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A study of the Second Mass Vasectomy Camp in Kerala

(At the premises of Hindusthan Latex) EKM

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PREFACE

The Second Mass Vasectomy Camp held at ... for a period of one month from July 1st to 31st 1971, has been hailed as one of phenomenal success - having achieved more than four times the original target of 15000 operations. This report just like the previous one of the first vasectomy camp at Ernakulam, during November-December 1970 gives a statistical appraisal of the acceptors at the camp, based on data collected from a sizable sample of persons. The socio-economic and demographic characteristics of the persons sterilised at the camp have been analysed and compared with those of the first camp. There has been a welcome change in the age group of acceptors, as more of younger couples have turned up for the 2nd camp, bringing down the median age form 39.1 to 37.3. It is hoped that the analysis and comparison of other characteristics will be useful to the organisers of the camp and planners. The region wise distribution of acceptors, expenditure and impact of the camp are also dealt with in this report.

The report has been prepared by Sri N.V.George, Research Officer. Sri P.S.Gopinathan Nair, Assistant Director and Sri S.Bhagavatheeswara Iyer, formerly Deputy Director, Population Division have been associated with the preparation of the report.

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A STUDY OF THE SECOND MASS VASECTOMY CAMP IN KERALA

(Held at Ernakulam in July 1971)

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1. Introduction:

Ernakulam District in Kerala State which won the unique distinction of having conducted vasectomy operations on a massive scale through organised camp in 1970 conducted its second camp in July 1971 in which it set up an international record. The second camp was conducted from 1-7-1971 to 31-7-1971. This 31 day camp, which was publicised as "Kudumbakshema Maholsava" (Family Welfare Festival) achieved an all-time record of 62902 vasectomy operations in the main camp held in the gaily decorated Town Hall at Ernakulam. As a part of the main camp, sub-camps and minicamps were organised in the taluk and municipal areas of the District, where necessary clinical facilities were available. In these camps 516 tubectomy operations were performed thereby making the total number of sterilisation operations during the camp to 63418. The remarkable achievement of this camp is quite striking when compared to the earlier camp held from 20-11-1970 to 20-12-1970 at the same place when 15005 vasectomy operations were achieved.

The socio-economic and demographic particulars of the persons who underwent sterilisation in the first camp were published in the report "Population Studies No.114" issued by the Demographic Research Centre of the Bureau of Economics and Statistics. The present report gives a statistical appraisal of the socio-economic and demographic particulars of the persons who underwent vasectomy operations in the second camp.

2. Organisation of the camp:

The main camp was held at the Town Hall at Ernakulam. Initially only a target of 20,000 vasectomy operations was fixed. The target was subsequently revised to 30,000 and again to 50,000. But the actual achievement far exceeded these targets. It may further be noted that the achievement in this camp alone far exceeded the annual target fixed for the whole State by the Department of Health Services.

The credit of the success of the camp goes to the efficient organisation of the camp. The facilities provided for the acceptors in respect of their transportation to and from the camp, the speedy completion of the formalities like registration, disbursement of incentives, etc. and above all the attractive clinical services for the safe conduct of the sterilisation operations deserve mention.

3. Incentives to the acceptors:

The liberal incentives offered to the acceptors was a majo factor of their attraction to the camp. The incentives to each acceptor with their equivalent money value are listed below:

Contd..........

i)	Usual cash payment from Government	Rs.21/- for male Rs.29/- for female
ii)	Special cash payment from Govt.	Rs.14/-
iii)	Cash payment from local bodies	Rs.10/-
iv)	Contribution packet from CARE (containing articles like Sarees, dhoti, umbrella, etc. and a plastic bag)	Rs.40/-
v)	One week's free ration for the family	Rs.14/-
vi)	Lottery ticket	Re. 1/-
	Total:	Rs.100/-

In addition to the above the acceptors were given free of cost, (i) transport to and from the camp, (ii) Refreshment and lunch, (iii) Medicines and tonic. The camp conducted also lottery in favour of the acceptors with the following prizes on the tickets issued to them free of cost.

One prize	Rs.10000/-
3 prizes	Rs. 1000/- each
5 prizes	Rs. 500/- "
10 prizes	Rs. 250/- "
82 prizes	Rs. 100/- "

The promoters of the acceptors were given Rs.10/- for each case of vasectomy or tubectomy promoted.

