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um Improvement and Upgradation for Trivandrum, Cochin and Cali

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PREFACE

This is the third and the final report to be submitted by the NIUA as part of the consultancy study on Slum Improvement and Uupgradation Project for Trivandrum, Cochin and Calicut sponsored by the Local Administration Department, Government of Kerala in connection with the Kerala Urban Development Project which is to be funded by the World Bank. Of the earlier two reports, the Preliminary Report dealt with the magnitude of slum formation in the State, the policy response to ameliorate conditions in the slums and an evaluation of the improvement programme and its funding in the past. The Report on Household Survey, based on sample survey of 1000 slum households in the cities of Trivandrum, Cochin and Calicut, presented a socio-economic profile of slum dwellers in terms of shelter, economic conditions, accessibility to basic urban services and community participation in the improvement programme.

Drawing from these earlier reports and conforming to the stipulations of the World Bank, the present report deals with the modalities of improvement of slums through upgradation of services. For this, it examines and analyses housing improvement, the tenure system and maintenance, alternative approaches to the improvement and upgradation programme, project cost under various alternatives and the feasibilities of direct and indirect cost recovery. It also suggests the design parameters, mechanism of community's

participation in planning and implementation of improvement programme and its organisation. The strategy for improvement and upgradation of services suggested in this report are in the form of options which would help the implementing agencies in selecting particular types of slums for improvement in the various phases of implementation programme. Detailed guidelines have been given for formulation of projects for improvement.

It is hoped that the series of three studies submitted by the NIUA will help the planning and implementing agencies in project formulation, post-project sustainance and cost recovery.

The study was intiated by Shri Om Prakash Mathur, the former Director of NIUA. The project is coordinated by Dr. Gangadhar Jha, Research Professor at the Institute. Dr. Jha was responsible for planning and programming of the entire study at its various phases for the collection of primary and secondary data, data analysis and report writing.

Improving the quality of the living environment, especially of the poorer residents, has always posed a serious challenge to the planners and policy makers. Experience gained in the earlier slum improvement projects

have provided a much deeper understanding of the problems and the bottlenecks. It is hoped that this detailed and comprehensive study would assist the Kerala Government in formulating an appropriate slum improvement programme.

New Delhi
December, 1993

Dinesh Mehta
Director

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A large number of organisations and agencies of the Government of Kerala and individuals substantially contributed in conducting of this study. Amongst the organisations and agencies, special mention must be made of the Local Administration Department of the Government of Kerala, the office of the Kerala Urban Development Project (KUDP), the Directorate of Municipal Administration, the Town Planning Department (TPD), the Kerala Urban Development Finance Corporation (KUDFC), the Cochin Urban Development Authority and the three Municipal Corporations of Trivandrum, Cochin and Calicut.

Shri Philipose Thomas, the then Secretary of the Local Administration Department, took pains in facilitating data collection by the research team in the three cities. He evinced keen interest in the study at every stage. His successors Shri P.K.Sivanandan and Shri Mohan Das took equally keen interest in the study. Ms.Lida Jacob, Director, KUDP, was kind enough to arrange logistics for the field work and took keen interest in every aspect of the study. She also offered valuable suggestions for the study. Shri Shanmugam Pillai, Senior Planner, KUDP took interest in the minutest details of the study and came out with useful suggestions to be encorporated in the study.

Shri C.C.Keshwan, Director Municipal Administration gave useful insights into the interface of municipal authorities and the TPD in formulation, technical sanction and funding of improvement programmes under the EIUSP. Ms. Vijayalakshmi Ravindran, Town Planner, TPD offered a wealth of information for the study by making available the data collected by the 1985 TPD survey of slums. Shri G.Ashok Pillay, Joint Director, Centre for Urban Studies of the KUDFC, was kind enough to spare his valuable time in discussing the various aspects of the study and also provide logistic support to the research team.

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I take this opportunity to extend my thanks to all the public agencies, organisations and individuals in contributing to the conducting of this study.

New Delhi
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CHAPTER I

SLUM FORMATION AND THE LEVEL OF SERVICES

Kerala has a modest level of slum population as compared to other States of India. The varios estimates of slum population for the State indicate that it constitutes about 2 to 8 percent of the total urban population of the State[1]. The low level of slum population was attributed earlier in the Preliminary Report to the seemingly low level of urbanisation in the State itself which only marginally increased from 16.24 per cent in 1971 to 18.74 per cent in 1981. The results of the 1991 Census of India, however, reveal that the level of urbanisation in the State has substantially increased to 26.44 per cent which is even higher than the level of urbanisation of India (25.72%) as a whole. It apparently suggests that the level of slum population in the State is low despite a high level of urbanisation and a high rate of growth in urban population between 1981 and 1991 (Table 1.1).

Though the level of slum population in Kerala happens to be low, the level of slum population in Kerala in the three cities selected for the World Bank Project (Trivandrum, Cochin and Calicut) is not so. About one-fourth of the total population in the city of Calicut is residing in slum. In the cities of Trivandrum and Cochin about 12 per cent of the cities' population is residing in slums (Table 1.2). The rates of demographic growth of these cities are tabulated in Table 1.1. Calcicut, which has

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1 National Sample Survey, Sarvekshan, Vol.III, No.4, April 1980; India (Town and Country Planning Organisation), A Compendium on Indian Slums, New Delhi; India (Planning Commission), Task Forces on Housing and Urban Development: IV Shelter for the Urban Poor and Slum Improvement, New Delhi, 1983.

the lowest decennial growth of population according to the 1991 Census results, has the highest proportion of slum population.

Slum Formation

Apart from a high proportion of slum population in the three cities, the pace of slum formation has been fairly rapid. The number of slums in the three cities taken together has increased from 200 in 1985 to 266 in 1990 indicating about 33 per cent increase in five years which is quite high in a situation like Kerala. The slum population has increased even faster from about 1.52 lakhs in 1985 to about 2.36 lakhs in 1990 indicating a growth of about 55 per cent (Table 1.3). Of all the three cities, slums have grown at a much more rapid rate in Cochin where the number has increased by about 54 per cent and the slum population at a run-away rate of growth of about 108 per cent between 1985 and 1990. Cochin also happens to be the city which had the highest decennial rate of demographic growth in 1991 (66.15%). On the basis of number of slms, Calicut with 84 slum settlements and about 104128 slum population is next only to Cochin. However, the rate of growth in terms of number as well as slum population has been higher in Trivandrum (25% and 82.72% respectively) than in Calicut (12% and 22.98% respectively).

Area and Size

All the slum settlements in the three cities together occupy an area of 1277.70 hectares (Table 1.4). The largest area of land is occupied by the slum dwellers in Calicut (613.09 ha) which has the largest slum population amongst the three cities though in terms of number of households, it is next only to Trivandrum. In

Cochin, the slum dwellers occupy an area of 198.21 ha and in Trivandrum the land area occupied by the slum dwellers is 466.40 ha.

Analysis of slums in terms of land area occupied, number of households, population and the ownership of land reveals two specific features which are of direct relevance for policy intervention. First, a very large number of slums are tiny in size and second, in a very large number of them, the ownership of the land occupied by the slum dwellers is private. The ownership right has been given to the slum households even in such slums which are located on private land. Frequency distribution of slums in terms of land area, number of households and population has been given in the Preliminary Report. In Trivandrum, nearly 47 per cent of slums are located on upto one hectare of land. In Cochin, about 64 per cent of slums have upto one hectare of land. Only in Calicut, about 18 per cent of slums are located on land area of upto one hectare. In terms of the number of households in Trivandrum, about 38 per cent of slums have 100 or less than 100 households. In Cochin, about three-fourth of slums have 100 and less households. In Calicut, there are about 46 per cent of such slums (Table 1.5 see Chapter I of the Preliminary Report for details). Further break up of slums having 100 households and less reveals that in Trivandrum 12 slums have less than 50 households. The number of such slums in Cochin and Calicut is 67 and 22 respectively (Table 1.6).

It is revealed by the Household Survey as also by the secondary data collected from the three cities regarding the status of ownership of land occupied by slum households that a very large number of them are the owners of the land occupied by them. This is discussed in greater detail in Chapter II. The Household Survey

revealed that 76 per cent of the slum households in the three cities are owners (Table 1.7). In Calicut, about 92 per cent of the slum households are found to be owners. Such households are to the extent of about 76 per cent in Trivandrum and about 60 per cent in Cochin. The secondary data collected from the three cities also reveal that in a large number of slums, the pattas (ownership right) have been already awarded to the slum households in large numbers (Annexure 2.1).

These two specific features of slums in Kerala suggest that improvement strategy will not be viable with respect of small and tiny slums. It will call for identification of a cut off point on the basis of the number of households so that the improvement programme could be introduced only in such slums, which are above the cut off point. Similarly, the giving of ownership right to the slum households, as suggested in the Terms of Reference (TOR) will not be relevant in such a situation as a large number of slum households are already owning the land occupied by them. Granting of ownership right to the rest of the slum hoseholds and charging for this, will neither be equitable nor sustainable in law. This is discussed in greater detail in Chapter II.

Household Income

There exists a highly skewed distribution of income in the slums of the three cities. Of all the three cities, the most skewed income distribution is found in the slums of Calicut. As many as 79 per cent of the slum households have a monthly income of less than Rs. 600. Another 17 per cent have an income of Rs.600 to 1200 per month and only 1.85 per cent have more than Rs.1200 of monthly income. In Cochin, 48.17 per cent of the slum households

have an income of less than Rs.600 per month. Another 36 per cent have an income of Rs.601 to Rs.1200 and 15.57 per cent have an income of Rs.1201 to Rs.2001 per month. Only Trivandrum, has a relatively better distribution of income. About one-third of the households have a monthly income of less Rs.600. Another 35.6 per cent belong to the monthly income group of Rs.601 to Rs.1200 and 31.60 per cent of the slum households have a monthly income of Rs.1201 to Rs.2000. 15 per cent of the households living in slum have a monthly income of more than Rs.2000 (Table 1.8).

There is a great deal of variation in the average household income in the slums of the three cities. The highest average household income of Rs.1107 per month is found in Trivandrum. It is Rs.764 in Cochin and only Rs.484 in Calicut. Extending the official definition of poverty line, as many as about four-fifth of the total slum households in Calicut are living below the poverty line. In Cochin and Trivandrum 48.17 per cent and 32.80 per cent of the slum households respectively are below the poverty line.

This is yet another feature of the slums in the three cities which has important implications for policy intervention. Such low levels of income in the slums will apparently militate against direct cost recovery.

Services and Amenities

Pathways: Situational analysis of slums in the three cities suggests that the services available in the slums are at most only rudimentary. It has been analysed in greater detail in the Preliminary Report. Internal roads are available only in about one-third of the total slums. The situation seems to be most acute

in Calicut where about 80 per cent of the total slums do not have internal roads. In Trivandrum, there are about 63 per cent of such slums. This in Cochin is to the extent of 49 per cent. Mostly, the slums on critical locations (critical slums) are totally lacking the internal roads in the three cities. The problem of drainage is equally acute with the result that a majority of slums get water logging during the monsoon. About three-fourth of slums in Calicut, two-third in Cochin and Trivnadrum get water logging.

Water Supply: Analysis of data obtained through household survey reveals that only 5.3 per cent of the slum households in the three cities have private connection of water. Thus, an overwhelming proportion of slum households are depending on community sources of water supply which does not seem to be adequate. A significant proportion of slum households reported that they have to wait at the public standposts and handpumps for more than an hour. The proportion of such households in the three cities taken together is to the extent of 37.3 per cent. The problem seems to be acute especialy in Cochin where 58 per cent of the slum households who are drawing water from community sources reported spending more than an hour before they are able to fetch water. In Calicut also above 37 per cent of slum hoseholds have to wait for an hour and even more. Only in Trivandrum the proportion of such households is negligible, though here also about 84 per cent of the households have to wait for upto half-an-hour. About half the slum households in the three cities said that the water supply is inadequate. The reasons indicated by them for this include long queues, short duration, long distance from the dwelling units and low pressure (for details see Chapter V of Report on Household Survey).

Willingness to have Private Connection

Water supply presently being made available on community basis is inadequate. Do the slum households like to have private connections? The Household Survey has revealed that a substantial proportion of slum households are willing to have private connection. In Trivandrum about 80 per cent of the slum households are willing to have private connection of water supply. In Cochin and Calicut about 65 and 63 per cent of the slum households respectively are willing to have private connection. This has important implication for direct cost recovery for watar supply. As already about 5 to 6 per cent of the slum households have private connection, a very substantial proportion of slum households in the three cities will be paying for water on the basis of water charges. This in Trivandrum will come to about 86 per cent of the slum households. Only in Cochin and Calicut about 30 per cent of the households will still depend on the community sources of water supply. They will have to be charged for water on the community basis. This is discussed in greater detail in Chapter III.

Sanitation

In Trivandrum, about 58 per cent of the slum households already have private latrines. Only in Cochin and Calicut only about 39 per cent and 22 per cent respectively of the slum households have private latrines. About 63 per cent of the slum households in the three cities taken together do not have private latrines. When asked to reveal reasons for this, about 72 per cent of them said that it was too expensive to be afforded by them. Another about 9 per cent of them do not have it because the land occupied by them does not belong to them and they are apprehensive

of investing in installation of private latrine. Another about 7 per cent of them attributed to the lack of enough space for it. The Household Survey revealed that about 22 percent of the households in the slums of Calicut wish to have private latrines. The proportion of such households in Cochin and Trivandrum is about 38 per cent and 57 per cent respectively (for details see Chapter V of the Report on Household Survey).

The affordability to pay for installation of private latrine in one go is, however, low in all the three cities. However, a very large proportion of them (97%) are willing to pay for it in instalments. But they are in a position to pay only Rs. 50 per month for having private latrine.

An organised and formal system of garbage disposal also does not exist in the slums of the three cities. Only about 9 per cent of the slum households said that they have rubbish bins. Others just throw the garbage on the street, rivers and canals.

Electricity

Only about 35 per cent of the slum households in the three cities have electricity. Individually, the slums in Calicut have the lowest proportion of households with electricity (22%). In Cochin and Trivandrum, about 40 to 44 per cent of the households have electricity. Electricity for domestic use has inevitably to be left on the individual initiatives for taking domestic connection. Public intervention has to be confined to street lighting. The situational analysis of slums presented in the Preliminary Report has indicated that about 46 per cent of the total slums in the three cities do not have street lighting. The

problem is serious especially in the critical slums. About 83 per cent of the critical slums do not have any street lighting system.

Drainage

The drainage situation in the slums of both the types (critical and non-critical slums) is also grim. About 94 per cent of the slums of both the types do not have a drainage system. Kerala being a state having excessive rains during the monsoon, the provision of drainage is an imperative in any scheme of slum improvement.

The analysis of services in the slums of the three cities apparently brings home the fact that much is desired to provide even the basic services like water, sanitation and drainage. The status of these services have been discussed in greater detail in the Preliminary Report and the Report on Household Survey. The deficiency of services in each slum individually according to the prescribed norms is given in Annexure 3.4.

Improvement of Slums in the Past

Slum improvement programme in Kerala in the past has been devised within the framework of the Environmental Improvement of Urban Slums (EIUS) launched in 1972. As on June 1991, altogether about 70 slums in the three cities had been improved and another 16 were in the process of being improved in the three cities. List of developed and undeveloped slums is given in Appendix I.

A review of improvement programme in the past has been analysed in detail in the Preliminary Report (Chapter IV). It has revealed a two-fold deficiency in the implementation of improvement programme. First, the level of services provided is inadequate as

there exists a great deal of deviation from the norms suggested under EIUS and also by the Guidelines of the Government of Kerala in this regard. Some of the services and facilities have not been provided even in a rudimentary form. Provision of bathrooms on community basis, paved streets, pucca drains are some of such services which have completely gone by default. Second, whatever services have been provided, they are not properly maintained. This has led to further decline in the level of services. Choking of lavatories, drains, non-replacement of fused bulbs in the streets are some of the examples of lack of maintenance. The improvement of slums within the existing framework of EIUS therefore needs to be refurbished. First, the range of services and amenities suggested to be provided appears too ambitious and normative to have any relevance to the constraints on funds available. It has not been possible to provide even some of the core services like water, sanitation and drainage according to the minimum norms. To talk of landscaping, horticulture, development of parks, playgrounds, hospitals and so on in the slums sounds too much utopian and dogmatic in approach. It would be therefore, prudent to reformulate the priorities and redesignate a few critical services out of the EIUS list. This is done in greater detail in Chapter III. However, this is preceded by an analysis of house improvement tenure system and maintenance in Chapter II.

Table 1.1

Urban Population of Trivandrum, Cochin and Calicut

City	1961		1971		1981		1991	
	UA	C	UA	C	UA	C	UA	C
Trivandrum	262303	239815	409627 (56.17)	409627 (70.81)	520125 (26.98)	483086 (17.93)	825682 (58.75)	523733 (8.41)
Cochin	292167	277723	505838 (73.13)	439066 (58.09)	685836 (35.58)	513249 (16.90)	1139543 (66.15)	564038 (9.90)
Calicut	287323	220943	420705 (46.42)	333979 (51.16)	546058 (29.80)	394447 (18.11)	800913 (46.67)	419531 (6.36)
Kerala	2554141		3466449 (35.72)		4771275 (37.64)		7676371 (60.89)	
India	78936603		107824755 (36.60)		157680171* (46.24)		217177625 (37.73)	

UA : Urban Agglomeration
C : Municipal Corporation
* : Excludes Assam

Note: Figures in parantheses denote growth rate over the preceding decades

Source Census of India : 1981, Census of India : 1991, Series 1, Paper 2 of 1991.

Table 1.2

Population Living in Slum in Trivandrum, Cochin and Calicut

City	Population 1991	Slum Population 1990	Proportion of slum population
1. Trivandrum	523,733	64,909	12.39
2. Cochin	564,038	67,112	11.90
3. Calicut	419,531	104,128	24.82

Table 1.3

Growth of Slums in terms of Number, Household and Population

City	No.of slums			No. of households			Population		
	1985	1990	% Growth	1985	1990	% Growth	1985	1990	% Growth
Trivandrum	36	45	25.00	7237	15349	112.09	35524	64909	82.72
Cochin	89	137	53.93	5547	10385	87.22	32237	67112	108.18
Calicut	75	84	12.00	11345	14643	29.07	84668	104128	22.98
Total	200	266	33.00	24129	40377	67.34	152429	236149	54.92

Source : 1. Government of Kerala, Town Planning Department, Urban Slums in Kerala.
2. NIUA Survey, 1990.

Table 1.4

Area Occupied by Slums in Trivandrum, Cochin and Calicut

City	No. of slums	Area occupied (Hectares)	No. of households	Population
Trivandrum	45	466.40	15349	64909
Cochin	137	198.21	10385	67112
Calicut	84	613.09	14643	104128
Total	266	1277.70	40377	236149

Table 1.5

Distribution of Slums by Households

Households	Trivandrum		Cochin		Calicut	
	No.	%	No.	%	No.	%
Upto 100	17	37.78	103	75.18	39	46.43
100 - 150	2	4.44	14	10.22	9	10.71
151 - 200	2	4.44	7	5.11	5	5.95
201 - 250	4	8.89	-	-	10	11.90
251 - 300	2	4.44	2	1.46	3	3.57
301 - 350	2	4.44	1	0.73	-	-
351 - 400	2	4.44	1	0.73	3	3.57
401 - 450	-	-	-	-	2	2.38
451 - 500	1	2.22	-	-	-	-
501 - 550	1	2.22	1	0.73	3	3.57
551 - 600	1	2.22	-	-	1	1.20
601 - 650	3	6.67	-	-	-	-
651 - 700	-	-	-	-	1	1.20
700 +	7	15.56	1	0.73	2	2.38
U.A.	1	2.22	7	5.11	6	7.14
Total	45	100.00	137	100.00	84	100.00

Source : Data collected by NIUA from the concerned Municipal Corporations.

Table 1.6

Frequency Distribution of Slums having 100 and less Number of Households

No. of Households	No. of Slums		
	Trivandrum	Cochin	Calicut
Less than 10	7	7	-
10 - 20	3	19	4
21 - 30	1	18	4
31 - 40	-	8	8
41 - 50	1	15	6
51 - 60	1	11	5
61 - 70	1	7	5
71 - 80	2	10	3
81 - 90	1	4	1
91 - 100	-	4	3
Total	17	103	39

Table 1.7
Distribution of Sample Households according to Tenure Status

City	Tenure System							
	Tenant		Owner		No Response		Total	
	No.	%	No.	%	No.	%	No.	%
Trivandrum	35	13.46	197	75.77	28	10.77	260	100.00
Cochin	145	40.28	215	59.72	-	-	360	100.00
Calicut	27	7.11	349	91.84	4	1.05	380	100.00
Total	207	20.70	761	76.10	32	3.20	1000	100.00

Source : NIUA, Household Survey, 1990.

Table 1.8
Distribution of Households according to Monthly Income in the Sample Slums of the Three Cities

Income Group (Rs.)	Calicut			Cochin			Trivandrum			Total		
	Household	%	Cumulative percentage	Household	%	Cumulative percentage	Household	%	Cumulative percentage	Household	%	Cumulative percentage
< 100	-	-	-	5	1.42	1.42	6	2.4	2.40	11	1.12	-
101-200	20	5.28	5.28	14	3.97	5.39	6	2.4	4.80	40	4.07	5.19
201-400	166	43.80	49.08	66	18.70	24.09	31	12.4	17.20	263	26.78	31.97
401-600	113	29.82	78.90	85	24.08	48.17	39	15.6	32.80	237	24.13	56.10
601-800	38	10.03	88.93	66	18.70	66.87	41	16.4	49.20	145	14.77	70.87
801-1000	22	5.80	94.73	47	13.31	80.18	35	14.0	63.20	104	10.59	81.46
1001-1200	5	1.32	96.05	15	4.25	84.43	13	5.2	68.40	33	3.36	84.82
1201-1400	8	2.10	98.15	20	5.66	90.09	14	5.6	74.00	42	4.28	89.10
1401-1600	4	1.06	99.21	12	3.40	93.49	10	4.0	78.00	26	2.65	91.75
1601-1800	1	0.26	99.47	6	1.70	95.19	8	3.2	81.20	15	1.53	93.28
1801-2000	2	0.53	100.00	2	0.56	95.75	9	3.6	84.80	13	1.32	94.60
2000+	-	-	-	15	4.25	100.0	38	15.2	100.0	53	5.40	100.0
Total	379	100.0	100.0	353	100.0	100.0	250	100.0	100.0	982	100.0	100.0
No response	1	-	-	7	-	-	10	-	-	18	-	-
Grand Total	380	100.0	100.0	360	100.0	100.0	260	100.0	100.0	1000	100.0	100.0

Source : NIUA, Household Survey, 1990.

CHAPTER II

HOUSING IMPROVEMENT, TENURE SYSTEM AND MAINTENANCE

Tenure Type

One of the basic attributes of a slum is its illegality as, by and large, slums are configuration of settlements based on encroachment on land. The cities of Trivandrum, Cochin and Calicut, however, present a different scenario. The analysis of data on tenure types in the three cities reveals preponderance of households who are owning the land occupied by them. The household survey conducted by NIUA revealed that 76 per cent of the households in the three cities are owners (Table 2.1). Calicut has the highest number of owner households (91.84%). In Trivandrum, 75.77 per cent of the households are the owners and in Cochin the owner households are to the extent of about 60 per cent.

It is interesting to note that not a single household revealed during the household survey that he is a squatter. It, therefore, necessitated to varify the tenure type. An attempt was, therefore, made to collect the land ownership information from the three cities. The information collected is given in Annexure 2.1. It is seen from this that in a large number of slums the pattas have already been awarded to the slum households. In Calicut, pattas have been awarded to the extent of 100 per cent in seven slums. About 80 to 99 per cent of the slum households have been awarded pattas in as many as 13 slums and in 18 slums the pattas have been awarded to 60 to 79 per cent of the slum households. Many of such slums are located on

private lands. Thus, pattas have been awarded even to slum households who are located on private land. In Trivandrum as well, pattas have been awarded to slum households in several slums. The percentage of households who have been awarded pattas varies from 30 per cent to 80 per cent in different slums, though the slums located on private land have not been included for award of ownership right in Trivandrum. In Cochin, again a very large number of slums are located on private land which are owned by the slum households. Thus, a substantial proportion of slum dwellers have ownership right of land.

Such a large proportion of slum households having ownership right of land is explained by an enactment by the state legislature of Kerala, viz. the Land Reforms Act, 1963 as amended in 1969. The Act designates a person as a Kudikidappukaran if he does not have any homestead or any land more than three cents in any city or major municipality and has continued to occupy any land and the dwelling house on it from 16th August, 1968 to 1st January, 1970. The Act under Section 75(1) provides him protection against eviction. Sub-section (2) provides that in case the land occupied by him is needed bonafidely for building purposes or if the land is needed for public purpose in connection with a Town Planning Scheme approved by the competent authority or for industrial purpose, the kudikidappukaran is required to be shifted to a new site belonging to the land holder at his cost. Such new site should be located within a distance of one mile from the existing site. The land holder is also required to transfer ownership right and possession of the new

site to the kudikidappukaran. If, however, a landholder is holding less than one acre of land and there is a Kudipidappukaran on any of his land, if he requires the land for himself, he has to request the government for the acquisition of new land for rehabilitation of the Kudikidappukaran. The Act provides a time limit of two years to do this with effect from 1st July, 1969. After the 1st July, 1971 the land holder will have to do so only with the consent of the Kudikidappukaran. In case, the landholder opts for the eviction of the Kudikidappukaran, he is required to deposit 87.5 per cent of the amount of compensation for acquisition of land and bear the cost of shifting.

Thus, the Act has given the Kudikidappu right to the slum dwellers. The award of pattas to the slum dwellers even in the slums on private land has been possible due to the provisions of this Act. As the slum dwellers are aware of such law, they do not hesitate to call themselves owners of land occupied by them. Hence, the Act, due to its quite strict and harsh provisions, has virtually made the slum dwellers defacto owners of land occupied by them.

Nature of Tenancy

Data collected during the household survey reveal that only about one-fifth of the households are living as tenants in the three cities (Table 2.2). Maximum number of tenants is to be found in Cochin where about 40 per cent of the slum households are tenants. Proportion of tenants in Calicut and Trivandrum is 7 per cent and 13 per cent, respectively. Multiple tenancy

system exists in the three cities only on a small scale. Of the total slum households, hardly one-fourth are living under multiple tenancy system in the three cities taken together (Table 2.2). Only in Cochin, 10 per cent of the sample households are living as secondary tenant. In Trivandrum, there are only 3.5 per cent such households.

Self-Help Housing

About one-third of the sample households in the three cities taken together have brought about improvement in their dwelling units (Table 2.3). Maximum number of improvements have been brought in the slums of Trivandrum where about 63 per cent of the total households have improved their shelter followed by Cochin where about a little more than one-third of the slum households have brought about improvement in their shelter. Only in Calicut, the process of housing improvement is found to be slow as only about 14 per cent of the slum households have brought about improvement in their shelter. The household survey revealed that about 57 per cent of the total improved dwelling units in the three cities have been improved in the last four years. The nature of improvement reveals that to a very large extent, improvements have been brought about in the katcha and semi-pucca structures. As much as 67 per cent of the katcha and 56.5 per cent of the semi-pucca structures have been improved upon in the three cities in the last four years.

The improvement in dwelling units is not confined to any particular income group. There is not found to be any relationship between income and the nature of improvement. The

largest number of reconstruction from katcha to other types is found in the income range of Rs. 201 to Rs. 1000. Improvement of any one of the walls, roof and floor is found prevalent in the income range of Rs. 201 to Rs. 1400 (Table 2.4). Self-help in shelter improvement is thus quite prevalent in the slums of the three cities.

Improvement Financing

Institutional support for financing of improvement of shelter, as mentioned earlier, has been on a very small scale (only 12% of improvement in the three cities - Table 2.5). This has come, by and large, within the framework of two schemes introduced by the Government of Kerala. Structural Improvement Scheme was launched in February, 1981 and revised in June, 1981 and second, the Chief Minister's Fund for Slum Clearance/Improvement in urban areas introduced in May, 1981. The Structural Environmental Improvement Scheme was introduced with financial support from the Kerala State Housing Board. The Director, Municipal Administration was made the nodal authority to implement it by granting loans to the municipal authorities. Though, the scheme was conceived at the city level, financial assistance was envisaged to be given to the EWS in the form of loan. The Chief Minister's Fund had several other components as well. However, due to constraints on the availability of funds, it could not make much headway.

Financial Requirement

The requirement of funds for home improvement has been worked out only for the improvement of katcha structures. According to the guidelines of the National Housing Bank, the affordable cost of a house has to be 30 times the monthly income of the households and the cost of improvement is only one-third of the cost of house. The house improvement loan component is supposed to be again only one-third of the cost of house improvement; the rest is to be contributed by the household by way of monetary contribution, and labour contribution. Accordingly, the requirement has been worked out based on the household incomes of slum dwellers in the three cities individually. The mean household income has been taken as the basis for working out the requirement of funds for improvement financing. Table 2.6 shows that the loan component comes to Rs.3,690 per household in Trivandrum, Rs. 2,547 in Cochin and Rs.1,613 in Calicut. Based on this component of home improvement loan table 2.7 indicates that the total requirement of improvement finance in the slums of the three cities comes to Rs.4.41 crores. Its split in the three cities indicates that an amount of Rs. 2.16 crores is required in Trivandrum, Rs. 1.23 crores in Cochin and Rs. 1.02 crores in Calicut.

