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SAMPLE REGISTRATION

KERALA—RURAL

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DEPARTMENT OF ECONOMICS AND STATISTICS
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PREFACE

The Registrar General, Government of India introduced the Sample Registration System with the objective of obtaining reliable estimates of vital rates in the country. The work relating to the rural areas in Kerala is being conducted by the Department of Economics and Statistics, since 1965.

This report presents the results of operation of the scheme in the rural areas of Kerala during the year 1981. Besides the estimates of crude birth and death rates of the population, estimates of the rates for different religions and comparison of rates in Malabar and Travancore-Cochin areas and other adjacent States, are also included in this report.

This report was prepared by the Sample Registration Unit of the Department of Economics & Statistics, Trivandrum. Sri M K. Bhaskaran Pillai, Deputy Director, Sri M. Mohammed Serverkhan, Regional Statistical Officer (SR) and Sri N. Umamaheswaran Asari, Research Assistant were deeply associated with the preparation of the report.

Trivandrum,
13-8-1984.

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Director.

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SAMPLE REGISTRATION ON BIRTHS AND DEATHS IN RURAL AREA—1981

CHAPTER I

INTRODUCTION

The results of Sample Registration in rural areas of Kerala for the year 1981, are presented in this report. The difficiencies in the Civil Registration System has made the sample registration system a necessity for obtaining reliable and accurate vital rates.

Thus, this system, basically a sample survey, designed for obtaining reliable data of vital events, was introduced in the State during 1964-65 as a pilot study in 20 rural and 5 urban samples. The full-fledged scheme began functioning on a regular basis, in 150 samples in rural areas with effect from 1-7-1965, under the direction of Department of Economics and Statistics, Kerala. The Director of Census Operations was in-charge of the work in the urban area since 1970. The sample design adopted, was uni-stage stratified sampling. The samples were selected after stratifying the villages into four types according to population of below 500, 500-999, 1000-1999 and 2000 & above, under the three natural regions of Lowland, Midland and Highland. The number of samples were allocated to different strata in proportion to the population of the strata to the total population. Details of allocation of sample units among strata are given in Table I appended.

1.1 Staff

The regular field work of continuous enumeration of births and deaths was being attended to by 150 part-time Enumerators. The half yearly surveys were conducted by 13 Computors of the Census Department and the reverification by Additional District Officers of the Department of Economics and Statistics. The nucleus staff of a Regional Statistical Officer, a Research Assistant and Compilers, at the State Headquarters, attended to the final tabulation, analysis and preparation of the report.

1.2 Field Work

Through the informants and by house visits, the Enumerators collected information on occurrence of vital events and register them on a regular basis gathering all necessary details from the households where events have occurred. These were reported to State Headquarters as well as to the District Head-quarters, every month. The Computor Supervisors independently conducted half yearly surveys, when, besides updating demographic particulars of each member of each household, they prepare an independent list of birth and death

that has occurred during the half year. The data, collected by both the Enumerators and Computors were matched at the District Offices and reverification of unmatched and partially matched events was done by the Additional District Officers.

1.3 Overlapping Survey

With every half yearly survey, the details of the previous half year were also collected in order to bring out the events, missed by both the Enumerator and Computor during the previous half year. By this procedure, 62 births and 13 deaths were additionally detected during the year 1981.

1.4 Intensive Enquiry

An intensive enquiry in weaker units was conducted in 22 samples by Senior Officers of this Department, by which 50 births and 7 deaths were additionally netted.

CHAPTER II

ESTIMATED POPULATION IN RURAL AREAS OF KERALA

2.1 Population and its growth

The rural population in Kerala estimated through Sample Registration Survey has increased from 206.65 lakhs on 1-1-1980 to 210.00 lakhs on 1-1-1981, recording an increase of only 1.62% as against 2.18% in the previous year. In the case of natural regions, midland holds the highest increase in population during the year, as in the previous year. The actual population growth rates during 1981 in lowland, midland and highland were 0.54%, 2.00% and 1.62% respectively as against 2.01%, 2.29% and 1.89% respectively during 1980.

2.2 Percentage Distribution of population by age and sex ratio

Table 2.2 presents the percentage distribution of population by age and sex ratios for the years 1971, 1980 and 1981 in the different age groups.

TABLE 2.2

Percentage distribution of Population by Age and Sex ratio in Rural—Kerala

Age Group	1971		1980		1981	
	Population percentage	*Sex ratio*	*Population Percentage*	*Sex ratio*	*Population percentage*	*Sex ratio*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0—4	13.5	980	12.4	963	11.8	960
5—9	13.6	974	11.5	971	11.7	955
10—14	13.5	983	12.0	980	11.5	989
(0—14)	(40.6)	(976)	(35.9)	(971)	(35.0)	(968)
15—19	10.9	1078	11.6	1022	11.6	1030
20—24	9.2	1046	10.2	1151	10.4	1149
25—29	6.4	1103	8.1	1081	8.3	1098
30—34	5.6	1080	6.3	1098	6.5	1071

(1)	(2)	(3)	(4)	(5)	(6)	(7)
35—39	6.0	1080	5.1	1137	5.2	1104
40—44	4.6	1005	4.9	1145	4.9	1116
45—49	4.5	941	4.5	1169	4.4	1155
50—54	3.2	969	3.9	1005	4.0	1047
55—59	2.7	982	3.0	966	3.1	979
60—64	2.3	1044	2.5	1037	2.5	1936
65—69	1.6	1086	1.7	1051	1.8	1027
70+	2.4	1116	2.3	1125	2.3	1118
All ages	100.0	1020	100.0	1043	100.0	1041

Sex Ratio—No. of females per 1000 males.

CHAPTER III

MEASURES OF FERTILITY

3.1 Introduction

The most common measure of fertility is the crude birth rate. Other measures of fertility are age-specific fertility rate, general fertility rate, total fertility rate, gross reproduction rate and net reproduction rate. Estimates of these rates for the year 1981 are presented in this chapter.

3.2 Crude Birth rate

Crude birth rate (the number of live births per 1000 of mid-year population) in rural Kerala during 1981 is estimated as 24.72, which is 2.13 less than that in the previous year. Only the births to usual resident population of the area are taken for estimation of fertility rates. The birth rates in the natural regions of the State during the years 1972 to 1981 are given in Table 3.2. The corresponding rates for rural India is also given for comparison purpose.

TABLE 3.2

Crude birth rate in 1972-1981 in Kerala (Rural) and All India (Rural)

Year	*Natural regions in Kerala*			*Kerala (Rural)*	*All India (Rural)*
	Lowland	*Midland*	*Highland*		
1972	30.5	32.4	33.4	32.1	38.4
1973	27.8	30.0	33.0	29.9	35.9
1974	25.6	27.0	29.3	27.0	35.9
1975	25.9	27.9	32.8	28.2	36.7
1976	26.4	28.7	30.8	28.5	35.8
1977	24.8	26.2	28.7	26.2	34.2
1978	24.6	26.1	26.4	25.8	34.6
1979	23.6	27.8	27.4	26.8	34.3
1980	25.1	26.9	29.3	26.9	35.0
1981	23.2	24.8	26.9	24.7	35.5

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3.3 *Birth* rates in the rural areas of neighbouring states

Compared to the rural areas of neighbouring states, Rural Kerala keeps the lowest rate. In accordance with the estimates of the Registrar General India, for the period under report, the birth rates for Andhra Pradesh, Karnataka and Tamil Nadu are 32.5, 30.2 and 29.6 respectively.

