



**GOVERNMENT OF KERALA**

**RESIDENTIAL VITAL RATES  
Corporations & Municipalities**

**ANNUAL REPORT 1993**

**DEPARTMENT OF ECONOMICS & STATISTICS  
THIRUVANANTHAPURAM 1997**



GOVERNMENT OF KERALA

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RESIDENTIAL VITAL RATES  
IN  
CORPORATION AND MUNICIPALITIES  
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DEPARTMENT OF ECONOMICS & STATISTICS  
THIRUVANANTHAPURAM



## P R E F A C E

This report presents the adjusted residential rates of birth and death in the Municipal and Corporation areas of Kerala during the year 1993. These rates have been estimated from the registered rates of birth and death to normal residents, after making adjustments for under registration and for the events occurred outside the Municipal/Corporation areas. The results of the spot check survey conducted in various Municipalities & Corporations are used for this purpose.

This report has been prepared by the Vital Statistics Unit of this Department.

Thiruvananthapuram  
3rd December, 1996

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**D I R E C T O R**  
**DEPARTMENT OF**  
**ECONOMICS & STATISTICS**

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This report presents the adjusted residentials rates of birth  
and death in the Municipality and Corporation areas of Kerala during  
the year 1989. These rates have been estimated from the revised  
census data of birth and death to wards' residents, after making  
allowances for under registration and other causes  
such as emigration from rural residential areas to the urban  
areas due to the Municipality Corporation areas. The results of the spot  
check survey conducted in various municipalities & corporation  
areas for this purpose.

This report was prepared by the Micro Statistics Unit  
of the Central Bureau of the Census.

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AND DEVELOPMENT, 1990

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## RESIDENTIAL VITAL RATES 1993

### 1. Introduction

The birth and death registration system (Civil Registration) in the state is governed by the Birth and Death Act 1969 and the rules made there under in 1970. All the births and deaths, as per these rules, are to be registered at the place of occurrence itself even if it occurred to a normal resident or to an outsider. In order to get better modern medical facilities, available in towns and cities, the people from rural areas flow to the urban areas, thereby increasing the rate of registration of vital events in towns.

The birth and death act, and rules framed these under, envisage the registration of vital events occurred in the country. The registration of all vital events occurred in the country. The registration of vital events is made compulsory and various remedial measures are taken up to avoid omissions in registration. But the extent of under registration and other residential data are not available. It is in this context, the scheme for improvement of vital statistics in urban areas - the spot check survey - was introduced.

### 2. Objectives

The main objectives of this scheme are:-

1. To determine the extent of under registration of vital events in Corporations and Municipalities.
2. To findout the residential vital rates in towns and cities.
3. To conduct study on urban mortality cause profile.
4. To promote awareness of registration system among the public.

### 3. Coverage of the Survey

The three City Corporations and 30 major Municipalities and Guruvayoor Township are selected for the conduct of this scheme. During the year 1993, the Survey was successfully carried out in all the centres. The work in entrusted with two Upper Division Compilers and one Research Assistant posted in the three City Corporations, and in Alappuzha and Kollam Municipalities. In the other Municipalities the work is carried out by one Upper Division Compiler. The District level Officers extend their supervision and guidance. The following surveys are also conducted as a complementary to the Civil Registration Scheme.

#### Scheme for the improvement of Vital Statistics

1. The Sample Survey Scheme.
2. The Survey of cause of death (Rural).
3. The medical certification of cause of death.

### 4. General Findings of the Survey

**Table-1 :-** Represents the estimated mid-year population of Corporations and Municipalities for 1993 to 2000 A.D. A few Municipalities showed a decreasing trend.

**Table-2 :-** Shows the census population (1991) of Scheduled Caste/Scheduled Tribe in Corporation and Municipalities which will cater the needs of the data users. The strength of Scheduled Caste population is high in Thiruvananthapuram Corporation (43297) but the strength of Scheduled Tribes was highest (943) in Kochi Corporation.

**Table-3 :-** Represents a brief report on birth and death rates of the Municipalities and Corporations for the year 1993. Most of the urban units showed an increasing trend in the number of births reported. Thalassery Municipality registered the highest birth rate (45-69) this year also. The lowest death rate - 1.71 - was recorded in Neyyattinkara Municipality, it was 2.51 for previous year. The highest death rate - 11.64 - was registered in Kozhikode Corporation, while that for 1992 was 10.18 recorded from Thalassery Municipality. The death rates showed a slight upward trend.

**Table-4 :-** Shows the number of medical institutions and its bed strength separately for public and private sectors. The highest number of Private Hospitals (25) with bed strength 6738 was available in Thiruvananthapuram Corporation. But the highest number of Private Hospitals (61) with bed strength 3764 was available in Kochi Corporation. The medical facilities available in the following major municipalities also deserve attention.

Place	No. of Private Hospitals	Bed strength
Kollam	21	1238
Thiruvalla	7	700
Pala	9	512
Aluva	12	577
Perumbavoor	12	541
Trissur	14	893
Palakkad	17	453
Thalassery	17	477
Kannur	29	497

It is seen that private medical institutions have an important role in the field of health and medical care. The available data on private medical institutions reveal that a large number of people are still not depending the free medical care provided by Government.

**Table-5 :-** Shows the number of burial grounds and cremation grounds both in public and private sectors with the number of registration units.

**Table-6 :-** This table shows the number and area of registration units with density per Square Kilometre.

**Table-7 :-** This table provides the total number of registered vital events in the municipalities/corporations. The events occurred to normal residents of the town/city are sorted out from the total events registered. The particulars pertaining to live births, still births, infant deaths, maternal deaths and other deaths are also collected.

It reveals the fact that large number of people flow from the rural areas to the well equipped hospitals of the towns and cities. The highest number of live births 16020 for normal residents was registered in Thiruvananthapuram Corporation, but only 7198 births were registered in Kochi Corporation. In the case of municipalities, Thalassery comes first

(5)

with 3318 births for normal residents while that for Guruvayoor was only 53. 3919 deaths were registered in Kozhikode Corporation. 2593 events were reported for Thiruvananthapuram Corporation. The highest number of infant mortality 423 was also reported from Kozhikode Corporation. Among municipalities, Alappuzha stands first with 44 registered events of infant mortality to normal residents. The number of still births reported from Kozhikode and Kochi Corporation were 173 and 49 respectively. Maternal deaths are reported only from two centres.

