

GOVERNMENT OF KERALA

SAMPLE REGISTRATION
KERALA
RURAL

ANNUAL REPORT 1988

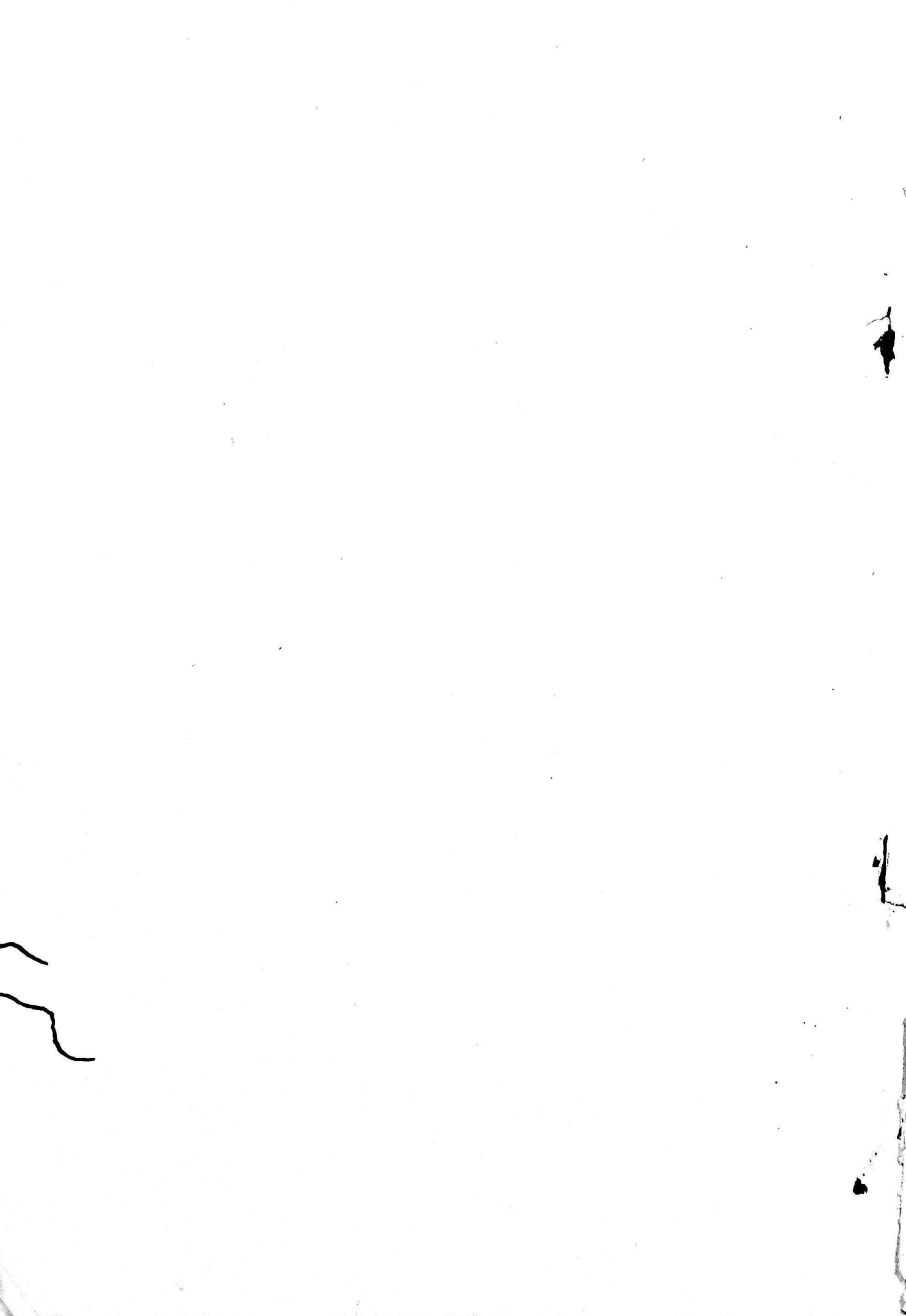
No. 26

Pub : 8th May 1990

DEPARTMENT OF ECONOMICS & STATISTICS

THIRUVANANTHAPURAM

1990



GOVERNMENT OF KERALA

*
**

**
*

SAMPLE REGISTRATION - KERALA - RURAL
Annual Report - 1988
No.26

*
**

**
*

DEPARTMENT OF ECONOMICS AND STATISTICS
THIRUVANANTHAPURAM
1990

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

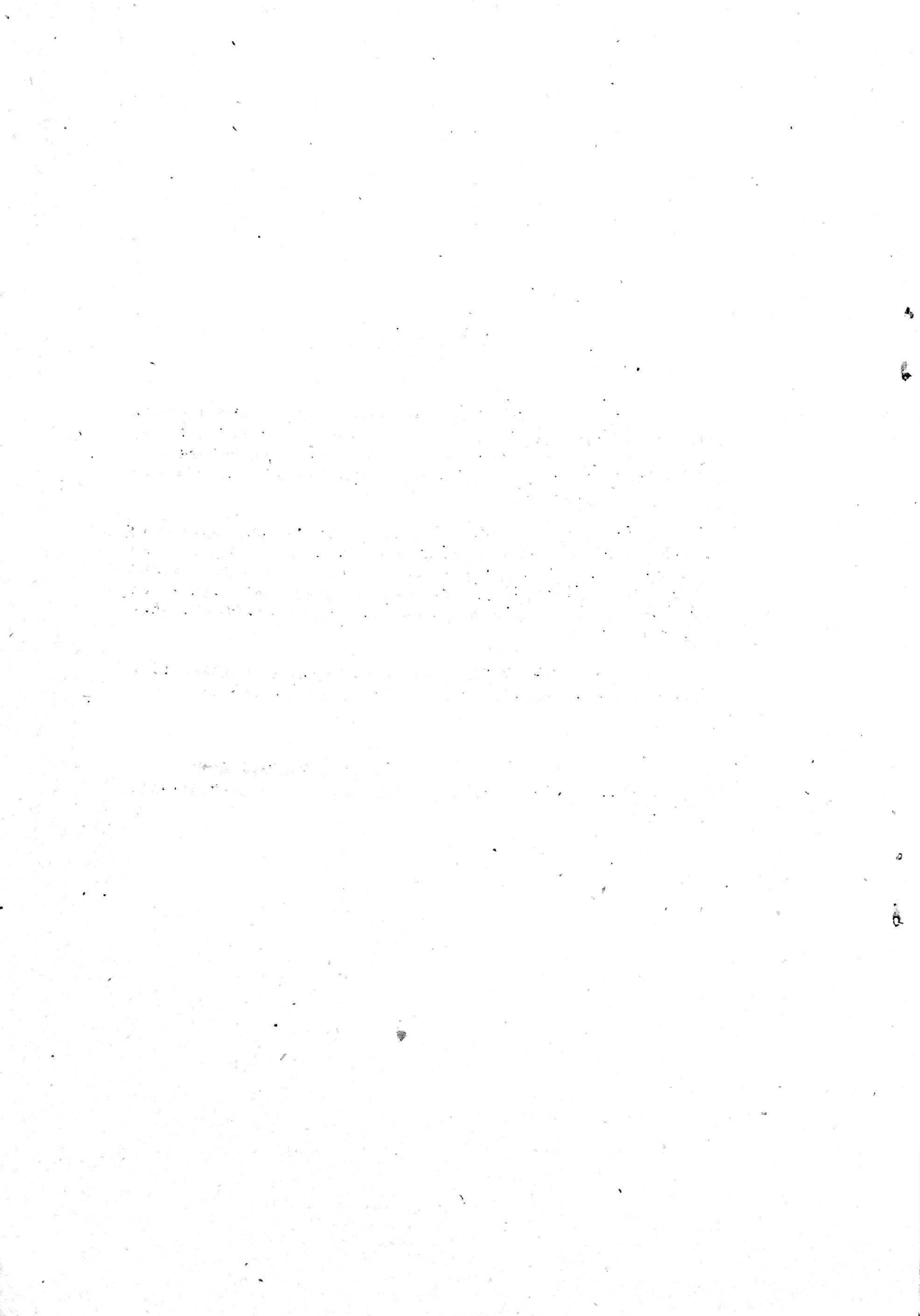
P R E F A C E

The Sample Registration System was introduced in all the states of India under the directions of the Registrar General of India with the objective of obtaining quick and reliable estimates of vital rates in the country regularly.

This report present the result of the study in rural areas of Kerala State for the year 1988. The estimates of vital rates viz:- crude birth and death rates, infant mortality rates etc. and also the details of marriages obtained through the study are included in this report.

This report was prepared by the Sample Registration Unit of the Directorate of Economics and Statistics.

P.L. SREEDEVI AMMA,
Thiruvananthapuram, Director of Economics and Statistics.
18.5.1990.



