CHAPTER VIII

INDIAN NATIONAL CENSUS – 2011 AND RELATED DEMOGRAPHIC MEASURES

8.1 INTRODUCTION: INDIA NATIONAL CENSUS: POPULATION GOES UP TO 1.21BILLION

In this Chapter we study and analyze data available on India; from(i) the latest Indian Census, 2011, Health and mortality related data from periodic Surveys, such as National Family Health Surveys (NFHS 1,2 & 3). Demographic measures studied are TFR, IMR and so on.

Census has been conducted in India since 1872 and the 15th Census 2011 marks the first time biometric information was collected.

The demographics of India are inclusive of the second most populous country in the world, with over 1.21 billion people (2011 census), more than a sixth of the world's population. Already containing 17.5% of the world's population, India is projected to be the world's most populous country by 2025, surpassing China, its population reaching 1.6 billion by 2050. The annual population growth rate in India during the last decade is 1.41%, ranking 93rd in the world.

India has more than 50% of its population below the age of 25 and more than 65% hovers below the age of 35. It is expected that, in 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan; and, by 2030, India's dependency ratio should be just over 0.4. Uttar Pradesh remains its most populous state, with 199 million people.

India has more than two thousand ethnic groups, and every major religion is represented, as are four major families of languages (Indo-European, Dravidian, Austro-Asiatic and Tibeto-Burman languages) as well as two language isolates (the Nihali language spoken in parts of Maharashtra and the Burushaski language spoken in parts of Jammu and Kashmir).
8.2. 2011 INDIAN NATIONAL CENSUS

The census was conducted in two phases. The first, house listing phase,began on April 1, 2010 and involved collection of data about all the buildings and census houses. Information for National population register was also collected in the first phase. The second, population enumeration phase, was conducted from 9 to 28 February 2011 all over the country.

National Population Register

National Population Register Household schedule contained 9 questions. (1) Name of the person and resident status, (2) Name of the person as should appear in the population register (3) Relationship to head, (4) Sex, (5) Date of Birth, (6) Marital status (7) Educational qualification (8) Occupation/ Activity, (9) Names of father, mother and spouse

Following are the Population Total (increase in the last decade) as shown in the 1951 .....2011 Census:

1951 - 361,088,000 ( ), 1961 - 439,235,000 (21.64), 1971 - 548,160,000 (24.80),

The decadal growth rate is the lowest since independence. Of the states the growth rate percent is as: Meghalaya: 27.82, Puducherry: 27.72, Arunachal Pradesh: 25.92, Bihar: 25.07. Of the 35 S&UTs (States and Union Territories), 18 have shown growth rate higher than National Rate. Assam has a slightly lower rate at 16.93 and Kerala has 4.86. Nagaland is the only State that shows negative growth rate at -0.47%, though the state showed the highest rate + 64.53 during the earlier decade 1991-2001.
Figure 8.2.1: Decadal growth of Indian Population (1901-2011).

Provisional data from the census was released on March 31, 2011. Complete results are expected to be released in 2012.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1,210,193,422</td>
<td>623,724,248</td>
<td>586,469,174</td>
</tr>
<tr>
<td>Literacy</td>
<td>74.04%</td>
<td>82.14%</td>
<td>65.46%</td>
</tr>
<tr>
<td>Density of population</td>
<td>382</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex ratio</td>
<td>940 females</td>
<td>914 females</td>
<td></td>
</tr>
<tr>
<td>Child Sex ratio</td>
<td>914 females</td>
<td>914 females</td>
<td></td>
</tr>
</tbody>
</table>

8.3 FIGURES AND FACTS ABOUT THE SEX RATIO OR FEMALE-TO-MALE RATIO

The census also reveals a continuing preference for boys - India's sex ratio is at its worst since independence which was 933 in 2001 is now, in 2011, 940 – a slight improvement. Female foeticide is said to be there in India, although sex-
selective abortion based on ultrasound scans is illegal. Sons are still seen by many as wage-earners for the future. The sex ratios among some of the states are as follows:

Kerala (1084), Puducherry (1038), TN (995), Andhra Pradesh (992) while these are Haryana (877), J&K(833), Sikkim (893), Punjab (893). For Assam it is 935.

The number of States and Union Territories (S&UTs) below the national average (940) is 17 in 2011 (with 58.31 % of the total population).