**Table-8** :- This table attempts to highlight the incidence of different diseases reported from towns and cities. 7830 mortality cases were reported from Thiruvananthapuram Corporation. 5325 and 7810 cases were registered at Kochi and Kozhikode corporations respectively. In the case of municipalities Trissur comes first with 2574 events followed by Alappuzha with 2237 mortality cases. In most of the municipalities and corporations the major cause group diseases of the circulating system comprising mainly of Heart Attack was accounted as major specific cause of mortality. Pulmonary diseases and cancer also accounted for several deaths in many centres. The cause of profile structure obtained from the survey may very slightly as some of the cases are not medically certified and the incumbents entrusted with the scheme are not para medical staff.

**Table-9** :- The results of spot check survey conducted in town and cities are presented in this table. The objection of the survey is to build up statistics relating to normal residents of the town/city. The extent of under registration and occurrence of outside registration are also determined for each town/city selected for the survey.

**Table-10** :- The occurrence of outside events and under registration showed a decreasing trend during the year. Under registration of births was reported from very few municipalities, the highest rate reported was from Trissur and Cherthala municipalities; 13.33 and 11.54 respectively. The extend of under registration in other centres was not so conspicuous. But under registration of deaths still exists in many centres. The highest rate of under registration of death was reported from Trissur (23.13) followed by Chalakkudy, Kozhikode and Kochi (18.45, 18.16 and 17.15 respectively). Several public awareness programmes are implemented by the municipalities to achieve centpercent registration of vital events as per the guidelines issued by the chief registrar of births and deaths.

Outside registration of birth and deaths still exist in most of the centres. It may be due to the mobility of people for employment or for better medical available in modern well equipped hospitals. The highest rate of outside registration of birth is reported from Irringalakkuda 85.08 followed by Kunnamkulam 76.86. Highest rate of outside death registration was reported from Changanacherry Minicipality 34.29 followed by Cherthala and Kannur 31.37 each.

**Table-11** :- Registered vital rates and adjusted residential vital rates are presented in this table. The registered birth rate reported from Thalassery was the highest 42.24 followed by Kozhikode Corporation 33.01 very low rate of vital registration indicate that medical facilities are not satisfactory in such minicipalities.

Adjusted residential birth rate was highest in Thalassery and Kozhikode Corporation, Vadakara and Cherthala minicipalities recorded highest rate of adjusted residential vital rates. The disparity between registered vital rates and adjusted residential vital rates is not so pronounced in the case of deaths.

**Table-12 :-** Provides birth and death rate for the last 6 years beginning from 1988.

### Conclusion

The result of this survey conducted in the city corporation and municipalities are encouraging. Eventhough under registration exists in the case of deaths to some extent it is not so conspicuous in the case of births. The unregistered events are brought to the notice of the authorities and steps are taken to minimise the rate of under registration.

### Appendix

#### Method of calculation of adjusted residential vital rates

Residential vital rates can broadly be defined as the rate of occurrence of vital events to the normal residents of an area in a year. The vital events occurring to normal residents enumerated during the spot check are divided into three categories.

1. Events occurring inside the town registered.
2. Events occurring inside the town but not registered.
3. Events occurring outside the town registered or unregistered.

For calculation of the percentage of under registration the events occurring to persons coming to the town/city to avail the better medical facilities are excluded and those of normal residents who are going outside the town are to be included.

- |  |   |
|--|---|
| I. Percentage of under registration.   | (No. of events occurred to normal residents inside the town but not registered $\times 100 \div$ No. of events occurred to normal residents inside the town registered and not registered).   |
| II. Percentage of events occurred outside the town to normal residents.  | (No. of events occurred to normal residents outside the town registered and unregistered $\times 100 \div$ (total No. of events enumerated and occurred to normal residents inside the town). |
| III. Registered birth/death rate to normal residents.  | Total number of births/deaths occurred to normal residents $\times 1000 \div$ Mid year population of the town.  |
| IV. Residential birth/death rate to normal residents occurred inside the town (weighted for under registration). | Registered birth/death rate $\times 100 \div$ (100-% of under registration).  |
| V. Final residential birth/death rate (weighted for outside events).   | Residential birth/death rate to normal residents occurred inside the town (weighted for under registration $\times 100) \div$ (100-% of events occurred outside the town to normal residents) |

Table-1  
Estimated Mid-year Population of Municipalities and Corporations 1993 to 2000 A.D.  
(as on 1st July)

Sl. No.	Municipality/ Corporation	1991 Census Population		1993		1994		1995		1996		1997		1998		1999		2000	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1.	Neyyattinkara	30419	31030	31296	31564	31834	32107	32282	32659	32939	32939	32939	32939	32939	32939	32939	32939	32939	
2.	Thiruvananthapuram	524006	534047	538407	542803	547234	551702	556206	560747	565325	565325	565325	565325	565325	565325	565325	565325	565325	
3.	Attingal	32634	33374	33696	34021	34349	34681	35016	35354	35695	35695	35695	35695	35695	35695	35695	35695	35695	
4.	Kollam	139852	140301	140494	140687	140881	141075	141269	141463	141658	141658	141658	141658	141658	141658	141658	141658	141658	
5.	Punalur	46279	47069	47412	47757	48105	48455	48808	49164	49522	49522	49522	49522	49522	49522	49522	49522	49522	
6.	Kayamkulam	67151	68588	69213	69844	70481	71123	71771	72425	73085	73085	73085	73085	73085	73085	73085	73085	73085	
7.	Mavelikkara	28299	28711	28890	29070	29251	29433	29616	29800	29985	29985	29985	29985	29985	29985	29985	29985	29985	
8.	Alappuzha	174666	175788	176271	176755	177241	177728	178216	178706	179197	179197	179197	179197	179197	179197	179197	179197	179197	
9.	Cherthala	43326	44016	44315	44616	44919	45224	45531	45840	46151	46151	46151	46151	46151	46151	46151	46151	46151	
10.	Thiruvalla	54780	55506	55820	56136	56454	56773	57094	57417	57742	57742	57742	57742	57742	57742	57742	57742	57742	
11.	Changanacherry	52445	52559	52608	52657	52706	52755	52805	52855	52905	52905	52905	52905	52905	52905	52905	52905	52905	
12.	Kottayam	63155	62861	62735	62610	62485	62360	62235	62111	61987	61987	61987	61987	61987	61987	61987	61987	61987	
13.	Palakkad	21890	21952	21979	22006	22033	22060	22087	22114	22141	22141	22141	22141	22141	22141	22141	22141	22141	
14.	Valkom	21788	21931	22002	22073	22144	22215	22287	22359	22431	22431	22431	22431	22431	22431	22431	22431	22431	
15.	Muvattupuzha	27595	28157	28401	28647	28895	29145	29398	29653	29910	29910	29910	29910	29910	29910	29910	29910	29910	
16.	Kochi (Corporation)	564589	577295	582825	588408	594045	599736	605481	611281	617137	617137	617137	617137	617137	617137	617137	617137	617137	
17.	Aluva	24744	24657	24607	24557	24508	24459	24410	24361	24312	24312	24312	24312	24312	24312	24312	24312	24312	
18.	Paravur	27906	28298	28468	28639	28811	28984	29158	29333	29509	29509	29509	29509	29509	29509	29509	29509	29509	
19.	Perumbavoor	24667	25057	25226	25396	25567	25739	25913	26088	26264	26264	26264	26264	26264	26264	26264	26264	26264	
20.	Irinjalakkuda	27491	27828	27973	28119	28266	28414	28562	28711	28861	28861	28861	28861	28861	28861	28861	28861	28861	

