possible to assess the level of adolescent fertility (births to women age 15 to 19 years), which is of special concern for Governments because women who start having children at very young ages are the more likely curtail their education and less likely to join the labor force. Early childbearing (before age 18) entails greater risks of maternal death and children born to very young mothers have higher levels of morbidity and mortality.

#### **4. ASSESSMENT OF DATA**

**(a) Data needed to compile the Indicator:** The basic information to calculate age-specific fertility rates is the number of births by age of mother and the number of women of childbearing age classified by five-year age groups. In all developed countries and in several developing countries, the information on births is obtained from a civil registration system and that on women from censuses. In developing countries, the necessary data are generally collected by representative sample surveys or censuses.

**(b) National and International Data Availability and Sources:** Particularly important sources of information are the annual editions of the Demographic Yearbook as produced by the Statistics Division of the Department of Economic and Social Affairs of

the United Nations Secretariat, which collects demographic data on a regular basis from the national statistics offices. Estimates derived from census data and from surveys are commonly used. Important sources are the surveys conducted in the 1970s and early 1980s under the World Fertility Survey (WFS) programme, the surveys conducted since the late 1980s under the Demographic and Health Surveys (DHS) programme, the Center for Disease Control (CDC) Reproductive Health Surveys and other regional programmes such as the Arab-Gulf PAFAM and PAPCHILD surveys. In addition, information as produced by other United Nations entities, such as ECLAC, UNICEF or WHO, as well as by regional organizations such as EUROSTAT and the Council of Europe are consulted. For all countries, the available data are evaluated and, if necessary, adjusted by the Population Division of DESA in preparing the official United Nations population estimates and projections.

**(c) Data references:** Past, current and projected total fertility estimates are calculated for all countries by the Population Division of the Department of Economic and Social Affairs and appear in the biennial United Nations publication World Population Prospects. A compilation of estimates derived directly from the sources available is presented in the publication World Fertility Report, prepared by the Population Division.

## **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, World Population Prospects: The 2006 Revision.  
<http://www.un.org/esa/population/publications/wpp2006/wpp2006.htm>

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

United Nations, World Fertility Report 2003. (United Nations publication, Sales No. E.04.XIII.6, New York, 2004).

United Nations, Statistics Division, Demographic Yearbook. (United Nations publication, various years).

United Nations, Programme of Action adopted at the International Conference on

Population and Development, Cairo, 5-13 September 1994. (United Nations publication, Sales No. E.95.XIII.7, New York, 1995).

**For information about government policies regarding this indicator, see:**

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

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

**Theme 5: Demographics**  
**Sub-Theme: Population Change**  
**Indicator 4: Dependency Ratio (Young and Old)**

DEPENDENCY RATIO		
Core indicator	Population	Demographics

**1. INDICATOR**

**(a) Name:** Dependency Ratio

**(b) Brief Definition:** The dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old).

**(c) Unit of Measurement:** Per hundred persons aged 15-64.

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

**2. POLICY RELEVANCE**

**(a) Purpose:** Dependency ratios indicate the potential effects of changes in population age structures for social and economic development, pointing out broad trends in social support needs.

**(b) Relevance to Sustainable/ Unsustainable development (theme/sub-theme):** By relating the group of the population most likely to be economically dependent (net consumers) to the group most likely to be economically active (net producers), changes in the dependency ratio provide an indication of the potential social support requirements resulting from changes in population age structures. In addition, the ratio highlights the potential dependency burden on workers and indicates the shifts in dependency from a situation in which children are dominant to one in which older persons outnumber children as the demographic transition advances (that is, the transition from high mortality and high fertility, to low mortality and low fertility). A high dependency ratio indicates that the economically active population and the overall economy face a greater burden to support and provide the social services needed by children and by older persons who are often economically dependent. A high youth dependency ratio, for instance, implies that higher investments need to be made in schooling and child-care.

As fertility levels decline, the dependency ratio falls initially because the proportion of children decreases while the proportion of the population of working age increases. The period when the dependency ratio declines is known as the “window of opportunity”

when a “demographic dividend” may be reaped because society has a growing number of potential producers relative to the number of consumers. However, as fertility levels continue to decline, dependency ratios eventually increase because of the proportion of working age starts declining and the proportion of older persons continues to increase. As populations grow older, increases in old-age dependency ratios are indicators of the added pressures that social security and public health systems have to withstand.

The need to ensure access to basic services, such as education and health, as well as to ensure the economic security of children and older persons has been emphasized in many international conferences and summits, including the World Summit for Children (1990), the International Conference on Population and Development (1994), the World Summit for Social Development (1995), The United Nations Millennium Declaration and the World Assembly on Ageing (2002).