SAMPLE REGISTRATION OF BIRTHS AND DEATHS IN KERALA RURAL - 1988

Chapter - I

Introduction

Sample Registration System has been recognised as a unique technique for obtaining quick and reliable data on vital rates, since the statutory registration system fails to record complete births and deaths. The agency for the study in rural areas of the State is the Department of Economics and Statistics and in the Urban areas, the Census Department as per the directions of the Registrar General of India. This report is based on the findings of the study in 150 samples selected in rural areas of the State for the year 1988.

The Sample Registration System, basically a sample Survey designed to obtain quick and reliable data on vital rates, was introduced in the State as a pilot project during 1964-65 in 20 rural and 5 urban samples. The full fledged scheme was introduced on first July 1965 covering 150 samples in rural areas of the State on a regular basis. The samples originally selected were retained for the study upto the year 1982. Out of these 150 samples, 75 samples were replaced during 1982 and the remaining 75 were replaced during the year 1983 for the study. The new samples were selected after stratifying the Census villages into four types according to the population of 1981 Census viz: - Below 500, 500 to 999, 1000 to 1999 and 2000 and above under the two regions formed in the State consisting of the northern districts of the State beyond Trichur as northern region and the remaining districts from Trivandrum to Trichur as Southern Region and allocating samples in different strata in proportion of the population of each strata to the total population. The number and population of the samples selected for the study and the total number and population of Census villages in each stratum are given in Table 32 appended to this report.

1.2 Staff

One hundred and fifty part-time Enumerators were engaged in regular fieldwork of registering the births and deaths occurred in each sample and for reporting the details to this office during each month and 15 Statistical Assistants/Computers deputed from Census Department for conducting half yearly surveys in all the 150 samples selected in the State. The supervision of field work and the reverification of the unmatched and partially matched events were done by the Additional District Officers of this Department in each district. A Regional Officer, a Research Assistant, a Computer from Census Department and two Compilers attended the work relating to Sample Registration System at the State Head quarters.

1.3 Field work

Originally a base line survey was conducted in all the Sample Units selected for fixing the resident population. The details of

births and deaths occurring in these units for the resident population were registered by part-time Enumerators appointed for this work on a regular basis through informants and house visits and the details reported to the district and state headquarters every month. The Statistical Assistant/Computer Supervisors conducted half yearly surveys during each half year for updating the population and for collecting the details of births and deaths. The data collected independently by both the Enumerators and Supervisors were matched at the District Headquarters and the reverification of the unmatched and partially matched events was done by the Additional district officers concerned and the finalised results of the survey furnished to the State headquarters. On a further scrutiny of the results at the headquarters, a copy of the details of births, deaths and population statement were forwarded to the office of the Registrar General of India for computation of vital rates.

1.4 Overlapping Survey

During each half yearly survey, the data relating to the previous half year were also collected, in order to list out the events missed, if any, by both the Enumerator and Supervisor during the previous half year. By this procedure 151 births and 26 deaths were detected during the year as the event of the extended reference period.

1.5 Intensive Enquiry

An intensive enquiry in all the households of the sample was conducted in 23 samples identified as deficient units for the year by the Additional District Officers of this department through which 28 births and 4 deaths were additionally detected.

Chapter - 2

Population and its growth

The population of Kerala rural was estimated as 22607846 on 1.7.1988 and 22713729 on 1.1.1989 recording an increase of 0.47 percent during the second half of 1988 as against 0.71 percent during the same period of the previous year. The increase in population during the period in northern region was 0.76 percent and that in southern region was 0.25 percent as against 1.12 percent and 0.41 percent respectively during the previous year. Mid-year population has shown an increase of 1.48 percent over the previous year.

2.2 Sex ratio and percentage distribution of population by age group

The sex ratio and percentage distribution of population for different age groups for the year 1971, 1987 and 1988 are presented in Table 5 appended to this report. The sex ratio is seen decreased from 1059 in 1987 to 1056 in 1988 showing the same trend as in the previous

year. Children below the age of 14 has come down to 31.4 percent of the total population from 32.0 percent during the year 1987.

2.3 Religion-wise population

Percentage of estimated population for Hindus, Muslims and Christians for the year were 57.32, 21.04 and 21.64 respectively whereas the percentages were 57.37, 21.29 and 21.34 respectively during the previous year.

Chapter - 3

Measures of fertility

Crude birth rate

The crude birth rate is the most common measure of fertility. It is defined as the number of live births per 1000 mid-year population. The births to the usual residents in the area only are taken into account for calculation of vital rates.

The crude birth rate for Kerala - rural for the year 1988 was estimated as 19.9 which is 1.6 less than that of the previous year. Birth rate in northern region is seen always higher than that of the southern region. Birth rates in northern and southern region were 23.2 and 17.6 respectively during 1988 while the rates were 24.6 and 19.2 respectively during the previous year. Birth rates for Kerala rural and India rural for the year 1982 to 1988 are given in Table A1.

Table - A1 Crude birth rate for Kerala rural and India rural for the year 1982 to 1988

Year	Kerala - Rural			India rural
	Northern region	Southern region	Total	
1	2	3	4	5
1982	27.9	21.3	24.3	35.5
1983	29.3	19.5	23.5	35.3
1984	28.5	20.3	23.7	35.3
1985	27.2	20.4	23.2	34.4
1986	27.0	19.4	22.6	34.2
1987	24.6	19.2	21.5	33.7
1988	23.2	17.6	19.9	32.8*

*Provisional

From Table A1, it can be seen that the birth rates in northern and southern regions have decreased by 1.4 and 1.6 respectively showing a considerable decrease in birth rates both in the northern and southern regions during the year 1988.

3.2 Birth rates of neighbouring states

The birth rates for rural alone and rural and urban together estimated provisionally for the year 1988 by the Registrar General of India in respect of Kerala and neighbouring States and all India are given in Table A2.

Table - A2 Birth rates of neighbouring states and all India for 1988*

States		Rural	Rural & Urban combined
1	2	3	4
1.	Andhra Pradesh	27.0	26.8
2.	Karnataka	30.1	28.7
3.	Tamil Nadu	23.2	22.5
4.	Kerala	19.6	19.9
	All India	32.8	31.3

*Provisional

Comparing the birth rates in rural areas, Kerala recorded the lowest birth rate, 19.6 as in the previous year. Karnataka recorded the highest birth rate 30.1 as against Andhra Pradesh recorded the highest birth rate 30.4 during the previous year. During the year, Andhra Pradesh stand second and Tamil Nadu third.

3.3 Birth rates by religion

The birth rates among the three religious groups Hindus, Muslims and Christians in rural areas of the state for the year estimated separately for northern and southern regions are given in Table 15 appended.

Among the three religions of the State, Muslims recorded the highest birth rate 26.7 as against 29.6 in the previous year. Hindus recorded the lowest birth rate 18.1 and Christians recorded the birth rate 18.2 as against 19.6 and 18.5 respectively during the previous year.

The Muslims in the northern region who forms 34.3 percent of the total population in the area and 68.8 percent of the total muslim population in the State recorded the highest birth rate 30.2 as against 33.1 during the previous year. The lowest birth rate 17.0 is recorded by Hindus in the southern region who constitute 57.0 percent of the total population in the region and 57.4 percent Hindu of the total population in the state. During the previous year Christians in the northern region recorded the lowest birth rate 18.2.

3.4 Distribution of sample villages under different birth rate

The distribution of sample villages by crude birth rate for the year 1988 and previous two years are presented in Table 13 appended. The birth rate for the state 19.9 during the year found place in the group of 16 and less than 20 whereas the birth rate for the state 20.5 during the previous year found place in the immediate higher group 20 and less than 24. It is seen that 21 samples (34.4 percent) in northern region and 64 samples (71.9 percent) in southern region were having birth rate below 20. The highest birth rate recorded by one sample in northern region falls in the group 36 and less than 40. The number of samples having birth rate below 12 is one in northern region and six in southern region.

3.5 Age specific fertility rate

Age specific fertility rate can be defined as the number of live births in an year to 1000 women of a specific age group. Age specific fertility rates for the year 1988 are given separately for the two regions in Table 9 appended. Age specific fertility rates for the years 1982 to 1988 are given in Table A3 for comparing the rates.