4. Objects of the study:

The present report attempts (i) to study the distribution of the acceptors over various administrative divisions in the Rural and Urban sectors, (ii) to analyse the socio-economic and demographic characteristics of the persons who underwent vasectomy operations in the main camp; (iii) to assess the impact of the operations in terms of births saved and (iv) to estimate the cost for vasectomy operation.

5. Data used:

The details regarding the socio-economic and demographic characteristics were collected and compiled by the District Statistical staff at Ernakulam. The collection of data was done on a sample basis. The declaration forms furnished by the persons coming for operation was the main source for the data. These forms contained details regarding acceptor's age, age of his wife, religion, income, occupation, educational status and the number of living children. 25% of the declaration forms of the acceptors for each day was selected at random. The data have been collected from 14,149 persons sterilised in the camp. The details presented is the total of the data for the 31 days. The other particulars dealt with in the report are collected from the District Medical Officer, Ernakulam.

6. <u>Regional distribution of acceptors:</u>

The original target fixed for the camp was 20,000. This was later revised to 50,000. But by the end of the month, even this was exceeded reaching a record figure of 62,902. The average achievement per day was thus above 2000. The achievement of the 1st camp at Ernakulam was 15005. The 2nd camp had an achievement more than 4 times the 1st camp.

It will be interesting to analyse the achievement on the basis of the place of the persons. In the first camp, all the persons except 342, came from the District itself. But in the second camp the pattern has changed very much. Only about 31% of the acceptors were from Ernakulam District. Of the remaining 43494 acceptors, 5 persons came from outside the State. The distribution of the remaining 43489 cases according to the districts is given below:

Table : 1

Distribution of vasectomy cases from outside Ernakulam District according to District of origin.

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District	Number	Percentage
Trichur	12330	28.35
Kottayam	11556	26.57
Alleppey	10716	24.64
Quilon	4896	11.26
Trivandrum	2191	5.04
Malappuram	715	1.64
Kozhikode	423	0.97
Palghat	411	0.95
Cannanore	243	0.57
Unspecified	5	0.01
Total:	43489	100.00

The distribution reveals some interesting peculiarities. The proximity to Ernakulam is naturally the most important factor. The three adjacent districts of Trichur, Kottayam and Alleppey account for about 80% of the vasectomy acceptors outside Ernakulam District. The percentage difference of acceptors between these districts is only less than 5%. As the distance from the camp increases the number of acceptors of vasectomy decreases. When we come to Quilon District, the percentage decreases to 11 and in the case of the southern most District Trivandrum, the percentage is only 5. In the case of northern Districts, the rate of achievement is still lower. Only less than 2000 vasectomy acceptors are reported from all the 4 Districts north of Trichur. This shows that proper organisation and attractive incentives can make such camps serve persons in far off places also.

The achievement of the camp in respect of acceptors within the District was also more than that of previous camp as the number of acceptors in the camp is 19,253 against 15005 acceptors in the previous camp. The Panchayat and block-wise distribution of the 19253 acceptors is presented in the detailed table appended to the report. The appendix also gives a comparison of the block-wise and Panchayat-wise achievements of the two camps in terms of the achievement per 1000 population and in terms of achievement per 100 eligible couples.

6.2. Panchayat-wise distribution of acceptors:

The frequency distribution of the Panchayats in the District according to the rate of achievement of sterilisation per 1000 population given in table (2) below reveals the progressive response to the family planning methods in the second camp as compared to the 1st camp.

Table : 2

Distribution of Panchayats according to the rate of achievement.

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Rate of sterilisation per 1000 population	Number of Panchayats according to achievement in		
	1st camp	2nd camp	Cumulative
Below 5	31	5	1
5 - 9	46	32	10
10 - 14	19	44	17
15 - 19	2	14	30
20 & above	1	4	41
Total:	99	99	99

The figures in the above table show that the number of Panchayats with higher rate of sterilisation achievement per 1000 population has considerably increased in the 2nd camp. While 30% of the Panchayats in the District, belonged to the class of 'below 5' sterilisation per 1000 population in the first camp, it was less than 5% in the 2nd camp as more Panchayats moved to the classes of higher rates of achievement of 10 or more sterilisation/1000 population in the 2nd camp whereas the corresponding percentage in the 1st camp was less than 25. Alakode Panchayat has the least rate in the second camp. This Panchayat has a rate below 5 sterilisation/1000 population even after the two camps. The highest rate of achievement is reported from Arakulam Panchayat. More than 70% Panchayats were able to achieve a cumulative rate of 15 or above, sterilisation per 1000 population as a result of the two camps.