**(c) International Conventions and Agreements:** None

**(d) International Targets/Recommended Standards:** International agreements do not specify targets in terms of values of the dependency ratio. However, in 2005, 66 per cent of Governments were concerned about the size of their working-age population and for 52 per cent reported that population ageing represented an issue of major concern (DESA, World Population Policies 2005).

**(e) Linkages to Others Indicators:** This indicator reflects the cumulative effect of past demographic dynamics in terms of fertility and mortality and is also related to past trends in the population growth by age.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Measurements Methods:** The dependency ratio refers to the number of children aged 0 to 14 years plus the number of persons aged 65 years or over per 100 persons aged 15 to 64 years:

Dependency Ratio =  $100 \times (\text{Population (0-14)} + \text{Population (65+)}) / \text{Population (15-64)}$

The dependency ratio can be disaggregated into: (1) the youth dependency ratio, which is the number of children aged 0-14 per 100 persons aged 15-64, and (2) the old-age dependency ratio, which is the number of persons aged 65 or over per 100 persons aged 15-64. The dependency ratio, also referred to as total dependency ratio, is the sum of the youth and old-age dependency ratios. Some studies employ other age groups in calculating dependency ratios, for instance 0-19 years to represent the population of children or the population aged 60 or over to represent the population of older persons.

**(b) Limitations of the Indicators:** The dependency ratio is an approximation to the ratio of net consumers to net producers. As a proxy for that ratio, the dependency ratio suggests that children under age 15 as well as persons aged 65 or over are economically dependent. In many populations, however, people do not stop being economically

active at age 65, nor is it true that all persons aged 15-64 are economically active. Although older persons often require economic support from others, in many societies they have economic resources of their own and provide support to their adult children. Furthermore, as the period of training for a productive life increases, most adolescents and young adults remain in school and out of the labor force, effectively extending the period of young-age dependency well beyond age 15. Whenever available, direct estimates of net producers and net consumers can be used for a more precise assessment and analysis of economic dependency.

#### **4. ASSESSMENT OF DATA**

**(a) Data needed to compile the indicator:** The information on population classified by age that is necessary to calculate the dependency ratio is usually derived from censuses or demographic surveys. The United Nations recommends that countries undertake population censuses every 10 years.

**(b) National and international data availability and sources:** In recent decades, most countries have carried out population censuses. National and sub-national census and survey data are available for the large majority of countries from national sources and publications, and are reported to the Statistics Division of the Department of Economic and Social Affairs (DESA) of the United Nations Secretariat by national statistical offices. For all countries, census and survey data are evaluated and, if necessary, adjusted by the Population Division of the Department of Economic and Social Affairs (DESA) as part of the analysis carried out in preparation of the official United Nations population estimates and projections.

**(c) Data references:** Past, current and projected dependency ratios are calculated for all countries by the Population Division of DESA and appear in the biennial United Nations publication, World Population 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) Readings:**

United Nations, World Population Prospects: The 2006 Revision, vol. I: Comprehensive Tables. <http://www.un.org/esa/population/publications/wpp2006/wpp2006.htm>

United Nations, World Population Policies 2005 (United Nations publication, Sales No. E.06.XIII.5, 2006).

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



## Theme 5: Demographics

### Sub-Theme: Migration

#### Indicator 5: Rate of Migration from Rural to Urban Areas

RATE OF MIGRATION FROM RURAL TO URBAN AREAS		
Core indicator	Migration	Demographics

#### 1. Indicator

(a) **Name:** Rate of Migration from Rural to Urban Areas.

(b) **Brief Definition:** Ratio of the difference between the number of in-migrants and out-migrants from rural area to the urban area in the same country during a specified period to the average population of that area during the period which is considered as part of internal migration.

(c) **Unit of Measurement:** The indicator is usually expressed as per thousand populations.

(d) **Placement in the CSD Indicator Set:**

#### 2. POLICY RELEVANCE

(a) **Purpose:** The migration from rural to urban areas measures geographical mobility of population between rural and urban areas. Migration is one of the basic demographic events -- birth and death are the others -- that directly influence the size of population in an area.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** this indicator is a major force of demographic redistribution. At the international level, migration (people) is one of three important flows along with commodities (goods and services), and capital (money). The migration both influences and is influenced by economic, social, environmental and political events. Increases of net migration linked to a loss of livelihood can be a symptom of UN sustainability.

