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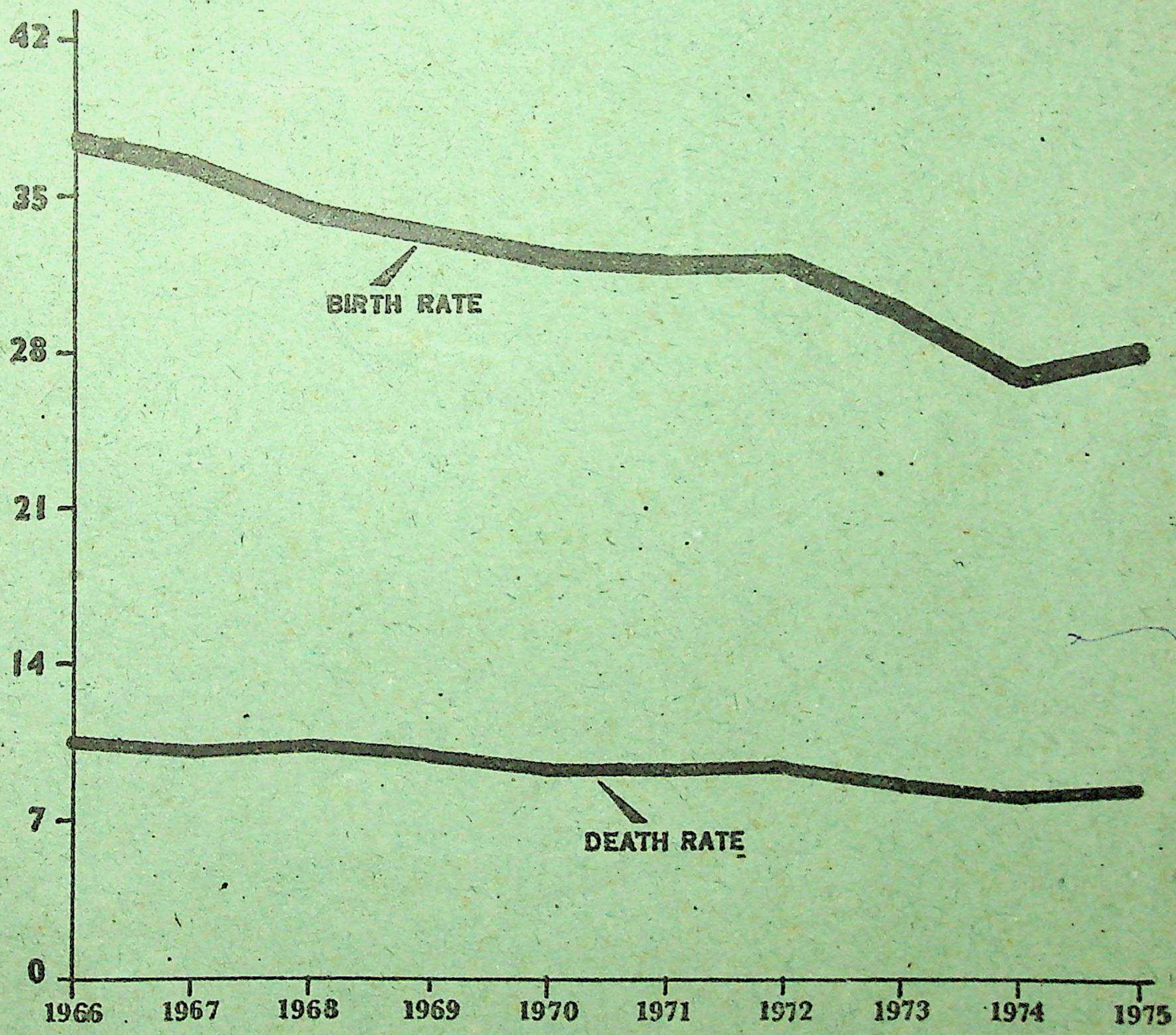
SAMPLE REGISTRATION KERALA-RURAL



BUREAU OF ECONOMICS AND STATISTICS

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PREFACE

The Sample Registration Survey (SRS) with the objective of getting reliable information on vital rates and population during the intercensal years is being conducted in all the States based on the guide lines issued by the Registrar General of India. The Survey in Kerala is carried out separately for rural and urban sectors. The Survey in rural sector is being conducted by the Bureau of Economics and Statistics and in the urban sector by the Census Department. The Sample Registration Survey (SRS) was first conducted in the rural sector in Kerala during 1965-66 in 150 randomly selected villages.

This report contains the results of the survey for the year 1975. It is hoped that the findings of the survey will be useful for those dealing with Population Statistics.

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10-10-1977

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SAMPLE REGISTRATION OF BIRTHS AND DEATHS IN RURAL—KERALA—1975

CHAPTER—I

INTRODUCTION

1.1. Genesis :

The role of reliable population data in economic and social planning need not be over emphasised. The census constitutes the most important source of information relating to population. But it is taken in our country only once in ten years. Recourse has therefore to be made to other methods for determining population growth during the intercensal years. The Civil Registration system, of course, provides information on population dynamics. But it is well known that the system is far from perfect. The Registrar General, India therefore launched the Sample Registration System with a view to obtaining reliable data on population and vital rates.

1.2. Objectives :

The Sample Registration Scheme is basically a Sample Survey designed to gather reliable data for estimating the birth and death rates for the States and all India separately for the rural and urban sectors; special studies like the fertility pattern of ever-married women, evaluation of family welfare programme etc. are also occasionally taken up as part of the scheme.

1.3. Commencement of the Scheme :

The scheme was first taken up in the State as a pilot study in rural areas during 1964-65. The full scale scheme in Kerala began functioning with effect from 1-7-1965 in the rural sector and in the urban sector from 1970. The survey is being continued every year thereafter.

1.4. Implementing agency :

The scheme in the rural sector of the State is implemented by the Bureau of Economics and Statistics and in the Urban Sector by the Director of Census Operations.