Table - A3 Age specific fertility rate in Kerala - Rural
for the years 1982 to 1988

Age group	1982	1983	1984	1985	1986	1987	1988
1	2	3	4	5	6	7	8
15 to 19	31.8	34.9	34.5	33.7	36.7	31.3	28.1
20 to 24	176.5	172.7	179.2	177.0	166.1	171.6	153.1
25 to 29	168.0	161.0	168.0	155.4	147.1	140.0	128.2
30 to 34	95.4	87.5	74.6	73.0	67.5	55.1	57.2
35 to 39	53.8	42.5	35.8	29.6	27.4	24.4	24.1
40 to 44	18.1	13.6	14.1	14.2	11.2	7.2	6.3
45 & above	3.8	3.1	4.0	1.8	2.9	2.1	3.0

3.6 Age specific marital fertility rate

Age specific marital fertility rate can be defined as the number of livebirths in an year to 1000 married women of specific age group. Age specific marital fertility rates for the year 1988 also are given in Table 9. Age group 20 to 24 recorded the highest marital fertility rate 293.6 during the year as against 328.1 recorded as highest marital fertility rate in the same age group during the previous year.

3.7 General fertility rate (G.F.R)

General fertility rate is the number of livebirths in an year to 1000 women in the reproductive age group 15 to 49. General fertility

rates for the two regions separately are given below.

Northern region	86.0
Southern region	61.5
State	71.5

General Fertility Rate for the years 1982 to 1988 are given below. It can be seen that there is a decreasing trend in G.F.R.

	1982	1983	1984	1985	1986	1987	1988
G.F.R.	90.8	87.1	87.5	84.4	81.0	77.4	71.5

3.8 Total fertility rate (T.F.R)

Total fertility rate denotes the average number of children that would be born to a woman during her life time, if she was to pass through her child bearing years conforming to the age specific fertility rates of the year. The total fertility rates for the two regions separately are given below.

Northern region	2.4
Southern region	1.7
State	2.0

Total fertility rate of Kerala - rural for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1988
T.F.R	2.7	2.6	2.6	2.4	2.3	2.2	2.0

3.9 Gross reproduction rate (G.R.R)

Gross reproduction rate is the average number of female children that would be born to a woman during her life time, if she was to pass through her child bearing years conforming to the age specific fertility rate of the year. The gross reproduction rate of Kerala rural for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1988
G.R.R.	1.3	1.2	1.3	1.2	1.1	1.1	1.0

3.10 Net reproduction rate (N.R.R)

Net reproduction rate is the average number of female children that would be born to a woman during her life time, conforming to the age specific fertility rates of the child bearing age groups by corresponding proportion of survivors as per life table for females (L_x/l_x) and then repeating the process as in gross reproduction rate. Net reproduction rate for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1988
N.R.R.	1.22	1.15	1.26	1.20	1.09	1.05	1.00

3.11 Still birth rate (S.B.R)

Still birth rate is the number of still births to 1000 births (both live births and still births). The still birth rate was estimated as 11.7 for the year as against 11.1 for the previous year. Still birth rates for Northern and Southern regions were estimated as 11.1 and 12.3 respectively. Still birth rates for males and females were estimated as 13.9 and 9.5 respectively for the year 1988.

Still birth rates for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1988
S.B.R.	12.6	13.5	10.5	13.3	14.0	11.1	11.7

3.12 Order of birth by age of mother

The percentage distribution of births by age of mother and order of birth of child is given in Table 12 appended. 88.5 percent of the births came under first three orders of birth as against 88.7 percent during the previous year. The births under seventh order and above during the year was 2.2 percent as against 2.0 percent during the previous year.

3.13 Births by type of medical attention received

The percentage distribution of births by type of medical attention received during the years 1982 to 1988 are given in Table A4.

Table - A4 Percentage distribution of births by type of medical attention received for the year 1982 to 1988

Year	Institu- tional	Trained profe- ssional	Untrained profes- sional	Non-Pro- fessional	Not stated
1	2	3	4	5	6
1982	59.1	21.8	18.2	0.9	-
1983	68.9	16.1	13.1	1.9	-
1984	73.3	9.2	13.6	3.7	0.2
1985	76.5	8.2	12.8	2.2	0.3
1986	80.2	6.3	9.7	3.7	0.1
1987	82.5	7.7	9.2	0.6	-
1988	83.1	6.8	7.9	2.0	0.2

More and more people were seen utilizing the institutional facilities provided for maternal and child health year by year. The distribution of number of births by various medical attention received

is given in Table 11 appended. It is seen that Institutional medical facilities availed during the year in northern region and Southern region were 70.3 and 95.8 percent respectively as against 69.8 and 94.7 percent respectively during the previous year. The services of untrained professionals utilised during the year in northern and southern regions were 14.3 and 1.5 percent respectively as against 17.3 and 1.5 percent respectively during the previous year.

3.14 Sex ratio at birth

Sex ratio at birth is defined as the number of male children born to 100 female children. Sex-ratio at birth for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1987
Se Ratio	107.2	108.7	100.8	100.2	110.7	104.2	99.3

Sex ratio at birth in northern region and Southern region were 96.8 and 101.7 respectively as against 102.2 and 106.2 respectively during the previous year.

3.5 Child - woman ratio (C.W.R)

Child-woman ratio is defined as the estimated number of children in the age group 0 to 4 years per 1000 women in the reproductive age group 15 to 49.

Estimated No. of children in the age group 0 to 4	2374215
Estimated No. of women in the age group 15 to 49	6308274

Child woman ratio for the years 1982 to 1988 are given below.

	1982	1983	1984	1985	1986	1987	1988
C.W.R	401	400	390	377	378	383	376

3.16 Comparison of vital rates under sample registration system and civil registration system

Civil registration system is a statutory system of recording the details of all births and deaths occurring in the State. A comparative study of vital rates under sample registration system and civil registration system reveal that a considerable number of births and deaths are left unregistered under civil registration system. The birth rates and still birth rates arrived from the data collected through sample registration system and civil registration system for the years 1982 to 1988, are given in Table A5. The vital rates calculated from the data on civil registration system show that the rates were very high in urban areas compared to the rural areas of the State. A good number of births and deaths of the resident population in rural areas are seen registered in urban areas of the state in civil registration system.

Table - A5 Vital rates under civil registration system and Sample Registration System in Kerala Rural for the years 1982 to 1988.

Year	Birth rate		Still birth rate	
	Civil Re- gistration	Sample Re- gistration	Civil Re- gistration	Sample Re- gistration
1	2	3	4	5
1982	15.4	24.3	5.1	12.6
1983	14.3	23.5	3.9	13.5
1984	13.8	23.7	4.9	10.5
1985	14.7	23.2	3.9	13.3
1986	13.5	22.6	2.9	14.0
1987	13.5	21.5	2.9*	11.1
1988	12.5	19.9	2.9*	11.7

* Provisional.

3.17 Rate of marriage per 1000 population and percentage distribution according to age and sex

The rate of marriages and remarriages per 1000 population and percentage distribution of marriages according to age and sex are given in Table 28 appended. The highest rate of first marriage to 1000 female population during the year was 66.1 in the age group 20 to 24 as against 70.9 in the same age group during the previous year. In the case of males, the highest rate was 67.3 in the age group 25 to 29 as against 71.4 in the same age group during the previous year. The rate of marriage of females in the age group 15 to 19 has been decreased by 5.3 over the previous year. Of the total marriages, 3.2 percent were remarriages while it was 3.5 percent during the previous year.

The mean age at marriage for males and females were seen as 27.3 and 22.1 respectively whereas the mean age at marriage during the previous year were seen as 27.1 and 21.9 respectively.

Chapter - 4

MORTALITY MEASURES

4.1 Crude death rate

The crude death rate is defined as the number of deaths per 1000 of mid-year population. As in the case of birth rate, deaths occurred to usually resident members only were considered for calculating the death rate. The crude death rate for the year in Kerala rural is seen as 6.3 as against 6.1 during the previous year. The death rates in northern region and southern region were 6.2 and 6.3 respectively whereas the death rates were the same 6.1 in northern and southern region during the previous year. The crude death rates for Kerala rural and All India rural for the years 1982 to 1988 are given in Table B-1 below.

Table - B1 Crude death rate in Kerala rural and All India rural for the years 1982 to 1988

Year	Northern region	Southern region	Combined	All India rural
1	2	3	4	5
1982	6.3	5.6	5.9	13.1
1983	7.2	6.2	6.6	13.1
1984	6.9	6.0	6.4	13.8
1985	6.8	6.4	6.6	13.0
1986	6.0	6.1	6.0	12.2
1987	6.1	6.1	6.1	12.0
1988	6.2	6.3	6.3	11.8*

* Provisional.

4.2 Death rates of neighbouring states

The death rates in rural areas and rural and urban combined estimated provisionally for the year 1988 by the Registrar General of India in respect of the neighbouring States and All India are given in Table B2.

Table - B2 Death rates of neighbouring States and All India

Sl. No.	States	Rural	Rural and Urban combined
1	2	3	4
1.	Andhra Pradesh	10.6	9.9
2.	Karnataka	9.5	8.8
3.	Tamil Nadu	10.2	9.2
4.	Kerala	6.2	6.3
	All India	11.8	10.9

Comparing the death rates in rural areas of the neighbouring States Andhra Pradesh recorded the highest death rate 10.6 while Kerala recorded the lowest death rate 6.2 during the year. When the death rates for rural and urban together are compared, Andhra Pradesh recorded the highest death rate 9.9 and Kerala the lowest death rate 6.3 as usual. As regards the death rates, Tamil Nadu stands second and Karnataka third during the year.