6.3. Achievement in urban areas:

The urban areas (only Municipal towns) reported a lower rate of achievement compared to the rural areas in the second camp. While in the first camp the average urban rate of achievement of

sterilisation per 1000 population was slightly higher (7.7) than the rural rate (7.4), in the 2nd camp the urban rate dropped to 6.4 sterilisation per 1000 population while the rural rate went upto 11 sterilisation per 1000 population. One probable reason for this may be that large number of couples in the Municipal towns might have had adopted sterilisation even before the massive camps. The eligible couples now available for sterilisation would therefore be lower in these towns.

In order to study the relation between rate of achievement in the various blocks in the two camps, the rank correlation coefficient method has been used. The rank correlation coefficient is worked out between the ranks of the different blocks in the District in the two camps according to the rate of achievement of sterilisations per 1000 population. The rank correlation coefficient works out 0.53. This shows that the achievements of the blocks in the two camps are highly correlated. This indicates that the Blocks which reported relatively high rates of achievements in the 1st camp did so in the second camp also.

7. Characteristics of the sterilised persons:

The characteristics of the persons who underwent the operation in the camp are studied in the paragraphs that follow. The characteristics considered are (i) age, (ii) age of the wife of the sterilised person, (iii) religion, (iv) educational status, (v) income, (vi) occupation and (vii) the number of children living. As already mentioned, the data for this study have been collected from a 25% sample of declaration forms. The sample size is 14149.

7.1. Age:

The ages of the sterilised person and of his wife are important factors as regards the timing of sterilisation. Vasectomy of a person whose wife is in the fag end of her reproductive period has obviously very little saving of births compared to sterilisation of a person whose wife is in the early or middle years of reproductive period. Table 3 below gives the distribution of sterilised persons according to their age and that of their wives.

Table : 3

Distribution of sterilised persons according to age.

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Age group	Age of husband		Age of wife	
	Number	Percentage	Number	Percentage
15 - 19	..	..	189	0.3
20 - 24	881	1.4	9939	15.8
25 - 29	7611	12.1	17235	27.4
30 - 34	13461	21.4	16480	26.2
35 - 39	16921	26.9	15348	24.4
40 - 44	13083	20.8	3397	5.4
45 - 49	9561	15.2	314	0.5
50 & above	1384	2.2	..	..
Total:	62902	100.0	62902	100.0

Comparatively more persons are drawn for the sterilisation from the age group of 30-44 years. These age groups accounts for 70% of the males sterilised. When the age of wife is considered it is seen that relatively more persons whose wives are in the age group of 25-39 have accepted the sterilisation. That is, as much as 78% of the persons who underwent sterilisation had their wives in the age-group 25-39.

In the study of the 1st camp the age of the vasectomised person alone was considered. According to that study 85% was in the age group 30-49 years. When this age group is considered the figure is more or less the same for the two camps. The above percentages point out the trend in adoption of sterilisation. Very few adopt sterilisation in the early years of their married life. The comparison with the figures of the 1st camp shows that sterilisation is increasingly adopted by young couples. The percentage of sterilised persons in 20-29 age group has increased from 9.5% in the first camp to 13.5% in the 2nd camp.

The median age of sterilised persons in the 2nd camp works out to 37.3 years as against 39.1 years in the first camp. When the age of the wives of sterilised persons is considered, the median age works out to 30.7 years in the second camp. The age of wives of sterilised persons was not studied in the first camp and so the comparable figure in the first camp is not quoted.

7.2. Religion:

The differential acceptance of family planning by various religious groups is presented in table 4 below:

Table : 4

Distribution of sterilised persons according to religion.