3.4 Birth rates in Malabar and Travancore-Cochin areas of the State (Rural)

Based on the historical development and Socio-economic conditions, the state forms two distinct regions as Malabar and Travancore-Cochin regions; the former comprising of the northern districts and the latter the remaining districts. Out of 150 samples, selected for the rural areas 72 samples fall in the Malabar region and 78 in Travancore-Cochin region.

Rural birth rates in the above two regions for the past five years are given in Table 3.4.

TABLE 3.4

Birth Rates in Malabar and Travancore-Cochin Areas (Rural)

Years	*Malabar*	*Travancore-Cochin*	*Kerala*
1977	28.92	23.64	26.22
1978	30.57	21.72	25.78
1979	31.80	22.18	26.84
1980	30.46	23.38	26.85
1981	28.01	21.50	24.74

The birth rate has always been higher in Malabar region, when compared to that in Travancore-Cochin region. The factors responsible for this phenomenon may be the low age of female at marriage, low literacy rate etc., prevailed among the majority of the residents in the region.

In the case of natural regions, the birth rates in Lowland Midland and Highland in Malabar area are 25.2, 28.7 and 26.8 respectively as against 22.7, 19.7 and 26.9 respectively in Travancore-Cochin area during the year 1981.

3.5 Birth rates by religions

The birth rates for the major religious groups in the state for the year 1981 are shown in Table 3.5.

TABLE 3.5

Birth rates among different religions

Region	*Hindu*	*Muslims*	*Christians*
Lowland	21.6	27.8	23.1
Midland	23.1	33.6	16.8
Highland	26.3	31.5	23.4
State	23.3	32.2	18.8

The birth rate among Muslims in the state is the highest during the year as in the previous year.

The birth rate is lowest among Christians except in Lowland.

3.6 Birth rates by religious groups in Malabar and Travancore-Cochin Areas

In the case of Travancore-Cochin area and Malabar area the highest birth rate in the state i.e., 34.9 is among the Muslims in Malabar area, where Muslims form 35.2% of the total population in the area, and at the same time the lowest birth rate, i.e., 15.6 is seen among the Christians in the same area; the facts of which can be derived from Table 3.6.

TABLE 3.6

Birth rates by religious groups in Malabar and Travancore—Cochin Area

Region	*Religious groups*		
	Hindus	*Muslims*	*Christians*
Malabar	25.1	34.9	15.6
Travancore-Cochin	21.6	25.8	19.6
Kerala	23.3	32.2	18.8

In short the Muslims have the highest birth rate while the Christians the lowest.

3.7 Distribution of samples by birth rate

The distribution of samples by birth rate is given in Table No. 3.7.

TABLE 3.7

Distribution of samples under different Rates of Birth 1981

Region	Birth Rates																			
	Less than 16		16–19.9		20–23.9		24–27.9		28–31.9		32–35.9		36–39.9		40–43.9		44 *and above*		*All*	
	No.	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%	*No.*	%
1981 Rural Malabar	2	2.8	1	1.4	20	27.8	17	23.6	11	15.3	10	13.9	4	5.5	4	5.5	3	4.2	72	100
1981 Rural Travancore-Cochin	18	23.1	15	19.2	21	26.9	12	15.4	7	9.00	3	3.8	1	1.3	1	1.3	..	..	78	100
1981 Rural Kerala	20	13.3	16	10.7	41	27.3	29	19.3	18	12.0	13	8.7	5	3.3	5	3.3	3	2.0	150	100
1980 Rural Kerala	11	7.3	25	16.7	32	21.3	22	14.7	24	16.0	15	10.0	7	4.7	10	6.7	4	2.7	150	100
1979 Rural Kerala	10	6.7	30	20.0	31	20.7	16	10.6	23	15.3	16	10.6	13	8.7	7	4.7	4	2.7	150	100
1978 Rural Kerala	14	9.3	22	14.7	32	21.3	33	22.0	21	14.0	9	6.0	9	6.0	6	4.0	4	2.7	150	100

It is seen from the distribution of samples, that 70.7% of samples have birth rate below 28 (State rate 24.7 falls in the group 24-27.9 in the table) during the year 1981, as against 60% in 1980. About 55.6% of the samples in Malabar area and 84.6% of those in Travancore-Cochin area, which form 26.7% and 44% respectively of the total samples in the State, were having birth rates below 28.

3.8 Age specific fertility rate

Age specific fertility rate denotes, the number of live births in one year to 1000 women of specific age group. The age specific fertility rate for 1981 and for previous years are given in Table 3.8.

TABLE 3.8

Age-specific Fertility Rate in Kerala Rural (1972-1981)

Age group	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
15–19	50.6	48.8	44.5	41.6	42.7	44.2	43.06	48.5	47.0	39.3
20–24	212.6	206.5	179.3	188.5	193.4	186.2	183.2	184.8	197.2	175.9
25–29	238.5	221.8	190.2	194.8	202.3	171.9	169.1	181.4	184.3	166.2
30–34	174.9	153.6	134.3	134.0	137.1	113.1	112.7	121.5	105.8	98.6
35–39	119.3	99.9	86.3	94.1	80.7	75.9	71.4	65.1	59.5	53.9
40–44	45.7	38.6	25.7	29.8	25.3	24.3	22.6	19.4	15.9	19.4
45–49	6.3	6.0	6.9	5.4	6.1	5.6	3.7	5.5	3.6	4.9

Compared to the previous year, the age specific fertility rates in all the age groups except 40-44 and 45-49 have considerably decreased during the year 1981, as a result of the decline in the number of births. The age specific fertility rate in the age group 40-44 has come up to the level of that for the year 1979. The age group 45-49 has shown a slight decrease in ASFR compared to 1979.

3.9 General Fertility Rate

General Fertility Rate (GFR) in the number of live births in an year to 1000 women in the reproductive age group 15-49. General Fertility Rate for the years 1972 to 1981 are given below:

Year	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
GFR	127.9	118.4	104.0	108.0	109.0	99.4	97.7	101.3	101.1	92.2

The General Fertility rate during the year, is the lowest of all those in the previous ten years. In the case of natural regions, low land shows the lowest G.F.R. ie. 85.9 while the high land, the highest, ie. 102.7 as in the previous year. General fertility rate for the midland is 92.04, during the period.

3.10 Total Fertility Rate (TFR)

Total Fertility Rate is 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 confirming to the age specific fertility rates of the year. Total Fertility rates for Kerala Rural during 1981 and preceeding years are given below:

Year	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
T.F.R.	4.2	3.9	3.3	3.4	3.4	3.1	3.0	3.1	3.1	2.8

The Total Fertility rate for the year 1971 was 4.1. But after a decade, it has decreased by 1.3. The total fertility rates for low land, midland and high land for the year 1981 are 2.5, 2.8 and 3.2 respectively.

3.11 Gross Reproduction Rate (GRR)

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

the child bearing years conforming to the age specific fertility rates of the year. The GRR for Kerala Rural for the years 1972 to 1981 are given below:

Years	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
GRR	2.1	1.9	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.3

3.12 Net Reproduction Rate (NRR)

Net Reproduction Rate shows the average number of female children that would be born to a woman during her life time conforming to the age specific fertility rate and mortality condition in the year. The NRR for the year 1981 is 1.21 as against 1.34 for the year 1980.

3.13 Order of birth

Table 3.13 presents the observed number of births by age of mother and order of birth of child during 1981.