Migration is often seen as an economic phenomenon--in discussions of labor migration from rural to urban areas. Recently, linkages with environmental factors are receiving increasing attention, as in the cases of "environmental refugees" and migration to ecologically fragile areas. The significance of migration to national policy makers does not rest only in its size, but also in its composition. Such migrant characteristics as age, sex, fertility level, educational background, occupation, and skill levels have profound implications for development in both the sending and the receiving areas or countries.

(c) **International Conventions and Agreements:** International agreements do not

establish.

**(d) International Targets/Recommended Standards:** not available

**(e) Linkages to Other Indicators:** this indicator is considered to have strong associations with economic, social, and environmental indicators. There are close linkages between this indicator and other demographic indicators, including urbanization-related indicators. In addition, migration rates can be associated with natural resource depletion, desertification, and land use change.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** the net migration rate from rural to urban area is considered as a part of internal migration.

**(b) Measurement Methods:** Net migration rate from rural to urban area. The net migration rate for particular areas within a country is usually estimated on the basis of the number of persons reporting that they changed residence from outside to within the area of interest during a given period and those reporting that they changed residence from within to without the area of interest during the same period. Those reports are usually made only at the time of a census. A few countries maintaining continuous population registers have access to the required information on a yearly basis. Both censuses and population registers also produce information on the total population in the area of interest that allows the estimation of the denominator for the calculation of a net migration rate. When reliable direct information about in- and out-migration is unavailable, net migration can be estimated indirectly, as a residual factor when other sources of population change--births, deaths, and, in some cases, changes of boundaries of cities or other units--have been estimated separately.

**(c) Limitations of the Indicator:** The definitions of immigrant and emigrant used by different countries and even for different data sources within a single country vary considerably, thus compromising the comparability and interpretation of the indicator. The data are often poorly measured restricting the usefulness for modeling purposes.

**(d) Status of the Methodology:** not available

**(e) Alternative Definitions/Indicators:** Alternative indicators of international migration, such as the stock of foreign-born persons in a country, are often used.

### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** this indicator requires data for the population by current and previous place of residence, and length of stay in current residence; place of birth.

**(b) National and International Data Availability and Sources:** Censuses are the major source of information on internal migration. They vary, however, in the type of data they collect and the way in which the information obtained is coded and tabulated. The questions most commonly included in censuses that indicate the occurrence of some change of residence are: current place residence and place of residence at a specific time before the census; current and previous place of residence, and length of stay in current residence; place of birth. Most countries code place of residence in terms of major geographical subdivision (state, department, province etc.) although use of a finer subdivision of the territory is often useful. Some countries record the urban or rural nature of the place of residence involved. However, net rural-urban migration is more likely to be derived from indirect estimation procedures than directly from census data. In general, data on internal migration gathered by censuses remain under exploited and there is no comprehensive source of information of net migration rates between different units within countries, except for countries with a population register. Absolute data and rate of change are required by policy makers. The composition of migrants would also be useful.

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** The lead organization is the United Nations DESIPA. The contact point is the Director, Population Division, DESIPA; fax no. 1 212 963 2147.

## **6. REFERENCES**

### **(a) Readings:**

Patterns of Urban and Rural Population Growth (United Nations publication, Sales No. E.79.XIII.9).

Internal Migration of Women in Developing Countries (United Nations publication, Sales No. E.94.XIII.3).

Courgeau, Daniel, Méthodes de Mesure de la Mobilité Spatiale (Institut National d'Etudes Démographiques, Paris, 1988).

### **(b) Internet:**

<http://www.eurofound.europa.eu/pubdocs/1998/07/en/1/ef9807en.pdf>

## Theme 6: Peace and Security

Sub- Theme	Indicator
Absence of Peace and Security	Number of People Displaced and Refugees due to Wars
	Economic and Human Loss Due to War, as Percentage of Population and of GDP

## Theme 6: Peace and Security

### Sub-Theme: Absence of Peace and Security

#### Indicator 1: Number of People Displaced and Refugees due to Wars

NUMBER OF PEOPLE DISPLACED AND REFUGEES DUE TO WARS		
Core indicator	Peace and Security	Absence of Peace and Security

## 1. INDICATOR

(a) **Name:** Number of People Displaced and Refugees due to Wars

(b) **Brief Definition**<sup>25</sup>: Internally displaced persons are "persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, Unlike refugees, who have been deprived of the protection of their state of origin, IDPs remain legally under the protection of national authorities of their country of habitual residence. IDPs should therefore enjoy the same rights as the rest of the population. The Guiding Principles on Internal Displacement remind national authorities and other relevant actors of their responsibility to ensure that IDPs' rights are respected and fulfilled, despite the vulnerability generated by their displacement.