1.5. Sample design :

The survey in the rural sector is conducted in 150 villages selected by stratified random sampling. The rural sector of the State was first divided into three natural regions (viz Lowland, Midland and Highland) and the villages in each region were grouped into four population size classes, as follows :

Type A—Population less than 500
Type B—Population 500-999
Type C— do. 1000-1999
Type D— do. 2000 and above

Thus 12 strata were formed. The number of villages to be surveyed under the scheme was fixed as 150. These 150 units were allocated among the 12 strata in proportion to the stratum population. The villages so allocated for each stratum were selected by simple random sampling. The selected villages were surveyed in whole in the case of A, B & C type of villages Each D type village was divided into segments of population size 2000 or less and one such segment was selected at random as the sample unit representing the village. The 1961 census population of these 150 units was 2.22 lakhs and formed 1.55% of the total rural population. Details of the allocation of the 150 sample units among the 12 strata, and other particulars regarding the sample are shown in Table—I appended. Out of the 150 samples, 60 samples in which the population had increased very much and had become unwieldy for the survey were reduced in size with effect from 1-7-1970.

1.6. Base line survey :

As it was necessary to have a bench mark information on the demographic particulars of the population being studied, a base-line survey was conducted in the 150 sample units as on 1-7-1965. This was done after ascertaining the boundaries of the selected units and preparation of notional maps. It was really a census so far as the sample area was concerned. The survey provided a list of the households and the composition of the usual residents in them. A complete list of houses/households was drawn up in Form—I (houselist) and details about the members of each household were recorded in Form 2 (household schedules).

1.7. Collection of data :

The bench mark information collected is up-dated at the end of every six months by noting the changes in members and other characteristics. Details of events (births and deaths) occurring in the sample area are collected regularly as and when they occur or when the information can be collected. The events are again listed at the end of every six months by an independent agency. The Information thus collected for each year constitutes the primary data for preparing the various estimates.

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CHAPTER II

SCHEME OF WORK

2 1 Netting of events by Enumerators:

A part-time Enumerator has been appointed in each sample unit for netting the vital events. He is usually a local resident and mostly a local school teacher of the village. He enumerates the birth and death events occurring in the sample on a continuous basis. He collects the information with the help of informants fixed in different parts of the village. A list of pregnant women prepared during the half yearly survey is used as a guidance as to which all households should specially be visited to find out whether births have occurred or not. Details of births and deaths occurred are entered in birth and death registers respectively every month and their extract are sent as monthly reports to the Director, Bureau of Economics and Statistics and the District Statistical Officer.

2.2 Half yearly survey by Supervisor:

Half yearly surveys are done in January and July of each year by a Departmental Officer known as Supervisor. The Supervisor visits every household and prepares a list of births and deaths in form 3/4 and notes the changes regarding members of the households as on 1st January/July of the year.

2.2.1 Overlapping survey:

Though the main object of the half yearly survey is to net events missed by the Enumerator during one preceding half year, the Supervisor collects information regarding birth and deaths which occurred during the preceding two half years— thus it is main half-yearly survey for the immediately preceding six months and overlapping survey for the six months previous to that, and for which period a half yearly survey had already been conducted. The object of the overlapping survey is to net events which would have been missed by both Enumerator and Supervisor.

2.3 Matching of events:

The results reported in the birth and death records by the Enumerator and those in form 3/4 by the Supervisor are matched for one to one correspondence and the unmatched and partially matched events are picked out for further investigation to find correctness of the events.

2.4 Reverification of unmatched events:

The unmatched events (detected by the Supervisor and missed by the Enumerator, and vice-versa and the discrepant items in the partially matched events are then reverified by enquiry at the spot by senior officers at District level and an unduplicated list af correct events is prepared. The final results are forwarded to the Head Office. After scrutiny a copy of the consolidated results are sent to the Registrar General of India.

CHAPTER III

3.1 Enumerators:

Enumerators in all the 150 sample were in position. They recorded the births and deaths in the respective registers and submitted monthly extracts in form 10 to the District Statistical Officers and State Head-quarters. Some of them made quarterly visits and sent supplementary reports also.

3.2 Supervisor's work:

The half yearly surveys were done by the Computors/ Assistant Compiler's deputed from the Census Department. They were given training in July 1975 and January 1976 before the commencement of the 20th and 21st Half-yearly Surveys. Some event were netted through the 22nd Half yearly Survey conducted in July 1976—since it was an overlappin survey for the second half of 1975. As for the first half of 1975 the overlapping survey was conducted through the 21st Half-yearly survey for which the main period was the second half of 1975

.3 Supervision:

The field work of the Enumerators and Supervisors was inspected by the District Statistical Officers, Regional Officer (S.R.) and Deputy Director. The inspection at the District level was conducted mostly along with reverification of unmatched events at the end of the half-yearly surveys.

3.4 Compilation and Analysis of data:

The monthly reports received from the Enumerators, and the reports received from the District Statistical Officers after the half yearly surveys were (after proper scrutiny) compiled and analysed at the Head office of the Bureau of Economics and Statisrics and the results based on the same are presented in this report.

CHAPTER—IV

MARRIAGES AND POPULATION DISTRIBUTION

4.1. Number of marriages and age at marriage (1975):

Age specific marriage rates and percentage distribution of marriages of the sample population calculated for the year 1975 are given below. The median age at marriage in the case of first marriages is 26.4 for males and 21.1 for females.