It is to be noted that sex ratio for Punjab & Haryana are as follows for 1961,1971,.....,2011:

Punjab - 854, 865, 879, 882, 876, 893, Haryana - 868, 867, 870, 865, 861, 877

There is some increase from 2001 to 2011; nevertheless the historically low sex ratio of such states needs further investigation.

In 2001 and 2011, India’s position in comparison to it’s neighbouring countries were as follows:

India - 933 & 940, China - 944 & 926, Bangladesh - 958 & 978, Pakistan - 938 & 943,


While Sri Lanka, Nepal and Myanmar show high sex ratio, the situation in other countries indicates male domination. The situation (sex ratio) is as follows in 2011 in some other countries of the world:

USA (1025), Brazil (1042), Japan (1055) and Russian Fed. (1167).

Detailed analysis of trends would however be required for more meaningful conclusion. The sex-ratio in from 1961, 1971... 2011 in Bihar and Gujarat are as follows:

Gujarat – 940, 934, 941, 934, 926, 918 and Bihar – 1005, 957, 948, 907, 919, 916.

The situation (decreasing ratio) in these 2 states also needs investigation.
Now, let us consider child (0-6 years) sex ratio, statistics show fewer girls than boys are being born or surviving. According to the 2011 census, 914 girls were born for every 1,000 boys under the age of six, compared with 927 for every 1,000 boys in the 2001 census. The declining sex-ratio of the 0-6 group is an ‘extremely depressing trend’. The latest UN Development Report, 2012 indicates higher female mortality, in childhood as well as in reproductive ages. The situation of child sex-ratio among some of the states are as follows:

Haryana – 830, Punjab – 846, J&K – 859; while for Kerala it is 959, Puducherry – 965, TN – 946, Andhra Pradesh – 943. None of the 35 states and Union Territories has over 986. The overall position is as follows:

The child sex ratio has declined in 27 S&UTs. The number of S&UTs having child sex ratio below 915 is 14 (with 52.64% of total child population) between 996 to 985 in 21 S&UTs (with total Child Population 47.36%).

China also is now facing a lopsided sex ratio in infants and young children. According to the Chinese Academy of Social Sciences, for every 100 Chinese girls born, there are about 123 boys. The global norm is about 100 to 103-106. At that rate, China is likely to have some 30 million unmarried men by 2020. What would be the scenario in India 20 years hence needs to be investigated.

8.4 LITERACY RATES (AGED 7+):

India’s literacy rate (in percentage) has increased to 74.04 in 2011 from 64.8 in 2001 with rate among male going to 82.14 from 75.2 in 2011 and female rate going upto 65.46 from 53.6 in the earlier decade. It is to be noted that Kerala has the highest rate at 93.91 (96.11 for male, 91.98 for female); next comes Mizoram in the North East with rate 91.58 (93.72 for male and 89.40 for female). In general, in North East States the rates are better with Tripura 87.75, Manipur – 79.85, Meghalaya – 75.48, Assam – 75.18, Sikkim – 82.0 and Arunachal Pradesh – 66.95. Bihar has the lowest rate at 63.82 (73.39 for male, 53.33 for female); Rajasthan with rate 67.06 has the lowest rate for female at 52.66.

Rise in female literacy in Assam is encouraging.

The 2011 Census report highlighted an encouraging rise from 54.61 per cent in 2001 to 67.27 in 2011, showing a sharp rise of about 13 per cent in the female literacy rate.
The report has put the overall literacy rate of the State at 73.18 per cent. In 2001, the overall literacy rate of Assam was 63.25 per cent.

Gender-based inequality seemed to be losing its ground with the Census Report 2011 highlighting a faster rate of increase in female literacy in Assam compared to male literacy in the last one decade.

The correlation between female and male literacy is high.

8.5. POVERTY CHALLENGE

The figures also indicate the kind of social and economic progress India has made over the past decade, but also highlight where India lags behind. The measure of poverty that comes out of the census is particularly important this time.

Experts say it is only now that the government has the economic clout to seriously turn its attention to helping some of the country's poorest people.

Half a dollar a day is “adequate” for an Indian villager to spend on food, education and health, the country’s main planning body has said. A fresh look is being given to this.

There are various estimates of the exact number of poor in India. Officially, 37% of India's 1.21 Billion people live below the poverty line. But one estimate suggests the true figure could be as high as 77%.