(5)

(Table-1 contd)

	2	3	4	5	6	7	8	9	10	11
21.	Kodungallur	31249	31972	32287	32605	32926	33250	33577	33907	34241
22.	Chalakkudy	45069	45844	46180	46519	46860	47204	47550	47899	48250
23.	Trissur	74604	73850	73529	73210	72892	72575	72260	71946	71634
24.	Guruvayoor (TS)	20216	20809	21069	21332	21598	21868	22141	22417	22697
25.	Kumnamkulam	19657	19708	19730	19752	19774	19796	19818	19840	19862
26.	Palakkad	123289	126283	127588	128906	130238	131584	132944	134318	135706
27.	Chittur-Thathamangalam	32048	32448	32619	32791	32964	33138	33313	33489	33665
28.	Thirur	49453	51724	52728	53752	54795	55859	56943	58048	59175
29.	Malappuram	49692	52341	53518	54721	55951	57209	58495	59810	61155
30.	Kozhikode	419831	425987	428652	431334	434033	436748	439480	442229	444996
31.	Vadakara	72434	74511	75418	76337	77267	78208	79161	80125	81101
32.	Thalassery	103579	78559	78807	79056	79356	79556	79808	80060	80313
33.	Kannur	65238	66293	66750	67210	67674	68141	68611	69084	69561
34.	Kasaragod	50126	51915	52700	53497	54306	55128	55962	56809	57688

(6)

Table-2  
Population of Scheduled Castes & Scheduled Tribes (1991 Census)

S1. No.	Corporation/Municipality 1.....2	Scheduled Castes 3	Scheduled Tribes 4
1.	Neyyattinkara Municipality	2514	8
2.	Thiruvananthapuram Corporation	43297	550
3.	Attingal Municipality	3560	9
4.	Kollam "	10112	84
5.	Punalur "	4150	318
6.	Kayamkulam "	4491	75
7.	Mavelikkara "	3851	14
8.	Alappuzha "	3978	281
9.	Cherthala "	1526	54
10.	Thiruvalla "	4892	285
11.	Changanacherry "	4063	15
12.	Kottayam "	4710	176
13.	Pala "	558	33
14.	Vaikom "	1732	25
15.	Muvattupuzha "	1541	37
16.	Kochi Corporation	19621	943
17.	Aluva Municipality	1013	5
18.	Paravur "	1328	118
19.	Perumbavoor "	2295	34
20.	Irinjalakkuda "	2757	2
21.	Kodungallur "	2729	-
22.	Chalakkudy "	3371	15
23.	Trissur "	3635	27
24.	Guruvayoor "	2254	(31) 3
25.	Kunnamkulam "	2338	5
26.	Palakkad "	9757	97
27.	Chittur - Thathamangalam "	3785	38
28.	Thirur "	2686	12
29.	Malappuram "	2626	9
30.	Kozhikode Corporation	18014	301
31.	Vadakara Municipality	1539	48
32.	Thalassery "	1996	62
33.	Kannur "	4415	23
34.	Kasaragod "	1817	131

**Table-3**  
**Birth and Death rates for 1993**

ST: No.	Municipality/Corporation Towns/Cities	Birth rate 3	Death rate 4
1.	Neyyattinkara	16.13	1.71
2.	Thiruvananthapuram	30.00	4.94
3.	Attingal	11.31	3.19
4.	Kollam	18.62	4.55
5.	Punalur	22.00	3.99
6.	Kayamkulam	17.57	4.34
7.	Mavelikkara	18.02	8.01
8.	Alappuzha	13.78	5.61
9.	Cherthala	15.09	11.04
10.	Thiruvalla	10.02	5.47
11.	Changanacherry	23.12	5.68
12.	Kottayam	9.88	6.35
13.	Pala	13.25	7.43
14.	Vaikom	21.84	6.57
15.	Muvattupuzha	12.40	4.81
16.	Kochi	16.27	6.81
17.	Aluva	13.20	5.32
18.	Paravur	20.32	5.56
19.	Perumbavoor	10.42	3.14
20.	Iranjalakkuda	21.45	7.06
21.	Kodungallur	17.51	7.00
22.	Chalakkudy	15.43	7.87
23.	Trissur	18.58	6.04
24.	Guruvayoor (TS)	8.56	6.21
25.	Kunnamkulam	12.92	6.89
26.	Palakkad	19.04	6.73
27.	Chittur-Thathamangalam	20.17	6.40
28.	Thirur	6.30	2.40
29.	Malappuram	20.92	3.50
30.	Kozhikode	37.23	11.64
31.	Vadakara	17.01	6.64
32.	Thalassery	45.69	8.78
33.	Kannur	20.20	6.50
34.	Kasaragod	20.13	3.95