4.3 Death rates among religions

The death rates among the three religious groups Hindus, Muslims and Christians are given in Table 15 appended. The highest death rate 6.9 was recorded among Hindus in the northern region, as in the previous year. The lowest death rate 4.8 was recorded among Christians in the same region, as before. At state level, the highest death rate 6.7 was among Hindus and lowest death rate 5.2 was among Muslims, as in the case of the previous year. It is seen that the death rates of all the three religious groups have been increased during the year.

4.4 Age specific death rate

Age specific death rate is the number of deaths in a specific age group among 1000 persons of that age group in an year. The age specific death rates for different age groups according to region and sex are given in Table 18 appended. The highest death rate 91.0 was recorded in the age group 70 and above as against 85.4 during the previous year. The lowest death rate 0.6 was recorded in the age group 15 to 19 as against 0.5 recorded in the age group 10 to 14 during the previous year. The age specific death rates for the age group 70 and above in northern region and southern region were 105.2 and 84.5 respectively as against 92.3 and 82.2 respectively during the previous year. Similarly the age specific death rates for the age group 70 and above for males and females have also been increased to 100.7 and 83.3 respectively from 94.6 and 78.4 respectively during the previous year. The difference between the age specific death rates of males and females in the age group 70 and above was 17.4 during the year while it was 16.2 during the previous year. The gap between the death rates of males and females in the age group 70 and above has been increased during the year. The death rates for males and females in Kerala rural for the year 1988 were seen as 7.3 and 5.3 respectively whereas the rates were 7.0 and 5.2 respectively during the previous year showing an increase of 0.3 for males and 0.1 for females.

4.5 Infant mortality rate

Infant mortality rate is defined as the estimated number of deaths of children below one year of age out of 1000 live births in an year. The estimated number of infant deaths and infant mortality rates in Kerala rural according to sex and region are given in Table 22 appended. The infant mortality rates of Kerala rural for the years 1982 to 1988 are given below.

Infant mortality rate	1982	1983	1984	1985	1986	1987	1988
	30.3	38.9	30.1	33.0	28.6	27.0	29.9

Infant mortality rates recorded in northern and southern regions were 29.0 and 30.9 respectively as against the rates 28.1 and 26.0 respectively during the previous year.

4.6 Neo natal mortality rate

Neo natal mortality rate is defined as the estimated number of deaths of infants below 28 days of age per 1000 live births in an year. Neo natal mortality rate was calculated as 21.3 during the year 1988 as against 21.4 during the previous year.

4.7 Peri natal mortality rate

Perinatal mortality rate is defined as the estimated number of deaths of infants below 7 days of age per 1000 live births in an year.

The perinatal mortality rate was calculated as 17.4 against 17.3 during the previous year.

The perinatal, neo natal and infant mortality rates according to sex and region are given in Table B3 below.

Table - B3 Perinatal, neo natal and infant mortality rates

Region	Mortality rates								
	Peri natal			Neo natal			Infant		
	M	F	All	M	F	All	M	F	All
1	2	3	4	5	6	7	8	9	10
Northern Region	19.0	16.6	17.7	24.7	19.6	22.1	32.5	25.6	29.0
Southern Region	18.2	16.1	17.1	22.0	19.1	20.6	34.1	27.6	30.9
State	18.6	16.3	17.4	23.3	19.4	21.3	33.3	26.6	29.9

4.8 Distribution of samples according to death rate of each sample

The distribution of samples according to death rates for the year 1988 and previous two years, are given in Table 21 appended. During the year under report 36 samples (59.0 percent) of the northern region and 57 samples (64.0 percent) of the southern region recorded the death rates below 7 as against 63.9 percent and 69.7 percent respectively during the previous year. At state level 93 samples (62.1 percent) have recorded the death rate less than 7 as against 101 samples during the previous year. The highest death rates recorded by two samples in southern region found place in the group 11 and less than 13. The number of samples recorded death rates 11 and above during the previous year were 2 each in northern and southern regions. The lowest death rate less than 1 is recorded in one sample of the southern region during the year.

4.9 Medical attention received before death

The percentage distribution of deaths according to medical attention received before death during the year 1982 to 1988 are given in Table B4 below.

Table - B4 Percentage distribution of deaths according to type of medical attention received for the years 1982 to 1988

Year	Institu- tional	Qualified medical practitioner	Unqualified medical practitioner	None
1	2	3	4	5
1982	44	31	10	15
1983	46	26	13	15
1984	46	24	8	22
1985	49	23	11	17
1986	49	27	6	18
1987	47	28	7	18
1988	42	32	7	19

The percentage of institutional medical facilities received before death has been decreased by 5 percent while the services of qualified medical practitioner has been increased by 4 percent during the year.

4.10 Comparison of mortality rates

Comparison of mortality rates under civil registration system and sample registration system for the years 1982 to 1988 of Kerala rural.

Year	Death rate		Infant mortality rate	
	Civil Regist- ration	Sample regist- ration	Civil regist- ration	Sample regist- ration
1	2	3	4	5
1982	3.7	5.9	10.9	30.3
1983	3.6	6.6	11.3	38.9
1984	3.6	6.4	9.1	30.1
1985	4.0	6.6	9.1	33.0
1986	3.9	6.0	8.0	28.6
1987	3.9*	6.1	4.4*	27.0
1988	3.9*	6.3	3.9*	29.9

* Provisional.

As in the case of birth rates, the mortality rates estimated under civil registration system is seen always less than that of the rates arrived through sample registration system. One of the reasons for the low mortality rates under civil registration system is that a considerable number of deaths of resident population in rural areas are registered in urban areas where they seek medical facilities.

4.11 Expectatio of life based on age specific death rates for the last 3 years

Life tables have been constructed separately for males, females and males and females together based on age specific death rates for the years 1986, 1987 and 1988. The details are given in Tables 29, 30 and 31 appended to this report. The expectation of life at birth for males, females and males and females together were calculated as 67.0, 73.5 and 70.2 respectively as against 67.1, 73.1 and 70.1 respectively during the previous year. Expectation of life of females is seen always higher than that of males. The difference between males and females during the year 1988 was 6.5 years as against 6.0 years during the previous year. The expectation of life calculated for the last 7 years are given in Table B6 below.

Table - B6 Expectation of life based on age specific death rates for the years 1982 to 1988

Age specific death rates for the years	Males	Females	Males and females together
1	2	3	4
1980, 1981 and 1982	66.4	70.7	68.5
1981, 1982 and 1983	66.0	71.8	68.8
1982, 1983 and 1984	66.5	73.4	69.7
1983, 1984 and 1985	65.7	72.5	68.9.
1984, 1985 and 1986	66.9	72.8	69.7
1985, 1986 and 1987	67.1	73.1	70.1
1986, 1987 and 1988	67.0	73.5	70.2

DIRECTOR.

METHOD ADOPTED FOR CALCULATION OF LIFE TABLES

$$m_x = \frac{\text{Total of age specific death rates for the last 3 years}}{3 \times 1000}$$

$$q_0 = \frac{D_1}{B_1} + \frac{D_2}{B_2}$$

Where D_1 is the number of deaths of children born during the previous year and died during the current year and D_2 is that of the children born and died during the current year. B_1 and B_2 denote the total number of births occurred during the previous year and current year respectively.

$$q_x = \frac{2 \times c_x \times m_x}{2 + c \times m_x}$$

Where c is the class interval

Let l_0 be 100000

$$l_x = l_0 - d_0$$

$$d_x = l_x \times q_x$$

Let d_{70} is equal to l_{70}

$$l_0 = f \times l_0 + (1-f) l_1 \text{ where } f = \frac{D_1}{D_1 + D_2}$$

$$L_x = \frac{(L_x + l_{x+1}) C}{2}$$

$$L_{70} \text{ is equal to } \frac{d_{70}}{m_{70}}$$

Let L_{70} be T_{70}

$$T(70-1) = T_{70} + L(70-1)$$

$$\text{Expectation of life } E_x = \frac{T_x}{l_x}$$

.....