(c) **Unit of Measurement:** number of persons.

(d) **Placement in the CSD Indicator Set:** Peace and Security

## 2. POLICY RELEVANCE

**Purpose:** In recent years wars have seemed characterized by endless streams of wretched refugees, so it is importance to estimate the total number of displaced and Refugees people due to Wars.

Another approach is to assess levels of forced displacement. It can be argued that this is a relatively good indicator to prevent displacement and minimize its adverse effects and allocate adequate resources to support them.

Governments have the primary responsibility for addressing the needs of displaced persons within their borders. Indeed, sovereignty generally is recognized as entailing national responsibility for ensuring the welfare and security of one's citizens and other populations residing within a country's territorial jurisdiction. To this end, governments are expected to undertake measures, such as adopting policies and laws,

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<sup>25</sup> Source: Internal displacement monitoring centre. [http://www.internal-displacement.org/8025708F004D404D/\(httpPages\)/CC32D8C34EF93C88802570F800517610?OpenDocument](http://www.internal-displacement.org/8025708F004D404D/(httpPages)/CC32D8C34EF93C88802570F800517610?OpenDocument)

setting up national institutions, allocating resources, and cooperating as appropriate with international and regional organizations as well as non-governmental organizations, to ensure the provision of assistance, protection and reintegration and development aid to their internally displaced populations

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** about 9.2 million refugees worldwide, there are more than twice as many people who have been uprooted from their homes but who, unlike refugees, remain within their own countries and are called internally displaced persons (IDPs). Around the world, some 25 million women, men and children have been internally displaced by conflict, communal violence, and internal strife. Many millions more have been displaced by natural disasters and development projects. Africa bears a disproportionate and truly staggering toll of the global problem of internal displacement. Of those internally displaced by conflict and communal violence, more than half -- an estimated 13.2 million persons -- are in Africa, with some 2.9 million in the countries comprising the Southern African Development Community (SADC).

In addition this indicator will contribute to a better understanding of the level of vulnerability in a given country, thus encouraging long-term, sustainable risk reduction programs to prevent disasters, which are a major threat to national development.

**(c) International Conventions and Agreements:** still no international convention for this indicator but there is a Guiding Principles on Internal Displacement are the first international standards specifically tailored to the needs of IDPs. Based on international humanitarian law, human rights law and refugee law by analogy, the 30 Principles set forth the rights of IDPs and the obligations of governments and non-state actors towards these populations. They cover all phases of internal displacement: the pre-displacement phase; during displacement; and during return or resettlement and reintegration.

**(d) International Targets/Recommended Standards:** Since their presentation to the United Nations in 1998 by the Representative of the Secretary-General on Internally Displaced Persons, who had been requested by the UN Commission on Human Rights and the General Assembly to develop a normative framework, the Guiding Principles have gained international standing and authority and are being widely used around the world. Intergovernmental bodies, such as the UN Commission on Human Rights and the General Assembly, in resolutions adopted by consensus and with a number of SADC states as cosponsors, have recognized the Principles as 'an important tool' and 'standard' for addressing situations of internal displacement, encouraged their wide dissemination and welcomed their increasing use by states, UN agencies and regional and non-governmental organizations<sup>5</sup>. The UN Secretary-General has called on the Security Council to encourage states to observe the Guiding Principles in situations of mass displacement, and in his 2005 report on UN reform, he urged member states to accept the Guiding Principles as 'the basic international norm for protection' of internally displaced persons<sup>6</sup>. All of the main international humanitarian, human rights

and development organizations and umbrella groups have endorsed the Guiding Principles and taken steps to disseminate and apply them in the field. Around the world, regional organizations including the Organization for Security and Cooperation in Europe (OSCE) and the Inter-American Commission on Human Rights of the Organization of American States (OAS), have expressed support for the Principles and use them as a monitoring tool, as a benchmark for measuring conditions on the ground and as a framework for IDP programs and activities. Regional and sub-regional responses in Africa are discussed below.

**(e) Linkages to Other Indicators:** this indicators linked to other indicators relate to peace and security like human and economic losses due to war, also this indicator linked to the human rights indicators.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** the definition underlined the main reason of displacement and refugee as a war, which include mainly the armed conflicts.