**Table-4**  
**Number of Medical Institution 1993**

Sl. No.	Municipality / Corporation	Hospitals										Dispensaries & other Institutions						Maternity & child health centre					
		Public		Private		Total		Public		Private		Total		Public		Private		Total		Public		Private	
		Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	Beds	Nos	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	19	20	19	20
1. Neyyattinkara	3	320	2	35	5	355	1	-	11	-	12	-	2	-	-	-	-	-	2	-	-	-	-
2. Thiruvananthapuram	25	6738	37	1352	62	8090	6	-	32	-	38	-	34	-	-	-	-	-	34	-	-	-	-
3. Attingal	1	60	8	330	9	390	4	-	16	-	20	-	3	-	-	-	-	-	3	-	-	-	-
4. Kollam	6	950	21	1238	27	2188	7	-	70	-	77	-	12	-	-	-	-	-	12	-	-	-	-
5. Punalur	1	144	11	225	12	369	2	-	22	-	24	-	4	-	-	-	-	-	4	-	-	-	-
6. Kayamkulam	3	170	12	262	15	432	-	-	7	-	7	-	2	-	-	-	-	-	2	-	-	-	-
7.avelikkara	2	267	7	315	9	582	-	-	10	-	10	-	-	-	-	-	-	-	-	-	-	-	-
8. Alappuzha	8	1548	5	120	13	1668	2	-	127	-	129	-	6	-	-	-	-	-	6	-	-	-	-
9. Cherthala	3	270	5	469	8	739	-	-	23	-	23	-	4	-	-	-	-	-	4	-	-	-	-
10. Thiruvalla	3	300	7	700	10	1000	-	-	10	-	10	-	-	-	-	-	-	-	3	-	-	-	-
11. Changanacherry	2	214	5	243	7	457	-	-	28	-	28	-	5	-	-	-	-	-	5	-	-	-	-
12. Kottayam	4	415	15	200	19	615	1	-	54	-	55	-	3	-	-	-	-	-	3	-	-	-	-
13. Pala	3	250	9	512	12	762	-	-	22	-	22	-	15	-	-	-	-	-	15	-	-	-	-
14. Vaikom	2	266	2	25	4	291	-	-	40	-	40	-	1	-	-	-	-	-	2	-	-	-	-
15. Moovattupuzha	3	186	12	430	15	616	1	-	30	-	31	-	2	-	-	-	-	-	2	-	-	-	-
16. Kochi	14	1962	61	3764	75	5726	6	-	76	-	82	-	12	-	-	-	-	-	12	-	-	-	-
17. Aluva	2	237	12	577	14	814	-	-	28	-	28	-	-	-	-	-	-	-	-	-	-	-	-
18. Paravur	2	175	7	209	9	384	1	-	29	-	30	-	2	-	-	-	-	-	2	-	-	-	-
19. Perumbavoor	2	241	12	541	14	782	1	-	13	-	14	-	5	-	-	-	-	-	5	-	-	-	-

(9)

(contd. . Table-4)

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Table-5

Number of Burial Grounds, Cremation Grounds and Civil Registration Units

S1. Municipality/ No. Corporation	2	Burial Grounds			Cremation Grounds			Total No.of Regn.		
		Municipality/ Corporation	Pri- vate	To- tal	Municipality/ Corporation	Pri- vate	To- tal	Wards	Division	10
1	3	4	5	6	7	8	9			
1. Neyyattinkara		1		4	5	-	3	3	20	1
2. Thiruvananthapuram		4		27	31	1	-	1	50	15
3. Attingal		1		1	2	-	5	5	20	1
4. Kollam		2		20	22	-	-	-	36	1
5. Punalur		1		16	17	-	-	-	28	1
6. Kayamkulam		1		14	15	1	3	4	32	1
7. Mavelikkara		1		9	10	-	1	1	20	1
8. Alappuzha		3		2	5	-	19	19	36	2
9. Cherthala		1		5	6	-	1	1	28	1
10. Thiruvalla		1		1	2	-	-	-	32	1
11. Changanacherry		1		12	13	-	1	1	32	1
12. Kottayam		1		15	16	1	1	2	32	2
13. Pala		1		5	6	-	-	-	20	1
14. Vaikom		1		2	3	-	-	-	20	1
15. Muvattupuzha		1		8	9	-	-	-	20	1
16. Kochi		8		40	48	5	11	16	50	2
17. Aluva		-		7	7	-	3	3	20	1
18. Paravur		1		7	8	1	7	8	20	1
19. Perumbavoor		-		8	8	-	1	1	20	1
20. Irinjalakkuda		1		5	6	-	1	1	20	1
21. Kodungalluro		-		2	2	-	-	-	20	1
22. Chalakkudy		2		8	10	-	1	1	28	1
23. Trissur		3		11	14	2	1	3	32	6
24. Guruvayur		1		4	5	-	1	1	10	1
25. Kunnamkulam		1		1	2	-	-	-	16	1
26. Palakkad		4		7	11	3	1	4	36	1
27. Chittoor- Thathamangalam		-		1	1	3	1	4	24	1
28. Thirur		2		-	2	-	-	-	28	1
29. Malappuram		1		10	11	-	1	1	24	1
30. Kozhikode		2		9	11	4	2	6	39	14
31. Vadakara		1		8	9	-	-	-	32	1
32. Thalassery		1		15	16	1	11	12	32	2
33. Kannur		1		12	13	1	-	1	32	4
34. Kasaragod		-		9	9	2	1	3	28	2

Table-6  
Area Population and Density - 1993

Sl. No.	Municipality/ Corporation	No. of Registr- ation Units.	Area in Squire Km.	Area per regi- stration unit.	Estimated population	Population per registration unit	Density per Sq.Km.
1	2	3	4	5	6	7	8
1.	Neyyattinkara	1	9.70	9.70	31030	31030	3199
2.	Thiruvananthapuram	15	74.93	4.99	534047	35603	7127
3.	Attingal	1	14.18	14.18	33374	33374	2354
4.	Kollam	1	18.48	18.48	140301	140301	7952
5.	Punalur	1	34.60	34.60	47069	47069	1360
6.	Kayamkulam	1	21.79	21.79	68588	68588	3148
7.	Mavelikkara	1	12.65	12.65	28711	28711	2270
8.	Alappuzha	2	46.77	23.38	175788	87894	3759
9.	Cherthala	1	16.18	16.18	44016	44016	2720
10.	Thiruvalla	1	27.94	27.94	55506	55506	1987
11.	Changanacherry	1	13.50	13.50	52559	52559	3893
12.	Kottayam	2	15.55	7.77	62861	31430	4043
13.	Pala	1	15.93	15.93	21952	21952	1378
14.	Vaikom	1	8.73	8.73	21931	21931	2512
15.	Muvattupuzha	1	13.18	13.18	28157	28157	2136
16.	Kochi	2	94.88	47.44	577295	288647	6084
17.	Aluva	1	7.18	7.18	24657	24657	3434
18.	Paravur	1	9.02	9.02	28298	28298	3137
19.	Perumbavur	1	13.59	13.59	25057	25057	1844
20.	Irinjalakkuda	1	11.24	11.24	27828	27828	2476

(Table 6-4 contd)

1	2	3	4	5	6	7	8
21.	Kodungalloor	1	17.30	17.30	31972	31972	1848
22.	Chalakkudy	1	25.23	25.23	45844	45844	1817
23.	Trissur	6	12.65	2.11	73850	12308	5838
24.	Guruvayoor	1	6.49	6.49	20809	20809	3206
25.	Kunnamkulam	1	6.96	6.96	19708	19708	2832
26.	Palakkad	1	26.60	26.60	126283	126283	4747
27.	Chittoor-Thathamangalam	1	14.71	14.71	32448	32448	2206
28.	Thirur	1	16.59	16.59	51724	51724	3118
29.	Malappuram	1	33.61	33.61	52341	52341	1557
30.	Kozhikode	14	82.68	5.90	425987	425987	5152
31.	Vadakara	1	21.33	21.33	74511	74511	3493
32.	Thalasserry	2	23.96	11.98	78559	78559	3279
33.	Kannur	4	11.03	2.75	66293	66293	6017
34.	Kasaragod	2	16.68	8.34	51915	51915	3112