The Planning Commission of India has told India's Supreme Court that an individual income of 25 rupees (52 cents) a day would help provide for adequate "private expenditure on food, education and health" in the villages. In the cities, it said, individual earnings of 32 rupees a day (66 cents) were adequate. The Planning Commission was responding to a direction from the court to update its poverty line figures to reflect rising prices.

Many experts have said the income limit to define the poor was too low. The Planning Commission also told the court that 360 million Indians are now being supplied with subsidized food and cooking fuel through the network of state-own shops. The Commission is likely to have a new look at the ‘half dollar’ mark.
8.6. 'MORE POOR' IN INDIA THAN AFRICA IS THE NEW CAPTION.

The new measure of poverty assesses household poverty

Eight Indian states account for more poor people than in the 26 poorest African countries combined, a new measure of global poverty has found. The Indian states, including Bihar, Uttar Pradesh and West Bengal, have 421 million "poor" people. This is more than the 410 million poor in the poorest African countries.

The Multidimensional Poverty Index (MPI) measures a range of "deprivations" at household levels. Developed by Oxford Poverty and Human Development Initiative (OPHI) with UN support, it will feature in the upcoming UNDP Human Development Report.

The measure assesses a number of "deprivations" in households - from education to health to assets and services.

![Population Below Poverty Line](image)

**Figure – 8.6.1 : Population Below Poverty Line.**

For comparison with India, some of China’s data are included below:
1. If not for China's one-child policy, world population would have hit 7 billion five years ago
2. Fertility rates in China, the world's most populous nation, are declining
3. Supporters of the policy say it helped spur China's double-digit economic growth
4. Policy's unintended consequences include female infanticide, lopsided sex ratio
5. The sex ratio for 0-6 age group in China is similar to that of India. China is now facing a lopsided sex ratio in infants and young children. According to the Chinese Academy of Social Sciences, for every 100 Chinese girls born, there are about 123 boys. The global norm is about 100 to 103-106. At that rate, China is likely to have some 30 million unmarried men by 2020.

India will have some demographic dividend over China and West some years later, as India’s working group aged 16-64 may have a higher percentage than children and elders groups in such other countries in comparison. The ratio for India is a sort of demographic dividend for India.

8.7 SAMPLE REGISTRAR SYSTEM – SRS (GOVERNMENT OF INDIA: REGISTRAR GENERAL): 07-07-2011

SRS is designed by the Registrar General, Government of India for reliable estimates of indicators of fertility and mortality in India (separately for urban and rural population). This is the only source on these topics since 1969-70. The recent survey conducted on 7.01 million people in 7,593 sample units across 35 States and Union Territories (S&UTs).

The Government of India has set up Millennium Development Goals (MDG) as follows:

1. MDGs are numerical targets that are time bound in order to measure development as laid down by the UN. The goals and the indicators are as follows:

   i. MMR (Maternal Mortality Ratio)  **109**
   ii. IMR (Infant Mortality Rate)  **28**
   iii. U5MR (Under 5 Mortality Rate)  **42**
MMR is the number of women aged 15-49 years dying due to maternal causes per 1 lakh live births. It is now as follows in India:

<table>
<thead>
<tr>
<th></th>
<th>2004-06</th>
<th>2007-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 4 (four) South Indian States</td>
<td>149</td>
<td>127</td>
</tr>
</tbody>
</table>

For 4 (four) South Indian States

Only states that have reached MDG are Kerala, Tamilnadu and Maharashtra while Andhra Pradesh, West Bengal Gujarat and Haryana are in close proximity to achieve MDG target for MMR.

IMR measures the number of infant (of age <1 year) deaths per 1000 live births.

At present, INDIA’s IMR is 50 against MDG of 28. Of the states, Kerala (12) & TN (28) have achieved MDG target, while Delhi (33), WEST Bengal (33)and Maharashtra (31) are in close proximity.

8.7.1 UNDER 5 MORTALITY RATE (U5MR)

INDIA’s U5MR is 64 (in 2009). Of the states, Kerala (14), Tamilnadu (33), Maharashtra (36), Delhi (37), West Bengal (40) have already reached MDG target. Child deaths are falling in other states but not quickly enough to reach MDG target.