A Women and children make up the majority of displaced populations, overwhelmingly so in situations of armed conflict, and have specific protection, assistance and reintegration needs. Especially when displacement undermines the family structure, which is the most basic unit of protection, they are exposed to heightened risk of harassment and abuse, including sexual violence and exploitation, trafficking and military recruitment. Women heads of household and unaccompanied children, the number of which dramatically increases in most situations of displacement, are especially vulnerable. Moreover, for children, the disruption of education that displacement causes not only stunts their development but also heightens their vulnerability to these and other risks. It is noteworthy that Zimbabwe's National Plan of Action on Orphans and Other Vulnerable Children recognizes the need to gather more information on displaced children. Region-wide, the 1998 SADC Declaration on the Prevention and Eradication of Violence Against Women and Children calls for the adoption of legislation to protect vulnerable women, including women in armed conflict, as well as for measures to ensure the protection of children; in many cases, however, this legislation has not yet materialized or suffers from insufficient implementation.

**(b) Measurement Methods:** still the methodology for this indicator not developed yet. the methodology suppose to cover all persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized border.

This description highlights the two core elements of internal displacement: (1) the involuntary character of the movement; and (2) the fact that such movement takes place

within national borders.

**(c) Limitations of the Indicator:** the methodology still not developed, the limitation of availability of reliable data.

**(d) Status of the Methodology:** not developed yet.

**(e) Alternative Definitions/Indicators:** development and that of security, the two terms are not synonymous. While delegates enthusiastically subscribed to a wide definition of security as encapsulated by the term 'human security', the concept requires some delineation. In fact, there is a close overlap between our understanding of security and the term 'peace-building'. Therefore, for example, while delegates did not focus on the issue of development as such, the effects of (failed) development approaches and policies that impact very significantly on individual and communal security were considered to be of central concern.

Our focus on security does not imply a top-down approach to the strengthening of administrative structures or a state-centered approach to security thinking. Indeed, we reject an approach that relies upon structure to the exclusion of content and process.

Our concern with human security, therefore, provides space for community-based approaches to building stability and a host of initiatives between this and international responses and initiatives. Finally, in contrast to the short-term, problem-orientated focus of traditional strategic or security studies, our focus on human security attempts to lengthen the timescale within which security concerns are addressed, and broaden the scope beyond purely military issues.

#### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** number of persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict.

**(b) National and International Data Availability and Sources:** The first chapter of a 1997 MSF Report, entitled *World in Crisis*, begins with the observation that: Civilians have always been under threat in war. But the methods of modern warfare seem sometimes to threaten more of them more of the time.

The most well-established war indicators are those of the Stockholm International Peace Research Institute (SIPRI). Although SIPRI actually avoids the term war itself in its annual Yearbook, preferring to use the less overtly problematic expression 'major armed conflicts', the SIPRI data is commonly used as a source for assessing the scale of the global war problem. Sometimes this is done explicitly (e.g. Thomas, 1994; Carnegie Commission, 1997) and sometimes indirectly (e.g. The World Bank, *Breaking the Conflict Trap*, 2003, p.94, [http://indh.pnud.org.co/files/rec/ Conflicttrap.pdf](http://indh.pnud.org.co/files/rec/Conflicttrap.pdf)).



## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

### **(a) Lead Agency:**

The international community can reinforce and provide valuable support to national and regional efforts for addressing internal displacement. UN agencies and international humanitarian and development organizations such as UNHCR, WFP, the UN Children's Fund (UNICEF), the World Health Organization (WHO), the UN Development Program (UNDP), the Office of the High Commissioner for Human Rights, the Office for the Coordination of Humanitarian Affairs (OCHA), IOM as well as the ICRC and an array of international NGOs have been directly engaged in providing assistance, protection and reintegration support to large numbers of IDPs in the region, in particular in the DRC, Angola and in Mozambique. Areas of activity include: providing emergency relief to uprooted victims of conflict and disaster; promoting adherence to international human rights and humanitarian law; awareness-raising and training on the Guiding Principles; advocating for the rights of IDPs; supporting national capacity-building to address internal displacement; facilitating IDP return or resettlement and monitoring to ensure that return or resettlement is voluntary and occurs in conditions of safety; and providing reintegration assistance so IDPs can begin to rebuild their lives. In addition to channeling crucial resources enabling these and other activities, donor countries have drawn attention to particular crises of internal displacement, for instance in Angola in 2000, and advocated with governments for effective responses to the plight of their internally displaced populations.