(13)

Table-7  
**Vital Events Registered during the year 1993**

Sl. No.	Municipality/ Corporation	Live Birth						No. of Still Births					
		Total Events			Events to normal residence			Total events			No. of Still Births		
		Male 3	Female 4	Total 5	Male 6	Female 7	Total 8	Male 9	Female 10	Total 11	Male 9	Female 10	Total 11
1.	Neyyattinkara	1847	1833	3680	141	137	278	-	-	-	-	-	-
2.	Thiruvananthapuram	15524	15360	30884	8030	7990	16020	78	65	143	65	65	143
3.	Attingal	630	657	1287	62	59	121	4	3	7	3	3	7
4.	Kollam	6430	6288	12718	1181	1066	2247	37	32	69	32	32	69
5.	Punalur	1604	1531	3135	366	318	684	12	10	22	10	10	22
6.	Kayamkulam	1681	1501	3182	443	379	822	10	4	14	4	4	14
7.	Mavelikkara	1837	1748	3585	164	140	304	10	10	20	10	10	20
8.	Alappuzha	4562	4232	8794	1135	909	2044	44	29	73	29	29	73
9.	Cherthala	1142	1063	2205	212	195	407	4	2	6	2	2	6
10.	Thiruvalla	2549	2410	4959	198	167	365	13	12	25	12	12	25
11.	Changanacherry	1061	1223	2284	296	342	638	-	3	3	3	3	3
12.	Kottayam	1754	1560	3314	182	174	356	6	6	12	6	6	12
13.	Palai	1425	1347	2772	93	73	166	18	14	32	14	14	32
14.	Vaikom	638	633	1271	62	66	128	3	8	11	3	8	11
15.	Muvattupuzha	1757	1271	3028	111	109	220	8	3	11	8	8	11
16.	Kochi	9217	8514	17731	3748	3450	7198	65	37	102	37	37	102
17.	Aluva	2274	2125	4399	67	79	146	18	20	38	18	18	38
18.	Paravur	1234	1200	2434	126	109	235	11	8	19	11	11	19
19.	Perumbavoor	1333	1181	2514	73	70	143	5	5	10	5	5	10
20.	Irinjalakkuda	659	639	1298	50	39	89	3	2	5	3	3	5

(table-7 contd)

1	2	3	4	5	6	7	8	9	10	11
21.	Kodungalloor	2137	2105	4242	181	183	364	-	-	-
22.	Chalakkudy	1957	1738	3695	213	235	448	9	8	17
23.	Trissur	7121	7341	14462	499	525	1024	113	155	268
24.	Guruvayoor	430	424	854	20	33	53	2	2	4
25.	Kunnamkulam	1158	1156	2314	34	25	59	12	9	21
26.	Palakkad	4879	4453	9332	998	765	1763	37	32	69
27.	Chittoor-Thathamangalam	908	837	1745	168	140	308	13	3	6
28.	Thirur	3198	3119	6317	160	166	326	9	14	23
29.	Malappuram	1754	1755	3509	372	336	708	6	2	8
30.	Kozhikode (C)	15222	15396	30618	6914	7149	14063	347	309	656
31.	Vadakara	3478	3307	6785	368	365	733	13	14	27
32.	Thalassery	5251	5531	10782	1812	1506	3318	17	28	52
33.	Kannur	2396	2218	4614	487	449	936	3	3	6
34.	Kasaragod	3287	3213	6500	505	519	1024	56	50	106

(table-7 contd)

Sl. No.	Municipality/ Corporation	Still Birth			Infant			Deaths		
		Events to normal residence			Total events			Events to normal residence		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	12	13	14	15	16	17	18	19	20
1.	Neyyattinkara	-	-	-	5	7	12	-	-	-
2.	Thiruvananthapuram	-	-	370	242	612	94	87	181	
3.	Attingal	-	-	-	-	-	-	-	-	-
4.	Kollam	7	5	12	109	77	186	17	53	30
5.	Punalur	2	1	3	18	7	25	-	3	-
6.	Kayamkulam	2	1	3	11	3	14	3	2	5
7.	Mavelikkara	1	1	2	12	12	29	2	5	7
8.	Alappuzha	-	-	-	93	88	181	26	18	44
9.	Cherthala	2	3	5	19	16	35	13	8	21
10.	Thiruvalla	3	2	5	31	28	59	7	3	10
11.	Changanacherry	-	2	2	7	4	11	1	3	4
12.	Kottayam	-	-	-	3	2	5	1	1	2
13.	Palai	1	1	2	14	10	24	-	-	-
14.	Vaikom	-	-	-	4	8	12	-	-	-
15.	Muvattupuzha	2	-	2	10	12	22	1	2	3
16.	Kochi	34	15	49	191	131	322	72	60	132
17.	Aluva	1	1	2	12	10	22	-	-	-
18.	Paravur	-	-	-	6	4	10	-	-	-
19.	Perumbavoor	-	1	1	13	7	20	1	1	2
20.	Irinjalakkuda	-	-	-	6	5	11	1	1	1

(16)

(table-7, contd)

	1	2	12	13	14	15	16	17	18	19	20
21.	Kodungalloor	-	-	-	12	6	18	1	-	1	
22.	Chalakkudy	-	1	1	14	11	25	3	3	6	
23.	Thrissur	5	4	9	221	198	419	6	5	11	
24.	Guruvayoor	-	-	-	1	3	4	-	-	-	
25.	Kunnamkulam	1	1	2	11	7	18	-	-	-	
26.	Palakkad	9	3	12	87	72	159	11	8	19	
27.	Chittur-Thatthamangalam	-	-	-	10	14	24	3	-	3	
28.	Thirur	-	-	-	27	15	42	-	-	-	
29.	Malappuram	1	1	2	18	11	42	-	-	-	
30.	Kozhikode	93	80	173	522	456	978	238	185	423	
31.	Vadakara	3	4	7	16	11	27	3	-	3	
32.	Thalassery	4	5	9	37	31	68	7	9	16	
33.	Kannur	-	1	1	43	44	87	6	4	10	
34.	Kasaragod	4	7	11	43	34	77	2	3	5	

(17)

(Table-7 contd.)