Recovery of home improvement loan is suggested at the rate of 13 per cent interest in ten years. Accordingly, the monthly payment required to be made by the slum households in Trivandrum comes to Rs. 57. This is Rs. 39 and Rs. 25 in case of Cochin and Calicut, respectively.

The requirement of funds as discussed above and the extent of improvement loan to be given to the slum households seems to be the best course of action in the situation. In view of constraints on resources, the improvement of shelter within semi-pucca structure is not suggested to be brought within the purview of home improvement loan. The improvement required in such structures, if at all it is required, could be left completely on the basis of self-help. As mentioned earlier, the schemes for funding of structural improvement could not make much headway due to paucity of financial resources. Hence the framework suggested above seems to be the best course in the obtaining situation.

Operation and Maintenance

Existing Status :

A sample survey of 25 per cent of the improved slums in the three cities has revealed that the services provided under the improvement programme are not being maintained properly. This was the feeling of the residents of as many as 20 sample slums (out of 22). When asked to indicate reasons for this, almost all of them felt that it is so due to apathy and indifferent attitude of the municipal authorities. The common grievance of the residents of the sample slums pertained to lack of cleanliness and clearing of choked public latrines, non-replacement of fused bulbs in the street lighting poles, non-repairing of the broken water taps, drains and footpath, inadequate cleaning of streets and unsatisfactory disposal of garbage.

Apathy and indifferent attitude of the civic authorities apart, a fundamental reason for lack of maintenance relates to the fiscal strength of the municipal corporations in the three cities. A weak local fiscal health has been instrumental in lack of maintenance of improved slums. An analysis of trends in revenue expenditure and receipts of the municipal corporations in the three cities has revealed that the per capita expenditure and income in real terms have been stagnating between 1974-75 and 1986-87 despite continuous demographic growth.[1] The resource situation of the Municipal Corporations of Calicut and Trivandrum appears to be quite serious as their per capita receipts in real terms have declined to a very great extent. Even in the case of Cochin, the increase is only marginal. A weak fiscal health of the municipal corporations have adversely affected their capacity to maintain the improved slums.

If the situation has to improve, which is an imperative in any scheme of slum improvement and upgradation, a two-pronged strategy is called for. First, policy intervention is urgently reguired to tone up the state municipal finance in the three cities by diagnosing the problems and evolving a suitable strategy. As this is presently being looked into by a Consultant, hopefully it will culminate in devising of ways and means of mobilisation of resources at the local level. Second, the beneficiaries themselves have to contribute their might

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1. NIUA, Preliminary Report, Chapter V.

towards maintenance of services. The cost of improvement also needs to be borne by the beneficiaries so that it will supplement the funds raised through indirect cost recovery at the city level.

Table 2.1

Distribution of Households according to Tenure Status

City	Tenure status							
	Tenant		Owner		No response		Total	
	No.	%	No.	%	No.	%	No.	%
Calicut	27	7.11	349	91.84	4	1.05	380	100.0
Cochin	145	40.28	215	59.72	-	-	360	100.0
Trivandrum	35	13.46	197	75.77	28	10.77	260	100.0
Total	207	20.70	761	76.10	32	3.20	1000	100.0

Source : NIUA, Household Survey, 1990.

Table 2.2

Distribution of Tenants according to Status of Tenancy

City	Tenancy				Ownership				No response	Total
	Ist	IInd	Any other	Total	Ist	IInd	Any other	Total		
Calicut	25 (6.6)	1 (0.3)	1 (0.3)	27 (7.1)	316 (83.2)	31 (8.2)	2 (0.5)	349 (91.8)	4 (1.1)	380 (100.0)
Cochin	104 (28.9)	36 (10.0)	5 (1.4)	145 (40.3)	94 (26.1)	39 (10.8)	82 (22.8)	215 (59.7)	-	360 (100.0)
Trivandrum	26 (10.0)	9 (3.5)	- -	35 (13.5)	149 (57.3)	44 (16.9)	4 (1.5)	197 (75.8)	28 (10.8)	260 (100.)
Total	155	46	6	207	559	114	88	761	32	1000

Note : Figures in parentheses indicate percentage to the total.
Source : NIUA, Household Survey, 1990.

Table 2.3

Number of Dwelling Units Improved

Type	Calicut		Cochin		Trivandrum		Total	
	No.	%	No.	%	No.	%	No.	%
Improved	52	13.7	123	34.2	163	62.7	338	33.8
Not improved	328	86.3	237	65.8	97	37.3	662	66.2
Total	380	100.00	360	100.00	260	100.00	1000	100.00
	38.00		36.00		26.00		100.00	

Source: NIUA, Household Survey, 1990.

Table 2.4

Nature of Improvement of Shelter according to Income Group

Household Income	Nature of Improvement								
	1	2	3	4	5	6	Total	N.A.	Grand total
< 100	2	-	4	-	10	-	16	22	38
%	(12.5)		(25.0)		(62.5)		(100.0)		
101-200	4	-	3	-	3	-	10	28	38
%	(40.0)		(30.0)		(30.0)		(100.0)		
201-400	11	2	21	1	16	2	53	206	259
%	(20.8)	(3.8)	(39.6)	(1.9)	(30.2)	(3.8)	(100.0)		
401-600	22	3	28	-	21	-	74	161	235
%	(29.7)	(4.1)	(37.8)		(28.4)		(100.0)		
601-800	17	4	26	-	15	1	63	85	148
%	(27.0)	(6.3)	(41.3)		(23.8)	(1.6)	(100.0)		
801-1000	12	2	14	1	10	1	40	60	100
%	(30.0)	(5.0)	(35.0)	(2.5)	(25.0)	(2.5)	(100.0)		
1001-1200	5	-	6	-	3	-	14	19	33
%	(35.7)		(42.9)		(21.4)		(100.0)		
1201-1400	3	2	10	-	2	-	17	25	42
%	(17.6)	(11.8)	(58.8)		(11.8)		(100.0)		
1401-1600	4	1	3	-	7	-	15	11	26
%	(26.7)	(6.7)	(20.0)		(46.7)		(100.0)		
1601-1800	3	-	5	-	2	1	11	4	15
%	(27.3)		(45.5)		(18.2)	(9.1)	(100.0)		
1801-2000	1	-	3	-	3	1	8	5	13
%	(12.5)		(37.5)		(37.5)	(12.5)	(100.0)		
2001+	8	5	12	-	5	1	31	22	53
%	(25.8)	(16.1)	(38.7)		(16.1)	(3.2)	(100.0)		
Total	92	19	135	2	97	7	352	648	1000

1 - Reconstruction from kutcha to semi-pucca & semi-pucca to pucca.
2 - Addition of room.
3 - Improvement/modification of either the wall, roof or floor.
4 - Addition of latrine/bathroom/kitchen.
5 - Repairs and maintenance, rethatching & white washing.
6 - Fixtures & fittings.
N.A. - Not Applicable
Source: NIUA, Household Survey, 1990.

Table 2.5

Nature of Improvement according to Sources of Funding

Source of funding	Nature of Improvement													
	1		2		3		4		5		6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gove. Credit or grant	14	15.22	1	5.26	18	13.33	-	-	7	7.22	-	-	40	11.36
Own effort	68	73.91	16	84.21	110	81.48	2	100.0	69	71.13	6	85.71	271	76.99
Others' assistance	10	10.87	2	10.53	7	5.19	-	-	21	21.65	1	14.29	41	11.65
Total	92	100.0	19	100.0	135	100.0	2	100.0	97	100.0	7	100.0	352	100.0

1 - Reconstruction from kutcha to semi-pucca & semi-pucca to pucca.
2 - Addition of room.
3 - Improvement/modification of either the wall, roof or floor.
4 - Addition of latrine/bathroom/kitchen.
5 - Repairs and maintenance, rethatching & white washing.
6 - Fixtures fittings.

Source: NIUA, Household Survey, 1990.

Table 2.5

Nature of Improvement according to Sources of Funding

Source of funding	Nature of Improvement													
	1		2		3		4		5		6		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gove. Credit or grant	14	15.22	1	5.26	18	13.33	-	-	7	7.22	-	-	40	11.36
Own effort	68	73.91	16	84.21	110	81.48	2	100.0	69	71.13	6	85.71	271	76.99
Others' assistance	10	10.87	2	10.53	7	5.19	-	-	21	21.65	1	14.29	41	11.65
Total	92	100.0	19	100.0	135	100.0	2	100.0	97	100.0	7	100.0	352	100.0

1 - Reconstruction from kutcha to semi-pucca & semi-pucca to pucca.
2 - Addition of room.
3 - Improvement/modification of either the wall, roof or floor.
4 - Addition of latrine/bathroom/kitchen.
5 - Repairs and maintenance, rethatching & white washing.
6 - Fixtures fittings.

Source: NIUA, Household Survey, 1990.

Table 2.6

Requirement for Home Improvement Loan

City	Mean Monthly Income (Rs)	Cost of House 30x(i) (Rs)	Cost of house Improve- =1/3x(ii) (Rs)	Loan component for house Improvement =1/3x(iii) (Rs)
	(i)	(ii)	(iii)	(iv)
Trivandrum	1107	33210	11070	3690
Cochin	764	22920	7640	2547
Calicut	484	14520	4840	1623

Note : The mean monthly income has been worked out on the basis of primary survey conducted by the NIUA in 1990. The cost of house has been worked out at thirty times the mean monthly income as per the guidelines of the National Housing Bank. The cost of improvement accordingly comes to one-third of the cost of the house. The house improvement loan component comes to one-third of the cost of house improvement.

Table 2.7

Total Amount Required For House Improvement Loan

City	Loan component per household	No. of houses needing improvement	Amount required for house improvement loan =(ii)x(iii) (Rs crores)
(i)	(ii)	(iii)	(iv)
Trivandrum	3690	5848	2.16
Cochin	2547	4819	1.23
Calicut	1613	6309	1.02
	7850	16976	4.41

ANNEXURE - 2.1

Status of Ownership of Land in the three cities of Kerala

S.No.	Name of the Slum	Public land	Whether patta given	Private land	Whether patta given	Remarks
1	2	3	4	5	6	7
CALICUT						
1.	Kappakkal			Yes	85%	
2.	Kudithoudu & Chittodi Thazham			Yes	100%	
3.	Podannayil			Yes	70%	
4.	Thaivelappu			Yes	75%	
5.	Thiruthu Paramba			Yes	85%	
6.	Chevarambalam			Yes	100%	
7.	Pallikkandi (East)			Yes	100%	
8.	West Hill	Yes				
9.	Vellayill					10 ha private, 9 ha local body, 2 ha. govt. 50% of the private has got patta.
10.	Milloth Colony			Yes	95%	
11.	Kannanparamba			Yes	50%	
12.	Pandarathilvalappu			Yes	50%	
13.	Vellayil (South)			Yes	90%	
14.	Nainanvalappu & Pallikkandi (West)			Yes	70%	
15.	Kalluthakadavu			Yes	75%	
16.	Veliyancherry			Yes	65%	
17.	Vattkundu			Yes	75%	
18.	Nodinagar					Govt. and private (patta to 16 h.h. in private land)
19.	Kottaparamba			Yes	14%	
20.	Mukadar			Yes	60%	
21.	Mannenpadam			Yes	85%	
22.	Acharathoppu			Yes	43%	
23.	Puthiyathapputoduka			Yes	40%	
24.	Chamundivalappu			Yes	100%	
25.	Thalayathuparamba			Yes	65%	
26.	Perukuzhipadam			Yes	37%	
27.	Thirumunbu Nilam			Yes	85%	
28.	Thadanilam			Yes	90%	
29.	Puthiyappa	Yes				
30.	Paliyarakkal	Yes	50%			
31.	Palliyarathazath	Yes	50%			
32.	Pallikandi (West)	Yes	50%			
33.	Perumalkandi	Yes	50%			
34.	Thaikootam	Yes	50%			
35.	Puthiyakadava Beach	Yes				

Contd....

1	2	3	4	5	6	7
36.	Thoppayil	Yes				
37.	Thalappanthoduka	Yes				
38.	Thottulipadam			Yes	75%	
39.	Poovalappu			Yes	60%	
40.	Vellerithodu			Yes	80%	
41.	Manaripadam			Yes	80%	
42.	Kambram			Yes	80%	
43.	Cherottuvayal			Yes	80%	
44.	Chappayil			Yes	65%	
45.	Puthiyakadappuram			Yes	70%	
46.	Chirakuziapadanna			Yes	50%	
47.	Satharam Compound					Local Body
48.	Kalluthunanda					Local Body
49.	Veneervayal			Yes	90%	
50.	Chalikara			Yes	95%	
51.	Thiruthivalappu			Yes	60%	
52.	Maruthamuli Paramba			Yes	70%	
53.	Koyavalappu			Yes	70%	
54.	Puthiyarapadanna			Yes	90%	
55.	Illathayal			Yes	48%	
56.	Kavilthazham			Yes	75%	
57.	Thiruthivayal			Yes	80%	
58.	Valakandathazham			Yes	80%	
59.	Kallorthazham			Yes	49%	
60.	Pandaranitam Vayal			Yes	100%	
61.	Kalathithazham Nilam			Yes	70%	
62.	Chandunninair Padanna			Yes	95%	
63.	Kalathil Paramba			Yes	85%	
64.	Chettair Housenilam			Yes	30%	
65.	Ayappoankothazham			Yes	90%	
66.	Chakkumkadov			Yes	70%	
67.	Mallorkunu					Local Body 97% got patta
68.	Kaneerthodi					Local Body 100% got patta
69.	Kaizher Madam			Yes	80%	
70.	Mundadithazham Poyal Kothi			Yes	100%	
71.	Kothi					Private development and govt. 12% patta
72.	Karulthazham			Yes	80%	

S.No.	Name of the Slum	Public land	Whether patta given	Private land	Whether patta given	Remarks
1	2	3	4	5	6	7
COCHIN						
1.	Chakkandam			Yes	Owned	Trust land
2.	Srampikkalparamba			Yes	Owned	
3.	Kalathilparamba			Yes	Owned	
4.	Cheliparamba			Yes	Owned	
5.	Cherulaikadavu			Yes	Owned	
6.	Mini Colony			Yes	Owned	
7.	Kochuparambu & Valaiparamba			Yes	Owned	Trust land
8.	Kannakataraparamba			Yes	Owned	
9.	SDPY colony	Yes		Yes	Owned	
10.	Military Parambu			Yes	Owned	
11.	Perupadappu			Yes		
12.	Panakassin Parambu			Yes	Owned	
13.	chilavannur	Yes	20%			
14.	Kadathanathu colony			Yes		Private and Govt.
15.	Chandanpalli colony			Yes	Owned	
16.	Peruwaram Railway Parambau	Yes				
17.	Rehmanya Paramba			Yes	Owned	Trust land
18.	Eraveli			Yes	Owned	
19.	Jwethan Paramba			Yes	Owned	Trust land
20.	North of verna company			Yes	Owned	
21.	Panayapilly Pardikkudy			Yes		
22.	Soudhi	Yes	No			Trust land
23.	MKS Parambu			Yes	Owned	
24.	Adhikari Valappu			Yes	Owned	
25.	Thundi Parambu			Yes	Owned	
26.	Malikal Parambu			Yes	Owned	
27.	Cherulaikadavu			Yes	Owned	
28.	Kavilampally Padam			Yes		
29.	East of St. Francis Cathedral			Yes	Owned	
30.	Thanthonnithuruth			Yes	Owned	
31.	Pannoth slum	Corporation				
32.	Scavengers colony SRM Road	Yes				Private and Corporation
33.	Manthara Pulaya Colony			Yes		
34.	Arippakka Paramba			Yes	Owned	
35.	Pandaraparambu	Yes				

Contd....

1	2	3	4	5	6	7
36.	Manapputti Parambu			Yes		
37.	Puthiyavittil Parambu			Yes Owned		
38.	Panakka Parambu			Yes Owned		
39.	Fishermen colony Elamuthin			Yes Owned		
40.	S.V. Puram			Yes Owned		
41.	Thannanam Labour Colony			Yes Owned		
42.	Vettura Colony Thannahan			Yes		
43.	Kissan colony			Yes		
44.	Kudumbi Colony			Yes Owned	Yes owned	
45.	Perandoor Bridge Slum			Yes		
46.	Kayapilly Colony			Yes		
47.	Slum near Anglo-Indian School			Yes		
48.	Kochangady			Yes Owned		
49.	Kanpiri Colony			Yes Owned		
50.	Kudumbi Colony (Mattanchery)			ned		
51.	Colony of east St. Anges Church			Yes Owned		
52.	Fishmen Colony New Gandhi Square			Yes Owned		
53.	Vadayar Parambu			Yes Owned		
54.	Chirakkal Colony			Yes Owned		
55.	Pulimoothil Parambu	Yes (local body)	No			No proposal for giving patta
56.	St.John's Pattan Colony			Yes		No proposal for giving patta
57.	Panambally Nagar (West)			Yes Owned		
58.	Panambally Nagar (East)			Yes Owned		
59.	Velluparamba Colony			Yes Owned		
60.	Kothera Rehabilitation Colony			Yes Owned		
61.	Murickathera Parambu			Yes Owned		
62.	Fishermen Colony Theverkad			Yes Owned		
63.	Moopa colony			Yes Owned		
64.	Chularzath Parambu			Yes Owned		
65.	Kanachathara Parambu			Yes Owned		Dispute with owner
66.	Chelut Railway Colony	Yes				Local body andoi private
67.	South Padiyath Colony	Yes				
68.	Thevara Canal Colony			Yes		
69.	Thuruthy Colony			Yes Owned		
70.	Ettir Kettu			Yes Private		
71.	Padathukulam	Yes				78 to 82 require rehabilitation as the occupation is in public lands
72.	Vennalappara	Yes				

Contd....

1	2	3	4	5	6	7
73.	ESI Colony	Yes				
74.	ERG Road	Yes				
75.	Sakuparambu Power House Road	Yes				
76.	Padivattam	Yes				83 to 89 and 91 require rehabilitation as the occupation is in public lands
77.	Kaithara Thodu	Yes				
78.	Elamkara Temple	Yes				
79.	Vannara Temple	Yes				
80.	Ambothuchira	Yes				
81.	Chilarannur					Private and Govt.
82.	Cheruthod Colony	Yes				
83.	Velloparambu	Yes				
84.	Karithala Colony	Yes				
85.	St.Agens Church					Public and private
86.	Valummel Colony	Yes				
87.	Pallichal Colony	Yes				
88.	DLB Colony Pallarathy					Govt. + private
89.	Pandarachira Colony			Yes		
90.	S.P. Puram North			Yes		
	S.P. Puram South			Yes		
91.	Kumlalangi Vazhi			Yes		As the land is required for public purposes rehabilitation will be done
92.	Vatturuthy Slum			Yes		
93.	Shipyard Kudikidappu Colony			Yes		
94.	Kaniampuzha Colony			Yes		
95.	Kadupathu Harizan Colony			Yes		
96.	Cheru Vithuppu Colony			Yes		
97.	Pullethundil Harizan Colony			Yes		
98.	Fisherman Colony - Elamkkara			Yes		
99.	Perandoor Bridge Colony			Yes		
100.	Vennala Harizan Colony	Yes				
101.	Thareparamlu Colony			Yes		
102.	Anamtheereethu Labour Colony			Yes		River bed :
103.	Anakettu Parambu			Yes		
104.	Pallichal Colony Slum	Yes				111 to 115 to be rehabilitated
105.	KMP Oil Hill	Yes				
106.	Northern Side of Pipe Line Road	Yes				
107.	Khadebhapom			Yes		
108.	Southern Side of Pipe Line Road	Yes				Hillock
109.	Pollully Colony			Yes		

Contd....

1	2	3	4	5	6	7
110.	Jagjeewan Ram Colony			Yes		
111.	Koothappally Purambu			Yes		
112.	Elamkulam Harizan Colony	Yes				To be rehabilitated
113.	Company Parambu			Yes		
114.	Kacheripady Kamnath Haridan Road	Yes				
115.	Labour Colony Palikavu Temple					Local body and private
116.	Fisherman Colony near Vaduthala Housing Colony			Yes		
117.	Mangalathu Parambu Slum No. 3					Trust (to be rehabilitated) Municipal and private
118.	Cheliparamba Slum					Trust (to be rehabilitated) Municipal and private
119.	Gelasethu Parambu					Trust (to be rehabilitated) Municipal and private
120.	Hassan Colony Slum					Municipal and private
121.	Moolamkuzhy Slum	Yes				
122.	Southern Side of Colony					Municipal and private
123.	Chirakapadom Slum					River bed
124.	Northern Side of Sujatha Theatre			Yes		
125.	Anakettu Parambu Slum					Municipal and private
126.	Kocherry Parambu Colony			Yes		Municipal and private
127.	Pulaya Colony			Yes		
128.	Soudi Colony			Yes		
129.	Kanneth Colony			Yes		
130.	Fisherman Colony Shannupapuram			Yes		

S.No.	Name of the Slum	Public land	Whether patta given	Private land	Whether patta given	Remarks
1	2	3	4	5	6	7
TRIVANDRUM						
1.	Anchanda	Yes	50%			
2.	Chirakulam	Yes	No			
3.	Pound Kulam	Yes	No			
4.	Vadavathu Colony	Yes	75%			
5.	Kannanthura	Yes	No			
6.	Thekkumoodu Bund Colony	Yes	No			
7.	R.C. Street Kunnukuzhy			Yes		
8.	Oorkulam			Yes		
9.	Slum War Sewerage Farm	Yes	No			
10.	Slum near Titanum	Yes	30%			
11.	Krishnapillee Nagar	Yes	70%			
12.	Karimadom Colony	Yes	No			
13.	Barloon Hill	Yes	70%			
14.	Puthencotta Burial Ground	Yes	No			
15.	Tagore Garden			Yes		
16.	Thiricharapuram Colony	Yes	60%			
17.	Kunnurila Colony	Yes	No			
18.	Charurilakathu Slum near M.C. College			Yes		
19.	Valiyathura Fisherman Colony	Yes	No			
20.	L.S. Road Shanphungham	Yes	No			
21.	New Block Colony in Poonthura			Yes	Owned	
22.	Kollur Bund Colony	Yes	No			
23.	V.F.I. Colony, Muttathara	Yes	No			
24.	Fisherman Settlement from Veli to Sangumugham					Govt. + private
25.	Slum near Kuriathy	Yes	No			
26.	Plamoodu Thottuvarambu	Yes	No			
27.	Paruthikuzhi Attuvarambu	Yes	No			
28.	Uppidamoodu	Yes	30%			
29.	Uppidemoodu	Yes	No			
30.	Fisherman Settlement, Poonthura			Yes	Yes	
31.	Chullagi Padinjara Thekkumbhapoom	Yes	No			
32.	Korakulam near M.G. College	Yes	No			
33.	Muringapalam Bund Colony	Yes	No			
34.	Alamthara Vazhavilakulam	Yes	No			

Contd....

1	2	3	4	5	6	7
35.	Perunelly at Kamleshwaram	Yes	80%			River bed
36.	Pourasamithy Colony (Balanagar Colony)	Yes	Patta being given			
37.	Pettah Railway Station	Yes	No			
38.	Vayyamoola	Yes	50%			
39.	St. Mary's H.S. Vettucard	Yes	50%			
40.	Modhavapuram	Yes	80%			
41.	R.C. Churah Thappu	Yes	No			
42.	Puthan Road Mukku	Yes	No			
43.	Cheelanthi Mukku	Yes	No			

CHAPTER III

PROJECT COST AND COST RECOVERY

Magnitude of Cost

Cost of a slum upgradation programme is essentially related to the type and range of services, amenities and activities included in an improvement programme. It also depends on the levels of services which is reflected in the norms and standards of services. The range and type of activities in a slum improvement programme, by and large, include provision and upgradation of services and amenities, improvement of shelter, awarding of tenurial right on land to the slum dwellers and improvement of their economic well being.

For the slum upgradation programme in Kerala we have included, within the ambit of costing, the upgradation of services only. Other components have been considered outside the formal financing of the project for the reasons given below.

Costing of awarding of tenurial right has not been favoured primarily on legal and equity considerations. As discussed in greater detail in Chapter II, the tenurial right on land occupied by the slum dwellers has been recognised by the Kerala Land Reforms Act, 1963 (Act I of 1964 as on Ist June, 1973). As the ownership right on land has been recognised by this Act, the award of ownership on the basis of charging a price or lease money is not considered desirable. Pattas have already been awarded to the slum dwellers in several slums in all the three cities without charging anything for this. Charging a price for

this in future from the remaining slum households will pose serious question of equity. Moreover, it will not sustain the scrutiny of law as well. In view of these, it is suggested that the pattas may be awarded to those who have not yet been given tenurial rights on land, without charging anything for this. But the process needs to be expedited and completed within six months of formal launching of the project.

Improvement of shelter has also not been included in the framework of formal costing. It has been considered separately in Chapter II and also subsequently in this Chapter. The requirement for loan for improving the shelter stock comes to about Rs. 44.12 millions as is seen in the table given below :

Table

Funds Required for Home Improvement Loan

City	Loan Amount	No. of houses	No. of Katcha Houses	Funds Required (Rs. million)
1. Trivandrum	3690	15349	5848	21.58
2. Cochin	2547	10385	4819	12.27
3. Calicut	1623	14643	6326	10.27
Total	-	40377	16993	44.12

The average amount of loan per katcha dwelling unit comes to Rs. 2596 according to the NHB guide lines. Discounted at 13 per cent rate of interest for a period of ten years, the equated monthly instalment comes to Rs. 40 per month per household. This has not been included in the costs worked out for upgradation of services because the actual number of households coming forward to avail of the home improvement loan is not known. The annunity, as mentioned above, is based on average for the three cities and is subject to change depending on the actual number of households availing the loan facility. Due to this reason the cost of shelter improvement is not included in the cost. As the funds have been provided for upgradation of shelter under the Nehru Rozgar Yojana, it could be effectively utilised for home improvement.

Services

The following components of services have been included in the framework of slum upgradation in Kerala.

1. Pathways and access roads
2. Street Lighting
3. Drinking Water Supply
4. Sanitation
5. Garbage Disposal
6. Storm Water Drainage

The norms for provision of these services in the slums without any service and upgradation of slums with rudimentary

services are given in Figure 3.1. It shows the norms adopted for the World Bank funded projects in Madras, Bombay, and the EIUS and also the norms presently being adopted by the Government of Kerala's Town Planning Department for the slum improvement programme under the EIUS. The norms have been further rationalised and suggested for adoption for the proposed slum improvement and upgradation project in Trivandrum, Cochin and Calicut. These norms and standards have been taken as the basis for costing of improvement. An elucidation of the services alongwith norms is discussed below.

1. Pathways and Access Roads

Pathways and access roads are required for easy access as also for prevention of water-logging. 1.5 to 3 meter wide pathways within the slum settlements is suggested to be provided. The width could be subject to change depending upon the availability of land. Material for paving could be either cement concrete or burnt clay bricks laid on edge or stone slabs whichever is locally available, is cost effective and socially acceptable. In special cases, the entire area could be paved with suitable slopes so as to avoid separate storm water drains. Costing has been done on the basis of 3 wide pathways of cement concrete. The actual cost would, therefore, be on the lower side than shown in the cost for this.

2. Street Lighting

Street lighting along the pathways has to be provided at the rate of one pole for every 30 m of running length of

SERVICE NORMS FOR SLUM UPGRADATION PROGRAMME

Fig. No. 3·1

	SERVICE COMPONENT	BOMBAY	MADRAS	KERALA (TPD)	EIUS	KUDP (SUGGESTED NORM)	
S1	Pathways	Pathway Access To Every Plot	Pathway Access To Every Plot	—	Widening Of Paved Lanes (To Make Room For Easy Flow Of Pedestrians Bicycles And Hand Carts	1·5m To 3m Wide Pathways @ 660m Lenth For 1ha. Subject To Availability Of Land	N1
S2	Drainage	For Every Plot	For Every Plot	—	Quick Drain Out Of Storm Water	660m Lenght For 1ha. (For Every Plot Subject To Over All Nature Of Slum, Land Position And Gradient)	N2
S3	Water Supply Posts	1 For 15 HHs. (75 Persons) @ 45 lpcd	1 For 10 HHs. (50 Persons)	1 For 100 Persons	1 For 150 Persons	1 Tap For 75 Persons	N3
S4	Community Latrine Seats	1 For 10 HHs. (50 Persons)	1 For 10 HHs. (50 Persons)	1 For 20 Persons	1 For 20–25 Persons	1 For 50 Persons	N4
S5	Street Lighting Posts	On Major Roads Only	—	1 For Every 30 Metres	1 Pole For 30 Metres	20 Posts For 1 ha.	N5
S6	Garbage Collection Points	1 For 15 HHs. (75 Persons)	—	—	—	1 Point For 75 Persons	N6

the pathway. In case, the entire area is paved, 8 poles for every one acre have to be provided. The light fittings should preferably be tube lights with a judicious mix of sodium vapor at select points near the entry to the slum area.

3. Water Supply

Individual water taps would be too expensive to be provided. Hence community stand posts could be provided at the rate of one tap for every 15 households or for 75 persons. In case of good potable ground water table, community hand pumps could be installed in place of community water taps. In case of community water stand posts, at least 135 liters of water per capita per day has to be ensured. Costing is based on provision of public standposts on community basis.

4. Sanitation

Conventional sewerage system would be very costly as it would also require treatment before final disposal. Low cost sanitation system viz. two-pit pour flush latrines on a community basis, therefore, needs to be provided. It is suggested to provide one seat for 10 households or 50 persons. Separate latrine blocks for men and women have to be constructed.