**(b) Other Contributing Organizations:** There are also UN experts on thematic issues that have undertaken missions to specific situations of internal displacement to assess and discuss the conditions of the internally displaced with the government and other relevant actors. For instance, the Representative of the UN Secretary-General on Internally Displaced Persons visited Mozambique in 1996 and Angola in 2000 to engage in dialogue with the respective governments in particular as regards the search for durable solutions for the millions of internally displaced persons uprooted by the conflicts. Missions undertaken to SADC countries by the Representative of the Secretary-General on Children and Armed Conflict, the Internal Displacement Division of OCHA and, most recently, the Secretary-General's Special Envoy for Human Settlement Issues in Zimbabwe also have addressed particular issues and situations of internal displacement in the region.

Although not specific to internal displacement, a number of broader regional and international initiatives also have important linkages to addressing internal displacement in the Southern African region. Particularly noteworthy is the New Economic Partnership for African Development (NEPAD), which is premised on recognition of the link between peace, security and development and promotes good governance and sustainable post-conflict reconstruction and development. The Millennium Development Goals adopted by Heads of State in 2000 also are relevant; indeed, their implementation would go a long way to addressing many of the assistance,

protection and reintegration needs of the internally displaced.

## **6. REFERENCES**

### **(a) Readings:**

Dawn Chatty and Marcus Colchester (eds.), *Conservation and Mobile Indigenous Peoples Displacement, Forced Settlement and Sustainable Development* (Oxford: Berghahn Books, 2002).

*Zimbabwe: A Hidden Displacement Crisis* (Geneva: Norwegian Refugee Council, Global IDP Project, 2004). Posted at <http://www.db.idpproject.org/Sites/idpSurvey.nsf/wCountries/Zimbabwe>.

United Nations, *Report of the Fact-Finding Mission to Zimbabwe to assess the Scope and Impact of Operation Murambatsvina by the Special Envoy on Human Settlements Issues in Zimbabwe, Mrs. Anna Kajumulo Tibaijuka* (18 July 2005).

United Nations, Commission on Human Rights, *Profiles in Displacement: Mozambique. Report of the Representative of the Secretary-General on Internally Displaced Persons*, UN Doc. E/CN.4/1997/43/Add.1.

See United Nations, Commission on Human Rights resolution 2004/55; General Assembly resolution 2004/58; and Commission on Human Rights resolution 2005/46.

United Nations Secretary-General Kofi Annan, *In Larger Freedom: Towards Development, Security and Human Rights for All*, UN doc. A/59/2005 (2005), para. 210.

See *Seminar on Internal Displacement in Southern Sudan, November 25, 2002* (Washington, D.C.: Brookings-SAIS Project on Internal Displacement, 2002).

*Addressing Internal Displacement: A Framework for National Responsibility* (Washington, D.C.: Brookings Institution-University of Bern Project on Internal Displacement, 2005).

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'Early Warning and Response' by Deborah Saidy, Drought Emergency in Southern Africa Programme, UN Department of Humanitarian Affairs (1997). Posted at <http://www.brad.ac.uk/research/ijas/ijasno2/saidy.html>.

Regional Meeting on Refugees and Internally Displaced Persons in the Southern African Development Community (SADC), Seminar on Internal Displacement, Gaborone, Botswana, 24-26 August 2005.

**(b) Internet:**

<http://first.sipri.org/> Failed States Index -Fund for Peace

[http://www.fundforpeace.org/web/index.php?option=com\\_content&task=view&id=99&Itemid=140](http://www.fundforpeace.org/web/index.php?option=com_content&task=view&id=99&Itemid=140)

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## Theme 6: Peace and Security

### Sub-Theme: Absence of Peace and Security

#### Indicator 2: Economic and Human Loss Due to War, as Percentage of Population and of GDP

ECONOMIC AND HUMAN LOSS DUE TO WAR, AS PERCENTAGE OF POPULATION AND OF GDP		
Core indicator	Absence of Peace and Security	Peace and Security

#### 1. INDICATOR

**(a) Name:** Economic and Human Loss Due to War, as Percentage of Population and of GDP.

**(b) Brief Definition:** The number of persons deceased, missing, and/or injured as a direct result of a war; and the amount of economic and infrastructure losses incurred as a direct result of the war.

**(c) Unit of Measurement:** Number of fatalities; \$US.

**(d) Placement in the CSD Indicators Set:** not included

#### 2. POLICY RELEVANCE

**(a) Purpose<sup>26</sup>**

The economic costs include the resources spent on the war, the value of physical assets damaged and destroyed, and the economic output and opportunities of growth and development foregone.

The human loss comprises the death and injury of combatants and civilians, the anguish of bereaved widows, orphans, relations and friends, homelessness and displacement. There are economic costs too to the human loss, such as the economic life years lost through death and injury, the income earning activity disrupted through displacement, the lost skills of those who have taken refuge abroad, and the cost of maintaining and rehabilitating the displaced.