TABLE 3.13

Age of mother and order of birth of child 1981

Age of mother	Order of birth										*Total*
	1	2	3	4	5	6	7	8	9	10 *and above*	
15—19	513	76	4	..	..	..	..	..	..	..	593
20—24	1191	884	291	48	59	16	7	1	..	..	2497
25—29	380	611	539	283	21	5	2	2	..	..	1843
30—34	47	101	209	183	137	99	52	19	5	..	852
35—39	13	14	37	48	61	69	54	45	18	15	374
40—44	1	3	7	5	15	30	23	21	9	13	127
45—49	..	1	1	1	2	8	5	2	2	3	25
Total	2145	1690	1088	568	295	227	143	90	34	31	6311

About 78% of total births during the year comes under the first three orders of births and the remaining 22% of births falls under orders above 3. As in the previous years, the percentage of births under orders above 3, during the year also decreased by 1.7. But it is seen that the percentage of births under orders six and nine, increased during the year, by 0.1 and 0.3 respectively. Out of 6311 live births observed during the year 1981 about 34% comes under the first order of birth in the age groups 15-44 and 0.5% under the tenth order of birth in the age groups 35-49.

3.14 Medical attendance at birth

The percentage of births under different types of medical attendance during the years 1974 to 1981 is given in table 3.14.

TABLE 3.14

Medical attendance at birth (percentage)

Years	*Institutional*	*Trained professional*	*Untrained professional*	*Non professional*	*Not stated*
(1)	(2)	(3)	(4)	(5)	(6)
1974	28.1	20.9	37.5	13.2	0.4
1975	28.8	21.8	34.8	14.3	8.3
1976	32.1	19.1	32.6	14.8	0.7
1977	35.6	17.6	31.8	13.9	1.1
1978	40.8	16.4	40.6	2.2	0.0
1979	45.4	27.5	25.9	1.2	0.0
1980	46.6	24.4	28.2	0.7	0.1
1981	47.8	26.7	23.6	1.7	0.2

The continuous increase in the institutional medical attendance at birth is an evidence of the awareness of the people to avail of the facilities and services provided, for maternal and child health.

But contrary to the conditions during previous years, the percentage of births under institutional attendance among the high land people has slipped down from 36.4 to 31.8 during the year. As such, in the case of utilising the services of trained professionals, low land and high land people failed to reach up to the mark which they gained during the previous year. When the utilisation of services of trained professionals among low land and high land residents has decreased by 1.1% and 0.7% respectively, that among the mid land residents increased by 4.3%.

3.15 Still birth rate (SBR)

Still Birth rate is the number of still births out of 1000 births, i.e. both the live and still births in an year. The still birth rates during the year 1981 and previous years are given below:—

Year	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
S.B.R.	27.25	25.01	18.28	19.44	26.18	19.30	23.68	20.50	18.35	20.76

Though there was considerable decrease in the still birth rate during 1980, considerable increase is seen during the year 1981. The still birth rate for low land midland and high land are 18.96, 21.35 and 20.75 respectively during 1981.

3.16 Sex ratio at birth

Sex ratio at birth (number of males per 100 females) during the year 1981 and previous years is given below:

Year	*Sex ratio at birth*
1972	105.7
1973	110.2
1974	103.2
1975	108.0
1976	100.5
1977	103.6
1978	104.9
1979	104.4
1980	107.4
1981	108.8

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

Child-woman ratio can be defined as the number of children in the age group 0-4 years per 1000 women in the reproductive age group, 15—49.

The child-woman ratios during years 1972—1981 are given below:

Years	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
C.W.R.	520	511	479	463	470	459	441	451	466	441

3.18 No. of marriages and age at marriage

The Table 3.18 below, presents the rate of marriages and remarriages per 1000 population (for males and females separately) which took place for each age group of sample population during 1981.

The highest rate of first marriage per thousand female population is 54.75 in the age group 20-24 as against 63.64 in the same group during the previous year. In the case of males, highest rate of first marriage during the year 1980 was 63.42 in the age group 25–29, and it is 49.87 in the same age group in 1981.

The median age at first marriage for males and females is same as in the previous year i.e. 27.2 and 21.6 respectively.

The highest percentage of remarriages among males and females occurs in the age groups 20-24 and 25-29 respectively. Out of total marriages during the year 2.16% marriages were remarriages for both males and females.

TABLE 3.18

Marriage rate per 1000 population for the year 1981

Age group	*First marriage*		*Remarriage*		*All marriages*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
15—19	1.72 (2.46)	35.50 (33.37)	.. ..	0.20 (5.08)	1.72 (2.32)	35.70 (32.37)
20—24	22.95 (27.73)	54.75 (48.56)	1.06 (22.03)	1.06 (25.43)	24.01 (27.42)	55.81 (47.73)
25—29	49.87 (48.77)	22.94 (15.75)	1.10 (18.65)	1.64 (30.51)	50.97 (47.12)	24.58 (16.27)
30—34	22.03 (17.31)	3.98 (2.13)	1.25 (16.95)	1.17 (16.95)	23.28 (17.28)	5.15 (2.66)
35—39	5.46 (3.34)	0.44 (0.19)	1.77 (18.65)	1.17 (13.56)	7.23 (4.18)	1.61 (0.67)
40—44	0.69 (0.39)	.. ..	0.86 (8.47)	0.31 (3.39)	1.55 (0.84)	0.31 (0.12)
45—49	.. ..	.. ..	1.73 (15.25)	0.50 (5.08)	1.73 (0.84)	0.50 (0.18)
All	16.41 (100.00)	23.46 (100.00)	0.95 (100.00)	0.87 (100.00)	17.36 (100.00)	24.33 (100.00)

(Figures in brackets denote the percentage of marriage under each group)

CHAPTER IV

MORTALITY MEASURES

4.1 Crude death rate

The crude death rate for Kerala Rural for 1981 is estimated as 6.49 as against 7.11 during the previous year. As in the case of births, deaths occurred to usual residents only are taken into consideration for calculating the death rate.

The crude death rates for Kerala Rural and All India Rural from 1972 onwards are presented in Table 4.1

TABLE 4.1

Crude Death Rates in Kerala Rural and All India Rural 1972-1981

Year	*Natural regions in Kerala*			*Kerala Rural*	*All India Rural*
	Low land	*Mid land*	*High land*		
(1)	(2)	(3)	(4)	(5)	(6)
1972	8.2	9.5	11.0	9.4	18.9
1973	8.8	8.5	9.3	8.7	17.0
1974	8.1	7.7	9.6	8.0	15.9
1975	8.5	8.4	9.1	8.5	17.3
1976	8.6	7.7	10.4	8.3	16.3
1977	7.4	7.3	8.4	7.3	16.0
1978	7.2	7.0	8.2	7.2	15.3
1979	6.0	7.2	8.9	7.2	13.9
1980	6.5	7.0	8.5	7.1	13.7
1981	6.9	6.1	7.5	6.5	13.6

Death rate in low land has shown an increase of 0.4 during the year 1981 as against 0.5 in 1980. As in the case of 1975 and 1977, the death rate for Kerala Rural is below 50% of the death rate for All India (Rural) during this year. The high land records the highest death rate and the mid land the lowest.