A P P E N D I X

List of Tables 1988

- Table 1. Mid year estimated population, births, deaths and vital rates.
- Table 2. Sample population and estimated population for each stratum.
- Table 3. Stratum-wise population according to sex.
- Table 4. Mid-year sample population and estimated population according to age and sex.
- Table 5. Sex ratio and percentage distribution of population by age group (1971, 1987 & 1988)
- Table 6. Religion-wise sample population and estimated population for each stratum.
- Table 7. Stratum-wise live births observed in samples and estimated according to sex.
- Table 8. Estimated number of total Women, married women and live births in different reproductive age groups.
- Table 9. Age specific fertility rate, age specific marital fertility rate, G.F.R, T.F.R. and G.R.R.
- Table 10. Live births observed in samples classified by month of occurrence.
- Table 11. Live births observed in samples by type of medical attention at delivery.
- Table 12. Percentage distribution of births by age of mother and order of birth of child.
- Table 13. Distribution of samples according to birth rate of each sample.
- Table 14. Still births observed in samples and estimated according to sex and still birth rate.
- Table 15. Religion-wise birth and death rate.
- Table 16. Stratum-wise deaths observed in samples and estimated according to sex.

- Table 17. Distribution of estimated deaths according to age and sex.
- Table 18. Age specific death rates based on estimated values.
- Table 19. Deaths observed in samples classified by month of occurrence.
- Table 20. Deaths classified by type of medical attention.
- Table 21. Distribution of samples according to death rate of each sample.
- Table 22. Infant deaths observed, estimated and infant mortality rate according to sex.
- Table 23. Number of infant deaths observed in samples of children born during the previous year and current year.
- Table 24. Estimated number of infant deaths of children born during the previous year and current year.
- Table 25. Estimated number of perinatal, neonatal and infant deaths according to sex.
- Table 26. Births and deaths detected through overlapping survey and intensive enquiry classified according to place and type of birth and death.
- Table 27. Distribution of births and deaths recorded by Enumerator, Supervisor detected through overlapping survey and intensive enquiry.
- Table 28. Distribution of rate of marriage per thousand population and percentage distribution of marriages according to age and sex.
- Table 29. Life table of males based on age specific death rates for the years 1986, 1987 and 1988.
- Table 30. Life table of females based on age specific death rates for the years 1986, 1987 and 1988.
- Table 31. Life table of males and females together based on age specific death rates for the years 1986, 1987 & 1988.
- Table 32. Number of Units and population in the universe and in samples.

....

1. Mid-year estimated population of births, deaths and vital rates 1988

Stratum	Estimated				Vital Rates				
	Population	Births	Deaths	Still births	Infant deaths	Birth rate	Death rate	Still birth rate	Infant mortality rate
1	2	3	4	5	6	7	8	9	10
IA	36232	755	252	-	-	20.84	6.96	-	-
B	177598	4123	1337	111	334	23.22	7.53	26.22	81.01
C	897088	19693	4074	-	388	21.95	4.54	-	19.70
D	8433481	196832	52993	2382	5699	23.34	6.28	11.96	28.95
Northern Region	9544399	221403	58656	2493	6421	23.20	6.15	11.13	29.00
II A	100040	2434	243	122	-	24.33	2.43	47.73	-
B	332200	4590	3740	-	340	13.82	11.26	-	74.07
C	1443713	26722	8481	547	547	18.51	5.88	20.06	20.47
D	11187494	195612	70347	2179	6190	17.48	6.29	11.07	31.64
Southern Region	13063447	229358	82811	2848	7077	17.56	6.34	12.26	30.86
State	22607846	450761	141467	5341	13498	19.94	6.26	11.71	29.94

2. Sample population and estimated population for each stratum

Stratum	Observed population in samples in each each stratum		Estimated population for each stratum	
	1.7.1988	1.1.1989	1.7.1988	1.1.1989
	2	3	4	5
I A	719	710	36232	35778
B	1594	1603	177598	178601
C	9247	9310	897088	903199
D	99146	99923	8433481	8499573
Northern Region	110706	111546	9544399	9617151
II A	822	843	100040	102595
B	1954	1905	332200	323869
C	15830	15837	1443713	1444352
D	128339	128778	11187494	11225762
Southern Region	146945	147363	13063447	13096578
State	257651	258909	22607846	22713729

3. Statum-wise population according to sex

Stratum	Observed population			Estimated population		
	Male	Female	Total	Male	Female	Total
	2	3	4	5	6	7
I A	361	358	719	18192	18040	36232
B	780	814	1594	86905	90693	177598
C	4451	4796	9247	431809	465279	897088
D	48097	51049	99146	4091190	4342291	8433481
Northern Region	53689	57017	110706	4628096	4916303	9544399
II A	421	401	822	51237	48803	100040
B	970	984	1954	164910	167290	332200
C	7639	8191	15830	696685	747028	1443713
D	62557	65782	128339	5453183	5734311	11187494
Southern Region	71587	75358	146945	6366015	6697432	13063447
State	125276	132375	257651	10994111	11613735	22607846

4. Mid-year sample population and estimated population
according to age and sex

Age	observed population			Estimated population		
	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7
Less than 1	2624	2612	5236	229416	229200	458616
1 - 4	11135	10763	21898	974056	941543	1915599
5 - 9	13256	12990	26246	1159622	1138022	2297644
10 - 14	13984	13598	27582	1225546	1192315	2417861
15 - 19	14515	14643	29158	1272840	1284235	2557075
20 - 24	12858	15439	28297	1130646	1353193	2483839
25 - 29	11026	12166	23192	968927	1067624	2036551
30 - 34	9002	9798	18800	789320	858650	1647970
35 - 39	7328	7689	15017	643296	675106	1318402
40 - 44	6161	6745	12906	540391	592224	1132615
45 - 49	5091	5431	10522	447852	477242	925094
50 - 54	5041	5471	10512	443665	480787	924452
55 - 59	3939	4262	8201	346818	375246	722064
60 - 64	3368	3679	7047	296323	323722	620045
65 - 69	2572	2818	5390	226608	248576	475184
70 +	3376	4271	7647	298785	376050	674835
Total	125276	132375	257651	10994111	11613735	22607846

5. Sex ratio and percentage distribution of population by age groups
(years 1971, 1987 and 1988)

Age group	1971		1987		1988	
	Sex ratio	Percent- age popu- lation	Sex- ratio	Percent- age popu- lation	Sex ratio	Percentage popula- tion
1	2	3	4	5	6	7
0 - 4	980	13.5	958	10.6	973	10.5
5 - 9	974	13.6	972	10.5	981	10.2
10 - 14	983	13.5	967	10.9	973	10.7
(0 - 14)	(976)	(40.6)	(966)	(32.0)	(976)	(31.4)
15 - 19	1078	10.9	1035	11.5	1009	11.3
20 - 24	1046	9.2	1177	10.8	1197	11.0
25 - 29	1103	6.4	1134	8.9	1102	9.0
30 - 34	1030	5.6	1093	7.1	1088	7.3
35 - 39	1080	6.0	1059	5.8	1049	5.8
40 - 44	1005	4.6	1093	4.8	1096	5.0
45 - 49	941	4.5	1070	4.2	1066	4.1
50 - 54	969	3.2	1109	4.0	1084	4.1
55 - 59	982	2.7	1084	3.2	1082	3.2
60 - 64	1044	2.3	1097	2.7	1092	2.7
65 - 69	1086	1.6	1134	2.1	1097	2.1
70 and above	1116	2.4	1302	2.9	1259	3.0
All	1020	100.0	1059	100.00	1056	100.0

6. Religion-wise sample population and estimated population for each stratum

I	Observed population				Estimated population			
	Hindu	Muslim	Christian	Total	Hindu	Muslim	Christian	Total
	2	3	4	5	6	7	8	9
I A	389	138	192	719	19603	6954	9675	36232
B	1173	416	5	1594	130692	46349	557	177598
C	4708	4067	472	9247	456742	394556	45790	897088
D	57697	33228	8221	99146	4907778	2826415	699288	8433481
Northern Region	63967	37849	8890	110706	5514815	3274274	755310	9544399
II A	106	8	708	822	12901	974	86165	100040
B	863	-	1091	1954	146719	-	185481	332200
C	8165	1270	6395	15830	744657	115825	583231	1443713
D	75017	15668	37654	128339	6539339	1365802	3282353	1187494
Southern Region	84151	16946	45848	146945	7443616	1482601	4137230	13063447
State	148118	54795	54738	257651	12958431	4756875	4892540	22607846

7. Stratum-wise live births observed in samples and estimated according to sex

Stratum	Observed in samples			Estimated		
	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7
I A	4	11	15	201	554	755
B	17	20	37	1894	2229	4123
C	99	104	203	9604	10089	19693
D	1143	1171	2314	97225	99607	196832
Northern Region	1263	1306	2569	108924	112479	221403
II A	11	9	20	1339	1095	2434
B	10	17	27	1700	2890	4590
C	140	153	293	12768	13954	26722
D	1145	1099	2244	99811	95801	195612
Southern Region	1306	1278	2584	115618	113740	229358
State	2569	2584	5153	224542	226219	450761

