



सत्यमेव जयते

REPORT NO. 1 OF 2012

SAMPLE REGISTRATION SYSTEM STATISTICAL REPORT 2010



**OFFICE OF THE REGISTRAR GENERAL, INDIA
MINISTRY OF HOME AFFAIRS
GOVERNMENT OF INDIA
NEW DELHI**

**SAMPLE REGISTRATION SYSTEM
STATISTICAL REPORT 2010**

**OFFICE OF THE REGISTRAR GENERAL, INDIA
MINISTRY OF HOME AFFAIRS
GOVERNMENT OF INDIA
NEW DELHI**

P R E F A C E

The Sample Registration System (SRS) in India is the largest demographic survey in the world covering about 1.5 million households and 7.3 million population. It has continued to be the main source of information on fertility and mortality indicators both at the State and National levels. Apart from the large sample size and geographical spread in most of the Districts, the system has a unique feature of dual recording, which involves collection of data through two different procedures viz., continuous enumeration and retrospective half-yearly surveys. The continuous enumeration and retrospective surveys are followed by the process of matching of the two records and subsequent field verification of unmatched and partially matched events. The system provides a cross check on the correctness and completeness of the events of birth and death listed by the two independent functionaries.

2. Based on the dual record system, the SRS has been providing reliable estimates of fertility and mortality on a regular basis from 1971 onward. It includes data on population composition by broad age groups, sex and marital status, fertility and mortality levels, for India and bigger States (with population 10 million and above) separately for rural and urban areas. As per the recommendations of the Technical Committee, from 1990 onward tabulations on certain items of demographic interest such as mean age at effective marriage for females, interval between current and previous live birth and also distribution of live births by birth order have continued to form part of the SRS report. From 2000, the sex ratio at birth and from 2002, the sex ratio of child (age-group 0-4) have been included in this Report. Moreover, in order to facilitate effective tracking of Millennium Development Goals (MDGs) on under-five mortality, the estimates of under-five mortality for India and bigger States separately for rural and urban also by sex have been introduced in this Report since 2008.

3. The present Report is the sixth in the series that has been prepared based on data collected from new SRS sample units selected on the 2001 Census frame. Apart from the fertility and mortality indicators, this Report includes data on crude birth rate, crude death rate and infant mortality rates at Natural Division (group of contiguous districts) level for rural areas of a State. In the present Report, an executive summary containing important findings has been added to enhance its utility. For those who are interested in trend analysis, the National level trends for few core indicators have been presented since 2004 (the base year of new frame). Detailed State-level tables on these indicators for 2005-2010 have also been added to provide a glimpse of the trends. Henceforth, these additions would become a regular feature of the Report. With the modification of the system and consistent efforts of SRS Division and the Directorates of Census Operations, it has been our endeavor to release the report by year end. However, adhering to this timeline during the Census 2011 period was a big challenge. Nevertheless, we have succeeded in restricting the delay to a few months only.

4. The SRS has been a joint effort of the Central and State Governments. This study has been made possible with the active involvement of staff and officers of the Directorates of Economics & Statistics of Kerala and Maharashtra as well as the staff and officers of the Directorates of Census Operations, Map Division and the SRS Wing of the Vital Statistics Division at the headquarters. I am thankful to all of them. I must specially place on record my appreciation of the efforts put in by Shri P.K. Majumdar, Joint Director, Shri Jaspal Singh, Deputy Director, Smt Gracy James, Assistant Director, Shri Jagat Singh, S.I. Grade-I, Shri Brijesh Kumar and Shri Ravi Kant, S.I Grade- II, Smt. Prabha Agarwal and Shri R.S. Kar, Data Entry Operators, in the preparation of this Report supervised by Shri Bhaskar Mishra, Deputy Registrar General under the overall guidance of Dr. R.C. Sethi, Addl. Registrar General, India.