**(b) Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** a war cause adversely affecting progress towards sustainable development. They cause loss of life, social disruption and affect economic activities.

The war costs include the impact on resources used, the income and output lost or forgone as a result of the war.

The human losses includes mainly the number of people killed, and the number of

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<sup>26</sup> Source: the cost of the war in Sri Lanka

disabled

**(c) International Conventions and Agreements:** not available.

**(d) International Targets/Recommended Standards:** None.

**(e) Linkages to Other Indicators:** This indicator is linked with indicators that are related to Peace and Security indicators such as the number of people displaced and refugees due to wars.

### **3. METHODOLOGICAL DESCRIPTION**

**(a) Underlying Definitions and Concepts:** the war impact includes the direct expenditure on the war, the cost of damage and destruction of physical assets and the expenditure on displaced persons.

**(b) Measurement Methods:**

There are two principle categories of costs to be considered in estimating the economic burden of war; the re-sources used or lost in waging the war and the income and output lost or forgone as a result of the war. In order to estimate the overall economic cost of the War, the study calculates:

- i. The direct costs and the losses of sectoral output and resource flows that can be reliably identified - this is used to estimate the losses to consumption, investment and growth.
- ii . The overall loss to the economy on the assumption that the economy could have grown at a higher rate had normal conditions prevailed.
- iii . The cost of continuing the war, based on the current level of expenditure and losses of output.

**(c) Limitations of the Indicator:** the absence of international methodology to estimate this indicator and the different categories to be calculated to estimate the indicator, also the difficulty of estimation of direct and indirect costs of war on human and economic are the main challenges, in addition due to the absence of reliable data.

The validity of this indicator is limited by the quality and the format of the data used for its calculation. Comparability over time may represent a particular problem for this indicator.

**(d) Status of the Methodology:** none.

**(e) Alternative Definitions:** it is important to improve methodology to calculate this indicator.

### **4. ASSESSMENT OF DATA**

**(a) Data Needed to Compile the Indicator:** this indicator requires data relate to number of human losses and the economic losses due to war, which include the impact on different economic activities.

**(b) National and International Data Availability and Sources:** The most well-established war indicators are those of the Stockholm International Peace Research Institute (SIPRI). Although SIPRI actually avoids the term war itself in its annual Yearbook, preferring to use the less overtly problematic expression 'major armed conflicts', the SIPRI data is commonly used as a source for assessing the scale of the global war problem. Sometimes this is done explicitly (e.g. Thomas, 1994; Carnegie Commission, 1997) and sometimes indirectly (e.g. The World Bank, *Breaking the Conflict Trap*, 2003, p.94, [http://indh.pnud.org.co/files/rec/ Conflicttrap.pdf](http://indh.pnud.org.co/files/rec/Conflicttrap.pdf)).

**(c) Data References:** not available

## **5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR**

**(a) Lead Agency:** not available

## **6. REFERENCES**

### **(a) Readings:**

Dawn Chatty and Marcus Colchester (eds.), *Conservation and Mobile Indigenous Peoples Displacement, Forced Settlement and Sustainable Development* (Oxford: Berghahn Books, 2002).

United Nations, *Report of the Fact-Finding Mission to Zimbabwe to assess the Scope and Impact of Operation Murambatsvina by the Special Envoy on Human Settlements Issues in Zimbabwe, Mrs. Anna Kajumulo Tibaijuka* (18 July 2005).

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See United Nations, Commission on Human Rights resolution 2004/55; General Assembly resolution 2004/58; and Commission on Human Rights resolution 2005/46.

United Nations Secretary-General Kofi Annan, *In Larger Freedom: Towards Development, Security and Human Rights for All*, UN doc. A/59/2005 (2005), para. 210.

See *Seminar on Internal Displacement in Southern Sudan, November 25, 2002* (Washington, D.C.: Brookings-SAIS Project on Internal Displacement, 2002).

*Addressing Internal Displacement: A Framework for National Responsibility* (Washington, D.C.: Brookings Institution-University of Bern Project on Internal Displacement, 2005).

SADC, *Strategic Indicative Plan for the Organ on Politics, Defence and Security Cooperation* (Gaborone: SADC, 2004), pp. 17 and 19.