Age	Age specific marriage rate (per 1000)		Percentage distribution of marriages during 1975	
	Males	Females	Males	Females
15—19	2 0	43.8	2.5	39.2
20—24	32.3	59.5	33 7	48 5
25—29	60.5	19 3	48.9	11.8
30—34	19.9	2.5	11.7	1.1
35—39	4.7	1.0	2.6	0.4
40—44	1.1	..	0.6	..
45—49	..	..	..	..
All (15—49)	19.1	25.3	100.00	100.00

4.2. Age distribution and sex ratio of population (1975):

The percentage distribution of population by age and sex ratio (number of males per 1000 females) for the year 1975 in the different age groups are given below:

Age group	Percentage of population	Sex ratio
0—1	2.4	104 0
1—4	9.7	104.6
5—9	12.7	102 0
10—14	12.4	103.7
15—19	11.7	98 0
20—24	10.2	90 0
25—29	7 8	91.6
30—34	5 7	90 3
35—39	5 5	91 5
40—44	4.9	88.8
45—49	4.6	100 6
50—54	3 6	104 3
55—59	2.9	100.1
60—64	2.1	99.8
65—69	1 6	96 4
70 +	2.2	8[illegible].9
All	100.0	97.5

In age groups upto 14 and the age groups between 45 and 59, the males predominate and in all other age groups the females predominate in number. It is also noted that 37.2% of the population is below the age of 15 and males predominate in number. The precentage of old persons (of age 55 and above) comes to 8.8. The corresponding figures for the last 4 years are given below:

	% of children (0—14 years)	% of old people (55 +)
1972	39.5	8.5
1973	39.2	8.6
1974	38.1	8.6
1975	37 2	8.8

CHAPTER V

RESULTS OF THE SURVEY

5.1. Birth and death rates:

The following table shows the estimated birth and death rates and the resulting natural growth rate of population since the year 1966.

Year	Birth Rate	Death Rate	Natural growth Rate (%)
1966	37.38	10.45	2.69
1967	36.30	10.13	2 62
1968	34.33	10 38	2 40
1969	33 30	9 80	2 35
1970	32.26	9.23	2.30
1971	31.88	9.23	2 27
1972	32.09	9.39	2 27
1973	29.91	8.67	2 12
1974	26.96	8 00	1.90
1975	28.17	8.48	1.97

The crude birth rate and death rate for the year 1975 are 28 17 and 8.48 per 1000 respectively. The above rates relate to the usual resident population. The birth rate and death rate during the year 1975 show an increase from the previous year contrary to the declining trend experienced during the past so many years except 1972. The year 1973 and 1974 witnessed the greater fall in both birth and death rates which (in the absence of other reason) might be due to missing of events caused by the dislocation of field work and changing of field staff. Hence this significant increase in both the birth and death rates during the year 1975 might be due to the success in spoting out of events by reason of much vigilance and sincerity in work on the part of the field staff.

5.2 Birth and death rates for natural regions:

The birth and death rates for the natural regions of the State for 1975 are given below together with those for the previous four years.

A study of birth and death rates by natural regions reveals certain peculiar features. The high land region differs much from the other two regions in both birth and death rates. The birth rate is highest in the highland region, lowest in the lowland region and midway between these two in the mid land region. The death rate is also highest in the highland region. It is observed that this pattern is consistant for all the years.

Region	Birth Rate					Death Rate				
	1971	1972	1973	1974	1975	1971	1972	1973	1974	1975
Lowland	31.36	30.51	27.77	25.59	25.94	8.53	8.18	8.84	8.10	8.47
Midland	31.95	32.36	29.99	26.95	27.93	9.22	9.46	8.48	7.67	8.35
Highland	32.40	33.38	32.97	29.25	32.78	10.35	10.99	9.26	9.56	9 08
STATE	31 88	32.09	29.91	26.96	28.17	9.23	9.39	8.67	8 00	8 48

5.3 Birth and death rates of the individual sample units:

The birth and death rates for the individual sample units are calculated directly from the number of births and deaths and mid-year population observed in the units whereas the birth rate and death rates for the State/Regions referred to in the foregoing sections have been obtained by the unbiased method of estimatinon explained in Chapter VI. The rates thus obtained give rise to the following frequency distributions.

Birth rate	No. of Units	Death rate	No. of Unit
Less than 16	5	Less than 3	3
16—20	18	3—5	18
20—24	17	5—7	30
24—28	36	7—9	40
28—32	30	9—11	33
32—36	17	11—13	10
36—40	16	13—15	7
40—44	10	15—17	5
44+	1	17+	4
All	150	All	150

In 44% of the sample units the birth rate is between 24 and 32 and the largest number of villages (24%) have birth rate between 24 and 28.

In 68.67% of the units the death rate falls between 5 and 11 and the largest number of units (26.66%) have death rate between 7 and 9.

5. 4 Comparison of vital rates obtained from Sample Registration and Civil Registration

Year	Birth rate			Death rate		
	S. R.	C. R.	C. R. as % of S. R.	S. R.	C. R.	C. R. as % of S R.
1966	37 38	22.52	60.2	10 45	5 38	51.5
1967	35.30	20.69	57.0	10.13	4 86	48.0
1968	34.33	20.89	60 8	10.38	4.66	44.9
1969	33.30	19.64	56 0	9 80	4 29	43.8
1970	32.26	14.70	45.6	9 23	3.36	36.4
1971	31 88	18 54	58.1	9.23	4.25	46.4
1972	32.09	21.15	69.9	9.39	4.63	49.3
1973	29.91	20 87	69.8	8 67	4.75	54.9
1974	26.96	16.69	61.9	8 00	4.36	54.5
1975	28.17	N.A.		8.48	N.A.	

A comparison between the vital rates obtained from the Civil Registration and Sample Registration is shown in the above table. The inadequacy of the Civil Registration system in obtaining the accurate vital rates is clear from the given Table.

5.5 Still birth :

The still birth rates which is an indicator of pregnancy wastage, for the year 1975 is estimated as 19 44 i.e. 1.16 higher than that for the previous year. The estimated rates for the last seven years are given as follows.