(18)

Sl. No.	Municipality/ Corporation	Number of other deaths						No. of maternal deaths		
		Total events			Events to normal residence			Total events	Events to nor- mal residence	Total maternal deaths
		Male	Female	Total	Male	Female	Total			
1	2	21	22	23	24	25	26	27	28	
1.	Neyyattinkara	142	127	269	31	12	43	-	-	-
2.	Thiruvananthapuram	3906	3312	7218	1214	1198	2412	-	-	-
3.	Attingal	62	70	132	46	48	94	-	-	-
4.	Kottayam	1144	646	1790	300	210	510	-	-	-
5.	Punalur	186	156	342	76	56	132	-	-	-
6.	Kayamkulam	247	153	400	167	112	279	-	-	-
7.	Mavelikkara	289	125	414	106	66	172	-	-	-
8.	Alappuzha	1218	838	2056	594	299	893	-	-	-
9.	Cherthala	365	220	585	138	146	284	-	-	-
10.	Thiruvalla	517	286	803	167	111	278	-	-	44
11.	Changanacherry	162	142	304	86	106	192	-	-	21
12.	Kottayam	338	220	558	167	109	276	-	-	21
13.	Pala	185	126	311	57	41	98	-	-	21
14.	Vaikom	123	88	211	56	49	105	-	-	21
15.	Muvattupuzha	182	113	295	72	46	118	-	-	21
16.	Kochi	3051	1952	5003	1747	1202	2949	7	-	-
17.	Aluva	209	121	330	60	29	89	-	-	-
18.	Paravur	183	167	350	77	45	122	-	-	-
19.	Perumbavoor	189	119	308	27	25	52	-	-	-
20.	Irinjalakkuda	132	93	225	72	68	140	-	-	-

(table-7 contd)

1	2	21	22	23	24	25	26	27	28
21.	Kudongallur	246	149	395	86	81	167	-	-
22.	Chalakkudy	255	142	397	137	97	234	15	-
23.	Thrissur	1178	977	2155	195	90	285	12	-
24.	Guruvayoor	109	99	208	51	48	99	10	-
25.	Kunnamkulam	141	92	233	60	50	110	30	-
26.	Palakkad	1032	478	1510	624	103	727	20	-
27.	Chittur-Thathamangalam	135	113	248	80	104	184	15	-
28.	Thirur	229	172	401	60	64	124	13	-
29.	Malappuram	192	156	348	90	73	163	12	-
30.	Kozhikode	4277	2554	6831	2168	1328	3496	1	-
31.	Vadakara	287	246	533	159	158	317	11	-
32.	Thalassery	651	563	1214	260	266	526	12	-
33.	Kannur	309	198	507	151	118	269	10	-
34.	Kasaragode	239	171	410	115	85	200	5	-

(19)

Table-8  
Deaths according to Causes - 1993

Sl. No.	Municipality / Corporation	B Pla-	Coo-	Small	Pre-	Res-	Ent-	Sal-	Sep-	Can-	Heart	Multi-	Non-	En-	En-	Fai-	Fai-	Lungs	En-	En-	Fai-	Fai-	Lungs
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1.	Neyyattinkara	-	-	303	-	138	-	5	6	-	3	-	7	-	-	-	-	260	281				
2.	Thiruvananthapuram	46	-	47	-	103	-	320	64	-	-	548	-	3216	10	3626	7830						
3.	Attringal	-	-	88	-	579	-	239	1	16	2	-	9	-	47	1	56	132					
4.	Kollam	-	-	171	-	5228	-	883	-	3	138	-	9	-	532	119	1313	1976					
5.	Punalur	-	-	163	-	129	-	349	1	-	1	-	3	-	-	10	84	263	362				
6.	Kayamkulam	7	-	550	-	155	-	70	-	86	2	-	13	-	133	4	170	415	20				
7.	Mavelikkara	-	-	132	-	113	-	568	1	9	6	-	24	1	235	12	155	443					
8.	Alappuzha	-	-	1065	-	448	-	100	-	-	-	60	-	300	23	1754	2237						
9.	Cherthala	-	-	147	-	45	-	57	5	10	-	2	-	20	10	30	41	502	620				
10.	Thiruvalla	-	-	108	-	63	-	508	1	-	3	-	16	12	8	16	806	862					
11.	Changanacherry	10	-	118	-	611	-	524	6	31	18	-	16	16	-	10	17	206	315				
12.	Kottayam	26	-	522	-	175	-	343	-	-	1	1	-	12	-	20	-	503	563				
13.	Pala	-	-	340	-	173	-	302	-	45	-	-	5	-	25	14	246	335					
14.	Vaikom	-	-	311	-	171	-	301	-	-	-	-	7	5	83	41	87	223					
15.	Muvattupuzha	-	-	311	-	171	-	301	-	53	2	-	-	20	15	15	10	202	317				
16.	Kochi	115	-	-	-	172	-	260	3	-	-	-	297	2	420	40	4186	5325					
17.	Aluva	-	-	-	-	-	-	-	-	20	-	-	-	9	-	12	9	302	352				
18.	Paravur	-	-	-	-	-	-	-	-	10	-	-	-	28	10	95	10	207	360				

(table-8 contd)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
19. Perumbavoor	3	-	-	-	-	-	-	-	-	20	9	10	-	286	328		
20. Irinjalakkuda	-	-	-	-	-	-	-	-	-	9	-	-	-	7	219	236	
21. Kodungalloor	-	-	-	-	-	-	-	-	-	5	-	-	-	39	357	413	
22. Chalakkudy	3	-	-	-	-	1	146	-	-	-	12	-	-	49	5	210	422
23. Thrissur	-	-	-	-	-	9	-	-	-	-	8	-	-	151	-	319	-
24. Guruvayoor	-	-	-	-	-	-	-	-	-	30	3	-	-	-	2095	2574	
25. Kunnamkulam	-	-	-	-	-	-	-	-	-	6	1	116	-	56	212		
26. Palakkad	-	-	-	-	-	-	-	-	-	-	3	-	-	8	18	215	251
27. Chittoor- Thathamangalam	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	1
28. Thirur	10	-	-	-	-	-	-	-	-	-	15	-	-	15	-	31	30
29. Malappuram	-	-	-	-	-	-	-	-	-	3	-	-	-	15	1	-	40
30. Kozhikode	240	-	-	-	-	-	-	-	-	24	-	122	1	-	466	-	306
31. Vadakara	-	-	-	-	-	-	-	-	-	-	5	-	-	17	-	-	4
32. Thalassery	-	-	-	-	-	-	-	-	-	14	-	22	-	238	-	-	120
33. Kannur	-	-	-	-	-	-	-	-	-	-	5	-	-	20	-	-	36
34. Kasaragode	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	12
														8	-	-	464
															-	-	487