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Religion	Number	Percentage (2nd camp)	Corresponding percentage in the first camp
Hindu	42836	68.1	54.9
Christian	16606	26.4	37.1
Muslim	3460	5.5	8.0
Total:	62902	100.0	100.0

The percentage of Hindus is more than that in the 1st camp and those of Christians and Muslims are less than those in the 1st camp. The relative popularity among various religions cannot be assessed since the population from which the sterilised persons came is not exactly known in view of the fact that only 31% of persons came from Ernakulam District and the rest came from other Districts in varying proportions. However the expected percentage of the 3 religious groups in the population from which the sterilised persons came have been worked out as weighted average of the percentage of persons in each religion according to 1961 census in the 10 Districts of Kerala, the weights being the number of persons sterilised from each District in the camp. These estimates indicate that the population from which the sterilised persons

have been drawn in the 2nd camp is composed of 55.9% Hindus, 34.2% Chirstians and 9.9% of Muslims. On the basis of these percentages it can be seen that among sterilised persons the percentage of Hindus is considerably higher and those of Christians and Muslims are considerably lower as compared to the corresponding estimated percentages in the general population from which the persons have come for sterilisation.

7.3. Education:

The common feature noticed about the educational status of sterilised persons is that illiterate persons adopt sterilisation only rarely. Comparatively higher percentage from the higher educational strata come forward to accept sterilisation. Table 5 given below presents the distribution of sterilised persons according to educational status.

Table : 5

Distribution of sterilised persons according to educational status.

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Educational status	Number	Percentage
Illiterate	12832	20.4
Literate below Primary	28620	45.5
Passed primary but below middle	16417	26.1
Passed middle but below matric	3397	5.4
Matric and above	1636	2.6
Total:	62902	100.0

The impact of education can be studied by comparing the various educational status groups in the above frequency distribution with those in the general population. According to 1961 census of Kerala, among males aged 20-59 years, 29.1% of persons were illiterate, 48.5% were literate without educational level, 14.6% passed primary or junior basic and 7.8% passed matriculation and above. A comparison of the distribution of sterilised persons with these figures shows that comparatively fewer persons from the illiterate group and matric or above group came for sterilisation. This comparison may not be fully valid because of the fact that the basic figures used for comparison relate to the whole of Kerala population which is not exactly the population from which the camp has attracted persons. The literates who have passed primary standard but have not attained matric constitute only 15% of male population aged 20-59 years. But among sterilised persons their percentage is more than double that in the general population (31.5). It may be that while the lower proportionate representation of illiterates may be due to lack of sufficient motivation, that of the educated group may be due to the social inhibition in attending such a publicised camp.

7.4. Income:

The income of the sterilised person is an important factor in view of the fact that the incentives provided in the camp to the acceptors were very high compared to the usual incentive and this factor alone might have attracted many acceptors to the camp. The distribution of the acceptors according to income is given in table 6 below:

Table : 6

Distribution of sterilised persons according to monthly income

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Monthly income	Number	Percentage	Corresponding % in the first camp 1970
Below Rs.50	6164	9.8 ⟩	77.3
Rs. 50 - 99	43465	69.1 ⟩	
Rs.100 - 149	9561	15.2 ⟩	19.6
Rs.150 - 199	2013	3.2 ⟩	
Rs.200 - 499	1447	2.3	2.5
Rs.500 & above	252	0.4	0.6
Total:	62902	100.0	100.0

The income distribution shows that 79% of the acceptors had a monthly income below Rs.100/-, 18% between Rs.100-199 and only 3% had a monthly income of 200 and above. The comparison with the figures of the last camp shows striking similarity. The liberal incentives awarded in the camp have attracted a large number of acceptors from the lower income strata.

7.5. Occupation:

The distribution of sterilised persons according to occupation is given in Table 7.

Table : 7

Distribution of sterilised persons according to occupation

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Occupation	Number	Percentage	Corresponding % in the 1st camp
Agricultural labourers and other unskilled workers.	37112	59.0	64.3
Cultivators and farmers.	12769	20.3	15.7
Skilled worker	5787	9.2	9.7
Professional worker	1761	2.8	2.5
Trade & Commerce	2642	4.2	4.8
Clerical workers	252	0.4	0.4
Others	2390	3.8	2.4
No occupation	189	0.3	0.2
Total:	62902	100.0	100.0

The distribution of the acceptors according to occupational pattern remained more or less the same in the first and second camps, the only difference being that from the agricultural sector, a relatively larger percentage of agricultural labour have been motivated for accepting sterilisation in the camp. This position further corroborates the fact that most of the acceptors in the camp came from the lower income groups.