5. Garbage Disposal

Garbage disposal bins have to be provided at the rate of one collection point for every 15 households or 75

persons. Garbage bins could be made of concrete rings or brick walled enclosures.

6. Storm Water Drainage

It needs to be provided along the pathways so as to carry away the storm water as well as water used for bathing and washing. Wherever the total area of the slum is paved, only major storm drains would be required.

Cost of Service Upgradation

The costing of slum upgradation project for the three cities has been done on the basis of norms as suggested in Figure 3.1. In order to arrive at the cost of the project, it is imperative to first assess the deficiencies in all the slums against the set of norms which act as a benchmark for measuring the deficiencies. It is worth mentioning that the levels of services provided even in the improved slums do not come up to the suggested norms under the EIUS. The review of improvement of slums in the Preliminary Report has revealed that the improvement programme under EIUS has not been implemented in letter and spirit of the norms as suggested by the EIUS and also by the detailed guidelines issued by the Government of Kerala in this regard. It has not been possible to provide even some of the core services like water, sanitation, drainage and street lighting according to the minimum prescribed norms. The costing

exercise for slum upgradation, therefore, includes the improved slums also for upgradation of services. In costing the improvement and upgradation of services, the unit cost for each of the services mentioned above have been adopted at 1991 prices on the basis of current similar on-going projects in Kerala.

Alternative I

Total cost of providing services in the zero service slums and upgradation of services in other slums according to the adopted norms is given in table 3.1. It could be seen from this table that the total cost of on-site infrastructure in both the categories of slums in the three cities together amounts to Rs. 520.42 millions. Of this, the provision of services in unimproved slums is to the extent of Rs. 390.05. The cost of off-site infrastructure comes to Rs. 52.04 millions for all the slums. Total infrastructure cost thus comes to Rs. 572.46 millions. Adding the maintenance cost and other departmental charges to it, the total gross cost of providing on-site and off-site infrastructure comes to Rs. 744.20 millions or approximately Rs. 75 crores.

With a view to reduce this total gross cost, it is suggested to recover some part of the cost by selling the excess vacant land available in the slums of the three cities. The extent of excess land which could be available for sale has been worked out on the basis of densities. There exists a wide range of densities in the slums of the three cities. A density of 500

persons per hectare leased was taken as the cut-off point for calculating the excess land. All the slums below a density of 500 persons per hectare have excess land which could be taken over by the government. The extent of gross and net excess land available is mentioned in the table given below :

Table

The Extent of Excess Land Available in the Slums of the Three Cities

(In hectare)

City	Excess Gross Land	Excess Net Land*
1. Trivandrum	364.31	182.16
2. Cochin	122.77	61.39
3. Calicut	410.87	205.44
Total	897.95	448.99

* 50% of Gross Excess Land

In all the three cities taken together, the gross excess land is to the extent of 897.95 ha. Of this, 50 per cent is supposed to be used for circulation, open spaces and amenities and also some part of it is to be handed over to the private land owner. It is suggested that half of such land should be used for providing circulation and amenities and half for handing over to the private land owner. The net excess land available is thus to the extent of 448.99 ha. This is suggested to be sold out at a price which is twice the development cost. The development

cost per sq. met. in the three cities taken together comes to Rs. 52.94 per sq. met. (see Annexure 3.1 for details). Thus the sale proceeds of excess land is expected to the extent of Rs. 475.92 millions. The gross cost of providing on-site infra-structure in all the slums in the three cities, as mentioned earlier, is to the extent of Rs. 676.54 million. Thus the net cost, after adjusting the sale proceeds of excess land amounts to Rs. 200.63 millions. At this cost, the average cost per household comes to about Rs. 4969. This when recovered at an interest rate of 13 per cent in 10 years comes to about Rs. 76 per household per month (Table 3.2).

The cost of on-site and off-site infrastructure taken together compares favourably with the cost of slum improvement in Madras. For a population of 97000, the total cost in Madras project is to the extent of Rs. 37 crores at 1987 prices. In Kerala, the cost of about Rs. 74 crores for a population of 2.36 lakhs at 1991 prices seems to be quite legitimate and rational.

Besides this total scenario of improvement cost, we give below two more alternative secenarioes for possible public intervention.

Alternative II

Second alternative is based on improving the levels of services in the unimproved slums only. This alternative in terms of cost is presented in Table 3.3. Under this, the total gross cost comes to Rs. 507.07 millions. Allowing for the adjustment of the sale proceeds of excess land available within the

unimproved slums only, the net cost amounts to Rs. 266.71 millions (see Annexure 3.2 for details). The average cost per household per month at an interest rate of 13 per cent to be recovered in 10 years comes to Rs. 154.72. This appears to be on the higher side. With a view to reduce this cost substantially as also to make the project affordable and easier to implement, we suggest Alternative III.

Alternative III

This alternative is based on the same gross total cost as under Alternative II. But the cost is substantially reduced by allowing for the sale of excess land available in the improved slums as well. The cost scenario is given in Table 3.4. It could be seen from this table that if the entire excess land (including those available in the already improved slums as well) are sold out, the net cost dramatically comes down to Rs. 31.14 millions only. This gives an average cost of Rs. 1176 per household per annum. When costed at an interest rate of 13 per cent to be recovered in ten years, the average cost per household comes to only Rs. 18 per month which seems to be very attractive and a feasible proposition.

We have suggested under Alternative I to upgrade services in the already improved slums as well for reasons mentioned earlier. Another reasons for this is financial in nature. Table 3.5 shows that providing for upgradation of services in the slums already improved under the EIUS provides a financial cushion to the entire project as there is an inter-area cross subsidy to the

extent of Rs. 73.94 millions. This helps in reducing the total cost.

We thus suggest three alternative models. It would be desirable at this stage to recapitulate them again. The first alternative pertains to all the slums - both improved already under the EIUS and unimproved slums. The average cost per household to be recovered at 13 per cent rate of interest comes to Rs. 76 per month. If, however, it is decided to stretch the period of cost recovery to 15 years, it will come down to about Rs. 64 per month. When extended to 20 years as is the case in Madras project, the equated monthly installment will further come down to about Rs. 59 per month. Under Alternative II, the average cost per household per month appears to be high at Rs. 155. Alternative III has the lowest amount of annunity at Rs. 18 per month which seems to be quite attractive.

In all the three cities taken together, the total gross cost comes to Rs. 74.42 crores for first alternative. The total net cost for the first alternative is Rs. 20.00 crores. The total gross costs, computed for second and third alternatives, are the same (Rs. 50.70 crores). The net costs, for second and third alternatives are Rs. 26.67 crores and Rs. 31.14 crores, respectively.

The cost of upgradation of slums have been analysed in the preceding pages in the form of options. These options have taken into account the sale of excess land for reducing the cost and full cost recovery from the beneficiaries as provided for in the Terms

of Reference (TOR). However, problems are visualised on both these counts in project formulation and implementation. Sale of excess land would require reconstitution of land for determining the ownership and the excess land. This itself is infested with complexities and complications. Such a view has been expressed also by the functionaries associated with slum upgradation in Kerala. Secondly, cost recovery even for recovering the capital investments to be made for providing the on-site and off-site infrastructure is also beset with problems primarily because of low income levels and low affordability. As discussed subsequently, in this Chapter, the project, under option I will be able to recover only about 70 per cent of the total cost. Under option II, the cost recovery seems to be feasible only to the extent of 35 per cent.

Besides these two difficulties, the options given do not enable the implementing agencies to prioritise between the different slums for improvement by identifying the priority slum areas so that they could undertake the upgradation programme in a phased manner. This becomes all the more important as quite a few slums have already been improved under the presently on-going EIUS. Though, the level of services in these slums do not compare with the suggested norms, they nevertheless have a modicum of basic services. In such a situation, the improvement and upgradation programme has to allow for a kind of trade-off between costs and the number of slums provided with improved services, the level of services to be provided and the number of services to be provided. In view of these, we suggest the following option for slum

upgradation which seems to be much more pragmatic and also helps in identifying the priority slums and which takes care of the trade-offs. Identification of priority slums, the level and number of services to be provided and the trade-off between these and the costs are built-into this option. With a view to distinguish this particular option from other alternatives suggested before, we call it a pragmatic solution.

Alternative IV : The Pragmatic Solution

This option is also based on the suggested range and norm of services as discussed in the beginning of this Chapter. But with a view to enable prioritisation of slums to be improved in the first phase,it is based on the existing level of services already available in the slums, the gap between the existing level of services and the consequent deficiency in services and the requirements in physical and financial terms to eliminate the deficiencies. The existing level of services and the requirements for upgradation of services are listed in Annexure 3.3 for all the slums located in the three cities. It also depicts if the slum is located on critical location or on normal location, total physical area of slums, population, number of households, the status of six services to be provided under the upgradation programmes as also the requirement of services to be upgraded both in physical and financial terms. Annexure 3.3 thus serves as a ready reckoner for computing the cost of any slum or a number of slums to be developed in the three cities. The competent authority engaged in slum upgradation will immensely benefit from it and could select any type and number of slums depending on the criteria it applies on

its own for selection of slums to be improved. This option thus provides a lot of flexibility for upgradation programme. The implementing agencies are themselves to develop the criteria depending on the existing deficiency of services. There could emerge number of criteria from this. The criteria to be developed will inevitably related to the type of services required in a particular slum and the extent of deficiency.

Cost of Upgradation

In such a flexible option determining the total cost of improvement becomes a difficult exercise for, the number and type of slums to be brought within the ambit of improvement is dependent on the choice of implementing authorities regarding the type of slums to be improved in terms of level of existing services and location (slums on critical location). However, in order to give an account of the total cost involved in improving all the slums in the three cities, we give the details of costing of improvement based on the financial requirements for upgrading the services according to the suggested norms. The costs are derived by aggregating the financial requirements of providing the normative standards of services for each slums. It is worth mentioning that the total cost depicted are only illustrative, not suggestive as the final cost will depend on the choice of the type of slums to be selected for improvement in terms of (i) location, (ii) the type of services to be provided or upgraded and (iii) the extent of existing deficiency.

The basic cost (aggregation of cost of improvement of individual slums) of upgrading the services in all the slums in the

three cities is presented in Table 3.6. The total basic cost of upgrading the services according to the norms comes to Rs. 520.42 millions in the three cities taken together. Of this, Calicut accounts for the highest proportion of more than half (Rs.274.71 million) of the total base cost. Trivandrum accounts for Rs.174.73 millions and Cochin accounts for Rs. 70.98 milllions. The actual base cost for various services shows that provision of pathway is the costliest service to be provided which is to the extent of about 53 per cent (Rs.275.35 million) of the total base cost for the slums in the three cities. Drainage requiring Rs.144.84 millions is the next costliest item in the improvement programme; street lighting requires Rs.4.30 million and community water standposts only Rs.1.32 million. Provision of garbage bins for solid-waste collection requires the lowest amount of Rs.0.39 millions.

Certain other costs have to be added to the base cost of Rs.520.42 millions. These are (i) cost of off-site infrastructure, (ii) design, supervision and management cost, (iii) contingencies and maintenance cost. These have been added in Table 3.7 which gives a total effective cost of Rs.744.20 millions for the three cities. It is worth mentioning that this cost is based at 1991 prices and is not adjusted for the already existing private connection for water and availability of private latrines. It is worth stressing again that this is only illustrative. The actual cost will depend on the type of slums to be improved according to the criteria to be applied taking into consideration location, the type of services and the extent of deficiency.

It should be obvious from the Table given below that private water connections and latrines are already available with some of the slum households.

Table

Proportion of Slum Households having Private Water Connection and Latrines

(Per cent)

	City	Water Connection	Private latrines
1.	Trivandrum	6.2	57.00
2.	Cochin	4.2	38.60
3.	Calicut	5.8	22.40

Source : NIUA, Household Survey, 1990.

The total basic cost for community water and latrine have, therefore, been adjusted for this as the households already having these facilities are not expected to use the community based provision of services. Adjusted basic cost is presented in Table 3.8. It can be seen from the relevant column of this Table that when adjusted for private availability of services, the basic cost and also the full effective costs decline only marginally. The adjusted total cost for the three cities declines marginally from Rs.744.20 millions to Rs.738.87 millions.

As discussed in Chapter I, a large number of slums in the three cities are small in terms of area occupied and number of households. Providing services in tiny slums will not be viable. It is, therefore, suggested that, to begin with, only such slums may be taken up for improvement which have more than 50 households. What will be the cost of improving all the slums with more than 50

households? Table 3.8 contains the cost of slums above this cut-off point. The basic cost comes to Rs.487.24 millions for the three cities taken together. When other costs are added to it, it comes to Rs.703.75 millions without taking into consideration the private connections of water and private latrines. When adjusted for these, the total cost declines to Rs.691.81 millions (Table 3.9).

The analysis of costs thus suggests that there exists a wide range of option for upgradation of slums. The actual option for upgradation of slums will depend on the policy decision of the implementing authorities. Nevertheless, it is suggested that the improvement programme should initially be extended to only such slums which have more than 50 households. In case the availability of funds is a constraint in improving all such slums, only such a few services could be provided which are critical in nature. Drainage, community water supply and community latrines are such services which are critical services affecting the health of slum households and also the environmental sanitation of slums settlements. The total basic cost for these three basic services comes to Rs.157.60 millions (Table 3.10) for all the slums (including the slums with less than 50 households). The total effective adjusted cost comes to Rs.220.04 millions for the three cities (Table 3.11). If, however, it is decided to undertake improvement programme only in slums on normal locations by providing all the three services, the total unadjusted cost comes to Rs.609.42 millions for all the slums in the three cities (Table 3.12).

Criteria for Selection of Slums

Besides the options suggested above, there exists a lot of other options as well which could be derived from the data on level of services and financial requirements presented for all the slums individually in Annexure 3.3. The options discussed above are only illustrative. The implementing authorities have to choose from the innumerable options built-into Annexure 3.3. The actual option will depend on the trade-off between the cost and level of existing services and the type of slums. It is, therefore, not advisable to suggest a particular option which should be followed for the upgradation programme. The decision to select the slum of improvement and upgradation shall have to be based on the extent of criticality of a particular type and level of services, the type of locations and costs. In some slums, the provision of drainage could be the most critical factor; in others, it could be water or latrine. These things will have to be taken into consideration in selecting the slums within the ambit of improvement and upgradation programme. It would, however, be advisable to select only such slums where the deficiency of services is the highest.

Annexure 3.4 contains the extent of deficiency of services in the various slums in the three cities in terms of percentage. All the slums on normal locations with 75 per cent to 100 per cent of deficiency of all the services could be selected for improvement in the first instance. There are several such slums in the three cities. Subsequently, the slums with more than fifty per cent of deficiency could be taken up for improvement and upgradation. Having decided the type of slums to be selected for improvement in

this manner, the base cost for providing the required number and level of services could be known from Annexure 3.3. Other costs viz. off-site infrastructure cost (at the rate of 10% of the base cost, design, supervision, management cost, contingencies and maintenance at the rate of 30 per cent of the sum of on-site and off-site infrastructure cost) could be computed as depicted in Table 3.8. Annexure 3.3 and 3.4 thus provide the data to opt for the proposed improved programme in a much more flexible manner. It will serve as useful aid to facilitate the decision making process for identifying the priority slums for improvement and upgradation. It also helps to find out the base cost for the type of slums to be selected for improvement and upgradation. We have suggested only three criteria to help in decision making process. To recapitulate, these are first, to take up only such slums which are located on normal locations, second, which have more than 50 households and third which have more than 75 per cent to 100 per cent of eficiency of services. Slums located on critical locations (the critical slums) have inevitably to be relocated to safer locations on the basis of site and services schemes of a special type having sites earmarked also for high and middle income groups and for non-residential landuses. This is discussed in greater detail in Chapter IV.

Levels of Cost Recovery

The level of cost recovery is related to income levels. Monthly income of slum households were collect through a socio-economic sample survey in the slums of the three cities. Income distribution obtaining in the slums of the three cities is

presented in Figure 3.2. The monthly income of the slum households varies from Rs. 200 per month to about Rs. 2000 per month. Based on the pattern of mean income levels, the slum households in the three cities taken together are classified into 4 categories. Category I has a monthly income of upto Rs. 400. Category II has a monthly income of Rs. 401 to Rs. 600. Category III has a monthly income of Rs. 601 to Rs. 800 and category IV has a monthly income of more than Rs. 800. The proportion and the number of households belonging to these different income groups are given in table 3.13.

With a view to comprehend the proportion of income the different income groups will be able to afford for services, the with different income levels was analysed.[1] It showed that the households are presently incurring a very high proportion of their incomes on services. It ranges from about 38 per cent for the lowest income group to about 18 per cent for the higher income groups. Of course, this includes, besides water also health, education, transport, electricity and other services. For water, the slum households are, at the moment, paying a very negligible amount and in fact, a very large proportion of slum households who are using public standpost are not paying anything for this. Looking at the proportion of income being charged for services in Madras and Bombay projects as also considering the feasibility of cost recovery and affordability, it is suggested

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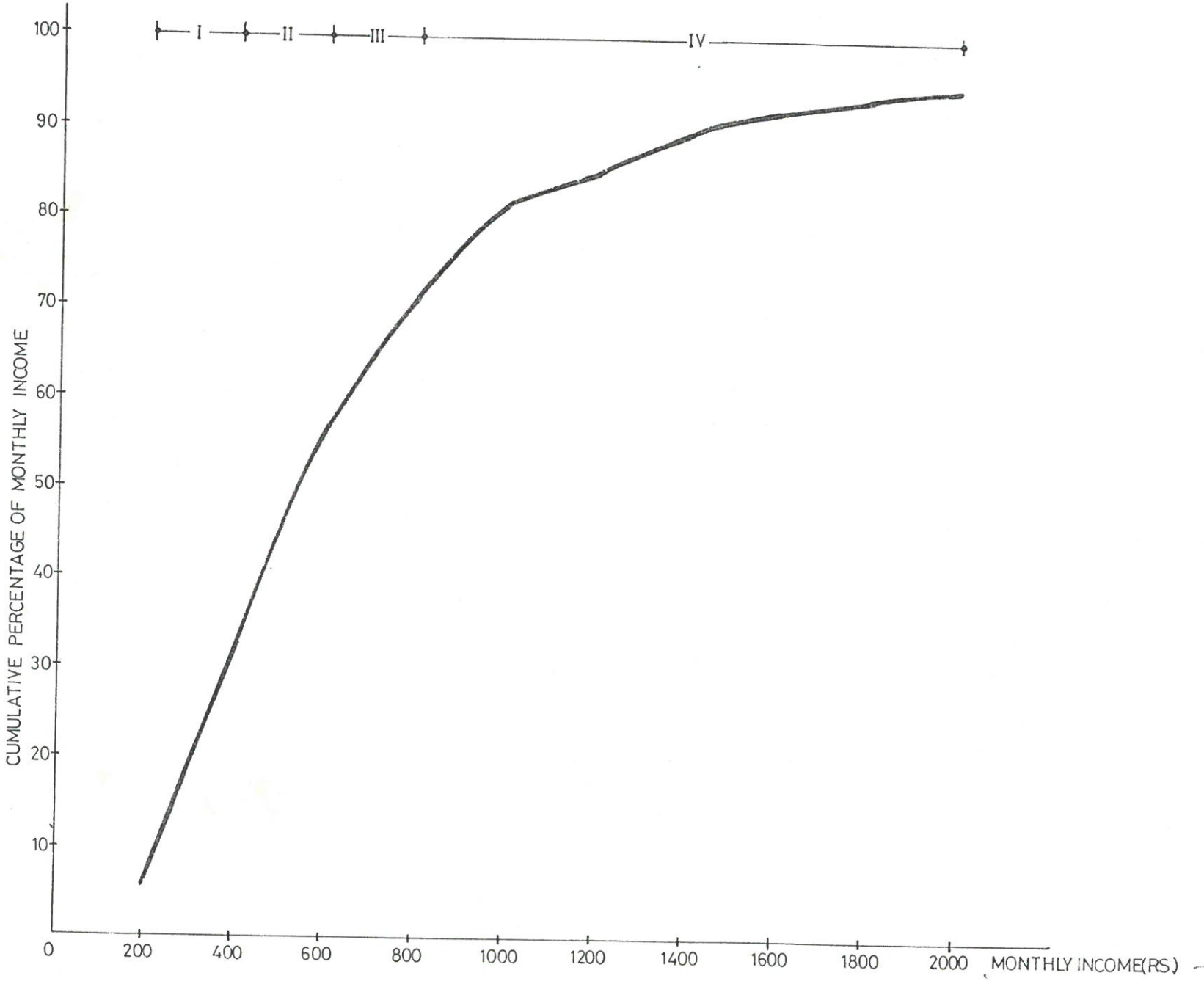
1. NIUA, Report on Household Survey, March 1991, Table 4.19,

INCOME DISTRIBUTION CURVE

Fig.No. 3·2



that the lowest income group (having monthly income of less than Rs. 400) should be in a position to spend 6 per cent of their income on services to be provided under the slum improvement and upgradation programme in the three cities. This is increased to 8 per cent in the next income group and to 9 per cent in the third income group (Rs. 601-800). For the fourth category, the affordable level is suggested at 10 per cent (Table 3.13). Such a scheme, besides taking care of affordability, also has a built-in mechanism for cross subsidy amongst the slum households of different income groups.

When relating it to the level of cost recovery required for recovering the entire cost (Rs. 76 per household per month under Alternative I), 100 per cent cost recovery does not seem to be a feasible proposition with the existing levels of income (Table 3.13). As against the required cost recovery of Rs 80 per household per month the project is able to recover cost only to the extent of Rs 56. The actual cost recovered is thus only to an extent of 73.68 per cent of the cost incurred. It, therefore, suggests to give a subsidy of about 26 per cent to the beneficiaries especially with an income of up to Rs 800 per month per household. The project, accordingly, has to be financed on the basis of a mix of loan and grant; grants would be required to the extent 26 per cent of the project cost. The rest will have to be financed out of loan.

Under Alternative II, the cost recovery will still be much more difficult as hardly about 36 per cent of the total cost incurred will be able to be recovered. Alternative III, on this

account, seems to be very attractive. Even the households with the lowest income levels will be able to contribute less than the required proportion of their income.

Cost Recovery Under Alternative IV

The analysis of cost recovery and affordability of slum households in the previous section has indicated that cost recovery is difficult to come by. It becomes difficult also because the cost of land vesting already with the slum households is not possible to be recovered due to legal and equity considerations. In a situation like Kerala where already there exists a large degree of de facto ownership of land, recovering the capital cost of installation of basic services does not seem to be desirable and equitable as well. The improvement programmes visualised for the three cities is in the nature of basic services approach where a modicum of urban basic services are to be provided to remove the existing deprivation of the slum dwellers. It will, therefore, not be equitable to charge for installation of these services. Moreover, all the services are in the nature of public goods for which the principle of exclusion can not be applied. We, therefore, do not suggest to recover the capital cost of providing on-site infrastrcture. Cost for off-site infrastructure are usually recovered indirectly through local fiscal instruments. We, therefore, suggest that in Kerala as well, the off-site infrastructure should be financed out of resources mobilised by the different service organisations indirectly.

As for charging for services consumed and used by the slum dwellers, except water, the other services do not qualify for user charges due to their very nature. Application of user charges for water is also fraught with difficulties as water is to be provided not individually to the slum households but on the communal basis. This will create the problem of charging for the actual use of water. In view of these difficulties it is advisable to recover only the maintenance cost indirectly through service taxes. This could be supplemented even by imposing the Property Tax (PT) on the dwelling units in the improved slums. After the improvement programme, the dwelling units will have a rateable value which is likely to be more than the present exemption limit of PT. However, levying PT involves political decisions.

Our exercise to gauge the effectiveness of local fiscal instruments in mobilising revenues for meeting the maintenance cost is encouraging and it suggests that it could be feasible to charge PT as well as service taxes from the slum households and that the revenue to be mobilised in this manner is expected to be enough to take care of maintenance cost.

Kerala has the system of levying PT on the rateable value (RV) determined on the basis of an Assessment Table. The cities are divided into three zones viz. (i) inner city, (ii) outer city, and (iii) peripheries. The lands and buildings located in these three different zones are cross-classified in terms of location and type of construction. Each property is assessed on the basis of graded rent per sq.mt. which varies according to the

above mentioned features of properties and also its area. PT and service taxes are levied on the rateable value thus determined by the municipal authorities. This being the method of assessing the rateable value in Kerala, the dwelling units in the slums have also to be assessed on the basis of this Assessment Table though there appears to be some legal problems in this regard. It would be worth, first, to briefly mention the legal constraint.

The practice of determining the rental value of lands and buildings on the basis of predetermined rentals on the basis of floor area is arbitrary and does not conform to the law of the land. Arbitrariness arises primarily due to the pre-determined rental value for different zones, localities and the type of construction. The base of PT in Kerala, as in other states, is "the gross annual rent" at which the lands and buildings "may reasonably be expected to let..." In Kerala, this value, instead of getting determined in a free and competitive market, is artificially fixed by the bureaucracy. One could very well argue in such a situation as to why the rental value should not be Rs. 2 or Rs. 8 instead of say Rs.2 per sq. mt. The system is, therefore, highly arbitrary and hence is likely to be struck down if challenged in a court of law.

Another legal problem with such a system is the practice of imposing PT on the basis of physical area of properties. The Courts, in several instances, have declared it null and voide. The Supreme Court, for example, in the State of Kerala V. Haji

Kutti, held that the tax imposed on physical area violates the equality clause of the Constitution of India (AIR 1969 SC 378). The Madras High Court did not allow the Madras Municipal Corporation to levy PT on the basis of floor area as it was against the legal provisions in the enabling Act (in Kerala also the enabling legal provisions are the same as in Madras). The High Court, (P.R. Dalavai V. The Government of Madras, Madras Law Journal, Madras High Court, 93), in deciding this case, relied on a couple of case laws of the Supreme Court of India which held that levying PT on the basis of floor area is against the law of this land (AIR 1961 SC 1358; AIR 1963 SC 1742).

In view of these the existing practice of determining rental value by applying the predetermined rental values on the basis of physical features is not sustainable in law. The municipal authorities in Kerala have been doing this as it has not yet been challenged in a court of law.

The legal problems notwithstanding, as this is the existing practice, the resources to be mobilised from PT in the slum areas have been worked out on the basis of the existing Assessment Table only.

The types of zones, localities and construction in the Assessment Table have been classified into three categories (1, 2 and 3). For the purpose of this study, it has been assumed that the slums are mostly in Zone 2 and 3 and located on type 2 and 3 locations. It has also been assumed that the type of construction is basically of type 2 and 3. Our Household Survey

in the three cities has indicated that only 13.5 per cent of the dwelling units are of pucca type. Large many of them will not qualify for the type construction of the Assessment Table.

Rental values per sq. mt. for these types of zones, locations and types of construction are presented in Table 3.14. As there are several variations in the pre-determined rental values in the Assessment Table, we have taken the average rental value for the dwelling units located in different zones. This comes to Rs. 1.12 per sq. mt. As the letting values are related of the extent of physical area of dwelling units, it has been assumed that the dwelling units in the slums have an area of upto 60 sq. mt. and 100 sq. mt. The rateable value of these two types of properties in the slums and and the consequent tax incidence have been worked out again in the form of two options. Option A is based on imposition of both PT (General Tax) and service taxes. Option B takes into account the levy of only service taxes. Presently the service taxes levied in Trivandrum include Lighting Tax (30%), Drainage Tax (5%) and Water Tax (3%). General Tax is levied at the rate of 7 per cent of the rateable value. It is suggested to levy PT in the slum settlements at the prevailing rate along with service taxes. If, however, this is not politically feasible, at least the service taxes should be levied on all the improved slums at the rates indicated above.

Table 3.15 shows that the incidence of general tax and service taxes per household comes to only Rs. 7 to 15 per month which the slum households could easily bear. If the general tax is not levied, the incidence of service taxes comes to only Rs. 7

to Rs. 9 per month. This is well in conformity to the affordability of slum households (Table 3.13). The expected revenue mobilised from the levy of PT and service taxes also compares favourably with the maintenance of cost as can be seen from Table 3.16.

Recovery of Capital Cost

We have not favoured recovery of cost on account of capital investments to be made on providing on-site infrastructure. Reasons for this has already been discussed. The sample survey of 25 per cent of the improved slums and also the Household Survey have revealed that the slum households are not willing to contribute anything towards the cost of improvement in monetary terms. They have, nevertheless, indicated their willingness to contribute their physical labour in the upgradation programme. The slum dwellers accordingly, be involved in the improvement programme by contributing their labour.

Collection Mechanism

We have suggested in Chapter IV to adopt the UCD approach to slum improvement as tried successfully in Hyderabad. This would require the setting up of slum welfare committees and recruitment of Community Organisers to work with the slum households on the basis of mutual confidence and rapport. The Committee may also be entrusted with the task of cost recovery from the member households. If the C.Os, and P.Os are able to win over the confidence of the slum dwellers, which is a critical imperative for functioning of UCD, the recovery of cost by the Committee

should be a simple and an easy task. But this requires first to discuss in the Committee the context and the reasons of cost to be recovered and the amount of cost to be recovered from the households belonging to different income groups. It would require to motivate the members of the committee and once it is achieved, compliance to cost recovery should not be a problem. The Committee, after collecting the taxes, will deposit the same with the concerned public agency.