8. Estimated number of total women, married women and live births in different reproductive age groups

Item	Age group of women								
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total	
1	2	3	4	5	6	7	8	9	
A-Estimated number of total women									
I-Northern Region	543005	547633	424429	345914	274361	248650	191729	2575721	
II-Southern Region	741230	805560	643195	512736	400745	343574	285513	3732553	
State	1284235	1353193	1067624	858650	675106	592224	477242	6308274	
B-Estimated number of married women									
I-Northern Region	94586	348516	345501	299608	232791	202196	139231	1662429	
II-Southern Region	46540	357127	497802	443513	342946	285902	223392	2197222	
State	141126	705643	843303	743121	575737	488098	362623	3859651	
C-Estimated number of live births									
I-Northern Region	24815	102229	56330	23203	10683	3037	1106	221403	
II-Southern Region	11262	104928	80573	25943	5611	697	344	229358	
State (all births)	36077	207157	136903	49146	16294	3734	1450	450761	
State (Female births)	17258	104162	70295	24708	7818	1379	599	226219	

9. Age specific fertility rate, age specific marital fertility rate
G.F.R., T.F.R and G.R.R.

Item	Region	Age group of Women							
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	15-49
1	2	3	4	5	6	7	8	9	10
A-Age specific fertility rate	I. Northern region	45.70	186.68	132.72	67.08	38.94	12.21	5.77	85.96
	II. Southern region	15.19	130.25	125.27	50.60	14.00	2.03	1.21	61.45
	State (all births)	28.09	153.09	128.23	57.24	24.14	6.31	3.04	71.46
	State (female births)	13.44	76.97	65.84	28.78	11.58	2.33	1.26	35.86
B-Age specific Marital fertility rate	I. Northern region	262.35	293.33	163.04	77.44	45.89	15.02	7.94	133.18
	II. Southern region	241.99	293.81	161.86	58.49	16.36	2.44	1.54	104.39
	State (all births)	255.64	293.57	162.34	66.13	28.30	7.65	3.99	116.79

	Northern region	Southern region	State
G.F.R.	85.96	61.45	71.46
T.F.R.	2.4	1.7	2.0
G.R.R.	-	-	1.0

10. Live births observed in sample classified by month of occurrence

Stratum Region/ State	Number of live births reported from samples												Total
	Janu- ary	Febru- ary	March	April	May	June	July	August	Sept- ember	Octo- ber	Novem- ber	Decem- ber	
I	3	3	4	5	6	7	8	9	10	11	12	13	14
I. A	-	1	3	1	-	2	4	1	1	-	-	2	15
B	3	2	3	6	1	4	2	3	4	3	5	1	37
C	11	14	23	23	17	19	19	11	18	20	9	19	203
D	191	195	202	236	215	203	176	207	168	183	166	172	2314
Northern Region	205	212	231	266	233	228	201	222	191	206	180	194	2569
II. A	-	1	-	1	4	2	1	3	3	2	2	1	20
B	4	-	4	4	3	-	4	3	-	-	1	4	27
C	22	28	24	32	22	25	21	22	24	21	33	19	293
D	184	164	163	206	214	184	178	199	187	208	189	168	2244
Southern Region	210	193	191	243	243	211	204	227	214	231	225	192	2584
State	415	405	422	509	476	439	405	449	405	437	405	386	5153

13. Distribution of samples according to birth rate of each sample

Birth rate	Northern region		Southern region		1988		1987		1986	
	Number	%	Number	%	Number	%	Number	%	Number	%
	2	3	4	5	6	7	8	9	10	11
Less than 12	1	1.7	6	6.8	7	4.7	-	-	-	-
12 and less than 16	4	6.5	28	31.4	32	21.3	26	17.4	24	16.0
16 and less than 20	16	26.2	30	33.7	46	30.7	46	30.7	36	24.0
20 and less than 24	15	24.6	20	22.5	35	23.3	41	27.4	36	24.0
24 and less than 28	10	16.4	5	5.6	15	10.0	17	11.3	24	16.0
28 and less than 32	11	18.0	-	-	11	7.3	8	5.3	15	10.0
32 and less than 36	3	4.9	-	-	3	2.0	8	5.3	6	4.0
36 and less than 40	1	1.7	-	-	1	0.7	2	1.3	7	4.6
40 and less than 44	-	-	-	-	-	-	2	1.3	1	0.7
44 and above	-	-	-	-	-	-	-	-	1	0.7
Total	61	100.00	89	100.00	150	100.00	150	100.00	150	100.00

14. Still births observed in samples and estimated according to sex and still birth rate

Stratum	Still births observed			Still births estimated			Total estimated Still birth rate	
	M	F	T	M	F	T	births & still births	rate
I	2	3	4	5	6	7	8	9
I. A	-	-	-	-	-	-	755	-
B	1	-	1	111	-	111	4234	26.22
C	-	-	-	-	-	-	19693	-
D	16	12	28	1361	1021	2382	199214	11.96
Northern Region	17	12	29	1472	1021	2493	223896	11.13
II. A	1	-	1	122	-	122	2556	47.73
B	-	-	-	-	-	-	4590	-
C	3	3	6	274	273	547	27269	20.06
D	15	10	25	1307	872	2179	197791	11.01
Southern Region	19	13	32	1703	1145	2848	232206	12.26
State	36	25	61	3175	2166	5341	456102	11.71

15. Religion-wise birth and death rates

Stratum	Birth rate			Death rate		
	Northern region	Southern region	State	Northern region	Southern region	State
I	2	3	4	5	6	7
Hindu	19.57	17.03	18.11	6.92	6.52	6.69
Muslim	30.24	18.78	26.67	5.16	5.32	5.21
Christian	19.19	18.07	18.24	4.80	6.38	6.14
Total	23.20	17.56	19.94	6.15	6.34	6.26

16. Stratum-wise deaths observed in samples and estimated according to sex

Stratum	Deaths observed in samples				Estimated number of deaths							
	M		F		T							
	2	3	4	5	M	F	T	5	6	7		
I. A	3	2	5	151	101	252						
B	7	5	12	780	557	1337						
C	26	16	42	2522	1552	4074						
D	355	268	623	30197	22796	52993						
Northern Region	391	291	682	33650	25006	58656						
II. A	2	-	2	243	-	243						
B	10	12	22	1700	2040	3740						
C	46	47	93	4195	4286	8481						
D	463	344	807	40360	29987	70347						
Northern Region	521	403	924	57498	36313	82811						
State	912	694	1606	80148	61319	141467						

17. Distribution of estimated deaths according to age and sex

Age Group	Northern Region			Southern Region			State		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	2	3	4	5	6	7	8	9	10
Less than 1	3537	2884	6421	3943	3134	7077	7480	6018	13498
1-4	851	948	1799	785	1050	1835	1636	1998	3634
5-9	255	170	425	558	257	815	813	427	1240
10-14	425	437	862	523	261	784	948	698	1646
15-19	731	85	816	440	262	702	1171	347	1518
20-24	607	255	862	610	788	1398	1217	1043	2260
25-29	766	366	1132	1228	262	1490	1994	628	2622
30-34	890	366	1256	1050	701	1751	1940	1067	3007
35-39	1106	425	1531	1049	697	1746	2155	1122	3277
40-44	1071	766	1837	1657	1141	2798	2728	1907	4635
45-49	2053	595	2648	1482	789	2271	3535	1384	4919
50-54	1361	255	1616	2475	1569	4044	3836	1824	5660
55-59	2138	1798	3936	3054	1585	4639	5192	5383	8575
60-64	2921	1616	4537	3673	1669	5342	6594	3285	9879
65-69	4034	2673	6707	4798	2174	6972	8832	4847	13679
70 and above	10904	11367	22271	19173	19974	39147	30077	31341	61418
All	33650	25006	58656	46498	36313	82811	80148	61319	141467

18. Age specific death rates based on estimated values

Age Group	Northern Region	Southern Region	S t a t e		
			Total	Males	Females
1	2	3	4	5	6
Less than 1	29.39	29.47	29.43	32.60	26.26
1-4	1.86	1.93	1.90	1.68	2.12
5-9	0.38	0.69	0.54	0.70	0.38
10-14	0.76	0.61	0.68	0.77	0.59
15-19	0.75	0.48	0.59	0.92	0.27
20-24	0.85	0.95	0.91	1.08	0.77
25-29	1.40	1.21	1.29	2.06	0.59
30-34	1.93	1.75	1.82	2.46	1.24
35-39	2.94	2.19	2.49	3.35	1.66
40-44	3.99	4.16	4.09	5.05	3.22
45-49	7.20	4.08	5.32	7.89	2.90
50-54	4.60	7.05	6.12	8.65	3.79
55-59	14.84	10.15	11.88	14.97	9.02
60-64	20.77	13.30	15.93	22.25	10.15
65-69	39.10	22.96	28.79	38.97	19.50
70 and above	105.19	84.53	91.01	100.66	83.34
All ages	6.15	6.34	6.26	7.29	5.28