New Delhi
March, 2012

Dr. C. Chandramouli
Registrar General & Census Commissioner, India

CONTENTS

	Page
List of statements	ix- xii
List of charts	xiii
Definitions	xv-xvi
Figures at a glance, India – 2010	xvii-xix
National level trends for few core indicators 2005-10	xxi
Executive Summary	xxiii-xxiv
Map - Birth rate by NSS Natural Division, 2010	xxv
Map - Death rate by NSS Natural Division, 2010	xxvii
Map - Infant mortality rate by NSS Natural Division, 2010	xxix
Chapter 1- Introduction	1-10
Chapter 2 - Population Composition	11-28
Chapter 3 - Estimates of Fertility Indicators	29-66
Chapter 4 - Estimates of Mortality Indicators	67-89

Detailed Tables

1.	Percentage distribution of estimated population by age-group, sex and residence, 2010	93-103
2.	Percentage distribution of population by sex, marital status and age-group, 2010	104-124
3.	Fertility Indicators, 2010	125-130
4.	Fertility indicators by level of education of women, 2010	131-151
5.	Percentage distribution of live births by order of birth, 2010	152-157
6.	Percentage distribution of current live births by birth interval, 2010	158-159
7.	Percentage distribution of current live births by birth interval and birth order, 2010	160-165
8.	Age-specific death rate by sex and residence, 2010	166-186
9.	Child (Aged 0-4 years) and infant mortality indicators, 2010	166-186
10.	Percentage distribution of deaths to total deaths by residence, sex and age-group, 2010	187-197
11.	Birth rate, death rate and infant mortality rate by NSSO natural division, 2010	198-200

Tables on Trend

12.	Annual estimates of Birth rate by residence, India and bigger States, 2005-10	203
13.	Annual estimates of Death rate by sex, India and bigger States, 2005-10	204
14.	Annual estimates of Infant mortality rate by sex, India and bigger States, 2005-10	205
15.	Annual estimates of Total Fertility rate by residence, India and bigger States, 2005-10	206
16.	Sex ratio at birth (female per 1000 male) by residence, India and bigger States, 2004-06 to 2008-10	207
17.	Sex ratio of child (age group 0-4) by residence, India and bigger States, 2004-06 to 2008-10	208
18.	Percent of live births where the mothers received medical attention at delivery either at Government hospitals or at Private hospitals, India and bigger States, 2005-10	209
19.	Percent of deaths where medical attention received before death was either at Government hospitals or at Private hospitals, India and bigger States, 2005-10	210

Annexure

I	Map of natural divisions	213
II	List of natural divisions along with their districts	215-224
III	List of officers associated with the Report	225

LIST OF STATEMENTS

		Page
General		
1	Number of sample units at different replacement period	2
2	Number of sample units and population covered, India, States and union territories, 2010	6
Population Composition		
3	Percentage distribution of population by broad age groups to total population by sex and residence, India, 2010	12
4	Percentage of population in the age group 0-4 years to total population by sex and residence, India and bigger States, 2010	14
5	Percentage of population in the age group 0-14 years to total population by sex and residence, India and bigger States, 2010	16
6	Percentage of population in the age group 15-59 years to total population by sex and residence, India and bigger States, 2010	18
7	Percentage of population in the age group 60 years and above to total population by sex and residence, India and bigger States, 2010	20
8	Percentage distribution of population by marital status and sex, India and bigger States, 2010	22
9	Percentage distribution of population age 10+ by marital status and sex, India and bigger States, 2010	23
10	Percentage distribution of female age 10+ by marital status and residence, India and bigger States, 2010	24
11	Percentage distribution of female age 15+ by marital status and residence, India and bigger States, 2010	25
12	Percentage of females by age at effective marriage and by residence, India and bigger States, 2010	26
13	Mean age at effective marriage of female by residence, India and bigger States, 2010	27

Fertility Indicators		Page
14	CBR (Crude birth rate) by residence, India and bigger States, 2010	30
15	Percent change in average crude birth rate between 1998-00 and 2008-10 by residence, India and bigger States	32
16	Sex ratio (female per 1000 male) at birth by residence, India and bigger States 2008-10	34
17	Sex ratio of child (age group 0-4 years) during the period 2008-10, India and bigger States	36
18	GFR (General fertility rate) by residence, India and bigger States, 2010	37
19	Percentage change in average GFR (General fertility rate) between 1998-00 and 2008-10, by residence, India and bigger States	40
20	ASFRs (Age specific fertility rates) by residence, 2010	41
21	Percentage change in age specific fertility rates by residence between 1998-00 and 2008-10, India	43
22	ASFRs (Age specific fertility rates), India and bigger States, 2010	44
23	Percentage distribution of cumulative fertility by age group, India and bigger States, 2010	45
24	Mean age of fertility and associated standard deviation, India and bigger States, 2010	47
25	TFR (Total fertility rate) by residence, India and bigger States, 2010	48
26	Percentage change in average TFR (Total fertility rate) between 1998-00 and 2008-10 by residence, India and bigger States	51
27	GRR (Gross reproduction rate) by residence, India and bigger States, 2010	52
28	ASMFRs (Age specific marital fertility rates) by residence, India 2010	53
29	ASMFRs (Age specific marital fertility rates) India and bigger States, 2010	54
30	TMFRs (Total marital fertility rates) by residence, India and bigger States, 2010	55