Flow of Funds from Various Sources

The total requirement of resources for slum improvement itself is quite huge by all standards. It requires about Rs 69 crores to be invested in the three cities if all the slums with more than 50 households are to be improved in the three cities. On the supply side, what is the situation of availability of funds? We have analysed in the Preliminary Report, the flow of funds for slum improvement under the EIUS from 1984-85 to 1989-90. It has shown that the funds allocated do to have any pattern and consistency. It has been flowing in spurts. In Cochin, for instance, the funds made available in 1984-85 was to the tune of Rs. 32.34 lakhs which declined to Rs 3.09 lakhs in 1985-86 and then to zero in the next year. Allocation of funds on regular basis has not been sustained on year to year basis. Second, the allocations made do not seem to have any relationship with the magnitude of the problem. Hence, the allocation of funds needs to be made on regular basis.

The requirement of investible resources being huge, there is the need to facilitate the convergence of various agencies,

government departments and voluntary organisations along with their schematic budgets. An attempt was made to comprehend the extent of resources already converging on slums. But the analysis was constrained by the existing budgeting and accounting system of various public departments like water supply undertaking, health, education, social welfare and similar other departments of the state governments who do not follow the practice of disaggregating their expenditures or investment at such a micro level as a slum. As the allocation of funds for slum improvement under the EIUS itself has been made in spurts, even the allocation on regular and sustained basis on this account can not be forecast with certainty. Nevertheless, with a view to have some idea about the availability of resources from various sources we have tabulated the availability of funds from various sources in Table 3.17. It shows the funds available for the three cities individually under the Nehru Rozgar Yojana (NRY) and UBS (for Cochin only). All these programmes and the allocations there under impinge on urban poor and hence on slums. Thus taken together the total availability of funds comes to Rs 73.88 millions. An amount of Rs 1.82 millions may be added to it as the annual flow of funds from the state government under the EIUS. This is based on the allocations made during 1989-90 for the three cities. The total amount thus comes to Rs 75.70 millions which is only about 11 per cent of the total requirement of financial resources. However, it constitutes more than one-third of the gross cost of providing only three services in all the slums in the three cities. This will substantially alleviate the constraints on funds.

It is worth mentioning that the shelter upgradation component of NRY provides for a cost of Rs 4150 per dwelling unit (per household) as a mix of loan and subsidy. HUDCO Loan is to be made available to the extent of Rs 3150 and the government subsidy in addition to it is to the extent of Rs 1000 per household. The total allocation for the cities together is to the extent of Rs 32.79 millions. We have mentioned earlier that shelter improvement for the katcha structure only requires an amount of Rs 44.12 millions for the three cities taken together. Individually, Trivandrum requires Rs 21.58 millions against the NRY provision of Rs 11.21 millions, Cochin requires Rs 12.27 millions against the provision of Rs 12.04 millions and Calicut needs Rs 10.27 millions against the provision of Rs 9.55 millions. Thus the resource situation for shelter upgradation does not seem to be formidable. What is required is that the funds made available have to be properly addressed to the target group, majority of whom are residing in slums.

Table 3.1
Cost of Upgradation of Services in the Improved and Unimproved Slums of Trivandrum, Cochin and Calicut
(Alternative I)

Sl.No.	Particulars		Amount (Rs. in millions)
A.	UPGRADATION OF IMPROVED SLUMS :		
1.0	On-Site Infrastructure		
	1.1 Pathways	=	66.62
	1.2 Drains	=	38.59
	1.3 Community Taps	=	01.03
	1.4 Community Latrines & Bath Rooms	=	03.22
	1.5 Street Lighting	=	20.60
	1.6 Garbage Bins	=	00.31
	1.7 Sub-total - I	=	130.37
B.	UPGRADATION OF UNIMPROVED SLUMS :		
2.0	On-Site Infrastructure		
	2.1 Pathways	=	211.49
	2.2 Drains	=	105.24
	2.3 Community Taps	=	2.27
	2.4 Community Latrines & Bath Rooms	=	7.38
	2.5 Street Lighting	=	63.04
	2.6 Garbage Bins	=	0.63
	2.7 Sub-total	=	390.05
C.	Total Base cost of on-site infrastructure (1.7 + 2.7)	=	520.42
D.	Total Off-site infrastructure costs (@ 10% of (c) above)	=	52.04
E.	Total Infrastructure costs (c + d)	=	572.46
F.	Other costs		
	i. Design, Supervision and Management (DSM) @ 15% of (E) above	=	85.87
	ii. Contingencies @ 10% of (E) above	=	57.25
	iii. Maintenance @ 5% of (E) above	=	28.62
G.	GRAND TOTAL	=	744.20

Table 3.2

Average Cost Per Household and per sq. met. for Upgradation of Services in the Improved and Unimproved Slums in the Three cities (Alternative I)

Particulars		Cost* (Rs)
A.	Total Slums	676.55 million
B.	Deduct Sale Proceeds of Excess Land	(-)475.92 million
C.	Net Cost	200.63 million
D.	Cost Per Household Per Month at 13% interest over a period of 10 years	76.31

* On-site infrastructure cost only.

Table 3.3

Average Cost Per Household for Providing Services in the Unimproved Slums in the Three cities (Alternative II)

Particulars		Cost* (Rs)
A.	Total Cost of Development	507.07 million
B.	Deduct Sale Proceeds of Excess Land	240.36 million
C.	Net cost	266.71 million
D.	Cost Per Household at 13% interest over a period of 10 years	154.72

* On-site infrastructure cost only

Table 3.4

Alternative Cost Scenario for Improving Unimproved Slums in the Three Cities (Alternative III)

Particulars		Cost* (Rs.)
A.	Total Cost of on-site infrastructure	507.07 million
B.	Sale proceeds of Excess Land in Improved and Unimproved Slums	448.99 ha x 10000 sq.mt x Rs.106 = Rs 475.93
C.	Net Cost	507.07-475.93 =31.14 million
D.	Cost Per H.H. Per annum	= Rs.1176.00
E.	Cost Per H.H. Per month @ 13% interest for 10 years	= Rs. 18.06

Table 3.5

Average Cost Per Household and Per Sq.Mt for Providing Services in the Improved Slums in the Three Cities

Particulars		Cost* (Rs in million)
1.	Total Area	349.854
2.	Total No. of H.H.	13902
3.	Total cost of Development	169.49
4.	Total Land Available for Sale	223.23 ha
5.	Total amount to be Recovered by Sale of Excess Land	222.23 x Rs. 97 sq.mt. = Rs. 215.56
6.	Total cost of Development	Rs. 169.49 - Rs. 215.56 + 73.94

* On-site cost only

Table 3.6

Cost of Development of all the Slums in Trivandrum, Cochin and Calicut

(Rs.in million)

Services	Slums on normal locations			Slums on critical locations			All slums			Total
	Trivandrum	Cochin	Calicut	Trivandrum	Cochin	Calicut	Trivandrum	Cochin	Calicut	
Pathways	49.21	29.71	148.34	35.63	8.76	3.70	84.84	38.47	152.04	275.35
Drainage	32.06	15.95	69.06	21.85	4.16	1.76	53.91	20.11	70.82	144.84
Community water tap	0.39	0.71	1.25	0.61	0.06	0.07	1.00	0.77	1.32	3.09
Community latrine	1.16	2.53	4.04	1.68	0.18	0.26	2.84	2.53	4.30	9.67
Street lighting	18.82	7.33	44.87	13.06	1.51	0.97	31.38	8.84	45.84	86.56
Garbage bing	0.11	0.25	0.37	0.15	0.01	0.02	0.26	0.26	0.39	0.91
Total	101.75	56.48	267.93	72.98	14.68	6.78	174.73	70.98	274.71	520.42

Table 3.7

Cost of Upgradation of Services in the Slums of Trivandrum, Cochin and Calicut

(Rs. in million)

Sl. no.	Particulars of cost	Cost	
		Unadjusted	Adujsted
1.	ON SITE INFRASTRUCTURE		
	1.1 Pathways	275.35	275.35
	1.2 Drainage	144.84	144.84
	1.3 Community water taps	3.09	2.92
	1.4 Community latrines	9.67	6.11
	1.5 Street lighting	86.56	86.56
	1.6 Garbage bing	0.91	0.91
	1.7 Total base cost	520.42	516.69
2.	OFF SITE INFRASTRUCTURE COST (@ 10% of 1.7 above)	52.04	51.67
3.	TOTAL INFRASTRUCTURE COST (1.7 + 2)	572.46	568.36
4.	OTHER COSTS		
	4.1 Design, Supervision and management (DSM @ 15% of (3) above	85.87	85.25
	4.2 Contengencies (@ 10% of (3) above)	57.25	56.84
	4.3 Maintenance (@5% of (3) above)	28.62	28.42
5.	GRAND TOTAL	744.20	738.87

* Full costs of community water and latrines have been adujsted according to the proportion of private connections for water and private privies already existing in the three cities.

Table 3.8

Cost of Development of Slums with More than 50 Households

(Rs.in million)

Services	Slums on normal locations			Slums on critical locations			All slums			Total
	Trivandrum	Cochin	Calicut	Trivandrum	Cochin	Calicut	Trivandrum	Cochin	Calicut	
Pathways	48.82	21.83	147.76	35.51	1.19	2.83	84.33	23.02	150.59	257.94
Drainage	31.89	15.06	66.05	21.80	0.57	1.35	53.69	15.63	67.40	136.72
Community water tap	0.37	0.59	1.20	0.60	0.03	0.06	0.97	0.62	1.26	2.85
Community latrine	1.12	2.05	4.02	1.66	0.09	0.24	2.78	1.96	4.26	9.00
Street lighting	18.71	3.74	43.49	13.02	0.20	0.71	31.73	3.94	44.20	79.87
Garbage bing	0.10	0.22	0.36	0.15	1.003	0.01	0.25	0.23	0.38	0.86
Total	101.01	43.49	262.88	72.74	2.083	5.20	173.75	45.40	268.09	487.24

Table 3.9

Cost of Upgradation of Services in all the Slums in the Three Cities with More than 50 Households

(Rs. in million)

Sl. no.	Particulars of cost	Cost	
		Unadjusted	Adujsted
1.	ON SITE INFRASTRUCTURE		
	1.1 Pathways	257.94	257.94
	1.2 Drainage	136.72	136.72
	1.3 Community water taps	2.85	2.69
	1.4 Community latrines	9.00	5.70
	1.5 Street lighting	79.87	79.87
	1.6 Garbage bing	0.86	0.86
	1.7 Total base cost	487.24	483.78
2.	OFF SITE INFRASTRUCTURE COST (@ 10% of 1.7 above)	48.72	48.38
3.	TOTAL INFRASTRUCTURE COST (1.7 + 2)	535.96	532.16
4.	OTHER COSTS		
	4.1 Design, Supervision and management (DSM @ 15% of (3) above	87.39	79.82
	4.2 Contengencies (@ 10% of (3) above)	53.60	53.22
	4.3 Maintenance (@5% of (3) above)	26.80	26.61
5.	GRAND TOTAL	703.75	691.81

* Full costs of community water and latrines have been adujsted according to the proportion of private water connection and private W.C.

Table 3.10

Cost of Providing only Three Services in the Slums of the Three Cities

(Rs.in million)

City	Slums on normal locations			Slums on critical locations			All slums			Total
	Drainage	Commty. water tap	Commty. latrine	Drainage	Commty. water tap	Commty. laterine	Drainage	Commty. water tap	Commty. latrine	
1. Trivandrum	32.06	0.39	1.16	21.85	0.61	1.68	53.91	1.00	2.84	57.75
2. Cochin	15.95	0.71	2.53	4.16	0.06	0.18	20.11	0.77	2.53	23.41
3. Calicut	69.06	1.25	4.04	1.76	0.07	0.26	70.82	1.32	4.30	76.44
Total	117.07	2.35	7.73	27.77	0.74	2.12	144.84	3.09	9.67	157.60

Table 3.11

Cost of Providing only Three Services in all the Slums in the Three Cities

(Rs. in million)

Sl. no.	Particulars of cost	Cost (adjusted)*
1.	ON SITE INFRASTRUCTURE	
	1.1 Drainage	144.84
	1.2 Community water taps	2.92
	1.3 Community latrines	6.11
	1.4 Total base cost	153.87
2.	OFF SITE INFRASTRUCTURE COST	15.39
3.	TOTAL INFRASTRUCTURE COST (1.4 + 2)	169.26
4.	OTHER COSTS	
	4.1 Design, Supervision and management (DSM)	25.39
	4.2 Contengencies	16.93
	4.3 Maintenance	8.46
5.	GRAND TOTAL	220.04

* Adusted for the availability of private water connection and w.c.

Table 3.12

Upgradation of Services in the Slums on Normal Locations in the Three Cities

(Rs. in million)

Sl. no.	Particulars of cost	Cost (unadujsted)*
1.	ON SITE INFRASTRUCTURE	
	1.1 Pathways	227.26
	1.2 Drainage	117.07
	1.3 Community water taps	2.35
	1.4 Community latrines	7.73
	1.5 Street lighting	71.02
	1.6 Garbage bins	0.73
	1.7 Total base cost	426.16
2.	OFF SITE INFRASTRUCTURE COST (@ 10% of 1.7 above)	42.62
3.	TOTAL INFRASTRUCTURE COST (1.7 + 2)	468.78
4.	OTHER COSTS	
	4.1 Design, Supervision and management (DSM @ 15% of (3) above	70.32
	4.2 Contengencies (@ 10% of (3) above)	46.88
	4.3 Maintenance (@5% of (3) above)	23.44
5.	GRAND TOTAL	609.42

* Inclusive of all households irrespective of private connection of water and private W.C.

Table 3.13

Affordability of Households
(as % of income)

Income Group (Monthy HH income)	% of HH	No. of HH	Affordability P.M.	Affordable Monthly amount	Monthly EMI for 100% cost recovery
I. Upto Rs. 400.00	32	12921	6%	Rs 24	Rs 76
II Rs. 401-600	24	9690	8%	Rs 40	Rs 76
III Rs 601-800	14	5653	9%	Rs 63	Rs 76
IV Rs 800 +	30	12113	10%	Rs 100	Rs 76

Table 3.14

Assessment Table for Determination of Rent Per Sq.mt for Properties Located in Different Zones, Localities and of Various Types

Area	Zone	Locality	Type	Rate (per sq.mt) (Rs.)
Upto 100 sq mt	2	2	2	1.90
Upto 100 sq mt	2	2	3	1.00
Upto 100 sq mt	2	3	2	1.60
Upto 100 sq mt	2	3	3	0.60
Upto 100 sq mt	3	2	2	1.25
Upto 100 sq mt	3	2	3	1.00
Upto 100 sq mt	3	3	2	0.50
Total rental per sq. mt and average rental per sq.mt.	-	-	7.85/12 =	1.12

Source: Directorate of Municipal Administration Government of Kerala.

Table 3.15

Expected Revenue Mobilisation from Property Tax and Service Taxes in the Three Cities and the Tax Incidence

Area of the dwelling unit	Type of slum	Taxes	Tax per household (Rs.)		Total (Rs. in million)
			Per annum	Per month	
80 sq.mt.	All slums	PT+ST	174.18	14.51	70.32
80 sq.mt.	All slums	ST	106.44	8.87	42.98
80 sq.mt.	<50 HH	PT+ST	174.18	14.51	65.30
80 sq.mt.	<50 HH	ST	106.44	8.87	39.91
60 sq.mt.	All	PT+ST	130.63	10.88	52.74
60 sq.mt.	All	ST	79.83	6.65	32.20
60 sq.mt.	<50 HH	PT+ST	130.63	10.88	48.98
60 sq.mt.	<50 HH	ST	79.83	6.65	29.93

Note: (i) 80 sq. mt. and 60 sq mt. are the mean maximum and minimum size of the dwelling units of the slums.
(ii) HH = Households
(iii) PT = Property Tax
(iv) ST = Service Tax.

Table 3.16

Expected Revenue to be Mobilised from Property Tax and Service Taxes and the Maintenance Cost

(Rs. in million)

Option no.	Per annum	Maintenance cost		
		All slums	Slums with less than 50 HH	Only for three services
1.	87.62	28.42	26.61	8.46
2.	53.30	-	-	-
3.	81.36	-	-	-
4.	49.50	-	-	-
5.	52.69	-	-	-
6.	32.20	-	-	-
7.	48.93	-	-	-
8.	29.90	-	-	-

Table 3.17

Statement Showing Funds Allocated to Various Schemes in the Three Cities of Kerala

Name of Scheme/ Activity	City	Project Cost (Rs. in lakhs)	Funds Available (Rs. in lakh) UNICEF	Govt. of Kerala	Govt. of India	Corporation	Beneficiaries	Hudco Loan	Central	State	Bank Loan	Total
1. Urban Basic Services	Cochin	-	2.00 (18.92%)	2.00 (18.92%)	1.00 (9.46%)	3.42 (32.36%)	2.15 (20.34%)	-	-	-	-	10.57 (100.00%)
2. Nehru Rojgar Yojana												
A. Urban Micro Enter-prises Scheme	Trivandrum								17.39 (12.50%)	17.39 (12.50%)	104.34 (75%)	139.12 (100.00%)
	Cochin								18.47 (12.50%)	18.47 (12.50%)	110.82 (75.00%)	147.76 (100.00%)
	Calicut								14.19 (12.50%)	14.19 (12.50%)	85.14 (75.00%)	113.52 (100.00%)
Total (A)									50.05 (12.50%)	50.05 (12.50%)	300.30 (75.00%)	400.40 (100.00%)
B. Home Upgradation	Trivandrum	112.05	-	-	-	-	-	85.05 (75.90%)	21.60 (19.28%)	5.40 (4.82%)	-	112.05 (100.00%)
	Cochin	120.35	-	-	-	-	-	91.35 (75.9%)	23.20 (19.28%)	5.80 (4.82%)	-	120.35 (100.00%)
	Calicut	95.45	-	-	-	-	-	72.45 (75.90%)	18.40 (19.28%)	4.60 (4.82%)	-	95.45 (100.00%)
Total (B)		327.85						248.85 (75.90%)	63.20 (19.28%)	15.80 (4.82%)		327.85 (100.00%)
Grant Total (A + B)								248.85 (34.17%)	113.25 (15.55%)	65.85 (9.04%)	300.30 (41.24%)	738.82

Source : Collected from the Urban Development Finance Corporation, Trivandrum, and the Corporation of Cochin

ANNEXURE 3.1

Average Cost Per Household and Per Sq.Mt. for Improvement and Upgradation of Services in the Improved and Unimproved Slums of Trivandrum, Cochin and Calicut

	Particulars	Amount (Rs.in Million)
A.	Base Cost for Total Slums (only on-site infrastructure)	= 520.42
-	DSM @ 15%	= 78.06
-	Contingencies @ 10%	= 52.04
-	Maintenance @ 5%	= 26.02
	Total	= Rs. 676.54
B.	Base cost for undeveloped slums (only on-site infrastructure)	= 390.05
-	DSM @ 15%	= 58.51
-	Contingencies @ 10%	= 39.01
-	Maintenance @ 5%	= 19.50
	Total	= Rs. 530.37

Total Slums

1.	Total Area	= 1277.70
2.	Total No. of H H	= 40377
3.	Total cost of Dev.	= Rs. 676.54
4.	Average Cost of Dev. per sq.mt.	= Rs. 52.94
5.	Total land available for Sale	= 448.99 ha
6.	Total amount that can be recovered by Sale	= (448.99x10,000) X Rs.106 Rs. 106.00 = Rs. 475.92
7.	Total Cost of Dev.	= Rs. 676.54 million - Rs. 475.92 million Rs. 200.63 or Rs. 20 crores
8.	Cost of Dev. / sq.mt.	= Rs. 15.70 per sq. mt.
9.	Cost of Dev. / H H	= Rs.4969.78 per H H or Rs. 76.31 per month per H H EMI @ 13% interest over a period of 10 years.

ANNEXURE 3.2

Average Cost Per Household and Per Sq.Mt. for Providing Services in the Unimproved Slums of the Three Cities

	Particulars		Amount (Rs.in Million)
1.	Total Area	=	927.85 ha
2.	Total no. of H H	=	26475
3.	Total cost of Dev.	=	Rs. 507.07 million
4.	Total Land Available for Sale	=	226.76 ha
5.	Total amount that can be recovered by sale of excess land	=	(226.76 X 10,000) X
		=	240.36
6.	Total Cost of Dev.	=	Rs. 507.07 million
		= -	Rs. 240.36 million
			Rs. 266.71 million
		or	Rs. 27 crores
7.	Cost of Dev./sq.,mt.	=	Rs. 28.74 per sq. m.
8.	cost of Dev./ H H	=	Rs.10074 per H H
		or	Rs. 154.71 per H H per months EMI @ 13% interest over a period of 10 years

ANNEXURE 3.3

List of all the Slums with Services, Area, Population and Number of Households
COCHIN

(All cost figures Rs.'00 at 1990 prices)

Sl. no.	Name of Slum	Area in (ha)	Population	No. of households	Critical location	Pathways		Drains		Community water supply		Community latrines		Street light		Garbage disposal	
						Requirement (mtrs)	Cost (Rs)	Requirement (mtrs.)	Cost (Rs.)	Requirement (No.of posts)	Cost (Rs.)	Requirement (No.of seats)	Cost (Rs.)	Requirement (No.of poles)	Cost (Rs.)	Requirement (No.of bins)	Cost (Rs.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Cochin																	
1.	Chakkanadan	0.75	729	120		0	-	495	940.50	5	85	15	420	0	-	9	27
2.	Srampikkalparamba	0.20	140	23		0	0	132	174.24	0	0	1	28	3	120	2	6
3.	Kalathil Paramba	0.12	76	14		0	0	80	152.00	0	0	0	0	0	-	1	3
4.	Cheliparamba	1.00	564	76		0	-	600	1140.00	0	0	5	140	8	320	8	24
5.	Cherulaikadvu	2.00	5800	800		660	2640	1320	2508.00	67	1139	104	2912	28	1120	77	231
6.	Mini Colony	1.04	489	85		0	0	686	1303.40	4	68	10	280	21	840	7	21
7.	Kochuparambu & Valaiparamba	0.30	2346	327		0	-	100	190.00	23	391	0	-	1	40	31	93
8.	Kannakatharaparamba	.22	800	75		145	580	145	275.50	3	51	16	448	0	-	10	30
9.	S.D.P.Y. Colony	0.40	138	28		0	-	130	247.00	0	0	3	84	8	320	2	6
10.	Military Parambu	0.60	223	40		0	0	200	380.00	1	17	5	140	0	-	3	9
11.	Perupadappu	1.00	266	52		660	2640	660	1254.00	0	-	5	140	8	320	4	12
12.	Panakassin Parambu	0.20	325	40		0	-	132	250.80	0	-	7	196	1	40	5	15
13.	Chilavannur H.C.	1.60	111	22		56	224	1056	2006.40	0	-	0	0	32	1280	2	6
14.	Kadathanathu Colony	0.20	153	27		82	328	132	250.80	0	0	3	84	8	160	2	6
15.	Chandanpalli Colony	0.06	64	8		40	160	40	76.00	0	-	1	28	0	-	1	3
16.	Peruvaram Railway Parambau	0.08	135	32		53	212	53	100.70	1	17	3	84	2	80	2	6
17.	Rehmanya Paramba	0.20	870	134		132	528	132	250.80	6	102	8	224	2	80	12	36
18.	Eraveli	0.75	1983	285		248	992	484	919.60	13	221	20	560	7	280	26	78
19.	Jwethan Paramba	0.20	756	115		66	264	132	250.80	5	85	7	196	2	80	10	30
20.	North of Varma Company	0.80	369	65		528	2112	528	1003.20	3	51	0	0	7	280	5	15
21.	Panayapilly Pawdikkudy	1.20	761	114		792	3168	792	1504.80	5	85	7	196	12	480	10	30
22.	Soudhi	0.12	110	15		79	316	79	150.10	0	-	2	56	1	40	1	3
23.	M.K.S. Parambu	0.40	1250	169		264	1056	264	501.60	8	136	12	336	4	160	16	48
24.	Adhikari Valappu	0.42	935	138		138	552	276	524.40	6	102	9	252	4	160	12	36
25.	Thundi Parambu	2.00	285	52		198	792	396	752.40	2	34	3	84	6	240	4	12
26.	Malikal Parambu	0.80	1076	142		264	1056	528	1003.20	7	119	10	280	7	280	14	42
27.	Cherulaikadavu	2.00	1267	184		660	2640	1320	2508.00	8	136	12	336	20	800	16	48

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
28.	Kavilampally Padam	0.42	319	60		277	1108	277	526.30	2	34	3	84	8	320	4	12
29.	East of St. Francis Cathedral	0.60	308	50		396	1584	198	376.20	2	34	3	84	12	480	4	12
30.	Thanthonnithuruth	0.20	311	53		132	528	132	250.80	2	34	6	168	4	160	4	12
31.	Pannoth Slum	0.40	135	29		264	1056	264	501.60	1	17	1	28	8	320	2	6
32.	Scavengers Colony S.R.M. Road	0.40	224	47		264	1056	264	501.60	1	17	2	56	4	160	2	6
33.	Manthara Pulaya Colony	0.40	99	16		264	1056	264	501.60	0	-	1	28	8	320	1	3
34.	Arippakka Paramba	0.10	118	18		66	264	66	125.40	0	-	1	28	2	80	1	3
35.	Pandaraparambu	0.02	98	17		13	52	13	24.70	1	17	2	56	1	40	1	3
36.	Manapputti Parambu	2.40	650	118		792	3168	1584	3009.60	4	68	7	196	48	1920	8	24
37.	Puthiyavittil Parambu	0.12	144	17		79	316	79	150.10	1	17	1	28	3	120	2	6
38.	Panakka Parambu	0.24	66	12		158	632	316	600.40	0	-	0	-	2	80	1	3
39.	Fishermen Colony Elamuthim	2.00	410	73		1320	5280	1320	2508.00	2	34	4	112	20	800	4	12
40.	S.V. Puram	2.00	455	61		1320	5280	1320	2508.00	2	34	5	140	20	800	4	12
41.	Thamanam Labour Colony	1.20	321	53		396	1584	792	1504.80	1	17	3	84	24	960	2	6
42.	Vettura Colony Thamaham	0.80	148	29		528	2112	528	1003.20	1	17	1	28	8	320	2	6
43.	Kissan Colony	1.20	940	200		792	3168	792	1504.80	6	102	9	252	24	960	12	36
44.	Kudumbi Colony	1.60	491	77		528	2112	1056	2006.40	3	51	5	140	16	640	6	18
45.	Perandoor Bridge Slum	4.80	244	46		3168	12672	3168	6019.20	1	17	2	56	96	3840	2	6
46.	Kayapilly Colony	3.60	460	71		2376	9504	2376	4514.40	3	51	4	112	36	1440	6	18
47.	Slum Near Anglo-Indian School	0.80	251	43		528	2112	528	1003.20	1	17	2	56	8	320	2	6
48.	Kochangady	0.20	126	20		66	264	132	250.80	2	34	1	28	4	160	2	6
49.	Kanpiri Colony	2.00	352	62		1320	5280	1320	2508.00	1	17	3	84	20	800	2	6
50.	Kudumbi Colony (Mattan Chery)	0.30	111	22		198	792	198	376.20	0	-	2	56	3	120	1	3
51.	Colony at East St. Anges Church	0.04	21	5		27	108	27	51.30	1	17	1	28	1	40	1	3
52.	Fishermen Colony New Gandhi Square	1.40	328	49		462	1848	924	1755.60	1	17	3	84	14	560	2	6
53.	Vadayar Parambu	0.10	45	8		66	264	66	125.40	1	17	0	-	2	80	1	3
54.	Chirakkal Colony	0.50	351	63		330	1320	330	627.00	2	34	3	84	10	400	4	12
55.	Pulimoothil Parambu	1.60	617	122		528	2112	1056	2006.40	4	68	6	168	16	640	8	24
56.	St. John's Pattan Colony	0.40	181	28		264	1056	264	501.60	1	17	1	28	4	160	2	6

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
57.	Panambally Nagar (West)	0.20	80	16		132	528	132	250.80	0	-	0	-	2	80	1	3
58.	Panambally Nagar (East)	0.06	25	5		20	80	40	76.00	1	17	1	28	2	80	1	3
59.	Velluparamba Colony	0.24	130	26		132	528	132	250.80	1	17	1	28	2	80	2	6
60.	Kothera Rehabilitation Colony	0.80	292	55		528	2112	528	1003.20	1	17	3	84	16	640	2	6
61.	Murickathera Pararambu	0.20	290	48		66	264	132	250.80	2	34	3	84	4	160	4	12
62.	Fishermen Colony Theverkad	6.00	1268	200		1980	7920	3960	7524.00	8	136	12	336	60	2400	16	48
63.	Moopa Colony	2.60	151	20		172	688	172	326.80	1	17	1	28	5	200	2	6
64.	Chularrath Parambu	2.00	84	137		1320	5280	1320	2508.00	5	85	8	224	20	800	10	30
65.	Kanachathara Parambu	0.22	348	53		145	580	145	275.50	2	34	3	84	5	200	4	12
66.	Pidhiyakava Slum	0.06	51	9													
67.	Kannan Kulangara	0.06	51	12													
68.	Karingachira	0.12	27	6													
69.	Vallethara H.C.	1.20	248	43													
70.	Kunnara H.C.	1.20	288	49													
71.	One lakh Colony near market	0.05	107	24													
72.	One lakh colony	0.80	223	36													
73.	Chelut Railway Colony	0.21	552	115		139	556	139	264.10	3	51	11	308	4	160	6	18
74.	South Padiyath Colony	0.25	181	41		165	660	165	313.50	1	17	2	56	5	200	2	6
75.	Thevara Canal Colony	0.75	357	59		495	1980	495	940.50	2	34	3	84	7	280	4	12
76.	Thuruthy Colony	1.20	1943	287		399	1596	798	1516.20	13	221	19	532	12	480	26	78
77.	Ettir Kettu	0.40	234	43		264	1056	264	501.60	3	51	2	56	8	320	3	9
78.	Padathukulam	0.12	132	27	CR	79	316	79	150.10	2	34	3	84	3	120	2	6
79.	Vennalappara	0.12	109	22	CR	79	316	79	150.10	2	34	2	56	3	120	2	6
80.	E.S.I. Colony	0.08	69	15	CR	53	212	53	100.70	1	17	1	28	2	80	1	3
81.	E.R.G. Road	0.12	81	15	CR	79	316	79	150.10	1	17	2	56	3	120	1	3
82.	Sakuparambu Power House Road	0.02	30	7	CR	13	52	13	24.70	1	17	1	28	1	40	1	3
83.	Padivattam	0.20	205	43	CR	132	528	132	250.80	2	34	4	112	4	160	2	6
84.	Kaithara Thodu	0.30	299	73	CR	198	792	198	376.20	4	68	6	168	6	240	4	12
85.	Elamkara Temple	0.02	37	10	CR	13	52	13	24.70	1	17	1	28	1	40	1	3
86.	Vannara Temple	0.03	46	9	CR	20	80	20	38.00	1	17	1	28	1	40	1	3
87.	Ambothuchira	0.06	111	22	CR	40	160	40	76.00	2	34	2	56	1	40	2	6