4.2 Death rates in the rural areas of neighbouring States

The death rate of Kerala Rural during the year 1981, is the lowest of all the States in India, except Nagaland, where the death rate is 5.3 according to the estimates of Registrar General India. As far as the neighbouring States are concerned Karnataka stands second in the lowest death rate. The death rates in the rural areas of Andhra Pradesh, Tamil Nadu and Karnataka for the period are 12.1, 13.5 and 10.5 respectively.

4.3 Death rates in Malabar and Travancore–Cochin Region (Rural)

The death rates in Malabar and Travancore–Cochin region for 1981 are given in Table 4.3.

TABLE 4.3

Death Rates in Rural Areas of Malabar and Travancore—Cochin Area (Rural)

Years	*Malabar*	*Travancore–Cochin*	*Kerala*
1977	8.39	6.64	7.3
1978	8.37	6.22	7.2
1979	8.63	5.84	7.2
1980	7.51	6.71	7.1
1981	6.91	6.07	6.5

The general tendency of decreasing the death rates, since 1977 was upset by a sudden increase of 0.26 in Malabar region during 1979 and of 0.87 in Travancore-Cochin region during 1980. However, a uniform decrease in death rates for both the regions during the year is seen. As usual, the death rate in Malabar region is seen higher than that in Travancore-Cochin region. The gradual decrease, found in the difference in death rates between these two regions, shows that the difference in Socioc-conomic conditions of these regions is becoming less.

In regard to the natural regions, the low land in Travancore-Cochin area shows a death rate higher than that in Malabar area, while the midland and the highland regions the lower. The death rates for low land, midland and high land in Travancore-Cochin area for the period are 6.93, 5.27 and 7.39– respectively and in Malabar area 6.78, 6.77 and 7.50 respectively.

4.4 Death rates among religious groups

The death rates according to religious groups in Kerala Rural for 1981 are given in Table 4.4.

TABLE 4.4

Death Rates in Different Religions in Kerala Rural—1981

Regions	*Religions*		
	Hindus	*Muslims*	*Christians*
Low land	7.02	7.33	6.22
Midland	6.60	6.34	4.70
High land	7.86	7.80	3.79
State	6.94	6.69	4.93

The death rate is highest among Hindus in all the natural regions, except in low land, while it is lowest among Christians in all the regions, during the year. The death rates among Hindus, Muslims and Christians in Midland and highland are seen decreasing, but that in lowland increasing from those in the year 1980.

4.5 Death Rates By Religious Groups in Malabar and Travancore-Cochin Areas

As in the case of birth rates, the highest and lowest death rates are seen in Malabar area-the highest is among Hindus and the lowest among Christians. The table below presents the death rates by religious groups in Malabar and Travancore-Cochin areas for 1981.

TABLE 4.5

Death Rates by Religious Groups in Malabar and Travancore-Cochin Area—1981

Regions	*Religions*		
	Hindus	*Muslims*	*Christians*
Malabar	7.38	6.68	3.58
Travancore-Cochin	6.49	6.69	5.25
State	6.94	6.69	4.93

4.6 Distribution of Samples by Death Rates

The distribution of samples by death rate is given in Table 4.6

TABLE 4.6

Distribution of number of samples under different rates of Death—1981

Region	*Sample*	*Death rates*										
		2	2-2.9	3-4.9	5-6.9	7-8.9	9-10.9	11-12-9	13-14.9	15-16.9	17 and *above*	*All*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Malabar Area 1981	No.	1	6	5	23	22	13	2	..	..	..	72
	%	1.4	8.3	6.9	31.9	30.6	18.1	2.8	..	..	..	100.00
Travancore-Cochin area 1981	No.	3	8	15	27	15	4	4	1	1	..	78
	%	3.9	10.3	19.2	34.6	19.2	5.1	5.1	1.3	1.3	..	100.00
Kerala 1981	No.	4	14	20	50	37	17	6	1	1	..	150
	%	2.7	9.3	13.3	33.3	24.7	11.3	4.00	0.7	0.7	..	100.00
Kerala 1980	No.	3	3	32	50	28	22	6	4	1	1	150
	%	2.0	2.0	21.3	33.3	18.6	14.7	4.0	2.7	0.7	0.7	100.00
Kerala 1979	No.	2	7	31	44	30	17	11	2	4	2	150
	%	1.3	4.7	20.7	29.4	20.0	11.3	7.3	1.3	2.7	1.3	100.00
Kerala 1978	No	..	10	25	43	35	23	4	8	1	1	150
	%	..	6.7	16.7	28.7	23.3	15.3	2.7	5.3	0.7	0.7	100.00

During the year 1981, the number of samples, having death rate less than 7 (as the State rate 6.5 falls in the age group 5–6.9) in Malabar and Travancore-Cochin areas are the same as in the previous year, viz. 35 samples forming 48.6% in Malabar, 53 samples forming 67.9% in Travancore-Cocinareas.

4.7 Age specific death rate

Age specific death rate is the number of deaths in a specific age group in one year among 1000 persons of that age group. The age specific death rates for males and females and for the three natural regions of the state are given in Table XI appended.

The age specific death rate is highest in the age group 70 and above, followed by 0.1 age group and then 65–69 age group. This seemed to be a natural phenomenon as the death rates of the aforesaid age groups have been highest since inception of the scheme. As in the previous year, the lowest death rate is in the age group 10–14.

In the case of male and female, the death rates of male are highest in all age groups except the age groups 1–4, 10–14, 15–19 and 35–39. As far as the natural regions are concerned, the highest death rate (119.12) is found in the age group 70 and above, in high land, while the lowest in the same age group, in midland. Contrary to the position in the previous year, the lowest death rate during the year is in the age group 10–14 in all the three natural regions.

4.8 Infant mortality rate

Infant mortality rate is defined as the number of deaths of infants below one year of age out of 1000 live births in an year. The infant mortality rates for the years 1972-1981 for the three natural regions are given in Table 4.8

TABLE 4.8

INFANT MORTALITY RATE IN NATURAL REGIONS

Region	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Lowland	55.3	46.6	30.7	45.8	57.3	44.9	32.2	29.8	32.0	45.3
Midland	61.2	46.8	55.4	58.1	50.8	46.6	41.1	46.1	40.2	35.9
High land	101.7	78.1	95.2	63.5	77.4	71.4	78.3	84.4	65.7	52.0
State	66.0	51.7	55.9	57.3	56.5	50.7	44.8	48.6	42.5	40.4

A considerable increase in infant mortality rate for low land during the year has been seen. The phenomenon of the highland of having the highest infant mortality rate during the previous years continued this year also. The lowest rate in the previous year was in low land, but during this year it is in midland.

The highest infant mortality rate can be attributed to the paucity of medical facilities in the locality and the lack of awareness of the people of such aspects.

As in the case of death rates, the infant mortality rate is also highest in Malabar area. Infant mortality rates estimated for Travancore-Cochin area, and Malabar area are 39.2 and 42.7 respectively.

4.9 Neo-natal death rate

The neo-natal death rate is the number of deaths to Children of below 28 days of age per 1000 live births in an year. It is estimated as 28 during the year, as against 28.5 in the previous year. Infant mortality has been distributed according to the period within which the infants died before completing one year of age, such as less than 7 days, 7–27 days, 28 days and above. The rates in each period are presented in Table 4.9.