7.6. Number of children:

Table 8 gives the distribution of the sterilised persons according to the number of children living.

Table : 8

Distribution of sterilised persons according to number of children living.

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Number of children living	Number	Percentage	Corresponding % in the first camp
1	315	0.5	0.5
2	13776	21.9	22.3
3	16543	26.3	27.6
4	12580	20.0	18.6
5	9184	14.6	12.8
6	5724	9.1	11.7
7	2956	4.7	4.1
8	1258	2.0	1.3
9	377	0.6	1.1
10 & above	189	0.3	..
Total:	62902	100.0	100.0

The percentage of acceptors with 3 or less children living was 49% in the second camp as against slightly above 50% in the first camp. The average number of children living per acceptor works out 3.89 in this camp as against 3.85 in the previous camp. Though the differences in the figures are only nominal, one may be led to think that comparatively speaking motivational efforts in second camp had not been as effective as in the 1st camp.

8. Impact of the camp:

The success of the camp has paved the way for organising similar camps in other parts of the State and outside the State. The demographic impact of the camp in terms of births saved, is assessed using the age distribution of the wives of sterilised persons given in Table 3 and the age specific marital fertility rates obtained from sample registration scheme conducted by the Bureau of Economics and Statistics. The number of births that will be saved in the next year will be 15098 births. The sterilisation will have their effect in saving births as long as the wives of sterilised persons are in reproductive period and both partners survive.

According to the general norm fixed by the Department of Family Planning, Government of India, about 1.7 births are saved during 10 years time as a result of each sterilisation. The total number of births saved according to this estimate is 106933 in 10 years.

The population of Kerala according to the provisional figures of 1971 census is 212.80 lakhs. The sterilisations conducted in the camp work out to 2.96 per 1000 population.

9. Expenditure of the camp:

The total expenditure of the camp is worked out as Rs.92.06 lakhs - Rs.91.21 lakhs for vasectomy operation and Rs.0.85 lakhs for tubectomy operations. The average expenditure for vasectomy works out to Rs.145/- and that per tubectomy to Rs.166/-. About 79% of the expenditure in the case of vasectomy and 81% of the expenditure in the case of tubectomy form the incentives given to the acceptors. About 7% of the expenditure for vasectomy and 6% of expenditure/tubectomy form the benefits to the promoters.

The above details have been taken from the report issued by the District Collector, Ernakulam.

10. Summary and conclusions:

Only 31% of the vasectomy cases are from Ernakulam District. 80% of the remaining cases are from the adjacent districts of Kottayam, Alleppey and Trichur.

Vasectomy is becoming popular among males in the younger age groups compared to the previous camp. Comparatively few illiterate persons have adopted vasectomy.

The average number of children living is 3.89 at the time of sterilisation.

It is estimated that about 1.07 lakh births will be saved in 10 years by the sterilisations conducted in the camp.

About 0.15 lakh births will be saved in the 1st year.