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
88.	Chilarannur	0.30	60	13	CR	198	792	198	376.20	1	17	2	56	6	240	1	3
89.	Cheruthod Colony	0.40	43	9	CR	264	1056	264	501.60	1	17	1	28	8	320	1	3
90.	Velloparambu	0.12	53	10	CR	79	316	79	150.16	1	17	1	28	3	120	1	3
91.	Karithala Colony	0.14	344	90	CR	92	368	92	174.80	5	85	7	196	3	120	5	15
92.	St. Agens Church	0.12	40	8		79	316	79	150.60	1	17	1	28	1	40	1	3
93.	Valunnel Colony	0.30	300	30		20	80	20	38.00	2	34	6	168	1	40	4	12
94.	Pallichal Colony	0.25	105	21		165	660	165	313.50	2	34	2	56	5	200	2	6
95.	D.L.B. Colony Pallarathy, Qr.No.18	4.05	2000	200		2673	10692	1336	2538.40	13	221	40	1120	40	1600	26	78
96.	Pandarachira Colony	0.60	300	60		396	1584	396	752.40	2	34	6	168	6	240	4	12
97.	S.P. Puram North S.P. Puram South	0.25	175	35		165	660	165	313.50	1	17	4	112	2	80	2	6
98.	Kumalangi Vazhi	0.30	256	43		20	80	20	38.00	1	17	5	140	1	40	2	6
99.	Vatturuthy Slum	5.00	4000	550		3300	13200	3300	6270.00	25	425	78	189	50	2000	50	150
100.	Shipyard Kudikidappu Colony	0.70	200	32		462	1848	231	438.90	1	17	2	56	7	280	2	6
101.	Kaniampuzha Colony	25.00	200	25	CR	16500	66000	16500	31350.00	1	17	4	112	250	10000	2	6
102.	Kadupathu Harizan Colony	10.00	153	21		6600	26400	6600	12540.00	1	17	3	84	200	8000	2	6
103.	Cheru Vithuppu Colony	1.40	210	41		924	3696	924	1755.60	1	17	4	112	28	1120	2	6
104.	Pullethundil Harizan Colony	0.60	175	30		396	1584	396	752.40	1	17	4	112	6	240	2	6
105.	Fisherman Colony - Elankkara	1.25	410	41		825	3300	825	1567.50	2	34	8	224	12	480	4	12
106.	Perandoor Bridge Colony	0.40	350	70		264	1056	264	501.60	1	17	5	140	4	160	2	6
107.	Vennala Harizan Colony	8.00	325	62		5280	21120	5280	10032.00	2	34	6	168	80	3200	4	12
108.	Thareparamb Colony	0.30	225	38		99	396	198	376.20	1	17	5	140	3	120	2	6
109.	Anamtheereethu Labour Colony	0.08	200	23	CR	53	212	53	100.70	1	17	4	112	2	80	2	6
110.	Anakettu Parambu	3.60	538	90		2310	9240	2310	4389.00	3	51	11	308	35	1400	6	18
111.	Pallichal Colony Slum	3.24	1000	200		2138	8552	2138	4062.20	6	102	20	560	32	1280	12	36
112.	K.M.P. Oil Hill	0.20	305	61		132	528	132	250.80	4	68	6	168	4	160	4	12

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
113.	Northern Side of Pipe Line Road	4.05	2000	400		2673	10692	2673	5078.70	13	221	40	1120	40	1600	26	78
114.	Khadebhapou	2.42	584	144		1597	6388	1597	3034.30	3	51	12	336	24	960	6	18
115.	Southern Side of Pipeline Road	4.05	1000	200	CR	2673	10692	2673	5078.70	6	102	20	560	40	1600	12	36
116.	Pollully Colony	0.24	180	27		158	632	158	300.20	1	17	4	112	2	80	2	6
117.	Jagjeewan Ram Colony	0.40	117	22		264	1056	264	501.60	1	17	3	84	4	160	2	6
118.	Koothappally Purambu	3.20	443	88		2112	8448	2112	4012.80	3	51	9	252	32	1280	6	18
119.	Elankulam Harijan Colony	0.70	400	19		462	1848	462	877.80	3	51	8	224	14	560	6	18
120.	Company Parambu	0.19	610	103		125	500	125	237.50	4	68	12	336	2	80	8	24
121.	Kacheripady Kannath Haridan Road	5.00	930	100		3300	13200	3300	6270.00	6	102	19	532	30	1200	12	36
122.	Labour Colony Palikavu Temple	1.21	550	80		399	1596	798	1516.20	3	51	11	308	12	480	6	18
123.	Fisherman Colony near Vaduthala Housing Colony	2.00	385	77		660	2640	1320	2508.00	2	34	8	224	20	800	4	12
124.	Mangalathu Parambu Slum Qr. No. 3	0.89	1000	75		294	1176	294	558.60	6	102	18	504	9	360	12	36
125.	Cheliparamba Slum	1.00	350	35		330	1320	330	627.00	2	34	5	140	10	400	4	12
126.	Gelasethu Parambu	3.44	1000	75		1135	4540	1135	2156.50	6	102	17	476	34	1360	12	36
127.	Hassan Colony Slum	0.40	600	48		132	528	132	250.80	4	68	12	336	4	160	8	24
128.	Moolankuzhy Slum	2.48	920	84		1637	6548	1637	3110.30	6	102	18	504	25	1000	12	36
129.	Southern Side of Colony	0.50	550	60		165	660	165	313.50	3	51	11	308	5	200	6	18
130.	Chirakapadom Slum	2.01	132	28	CR	1326	5304	1326	2519.40	1	17	3	84	40	1600	2	6
131.	Northern Side of Sujatha Theatre	0.80	500	95		26	104	26	49.40	3	51	10	280	1	40	6	18
132.	Anakettu Parambu Slum	2.78	500	60		917	3668	917	1742.30	3	51	10	280	28	1120	6	18
133.	Kocherry Parambu Colony	2.12	400	40		699	2796	699	1328.10	2	34	8	224	21	840	4	12
134.	Pulaya Colony	1.14	1200	100		752	3008	752	1428.80	8	136	24	672	11	440	16	48
135.	Soudi Colony	0.20	100	15		132	528	264	501.60	0	-	2	56	2	80	0	-
136.	Kanneth Colony	3.20	700	120		2112	8448	1056	2006.40	4	68	14	392	32	1280	8	24
137.	Fisherman Colony Shanmupapuram	19.00	1600	309		12540		6270		10	170	32		190	7600	20	60
	Total	198.21	67112	10385	18												

CALICUT

(All cost figures Rs.'00)

Sl. no.	Name of Slum	Area in (ha)	Population	No. of households	Critical location	Pathway		Drains		Community water supply		Community latrines		Street light		Garbage disposal	
						Requirement (mts)	Cost (Rs.)	Requirement (mts)	Cost (Rs.)	Requirement (No. of post)	Cost (Rs.)	Requirement (No. of seats)	Cost (Rs.)	Requirement (No. of pols)	Cost (Rs.)	Requirement (No. of bins)	Cost (Rs.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Calicut																	
1.	Kappakkal	15.00	2810	407		9600	38400	9600	18240.00	34	578	56	1568	281	11240	38	114
2.	Kudithondu & Chittodi Thazham	4.20	275	54		2752	11008	2752	5228.80	1	17	6	168	84	3360	4	12
3.	Podannayil	5.25	1784	240		3265	13060	3265	6203.50	14	238	36	1008	66	2640	24	72
4.	Thaivelappu	11.75	723	122		7555	30220	7555	14354.50	5	85	15	420	220	8800	10	30
5.	Thiruthu Paramba	0.50	192	24		230	920	230	437.00	2	34	4	112	10	400	3	9
6.	Chevarambalam	1.50	66	12		990	3960	990	1881.00	0	-	1	28	30	1200	1	3
7.	Pallikkandi (East)	0.65	254	35		329	1316	329	625.10	4	68	5	140	13	520	4	12
8.	West Hill	2.90	1011	198		1664	6656	1664	3161.00	14	238	20	560	58	2320	14	42
8.	Vellayill	21.00	8598	1173		12860	5144	9645	18325.00	85	1445	172	4816	370	14800	115	345
10.	Milloth Colony	0.36	288	39		0	-	0	-	0	-	6	168	0	-	4	12
11.	Kannanparamba	2.90	2125	279		1414	5656	700	1330.00	20	340	39	1092	25	1000	28	84
12.	Pandarathilvalappu	0.90	327	47		394	1576	394	748.60	0	-	7	196	8	320	4	12
13.	Vellayil (South)	10.00	4473	584		6600	26400	6600	26400.00	53	901	87	2436	157	6280	60	180
14.	Nainanvalappu & Pallikkandi (West)	10.00	3909	524		6400	25600	6400	12160.00	40	680	78	2184	138	5520	52	156
15.	Kalluthakadavu	1.2	320	68	CR	792	3168	792	1504.80	4	68	6	168	24	960	4	12
16.	Veliyancherry	2.4	709	138		1584	6336	1584	3009.60	4	68	7	196	24	960	4	12
17.	Vattkundu	2.9	1596	226		1914	7656	1914	3636.60	10	170	16	448	29	1160	10	30
18.	Nodinagar	9.35	2353	385		6171	24684	6171	11724.90	15	255	23	644	94	3760	15	45
19.	Kottaparamba	0.6	276	39		396	1584	396	752.40	2	34	3	84	6	240	2	6
20.	Mukadar	5.25	1724	242		3432	13728	3432	6520.80	11	187	17	476	52	2080	11	33
21.	Mannenpadam	1.20	190	34		792	3168	792	1504.80	1	17	2	56	12	480	1	3
22.	Acharathoppu	3.0	634	87		1980	7920	1980	3762.00	4	68	6	168	30	1200	4	12
23.	Puthiyathppu-toduka	7.0	1100	136		4620	18480	4620	8778.00	7	119	11	308	70	2800	7	21
24.	Chamundivalappu	0.3	156	23		198	792	198	376.20	2	34	3	84	6	240	2	6
25.	Thalayathuparamba	1.4	971	110		924	3696	924	1755.60	6	102	10	280	14	560	6	18
26.	Perukuzhipadam	1.3	528	94		858	3432	858	1630.20	3	51	5	140	13	520	3	9
27.	Thirumunbu Nilam	6.0	1011	168		1980	7920	1980	3762.00	7	119	10	280	60	2400	7	21
28.	Thadanilam	1.75	404	55		1155	4620	1155	2194.50	2	34	4	112	17	860	2	6
29.	Puthiyappa	0.25	67	13	CR	165	660	165	313.50	1	17	1	28	5	200	1	3
30.	Paliyarakkal	1.40	302	52	CR	924	3696	924	1755.60	4	68	6	168	28	1120	4	12

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
31.	Palliyarathazhath	1.50	212	41	CR	990	3960	990	1881.00	1	17	4	112	30	1200	3	9
32.	Pallikande (West)	2.00	429	68	CR	1320	5280	1320	2508.00	6	102	5	140	40	1600	6	18
33.	Perumalkandi	1.40	280	47	CR	924	3696	924	1755.60	4	68	3	84	28	1120	4	12
34.	Thaikootam	2.00	469	80	CR	1320	5280	1320	2508.00	3	51	9	252	20	800	6	18
35.	Puthiyakadava Reach	1.60	1063	150	CR	1056	4224	1056	2006.40	7	119	21	588	16	640	14	42
36.	Thoppayil	2.11	1304	187	CR	1390	5560	1390	2641.00	8	136	26	728	42	1680	17	51
37.	Thalappanthoduka	0.40	438	58	CR	264	1056	264	501.60	3	51	9	252	8	320	6	18
38.	Thottulipadam	12.00	2759	362		7920	31680	7920	15048.00	18	306	27	756	120	4800	36	108
39.	Poovalappu	2.50	893	121		1650	6600	1650	3135.00	6	102	9	252	25	1000	12	36
40.	Vellerithodu	10.50	1595	223		6930	27720	6930	13167.00	10	170	16	448	105	4200	22	66
41.	Manaripadam	1.70	434	78		1122	4488	1122	2131.80	3	51	4	112	17	680	6	18
42.	Kambram	7.00	1059	168		4620	18480	4620	8778.00	7	119	10	280	70	2800	14	42
43.	Cherottuvayal	9.75	3406	431		6435	25740	6435	12226.50	22	374	34	952	98	3920	45	135
44.	Chappayil	4.50	1877	274		2970	11880	2970	5643.00	12	204	18	504	45	1800	25	75
45.	Puthiyakadappuram	5.00	843	104		3300	13200	3300	6270.00	5	85	8	224	50	2000	11	33
46.	Chirakuziapadaamna	2.20	576	100		1452	5808	1452	2758.80	4	68	5	140	22	880	8	24
47.	Satharam Compound	0.16	183	36	CR	105	420	105	199.50	1	17	2	56	2	80	3	9
48.	Kalluthunanda	2.60	844	147		1650	6600	1650	3135.00	5	85	8	224	25	1000	11	33
49.	Veneervayal	1.20	250	37		792	3168	792	1504.80	1	17	2	56	12	480	3	9
50.	Chalikara	4.00	720	117		2640	10560	2640	5016.00	5	85	7	196	40	1600	10	30
51.	Thiruthivalappu	12.5	1651	224		8250	33000	8250	15675.00	11	187	16	448	125	5000	22	66
52.	Maruthamuli Paramba	23.5	2593	357		15510	62040	15510	29469.00	17	289	26	728	235	9400	34	102
53.	Koyavalappu	30.5	1472	197		20130	80520	20130	38247.00	10	170	15	420	305	12200	20	60
54.	Puthiyarapadanna	1.0	481	75		660	2640	660	1254.00	3	51	5	140	10	400	6	18
55.	Illathayal	1.8	235	48		1188	4752	1188	2257.20	1	17	2	56	18	720	3	9
56.	Kavilthazham	2.3	278	44		1518	6072	1518	2884.20	2	34	3	84	23	920	4	12
57.	Thiruthivayal	10.00	1535	253		6600	26400	6600	12540.00	10	170	15	420	100	4000	20	60
58.	Valakandathazham	7.00	1030	165		2310	9240	4620	8778.00	7	119	11	308	70	2800	14	42
59.	Kallorthazham	13.75	1451	233		9075	36300	975	1852.50	10	170	15	420	168	5520	20	60
60.	Pandaranitam vayal	1.40	198	32		924	3696	924	1755.60	3	51	4	112	14	560	3	9
61.	Kalathithazham Nilam	2.50	284	56		1650	6600	1650	3135	4	68	3	84	50	2000	4	12
62.	Thirunilam Paramba	3.00	678	95		NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
63.	Chandunninair Padanna	4.65	1479	214		1534	6136	3069	5831.10	10	170	15	420	47	1880	20	60
64.	Valappilthody	1.01	188	25		NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
65.	Kalathil Paramba	5.00	722	121		3300	13200	3300	6270.00	5	85	7	196	50	2000	10	30
66.	Pattar Colony	2.00	252	43		257	1028	-	-	-	-	-	-	-	-	-	-
67.	Thaltilpudika	0.75	84	18		462	1848	462	877.80	0	-	2	56	15	600	1	3
68.	Chettair Housenilam	1.25	378	67		825	3300	825	1567.50	2	34	3	84	12	480	5	15
69.	Ayappoan Kothazham	12.00	963	168		7920	31680	7920	15048.00	6	102	10	280	240	9600	12	36
70.	Chakkumkadov	24.00	5086	681		15840	63360	15840	30096.00	34	578	50	1400	240	9600	68	204

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
71.	Mallorkunu	1.5	221	36		990	3960	990	1881.00	1	17	2	56	15	600	3	9
72.	Kaneerthodi	0.75	115	23		495	1980	495	940.50	1	17	1	28	15	600	2	6
73.	Kaizher Madam	3.00	678	95		1980	7920	1980	3762.00	4	68	7	196	30	1200	9	27
74.	Mundadithazham Voyal kothi	1.50	120	24		990	3960	990	1881.00	1	17	1	28	30	1200	2	6
75.	Kothi	5.25	3711	534		3465	13860	3465	6583.50	25	425	37	1036	53	2120	50	150
76.	Chitadithazham	4.20	325	46		2772	11088	2772	5266.80	2	34	7	196	42	1680	4	12
77.	Karaparamba	0.40	200	31		264	1056	132	250.80	1	17	4	112	8	320	3	9
78.	Kattuvayal	0.70	400	67		462	1848	231	438.90	2	34	4	112	7	280	5	15
79.	Kothi South	52.50	4000	534		34650	138600	34650	65835.00	20	340	80	2240	5025	201000	50	150
80.	Payyanakkal	0.25	110	16		165	660	82.5	156.75	1	17	3	84	3	120	2	6
81.	Vellayiland Eastern side of Beach Road	21.00	10000	1156		13860	55440	6930	13167.00	66	1122	196	5488	210	8400	133	399
82.	Puthiyapalam Thikke Padanna 1986	9.60	2000	238		6336	25344	3168	6019.20	13	221	40	1120	96	3840	26	78
83.	Konnery Ecess land Colony Area	11.70	500	62		7722	30888	7722	14671.80	7	119	10	280	117	4680	7	21
84.	Kavithazham	134.50	1900	228		88770	355080	88770	168663.00	12	204	38	1064	1345	53800	25	78
	Total	613.09	104128	14643	11	391227		385715		791		1592		11449		1311	3933

TRIVANDRUM

(All cost figure Rs.'00)

Sl. no.	Name of Slum	Area in (ha)	Population	No. of house-holds	Critical location	Pathway		Drains		Community water supply		Community latrines		Street light		Garbage disposal	
						Requirement (mts)	Cost (Rs.)	Requirement (mts)	Cost (Rs.)	Requirement (No. of post)	Cost (Rs.)	Requirement (No. of seats)	Cost (Rs.)	Requirement (No. of pols)	Cost (Rs.)	Requirement (No. of bins)	Cost (Rs.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Trivandrum																	
1.	Anchamada	7.20	1362	289		2752	11008	4752	9028.80	5	85	27	756	119	4760	18	54
2.	Chirakulam	0.50	499	118		-	-	247	469.30	3	51	4	112	5	200	7	21
3.	Pound Kulam	0.90	646	158		-	-	356	676.40	6	102	5	140	0	-	9	27
4.	Vadavathu Colony	2.00	1304	267		-	-	1320	2508.00	2	34	26	728	5	200	21	63
5.	Kannanthura	1.50	636	141	CR	-	-	990	1881.00	0	0	10	280	5	200	9	27
6.	Thekkumoodu Bund Colony	0.30	311	87	CR	-	-	198	376.20	3	51	6	168	6	240	4	12
7.	R.C. Street Kunnukuzhy	1.30	1280	257		-	-	858	1630.20	8	136	13	364	13	520	17	51
8.	Oorkulam	0.6	346	68		-	-	198	376.20	2	34	3	84	6	240	5	15
9.	Slum Nar Sewerage Farm	1.50	821	155		-	-	998	1896.20	5	85	8	224	15	600	11	33
10.	Slum Near Titanum	3.50	750	148		2310	9240	2310	4389.00	5	85	7	196	70	2800	10	30
11.	Krishnapillee Nagar	1.50	1192	236		495	1980	990	1881.00	8	136	12	336	15	600	16	48
12.	Karimadom Colony	2.80	2311	493		1848	7392	924	1755.60	15	225	23	644	28	1120	31	93
13.	Barloon Hill	3.00	1778	372		-	-	1980	3762.00	12	204	17	476	30	1200	24	72
14.	Puthencotta Burial Ground	0.40	239	46		264	1056	264	501.60	3	51	2	56	4	160	3	9
15.	Tagore Garden	0.35	108	25		231	924	231	438.90	2	34	2	56	7	280	2	6
16.	Thiricharapuram Colony	2.00	443	103		-	-	1320	2508.00	3	51	4	112	20	800	6	18
17.	Kunnurila Colony	0.10	78	18		66	264	66	125.40	1	17	2	56	2	80	1	3
18.	Charurilakathu Slum near N.C. College	0.08	40	7		53	212	53	100.70	1	17	-	-	2	80	1	3
19.	Valiyathura Fishermen Colony	3.0	1998	380	CR	1980	7920	1980	3762.00	13	221	20	560	30	1200	27	81
20.	L.S.Road Shanphun Ghat	4.0	1320	243	CR	2640	10560	2640	5016.00	9	153	26	728	40	1600	18	54
21.	New Block Colony in Poonthura	1.20	1749	310	CR	-	-	792	1504.80	12	204	17	476	12	480	23	69
22.	Kollur Bund Colony	0.20	212	55	CR	132	528	132	250.80	3	51	4	112	4	160	3	9

Contd...

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
23.	V.F.I.Colony, Muttathara	0.30	251	49	CR	-	-	-	-	-	-	-	-	-	-	-	-
24.	Fishermen Settlement from veli to Sangumughan	10.00	2609	533	CR	6600	26400	6600	12540.00	35	595	52	1456	200	8000	35	105
25.	Slum near Kuriathy	0.08	64	13	CR	53	211	53	100.32	1	17	2	56	2	80	1	3
26.	Plamoodu Thottu Varambu	0.40	281	71	CR	264	1056	264	501.60	4	68	6	168	8	320	4	12
27.	Paruthikuzhi Attuvarambu	0.50	408	85	CR	330	1320	330	627.00	2	34	4	112	10	400	5	15
28.	Uppidamoodu I	0.08	38	7	CR	53	211	26	50.16	1	17	1	28	2	80	1	3
29.	Uppidamoodu II	0.07	36	9	CR	46	185	23	43.89	1	17	1	28	2	80	1	3
30.	Fishermen Settlement Poonthura	61.00	11831	2102	CR	-	-	20130	38247.00	78	1326	118	3304	610	24400	158	474
31.	Chullagi Padinjara Thekkumbhagom	0.03	21	5	CR	20	79	20	37.62	1	17	1	28	0	-	1	3
32.	Korakulam near M.G. College	0.07	41	7	CR	46	185	46	87.78	1	17	-	-	2	80	1	3
33.	Muringapalam Bund Colony	0.06	21	8	CR	40	158	40	75.24	1	17	1	28	2	80	1	3
34.	Alamthara Vazhavila kulam	0.10	65	11		66	246	66	125.40	1	17	2	56	2	80	1	3
35.	Krishna Pillai Nagar (East)	2.00	733	151		1320	5280	1320	2508.00	5	85	7	196	10	400	10	30
36.	Kodurkonam Kulathin Kara	0.08	37	7	CR	53	211	59	100.32	1	17	1	28	2	80	1	3
37.	Perunelly at Kauleshwaram	80.94	5500	2000	CR	51420	205680	53420	101498.00	58	986	110	3080	1518	60720	73	219
38.	Pourasamithy Colony (Balanagar Colony)	44.52	2500	850		-	-	29383	55827.00	31	527	50	1400	860	34400	33	99
39.	Pettah Railway Station	0.81	450	80	CR	35	140	535	1016.50	3	51	9	252	12	480	6	18
40.	Vayyamoola	40.47	2500	650	CR	25210	100840	26710	50749.00	23	391	50	1400	779	31160	33	99
41.	St. Mary's H.S. Vettucard	23.47	2100	400		13490	53960	15490	29431.00	23	391	42	1176	434	17360	28	84
42.	Modhavapuram	60.71	3000	875		35068	140272	40068	76129.20	35	595	60	1680	1134	45360	40	120
43.	R.C. Church Thappu	1.60	3000	620		-	-	264	501.60	37	629	60	1680	0	-	40	120
44.	Puthan Road Mukku	40.47	3000	600		25210	100840	26710	47899.00	34	578	60	1680	764	30560	40	120
45.	Cheelanthi Mukku	60.71	7000	2240		40068	160272	40068	76129.20	90	1530	140	3920	1184	47360	93	279
	Total	466.40	64909	15349	21												

ANNEXURE - 3.4

Services Deficiency in the Three Cities of Trivandrum, Cochin and Calicut

TRIVANDRUM

Slum no.	DEFICIENCY (%)					
	Path-ways	Drains	Commu-nity taps	Commu-nity latrine seats	Street light poles	Garbage bins
1	2	3	4	5	6	7
1	57.90	100.00	27.77	100.00	82.60	100.00
2	-	99.89	45.01	40.00	50.00	100.00
3	-	93.91	69.66	38.70	-	100.00
4	-	100.00	11.76	100.00	12.50	100.00
5	-	100.00	0.00	78.60	83.30	100.00
6	-	100.00	72.35	96.46	100.00	100.00
7	-	100.00	50.00	50.00	50.00	100.00
8	-	-	50.00	50.00	50.00	100.00
9	-	100.00	50.00	50.00	50.00	100.00
10	100.00	100.00	50.00	50.00	100.00	100.00
11	100.00	100.0	50.00	50.00	50.00	100.00
12	100.00	-	50.00	50.00	50.00	100.00
13	-	100.00	50.00	50.00	50.00	100.00
14	100.00	100.00	100.00	50.00	50.00	100.00
15	100.00	100.00	100.00	100.00	100.00	100.00
16	-	100.00	50.00	50.00	50.00	100.00
17	100.00	100.00	100.00	100.00	100.00	100.00
18	100.00	100.00	100.00	100.00	100.00	100.00
19	100.00	100.00	50.00	100.00	50.00	100.00
20	100.00	100.00	50.00	50.00	50.00	100.00
21	100.00	100.00	50.00	100.00	50.00	100.00
22	100.00	100.00	100.00	50.00	100.00	100.00
23	100.00	100.00	50.00	-	-	100.00
24	100.00	100.00	100.00	100.00	100.00	100.00
25	100.00	100.00	100.00	100.00	100.00	100.00
26	100.00	100.00	100.00	100.00	100.00	100.00
27	100.00	100.00	50.00	50.00	100.00	100.00
28	100.00	-	100.00	100.00	100.00	100.00
29	100.00	-	100.00	100.00	100.00	100.00
30	-	-	50.00	50.00	50.00	100.00
31	100.00	100.00	100.00	100.00	50.00	100.00
32	10.00	100.00	100.00	50.00	100.00	100.00
33	100.00	100.00	100.00	100.00	100.00	100.00
34	100.00	100.00	100.00	100.00	100.00	100.00
35	100.00	100.00	50.00	50.00	50.00	100.00

Contd.....

1	2	3	4	5	6	7
36	100.00	100.00	100.00	100.00	100.00	100.00
37	92.78	92.78	79.45	100.00	93.82	100.00
38	-	100.00	93.94	100.00	96.60	100.00
39	6.50	100.00	50.00	100.00	75.00	100.00
40	94.38	100.00	69.70	100.00	96.30	100.00
41	87.08	100.00	82.14	100.00	92.50	100.00
42	87.50	100.00	87.50	100.00	93.40	100.00
43	-	100.00	92.50	100.00	-	100.00
44	94.38	100.00	85.00	100.00	94.40	100.00
45	100.00	100.00	96.00	100.00	97.50	100.00

COCHIN

Slum no.	DEFICIENCY (%)					
	Path-ways	Drains	Commu-nity taps	Commu-nity latrine seats	Street light poles	Garbage bins
1	2	3	4	5	6	7
1	-	100.00	50.00	100.00	-	100.00
2	11.67	100.00	0.00	35.71	75.00	100.00
3	1.96	100.00	0	0	-	100.00
4	-	94.62	0.0	44.33	40.00	100.00
5	39.75	99.06	87.00	82.54	70.00	100.00
6	25.53	100.00	61.35	100.00	100.00	100.00
7	-	74.57	73.53	0.00	16.66	100.00
8	22.48	100.00	30.00	100.00	-	100.00
9	-	100.00	0.0	100.00	100.00	100.00
10	44.20	85.40	33.63	100.00	-	100.00
11	24.81	100.00	-	100.00	40.00	100.00
12	-	91.35	-	100.00	25.00	100.00
13	1.96	100.00	0.0	0.0	100.00	100.00
14	72.50	100.00	0.0	100.00	100.00	100.00
15	100.00	51.61	0.0	100.00	-	100.00
16	100.00	100.00	55.56	100.00	100.00	100.00
17	100.00	100.00	50.00	50.00	50.00	100.00
18	-	100.00	50.00	50.00	50.00	100.00
19	-	100.00	50.00	50.00	50.00	100.00
20	100.00	100.00	61.00	0.0	50.00	100.00
21	100.00	100.00	50.00	50.00	50.00	100.00
22	100.00	100.00	50.00	100.00	50.00	100.00
23	100.00	100.00	50.00	50.00	50.00	100.00
24	50.00	100.00	50.00	50.00	50.00	100.00
25	50.00	100.00	50.00	50.00	50.00	100.00
26	50.00	50.00	50.00	50.00	50.00	100.00
27	50.00	100.00	50.00	50.00	50.00	100.00
28	100.00	100.00	50.00	50.00	100.00	100.00
29	100.00	100.00	50.00	50.00	100.00	100.00
30	100.00	100.00	50.00	100.00	100.00	100.00
31	100.00	100.00	50.00	50.00	100.00	100.00
32	100.00	100.00	50.00	50.00	50.00	100.00
33	100.00	100.00	50.00	50.00	100.00	100.00
34	100.00	100.00	50.00	50.00	100.00	100.00
35	100.00	100.00	100.00	100.00	100.00	100.00
36	100.00	50.00	50.00	50.00	100.00	100.00
37	100.00	100.00	50.00	50.00	100.00	100.00
38	100.00	100.00	50.00	50.00	100.00	100.00
39	100.00	100.00	50.00	50.00	100.00	100.00
40	100.00	100.00	50.00	50.00	100.00	100.00
41	100.00	100.00	50.00	50.00	100.00	100.00
42	100.00	100.00	50.00	50.00	100.00	100.00

Contd.....