Year	1969	1970	1971	1972	1973	1974	1975
Still birth rate	23.06	25.63	17.21	27.25	25.01	18.28	19.44

5.6 Sex ratio at birth :

The sex ratio at birth (number of males for 100 females) for the last few years are given below:—

Year	Sex ratio at birth
1971	107.9
1972	105.7
1973	110.2
1974	103.2
1975	108.0

5.7 Child women ratio :

This is a fertility index and is defined as the number of children in the age group of 0-4 years per 1000 women in the child bearing age of 15-49 years. This ratio for 1975 is 463. This is considerably low when compared to 479 for 1974, 511 for 1973, 520 for 1972 and 519 for 1971.

5.8 Fertility rate :

The fertility rate of women in the age group of 15-49 years has been calculated from the number of births that occurred during 1975 and the number of women in the relevant age groups. The age distribution of the female population and their fertility performance are used to estimate the various fertility rates such as general fertility rates, age specific fertility rates, total fertility rates etc.

1. *General fertility rate.*—The general fertility rate during the year 1975 is 108.6 which is calculated as the average number of children born alive during the year per 1000 women in the reproductive age group of 15-49: The General Fertility Rate for 1975 is higher than the general fertility rate for 1974 which stood at 104.0 but less than the other preceding years. The general fertility rate for rural Kerala for the last few years are given below:

Year	G.F.R.	Year	G.F.R.
1969	129.2	1973	117.1
1971	124.7	1974	101.0
1972	126.4	1975	108.6

Age specific fertility rate is the number of children born alive per 1000 women of a particular age-group during an year.

2. *Age specific fertility rate (1975)*

Age of women	Fertility rate
15—19	42.0
20—24	189.0
25—29	195.7
30—34	134.8
35—39	95.0
40 44	29.9
45—49	5.5

3. The total fertility rate (TFR) for the year 1975 is calculated as 3.5 which is an estimate of the number of children that a woman would bear, if she lives through her reproductive period being exposed to the same set of age specific fertility rates prevalent during the year. The T.F.R. for some previous years are given below for comparison.

Year	*1975*	*1974*	*1973*	*1972*	*1971*	*1969*	*1969* All India
T.F.R. (Rural Kerala)	3.5	3.3	3.8	4.2	4.1	4.3	5.10

5.9. Order of birth of live born children:

The percentage distribution of births according to order of live births for the last 2 years is given in the Table below:

Order of birth	% under each order *1974*	*1975*
1	28.7	29.4
2	21.9	22.5
3	16.8	16.5
4	11.9	11.3
5	8.0	7.6
6	5.5	5.7
7	3.4	3.4
8	2.2	1.9
9	1.0	1.0
10	0.6	0.4
10 +	—	0.3
Total	100.00	100.00

It is observed that during the year 1974, 67.4% of the live births comes under 1st, 2nd and 3rd orders of births and 32.6% under the higher orders of birth while they constitute 68.4 and 31.6% respectively for 75, an increase in the first three orders and a decline for the higher orders which may be due to the growing inclination and change of attitude of the common mass towards the family planning programmes year after year.

The enactment of the Government order for the lifting the minimum age of marriage mav proluce significan effects in the lowering of births in the State. In other words nearly 9% of the births which comes under the age group 15-19 can either be reduced or averted by that decision.

The percentage of births for each age group of mother for the year 1975 is as follows:

Age group	% Birth (1975)
15—19	8 80
20—24	36 01
25—29	28 20
30—34	14.26
35—39	9 55
40—44	2 75
45—49	0.43
All	100.00

5.10 Infant Mortality Rate (IMR)

The infant mortality rate for the year 1975 is estimated as 57.3 per 1000 live births. It is 1.4 higher than that of the previous year. The IMRs of since 1966 are given below:

Year	I. M. R.
1966	68.3
1967	67 4
1968	64.0
1969	57 4
1970	52.6
1971	60.9
1972	66 0
1973	51.7
1974	55.9
1975	57.3

The region-wise analysis of the infant mortality rate exhibits a noticeable variation in the rate in such a way that the lowest rate is seen in low land region and the highest in the high land region and this pattern is discernible in previous years also as mav be seen from the region-wise table given below:

Region	1971	1972	1973	1974	1975
Lowland	34 4	55.3	46.6	30.7	45 8
Midland	61.3	61.2	46 8	55.4	58 1
Highland	98.6	101 7	78.1	95.2	68 5

5.11 Age specific death rate (Table-8)

The age specific death rates of 5 year interval worked out for the year 1975 are given in the Table appended. During the year 1975 the annual death rate for males is higher than that of the females, 9.18 for males and 7 90 for females.

The infant mortality rate (both sex combined) for the year 1975 is 57 26 which is much higher than for the previous year ~~(53.78)~~. Another imortant feature noticed is the continuous higher mortality rate of the females over males in the age group of 1-4 since so many years. The lowest mortality rate is seen in the age group 10-14 and the highest in below one age group and 70 + age group.

5.12 Expectation of life (Table-14)

The life table constructed for 1975 based on the average of the age specific death rates for the years 1973. 1974 and 1975 is given in the appended Table-14. The peculiarity noticed in the life table is the longer expectation of life for females than for males in all ages. The expectation of life at birth for the year 1975 is 63.18 while it was 62.1 calculated for the previous year, the same at the age 70 is 9.43 for 1975 and 9.38 for 1974.

CHAPTER VI

Estimation Procedure

6.1 Estimation Procedure

The rural sector of the State is divided into three natural regions and each region into four strata. The sample units of State are selected from the strata in proportion to their population size. The stratum estimates of births, deaths and population are prepared by the unbiased method of estimation. Adding the estimates at the stratum level the estimates for the natural regions are obtained. The State level estimate is obtained by summing up the estimates for the natural regions To obtain the variance and co-variance of the estimates at the natural region and State level from the variance and co-variance of the estimates at the stratum level, the procedure is the same

6.2 Adjustments for bifurcation of the sample units

Though the population of all the sample units selected in 1965 was less than 2000, it eventually increased and in 60 units exceeded the 2000 limit as on 1-7-1969. Consequently these 60 units were bifurcated and a portion retained for observation. The bifurcation took effect on 1-7-1970 and the events recorded for the second half of 1970 onwards pertained to the retained portion of the bifurcated units. Therefore in the case of these units, the data pertaining to the whole sample area (as selected on 1-7-1965) were obtained by inflating the data such as births, deaths and population actually observed in the retained portion of the units.