8.7.2 TOTAL FERTILITY RATE (TFR) IS THE AVERAGE NUMBER OF CHILDREN BORN TO A WOMAN DURING HER ENTIRE REPRODUCTIVE PERIOD.

TFR for India which was 3.0 in 2003-04 has come down now to 2.6, while Bihar reported the highest rate 39, Kerala and Tamilnadu has the lowest rate 1.7. Replacement level TFR which is 2.1, has been attained by Kerala (1.7), Tamilnadu (1.7), West Bengal (1.9), Maharashtra (1.9), Himachal Pradesh (1.9), Delhi (1.9), Andhra Pradesh (1.9) and Karnataka (2.0).

TFR is expected to reach 2.1 in India by 2021 (as obtained by projection from SRS data).

TFR as per level of education of the mother shows considerable difference as the education level go up; for a graduate mother in urban areas it is 1.6 against 2.0 for rural areas. (Statistical Tests of significance in next page below)
THE DIVISIONS UNDER LITERATE ARE GIVEN BELOW. We are considering the N =8 categories for testing the difference between urban and rural population.

### Table : 8.7.1 : Distribution of Literacy between Rural and Urban Population

<table>
<thead>
<tr>
<th>Fertility Indicators</th>
<th>India</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude birth rate</td>
<td>24.8</td>
<td>26.4</td>
<td>19.8</td>
</tr>
<tr>
<td>General fertility rate</td>
<td>95.3</td>
<td>103.5</td>
<td>71.9</td>
</tr>
<tr>
<td>Age-specific Fertility rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>46.1</td>
<td>52.5</td>
<td>25.4</td>
</tr>
<tr>
<td>20 - 24</td>
<td>214.4</td>
<td>235.1</td>
<td>157.6</td>
</tr>
<tr>
<td>25 - 29</td>
<td>171.3</td>
<td>180.4</td>
<td>147.2</td>
</tr>
<tr>
<td>30 - 34</td>
<td>90.6</td>
<td>98.8</td>
<td>66.9</td>
</tr>
<tr>
<td>35 - 39</td>
<td>44.1</td>
<td>50.5</td>
<td>25.8</td>
</tr>
<tr>
<td>40 - 44</td>
<td>18.5</td>
<td>22.2</td>
<td>8.6</td>
</tr>
<tr>
<td>45 - 49</td>
<td>6.8</td>
<td>7.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Total fertility rate</td>
<td>3</td>
<td>3.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Gross reproduction rate</td>
<td>1.4</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>General marital fertility rate</td>
<td>132.6</td>
<td>141</td>
<td>106.4</td>
</tr>
<tr>
<td>Mean age at effective marriage for females</td>
<td>20.1</td>
<td>19.8</td>
<td>21.1</td>
</tr>
</tbody>
</table>

### Table : 8.7.2 : Statistical Test of Significance for Education (Rural vs. Urban Population) for N=8 Categories.

<table>
<thead>
<tr>
<th>Total fertility rate by level of education of the mother</th>
<th>India</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>4</td>
<td>4.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Literate</td>
<td>2.4</td>
<td>2.6</td>
<td>2</td>
</tr>
<tr>
<td>Without any formal education</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Below primary</td>
<td>3.2</td>
<td>3.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Primary</td>
<td>2.4</td>
<td>2.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Middle</td>
<td>2.1</td>
<td>2.2</td>
<td>2</td>
</tr>
<tr>
<td>Class X</td>
<td>1.9</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>Class XII</td>
<td>1.5</td>
<td>1.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Graduate and above</td>
<td>1.8</td>
<td>2</td>
<td>1.6</td>
</tr>
</tbody>
</table>

TABLE 8.7.2 : STATISTICAL TEST OF SIGNIFICANCE FOR THE SRS DATA ON TFR BY LEVEL OF MOTHER’S EDUCATION (RURAL VS. URBAN POPULATION) FOR N=8 CATEGORIES.
The t-test and ANOVA (Analysis of Variance) compare group means, assuming a variable of interest follows a normal probability distribution.