*Report of the Workshop on Forced Migration including Refugees, Externally and Internally Displaced Persons in the SADC Region, October 27-29 2003, co-sponsored by the South African Migration Project, the International Organization for Migration and the International Migration Policy Programme (2003).*

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**(b) Internet:**

[http://docs.google.com/gview?a=v&q=cache:cInPqNvRoroJ:www.international-alert.org/pdfs/costwarxsum.pdf+cost+of+the+war+in+sri+lanka/executive+summary&hl=ar&gl=ae&sig=AFQjCNH8kTd5FdsBK1v-lFoJ\\_ndPvHhLgg](http://docs.google.com/gview?a=v&q=cache:cInPqNvRoroJ:www.international-alert.org/pdfs/costwarxsum.pdf+cost+of+the+war+in+sri+lanka/executive+summary&hl=ar&gl=ae&sig=AFQjCNH8kTd5FdsBK1v-lFoJ_ndPvHhLgg)

<http://first.sipri.org/> Failed States Index -Fund for Peace  
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[http://www.foreignpolicy.com/story/cms.php?story\\_id=3865](http://www.foreignpolicy.com/story/cms.php?story_id=3865)  
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<sup>2</sup>*Zimbabwe: A Hidden Displacement Crisis* (Geneva: Norwegian Refugee Council, Global IDP Project, 2004). Posted at <http://www.db.idpproject.org/Sites/idpSurvey.nsf/wCountries/Zimbabwe>

- <sup>25</sup> *International Standard Classification of Education*. Primary education is defined by ISCED97 as programmes normally designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music.
- <sup>26</sup> *International Standard Classification of Education*. Primary education is defined by ISCED97 as programmes normally designed on a unit or project basis to give pupils a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music.
- <sup>27</sup> *Gender parity index is the ratio of female to male values of a given indicator. A GPI of 1 indicates parity between sexes.*
- <sup>28</sup> EUROSTAT suggests the indicator “Number of tourist overnight stays in various accommodation facilities” as an indication of “pressure” on destinations (Methodological work on measuring the Sustainable Development of Tourism – Technical Report, 2005).
- <sup>29</sup> It should be noted that there are other territorial divisions that are important for tourism analysis (e.g. tourism area and tourism community) but that do not precisely correspond to a region or tourism destination).
- <sup>30</sup> The United Nations Convention on the Law of the Sea (UNCLOS) defines these zones in the following manner:
- Territorial Sea - The territorial sea extends from the baseline up to 12 nautical miles.
  - Exclusive economic zone - From 12 to 200 nautical miles, the coastal State can declare an exclusive economic zone.
- <sup>31</sup> The MEOW approach uses a three tiered system of progressively smaller units (from ‘realms’ to ‘provinces’, to ‘ecoregions’).
- <sup>32</sup> <http://www.searoundus.org/>
- <sup>33</sup> BOD5 is the Biochemical Oxygen Demand for a period of five days. It is equal to the amount of dissolved oxygen required by organisms for the aerobic decomposition of organic matter present in water. This is measured at 20 degrees Celsius for a period of five days. The parameter yields information on the degree of water pollution with organic matter.
- <sup>34</sup> COD is the mass concentration of oxygen equivalent to the amount of a specified oxidant consumed by dissolved or suspended matter when a water sample is treated with that oxidant under defined conditions.
- <sup>35</sup> The WWF Terrestrial Ecoregion approach uses a three tiered system of progressively smaller units (from ‘realms’ to ‘biomes’, to ‘ecoregions’). The database currently delineates 825 terrestrial ecoregions, with the average size roughly being 150,000 km<sup>2</sup>, with a median of 56,300 km<sup>2</sup>.
- <sup>36</sup> <http://laborsta.ilo.org/>
- <sup>37</sup> idem
- <sup>38</sup> <http://www.ilo.org/public/english/bureau/stat/download/res/ecacpop.pdf> and ILO 2000: Current international recommendations on labor statistics, 2000 edition (Geneva).
- <sup>39</sup> <http://www.ilo.org/public/english/bureau/stat/download/res/icse.pdf> and ILO 2000: Current international recommendations on labor statistics, 2000 edition (Geneva).
- <sup>40</sup> The Partnership on Measuring ICT for Development was launched in June 2004, and currently includes the following members: Eurostat, ITU, OECD, UNCTAD, four UN Regional Commissions (ECA, ECLAC, ESCAP, and ESCWA), UIS, the UN ICT Task Force and the World Bank. For further information on the objectives and activities of the Partnership, see <http://www.itu.int/ITU-D/ict/partnership/>.
- <sup>41</sup> For further details on concepts and recording methods, refer to the *Balance of Payment Manual 5th Edition*, International Monetary Fund (1993).



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