6.3 Notation and Formulae used

(a) *Notation*:

N = Total number of units in the stratum

n = Number of units selected from the stratum

$M = \frac{N}{n}$ = Raising factor for arriving at stratum estimates.

Pi = Mid-year population in the ith unit of the stratum

bi = Number of live births in the ith unit of the stratum

di = Number of deaths in the ith unit of the stratum

si = Number of still births in the ith unit of the stratum

fi = Number of infant deaths in the ith unit of the stratum

$P = M \Sigma Pi$ = Estimate of stratum population

$B = M \Sigma bi$ = Estimate of live births in the stratum

$D = M \Sigma di$ = Estimate of deaths in the stratum

$S = M \Sigma si$ = Estimate of still births in the stratum

$I = M \Sigma fi$ = Estimate of infant deaths in the stratum

$r_1 = \frac{B}{P} \times 1000$ = Crude birth rate of the stratum

$r_2 = \frac{D}{P} \times 1000$ = Crude death rate of the stratum

$r_3 = \frac{S \times 1000}{S + B}$ = Estimated still birth rate of the stratum

$r_4 = \frac{I \times 1000}{B}$ = Estimated infant death rate of the stratum

$K = \frac{N(N-n)}{n(n-1)}$ = Expansion factor for arriving at variance and co-variance of stratum estimates

(b) *Variance*:

$$\text{Variance of } P = V(P) = K\,\Sigma\left[Pi - \frac{\Sigma Pi}{n}\right]^2$$

$$\text{Variance of } B = V(B) = K\,\Sigma\left[bi - \frac{\Sigma bi}{n}\right]^2$$

$$\text{Variance of } D = V(D) = K\,\Sigma\left[di - \frac{\Sigma di}{n}\right]^2$$

(c) *Co-variance*:

$$\text{Co-variance of } P \text{ and } B = Cov\,(P.B.) = K\Sigma\left[Pibi - \frac{\Sigma Pi\ \Sigma bi}{n}\right]$$

$$\text{Co-variance of } P \text{ and } D = Cov\,(P.D.) = K\Sigma\left[Pidi - \frac{\Sigma Pi\ \Sigma di}{n}\right]$$

(d) *Variance of birth and death rates*:

$$\text{Variance of birth rate} = V(r1) = r1^2\left[\frac{V(P)}{P2} + \frac{V(B)}{B2} - \frac{2\ Cov\ (P.B)}{P.\ B.}\right]$$

$$\text{Variance of death rate} = V(r2) = r2^2\left[\frac{V(P)}{P2} + \frac{V(D)}{D2} - \frac{2\ Cov\ P.D}{P.\ D.}\right]$$

(e) *Co-efficient of variation of birth and death rates*:

$$\text{C. V. of } r1 = \frac{\sqrt{V(r1)} \times 100}{r1} = 100\left[\frac{V(P)}{P2} + \frac{V(B)}{B2} - \frac{2\ Cov\ (P.B)}{P.\ B.}\right]^{\frac{1}{2}}$$

$$\text{C. V. of } r2 = \frac{\sqrt{V(r2)} \times 100}{r2} = 100\left[\frac{V(P)}{P2} + \frac{V(D)}{D2} - \frac{2\ Cov\ (P.D)}{P.\ D.}\right]^{\frac{1}{2}}$$

APPENDIX—I

Tables Presented

Table	I	—	Number of units and population in the Sample and the Universe
Table	II	—	Sample Population and estimated population
Table	III	—	Vital events observed and estimated
Table	IV	—	Estimated vital rates and their co-efficient of variation
Table	V	—	Sex-wise distribution of birth, death and population
Table	VI	—	Age and Sex-wise distribution of sample population
Table	VII	—	Vital events according to month of occurrence
Table	VIII	—	Sex--wise distribution of deaths and age specific death rate
Table	IX	—	Age specific fertility rate (all women)
Table	X	—	Births and Deaths classified according to medical attention
Table	XI	—	No. of events detected by Enumerator and Supervisor
Table	XII	—	Births/Deaths detected through overlapping survey and intensive survey
Table	XIII	—	Number of marriages by age
Table	XIV	—	Expectation of life

APPENDIX—II

List of Forms Used

Form	—	1	—	List of households
Form	—	2	—	Household schedule
Form	—	3	—	List of births by Supervisor
Form	—	4	—	List of deaths by Supervisor
Form	—	5	—	List of births by Enumerator
Form	—	6	—	List of deaths by Enumerator
Form	—	7	—	List of pregnant women
Form	—	10	—	Monthly reports of births and deaths
Form	—	11	—	Abstract results of half yearly survey
Form	—	12	—	Age-wise distribution of population
Form	—	15	—	List of marriages

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SAMPLE REGISTRATION (RURAL SAMPLES) KERALA—1975

TABLE 1—Number of Units and 1951 Population in the universe and in the samples

Stratum/Natural Division/State		Universe: Number of units (1961 Census) Segment (N)	Census Villages	Population (1961)	Sample: Number of units Selected (n)	Population (1961)	%units selected (n/N)	%of Sample Population	Raising factor for stratum estimates N/n
(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	319	319	512766	5	7659	1.44	1.49	63.80000
	D	1718	609	2731775	29	43473	1.68	1.60	59.24137
	LOW LAND	2316	1207	3393582	36	52258	1.55	1.54	..
II	A	498	493	151292	1	341	0.20	0.23	498.00000
	B	791	791	593342	6	5241	0.76	0.88	131.83333
	C	1178	1178	1722319	18	27057	1.53	1.57	65.44144
	D	4066	1566	6213177	66	101026	1.62	1.61	61.60606
	MID LAND	6533	4033	8683130	91	133665	1.39	1.53	..
III	A	77	77	20310	..	..	..	..	..
	B	69	69	51719	1	976	1.45	1.89	69.00000
	C	145	145	215301	3	4950	2.07	2.29	48.33333
	D	1161	356	1897908	19	30145	1.64	1.61	61.10526
	HIGHLAND	1452	647	2185828	23	36071	1.58	1.67	..
	STATE	10301	5887	14267540	150	221994	1.46	1.55	..