1	2	3	4	5	6	7
43	100.00	100.00	100.00	50.00	100.00	100.00
44	100.00	100.00	100.00	50.00	50.00	100.00
45	100.00	100.00	100.00	50.00	100.00	100.00
46	100.00	100.00	100.00	50.00	50.00	100.00
47	100.00	100.00	100.00	50.00	50.00	100.00
48	100.00	100.00	50.00	50.00	100.00	100.00
49	100.00	100.00	100.00	50.00	50.00	100.00
50	100.00	100.00	100.00	50.00	50.00	100.00
51	100.00	100.00	100.00	100.00	100.00	100.00
52	50.00	100.00	50.00	50.00	50.00	100.00
53	100.00	100.00	100.00	50.00	100.00	100.00
54	100.00	100.00	50.00	50.00	100.00	100.00
55	100.00	100.00	50.00	50.00	50.00	100.00
56	100.00	100.00	50.00	50.00	50.00	100.00
57	100.00	100.00	50.00	50.00	50.00	100.00
58	50.00	100.00	100.00	100.00	100.00	100.00
59	100.00	100.00	50.00	50.00	50.00	100.00
60	100.00	100.00	50.00	50.00	100.00	100.00
61	100.00	100.00	50.00	50.00	50.00	100.00
62	100.00	100.00	50.00	50.00	50.00	100.00
63	100.00	100.00	50.00	50.00	100.00	100.00
64	100.00	100.00	50.00	50.00	50.00	100.00
65	100.00	100.00	50.00	50.00	100.00	100.00
66	-	-	-	-	-	-
67	-	-	-	-	-	-
68	-	-	-	-	-	-
69	-	-	-	-	-	-
70	-	-	-	-	-	-
71	-	-	-	-	-	-
72	-	-	-	-	-	-
73	100.00	100.00	50.00	100.00	100.00	100.00
74	100.00	100.00	50.00	50.00	100.00	100.00
75	100.00	100.00	50.00	50.00	50.00	100.00
76	50.00	100.00	50.00	50.00	50.00	100.00
77	100.00	100.00	100.00	50.00	100.00	100.00
78	100.00	100.00	100.00	100.00	100.00	100.00
79	100.00	100.00	100.00	100.00	100.00	100.00
80	100.00	100.00	100.00	100.00	100.00	100.00
81	100.00	100.00	100.00	100.00	100.00	100.00
82	100.00	100.00	100.00	100.00	100.00	100.00
83	100.00	100.00	100.00	100.00	100.00	100.00
84	100.00	100.00	100.00	100.00	100.00	100.00
85	100.00	100.00	100.00	100.00	100.00	100.00
86	100.00	100.00	100.00	100.00	100.00	100.00
87	100.00	100.00	100.00	100.00	100.00	100.00
88	100.00	100.00	100.00	100.00	100.00	100.00
89	100.00	100.00	100.00	100.00	100.00	100.00
90	100.00	100.00	100.00	100.00	100.00	100.00
91	100.00	100.00	100.00	100.00	100.00	100.00
92	100.00	100.00	100.00	100.00	50.00	100.00

Contd.....

1	2	3	4	5	6	7
93	100.00	100.00	50.00	100.00	100.00	100.00
94	100.00	100.00	100.00	100.00	100.00	100.00
95	100.00	50.00	50.00	100.00	50.00	100.00
96	100.00	50.00	50.00	100.00	100.00	100.00
97	100.00	50.00	50.00	100.00	100.00	100.00
98	100.00	100.00	50.00	100.00	100.00	100.00
99	100.00	50.00	50.00	100.00	100.00	100.00
100	100.00	50.00	50.00	100.00	100.00	100.00
101	100.00	100.00	50.00	100.00	100.00	100.00
102	100.00	100.00	50.00	100.00	50.00	100.00
103	100.00	50.00	50.00	100.00	50.00	100.00
104	100.00	50.00	50.00	100.00	100.00	100.00
105	100.00	50.00	50.00	100.0	100.00	100.00
106	100.00	100.00	50.00	100.00	100.00	100.00
107	100.00	100.00	50.00	100.00	50.00	100.00
108	100.00	100.00	50.00	100.00	50.00	100.00
109	100.00	100.00	50.00	100.00	100.00	100.00
110	100.00	100.00	50.00	100.00	50.00	100.00
111	100.00	100.00	50.00	100.00	50.00	100.00
112	100.00	100.00	100.00	100.00	100.00	100.00
113	100.00	50.00	50.00	100.00	50.00	100.00
114	100.00	100.00	50.00	100.00	50.00	100.00
115	100.00	50.00	50.00	100.00	50.00	100.00
116	100.00	100.00	50.00	100.00	50.00	100.00
117	100.00	100.00	50.00	100.00	50.00	100.00
118	100.00	50.00	50.00	100.00	50.00	100.00
119	100.00	100.00	50.00	100.00	100.00	100.00
120	100.00	100.00	50.00	100.00	50.00	100.00
121	100.00	100.00	50.00	100.00	50.00	100.00
122	50.00	100.00	50.00	100.00	50.00	100.00
123	50.00	100.00	50.00	100.00	50.00	100.00
124	50.00	50.00	50.00	90.00	50.00	100.00
125	50.00	50.00	50.00	71.00	50.00	100.00
126	50.00	50.00	50.00	85.00	50.00	100.00
127	50.00	50.00	50.00	100.00	50.00	100.00
128	100.00	50.00	50.00	100.00	50.00	100.00
129	50.00	100.00	50.00	85.00	50.00	100.00
130	50.00	50.00	50.00	100.00	50.00	100.00
131	50.00	100.00	50.00	100.00	50.00	100.00
132	50.00	50.00	50.00	100.00	50.00	100.00
133	50.00	50.00	50.00	100.00	50.00	100.00
134	100.00	50.00	100.00	100.00	50.00	100.00
135	100.00	100.00	100.00	100.00	50.00	100.00
136	100.00	50.00	100.00	100.00	50.00	100.00
137	100.00	50.00	100.00	100.00	50.00	100.00

CALICUT

Slum no.	DEFICIENCY (%)					
	Path-ways	Drains	Commu-nity taps	Commu-nity latrine seats	Street light poles	Garbage bins
1	2	3	4	5	6	7
1	97.00	100.00	90.74	100.00	93.66	100.00
2	98.22	100.00	277.27	100.00	100.00	100.00
3	94.54	100.00	58.86	100.00	62.86	100.00
4	97.42	100.00	51.87	100.00	93.62	100.00
5	76.74	100.00	78.13	100.00	100.00	100.00
6	94.28	100.00	-	100.00	100.00	100.00
7	81.10	100.00	100.00	98.00	100.00	100.00
8	88.79	100.00	100.00	100.00	100.00	100.00
9	92.78	100.00	74.15	100.00	88.00	100.00
10	-	100.00	0.00	100.00	-	100.00
11	74.75	100.00	70.58	91.76	41.66	100.00
12	66.33	100.00	0.00	100.00	44.44	100.00
13	97.10	100.00	88.33	100.00	78.50	100.00
14	97.10	100.00	76.75	100.00	69.00	100.00
15	100.00	100.00	100.00	100.00	100.00	100.00
16	100.00	100.00	50.00	50.00	50.00	100.00
17	100.00	100.00	50.00	50.00	50.00	100.00
18	100.00	100.00	50.00	50.00	50.00	100.00
19	100.00	100.00	50.00	50.00	50.00	100.00
20	100.00	100.00	50.00	50.00	50.00	100.00
21	100.00	100.00	50.00	50.00	50.00	100.00
22	100.00	100.00	50.00	50.00	50.00	100.00
23	100.00	100.00	50.00	50.00	50.00	100.00
24	100.00	100.00	50.00	50.00	50.00	100.00
25	100.00	100.00	50.00	50.00	50.00	100.00
26	100.00	100.00	50.00	50.00	100.00	100.00
27	100.00	100.00	50.00	50.00	100.00	100.00
28	100.00	100.00	50.00	50.00	100.00	100.00
29	100.00	100.00	100.00	100.00	100.00	100.00
30	100.00	100.00	100.00	100.00	100.00	100.00
31	100.00	100.00	50.00	100.00	100.00	100.00
32	100.00	100.00	100.00	100.00	100.00	100.00
33	100.00	100.00	100.00	100.00	100.00	100.00
34	100.00	100.00	50.00	50.00	100.00	100.00
35	100.00	100.00	50.00	100.00	50.00	100.00
36	100.00	100.00	50.00	100.00	50.00	100.00
37	100.00	100.00	50.00	100.00	100.00	100.00
38	100.00	100.00	50.00	50.00	100.00	100.00
39	100.00	100.00	50.00	50.00	50.00	100.00
40	100.00	100.00	50.00	50.00	50.00	100.00

Contd.....

1	2	3	4	5	6	7
41	100.00	100.00	50.00	50.00	50.00	100.00
42	100.00	100.00	50.00	50.00	50.00	100.00
43	100.00	100.00	50.00	50.00	50.00	100.00
44	100.00	100.00	50.00	50.00	50.00	100.00
45	100.00	100.00	50.00	50.00	50.00	100.00
46	100.00	100.00	50.00	50.00	50.00	100.00
47	100.00	100.00	50.00	50.00	50.00	100.00
48	100.00	100.00	50.00	50.00	100.00	100.00
49	100.00	100.00	50.00	50.00	50.00	100.00
50	100.00	100.00	50.00	50.00	50.00	100.00
51	100.00	100.00	50.00	50.00	50.00	100.00
52	100.00	100.00	50.00	50.00	50.00	100.00
53	100.00	100.00	50.00	50.00	50.00	100.00
54	100.00	100.00	50.00	50.00	50.00	100.00
55	100.00	100.00	50.00	50.00	50.00	100.00
56	100.00	100.00	50.00	50.00	50.00	100.00
57	100.00	100.00	50.00	50.00	50.00	100.00
58	100.00	100.00	50.00	50.00	50.00	100.00
59	100.00	100.00	50.00	50.00	50.00	100.00
60	100.00	100.00	100.00	100.00	50.00	100.00
61	100.00	100.00	100.00	100.00	100.00	100.00
62	100.00	100.00	50.00	50.00	50.00	100.00
63	100.00	100.00	50.00	50.00	50.00	100.00
64	100.00	100.00	50.00	50.00	50.00	100.00
65	100.00	100.00	50.00	50.00	50.00	100.00
66	100.00	100.00	50.00	50.00	50.00	100.00
67	100.00	100.00	50.00	50.00	100.00	100.00
68	100.00	100.00	50.00	50.00	50.00	100.00
69	100.00	100.00	50.00	50.00	100.00	100.00
70	100.00	100.00	50.00	50.00	50.00	100.00
71	100.00	100.00	50.00	50.00	50.00	100.00
72	100.00	100.00	50.00	50.00	100.00	100.00
73	100.00	100.00	50.00	50.00	50.00	100.00
74	100.00	100.00	50.00	50.00	100.00	100.00
75	100.00	100.00	50.00	50.00	50.00	100.00
76	100.00	100.00	50.00	100.00	50.00	100.00
77	100.00	50.00	50.00	100.00	50.00	100.00
78	100.00	100.00	50.00	100.00	50.00	100.00
79	100.00	100.00	50.00	100.00	50.00	100.00
80	100.00	50.00	50.00	100.00	50.00	100.00
81	100.00	50.00	50.00	100.00	50.00	100.00
82	100.00	50.00	50.00	100.00	50.00	100.00
83	100.00	100.00	100.00	100.00	50.00	100.00
84	100.00	100.00	50.00	100.00	50.00	100.00

CHAPTER - IV

DESIGN PARAMETERS AND COORDINATION OF IMPROVEMENT

The review of improvement of slums under EIUS in the past has revealed that the improvement could not be related to the adopted norms and standards of improvement as suggested by the TPD of Government of Kerala. Nevertheless, the improvement carried out in the slums positively improved roads, approaches, streets and pathways with the result that the movement of slum dwellers has been facilitated especially during the monsoon. However, it could not substantially improve accessibility of the slum dwellers to services and public hygiene.

Now since the improvement programme is to be revamped under the proposed Kerala Urban Development Project, we have suggested a new set of norms for six core services which have been extensively discussed in the last chapter. The specific feature of these norms are that they compare very favourably with the norms applied in other World Bank funded projects in Bombay and Madras. As regards the norms applicable in the EIUS being improved according to the TPD norms, we have suggested a few improvement in it. First, the norms for pathways and drainage have been concretised by suggesting the actual norms in these regards. For water supply, the norm suggested has been modified from one standpost for 100 persons to one for 75 persons. The existing norm for latrines is somewhat liberal as compared to the other World Bank funded projects. Hence it is suggested to be increased from one seat for 20 persons to one seat for fifty persons due to cost considerations and constraints on resources. With a view to ensure public hygiene and

cleanliness, we have suggested to provide one garbage collection point for every 75 persons or 15 families. This component has been lacking in the existing improvement programme. The range of services and the suggested norms are given in Figure 3.1.

The components of improvement as discussed above are expected to enhance the quality of life and environment of the slum dwellers. It will improve the accessibility of the slum dwellers to basic services and hence will go a long way in removing deprivation of the urban poor. In sum, it will provide a wholesome environment to live-in and work.

It is worth mentioning that in this scheme of the range and degree of improvement, we have not suggested anything regarding electricity except the provision of street lighting on community basis. If, however, the slum households have the affordability, they could get private connections at the obtaining rate of electricity supply.

Per Capita Cost

With a view to have a better perspective of perceived benefits of improved environment and levels of services it would be desirable to have a look at the per capita cost (both gross and net costs) of improvement. The per capita gross cost under alternative I (improving both the developed and undeveloped slums) comes to about Rs. 3151 and the net cost is to the extent of about Rs.850. The gross per capita cost for alternative II (improving only the unimproved slums and adjusting the gross cost out of the sale proceeds of excess land in the undevelopment slums) comes to about Rs. 3180 and the net cost comes to about Rs. 1672 per capita only. Under alternative III the gross per capita cost is to the

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extent of Rs. 3180 but the net per capita cost is reduced to only Rs. 195. The per capita cost under alternative IV is difficult to visualise as this in itself has several options to choose from. The per capita cost will therefore depend upon the type of option selected by the implementing agencies. To give some illustrations, if it is decided to upgrade the services in all the slums with more than 50 households, the per capita cost will come to Rs.3170. If, however, only three services viz community water supply, community latrine and drainage are provided in all the slums irrespective of number of households, the per capita cost will amount to Rs.932 only.

Programme Linkages :

In Chapter III, the funds converging on the programmes for urban poor have been analysed and discussed in detail. The funds will prove handy in managing the financing of improvement in the slums. The UBS in Cochin and NRY in the three cities will have a positive impact in improving the environmental conditions of slums as also the economic well-being of the slum dwellers. These programmes will provide the economic component in the improvement strategy together with physical improvements. However, though UBS is already based on participatory development, the effective utilisation of funds for NRY will essentially require to organise the community as discussed in Chapter V in detail. The type of economic opportunities required to be created will depend very much on organising and motivating of the slum-communities so that they reveal their genuine problems, preferences and requirements so that the programmatic content could be evolved accordingly.

As mentioned earlier in Chapter III, the existing budgeting and accounting practices do not enable to disaggregate the expenditure incurred by various agencies and government departments in slums in the three cities. Table 3.17 shows only the allocations made by the UNICEF, the State Government of Kerala, the Central Government and the Corporation of Cochin (for the UBS) and by HUDCO, Central Government, State Government and the nationalised banks for the Urban Micro-Enterprise Scheme and Home Upgradation Scheme under the NRY. But already a number of public departments are spending some money in the slums on water, health education, social welfare in a formal manner. The modality for ensuring convergence of activities will have to be based on the linkage of slum dwellers with voluntary organisations, public departments and agencies as discussed at length in Chapter V.

Slum Prototypes :

Slums represent, in fact, a social sub-system and hence they are full of diversities and complexities. Any scheme of planned public intervention, therefore, cannot be chalked out for accross the board universal application. Specific solutions will have to be devised for specific situations. This calls for evolving a typology of slums so that a universal across-the-board solution to every type of slum is avoided. In the Preliminary Report, the typology was developed on the basis of status of services and structural conditions primarily to enable an objective sampling of respondent households for detailed survey of socio-economic conditions. We suggest here another scheme of typology for relating public policy to improvement.

In the Preliminary Report it has been mentioned that there could be many ways of evolving a typology and one of the ways to do it was suggested on the basis of multiple variables which reflect the crucial characteristics of slums like encroachment on public/private land, rudimentary shelter, locational incompatibility, criticality of locations, inadequate services etc.

Accordingly, four distinct types of slums were suggested. These were (1) slums requiring improvement, (2)slums requiring upgradation (of services), (3) slums requiring reconstruction, and (4) slums requiring relocation. A number of indicators which go to group the slums in these categories were also identified. However, a problem with this scheme of typology is that several indicators are common under each type and second, there could be a situation where all the types may be found within a single settlement. We, therefore, suggest a new scheme of typology based on locational attributes and level of services. For doing this all the slums existing in the three cities are listed along with services, population, number of households, area, relative income levels, ownership of land etc. in Appendix I.

Taking locational attributes of slum settlement, we suggest to group the various slums initially into two broad groups viz. (1) slums on critical locations and (2) slums on normal locations.

(1) Slums on Critical Locations : All the slums on critical locations like, by the side of river, drains, bunds, railway line, in the river bed, on seasore, under the high tension wire or on the hillocks constitute the critical slums. All such slums

are called "Special Slums" in the TDP parlance. All the slums constituting this broad category are listed in Appendix II.

(2) Slums on Normal Locations : All the residuary slums located on plains and normal locations constitute the second broad type of slums. All such slums are listed in Appendix III.

These two broad types of slums have been further sub-divided into two each on the basis of status of services. Thus critical slums have been sub-divided into (1A) critical slums without any services, and (1B) critical slums with rudimentary services[1]. The list of slums belonging to Type IA is given in Annexure 4.1. Annexure 4.2 contains the list of slums belonging to Type IB. For all these slums the data on area, number of household and population are also given in the Annexure.

The second category of slums located on normal locations are also sub-divided according to level of services. Type 2A has all such slums which do not have any rudiment of services and Tupe 2B are those which have some rudiments of services which needs to be upgraded. The lists of slums belonging to these two types are presented in Annexures 4.3 and 4.4 respectively. Thus the typology suggested basically consists of two broad types with two sub-groups under each of them.

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1. All the slums where the levels of services are below the suggested norms.

In Cochin, there is yet a third type of slum. There are slums in which several families are living in the same structure. They are basically multi family slums having a single structure where the level of services, environmental conditions and also the structural conditions are deplorable. These slums are mentioned in Annexure 4.5.

Public Policy for Different Types

The four different types of slums in the three cities as also the fifth type prevalent especially in Cochin will require different approaches for improvement.

Slum on Critical Locations :

All the slums on critical locations have inevitably to be relocated on normal locations on the basis of sites and services scheme. The municipal corporations have already devised plans for relocation of a few of them on planned locations. However, the approach needs to be modified. The schemes as presently devised are limited to relocation of only slum dwellers. This will additionally constrain the financial resource situation. Hence it would be desirable to develop such schemes which are self-financing in nature. This could be done by developing composite site and service scheme consisting of high income group (HIG), middle income groups (MIG), low income group (LIG) and the economically weaker sections of the society. Besides these, the scheme should also have some component of remunerative scheme built into it for making it self-financing. Developing such composite colonies will also help in positively integrating various socio-economic groups and creating a cohesive social fabric. In the past, there has been

some problems in relocating the squatters and slum dwellers exclusively on new locations (Kissan colony in Cochin). The colonies already adjoining such relocation schemes have resented such moves especially in Cochin. Development of composite colonies on the basis of sites and services will take care of this acute social problem being encountered presently. Delhi provides an example where initially the squatters were relocated on planned locations and later on housing schemes for other income groups were provided as in-fill and also as an instrument for cost recovery on the basis of cross-subsidy. As the project is suggested to be self-financing, we have not gone into cost considerations and other details of it. It needs to be mentioned that with a view to internalise the maintenance cost in the post project sustenance phase, W.C. and bath room should be provided on individual basis even on the plots of land meant for the relocation of slum dwellers.

If, however, there are constraints on availability of land, the relocation could be done in phases. In the first phase, only such slums could be relocated whose continuance on the existing locations is dangerous for the safety of slum dwellers. In the remaining critical slums which are not as critical as others, the upgradation of services could be undertaken simultaneously. Of these, some are zero service critical slums (Type 1A) and others are non-zero service slums where the services are at most rudimentary (Type 1B). Provision of services and improvement of environment in the zero service critical slums and upgradation of services in the non-zero critical slums have to be started for such slums which are not to be relocated in near future.

Slums on Normal Locations

Slums on normal locations are to be taken up for in situ improvement. All the slums on normal locations with zero services (Type 2A) have to be provided with the seven core urban services mentioned earlier in the report as per the suggested norms and the level of services. The non-zero slums on normal locations having deficiency of services to the extent of 75 to 100 per cent will also (Type 2B) have to be upgraded according to the suggested norms.

Multi-family Single Structure Slums :

This is the type to be found exclusively in Cochin, by and large, on the Trust land. They require altogether a different strategy for improvement. They basically require rehabilitation of the households in better environment and structural conditions with upgraded services. Hence it calls for a service-cum-physical improvement of structures. The rehabilitation approach will require to first clear the site and relocate them on temporary camping sites. The cleared site then will have to be used for erecting four-story blocks for their rehabilitation. The process is very complex and costly. It would require availability of huge funds. Presently, there are 32 such slums. The list is given in Annexure 4.5. In all these slums, there are 3523 households living in these slums. Thus on an average, about 110 households are living in each slum, mostly in a single delapidated structure or in barracks. In certain instances, the structure is two to three storeyed. Rehabilitation will require to construct as many as 3523 dwelling units in four storeyed structures. The existing cost cieling of HUDCO for EWS housing is RS. 22000 per dwelling unit of which Rs. 19500 is given by HUDCO as loan and Rs. 1500 is supposed

to be contributed by the beneficiaries. At this rate, the construction cost alone for 3523 dwelling units will amount to about Rs. 77.51 millions. Cost of land acquisition will be in addition to it. The land values are very high as most of these slums are located in old Cochin which is the core of the twin-cities of Cochin and Ernakulam. As we have suggested in Chapter III, the land could be acquired by pursuading the land owners (which are mostly the Trusts) to part with three-fourth of their land areas to be utilised for construction of EWS tenements and provision of services. As the lands are occupied by slums for decades together, the owners of land should be favourbly disposed towards this if they are convinced that they will atleast get back some land as occupied by the slum dwellers.

However, even if we do not include the cost of land acquisition in the cost, the construction cost and other supervision and departmental charges would be substantial. The cost of construction (Rs. 77.51 million) itself will require the households to pay Rs. 159.25 per month for 22 years at an interest rate of 8 per cent which is the condition for HUDCO funds. The cost of improvement of services will be in addition to it. If, however, it is costed at 13 per cent rate of interest like the upgradation of services, the equated monthly instalment will increase to about Rs 300 per month for ten years.

Optional Public Response Prototype Package

The TOR requires the Consultant to suggest public response prototype packages for each type of slums in terms of the following:

i. a full tenure and full cost recovery pakage,

ii. a service package but with no tenure and no direct cost recovery (or cost recovery limited to directly chargeable utilities such as water supply).

iii. Public/Private Cooperation in slum upgrading under which private land owner is given some free land in exchange for granting tenure to slum dwellers on the bulk of land.

iv. Relocation of slum dwellers on land currently needed for essential public purposes along with a reasonable resettlement programme.

We have already suggested the response package in Chapter III and earlier in this chapter. However, in order to recapitulate them we discuss it again.

i. Full Tenure and Full Cost Recovery

We have earlier suggested to award pattas to the slum households who have not yet been allotted any patta so far. But the legal and equity considerations constrain the charging of price for it. In order to motivate the slum dwellers to improve their own shelter and enable them to have a psychological feeling that they belong to the environment and the land belongs to them, the award of tenure right is a critical imperative for improvement programme. Hence, the tenure right should be granted to them but without a charge. For full cost recovery in improvement and upgradation of services, we have suggested four alternatives. Alternative I involves an average cost of Rs. 76 per household for per month for ten years. But the cost recovery is possible only to the extent of about 74 per cent. For alternative II, the cost comes to about Rs. 154 and the possible cost recovery is to the extent of only 36 per cent and for Alternative III, the full cost recovery is not only

feasible but also easy without any mix of grant. Alternative IV does not involve recovery of capital costs. Only the operating and maintenance cost has to be recovered which is very much within the affordability limits of the slum households.Alternative I will require a mix of loan and grant in the ratio of 74:26. Alternative II does not seem to be feasible as the mix of loan and grant is in the ratio of 64:36 and Alternative III will fully ensure total cost recovery without any element of grant. For Alternative IV the entire capital investment has to be in the from of grant as the direct cost recovery for installation of services have been ruled out.

ii. Full Tenure and Partial Cost Recovery

To reiterate, full tenurial right has already been suggested to be awarded without any system of charging. If no direct cost recovery is adhered to for recouping the cost of improvement, the cost recovery will be limited to the recovery of only the off-site infrastructure to the extent of about Rs. 52 million. This will have to be collected indirectly through the system of municipal finance, and the resources available with the organisations providing these services.

In case, the direct cost recovery is limited to only directly chargeable utilities like water, the cost will be very low and its recovery the easiest. The provision and upgradation of water supply on community basis is to cost about Rs. 2.92 million in all the slums of the three cities. The annual average cost to be recovered from each family in a period of ten years at 13 per cent rate of interest comes to only Rs. 13.33. Even if sanitation (latrine on community basis) is included in it, the total cost comes to Rs. 9.03 millions. The average household cost per annum

at 13 per cent rate of interest for a period of ten years comes to the extent of about Rs. 41 only. On the monthly basis only an amount of Rs. 3.44 will have to be recovered from each household in the three cities.

Public-Private Cooperation

We have already suggested to reduce the gross cost by adjusting the sale proceeds of the excess land available in the slums of the three cities (Chapter III). The excess land available in the three cities is about 898 ha. We have suggested to allow 25 per cent of this to be restored to the private land owners in exchange for granting tenure to slum dwellers on the bulk of land. This could go a long way in reducing the net cost of improvement in the three cities if it is feasible to be implemented to be implemented as it would involve land reconstitution of built-up areas.

iv. Relocation of Slum Dwellers

We have suggested to relocate all the slums located on critical locations (Type IA). However, the relocation of slums should not be limited to the slum dwellers only. Composite schemes consisting of sites for the higher income groups (HIG, MIG, LIG) as well should be provided for in the scheme along with some component of remunerative schemes for minimising the cost and making it self-financing. In site and service schemes, it will be advisable to provide for water and w.c. on the individual basis so that operation and maintenance is internalised and the beneficiaries are charged on the basis of user charges. Such a composite scheme will also substantially help in integrating the various socio-cultural-economic groups.

General Approach to Improvement

The approach and strategy for slum improvement and upgradation have been discussed at length in this report. Nevertheless, with a view to put them together we reiterate them again.

1. All the slums on critical locations need to be relocated on planned location on the basis of developing composite sites and services schemes with a mix of all with the income groups and also a suitable component of remunerative scheme so that the scheme is self-financing and becomes an instrument for integrating the various sections of the society into a cohesive urban community. Maintenance cost needs to be internalised by providing privies and toilets on individual basis even on the plots meant for EWS.

2. If, however, the constraints on availability of land is a major factor to relocate all the critical slums in the three cities, relocation has to be selective based on the degree of criticality. The remaining critical slums could be taken up for in situ improvement.

3. In situ improvement of slums with zero services and deficient services will be taken up on the basis of norms and standards of services as suggested in Chapter III. As could be seen, the norms themselves and the Alternative IV are flexible so that they could be adjusted according to the realities of the situation.

4. Small size and tiny slums are abounding in the three cities. We do not favour to identify a cut-off point for public intervention. Therefore, all the small size slum clusters in

a neighbourhood shall have to be grouped together, to the extent possible to make a viable unit for project implementation. As a matter of principle, we have suggested to improve only such slums which have more than 50 households.