		Page
31	Percentage change in average Total Marital Fertility rate (TMFR) between 1998-00 and 2008-10 by residence, India and bigger States	56
32	Percentage female population in the age group 15-49 by level of education, India and bigger States, 2010	57
33	GFR (General fertility rate) by level of education of women, India and bigger States, 2010	58
34	ASFR (Age specific fertility rate) by level of education of women and residence, India, 2010	59
35	TFR (Total fertility rate) by level of education of women, India and bigger States, 2010	60
36	Percentage distribution of current live births by birth order, India and bigger States, 2010	62
37	Percentage distribution of current live births by birth order and residence, India and bigger States, 2010	63
38	Percentage distribution of second and higher order live births by interval, India and bigger States, 2010	64
39	Percentage distribution of second and higher order live births by interval and residence, India and bigger States, 2010	65
40	Percentage distribution of live births by type of medical attention received by the mother at delivery by residence, India and bigger States, 2010	66
 Mortality Indicators		
41	CDR (Crude death rate) by residence, India and bigger States, 2010	68
42	Percentage change in average crude death rate between 1998-00 and 2008-10, by residence, India and bigger States	70
43	CDR (Crude death rate) by sex and residence, India, 2010	72
44	CDR (Crude death rate) by sex, India and bigger States, 2010	72
45	Percentage distribution of deaths by broad age groups, India and bigger States, 2010	73
46	Percentage of infant deaths to total deaths by residence, India and bigger States, 2010	74

Page

47	IMR (Infant mortality rate) by sex and residence, India and bigger States, 2010	75
48	Percentage change in average IMR (Infant mortality rate) between 1998-00 and 2008-10 by residence, India and bigger States	78
49	Neo-natal mortality rate and percentage share of neo-natal deaths to infant deaths by residence, India and bigger States, 2010	79
50	Early neo-natal mortality rate and percentage share of early neo-natal deaths to infant deaths by residence, India and bigger States, 2010	80
51	Peri-natal mortality rate and Still birth rates by residence, India and bigger States, 2010	81
52	Percentage of deaths in the age group 0-4 years to total deaths by residence, India and bigger States, 2010	82
53	Estimated death rate for children age 0-4 years by sex and residence, India and bigger States, 2010	83
54	Under-five Mortality Rate by sex and residence, India and bigger States, 2010	84
55	Death rates for children age 5-14 years by sex and residence, India and bigger States, 2010	86
56	Death rate for persons age 15-59 years by sex and residence, India and bigger States, 2010	87
57	Death rate for persons age 60 years and above by sex and residence, India and bigger States, 2010	88
58	Percentage distribution of deaths by type of medical attention received before death by residence, India and bigger States, 2010	89