TABLE 4.9

Infant death rate distributed over different periods within which the infant died—1981

Region	*Less than 7 days*	*7–27 days*	*Less than 28 days*	*28 days and above*	*Total*
Lowland	21.64	5.65	27.29	17.97	45.26
Midland	19.87	6.47	26.34	9.56	35.90
Highland	25.17	10.18	35.35	16.63	51.98
State	21.07	6.88	27.95	12.43	40.38

The infant death rate for the period 7–27 days in all the natural regions is seen increased during the year. The lowland has shown an increase in the infant death rate for all the periods, while the other two regions, a decrease except for the period 7—27 days.

4.10 Medical Attendance at death

The percentage of deaths under different type of medical attention at the time of death for ten years (1972-1981) is furnished in Table 4.10 below.

TABLE 4.10

Medical Attendance at death (Percentage)

Year	*Institutional*	*Recognised Practitioner*	*Unrecognised Practitioner*	*None*
1972	19	34	17	30
1973	17	33	22	28
1974	18	36	19	27
1975	20	36	16	28
1976	24	31	19	26
1977	22	33	19	26
1978	22	34	24	20
1979	30	34	11	25
1980	32	32	19	17
1981	41	31	12	16

The percentage of deaths to persons who received institutional services, has shown a considerable increase during the year. The fact that more people found utilising the institutional facilities deserves to be mentioned.

4.11 Expectation of Life

Life tables have been constructed using the age specific death rates for 1979, 1980 and 1981 and are presented in Table XIX, XX and XXI. The expecation of life at birth is 66.75 years. Females have higher expectation of life than males as in the previous year. The expectation of life of males and females for the period are 64.71 and 69.01 respectively, as against 64.23 and 67.88 respectively in the previous year.

APPENDIX

APPENDIX

LIST OF TABLES

TABLE I

Number of units and 1961 population in the universe and in the samples

Stratum	Universe			Samples				
	No. of units (1961 Census)			No. of units selected (N)	Population 1961	% of units selected (n/N)	% of sample Population	Raising factor for stratum estimates N/n
	Segments (N)	Census Village	Population 1961					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I A	85	85	27545	1	494	1.18	1.79	85.00000
B	164	164	126496	1	632	0.61	0.50	164.00000
C	349	349	512766	5	7659	1.43	1.49	69.80000
D	1718	609	2732775	29	43473	1.69	1.59	59.24138
Low-land	2316	1207	3398582	36	52258	1.55	1.54	..
II A	498	498	151292	1	341	0.20	0.23	498.00000
B	791	791	596342	6	5241	0.76	0.88	131.83333
C	1178	1178	1722319	18	27057	1.53	1.57	65.44444
D	4066	1566	6213177	66	101026	1.62	1.63	61.60606
Mid-land	6533	4033	8683130	91	133665	1.39	1.54	..
III A	77	77	20310	..	..	..	..	..
B	69	69	51719	1	976	1.45	1.89	69.00000
C	145	145	215801	3	4950	2.07	2.29	48.33333
D	1161	356	1897998	19	30145	1.64	1.59	61.10526
High-land	1452	647	2185828	23	36071	1.58	1.65	..
State	10301	5887	14267540	150	221994	1.46	1.56	..

TABLE II

Observed population in the samples and estimated population for strata

Region/ Stratum	Observed population in samples in each stratum (Retained area)			Estimated population for each stratum		
	1-1-1981	1-7-1981	1-1-1982	1-1-1981	1-7-1981	1-1-1982
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I A	658	671	678	55930	57035	57630
B	1174	1201	1205	192536	196964	197620
C	8146	8167	8226	718471	720324	725527
D	49332	49188	49471	3660794	3650848	3671853
Low-land	59300	59227	59580	4627731	4625171	4652630
II A	403	424	426	200694	211152	212148
B	6868	6913	6955	905431	911354	916901
C	31932	32216	32519	2519784	2542195	2566105
D	116149	117312	118518	9440514	9535042	9633065
Mid-land	155352	156865	158418	13066423	13199753	13328219
III B	1260	1273	1289	86940	87837	88941
C	5161	5048	5082	249448	243987	245630
D	30803	31275	31389	2634042	2674404	2684153
High-land	37224	37596	37760	2970430	3006228	3018724
State	251876	253688	255758	20664584	20831152	20999573

TABLE III

Observed Population in retained portion and whole sample population by sex for 1981 and 1961

Stratum	Population observed in retained portion (1-7-1981)			Population in whole sample as on					
				1-7-1981			1961		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I A	314	357	671	314	357	671	218	276	494
B	611	590	1201	611	590	1201	315	317	632
C	3922	4245	8167	4956	5364	10320	3714	3945	7659
D	23930	25258	49188	29981	31645	61626	21203	22270	43473
Low-land	28777	30450	59227	35862	37956	73818	25450	26808	52258
II A	196	228	424	196	228	424	157	184	341
B	3370	3543	6913	3370	3543	6913	2538	2703	5241
C	15615	16601	32216	18828	20017	38845	13148	13909	27057
D	57644	59668	117312	76052	78722	154774	49662	51364	101026
Mid-land	76825	80040	156865	98446	102510	200956	65505	68160	133665
III B	608	665	1273	608	665	1273	456	520	976
C	2522	2526	5048	2522	2526	5048	2575	2375	4950
D	15572	15703	31275	21792	21975	43767	15255	14890	30145
High-land	18702	18894	37596	24922	25166	50088	18286	17785	36071
State	124304	129384	253688	159230	165632	324862	109241	112753	221994

TABLE IV

Mid year population (observed in retained portion 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)
0—1	3415	3234	6649	278384	262970	541354
1—4	11971	11594	23565	979822	945595	1925417
5—9	15212	14489	29701	1242523	1187021	2429544
10—14	14753	14534	29287	1207833	1194802	2402641
15—19	14522	14986	29508	1193218	1229138	2422356
20—24	12286	14137	26423	1012327	1162886	2175213
25—29	9947	10944	20891	818997	899330	1718327
30—34	7988	8533	16521	656166	702980	1359146
35—39	6221	6850	13071	512048	565448	1077496
40—44	5795	6486	12281	477514	532878	1010392
45—49	5211	5996	11207	427437	493703	921140
50—54	4980	5188	10168	407227	426312	833539
55—59	3995	3916	7911	328407	321617	650024
60—64	3047	3160	6207	251689	260770	512459
65—69	2209	2258	4467	182566	187468	370034
70+	2752	3079	5831	227590	254480	482070
Total	124304	129384	253688	10203748	10627404	20831152

TABLE V

Live births observed in retained portion and estimated for stratum—1981

Stratum/ Natural division/ State		Observed in retained portion			Estimated births		
		Male	Female	Total	Male	Female	Total
(1)		(2)	(3)	(4)	(5)	(6)	(7)
I	A	4	12	16	340	1020	1360
	B	15	14	29	2460	2296	4756
	C	101	83	184	8908	7321	16229
	D	609	537	1146	45202	39857	85059
Low-land		729	646	1375	56910	50494	107404
II	A	2	3	5	996	1494	2490
	B	77	64	141	10151	8437	18588
	C	364	305	669	28723	24068	52791
	D	1621	1490	3111	131753	121107	252860
Mid-land		2064	1862	3926	171623	155106	326729
III	B	22	14	36	1518	966	2484
	C	72	64	136	3480	3093	6573
	D	407	431	838	34804	36856	71660
High-land		501	509	1010	39802	40915	80717
State		3294	3017	6311	268335	246515	514850

TABLE VI

Age specific fertility Rate, General Fertility Rate, Total Fertility Rate and Gross Reproduction Rate—1981