5. Improvement of slums on normal locations could possibly be done on the basis of two possible policy options viz. (1) In situ upgradation; (2) Redevelopment. In situ upgradation will require upgradation of services and environemental improvement on the existing site itself. Redevelopment will involve upgradation of even shelter by relocating the slum households on temporary camping site and bringing about improvement after re-designing the lay-out in terms of circulation, clustering of dwelling units, rearrangement of space, open spaces and upgradation of services. The slum households would be then rehabilitated on the redeveloped sites. This option, however, is complicated.

It should be obvious that redevelopment, if applied in situations like Type 2A and 2B slums will be too expensive to be afforded. Therefore, we have favoured this approach only in the case of Type 3 slums which are Cochin specific. Here also we suggest to confine redevelopment only to upgradation of services and reconstruction of dwelling units. Cochin will, therefore, require additional funds than shown in this report. The situation in these slums in Cochin is deplorable and, therefore, there does not seem to be any other alternative than to go for redevelopment.

6. Any scheme of improvement, whether it is in situ improvement, relocation or redevelopment, will require to have information

on the number of households, their socio-economic conditions and their felt needs. It is, therefore, suggested to conduct a socio-economic survey. Though the Household Report contains a lot of data on the socio-economic conditions, it is important to mention that the report is based on a sample survey. There may be a wide degree of diviation from the average. Therefore, the data arising out of sample survey should not be taken as a proxy for preparation of improvement programme. A survey will have to be conducted for collecting the baseline data which will form the basis for project formulation, afordability and cost recovery.

7. Formulation of improvement project for the above mentioned slums has to be based on the following surveys :

i. Detailed physical survey of site.

ii. Detailed lay-out plan of existing huts.

iii. Details of existing services (roads, pathway, drainage, sanitation, garbage disposal , street light and so on) and vacant land.

iv. Details of proposed services to be provided and/or upgraded as per the suggested norms.

v. Details of the number of households, population, income levels, workers, unemployed, education, health services in the slums to be improved.

vi. Detailed lay-out plan for the slums to be improved.

vii. Total cost involved (on site and off-site separately and the extent of land available for providing amenities, giving it to the private owner and for sale as discussed at length in Chapter III).

viii. Affordability of the slum dwellers at the levels of affordability suggested in Chapter III and the gap to be removed by a mix of loan and grant for financing the project. Affordability for option IV is however, not at all a problem as the indirect cost recovery is nominal to be paid in the form of property tax adn service taxes.

8. Upgradation of shelter is suggested to be confined to upgradation of only the katcha structures. For this, the funds available under the NRY for shelter upgradation needs to be judiciously used.

9. Award of tenure is basic to slum improvement programme. We have suggested to give tenure right to the remaining slum households without charging anything for this as has been done in the past according to the avowed social welfare policy of the State Government.

10. Improvement schemes in order to be relevant and related to the wishes and aspirations of the slum dwellers, need to be related to the felt needs and scheme of prioritisation of the slum communities. This will basically require to involve them at every stage of planning, implementation, post-project sustainance and cost recovery through participatory development. Modalities of this approach have been discussed at length in Chapter V.

We have provided the broad guidelines as also the details of cost, project formulation and cost recovery in the form of options to facilitate a decision making process. Project cost,

affordability and cost recovery have been worked out and suggested as aggregate for the three cities taken together, not individually for each of them. This has been done with a view to ensure uniform pricing and charging across-the-board in all types of slums in all the cities. Project cost, therefore, is suggested to be recovered directly on the basis of a uniform charging system so that adverse economic effects of specific charge for specific cities are avoided. Indirect recovery of only the operations and maintenance cost is suggested for Alternative IV indirectly through the local fiscal instruments.

ANNEXURE - 4.1

Type 1 A: Slums on Critical Locations Without Any Service in the Three Cities of Kerala

Sl. No.	Name of Slum	Area (Hect.)	Popu-lation	No. of House hold
CALICUT				
1.	Kalluthakadavu	1.20	320	68
2.	Puthiyappa	0.25	67	13
3.	Paliyarakkal	1.40	302	52
4.	Palliyarathazhath	1.50	212	41
5.	Pallikandi (West)	2.00	429	68
6.	Perumalkandi	1.40	280	47
7.	Thaikotam	2.00	469	80
8.	Puthiyakadavu Beach	1.60	1063	150
9.	Thalappanathoduka	0.40	438	58
	A. Total	11.75	3580	577
COCHIN				
1.	Padathukulam	0.12	132	27
2.	Vennalappara	0.12	109	22
3.	E.S.I. Colony	0.08	69	15
4.	E.R.G. Road	0.12	81	15
5.	Sakuparambu Power House Road	0.02	30	7
6.	Padivattam	0.20	205	43
7.	Kaithara Thodu	0.30	299	73
8.	Elamakkara Temple	0.02	37	10
9.	Vannara Temple	0.03	46	9
10.	Ambothuchira	0.06	111	22
11.	Chilarannur	0.30	60	13
12.	Cheruthod Temple	0.40	43	9
13.	Velloparambu	0.12	53	10
14.	Karithala Colony	0.14	344	90
15.	Kaniampuzha Colony	25.00	200	25
16.	Anamtheereethu Labour Colony	0.08	200	23
	B. Total	27.11	2019	413

TRIVANDRUM

Sl. No.	Name of Slum	Area (Hect.)	Popu-lation	No. of House hold
1.	L.S. Road Shanphumgham	4.00	1320	243
2.	Kollur Bund Colony	0.20	212	55
3.	Thekkumoodu Bund Colony	0.30	311	87
4.	Kedurkonam Kulathinkara	0.08	37	7
5.	Fisherman Settlement from veli to Sangumugham	10.00	2609	533
6.	Slum near Kuriathy	0.08	64	13
7.	Plamoodu Thottu Varambu	0.40	281	71
8.	Paruthikuzhi Attuvarambu	0.50	408	85
9.	Uppidamoodi I	0.08	38	7
10.	Uppidamoodu II	0.07	36	9
11.	Chullagi Pandinjara Thekkumbhappom	0.03	21	5
12.	Korakulam near M.G.College	0.07	41	7
13.	Murinjapalam Bund Colony	0.06	21	8
14.	Perunelly at Kamleshwarm	80.94	5500	2000
	C. Total	96.81	10899	3130
	Three City G. Total	135.67	16498	4120

ANNEXURE - 4.2

Type 1 B : Slums on Critical Locations With Rudimentary Services in the Three Cities of Kerala

Sl.	Name of Slum	Area (Hect.)	Popu-lation	No. of Slums
CALICUT				
1.	Satharam Compound	0.16	183	36
	A. Total	0.16	183	36
COCHIN				
1.	Southern side of Pipe Line Road	4.05	1000	200
2.	Chirakapadam Slum	2.01	132	28
	B. Total	6.06	1132	228
TRIVANDRUM				
1.	Valiyathura Fisherman Colony	3.00	1998	380
2.	New Block Colony in Poonthura	1.20	1749	310
3.	Kannamthura	1.50	636	141
4.	V.F.I. Colony (Muttathara)	0.30	251	49
5.	Fisherman Settlement Poonthura	61.00	11831	2102
6.	Petteh Railway Station	0.81	450	80
7.	Vayyamoola	40.47	2500	650
	C. Total	108.28	19415	3712
	Three Cities G. Total	114.50	20730	3976

ANNEXURE - 4.3

Type 2 A : Slums on Normal Locations Without Any Service in the Three Cities of Kerala

Sl. No.	Name of Slum	Area (Hect.)	Popu-lation	No. of House hold
CALICUT				
1.	Chamundivalappu	0.30	156	23
2.	Thoppayil	2.11	1304	187
3.	Pandaranitam Voyal	1.40	198	32
4.	Kalathithazhamnilam	2.50	284	56
5.	Ayappoankothazham	12.00	963	168
6.	Mundadithazham Voyal Kothi	1.50	120	24
7.	Chitadithazham	4.20	325	46
8.	Kothi South	52.50	4000	534
9.	Kommerry Ecess Land Colony Area	11.70	500	62
	A. Total	88.21	7850	1132
COCHIN				
1.	Perupaddapu	1.00	266	52
2.	Kadathanatw Colony	0.20	153	27
3.	Peruwaram Railway Parambu	0.08	135	32
4.	Kovilampally Padam	0.42	319	60
5.	Thanthonnithuruth	0.20	311	53
6.	Pannoth Slum	0.40	135	29
7.	Manthara Pulaya Colony	0.40	99	16
8.	Pandaraparambu	0.02	98	17
9.	Puthiyavittil Parambu	0.12	144	17
10.	Perandoor Bridge Slum	4.80	244	46
11.	Kochangady	0.20	126	20
12.	Colony at East St. Agnes Church	0.04	21	5
13.	Vadayar Parambu	0.10	45	8
14.	Chirakkal Colony	0.50	351	63
15.	Panambally Nagar (East)	0.06	25	5
16.	Moopa Colony	2.60	151	20
17.	Kanachathara Parambu	0.22	348	53
18.	Chelut Railway Colony	0.21	552	115
19.	South Padiyath Colony	0.25	181	41
20.	Ettirkettu	0.40	234	43
21.	St. Agnes Church	0.12	40	8
22.	Volummel Colony	0.30	300	30
23.	Pollichal Colony	0.25	105	21
24.	Kumlalangi Vazhi	0.30	256	43

ANNEXURE - 4.4

Type 2 B : Slums on Normal Locations With Rudimentary Services in the Three Cities of Kerala

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
CALICUT				
1.	Kappakkal	15.00	2810	407
2.	Kudilthoudu & Chittodi-thazham	4.20	275	54
3.	Podannayil	5.25	1784	240
4.	Thaivelappu	11.75	723	122
5.	Thiruthuparamba	0.50	192	24
6.	Chevarambalam	1.50	66	12
7.	Pallikkandi (East)	0.65	254	35
8.	West Hill	2.90	1011	198
9.	Vellayill	21.00	8598	1173
10.	Milloth Colony	0.36	288	39
11.	Kannanparamba	2.90	2125	279
12.	Pandarathilvalappu	0.90	327	47
13.	Vellayil (South)	10.00	4473	584
14.	Nainanvalappu and Pallikandi (West)	10.00	3909	524
15.	Veliyancherry	2.40	709	138
16.	Vattkundu	2.90	1596	226
17.	Nadinagar	9.35	2353	385
18.	Kottaparamba	0.60	276	39
19.	Mukadar	5.25	1724	242
20.	Mannenpadam	1.20	190	34
21.	Acharathoppu	3.00	634	87
22.	Puthiyathpputoduka	7.00	1100	136
23.	Thalayalhuparamba	1.40	971	110
24.	Perukuzhipadam	1.30	528	94
25.	Thirumumbu Nilam	6.00	1011	168
26.	Thadanilam	1.75	404	55
27.	Thottulipadam	12.00	2759	362
28.	Poovalappu	2.50	893	121
29.	Vellarithodu	10.50	1595	223
30.	Manaripadam	1.70	434	78
31.	Kambram	7.00	1059	168
32.	Cherottuvayal	9.75	3406	431
33.	Chappayil	4.50	1877	274
34.	Puthiyakadappuram	5.00	843	104
35.	Chirakuziapadanna	2.20	576	100
36.	Kalluthunanda	2.60	844	147
37.	Veneervayal	1.20	250	37
38.	Chalikara	4.00	720	117
39.	Thiruthivalappu	12.50	1651	224
40.	Maruthamuliparamba	23.50	2593	357
41.	Koyavalappu	30.50	1472	197

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
42.	Puthiyarapadanna	1.00	481	75
43.	Illathayal	1.80	235	48
44.	Kavilthazham	2.30	278	44
45.	Thiruthivayal	10.00	1535	253
46.	Valakandathazham	7.00	1030	165
47.	Kallorthazham	13.75	1451	233
48.	Thirunilam Paramba	3.00	678	95
49.	Chandunninairpadanna	4.65	1479	214
50.	Valappilthody	1.01	188	25
51.	Kalathil Paramba	5.00	722	121
52.	Pattar Colony	2.00	252	43
53.	Thaltilpudika	0.75	84	18
54.	Chettair Housenilam	1.25	378	67
55.	Chakkumkadov	24.00	5086	681
56.	Mallorkunu	1.50	221	36
57.	Kanneerthodi	0.75	115	23
58.	Kaizhar Madam	3.00	678	95
59.	Kothi	5.25	3711	534
60.	Karaparamba	0.40	200	31
61.	Kattuvayal	0.70	400	67
62.	Payanakkal	0.25	110	16
63.	Vellayil & Eastern Side of Beach Road	21.00	10000	1156
64.	Puthiyapalam Thikke Padanna 1986	9.60	2000	238
65.	Kavilthazham	134.50	1900	228
	Total	512.97	92515	12898

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
TRIVANDRUM				
1.	Anchanda	7.20	1362	289
2.	Chairakulam	0.50	499	118
3.	Poundkulam	0.90	646	158
4.	Vadavathu Colony	2.00	1304	267
5.	R.C. Street Kunnukuzhy	1.30	1280	257
6.	Oorkulam	0.60	346	68
7.	Slum near Sewerage Farm	1.50	821	155
8.	Slum near Titanium	3.50	750	148
9.	Krishnapillee Nagar	1.50	1192	236
10.	Karimadom Colony	2.80	2311	493
11.	Barloon HIll	3.00	1778	372
12.	Thiricharapura Colony	2.00	443	103
13.	Krishna Pillai Nagar (East)	2.00	733	151
14.	Pourasamithy Colony	44.52	2500	850
15.	St. Marys H.S. Vettucarrd	23.47	2100	400
	Total	96.79	18065	4065

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
COCHIN				
1.	Chakkamdam	0.75	729	120
2.	Srampikkal Paramba	0.20	140	23
3.	Kalathilparambu	0.12	76	14
4.	Cheliparamba	1.00	564	76
5.	Cherulaikadavu	2.00	5800	800
6.	Mini Colony	1.04	489	85
7.	Kochuparamba & Valaiparamba	0.30	2346	327
8.	Kannakatharaparamba	0.22	800	75
9.	S.D.P.Y. Colony	0.40	138	28
10.	Military Paramba	0.60	223	40
11.	Panakassin Paramba	0.20	325	40
12.	Chillavannur H.C.	1.60	111	22
13.	Chandanpalli Colony	0.06	64	08
14.	Rehmanya Paramba	0.20	870	134
15.	Eraveli	0.75	1983	285
16.	Jwethan Parambu	0.20	756	115
17.	North of Varma Company	0.80	369	65
18.	Panayapilly Pardikakudy	1.20	761	114
19.	Soudhi	0.12	110	15
20.	M.K.S. Parambu	0.40	1250	169
21.	Adhikari Valappu	0.42	935	138
22.	Thundi Paramba	2.00	285	52
23.	Malikal Paramba	0.80	1076	142
24.	Cherulaikadavu	2.00	1267	184
25.	East of St. Francis Cathedral	0.60	308	50
26.	Scavangers Colony S.R.M. Road	0.40	224	47
27.	Arippakka Paramba	0.10	118	18
28.	Manapputti Parambu	2.40	650	118
29.	Panakka Parambu	0.24	66	12
30.	Fishermen Colony, Flamuthin	2.00	410	73
31.	S.V. Puram	2.00	455	61
32.	Thammanam Labour Colony	1.20	321	53
33.	Vettura Colony Thammaham	0.80	148	29
34.	Kissan Colony	1.20	940	200
35.	Kudumbi Colony	1.60	491	77
36.	Kayapilly Colony	3.60	460	71
37.	Slum Near Anglo-Indian School	0.80	251	43
38.	Kanpiri Colony	2.00	352	62
39.	Kudumbi Colony Mattanchery	0.30	111	22
40.	Fishermen Colony, New Gandhi Square	1.40	328	49
41.	Pulimoothil Parambu	1.60	617	122

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
42.	St. John's Pattan Colony	0.40	181	28
43.	Pannambally Nagar (West)	0.20	80	16
44.	Velluparamba Colony	0.24	130	26
45.	Kothera Rehabilitation Colony	0.80	292	55
46.	Murickathara Parambu	0.20	290	48
47.	Fishermen Colony Theverkad	6.00	1268	200
48.	Chularzath Parambu	2.00	84	137
49.	Puthiyakavu Slum	0.06	51	9
50.	Kannankulamgara	0.06	51	12
51.	Karingachira	0.12	27	6
52.	Valiathara H.C.	1.20	248	43
53.	Kunnara H.C.	1.20	288	49
54.	One Lakh Colony Near Market	0.05	107	24
55.	One Lakh Colony	0.80	223	36
56.	Thevara Canal Colony	0.75	357	59
57.	Thuruthy Colony	1.20	1943	287
58.	D.L.B. Colony Pallavuthy	4.05	2000	200
59.	Pandarachira Colony	0.60	300	60
60.	S.P. Puram (North & South)	0.25	175	35
61.	Vathuruthy Slum	5.00	4000	550
62.	Shipyard Kudikidappu Colony	0.70	200	32
63.	Cheruvithuppu Colony	1.40	210	41
64.	Pullethundil Harizan Colony	0.60	175	30
65.	Fisherman Colony Elamkkara	1.25	410	41
66.	Perandoor Bridge Colony	0.40	350	70
67.	Thareparambu Colony	0.30	225	38
68.	Northern Side of Pipe Line Road	4.05	2000	400
69.	Pollully Colony	0.24	180	27
70.	Koothappally Parambu	3.20	443	88
71.	Mangalathu Parambu Slum No.3	0.89	1000	75
72.	Cheliparambu Slum	1.00	350	35
73.	Gelesethu Parambu	3.44	1000	75
74.	Hassan Colony Slum	0.40	600	48
75.	Southern Side of Colony	0.50	550	60
76.	Northern Side of Sujatha Theatre	0.80	500	95
77.	Anakettu Parambu Slum	2.78	500	60
78.	Kocherry Parambu Colony	2.12	400	40
79.	Pulaya colony	1.14	1200	100
80.	Soudi Slum	0.20	100	15
81.	Kanneth Colony	3.20	700	120
82.	Fisherman Colony Shammugapuram	19.00	1600	309
	Total	112.41	52505	7857
	Three Cities G. Total	722.17	163085	24820

ANNEXURE - 4.5

Slums With Multiple Families Living in the Same Structure in Cochin

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
1.	Kochuparambu and Valiaparambu	0.30	2346	327
2.	Rehmanya Paramba	0.20	870	134
3.	Jwethan Parambu	0.20	756	115
4.	Panayapilly Pandikakudy	1.20	761	114
5.	M.K.S. Parambu	0.40	1250	169
6.	Adhikari Valappu	0.42	935	138
7.	Thundi Paramba	2.00	285	52
8.	Malikal Paramba	0.80	1076	142
9.	Cherulaikadavu	2.00	1267	184
10.	Arippakka Paramba	0.10	118	18
11.	Pandaraparambu	0.02	98	17
12.	Fishermen Colony New Gandhi Square	1.40	328	49
13.	Chandanapally Colony	0.06	64	8
14.	Kochangady	0.20	126	20
15.	Kanpiri Colony	2.00	352	62
16.	Kudumbi Colony (Mattanchery)	0.30	111	22
17.	Murickathara Parambu	0.20	290	48
18.	Thuruthy Colony	1.20	1943	287
19.	Pandarachira Colony	0.60	300	60
20.	Kumbalangi Vazhi	0.30	256	43
21.	K.M.P. Oil Mill	0.20	305	61
22.	Northern Side of Pipe Line Road	4.05	2000	400
23.	Southern Side of Pipe Line Road	4.05	1000	200
24.	Kacheripady Kammath Maidan Road	5.00	930	100

Sl. No.	Name of Slums	Area (Hect.)	Popu-lation	No. of House hold
25.	Cheliparambu Slum DN. No.4	1.00	350	35
26.	Gelesethu Parambu DN. No.5	3.44	1000	75
27.	Hassan Colony Slum	0.40	600	48
28.	Northern Side of Sujjatha Theatre DN. No. 12	0.80	500	95
29.	Anakettu Parambu Slum DN. No. 9	2.78	500	60
30.	Kocherry Parambu Colony Slum DN. No. 8	2.12	400	40
31.	Pulaya Colony DN. No.9	1.14	1200	100
32.	Fisherman Colony Shanmugapuram	19.00	1600	300
	Total	57.88	23917	3523

Source : Area, Population, No. of Household in NIUA Survey.

CHAPTER V

COMMUNITY PARTICIPATION

Commmunity Participation in Past

A review of slum improvement under the EIUS in the Preliminary Report has earlier revealed that the improvement programme has been carried on without any formal participation of the slum dwellers. An evaluation of slum improvement in the cities of Calicut, Cochin and Trivandrum based on sample survey has revealed that the slum communities have not organised themselves to act as a catalytic agent for bringing about improvement in slum situation nor as a pressure group.[1] No conscious efforts have been made by the public agencies to involve them in improvement programme.

Out of 22 sample slums in the three cities, only one slum in Trivandrum was found to have a non-government organisation doing some social work in the slum by helping in the education of children and construction of community hall. Though a large number of slums presently have a number of trade union associations like INTUC, CITU AND AITU, the voluntary organisations and social workers are conspicuous by their absence. In some slums in Trivandrum, the improvement has been organised by the church.

Baselines Data

Baseline data on socio-economic conditions, income and expenditure, occupation, activities of women and children, social -

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1. NIUA, Slum Improvement and Upgradation Project for Trivandrum, Cochin and Calicut: Preliminary Report, 1990, PP. 98-99.

groups, use of health and education facilities, shelter conditions have been discussed in detail in the Household Report.[2] It has revealed that the family size of the slum households in the three cities is larger than 5. the average family size is 5.8 for the slums of the three cities taken together. Cochin has the largest average family size of 6.1 followed by Calicut (5.7) and Trivandrum (5.6). The level of literacy is fairly high (80.3%). Amongst the three cities, Cochin has the highest level of literacy (80.7%). The participation rate is fairly high (29.16) which is higher than the participation rate existing in all the urban areas of the state and also in the cities of Calicut, Cochin and Trivandrum. However, more than three-fourth of the working population are unskilled workers. The second largest group of workers are fishermen who constitute about 14 per cent of the labour force. Male workers are dominant constituting about 82 per cent of the working force. Female workers constitute only 17 per cent of the total working force. Child labour is negligible as there were only 8 children found working in the slums of the three cities.

Income distribution is highly skewed. In Calicut, about 79 per cent of the households have a monthly income of less than Rs.600. In Cochin, such households constitute about 48 per cent and in Trivandrum only one-third of the slum households have an income of less than Rs. 600 per month. Four-fifth of the total - slum house-holds in Calicut, a little less than half (48.17

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2. NIUA, Slum Improvement and Upgradation Project for Trivandrum, Cochin and Calicut; Report on Household Survey, 1991.

per cent) in Cochin and about one third (32.8 per cent) in Trivandrum are below the nationally defined poverty line.

Structural condition of dwelling units have been discussed in detail in the Household Survey Report.[3] About 43 per cent of the total dwelling units in the three cities are katcha in structure. Another 43 per cent are semi-pucca and about 13.5 per cent of them are pucca. Among the three cities, only Trivandrum has the lowest proportion of katcha structure (38%). The katcha structures are, by and large, thatched roof (mostly of coconut leaves) with bamboo or wooden posts.

Community Participation : Elements and Methods

Slum improvement is a programme basically participatory in nature. Devoid of community's participation, the slum improvement programme is not in relation to the felt needs of the slum communities. Hence mechanisms have to be devised for involving the slum communities not only in planning for improvement of slums but also in implementation of the improvement programmes and the post-project sustainance of improvement.

Existing Practices

There are so far, three models of people's participation in slum improvement programme. First is the practice of constituting Cooperative Socities of slum dwellers as in Bombay under the World Bank funded slum upgradation programme and forming of association

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3. Ibid, Ch. 3

association of beneficiaries in the slums of Madras. Second is the involvement of voluntary and non-government organisations to organise the slum communities and provide the necessary linkages in slum improvement as tried successfully in the Vasna slum improvement programme in Ahmedabad in Gujarat and third is the catalytic Urban Community Development Programme (UCD) tried with remarkable success in Hyderabad.

In Bombay, a minimum of 70 per cent of the slum households are required to give their consent to form a cooperative society and become members of the society. Those who do not agree to become members of the society are shifted to other locations wherever available. About 50-100 residents go to form a cooperative society. Each cooperative society of this size is then provided with basic services like W.C. and water. Moreover, street lighting, widening of roads, drainage system and internal lanes are also provided within the geographical boundaries of the cooperative societies. The slum households who are the members of the society, are given the ownership right of land occupied by them on lease basis. The individual rights of the members and collective right of the cooperative society are clearly marked. The cooperative society is then vested with the responsibility of maintaining the W.Cs, water taps, lanes, pathways and other common amenities in the slum areas.

The society is formed with the main objective of improving the quality of life and social environment of the slum communities as also to promote unity and cooperation among the residents. Besides maintaining and, if necessary, improving and repairing the common amenities like W.Cs, water taps, electricity, roads and lanes,

drainage etc. provided by MHADA, the Society is also vested with the responsibility of disposal of garbage and making arrangement for throwing of household garbage in a common municipal garbage collection box for maintaining health and hygiene. The society has also to maintain and repair the civic amenities and organise and sustain balwadies, dispensaries etc. For this it is charged with the responsibility of collecting from its members water tax and other such payments as well as loan repayment and pay these collections to the appropriate authorities.

The Bombay model is thus primarily disposed towards maintenance of services and amenities. It also helps in making it difficult for the individual members to sell the land allotted and squat some where else as there is control of the society on its members and the society enjoys a collective right on land. The members of the society in its deliberations and occassional meetings are also in a position to ventilate their greivances, try to identify their common problems and evolve suitable solutions to those problems.

In Madras, the residents of a slum to be improved, are required to form an Association for organising themselves and take suitable steps for solution of their problems. However, it is not as formalised as in Bombay.

In Ahmedabad's Vasna slum, an Integrated Urban Development Project was formulated at the instance of a voluntary organisation namely the Ahmedabad Study Action Group (ASAG). ASAG served as an important link between the slum communities, the public agencies (namely the Municipal Corporation of Ahmedabad and the State Government) and yet another NGO-the OXFAM - a British international

voluntary agency. While the state government allotted land for housing the flood affected squatters, the Municipal Corporation of Ahmedabad provided the services. The ASAG roped-in OXFAM to provide Rs.400 per family and an additional sum to support the social action component and arranged from HUDCO a low interest, easy instalment loan to be repaid over 20 years. The social action component was able to initiate and maintain several community, organisational, educational, medical, motivational, training and income supplementary activities. With a view to organise the slum communities and motivate them to participate in improving the quality of life and the environment, trained community workers were put on the job as agents of change. They organised the slum dwellers to feel, to want, to participate, to invest as also to protest if the things did not move to their liking. The Vasna model is closer to the UCD approach tried in Hyderabad.

In Hyderabad, the UCD programme originated in the fifties out of the rural community development programme and therefore carried with it the philosophy of "people's programme with government participation". The basic objective was to organise the slum communities and to enable them to identify their own problems and priorities.

The solutions to such problems were sought initially on the basis of self help. The guiding principle of UCD was to create stronger communities in problematic urban areas with their own leaders who could plan, finance and carry out self help projects. With this end in view, an attempt was made to strengthen voluntary organisations and constitute Bustee Welfare Committees and Mahila Mandals. The programme caught the imagination of slum communities

and the list of priorities and problems became too large to be solved exclusively on the basis of self-help. The UCD Cell, constituted within the Municipal Corporation of Hyderabad was, therefore, strengthened by providing town planning and engineering wings to it. At the grass root level was put a Bustee Sahayak to live and work in slum with the slum dwellers directly and through Bustee Welfare Committees and Mahila Mandals for identification of their felt needs and problems. The Bustee Sahayak Assisted the Community Organisers (C.Os) who worked in pairs; one was to interact with the Welfare Committee and the other (a lady) to interact with the Mahila Mandals for identifying the special needs of women. The C.Os in turn assisted the project Officers who were headed by Project Director of the UCD. The UCD itself was headed by an Additional Commissioner.

UCD covered a very wide gamut of activities and aspects of slum dweller's life. It covered activities like housing, environmental improvement, balwadies, creches, special nuitrition programme, health check-up and immunisation, children's rallies, formation and strengthening of Mahila Mandals, women's cooperatives in tailoring and papad making, food demonstration, training in crafts, sewing, music and dance centres, fruit preservation and canning courses, organisation of youth clubs, games and sports, gymnasium, youth rallies and festivals, vocational training courses like typing, shorthand, autorickshaw and motor car driving, photography, radio-mechanism, refrigeration, air conditioning and so on.

With a view to have a comprehensive approach to the solution of problems and satisfaction of the felt needs of the slum communities, UCD also strived to provide necessary linkages in programme implementation. Such linkages were basically three.

First, the integration of physical improvement within the community development process. It avoides the bureacratic solutions to the community's felt needs and ensures cooperation and involvement of the people. It, at the same time, facilitates laying of roads and service networks by pursuading the slum households to part with some portion of land. Moreover, it also promotes a sense of belongingness on part of the slum dwellers which substantially helps in maintenance of services in post project phase. Second, the systematic linking of voluntary organisations with slum communities. Voluntary organisations, international service organisations like Lions Clubs, Rotary Clubs, organisations like Lijjat Papad, academic institutions and so on were identified and involved in project implementation for supplementing the limited resources. Third, linking of slum dwellers with financial institutions such as HUDCO, nationalised banks for arranging advancing of small loans to enable construction of shelter, purchase of auto rickshaws, rickshaws and other equipments which could help the slum dwellers in improving their economic conditions.