LIST OF CHARTS

		Page
1.	Flow chart	9
2.	Percentage distribution of population by broad age-groups and residence, India, 2010	13
3.	Percentage of child population (0-4 years) to total population by residence, India and bigger States, 2010	15
4.	Percentage of population age 0-14 years to total population by residence, India and bigger States, 2010	17
5.	Percentage of population age 15-59 years to total population by residence, India and bigger States, 2010	19
6.	Percentage of population age 60+ to total population by residence, India and bigger States, 2010	21
7.	Mean age at effective marriage of female by residence, India, 2010	28
8.	CBR (Crude birth rate) by residence, India and bigger States, 2010	31
9.	Distribution of bigger States by values of birth rate for rural and urban areas, 2010	33
10.	Sex ratio at birth by residence, India and bigger States, 2008-2010	35
11.	GFR (General fertility rate) by residence, India and bigger States, 2010	38
12.	Distribution of bigger States by values of GFR (General fertility rate) for rural and urban areas, 2010	39
13.	ASFRs (Age-specific fertility rates) by residence, India, 2010	42
14.	Percentage cumulative ASFRs by residence, India, 2010	46
15.	TFR (Total fertility rate) by residence, India and bigger States, 2010	49
16.	Distribution of bigger States by values of TFR (Total fertility rate) for rural and urban areas, 2010	50
17.	TFR (Total fertility rate) by level of education of women by residence, India, 2010	61
18.	CDR (Crude death rate) by residence, India and bigger States, 2010	69
19.	Distribution of bigger States by values of death rate for rural and urban areas, 2010	71
20.	IMR (Infant mortality rate) by residence, India and bigger States, 2010	76
21.	Distribution of bigger States by IMR (Infant mortality rate) for rural and urban areas, 2010	77
22.	U5MR (Under-five Mortality Rate) by residence, India and bigger States, 2010	85

DEFINITIONS

Crude birth rate (CBR)	=	$\frac{\text{Number of live births during the year}}{\text{Mid-year population}} \times 1000$
Age-specific fertility rate (ASFR)	=	$\frac{\text{Number of live births in a particular age-group}}{\text{Mid-year female population of the same age-group}} \times 1000$
General fertility rate (GFR)	=	$\frac{\text{Number of live births in a year}}{\text{Mid-year female population in the age-group (15-49) years}} \times 1000$
Total fertility rate (TFR)	=	$5 \times \frac{\sum_{15-19}^{45-49} \text{ASFR}}{1000}$
Gross reproduction rate (GRR)	=	$5 \times \frac{\sum_{15-19}^{45-49} \text{ASFR for female live births}}{1000}$
Age-specific marital fertility rate (ASMFR)	=	$\frac{\text{Number of live births in a particular age-group}}{\text{Mid-year married female population of the same age-group}} \times 1000$
General marital fertility rate (GMFR)	=	$\frac{\text{Number of live births in a year}}{\text{Mid-year married female population in the age-group (15-49) year}} \times 1000$
Total marital fertility rate (TMFR)	=	$5 \times \frac{\sum_{15-19}^{45-49} \text{ASMFR}}{1000}$
Crude death rate (CDR)	=	$\frac{\text{Number of deaths during the year}}{\text{Mid-year population}} \times 1000$

$$\text{Age-specific mortality rate (ASMR)} = \frac{\text{Number of deaths in a particular age-group}}{\text{Mid-year population of the same age-group}} \times 1000$$

Under-five Mortality Rate = The under-five mortality is the probability (${}_5q_0$) that a child born in a specific year or time period will die before reaching the age of five, subject to current age specific mortality rates. It is expressed as a rate per 1,000 live births.

$$\text{Infant mortality rate (IMR)} = \frac{\text{Number of infant deaths during the year}}{\text{Number of live births during the year}} \times 1000$$

Infant mortality rate comprises of two parts viz. Neo-natal mortality rate and Post neo-natal mortality rate. The neo-natal mortality rate also comprises of two parts viz. Early neo-natal mortality rate and late neo-natal mortality rate. These are defined as:

$$\text{Neo-natal mortality rate (NMR)} = \frac{\text{Number of infant deaths of < than 29 days during the year}}{\text{Number of live births during the year}} \times 1000$$

$$\text{Early neo-natal mortality rate} = \frac{\text{Number of infant deaths of < than 7 days during the year}}{\text{Number of live births during the year}} \times 1000$$

$$\text{Late neo-natal mortality rate} = \frac{\text{Number of infant deaths of 7 days to < than 29 days during the year}}{\text{Number of live births during the year}} \times 1000$$

$$\text{Post neo-natal mortality rate (PNMR)} = \frac{\text{Number of infant deaths of 29 days to < than one year during the year}}{\text{Number of live births during the year}} \times 1000$$

$$\text{Peri-natal mortality rate (PMR)} = \frac{\text{Number of still births and infant deaths of < than 7 days during the year}}{\text{Number of live births and still births during the year}} \times 1000$$

$$\text{Still birth rate (SBR)} = \frac{\text{Number of still births during the year}}{\text{Number of live births and still births during the year}} \times 1000$$