Region	*No. of women (estimated)*							
	Age group of women							
	15—19	20—24	25—29	30—34	35—39	40—44	45—49	*All*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Low land	266460	266457	215439	152682	118357	121276	109786	1250457
Mid land	786085	734518	561481	454520	366690	333122	313626	3550042
High land	176593	161911	122410	95778	80401	78480	70291	785864
State	1229138	1162886	899330	702980	565448	532878	593703	5586363
	No. of births estimated							
Low land	7624	47503	34762	11804	4049	1514	148	107404
Mid land	33509	127680	90459	46215	19967	7347	1552	326729
High land	7146	29386	24263	11303	6438	1449	732	80717
State (All births)	48279	204569	149484	69322	30454	10310	2432	514850
State (Female births)	23710	99937	71703	31868	13504	4559	1234	246515
	Age specific fertility rate							*G. F. R.* *T.F.R.*
Low land	28.61	178.28	161.35	77.31	34.21	12.48	1.35	85.89 2.5
Mid land	42.63	173.83	161.11	101.68	54.45	22.06	4.95	92.04 2.8
High land	40.47	181.49	198.21	118.01	80.07	18.46	10.41	102.71 3.2
State (All births)	39.28	175.91	166.22	98.61	53.86	19.35	4.93	92.16 2.8
State (Female births)	19.29	85.94	79.73	45.33	23.88	8.56	2.50	G.R.R.— 1.3

TABLE VII

Live Births, observed in samples classified by month of occurrence—1981

Stratum/ Natural Division/ State		No. of live births reported from samples												
		Total	*January*	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
I	A	16	..	2	1	1	1	2	2	2	2	1	..	2
	B	29	2	3	6	4	4	3	2	2	1	2	..	..
	C	184	18	21	13	12	21	21	12	12	13	7	12	22
	D	1146	100	85	108	93	101	80	107	91	72	96	106	107
Low land		1375	120	111	128	110	127	106	123	107	88	106	118	131
II	A	5	..	..	..	..	1	1	1	..	..	1	..	1
	B	141	15	10	11	5	14	13	11	18	11	20	4	9
	C	669	49	70	67	70	68	52	51	45	52	50	49	46
	D	3111	266	248	303	305	301	296	294	219	217	229	213	220
Mid land		3926	330	328	381	380	384	362	357	282	280	300	266	276
III	B	36	1	3	2	5	7	1	4	3	4	..	3	3
	C	136	13	9	11	14	16	12	14	10	8	8	8	13
	D	838	74	69	76	83	72	74	74	71	54	54	57	80
High land		1010	88	81	89	102	95	87	92	84	66	62	68	96
State		6311	538	520	598	592	606	555	572	473	434	468	452	503

TABLE VIII

Live Births by type of Attention at Delivery,—1981

Stratum		Type of Attention					
		Institutional	*Trained professional*	*Untrained professional*	*Non professional*	*Not stated*	*Total*
(1)		(2)	(3)	(4)	(5)	(6)	(7)
I	A	14	2	..	..	..	16
	B	26	1	1	1	..	29
	C	137	7	40	..	..	184
	D	714	277	151	4	..	1146
Low land		891	287	192	5	..	1375
II	A	5	..	..	..	..	5
	B	8383	32	22	..	4	141
	C	337	131	184	8	9	669
	D	1382	878	822	29	..	3111
Mid land		1807	1041	1028	37	13	3926
III	B	3	19	14	..	..	36
	C	88	23	22	3	..	136
	D	230	315	231	62	..	838
High land		321	357	267	65	..	1010
State		3019	1685	1487	107	13	6311

TABLE IX

Observed deaths, Deaths in Sample Area and Estimated Deaths by Sex—1981

Stratum		Observed deaths			Deaths in sample area			Estimated deaths		
		Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I	A	4	..	4	4	..	4	349	..	340
	B	2	2	4	2	2	4	328	328	656
	C	29	27	56	37	34	71	2558	2381	4939
	D	208	142	350	261	178	439	15428	10540	25978
Low land		243	171	414	304	214	518	18664	13249	31913
II	A	..	1	1	..	1	1	..	498	498
	B	24	8	32	24	8	32	3164	1055	4219
	C	131	89	220	158	107	265	10337	7023	17360
	D	396	326	722	522	430	952	32187	26497	58684
Mid land		551	424	975	704	546	1250	45688	35073	80761
III	B	7	6	13	7	6	13	483	414	897
	C	19	9	28	19	9	28	918	435	1353
	D	123	113	236	172	158	330	10518	9663	20181
High land		149	128	277	198	173	371	11919	10512	22431
State		943	723	1666	1206	933	2139	76271	58834	135105

TABLE X

Number of deaths by age and sex—1981

Region	Sex	All ages	Age in years: Below 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Low land	Both	414	64	25	6	2	6	9	11	9	8	15	11	14	22	33	35	149
Mid land	Both	975	142	74	22	10	27	26	19	15	19	25	33	52	63	76	79	293
High land	Both	277	54	24	7	4	8	7	7	8	4	5	9	18	18	10	16	78
State	Male	943	156	59	26	6	19	21	20	20	10	32	39	50	75	76	82	252
State	Female	723	104	64	9	10	22	21	17	12	16	13	14	34	28	43	48	268
State	Both	1666	260	123	35	16	41	42	37	32	26	45	53	84	103	119	130	520

TABLE XI

Age specific death rate (based on estimated values) 1981

Stratum	*Sex*	*All ages*	*Age group* 0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70—
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Low land	Both	6.90	43.20	4.69	0.86	0.30	1.00	1.44	2.09	2.26	1.03	5.43	4.07	5.95	10.29	21.01	30.90	97.32
Mid land	Both	6.12	34.27	4.92	1.15	0.53	1.45	1.54	1.44	1.40	2.29	3.42	4.79	8.21	12.90	19.66	29.34	77.79
High land	Both	7.46	48.53	6.64	1.60	0.90	1.97	1.75	2.24	3.55	2.18	2.47	5.71	12.38	16.25	11.03	26.95	119.12
State	Both	6.49	38.40	5.14	5.15	0.53	1.43	1.55	1.71	1.89	2.01	3.70	4.76	8.29	12.70	18.81	29.41	87.24
,,	Male	7.48	44.92	4.76	1.66	0.40	1.40	1.68	1.90	2.44	1.59	5.52	7.57	10.04	18.48	24.49	36.29	89.68
,,	Female	5.54	31.51	5.53	0.62	0.66	1.46	1.43	1.54	1.39	2.38	2.07	2.34	6.62	6.81	13.32	22.72	85.04

TABLE XII

Deaths observed in (retained portion) sample classified by months of occurrence—1981

Stratum		Total deaths	Months											
			January	*February*	*March*	*April*	*May*	*June*	*July*	*August*	*September*	*October*	*November*	*December*
I	A	4	..	..	..	1	1	..	..	1	..	1	..	..
	B	4	..	..	1	..	..	..	..	1	..	1	..	1
	C	56	5	5	2	5	7	3	8	5	8	2	3	3
	D	350	35	30	24	22	19	29	32	36	43	20	29	31
Low land		414	40	35	27	28	27	32	40	43	51	24	32	35
II	A	1	..	..	..	..	..	..	1	..	..	..	..	..
	B	32	1	..	4	4	1	2	4	2	3	5	3	1
	C	220	24	22	15	12	14	25	20	23	16	13	20	16
	D	722	67	63	63	54	52	64	87	68	61	57	47	39
Mid-land		975	92	85	82	70	67	91	112	93	80	75	72	56
III	B	13	2	..	..	..	2	2	..	1	3	1	..	2
	C	28	2	..	5	2	3	1	3	3	3	3	1	2
	D	236	19	20	20	23	16	18	24	22	22	21	14	17
High land		277	23	20	25	25	21	21	27	26	28	25	15	21
State		1666	155	140	134	123	115	144	179	162	159	124	119	112