Table-9  
Results of Spotcheck - 1993

Sl. No.	Municipality / Corporation	No. of wards selected.	Total No. of house holds	No. of house holds visited.	No. of house holds visited.	Live Birth		Infant Deaths		No. of events to normal residents detected			
						Enum- rated.	Regis- tered.	Enum- rated.	Occur- ered.	Regis- tered.	Occur- ed out side.	Regis- tered.	Occur- ed outside.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Neyyattinkara	15	7190	279	155	124	-	-	-	75	61	233	14
2.	Thiruvananthapuram	15	33379	26765	489	489	-	6	6	187	184	682	-
3.	Attingal	15	5694	5694	271	87	184	-	-	61	54	7	
4.	Kollam	18	11857	11857	673	579	94	4	3	191	162	29	
5.	Punalur	15	6486	6486	225	142	72	-	-	76	54	22	
6.	Kayamkulam	15	5469	5469	264	180	84	-	-	91	87	2	(22)
7.	Mavelikkara	15	4451	4451	228	134	91	3	3	137	106	19	
8.	Alappuzha	18	16540	16540	905	901	163	9	8	-	428	420	14
9.	Cherthala	15	6679	6679	150	92	46	6	3	2	102	64	32
10.	Thiruvalla	15	5884	5884	294	193	101	6	4	2	59	56	2
11.	Changanacherry	15	7350	7350	219	115	104	-	-	70	46	24	
12.	Kottayam	15	5957	5957	274	157	117	1	-	1	134	94	36
13.	Pala	15	3881	2743	97	97	73	-	-	-	34	30	16
14.	Vaikom	15	4553	3324	46	46	126	-	-	-	57	51	13
15.	Muvattupuzha	15	4463	4463	308	194	114	2	2	-	84	75	8
16.	Kochi	15	27379	27379	1564	1199	318	5	5	-	580	454	31
17.	Aluva	15	3524	3524	136	61	74	-	-	-	84	57	21
18.	Paravur	15	4335	235	96	139	-	-	-	-	120	93	22
19.	Perumbavur	15	3705	188	103	85	-	-	-	-	51	35	15

(table-9 contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
20.	Irajalakkuda	15	5995	4158	295	44	251	-	-	-	110	79	27
21.	Kodungallur	15	4715	4715	220	143	77	-	-	-	108	81	14
22.	Chalakkudy	15	4709	4709	308	195	113	-	-	-	126	84	23
23.	Thrissur	15	6143	6143	409	299	64	-	-	-	155	103	21
24.	Guruvayoor	10	3732	3732	178	53	125	-	-	-	129	99	17
25.	Kunnamkulam	15	3797	3797	229	53	176	-	-	-	126	102	17
26.	Palakkad	15	8789	8789	787	570	212	3	7	1	245	215	25
27.	Chittur- Thathamangalam	15	4304	4304	219	103	114	-	-	-	130	117	13
28.	Thirur	15	3899	3899	280	280	-	-	-	-	62	62	-
29.	Malappuram	15	5142	5142	631	408	223	2	2	-	109	99	9
30.	Kozhikode	15	33552	21785	1841	1632	187	12	11	-	530	419	18
31.	Vadakara	15	5059	5059	275	159	114	-	-	-	141	91	44
32.	Thalassery	15	4286	4286	450	416	-	-	-	-	117	92	25
33.	Kannur	15	10512	3729	439	307	131	7	4	3	146	95	45
34.	Kasaragode	15	6709	4490	443	443	9	1	-	-	40	40	-

Table-10

## Under Registration and Occurrence of outside events

Sl. No.	Municipality/ Corporation	% of under Registration		% of outside Events	
		Births 3	Deaths 4	Births 5	Deaths 6
1.	Neyyattinkara	-	-	44.44	18.67
2.	Thiruvananthapuram	-	1.64	-	-
3.	Attingal	-	-	67.90	11.48
4.	Kollam	-	-	13.97	15.38
5.	Punalur	0.70	1.82	33.49	28.57
6.	Kayamkulam	-	2.25	31.82	2.20
7.	Mavelikkara	2.19	9.92	39.91	13.57
8.	Alappuzha	0.44	2.06	15.26	3.10
9.	Cherthala	11.54	8.57	30.67	31.37
10.	Thiruvalla	-	1.75	34.35	3.39
11.	Changanacherry	-	-	47.49	34.29
12.	Kottayam	-	4.08	42.70	27.41
13.	Pala	-	11.76	42.94	32.00
14.	Vaikom	-	10.53	5.84	4.79
15.	Muvattupuzha	-	1.28	7.81	4.30
16.	Kochi	3.77	17.15	20.33	5.30
17.	Aluva	1.61	9.52	54.41	25.00
18.	Paravur	-	5.10	59.15	18.33
19.	Perumbavur	-	2.78	45.21	29.41
20.	Irinjalakkuda	-	4.82	85.08	24.55
21.	Kodungallur	-	13.83	35.00	12.96
22.	Chalakkudy	-	18.45	36.69	18.25
23.	Thrissur	13.33	23.13	15.65	13.55
24.	Guruvayur	-	11.61	70.22	13.18
25.	Kunnamkulam	-	6.42	76.86	13.49
26.	Palakkad	0.87	2.20	26.94	10.28
27.	Chittur-Thathamangalam	0.80	-	52.05	10.00
28.	Thirur	-	-	-	-
29.	Malappuram	-	0.98	35.34	8.11
30.	Kozhikode	1.33	18.16	10.16	3.40
31.	Vadakara	1.24	6.19	41.45	31.25
32.	Thalassery	-	-	7.56	21.37
33.	Kannur	0.32	5.71	29.84	31.37
34.	Kasaragode	-	-	2.03	-