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APPENDIX

DETAILED TABLES ON BLOCK/PANCHAYAT/ TOWN WISE ACHIEVEMENT IN MASSIVE VASECTOMY CAMPS AT ERNAKULAM

Name of Block and Panchayat	Population 1961	Achievement		Rate per 1000 Population.			No.of Eligible Couples	Rate per 100 Couples		
		1st Camp	2nd Camp	1st	2nd	Total		1st	2nd	Total
1	2	3	4	5	6	7	8	9	10	11
1. Vadavukode Block	83181	617	950	7.4	11.4	18.8	12876	4.8	7.4	12.2
Puthencruz Panchayat	15885	155	228	9.7	14.4	24.1	2390	6.5	9.5	16.0
Thiruvaniyoor "	12478	55	141	4.4	11.3	15.7	1925	2.9	7.3	10.2
Poothrikka "	12109	86	134	7.1	11.1	18.2	1836	4.7	7.3	12.0
Ikkaranad "	10998	81	118	7.4	10.7	18.1	1650	4.9	7.2	12.1
Kumarapuram "	13555	72	149	5.3	11.0	16.3	2350	3.1	6.3	9.4
Mazhavanoor/Irapuram	18156	168	180	9.3	9.9	19.2	2725	6.2	6.6	12.8
2. Parakkadavu Block	74140	520	1203	7.0	16.2	23.2	11110	4.7	10.8	15.5
Nedumbassery Panchayat	15083	152	322	10.0	21.3	31.3	2250	6.8	14.3	21.1
Parakkavadu "	17015	110	217	6.5	12.8	19.3	2550	4.3	8.5	12.8
Chengamanadu "	13479	84	219	6.2	16.2	22.4	2025	4.1	10.8	14.9
Puthenvelikkara "	16728	121	246	7.2	14.7	21.9	2510	4.9	9.8	14.7
Kunnukara "	11835	53	199	4.5	16.8	21.3	1775	3.0	11.2	14.2
3. Vythila Block	31838	254	295	8.0	9.3	17.3	4775	5.3	6.2	11.5
Maradu Panchayat	17017	162	164	9.5	9.6	19.1	2550	6.4	6.4	12.8
Kumbalam "	14821	92	131	6.2	8.8	15.0	2225	4.1	5.9	10.0

contd.....

1		2	3	4	5	6	7	8	9	10	11
4.	Parur Block	94458	617	1250	6.5	13.2	19.7	14205	4.3	8.8	13.1
	Chendamangalam Panchayat	21998	99	204	4.5	9.3	13.8	3300	3.0	6.2	9.2
	Ezhikara "	11573	81	164	7.0	14.2	21.2	1760	4..6	9.3	13.9
	Kottuvally "	20560	103	362	5.0	17.6	22.6	3085	3.3	11.7	15.0
	Chittattukara "	17304	130	192	7.5	11.1	18.6	2610	5.0	7.4	12.4
	Vadakkekara "	23023	204	328	8.8	14.2	23.0	3450	5.9	9.5	15.4
5.	Koovappady Block	86117	491	887	5.7	10.3	16.0	13120	3.7	6.8	10.5
	Mudakuzha Panchayat	10224	75	137	7.3	13.4	20.7	1550	4.8	9.0	13.8
	Asamannoor "	10230	94	163	9.2	16.0	25.2	1550	6.1	10.5	16.6
	Vengoor "	13533	69	200	5.1	14.8	19.9	2025	3.5	9.9	13.4
	Rayamangalam	19251	145	146	7.5	7.5	15.0	3045	4.8	4.8	9.6
	Koovappady "	32879	108	241	3.3	7.3	10.6	4950	2.2	4.9	7.1
6.	Kothamangalam Block	92849	460	1040	4.9	11.2	16.1	14250	3.2	7.3	10.5
	Kavalangad Panchayat	15862	125	221	7.9	13.9	21.8	2400	5.2	9.2	14.4
	Pindimana "	9995	52	108	5.2	10.8	16.0	1500	3.5	7.2	10.7
	Kottappady "	9970	54	138	5.4	13.8	19.2	1500	3.6	9.2	12.8
	Keerampara "	8939	44	95	4.8	10.6	15.4	1450	3.0	6.6	9.6
	Kothamangalam Panchayat	22541	116	227	5.1	10.1	15.2	3500	3.3	6.5	9.8
	Varapetty "	9536	27	105	2.8	11.0	13.8	1450	1.9	7.2	9.1
	Nellikuzhi Panchayat	16006	42	146	2.6	9.1	11.7	2450	1.7	6.0	7.7