TABLE XIII

Deaths classified by type of Medical attention—1981

Stratum		Type of Medical attention				
		Total deaths	*Institutional*	*Recognised medical practitioner*	*Unrecognised medical practitioner*	*Not stated*
I	A	4	..	2	..	2
	B	4	4	..	..	..
	C	56	32	8	6	10
	D	350	170	119	25	36
Low land		414	206	129	31	48
II	A	1	..	1	..	..
	B	32	18	6	3	5
	C	220	102	59	34	25
	D	722	256	240	83	143
Mid land		975	376	306	120	173
III	B	13	2	7	..	4
	C	28	15	8	3	2
	D	236	88	64	43	41
High land		277	105	79	46	47
State		1666	687	514	197	268

TABLE XIV

Estimated Infant deaths by sex, and Infant death rate for stratum—1981

Stratum		Number of Infant deaths: Observed in retained portion			Whole sample area			Estimated for stratum			Estimated live birth	Infant death rate
		Male	Female	Total	Male	Female	Total	Male	Female	Total		
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
I	A	..	..	..	..	..	..	..	..	..	1360	..
	B	..	..	..	..	..	..	..	..	..	4756	..
	C	3	5	8	4	6	10	265	441	706	16229	43.50
	D	33	23	56	41	29	70	2449	1707	4156	85059	48.86
Low land		36	28	64	45	35	80	2714	2148	4862	107404	45.27
II	A	..	..	..	..	..	..	..	..	..	2490	..
	B	5	..	5	5	..	5	659	..	659	18588	35.45
	C	18	9	27	22	11	33	1420	710	2130	52791	40.35
	D	60	50	110	79	66	145	4877	4064	8941	252860	35.36
Mid land		83	59	142	106	77	183	6956	4774	11730	326729	35.90
III	B	2	1	3	2	1	3	138	69	207	2484	83.33
	C	8	2	10	8	2	10	387	97	484	6573	73.63
	D	27	14	41	38	19	57	2309	1197	3506	71660	48.93
High land		37	17	54	48	22	70	2834	1363	4197	80717	52.00
State		156	104	260	199	134	333	12504	8285	20789	514850	40.38

TABLE XV

Population and Vital events observed in retained portion and calculated for sample areas-1981

Stratum		Observed in retained Portion					Calculated for whole sample area				
		Population as on 1-7-1981	Birth	Death	Still births	Infant deaths	Population as on 1-7-1981	Birth	Death	Still birth	Infant death
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	10)	(11)
I	A	671	16	4	..	..	671	16	4	..	..
	B	1201	29	4	1	..	1201	29	4	1	..
	C	8167	184	56	4	8	10320	133	71	5	10
	D	49188	1146	350	21	56	61626	1436	439	26	70
Lowland		59227	1375	414	26	64	73818	1714	518	32	80
II	A	424	5	1	..	..	424	5	1	..	..
	B	6913	141	32	..	5	6918	141	32	..	5
	C	32216	669	220	10	27	38845	807	265	12	33
	D	117312	3111	722	78	110	154774	4104	952	103	145
Midland		156865	3926	975	88	142	200956	5057	1250	155	183
III	B	1273	36	13	..	3	1273	36	13	..	3
	C	5048	136	28	..	10	5048	136	28	..	10
	D	31275	838	236	20	41	43767	1173	330	28	57
Highland		37596	1010	277	20	54	50088	1345	371	28	70
State		253688	6311	1666	134	260	324862	8116	2139	175	333

TABLE XVI

Estimated Population, births, deaths and Vital rates-1981

Stratum		Estimated Population, births and deaths					Vital rates			
		Population as on 1-7-1981	Births 1981	Deaths 1981	Still births 1981	Infant deaths 1981	Birth rate	Death rate	Still birth rate	Infant death rate
I	A	57035	1360	340	..	..	23.85	5.96	..	..
	B	196964	4756	656	164	..	24.15	3.33	33.33	..
	C	720324	16229	4939	353	706	22.53	6.86	21.29	43.50
	D	3650848	85059	25978	1559	4156	23.30	7.12	18.00	48.86
Lowland		4625171	107404	31913	2076	4862	23.22	6.90	18.96	45.27
II	A	211152	2490	498	..	..	11.79	2.36	..	..
	B	911364	18588	4219	..	659	20.40	4.63	..	35.45
	C	2542195	52791	17360	789	2130	20.77	6.83	14.73	40.35
	D	9535042	252860	58684	6340	8941	26.52	6–15	24.46	35.36
Midland		13199753	326729	80761	7129	11730	24.75	6.12	21.35	35.90
III	B	87837	2484	897	..	207	28.28	10.21	..	83.33
	C	243987	6573	1353	..	484	26.94	5.55	..	73.63
	D	2674404	71660	20181	1710	3506	26.79	7.55	23.31	48.93
Highland		3006228	80717	22431	1710	4197	26.85	7.46	20.75	52.00
State		20831152	514850	135105	10915	20789	24.72	6.49	20.76	40.38

TABLE XVII

Births and Deaths Recorded by Enumerators and Supervisors and Detected Through Overlapping and Intensive Survey—1981

Stratum	Total netted by Enumerator and Supervisor	Common to Enumerator and Supervisor	Enumerator		Supervisor		Others	Overlapping survey	Intensive survey	Total
			No.	%	No.	%				
			Birth—1981							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Lowland	1344	1093	1182	86.0	1255	91.3	3	16	12	1375
Midland	3844	3067	3381	86.1	3530	89.9	17	30	35	3926
Highland	986	812	863	85.5	935	92.6	5	16	3	1010
State	6174	4972	5426	86.0	5720	90.6	25	62	50	6311

Stratum	Total netted by Enumerator and supervisor	Common to Enumerator and Supervisor	Enumerator		Supervisor		Others	Overlapping survey	Intensive survey	Total
			No.	%	No.	%				
			Death—1981							
(1)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Lowland	411	353	376	90.8	388	93.7	1	1	1	414
Midland	959	761	852	87.4	868	89.0	3	7	6	975
Highland	272	232	247	89.2	257	92.8	..	5	..	277
State	1642	1346	1475	88.5	1513	90.8	4	13	7	1666

TABLE XVIII

Extra events detected through overlapping and Intensive survey classified according to place and kind—1981

Stratum	Births					Deaths				
	Total	Place		Kind		Total	Place		Kind	
		In	Out	Live birth	Still birth		In	Out	Infant death	Other death
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I A	..	..	..	..	..	..	..	..	..	..
B	..	..	..	..	..	..	..	..	..	..
C	4	..	4	4	..	..	..	..	..	..
D	24	3	21	24	..	2	2	..	2	..
Lowland	28	3	25	28	..	2	2	..	2	..
II A	..	..	..	..	..	..	..	..	..	..
B	4	..	4	4	..	1	..	1	1	..
C	8	..	8	8	..	4	2	2	1	3
D	53	17	36	53	..	8	5	3	5	3
Midland	65	17	48	65	..	13	7	6	7	6
III B	..	..	..	..	..	..	..	..	..	..
C	..	..	..	..	..	..	..	..	..	..
D	19	8	11	19	..	5	2	3	..	5
Highland	19	8	11	19	..	5	2	3	..	5
State	112	28	84	112	..	20	11	9	9	11