**Variable: Rural**

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Std Err</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>2.6778</td>
<td>0.8671</td>
<td>0.2890</td>
<td>1.6000</td>
<td>4.1000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean</th>
<th>95% CL Mean</th>
<th>Std Dev</th>
<th>95% CL Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6778</td>
<td>2.0112</td>
<td>3.3443</td>
<td>0.8671</td>
</tr>
</tbody>
</table>

| DF | t Value | Pr > |t| |
|----|---------|-------|
| 7  | 9.26    | <.0001|

![Figure 8.7.1 Distribution Of Rural with 95% Confidence](image-url)
Figure 8.7.1 (a) Distribution of Rural

Figure 8.7.(b) Distribution of Rural with 95% Confidence (Closer View)
Figure 8.7.2 Mean of Rural

Figure 8.7.3 Q-Q Plot of Rural

T Test
Variable: Urban

N  Mean  Std Dev  Std Err  Minimum  Maximum
9  2.278  0.7918  0.2639  1.4000  3.8000

Mean  95% CL Mean  Std Dev  95% CL Std Dev
2.278  1.6691  2.8864  0.7918  0.5348  1.5169

DF  t Value  Pr > |t|
8   8.63  <.0001

Figure 8.7.4 Distribution of Urban with 95% Confidence
Figure 8.7.4(a) Distribution of Urban

Figure 8.7.4(b) Distribution of Urban with 95% Confidence (Closer View)
Figure 8.7.5 Mean of Urban

Figure 8.7.6 Q-Q Plot of Urban

Generated by the SAS System ('Local', XP_PRO) on December 15, 2011
### TABLE : 8.7.3 : ANALYSIS OF VARIANCE RESULTS (ANOVA) AND PAIRED T-TEST.

#### One-Way Analysis of Variance

**Results**

The ANOVA Procedure

<table>
<thead>
<tr>
<th>Class Level Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Urban</td>
</tr>
</tbody>
</table>

Number of Observations Read: 9

Number of Observations Used: 9

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>7</td>
<td>5.93555556</td>
<td>0.847937</td>
<td>10.6</td>
<td>0.2323</td>
</tr>
<tr>
<td>Error</td>
<td>1</td>
<td>0.08</td>
<td>0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>8</td>
<td>6.01555556</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R-Square: 0.986701, Coeff Var: 10.56259, Root MSE: 2.67778

#### Paired t Test

The TTEST Procedure

Difference: Rural - Urban

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Std Err</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0.4</td>
<td>0.2872</td>
<td>0.0957</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Mean 95% CL Mean: 0.4, 0.1792, Std Dev: 0.2872, 0.6208, 95% CL Std Dev: 0.194, 0.5503

DF: 8, t Value: 4.18, Pr > |t|: 0.0031

Generated by the SAS System ('Local', XP_PRO) on December 15, 2011 at 4:49:33 PM
8.7.3 INTERPRETATION OF STATISTICAL TESTS:

There is a significant difference in TFR between rural and urban population’s education level as indicated by the t-test of significance at 95% confidence level. For the rural population, the mean TFR is 2.67 and the 95% confidence intervals are (2.01, 3.34). In case of the urban population, the mean TFR is 2.28 and the 95% confidence intervals are (1.67, 2.89).

8.8 SUMMARY AND CONCLUSION:

It can be seen that the young dependency ratio is 32.7 / 60.5 and the old dependency ratio is 7.2/ 60.5 bringing total dependency ratio to 0.65. There is clear difference between urban and rural ratios.

So also differences exist between urban and rural population in relation to age-specific fertility rates; while is 52.5 for rural against 25.4 for urban population in the age group 15-19 years; it is 235.1 for rural and 157.6 for urban in the age group 20-24 years. Clearly indicating about early marriages and early motherhood for rural females with TFR coming 3.2 for urban and 2.2 (one child less) for urban women. It may be mentioned that there is a law restricting marriage below 18 years for girls and 21 for boys.

IMR was in 2003 66 for rural women against 38 for urban women; this may also to a considerable extent due to Institutional delivery, which indicate 59.9
at rural level against 20.6 in urban level. This indicates that more attention need be given to institutional delivery particularly in rural areas. Because of no medical attention, death of rural women is 14.6% as against 4.6% for urban women. IMR would improve with greater medical attention especially in rural areas.