1	2	3	4	5	6	7	8	9	10	11
7. Pampakuda Block	99078	1175	1236	11.9	12.5	24.4	14920	7.9	8.3	16.2
Koothattukulam Pt.	11363	156	239	13.7	21.0	34.7	1710	9.1	14.0	23.1
Palakuzha Panchayat	9701	60	77	6.1	7.9	14.0	1460	4.1	5.3	9.4
Thirumaradi "	12717	117	150	9.2	11.8	21.0	1920	6.1	8.0	14.1
Elangi "	12998	59	99	4.5	7.6	12.1	1950	3.0	5.1	8.1
Pampakuda "	12216	171	110	13.9	9.0	22.9	1810	9.4	6.1	15.5
Ramamangalam "	10695	267	113	24.9	10.6	35.5	1650	16.2	7.0	23.2
Piravam Pt.	18337	223	271	12.2	14.8	27.0	2760	8-1	9.8	17.9
Maneed Pt.	11051	122	177	11.0	16.0	27.0	1600	7.3	10.7	18.0
8. Mulanthuruthy Block	106287	1154	1365	10.8	12.8	23.6	15960	7.2	8.6	15.8
Edakkattuvayal Pt.	11824	142	179	12.0	15.1	27.1	1800	7.1	10.0	17.1
Amballur Pt.	13724	123	209	8.9	15.2	24.1	1950	6.3	10.7	27.0
Udayamperoor Pt.	17932	245	214	13.6	11.9	25.5	2700	9.1	8.0	17.1
Mulanthuruthy Pt.	14135	133	198	9.4	14.0	23.4	2130	6.2	9.3	15.5
Thiruvamkulam Pt.	18637	227	262	12.1	14.1	26.2	2790	8.1	9.4	17.5
Thripunithura Pt.	30035	284	303	9.4	10.1	19.5	4590	6.2	6.6	12.8
9. Vypeen Block	119057	936	1448	7.9	12.1	20.0	17890	5.2	8.1	13.3
Elamkunnapuzha Pt.	26468	217	315	8.1	11.9	20.0	3975	5.5	7.9	13.4
Narakkal Pt.	16105	103	206	6.4	12.8	19.2	2430	4.2	8.2	12.4
Nayarambalam Pt.	17129	62	142	3.1	8.3	11.4	2580	2.4	5.5	7.9
Edavanakad Pt.	14023	88	71	6.3	5.1	11.4	2100	4.2	3.4	7.6
Kuzhapilly Pt.	8858	93	132	10.5	14.9	25.4	1345	6.9	9.8	16.7
Pallipuram Pt.	20408	253	427	12.4	20.9	33.3	3060	8.3	13.9	22.2
Mulavukad Pt.	16066	120	150	7.5	9.3	16.8	2400	5.0	6.2	11.2

	2	3	4	5	6	7	8	9	10	11
ock	55514	423	591	7.6	10.6	18.2	8330	5.1	7.1	12.2
r Panchayat	12401	56	84	4.5	6.8	11.3	1860	3.0	4.5	7.5
Pt.	9229	41	114	4.4	12.3	16.7	1400	2.9	8.1	11.0
Thrikkakai Pt.	16674	221	146	13.2	8.8	22.0	2490	8.9	5.9	14.8
Kalamassery Pt.	17210	105	247	6.1	14.3	20.4	2580	4.1	9.6	13.7
11. Allangad Block	81221	644	1011	7.9	12.4	20.3	12440	5.2	8.1	13.3
Varupuzha (Eloor)Pt.	27939	216	324	7.7	11.6	19.3	4320	5.0	7.5	12.5
Karumaloor Pt.	16558	144	256	8.1	15.5	23.6	2490	5.8	10.3	16.1
Alongad Pt.	19221	137	248	7.1	12.9	20.0	3000	4.6	8.3	12.9
Kodungalloor Pt.	17503	147	183	8.4	10.4	18.8	2630	5.6	6.9	12.5
12. Angamaly Block	122695	934	1200	7.6	9.8	17.4	18440	5.1	6.5	11.6
Ankamaly Panchayat	18908	132	187	7.0	9.9	16.9	2840	4.6	7.6	12.2
Kalady Pt.	16278	76	171	4.7	10.5	15.2	2450	3.1	7.0	10.1
Kanjoor Pt.	12227	67	104	5.5	8.5	14.0	1800	3.6	5.6	9.2
Sreemoolanagaram Pt.	12699	144	163	11.3	12.8	24.1	1920	7.5	8.5	16.0
Malayattoor Pt.	13177	82	123	6.2	9.7	15.9	1990	4.1	6.4	10.5
Manjapra Pt.	13182	131	131	9.9	9.9	19.8	1980	6.6	6.6	13.2
Thuravoor Pt.										
Mookkannoor Pt.	20183	161	176	7.9	8.7	16.6	3000	5.4	5.9	11.3
Karukutty Pt.	16045	141	140	8.8	8.7	17.5	2400	5.9	5.8	11.7

1050