TABLE XIX

Abridged life table based on Mean-age specific death rates for 1979, 1980 and 1981 (Male and Female)

Age x to x+n.	*Age specific death rate* 1979	1980	1981	Total	*Central age specific death rate* ($_n^m x$)	*Probability of a man aged x dying before age x+n* (qx)	*No. surviving to age x out of 100,000 born alive* (lx)	*Years of life lived between x and x+n* (nLx)	*Years of life lived at x and over x* (Tx)	*Expectation of life in years* (Ex)	*Beginning*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	50.33	42.44	38.40	131.17	0.04372	0.04095	100,000	96315	6674649	66.75	0
1—4	6.20	4.66	5.14	16.00	0.00533	0.02110	95905	379572	6578334	68.59	1
5—9	1.68	1.52	1.15	4.35	0.00145	0.00722	93881	467710	6198762	66.03	5
10—14	1.06	0.78	0.53	2.37	0.00079	0.00394	93203	465098	5731052	61.49	10
15—19	0.83	1.00	1.43	3.26	0.00109	0.00544	92836	462918	5265954	56.72	15
20—24	1.46	1.39	1.55	4.40	0.00147	0.00732	92331	459965	4803036	52.02	20
25—29	1.38	1.54	1.71	4.63	0.00154	0.00767	91655	456518	4343071	47.38	25
30—34	2.30	2.85	1.89	7.04	0.00234	0.01163	90952	452115	3886553	42.73	30
35—39	2.77	3.16	2.01	7.94	0.00265	0.01316	89894	446513	3434438	38.20	35
40—44	3.62	4.02	3.70	11.34	0.00378	0.01872	88711	439403	2987925	33.68	40
45—49	5.00	5.09	4.76	14.83	0.00494	0.02440	87050	429940	2548522	29.28	45
50—54	9.79	8.66	8.29	26.74	0.00891	0.04348	84926	415398	2118582	24.95	50
55—59	14.07	12.62	12.70	39.39	0.01313	0.06356	81233	393258	1703184	20.97	55
60—64	19.64	20.86	18.81	59.31	0.01977	0.09419	76070	362438	1309926	17.22	60
65—69	37.10	43.84	29.41	110.35	0.03678	0.16841	68905	315515	947488	13.75	65
70+	91.64	93.13	87.24	272.01	0.09067	1.00000	57301	631973	631973	11.03	70

TABLE XX

Abridged life table based on mean age specific death rates for 1979, 1980 and 1981 (Males)

Age x to x+n	*Age specific death rate* 1979	1980	1981	*Total*	*Central age specific death rate* ($_nm_x$)	*Probability of a man aged x dying before age x+n* ($_nq_x$)	*No. surviving to age x out of 100,000 born alive* (l_x)	*Years of life lived between x and x+n* ($_nL_x$)	*Years of life lived at x and over x* (T_x)	*Expectation of life in years* (e_x)	*Beginning*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	57.91	48.01	44.92	150.84	0.05028	0.04714	100,000	95769	6471132	64.71	0
1—4	5.93	4.18	4.76	14.87	0.00496	0.01964	95286	377402	6375363	66.91	1
5—9	1.95	1.44	1.66	5.05	0.00168	0.00836	93415	465123	5997961	64.21	5
10—14	1.07	0.64	0.40	2.11	0.00070	0.00349	92634	462363	5532838	59.73	10
15—19	0.65	1.14	1.40	3.19	0.00106	0.00528	92311	460338	5070475	54.93	15
20—24	1.28	1.32	1.68	4.28	0.00143	0.00712	91824	457485	4610137	50.21	20
25—29	1.31	1.90	1.90	5.11	0.00107	0.00533	91170	454635	4152652	45.55	25
30—34	2.84	3.63	2.44	8.91	0.00297	0.01474	90684	450078	3698017	40.78	30
35—39	4.57	4.62	1.59	10.78	0.00359	0.01779	89347	442763	3247939	36.35	35
40—44	5.41	4.91	5.52	15.84	0.00528	0.02606	87758	433073	2805176	31.96	40
45—49	7.49	7.51	7.57	22.57	0.00752	0.03691	85471	419468	2372103	27.75	45
50—54	13.98	10.87	10.04	34.89	0.01163	0.05651	82316	399950	1952635	23.72	50
55—59	19.08	14.67	18.48	52.23	0.01741	0.08342	77664	372123	1552685	19.99	55
60—64	23.14	24.73	24.49	72.36	0.02412	0.11374	71185	335635	[illegible]	[illegible]	[illegible]
65—69	39.73	49.79	36.29	125.81	0.04194	0.18980	63089	285510	844877	13.39	[illegible]
70+	88.02	96.44	89.68	274.14	0.09138	1.00000	51115	559367	559367	10.94	70

TABLE XXI

Abridged life Table based on Mean age specific death rates for 1979, 1980 and 1981 (Females)

Age x to x+n	*Age specific death rate* 1979	1980	1981	*Total*	*Central age specific death rate* ($n^m x$)	*Probability of a man aged dying before age x+n (qx)*	*No. surviving to age x out of* 100,000 *born alive (x)*	*Years of life lived between x and x+n (nLx)*	*Years of life lived at x and over x (Tx)*	*Expectation of life in years (Ex)*	*Beginning*
(1)	(2)	(3)	(4)	(5)	((6)	(7)	(8)	(9)	(10)	(11)	(12)
1	42.66	38.01	31.51	112.18	0.03739	0.03422	100,000	96907	6901420	69.01	0
1—4	6.48	5.31	5.53	17.32	0.00577	0.02282	96578	381904	6804513	70.46	1
5—9	1.41	1.67	0.62	3.70	0.00123	0.00613	94374	470425	6422609	68.05	5
10—14	1.05	0.92	0.66	2.63	0.00088	0.00439	93796	467950	5952184	63.46	10
15—19	1.01	0.87	1.46	3.34	0.00111	0.00553	93384	465630	5484234	58.73	15
20—24	1.62	1.52	1.43	4.57	0.00152	0.00757	92868	462582	5018604	54.04	20
25—29	1.44	1.21	1.54	4.19	0.00140	0.00697	92165	459220	4556022	49.43	25
30—34	1.81	2.25	1.39	5.45	0.00182	0.00906	91523	455542	4096802	44.76	30
35—39	1.15	1.88	2.38	5.41	0.00180	0.00896	90694	451437	3641260	40.15	35
40—44	2.07	3.23	2.07	7.37	0.00246	0.01222	89881	446660	3189823	35.49	40
45—49	2.80	2.97	2.34	8.11	0.00270	0.01341	88783	440937	2743163	30.90	45
50—54	5.55	6.45	6.62	18.62	0.00621	0.03057	87592	431265	2302226	26.28	50
55—59	8.93	10.51	6.81	26.25	0.00875	0.04281	84914	415482	1870961	22.03	55
60—64	16.37	17.70	13.32	47.39	0.01580	0.07600	81279	390952	1455479	17.91	60
65—69	34.57	39.45	22.72	97.74	0.03225	0.14922	75102	347492	1064527	14.17	65
70+	94.84	87.45	85.04	267.33	0.03911	1.00000	63895	717035	717035	11.22	70

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