19. Deaths observed in samples classified by month of occurrence

Stratum	Janu- ary	Febru- ary	March	April	May	June	July	August	Sept- ember	Octo- ber	Novem- ber	Decem- ber	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
I. A	2	-	-	-	1	-	-	-	-	-	-	2	5
B	2	2	1	-	-	1	-	2	2	1	1	-	12
C	9	3	2	2	2	1	6	4	3	3	4	3	42
D	64	60	55	46	55	55	53	47	42	46	41	59	623
Northern Region	77	65	58	48	58	57	59	53	47	50	46	64	682
II. A.	-	1	-	1	-	-	-	-	-	-	-	-	2
B	4	3	-	2	2	-	1	2	1	1	2	4	22
C	12	12	7	3	3	11	9	9	8	7	6	6	93
D	68	57	68	56	70	70	86	80	74	52	59	67	807
Southern Region	84	73	75	62	75	81	96	91	83	60	67	77	924
State	161	138	133	110	133	138	155	144	130	110	113	141	1606

20. Deaths classified by type of medical attention

Stratum 1	Insti- tutional 2	Qualified medical practitioner 3	Unqualified medical practitioner 4	No treatment 5	Total 6
I. A	5	-	-	-	5
B	7	-	3	2	12
C	20	11	10	1	42
D	210	224	55	134	623
Northern Region	242	235	68	137	682
II. A	1	-	1	-	2
B	8	13	-	1	22
C	43	40	1	9	93
D	380	222	36	169	807
Southern Region	432	275	38	179	924
State	674	510	106	316	1606

21. Distribution of samples according to death rate of each sample

Death Rate	Northern Region						Southern Region						state									
	2		3		4		5		6		7		8		9		10		11			
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Less than 1	-	-	-	-	1	1.1	1	0.7	1	1.1	0.7	1	0.7	1	0.7	1	0.7	1	0.7	1	0.7	
1 and less than 3	4	6.5	6	6.8	6	6.8	10	6.7	10	6.8	6.7	11	7.4	15	10.9	15	10.9	15	10.9	15	10.9	
3 and less than 5	15	24.6	19	21.3	19	21.3	34	22.7	34	21.3	22.7	33	22.0	36	24.0	36	22.0	36	24.0	36	24.0	
5 and less than 7	17	27.9	31	34.8	31	34.8	48	32.0	48	34.8	32.0	57	38.0	50	33.3	50	38.0	50	33.3	50	33.3	
7 and less than 9	20	32.8	21	23.6	21	23.6	41	27.3	41	23.6	27.3	37	24.6	36	24.0	36	24.6	36	24.0	36	24.0	
9 and less than 11	5	8.2	9	10.1	9	10.1	14	9.3	14	10.1	9.3	8	5.3	10	6.7	10	5.3	10	6.7	10	6.7	
11 and less than 13	-	-	2	2.3	2	2.3	2	1.3	2	2.3	1.3	4	2.7	3	2.0	3	2.7	3	2.0	3	2.0	
13 and less than 15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15 and above	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	61	100.00	89	100.00	89	100.00	150	100.00	150	100.00	150	100.00	150	100.00	150	100.00	150	100.00	150	100.00	150	100.00

22. Infant deaths observed, estimated and infant mortality rate according to sex

Item	Infant deaths observed				Infant deaths estimated				Estimated number of live births						Infant mortality rate		
	M		F		M		F		M		F		M		F		T
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
I. A	-	-	-	-	-	-	-	201	554	755	-	-	-	-	-	-	-
B	1	2	3	334	111	223	334	1894	2229	4123	58.61	100.04	81.01				
C	2	2	4	388	194	194	388	9604	10089	19693	20.20	19.23	19.70				
D	38	29	67	5699	3232	2467	5699	97225	99607	196832	33.24	24.77	28.95				
Northern Region	41	33	74	6421	3537	2884	6421	108924	112479	221403	32.47	25.64	29.00				
II. A	-	-	-	-	-	-	-	1339	1095	2434	-	-	-	-	-	-	-
B	-	2	2	340	-	340	340	1700	2890	4590	-	117.65	74.07				
C	5	1	6	547	456	91	547	12768	13954	26722	35.71	6.52	20.47				
D	40	31	71	6190	3487	2703	6190	99811	95801	195612	34.94	28.21	31.64				
Southern Region	45	34	79	7077	3943	3134	7077	115618	113740	229358	34.10	27.55	30.86				
State	86	67	153	13498	7480	6018	13498	224542	226219	450761	33.31	26.60	29.94				

23. Number of infant deaths observed in samples of children born during the previous year and current year

Stratum	Born in 1987						Born in 1988											
	Less than 7 days			Less than 28 days			Less than 7 days			Less than 28 days			Less than one year					
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T			
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
I. A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	2	2	2	1	2	3	1	2	3
C	-	-	-	-	-	-	-	-	-	2	2	4	2	2	4	2	2	4
D	-	-	-	-	-	-	3	2	5	22	17	39	28	21	49	35	27	62
Northern Region	-	-	-	-	-	-	3	2	5	24	21	45	31	25	56	38	31	69
II. A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	2	2	-	2	2	-	2	2
C	-	-	-	-	-	-	-	1	-	1	3	1	4	1	5	4	1	5
D	-	-	-	1	-	1	5	6	11	21	16	37	24	20	44	35	25	60
Southern Region	-	-	-	1	-	1	6	6	12	24	19	43	28	23	51	39	28	67
State	-	-	-	1	-	1	9	8	17	48	40	88	59	48	107	77	59	136

24. Estimated number of infant deaths of children born during the previous year and current year

Stratum	Born in 1987						Born in 1988											
	Less than 7 days		Less than 28 days		Less than one year		Less than 7 days		Less than 28 days		Less than one year							
	M	F	T	M	F	T	M	F	T	M	F	T						
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
I. A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	223	223	111	223	334	111	223	334
C	-	-	-	-	-	-	-	-	-	194	194	388	194	194	388	194	194	388
D	-	-	-	-	-	-	255	170	425	1871	1446	3317	2382	1786	4168	2977	2297	5274
Northern Region	-	-	-	-	-	-	255	170	425	2065	1863	3928	2687	2203	4890	3282	2714	5996
II. A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	340	340	-	340	340	-	340	340
C	-	-	-	-	-	-	91	-	91	274	91	365	365	91	456	365	91	456
D	-	-	-	87	-	87	436	523	959	1831	1395	3226	2092	1744	3836	3051	2180	5231
Southern Region	-	-	-	87	-	87	527	523	1050	2105	1826	3931	2457	2175	4632	3416	2611	6027
State	-	-	-	87	-	87	782	693	1475	4170	3689	7859	5144	4378	9522	6698	5325	12023

25. Estimated number of perinatal, neonatal and infant deaths according to sex

Stratum	Estimated number of infant deaths								
	Less than 7 days		Less than 28 days		Less than one year				
	Male	Female	Male	Female	Male	Female	Male	Female	
I	2	3	4	5	6	7	8	9	10
I. Northern Region	2065	1863	3928	2687	2203	4890	3537	2884	6421
II. Southern Region	2105	1826	3931	2544	2175	4719	3943	3134	7077
Total	4170	3689	7859	5231	4378	9609	7480	6018	13498

26. Births and deaths detected through overlapping survey and intensive enquiry classified according to place and type of birth and death

Stratum	Births							Death		
	Total	Place		Kind	Total	Place		Kind	Infant deaths	Other deaths
		In	Out			In	Out			
I	2	3	4	5	6	7	8	9	10	11
I. A	1	-	1	1	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-
C	7	1	6	7	-	-	-	-	-	-
D	52	17	35	50	2	5	5	-	2	3
Northern Region	60	18	42	58	2	5	5	-	2	3
II. A	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-
C	12	2	10	12	-	4	3	1	-	4
D	110	3	107	109	1	21	14	7	1	20
Southern Region	122	5	117	121	1	25	17	8	1	24
State	182	23	159	179	3	30	22	8	3	27

27. Distribution of births and deaths recorded by Enumerator, Supervisor, detected through overlapping survey and intensive enquiry

Items	Birth			Death		
	Northern region	Southern region	State	Northern region	Southern region	State
1	2	3	4	5	6	7
1. Common to Enumerator and Supervisor	1979	1852	3831	567	754	1321
2. Registered by Enumerator	No. 2069	No. 2019	No. 4088	No. 594	No. 803	No. 1397
	% 80.54	% 78.13	% 79.33	% 87.10	% 86.90	% 86.99
3. Listed by Supervisor	No. 2417	No. 2288	No. 4705	No. 648	No. 844	No. 1492
	% 94.08	% 88.54	% 91.31	% 95.01	% 91.34	% 92.90
4. Total netted by Enumerator and Supervisor	2507	2455	4962	675	893	1568
5. Detected by others	4	8	12	2	6	8
6. Overlapping survey (ERP events)	43	108	151	5	21	26
7. Intensive enquiry	15	13	28	-	4	4
Total	2569	2584	5153	682	924	1606