Table-11

## Registered Vital Rates and adjusted Residential Vital Rates

S1. No.	Municipality/ Corporation	Registered Vital Rates		Adjusted Residen- tial Vital Rates	
		Births 3	Deaths 3	Births 4	Deaths 5
1	2				
1.	Neyyattinkara	8.96	1.39	16.13	1.71
2.	Thiruvananthapuram	30.00	4.86	30.00	4.94
3.	Attingal	3.63	2.82	11.31	3.19
4.	Kollam	16.02	3.85	18.62	4.56
5.	Punalur	14.53	2.80	22.00	3.99
6.	Kayamkulam	11.98	4.14	17.57	4.24
7.	Mavelikkara	10.59	6.23	18.02	8.01
8.	Alappuzha	11.63	5.33	13.78	5.61
9.	Cherthala	9.25	6.93	15.09	11.04
10.	Thiruvalla	6.58	5.19	10.02	5.47
11.	Changanacherry	12.14	3.73	23.12	5.68
12.	Kottayam	5.66	4.42	9.88	6.35
13.	Pala	7.56	4.46	13.25	7.43
14.	Vaikom	5.84	4.79	21.84	6.57
15.	Muvattupuzha	7.81	4.30	12.40	4.81
16.	Kochi	12.47	5.34	16.27	6.81
17.	Aluva	5.92	3.61	13.20	5.32
18.	Paravur	8.30	4.31	20.32	5.56
19.	Perumbavur	5.71	2.16	10.42	3.14
20.	Irinjalakkuda	3.20	5.07	21.45	7.06
21.	Kodungallur	11.38	5.25	17.51	7.00
22.	Chalakkudy	9.77	5.24	15.43	7.87
23.	Thrissur	13.87	4.01	18.58	6.04
24.	Guruvayoor	2.55	4.76	8.56	6.21
25.	Kunnamkulam	2.99	5.58	12.92	6.89
26.	Palakkad	13.96	5.91	19.04	6.73
27.	Chittur-Thathamangalam	9.49	5.76	20.17	6.40
28.	Thirur	2.44	2.40	6.30	2.40
29.	Malappuram	13.53	3.22	20.92	3.50
30.	Kozhikode	33.01	9.20	37.23	11.64
31.	Vadakara	9.84	4.29	17.01	6.64
32.	Thalassery	42.24	6.90	45.69	8.78
33.	Kannur	14.12	4.21	20.20	6.50
34.	Kasaragode	19.72	3.95	20.13	3.95

Table-12  
Adjusted Residential Vital Rates from \*1988-1993

Sl. No.	Municipality/ Corporation	Birth Rate					Death Rate						
		1988	1989	1990	1991	1992	1993	1988	1989	1990	1991	1992	1993
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Neyyattinkara	40.85	39.49	31.48	21.74	17.83	16.13	6.15	4.73	5.05	4.03	2.51	1.71
2.	Thiruvananthapuram	27.49	28.73	30.98	27.74	27.32	30.00	3.59	3.80	4.02	3.88	3.62	4.94
3.	Attingal	24.21	24.40	35.11	21.26	14.88	11.31	4.63	4.45	4.28	4.37	3.80	3.19
4.	Kollam	21.63	22.71	21.42	20.74	18.97	18.62	4.05	5.19	6.05	8.18	4.79	4.55
5.	Punalur	21.15	22.48	14.57	20.53	20.77	22.66	4.51	4.32	4.22	5.91	5.47	3.99
6.	Kayamkulam	19.66	18.63	11.78	18.36	17.16	17.57	6.12	5.12	4.10	4.35	3.82	4.34
7.	Mavelikkara	22.54	21.87	11.85	17.37	16.03	18.02	7.59	7.42	5.64	6.04	7.80	8.01
8.	Alappuzha	17.58	17.36	17.84	13.78	14.07	13.78	8.88	5.27	5.06	2.23	4.67	5.61
9.	Cherthala	19.81	18.97	10.02	17.61	10.62	15.09	7.95	8.12	5.73	6.63	5.92	11.04
10.	Thiruvalla	25.38	22.28	13.07	16.12	14.76	10.02	5.12	5.49	4.69	5.86	5.05	5.47
11.	Changanacherry	17.50	17.93	21.05	15.93	21.67	23.12	5.21	4.98	4.51	4.95	5.51	5.68
12.	Kottayam	19.26	20.19	18.86	13.57	10.98	9.88	5.25	5.57	5.16	6.16	6.16	6.35
13.	Pala	11.39	13.04	11.84	10.53	17.61	13.25	3.20	4.49	3.50	6.32	5.72	7.43
14.	Vaikom	13.94	15.31	27.36	18.86	15.44	21.84	4.90	4.68	5.34	7.20	5.52	6.57
15.	Muvattupuzha	20.09	20.78	15.32	14.47	14.69	12.40	3.28	3.57	4.32	4.27	4.58	4.81
16.	Kochi	18.79	17.60	16.96	16.99	17.38	16.27	6.01	6.15	5.69	6.98	5.97	6.81
17.	Aluva	18.41	18.36	17.16	13.75	14.51	13.20	3.32	5.47	6.16	3.66	4.38	5.32
18.	Paravur	16.89	14.92	16.65	16.77	24.66	20.32	7.36	8.05	7.66	8.95	6.69	5.56
19.	Perumbavur	21.66	20.63	12.55	11.08	10.54	10.42	5.09	4.60	3.40	3.60	3.60	3.14
20.	Irinjalakkuda	17.94	17.91	17.22	20.61	16.44	21.45	8.50	6.56	5.49	6.78	7.64	7.06
21.	Kodungallur	21.52	21.39	15.82	17.43	16.41	17.51	6.62	6.70	7.13	7.68	7.25	7.00

(26)

(table-12 contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
22.	Chalakkudy	18.49	19.75	15.01	14.01	15.43	15.43	4.60	5.75	6.90	6.35	6.63	7.87
23.	Thrissur	26.00	26.74	16.55	16.11	18.00	18.58	5.43	4.75	5.22	5.56	5.78	6.04
24.	Guruvayoor	11.64	13.44	11.96	11.61	12.90	8.56	7.04	6.21	7.31	6.45	8.76	6.21
25.	Kunnamkulam	13.75	13.88	14.56	16.78	12.03	12.92	6.54	6.57	7.13	6.37	6.39	6.89
26.	Palakkad	25.76	25.57	20.25	19.08	20.01	19.04	5.94	5.94	5.52	5.90	6.37	5.73
27.	Chittur-Thathamangalam	30.09	30.23	37.38	28.65	28.85	20.17	7.97	5.77	9.52	9.02	6.76	6.40
28.	Thirur	11.06	12.40	8.16	9.04	8.73	6.30	3.43	3.44	2.95	2.69	3.19	2.40
29.	Malappuram	18.40	16.69	20.40	20.37	22.50	20.92	3.05	2.57	3.13	3.60	3.80	3.50
30.	Kozhikode	29.37	29.25	29.74	21.70	23.24	37.23	8.57	8.43	11.30	7.54	8.63	11.64
31.	Vadakara	22.95	21.07	20.89	21.31	23.34	17.01	6.38	6.79	6.19	5.44	6.19	6.64
32.	Thalassery	49.40	49.06	42.13	35.43	33.20	45.69	3.99	4.05	9.73	9.89	10.18	8.78
33.	Kannur	28.25	28.23	18.81	14.80	14.44	20.20	9.47	5.51	4.20	4.47	6.11	6.50
34.	Kasaragode	25.11	24.07	26.22	26.56	22.16	20.13	3.79	3.74	3.89	3.10	3.93	3.95

(27)



(72)