SAMPLE REGISTRATION (RURAL SAMPLES) KERALA—1975

TABLE 2—Sample population and estimated population

Stratum/ Region		Observed population in retained portion			Sample Population and Estimated Population—1975					
					Calculated for whole sample area			Estimated for the stratum		
		1-1-1975	1-7-1975	1-1-1976	1-1-1975	1-7-1975	1-1-1976	1-1-1975	1-7-1975	1-1-1976
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I	A	670	671	686	670	671	686	56950	57035	58310
	B	1047	1073	1095	1047	1073	1095	171708	175972	179580
	C	7928	7838	7973	10120	9903	10075	706376	691230	703235
	D	47332	47415	47383	59623	59404	59365	3532148	3519175	3516864
	LOW LAND	56977	56907	57137	71460	71051	71221	4467182	4443412	4457989
II	A	437	432	421	437	432	421	217626	215136	209658
	B	6620	6582	6630	6620	6582	6630	872737	867727	874055
	C	30071	30185	30281	36257	36395	36512	2372819	2381850	2389507
	D	108661	109340	109761	145037	144916	144812	8939553	8932095	8925685
	MID LAND	145789	147039	147093	188351	188325	188375	12402735	12396808	12393905
III	B	1229	1218	1232	1229	1218	1232	84801	84042	85008
	C	4688	4732	4886	4688	4732	4886	226587	228713	236157
	D	28653	28834	29210	38175	40350	40878	2332698	2465598	2497861
	HIGHLAND	34570	34784	35328	44092	46300	46996	2644081	2778353	2819026
	STATE	237336	238820	239558	303903	305676	306592	19513998	19618573	19675920

SAMPLE REGISTRATION (RURAL SAMPLES) KERALA 1975

TABLE 3—Vital events observed in retained portion and calculated for whole sample area and estimated for stratum

Stratum/Region	Retained portion				Whole sample area				Estimated for stratum			
	Births	Deaths	Still births	Infant deaths	Births	Deaths	Still births	Infant deaths	Births	Deaths	Still births	Infant deaths
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
I A	26	11	..	4	26	11	..	4	2210	935	..	340
B	27	10	..	2	27	10	..	2	4428	1640	..	328
C	206	70	6	8	260	87	8	10	18148	6071	558	698
D	1219	391	24	52	1527	489	30	66	90451	28968	1777	3910
LOWLAND	1478	482	30	66	1840	597	38	82	115247	37614	2335	5276
II A	13	13	..	1	13	3	..	1	6474	1494	..	498
B	163	48	1	9	168	48	1	9	22147	6328	132	1186
C	793	246	18	30	955	296	22	36	62498	19371	1440	2356
D	3139	939	58	198	4140	1238	77	261	255174	76305	4746	16087
MIDLAND	4113	1236	77	238	5276	1585	100	307	346293	102498	6317	20127
III B	41	12	1	2	44	12	1	2	3036	828	69	138
C	221	50	2	20	221	50	2	20	10681	2415	97	967
D	906	258	25	60	1266	360	35	84	77358	21997	2139	5133
HIGHLAND	1171	320	28	82	1531	422	38	106	91075	25240	2305	6238
STATE :	6722	2038	135	386	8647	2604	176	495	552615	166352	10957	31641

TABLE 4—Estimated birth and death rates and still birth and infant death rates

Stratum/Region	No. of samples in stratum	Crude birth rate		Crude death rate		Natural growth rate %	Still birth rate per thousand births	Infant death rate per thousand live births
		Per thousand population	Co-efficient of variation	Per thousand population	Co-efficient of variation			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I A	1	38.75	..	16.39	..	2.24	..	153.85
B	1	25.16	..	9.32	..	1.58	..	74.07
C	5	26.25	10.5	8.78	8.9	1.75	29.83	38.46
D	29	25.71	4.3	8.23	4.2	1.75	19.27	15.38
LOWLAND	36	25.94	3.9	8.47	4.3	1.75	19.86	45.78
II A	1	30.09	..	6.94	..	2.32	..	76.92
B	6	25.52	7.6	7.29	14.2	1.82	5.92	53.55
C	18	26.24	6.8	8.13	8.0	1.81	22.52	37.70
D	66	28.57	3.3	8.54	5.8	2.00	18.26	63.04
MIDLAND	91	27.93	2.8	8.35	4.6	1.96	17.91	58.12
III B	1	36.12	..	9.85	..	2.63	22.22	45.45
C	3	46.70	24.7	10.56	14.4	3.61	9.00	90.53
D	19	31.37	4.9	8.92	10.4	2.25	26.91	66.35
HIGHLAND	23	32.78	6.2	9.08	8.6	2.37	24.68	68.49
STATE :	150	28.17	2.3	8.48	3.3	1.97	19.44	57.26