28. Distribution of rate of marriage per thousand population and percentage distribution of marriage according to age and sex

	Rate of marriage per 1000 population													
	First marriage						Re-marriage						All marriages	
	Male		Female		All		Male		Female		All		Male	Female
	1	2	3	4	5	6	7	8	9	10	11	12	13	
15-19	1.2	36.6	-	0.3	1.2	36.9	1.2	26.3	-	8.6	1.1	25.8		
20-24	25.7	66.1	0.5	1.6	26.1	67.6	22.3	50.0	10.2	41.4	21.9	49.8		
25-29	67.3	33.5	1.1	1.2	68.4	34.8	50.3	20.0	20.3	25.9	49.1	20.2		
30-34	36.9	6.4	2.4	0.5	39.3	6.9	22.5	3.1	37.3	8.6	23.1	3.2		
35-39	6.3	1.2	0.5	0.7	6.8	1.8	3.1	0.5	6.8	8.6	3.3	0.7		
40-44	1.3	0.3	0.8	0.1	2.1	0.4	0.5	0.1	8.5	1.7	0.8	0.2		
45-49	0.2	-	1.9	0.6	2.2	0.6	0.1	-	16.9	5.2	0.7	0.1		
15-49	22.4	28.3	0.9	0.8	23.3	29.1	100.0	100.0	100.0	100.0	100.0	100.0		

29. Life table of males based on age specific death rates for the years 1986, 1987 and 1988

Age x to x+n	Age specific death rates		4	5	6	7	8	9	10	11	12
	1986	1987									
Less than 1	28.01	26.97	32.60	0.02919	0.03303	3303	100000	97042	6703199	67.03	0
1-4	2.06	3.01	1.68	0.00225	0.00896	866	96697	385056	6606157	68.32	1
5-9	1.44	1.09	0.70	0.00108	0.00539	517	95831	477863	6221101	64.92	5
10-14	0.29	0.49	0.77	0.00052	0.00260	248	95314	475950	5743238	60.26	10
15-19	0.83	1.04	0.92	0.00093	0.00464	441	95066	474228	5267288	55.41	15
20-24	1.45	0.93	1.08	0.00115	0.00573	542	94625	471770	4793060	50.65	20
25-29	1.51	1.45	2.06	0.00167	0.00832	783	94083	468458	4321290	45.93	25
30-34	2.23	3.65	2.46	0.00278	0.01380	1288	93300	463280	3852832	41.30	30
35-39	2.88	3.36	3.35	0.00320	0.01587	1460	92012	456410	3389552	36.84	35
40-44	5.75	4.33	5.05	0.00504	0.02489	2254	90552	447125	2933142	32.39	40
45-49	7.94	9.79	7.89	0.00854	0.04181	3692	88298	432260	2486017	28.15	45
50-54	10.72	10.60	8.65	0.00999	0.04873	4123	84606	412723	2053757	24.27	50
55-59	15.10	13.18	14.97	0.01442	0.06959	5601	80483	388413	1641034	20.39	55
60-64	22.57	18.00	22.25	0.02094	0.09949	7450	74882	355785	1252621	16.73	60
65-69	41.00	39.09	38.97	0.03969	0.18054	12174	67432	306725	896836	13.30	65
70 & above	85.70	94.57	100.66	0.09364	1.00000	55258	55258	590111	590111	10.68	70

30. Life table of females based on age specific death rates for the years 1986, 1987 and 1988

Age x to x+n	Age specific death rates		Mean age specific death rate (nm _x)	Probability of a person aged x dying before age x+n (q _x)	Number of deaths (dx)	Number surviving to age x out of 100000 born alive (l _x)	Years of life of lived between x and x+n (L _x)				Expectation of life in years (E _x)	Beginning age (x)
	1986	1987					1988	9	10	11		
Less than 1	28.49	26.65	26.26	0.02713	2649	100000	97656	7345549	73.46	0		
1-4	3.31	2.04	2.12	0.00249	965	97351	387474	7247893	74.45	1		
5-9	0.84	0.90	0.38	0.00071	341	96386	481078	6860419	71.18	5		
10-14	0.67	0.50	0.59	0.00059	283	96045	479518	6379341	66.42	10		
15-19	0.46	0.54	0.27	0.00042	201	95762	478308	5899823	61.61	15		
20-24	0.89	1.28	0.77	0.00098	467	95561	476638	5421515	56.73	20		
25-29	1.40	1.29	0.59	0.00107	508	95094	474200	4944877	52.00	25		
30-34	0.98	1.29	1.24	0.00117	551	94586	471553	4470677	47.27	30		
35-39	2.80	1.16	1.66	0.00187	875	94035	467988	3999124	42.53	35		
40-44	1.68	1.57	3.22	0.00216	1001	93160	463298	3531136	37.90	40		
45-49	2.56	3.11	2.90	0.00286	1309	92159	457523	3067838	33.25	45		
50-54	3.28	3.39	3.79	0.00349	1572	90850	450320	2610315	28.73	50		
55-59	7.65	8.59	9.02	0.00842	3681	89278	437188	2159995	24.19	55		
60-64	15.46	10.25	10.15	0.01195	4966	85597	415570	1722807	20.13	60		
65-69	30.36	23.45	19.50	0.02444	9285	80631	379943	1307287	16.21	65		
70 and above	69.05	78.42	83.34	0.07694	71346	71346	927294	927294	13.00	70		

31. Life table of males and females together based on age specific death rates for the years 1986, 1987 and 1988

Age x to x+n	Age specific death rates		Mean age specific death rate (nm _x)	Probability of a person aged x dying before age x+n (q _x)				Number of deaths (dx)	Number surviving to age x out of 100000 born alive (l _x)	Years of life lived between x and x+n (L _x)				Expected years of life in beginning age (x) (Ex)
	1986	1987		1988	5	6	7			8	9	10	11	
Less than 1	28.25	26.82	29.43	0.02817	0.02975	2975	100000	97350	7015528	70.16	0			
1-4	2.68	2.54	1.90	0.00237	0.00944	916	97025	386268	6918178	71.30	1			
5-9	1.14	0.99	0.54	0.00089	0.00444	427	96109	479478	6531910	67.96	5			
10-14	0.47	0.49	0.68	0.00055	0.00275	263	95682	477753	6052432	63.26	10			
15-19	0.64	0.78	0.59	0.00067	0.00334	319	95419	476298	5574679	58.42	15			
20-24	1.14	1.12	0.91	0.00106	0.00529	503	95100	474243	5098381	58.61	20			
25-29	1.45	1.33	1.29	0.00136	0.00678	641	94597	471363	4624138	48.88	25			
30-34	1.58	2.42	1.82	0.00194	0.00965	907	93956	467513	4152755	44.20	30			
35-39	2.84	2.23	2.49	0.00252	0.01252	1165	93049	462333	3685242	39.61	35			
40-44	3.63	2.89	4.09	0.00354	0.01754	1612	91884	455390	3222909	35.08	40			
45-49	5.15	6.33	5.32	0.00560	0.02761	2492	90272	445130	2767519	30.66	45			
50-54	6.81	6.81	6.12	0.00658	0.03237	2841	87780	431798	2322389	26.46	50			
55-59	11.28	10.79	11.88	0.01132	0.05504	4675	84939	413008	1890591	22.26	55			
60-64	18.79	13.94	15.93	0.01622	0.07794	6256	80264	385680	1477583	18.41	60			
65-69	35.43	30.78	28.79	0.03167	0.14673	10859	74008	342893	1091903	14.75	65			
70 and above	76.49	85.44	91.01	0.06431	1.00000	63149	63149	749010	749010	11.86	70			

32. Number of units and population in the universe and in samples

Stratum	Universe		Samples		Percentage of sample population	Raising factor for stratum estimates P/p
	No. of census villages	population (1981)p	No. of units selected	Population (p)		
1	2	3	4	5	6	7
I.						
A	73	33158	2	658	1.98	50.39210
B	217	171582	2	1540	0.90	111.41688
C	519	773395	6	7972	1.03	97.01392
D	1265	7421252	51	87246	1.17	85.06123
Northern Region	2074	8399387	61	97416	1.16	-
II.						
A	260	87991	2	723	0.82	121.70263
B	415	325570	3	1915	0.59	170.01044
C	894	1353880	10	14845	1.09	91.20108
D	2134	10515577	74	120631	1.15	87.17143
Southern Region	3703	12283018	89	138114	1.12	-
State	5777	20682405	150	235530	1.14	-