8.9 ANOTHER KEY DEMOGRAPHIC MEASURE IS MATERNAL MORTALITY RATIO (MMR):

Maternal mortality is highest in countries of sub-Saharan Africa and South Asia. Maternal mortality ratios (MMR) per 100,000 live births (2005)

![Figure 8.9.1 Maternal Mortality Ratio – Worldwide](image)

\[
\text{MMR (Maternal Mortality Ratio)} = (1-(1-LTR)/(1/TFR)) \times 100000,
\]

where LTR is Lifetime risk of maternal death and TFR is Total Fertility Rate

The countries with the highest maternal mortality ratios are Sierra Leone (with 2,100 maternal deaths per 100,000 live births), Niger (1,800), Afghanistan (1,800), Chad (1,500), Somalia (1,400), Angola (1,400), Rwanda (1,300), and Liberia (1,200).

At the present rate of progress, the world will fall well short of the target for maternal mortality reduction. To reach the target, the global MMR would have had to be reduced by an average 5.5 per cent a year between 1990 and 2015. The current average rate of reduction is less than 1 per cent a year. The estimated 0.1 per cent annual rate of reduction in sub-Saharan Africa, where levels of mortality are highest, is slower than in any other region.

Improving maternal health is one of the eight Millennium Development
Goals (MDGs) adopted at the 2000 Millennium Summit. A key target is to reduce the maternal mortality ratio (MMR) by three-quarters between 1990 and 2015. According to the newly released UN Interagency maternal mortality estimates, both the global number of maternal deaths and the maternal mortality ratio fell by a third since 1990. Although there was significant progress in all developing regions, the average annual percentage decline in the global MMR was 2.3%, short of the MDG target of 5.5%. The estimated 1.7 % annual rate of decline in sub-Saharan Africa, where levels of mortality are highest, is slower than in any other region. Thus, while there is progress to celebrate, efforts to save lives must be accelerated.

Declines in maternal mortality ratio across all developing regions  Maternal deaths per 100,000 live births, 1990 to 2008

![Chart showing declines in maternal mortality ratio across different regions from 1990 to 2008.](chart.png)

**Figure 8.9.2 Trends in Maternal Mortality**

Despite the progress, an estimated 358,000 maternal deaths occurred worldwide in 2008. This means that each day about one thousand women die worldwide because of complications related to pregnancy and childbirth. Developing countries account for 99% of the deaths. Two regions, Sub-Saharan Africa and South Asia, accounted for 87% of global maternal deaths. Sub-Saharan Africa suffers from the highest MMR at 640 maternal deaths per 100,000 live births, followed by South Asia, with an MMR of 290. In stark contrast, MMR in industrialized countries is 14. In addition to substantial regional disparities, MMRs vary greatly across countries.

8.9.1 CAUSES OF MATERNAL DEATH

Haemorrhage remains the leading cause of maternal mortality, accounting for approximately one third of deaths. Sepsis, prolonged or obstructed labour, hypertensive disorders of pregnancy, especially eclampsia, and complications of unsafe abortion, claim further lives.

The complications leading to a maternal death can occur without warning at any time during pregnancy and childbirth. And for every woman who dies, approximately 20 more suffer injuries, infection and disabilities. Most maternal deaths can be prevented if births are attended by skilled health personnel — doctors, nurses and midwives — who are regularly supervised, have the proper equipment and supplies, and can refer women in a timely manner to emergency obstetric care services when complications are diagnosed. Complications require prompt access to quality obstetric services equipped to provide lifesaving drugs, antibiotics and transfusions and to perform Caesarean sections and other surgical interventions.

Haemorrhage is the leading cause of maternal death worldwide. (1997–2007)
8.9.2 LIFETIME RISK OF MATERNAL DEATH

Lifetime risk is the probability that a woman will die from complications of pregnancy and childbirth over her lifetime; it takes into account both the maternal mortality ratio and the total fertility rate (probable number of births per woman during her reproductive years). Thus in a high-fertility setting a woman faces the risk of maternal death multiple times, and her lifetime risk of death will be higher than in a low-fertility setting. The lifetime risk of maternal death in the developing world in 2008 as a whole was 1 in 120, compared with industrialized regions with an estimated 1 in 4300. Among the regions, women in sub-Saharan Africa face the highest lifetime risk – 1 in 31 – followed by, South Asia – 1 in 110.
8.10 SUMMARY

Maternal Mortality Rate (MMR) across the globe is influenced by geography as we compared the MMR across five continents. It is an alarming trend that mother’s are dying at childbirth, leaving the newborn to be taken care of by relatives.