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA 1975

TABLE 5—Sex-wise dirtribution of births, deaths and population

Region	Sex	Observed in retained portion			Calculated for the whole Sample area			Estimated for the region		
		Births	Deaths	Population 1-7-1975	Births	Deaths	Population 1-7-1975	Births	Deaths	Population 1-7-1975
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
LOWLAND	Male	748	263	27874	932	326	34743	58257	20292	2175419
	Female	730	219	29123	908	271	36308	56990	17322	2267993
	All	1478	482	56997	1840	597	71051	115247	37614	4443412
MIDLAD	Male	2137	632	72546	2744	810	92936	179333	53092	6106472
	Female	1976	604	74493	2532	775	95389	166960	50406	6290336
	All	4113	1236	147039	5276	1585	188325	346293	103498	12396808
HIGHLAND	Male	626	187	17455	822	249	23251	48839	14955	1394992
	Female	545	133	17329	709	173	23049	42236	10285	1383361
	All	1171	320	34784	1531	422	46300	91075	25240	2778353
STATE	Male	3511	1082	117875	4498	1385	150930	286429	88339	9676883
	Female	3251	956	120945	4149	1219	154746	266189	78013	9941690
	All	6762	2038	238820	8647	2604	305676	552615	166352	19618573

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STAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA 1975

TABLE 6—Mid-year population by sex and age (Retained portion)

Age in Years	Lowland		Mid and		Highland		State		All
	Male	Female	Male	Female	Male	Female	Male	Female	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Below 1 Year	657	637	1834	1779	482	444	2973	2860	5833
1—4	2673	2612	7455	6977	1705	1694	11833	11313	23146
5—9	3605	3506	9575	9413	2159	2117	15339	15036	30375
10—14	3535	3294	9317	9123	2176	2079	15028	14496	29524
15—19	3277	3328	8527	8756	2065	2071	13869	14155	28024
20—24	2847	3238	7011	7812	1712	1835	11560	12885	24445
25—29	2199	2410	5313	5934	1388	1402	8930	9746	14676
30—34	1427	1631	4012	4505	1017	1013	6556	7149	13605
35—39	1389	1673	3363	4102	968	1026	6220	6801	13021
40—44	1367	1512	3319	3706	839	906	5515	6214	11729
45—49	1234	1386	3302	3161	817	774	5353	5321	10674
50—54	1064	1090	2589	2477	699	604	4352	4171	8523
55—59	875	898	2139	2175	510	443	3524	3521	7045
60—64	621	611	1547	1500	361	362	2529	2533	5062
65—69	487	541	1167	1210	258	232	1912	1983	3895
70 +	617	726	1566	1713	299	322	2482	2761	5243
All ages	27874	29123	72546	74493	17455	17329	117875	120945	23 820

TABLE 7—Births and deaths classified according to month of occurrence

Region	Total	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
A. BIRTHS													
Lowland	1478	122	82	137	109	116	115	151	133	116	147	114	136
Midland	4113	321	291	351	340	354	364	390	386	330	312	324	348
Highland	1171	103	74	119	103	115	95	123	105	87	84	70	93
State	6762	546	447	607	552	585	574	664	626	533	543	508	577
B. DEATHS													
Lowland	482	45	39	36	24	36	38	64	43	49	36	33	38
Midland	1236	110	85	97	93	88	98	134	125	114	98	100	94
Highland	320	34	20	16	23	24	35	34	26	31	24	24	29
State:	2038	190	144	149	140	148	171	232	194	194	158	157	161

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA 1795

TABLE 8—Number of deaths and death rates by age and sex

Age in years	Number of deaths						Age specific death rate					
	Lowland	Midland	Highland	State			Lowland	Midland	Highland	State		
	All	All	All	All	Male	Female	All	All	All	All	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
0—1	66	238	82	386	206	180	51.00	65.87	88.55	66.18	69.29	62.94
1—4	50	145	28	223	95	128	9.41	10.05	8.24	9.63	8.03	11.31
5—9	16	32	16	64	36	28	2.25	1.69	3.74	2.11	2.35	1.86
10—14	8	20	6	34	15	19	1.17	1.08	1.41	1.15	1.00	1.31
15—19	6	24	3	33	14	19	0.91	1.39	0.73	1.18	1.01	1.34
20—24	11	30	5	46	24	22	1.81	2.03	1.41	1.88	2.08	1.71
25—29	11	33	11	55	25	30	2.39	2.93	3.94	2.94	2.80	3.08
30—34	6	16	3	25	17	8	1.96	4.88	1.48	1.84	2.63	1.12
35—39	7	25	9	41	22	19	2.29	3.14	4.51	3.15	3.54	2.79
40—44	12	26	13	51	33	18	4.17	3.66	7.45	4.35	5.98	2.90
45—49	13	50	8	71	48	23	4.96	7.74	5.03	6.65	8.97	4.32
50—54	16	55	18	89	57	32	7.43	10.86	13.81	10.44	13.10	7.67
55—59	33	69	16	118	75	43	18.61	15.99	16.70	16.75	21.28	12.21
60—64	27	58	25	110	67	43	21.92	18.67	34.58	21.73	26.49	16.98
65—69	45	102	26	173	92	81	43.77	42.91	53.06	44.42	48.12	40.85
70 +	115	313	51	519	256	263	115.41	95.46	82.13	98.99	103.14	95.26
All	482	1236	320	2038	1082	956	8.46	8.41	9.20	8.53	9.18	7.90

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA 1975

TABLE 9—Number of births by age of mother/women by age/and age specific fertility rate.

REGION	Age of mother/women in years								
	15—19	20—24	25—29	30—34	35—39	40—44	45—49	Total	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A—Number of Births by age of Mother									
Lowland	125	549	443	198	129	33	1	1478	..
Midland	366	1450	1177	588	396	116	20	4113	..
Highland	104	436	287	178	121	37	8	1171	..
State All	595	2435	1907	964	646	186	29	6762	..
State Female	292	1158	918	461	313	94	15	3251	..
B—Number of women in the age group									
Lowland	3323	3[illegible]38	2410	1631	1673	1512	1386	15178	..
Midland	8756	7812	5934	4505	4102	3795	3161	38066	..
Highland	2071	1835	1402	1013	1026	906	774	9027	..
State	14155	12885	9746	7149	6801	6214	5321	62271	..
C—Age specific fertility rate								T.F.R.	G.F.R.
Lowland	37.6	169.5	183.8	121.3	77.1	21.8	0.7	3.06	97.4
Midland	41.8	185.6	198.3	130.5	96.5	30.6	6.3	3.45	108.0
Highland	50.2	237.6	204.7	175.7	117.9	40.8	10.3	4.19	129.6
State All	42.0	189.0	195.7	134.8	95.0	29.9	5.5	3.45	108.6
State Female	20.6	89.9	94.2	64.5	46.0	15.1	2.8	1.67	52.2

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA—1975

TABLF 10 A— Births Classified According to Medical Attendance

Region	Total	Type of attendance				
		Institutional	*Trained Professional*	*Untrained Professional*	*Non-Professional*	*Not stated*
(1)	(2)	(8)	(4)	(5)	(6)	(7)
Low land	1478	519	426	481	22	..
Mid land	4113	1148	882	1461	616	6
land Hhig	1171	248	167	413	328	15
State	6762	1945	1475	2355	966	21

TABLE 10 B— Deaths Classified According To Medical Attendance

Region	Total deaths	Type of medical attendance			
		Institutional	*Recognised Practitioner*	*Unrecognised Practitioner*	*None*
(1)	(2)	(3)	(4)	(5)	(6)
Low land	482	100	192	85	105
Mid land	12:6	249	442	214	331
High land	320	62	95	37	1:6
State	2038	411	729	336	562

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA—1975

TABLE —11 Births and deaths netted by enumerators and supervisors and detected through overlapping and intensive surveys

Region	BIRTHS								DEATHS							
	Netted by Er and Sr.	Common to Er and Sr.	By Er. alone		By Sr. alone		Overlapping and intensive survey	Grand total	Netted by Er and Sr.	Common to Er and Sr.	By Er alone		By Sr. alone		Overlapping and intensive survey	Grand total
			No.	%	No.	%					No.	%	No.	%		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Low land	13[illegible]0	1018	1137	81.8	1271	91.4	88	1478	451	333	387	85.8	397	88.0	31	482
Mid land	3879	3077	3265	84.2	3691	95.2	234	4113	1153	873	971	84.2	1055	91.5	83	[illegible]236
High land	1092	812	874	80.0	1030	94.3	79	1171	300	225	244	81.3	281	93.7	20	320
State	6361	4[illegible]07	5[illegible]76	8[illegible].9	5992	94.2	401	6[illegible]6[illegible]	1904	1431	1602	84.1	1733	91.0	134	[illegible]038

TABLE 12 Extra events detected through overlapping and intensive surveys

Region	BIRTHS					DEATHS				
	Total	Place		Kind		Place		Kind		
		In	Out	Live births	Still births	In	Out	Infant deaths	Other deaths	Total
( )	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Low land	88	44	44	88	..	25	6	8	23	31
Mid land	234	97	137	234	..	52	31	21	62	83
High land	79	39	40	79	..	15	5	9	11	20
State	401	180	221	401	..	92	42	38	96	134

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA—1975

TALLE: 13— Number of marriages classified according to age 1975

Age group	First marriage		Remarriage		All marriages	
	Males	Females	Males	Females	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
15—19	28	620	..	13	23	633
20—24	373	767	3	41	376	808
25—29	541	188	32	38	573	226
30—34	129	18	19	18	148	36
35—39	29	7	14	9	43	16
40—44	7	1	6	2	13	3
45—49	..	..	15	4	15	4
All	1107	1601	89	125	1196	1726

TABLE 14— Expectation of life in years. (Based on age specific death rates for 1973, 74 and 75)

Age	All	Male	Female	Age	All	Male	Female
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
0	63.18	60.91	63.26	35	37.39	34.52	37.73
1.	66.03	63.70	66.93	40	32.98	30.39	33.26
5	64.63	61.98	65.08	45	28.67	26.21	28.76
10	60.36	57.57	60.72	50	24.56	22.23	24.91
15.	55.63	52.82	56.00	55	20.74	18.53	20.81
20	50.92	48.04	51.36	60	16.09	15.05	16.27
25	46.34	43.46	46.76	65	12.25	11.88	12.61
30.	41.88	38.95	42.31	70	9.43	9.25	9.61

SAMPLE REGISTRATION SCHEME (RURAL SAMPLES) KERALA—1975

TABLE 15— Birth rate, Death rate, etc. in the Districts

District	No. of samples	Birth rate		Death rate		Still birth rate per 1000 births	Infant mortality rate per 1000 live births
		Rate per 1000 Population	C. V.	Rate per 1000 Population	C. V.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
.rivandrum	9	26.31	5.32	7.67	11.73	18.65	55.94
Quilon	16	22.07	9.02	7.21	7.48	17.39	36 52
Alleppey	12	24.39	7.91	8.34	13.91	16.99	38.22
Kottayam	6	22.07	6.84	8.81	11.35	10.36	62.18
Idukki	6	39.21	16.70	9.58	14.51	28.41	99.43
Ernakulam	13	22.33	5 42	7.33	7.64	13.13	43.76
Trichur	16	26.46	4.42	8.07	10.03	15.96	58.51
Palghat	16	34.27	7.00	13.C5	6.51	19 38	87 80
Malappuram	17	35.53	6.95	10.13	8.98	23.13	68.28
Kozhikode	21	28.52	5.26	7.59	10.28	23.64	42.14
Cannanore	18	29.34	4.91	7.56	9.39	22.36	45.73

BUREAU OF ECONOMICS AND STATISTICS
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List of Priced Publications

1. Statistical Hand Book of Kerala 1972 (Latest) and back issues
2. Basic Statistics relating to Kerala Economy 1956-57 to 1973-74
3. Administration report 1974-75 and back issues
4. Land Reforms Survey of Kerala 1968
5. The Third Decennial World Census of Agriculture 1970-71—Report for Kerala State Vol. I and II
6. Demographic Report of Kerala 1901-61 (with addendum for 1971)

Copies of the above Publications can be had from the Superintendent of Government Presses, Trivandrum.

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