UCD is thus a comprehensive strategy to promote people's participation in slum improvement as it imbraces a very wide range of slum community's physical environment and their socio-cultural and economic life. It is due to these reasons that UBS has been conceived and is being implemented through the help of a band of

community organisations who work with the slum dwellers, establish rapport with them and put the much desired social and economic input in to the programme.

Suggestions

Out of the three models discussed above, the Bombay model does not seem to have a replicability in Kerala situation. This is first, due to the nature of land ownership in slums. In Bombay, Cooperative Societies have been constituted to take care of land which is allotted collectively to the Society and then individually to the slum households on the basis of lease for which they have to pay the lease money in the form of annuities to the public authority through the Society. In Kerala, due to the award of Kudikidappu right, the occupants of land are already the defacto onwers and they can not be removed from there. Second, the Bombay model is concerned only with recovery of cost for land and also for maintenance and is not substantially concerned with organising the slum communities for involving them in planning, implementation and maintenance of services which happens to be the prime objective of any participatory development strategy. The same applies to the practice of forming of Associations in Madras.

Involving of volunatry organisations for organising the slum communities as in Vasna as mentioned earlier, is very close to the UCD concept tried in Hyderabad. But Vasna model did not have other vital components of UCD viz. organising and motivating the slum communities for identifying their felt needs and problems and, above all, it was not formalised as a participatory process within the public organisation itself.

In view of these, the UCD approach tried successfully in Hyderabad commends itself for its replication. It would require to constitute a UCD cell within the Municipal Corporation of Trivandrum, Cochin and Calicut to be headed by a Director. He should be assisted by a Programme Officer (P.O.). P.O. in turn will be assisted by Community Organisers (C.Os) who will be the grass-root level workers working with the slum dwellers. One C.O. should look after about 2000 families or 10,000 population and 5 to 6 C.Os should assist one P.O.. Thus the number of P.Os and C.Os will depend upon the total slum population. Accordingly, Trivandrum will require about 6 C.Os and one P.O.; Cochin will need to have about 7 C.Os and one P.O. and Calicut will require 10 C.Os and 2 P.Os. The C.Os will be working in the slum within their jurisdiction and will establish a rapport with them to make them identify their priorities and nature of problems relating to environmental improvement and social and economic upliftment of slum dwellers. This will have to be done by constituting slum improvement committies having one representative of the slum dwellers for every 10 households. The Committee will work as the contact point of the people and the project functionaries for interacting with them and providing critical social inputs for the improvement of their lots-both environmental and socio-cultural and economic. The nature of problems revealed by the slum dwellers through such committees should be taken care of by the project functionary by suitably providing for them in the project and also arranging for the linkages of voluntary organisations, NGOs and financial institutions with the slum committies and also by way of facilitating convergence of various public agencies and departments on to the project areas along with their schematic budgets. This

will go a long way in relating project with the felt needs of the slum dwellers as also in winning their confidence in post-project sustainance. The slum development committee has also to be vested with the responsibility of maintaining the improved services. It is worth stressing that once the slum communities are organised, motivated and involved in improvement programme in the aforesaid manner, it will automatically ensure their participation in maintenance phase as they will have a psychological felling of owing the improved services which they must keep in operational condition.

CHAPTER - VI

ORGANISING SLUM IMPROVEMENT

Project implementation, in order to be effective, requires two types of response in ample measure. First is the fiscal response. No amount of perfection in preparation of the blue-print will be able to yield results unless smooth flow of funds is ensured for implementing it. Second is the managerial response. Successful implementation is largely dependent on how the implementation of a project has been organised. Managerial response has three important dimensions. First, it requires to conceive a proper organisational frame for devising implementation processess of a project. It basically involves organisational development and may be conveived as altogether a new organisation or may involve entrusting of project implementation in an existing organisation by introducing some modifications. Second, it involves to create an administrative framework within the organisation for enhancing its institutional capability for designing, programming, implementing and monitoring and evaluation of implementation. Third, is the problem of coordination - both intra-organisation coordination and inter-organisation coordination.

Presently in Kerala, selection of slums for improvement is decided by the municipal authorities. But the lay-out plan for its improvement is prepared by the Town Planning Department (TPD). It is then forwarded to the municipal bodies for preparation of estimates. The estimates thus prepared is sent to the Chief Town Planner, (CTP) Government of Kerala for scrutiny of costs. The CTP then approves the cost and also accords the technical sanction. State level administrative and financial sanction is being given by

the Director, Municipal Administration (DMA). If, however, the estimated cost is more than Rs. 3.00 lakhs, the sanction is accorded by the State Government. The scheme then becomes operational for implementation. Implementation is done by the municipal bodies who have to coordiante it with other public agencies like the water supply authority, electric supply authority and other service organisations. DMA enjoys financial control and performs the watch-dog functions for ensuring the accomplisment of financial and physical targets. He also receives the monthly progress report on project implementation.

The Preliminary Report has indicated (Chapter V) that the funds for slum improvement in the past have been coming to the local bodies in spurts which is obvious from the allocation of funds between 1984 and 1990. This is due mainly to the lack of consistency and momentum in project formulation process itself. It indicates that project formulation has not been sustained on a regular basis over the years.

Slum improvement programme in other states are presently being done either by a parastatal organisation as the Slum Clearance Board in Tamil Nadu, Karnataka, Pondicherry, Gujarat, MHADA in Maharashtra or by the local bodies like the municipal authorities as in Andhra Pradesh and Kerala. In Tamil Nadu, Karnataka and Pondicherry as well, slum improvement was being carried on by the local bodies up to 1985-86.

Entrusting the implementation of slum improvement programme to the municipal bodies seems to be a healthy and welcome practice. Development basically involves a decision making process and the point at which such decisions are made must necessarily be located

in a respresentative organisation of the community for which the decisions are made. This holds good at all levels whether national, state or local. The decision making process when located in a representative, popular, elected organisation, is conceptually supposed to be in conformity with the nature and extent of the problems. It provides a built-in participatory mechanism to development. Hence, we suggest that slum improvement should continue to be located within the Municipal Corporations in the three cities. If entrusted to para statal bureaucratic organisations, the built-in popular elements going into the decision making process will be conspicnously lacking. Development process as also the decision making process then becomes apolitical. Moreover, state level organisation becomes too unwieldy to be abreast of local problems and the type of solutions devised by it perhaps remains too remote to be properly related to the obtaining situation. A study presently in progress at the Regional Centre for Urban and Environemntal Studies, Hyderabad suggests that the quality of slum improvement programme in Tamil Nadu was much better when it was implemented by the local bodies. The Hyderabad experience overwhelmingly suggests the same thing. In view of these considerations we favour the entrusting of slum improvement programme to the municipal bodies in Kerala.

However, the programme has not been sustained over the years on a regular basis due to many constraints. First, the municipal bodies have been entrusted with slum improvement only partially. The programme implementation is thus presently fragmented. They have to depend on the TPD for preparation of lay-out, project estimate and also for technical sanction; administrative sanction

is given by the DMA. The dependence on the TPD is time consuming which leads to delays. This is basically because the Municipal Corporations are not equipped with the required expertise in this regard. For reasons mentioned above, we do not suggest to locate slum improvement in the TPD nor do we favour the creation of Slum Clearance Board. What is required is to further strengthen the institutional capability of the municipal authorities by providing the requisite personnel to them.

We, therefore, suggest that the Municipal Corporations in the three cities should be strengthened by creating a slum improvement cell within them. The Cell should have Town Planning, and UCD secions. The town planning section should be headed by a Town Planner who in turn should be assisted by an Associate Planner and two Planning Assistants. For UCD, the staffing pattern has already been discussed in Chapter IV. The engineering component will be under the already existing Project Engineers in the three cities. The Project Engineer already has an elaborate engineering staff which will need to be strengthened only marginally by providing a couple of Assistant Engineers. This is about the choice for conveiving the type of organisation to entrust the slum improvement responsibilities.

As regards intra-organisational coordination, the line of command and inter-relationships will have to be drawn within the organisation for orchestrating the functioning of other sections of the Municipal Corporations with SIC and for coordinating the town planning, UCD and engineering sections within the cell itself.

The SIC will have to be entrusted with the following pre-project implementation processes :

1. Project formulation exercise comprising of conducting of surveys for collection of base line data in the slums to be improved.
2. Motivation of the local community for participation in the various stages of slum improvement programme.
3. Preparation of detailed layout plan for improvement.
4. Preparation of detailed estimates and obtaining financial sanction from the state government through DMA.
5. Allocation of funds to different programmes according to the prepared estimates.
6. There is prevalence of small size slums in the three cities. It will have to group a number of slums in the vicinity to make a viable unit for project implemenetation. .pa
7. Establish and evolve a linkage with other programme inputs in the spheres of health, education, social welfare, nuitrition, UBS, NRY and so on for enabling convergence of these activities.
8. Obtaining the necessary financial delegation for the expenditures to be incurred.
9. Calling of tenders and award of works.

Implementation Stage

The SIC will have to constantly monitor the implementation of project on monthly basis. Monitoring will have to be done in terms of progress relating to financial and physical targets. In the implementation phase, it will have to establish and develop the modalities of promoting inter-organisation coordination in project implementation. It will be advisable to constitute a Coordination Committee headed by the Mayor having Municipal Commissioner as the

Member Secretary and representation from all the action agencies involved in programme implementation. The Coordination Committee should meet once in three months. Monitoring and evaluation will also need to be strengthened by constituting a Review Committee headed by the DMA himself, having representation from TPD, service departments of the state government, the Mayor and the Municipal Commissioner of the concerned civic authorities. The Review Committee should also meet once in three months to review the progress and do the needful for successful implementation of project.

APPENDIX - I

List of Developed and Undeveloped Slums in the Three Cities of Kerala

List of Developed Slums in Calicut

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Vellayill	21.00	8598	1173
2.	Milloth Colony	0.36	288	39
3.	Kannanparamba	2.90	2125	279
4.	Pandarathilvalappu	0.90	327	47
5.	Veliyancherry	2.40	709	138
6.	Vattkundu	2.90	1596	226
7.	Nodinagar	9.35	2353	385
8.	Kottaparamba	0.60	276	39
9.	Mukadar	5.25	1724	242
10.	Acharathoppu	3.00	634	87
11.	Puthiyathapputoduka	7.00	1100	136
12.	Chamundivalappu	0.30	156	23
13.	Thalayathuparamba	1.40	971	110
14.	Thirumunbu Nilam	6.00	1011	168
15.	Thadanilam	1.75	404	55
16.	Manaripadam	1.70	434	78
	Total	66.81	22706	3225

List of Undeveloped Slums in Calicut

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Kappakkal	15.00	2810	407
2.	Kudithoudu & Chittodi Thazham	4.20	275	54
3.	Podannayil	5.25	1784	240
4.	Thaivelappu	11.75	723	122
5.	Thiruthu Paramba	0.50	192	24
6.	Chevarambalam	1.50	66	12
7.	Pallikkandi (East)	0.65	254	35
8.	West Hill	2.90	1011	198
9.	Vellayil (South)	10.00	4473	584
10.	Nainanvalappu & Pallikkandi (West)	10.00	3909	524
11.	Kalluthakadavu	1.20	320	68
12.	Mannenpadam	1.20	190	34
13.	Perukuzhipadam	1.30	528	94
14.	Puthiyappa	0.25	67	13
15.	Paliyarakkal	1.40	302	52
16.	Palliyarathazath	1.50	212	41
17.	Pallikandi (West)	2.00	429	68
18.	Perumalkandi	1.4	280	47
19.	Thaikootam	2.00	469	80
20.	Puthiyakadava Beach	1.60	1063	150
21.	Thoppayil	2.11	1304	187
22.	Thalappanthoduka	0.40	438	58
23.	Thottulipadam	12.00	2759	362
24.	Poovalappu	2.50	893	121
25.	Vellerithodu	10.50	1595	223
26.	Kambram	7.00	1059	168
27.	Cherottuvayal	9.75	3406	431
28.	Chappayil	4.50	1877	274
29.	Puthiyakadappuram	5.00	843	104
30.	Chirakuziapadanna	2.20	576	100
31.	Satharam Compound	0.16	183	36
32.	Kalluthunanda	2.60	844	147
33.	Veneervayal	1.20	250	37
34.	Chalikara	4.00	720	117
35.	Thiruthivalappu	12.50	1651	224
36.	Maruthamuli Paramba	23.50	2593	357
37.	Koyavalappu	30.50	1472	197
38.	Puthiyarapadanna	1.00	481	75
39.	Illathayal	1.80	235	48
40.	Kavilthazham	2.30	278	44
41.	Thiruthivayal	10.00	1535	253
42.	Valakandathazham	7.00	1030	165
43.	Kallorthazham	13.75	1451	233
44.	Pandaranitam Vayal	1.40	198	32

S.No.	Name of Slum	Area (ha)	Population	No. of Households
45.	Kalathithazham Nilam	2.50	284	56
46.	Thirunilambarambu	3.00	678	95
47.	Chandunninair Padanna	4.65	1479	214
48.	Valappilthody	1.01	188	25
49.	Kalathil Paramba	5.00	722	121
50.	Pattar Colony	2.00	252	43
51.	Thaltilpudika	0.75	84	18
52.	Chettair Housenilam	1.25	378	67
53.	Ayappoankothazham	12.00	963	168
54.	Chakkumkadov	24.00	5086	681
55.	Mallorkunu	1.50	221	36
56.	Kaneerthodi	0.75	115	23
57.	Kaizher Madam	3.00	678	95
58.	Mundadithazham Voyal Kothi	1.50	120	24
59.	Kothi	5.25	3711	534
60.	Chitadithazham	4.20	325	46
61.	Karaparamb	0.40	200	31
62.	Kattuvayal	0.70	400	67
63.	Kothi South	52.50	4000	534
64.	Payyanakkal	0.25	110	16
65.	Vellayiland Eastern side of Beach Road	21.00	10000	1156
66.	Puthiyapalam Thikke Padanna 1986	9.60	2000	238
67.	Kommery Grass land colony area	11.70	500	62
68.	Kavithazham	134.5	1900	228
	Total	546.28	81422	11418

List of Developed Slums in Cochin

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Chakkamdam	0.75	729	120
2.	Cheliparamba	1.00	564	76
3.	Kochuparambu & Valaiparamba	0.30	2346	327
4.	Military Parambu	0.60	223	40
5.	Panakassin Parambu	0.20	325	40
6.	Rehmanya Paramba	0.20	870	134
7.	Panayapilly Pardikkudy	1.20	761	114
8.	MKS Parambu	0.40	1250	169
9.	Adhikari Valappu	0.42	935	138
10.	Thundi Parambu	2.00	285	52
11.	Cherulaikadavu	2.00	1267	184
12.	Kavilampally Padam	.42	319	60
13.	Thanthonnithuruth	.20	311	53
14.	Pannoth slum	0.40	135	29
15.	Manthara Pulaya Colony	0.40	99	16
16.	Panakka Parambu	0.24	66	12
17.	Fishermen colony Elamuthin	2.00	410	73
18.	Thammanam Labour Colony	1.2	321	53
19.	Vettura Colony Thammaham	0.8	148	29
20.	Kissan colony	1.2	940	200
21.	Kudumbi Colony	1.6	491	77
22.	Kayapilly Colony	3.6	460	71
23.	Fishmen Colony New Gandhi Square	1.4	328	49
24.	St.John's Pattan Colony	0.40	181	28
25.	Parambally Nagar (East)	0.06	25	5
26.	Kothera Rehabilitation	0.80	292	55
27.	Moopa colony	2.60	151	20
28.	Thuruthy Colony	1.20	1943	287
29.	Ettir Kettu	0.40	234	43
30.	Pallichal Colony	0.25	105	21
31.	Pandarachira Colony	0.60	300	60
32.	S.P. Puram North	0.25	175	35
33.	Kadupathu Harizan Colony	10.00	153	21
34.	Cheru Vithuppu Colony	1.40	210	41
35.	Pulletheendil Harizan Colony	0.60	175	30
36.	Vennala Harizan Colony	8.00	325	62
37.	Anamtheereethu Labour Colony	0.08	200	23
38.	Labour Colony Palikavu Temple	1.21	550	80
39.	Hassan Colony Slum	0.40	600	48
40.	Moolamkuzhy Slum	2.48	920	84
41.	Soudi Colony	0.20	100	15
	Total	53.46	20222	3074

List of Undeveloped Slums in Cochin

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Srampikkalparamba	0.20	140	23
2.	Kalathilparamba	0.12	76	14
3.	Cherulaikadavu	2.00	5800	800
4.	Mini Colony	1.04	489	85
5.	Kannakatharaparamba	0.22	800	75
6.	SDPY colony	0.40	138	28
7.	Perupadappu	1.00	266	52
8.	Chilavannur	1.60	111	22
9.	Kadathanathu colony	0.20	153	27
10.	Chandanpalli colony	0.06	64	8
11.	Peruwaram Railway Parambau	0.08	135	32
12.	Eraveli	0.75	1983	285
13.	Jwethan Paramba	0.20	756	115
14.	North of verma company	0.80	369	65
15.	Soudhi	0.12	110	15
16.	Malikal Parambu	0.80	1076	142
17.	East of St. Ironics Cathedral	0.60	308	50
18.	Scavengers colony SRM Road	0.40	224	47
19.	Arippakka Paramba	0.10	118	18
20.	Pandaraparambu	0.02	98	17
21.	Manapputti Parambu	2.40	650	118
22.	Puthiyavittil Parambu	0.12	144	17
23.	S.V. Puram	2.00	455	61
24.	Perandoor Bridge Slum	4.80	244	46
25.	Slum near Anglo-Indian School	0.80	251	43
26.	Kochangady	0.20	126	20
27.	Kanpiri Colony	2.00	352	62
28.	Kudumbi Colony (Mattanchety)	0.30	111	22
29.	Colony of east St. Anges Church	0.04	21	5
30.	Vadayar Parambu	0.10	45	8
31.	Chirakkal Colony	0.50	351	63
32.	Pulimoothil Parambu	1.60	617	122
33.	Panambally Nagar (West)	0.20	80	16
34.	Velluparamba Colony	0.24	130	26
35.	Murickathera Parambu	0.20	290	48
36.	Fishermen Colony Theverkad	6.00	1268	200
37.	Chularzath Parambu	2.00	84	137
38.	Kanachathara Parambu	0.22	348	53
39.	Pudhiyakava Slum	0.06	51	9

S.No.	Name of Slum	Area (ha)	Population	No. of Households
40.	Kannan Kulamgara	0.06	51	12
41.	Karingachira	0.12	27	6
42.	Vallathara H.C.	1.20	248	43
43.	Kunnara H.C.	1.20	288	49
44.	One lakh Colony near market	0.05	107	24
45.	One lakh colony	0.80	223	36
46.	Chelut Railway Colony	0.21	552	115
47.	South Padiyath Colony	0.25	181	41
48.	Thevara Canal Colony	0.75	357	59
49.	Padathukulam	0.12	132	27
50.	Vennalappara	0.12	109	22
51.	ESI Colony	0.08	69	15
52.	ERG Road	0.12	81	15
53.	Sakuparambu Power House Road	0.02	30	7
54.	Padivattam	0.20	205	43
55.	Kaithara Thodu	0.30	299	73
56.	Elamkara Temple	0.02	37	10
57.	Vannara Temple	0.03	46	9
58.	Ambothuchira	0.06	111	22
59.	Chilarannur	0.30	60	13
60.	Cheruthod Colony	0.40	43	9
61.	Velloparambu	0.12	53	10
62.	Karithala Colony	0.14	344	90
63.	St.Agens Church	0.12	40	8
64.	Valummel Colony	0.30	300	30
65.	DLB Colony Pallarathy	4.05	2000	200
66.	Kumlalangi Vazhi	0.30	256	43
67.	Vatturuthy Slum	5.00	4000	550
68.	Shipyard Kudikidappu Colony	0.70	200	32
69.	Kaniampuzha Colony	25.00	200	25
70.	Fisherman Colony - Elamkka	1.25	410	41
71.	Perandoor Bridge Colony	0.40	350	70
72.	Thareparamlu Colony	0.30	225	38
73.	Anakettu Parambu	3.60	538	90
74.	Pallichal Colony Slum	3.24	1000	200
75.	KMP Oil Hill	0.20	305	61
76.	Northern Side of Pipe Line Road	4.05	2000	400
77.	Khadebhapom	2.42	584	144
78.	Southern Side of Pipe Line Road	4.05	1000	200
79.	Pollully Colony	0.24	180	27

S.No.	Name of Slum	Area (ha)	Population	No. of Households
80.	Jagjeewan Ram Colony	0.40	117	22
81.	Koothappally Purambu	3.20	443	88
82.	Elambkulam Harizan Colony	0.70	400	19
83.	Company Parambu	0.19	610	103
84.	Kacheripady Kammath	5.00	930	100
85.	Fisherman Colony near Vaduthala Housing Colony	2.00	385	77
86.	Mangalathu Parambu Slum No. 3	0.89	1000	75
87.	Cheliparamba Slum	1.00	350	35
88.	Gelasethu Parambu	3.44	1000	75
89.	Southern Side of Colony	0.50	550	60
90.	Chirakapadom Slum	2.01	132	28
91.	Northern Side of Sujatha Theatre	0.80	500	95
92.	Anakettu Parambu Slum	2.78	500	60
93.	Kocherry Parambu Colony	2.12	400	40
94.	Pulaya Colony	1.14	1200	100
95.	Kanneth Colony	3.20	700	120
96.	Fisherman Colony Shammupapuram	19.00	1600	309
	Total	144.75	46890	7311

List of Developed Slums in Trivandrum

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Anchanda H. Colony	7.20	1362	289
2.	Chirakulam	0.50	499	118
3.	Poundkulam	0.90	646	158
4.	R.C. Street Kunnukuzhy	1.30	1280	257
5.	Slum near Titamum	3.5	750	148
6.	Krishnapillee Nagar	1.5	1192	236
7.	Karimadom Colony	2.8	2311	493
8.	Barloon Hill	3.0	1778	372
9.	Valiyathura Fisherman Colony	3.0	1998	380
10.	Fisherman Settlement, Poonthura	61.0	11831	2102
11.	Perunelly at Kamleshwaram	80.94	5500	2000
12.	Vayyamoola	40.47	2500	650
13.	St. Mary's H.S. Vettucard	23.47	2100	400
	Total	229.58	33747	7603

List of Undeveloped Slums in Trivandrum

S.No.	Name of Slum	Area (ha)	Population	No. of Households
1.	Vadavathu Colony	2.00	1304	267
2.	Kannanthura	1.50	636	141
3.	Thekkumoodu Bund Colony	0.30	311	87
4.	Oorkulam	0.60	346	68
5.	Slum War Sewerage Farm	1.50	821	155
6.	Puthencotta Burial Ground	0.40	239	46
7.	Tagore Garden	0.35	108	25
8.	Thiricharapuram Colony	2.00	443	103
9.	Kunnurila Colony	0.10	78	18
10.	Charurilakathu Slum near M.G. College	0.08	40	7
11.	L.S. Road Shanphumgham	4.00	1320	243
12.	New Block Colony in Poonthura	1.20	1749	310
13.	Kollur Bund Colony	0.20	212	55
14.	V.F.I. Colony, Muttathara	0.30	251	49
15.	Fisherman Settlement from Veli to Sangumugham	10.00	2609	533
16.	Slum near Kuriathy	0.08	64	13
17.	Plamoodu Thottuvarambu	0.40	281	71
18.	Paruthikuzhi Attuvarambu	0.50	408	85
19.	Uppidamoodu	0.08	38	7
20.	Uppidemoodu	0.07	36	9
21.	Chullagi Padinjara Thekkumbhapoom	0.03	21	5
22.	Korakulam near M.G. College	0.07	41	7
23.	Muringapalam Bund Colony	0.06	21	8
24.	Alamthara Vazhavilakulam	0.10	65	11
25.	Krishna Pillai Nagar(East)	2.00	733	151
26.	Kodurkonam Kulathinkara	0.08	37	7
27.	Pourasamithy Colony (Balanagar Colony)	44.52	2500	850
28.	Pettah Railway Station	0.81	450	80
29.	Modhavapuram	60.71	3000	875
30.	R.C. Churah Thappu	1.60	3000	620
31.	Puthan Road Mukku	40.47	3000	600
32.	Cheelanthi Mukku	60.71	7000	2240
	Total	236.82	31162	7746

APPENDIX II

List of Slums with Services, Income, Area, Household, Population etc.
in the Three Cities of Kerala

Sl. no.	Name of Slum	Area in (ha)	Land owner-ship	Popula-tion	No. of house-holds	Income (in Rs)	Pathways (kms.)	Drainage (Y/N/%)	Water supply	latrines	Street light-ing
1	2	3	4	5	6	7	8	9	10	11	12
I	Trivandrum										
1.	Anchamada	7.20	PB 50%	1362	289	250-400	P-2000	N	13	n	25
2.	Chirakulam	0.50	PB	499	118	250-900	P-500	0-25	4	6	5
3.	Pound Kulam	0.90	PB	446	158	250-1000	P-1500	25-50	3	8	60
4.	Vadavathu Colony	2.00	PB 75%	1304	267	350-900	K-2000	N	15	N	35
5.	Kannanthura	1.50	PB	636	141	350-900	K-2000	N	8	2	5
6.	Thekkumoodu Bund Colony	0.30	PB	311	87	300-750	K-1050	N	1	N	N
7.	R.C. Street Kunnukuzhy	1.30	PR	1280	257	250-700	P	N	Y	Y	Y
8.	Oorkulam	0.6	PR	346	68	>=500	P	Y	Y	Y	Y
9.	Slum Var Sewerage Farm	1.50	PB	821	155	150-700	P	N	Y	Y	Y
10.	Slum Near Titanum	3.50	PB 30%	750	148	150-1000	K	N	Y	Y	N
11.	Krishnapillee Nagar	1.50	PB 70%	1192	236	200-750	PP	N	Y	Y	Y
12.	Karimadom Colony	2.80	PB	2311	493	300-900	N	Y	Y	Y	Y
13.	Barloon Hill	3.00	PB 70%	1778	372	300-1000	P	N	Y	Y	Y
14.	Puthencotta Burial Ground	0.40	PB	239	46	400-900	N	N	N	Y	Y
15.	Tagore Garden	0.35	PB+PR	108	25	N	N	N	N	N	N
16.	Thiricharaparam Colony	2.00	PB 60%	443	103	500-1000	P	N	Y	Y	Y
17.	Kunnurila Colony	0.10	PB	78	18	300-750	N	N	N	N	N
18.	Charurilakathu Slum near M.C. College	0.08	PR	40	7	300-800	N	N	N	Y	N
19.	Valiyathura Fishermen Colony	3.0	PB	1998	380	300-800	N	N	Y	Y	Y
20.	L.S.Road Shanphum Gham	4.0	PB	1320	243	400-700	N	N	Y	N	Y
21.	New Block Colony in Poonthura	1.20	PB	1749	310	300-900	P	N	Y	Y	Y
22.	Kollur Bund Colony	0.20	PB	212	55	200-500	NR	N	N	N	N
23.	V.F.I.Colony, Muttathara	0.30	-	251	49	200-500	N	N	N	N	N

1	2	3	4	5	6	7	8	9	10	11	12
24.	Fishermen Settlement from veli to Sangumughan	10.00	-	2609	533	250-1000	N	N	N	N	N
25.	Slum near Kuriathy	0.08	PB	64	13	400-900	N	N	N	N	N
26.	Plamoodu Thottu Varambu	0.40	PB	281	71	500-900	N	N	N	N	N
27.	Paruthikuzhi Attuvarambu	0.50	PB	408	85	500-1000	N	N	Y	Y	N
28.	Uppidamoodu I	0.08	PB 30%	38	7	500-600	N	Y	N	N	N
29.	Uppidamoodu II	0.07	PB	36	9	500-600	N	Y	N	N	N
30.	Fishermen Settlement Poonthura	61.00	PB+PR	11831	2102	300-700	P	Y	Y	Y	Y
31.	Chullagi Padinjara Thekkumbhagom	0.03	PB	21	5	300-500	N	N	N	N	Y
32.	Korakulam near M.G. College	0.07	PB	41	7	300-900	N	N	N	Y	N
33.	Muringapalam Bund Colony	0.06	PB	21	8	300-750	N	N	N	N	N
34.	Alanthara Vazhavila kulam	0.10	PB	65	11	200-500	N	N	N	N	N
35.	Krishna Pillai Nagar (East)	2.00	PB	733	151	300-800	K	N	Y	Y	Y
36.	Kodurkonam Kulathin Kara	0.08	PB	37	7	500-700	N	N	N	N	N
37.	Perunelly at Kanleshwara	80.94	PB 80%	5500	2000	100-2000	K-2000	N	15	N	100
38.	Pourasamithy Colony (Balanagar Colony)	44.52	PB	2500	850	150-2000	P-	N	2	N	30
39.	Pettah Railway Station	0.81	PB 50%	450	80	125-300	P-500	N	3	N	4
40.	Vayyamoola	40.47	PB	2500	650	250-2000	P-1500	N	10	N	30
41.	St. Mary's H.S. Vettucard	23.47	PB 50%	2100	400	150-3000	P-2000	N	5	N	35
42.	Modhavapuram	60.71	PB 80%	3000	875	200-2500	P-5000	N	5	N	80
43.	R.C. Church Thappu	1.60	PB	3000	620	200-300	K-5000	N	3	N	150
44.	Puthan Road Mukku	40.47	PB	3000	600	250-1500	K-1500	N	6	N	45
45.	Cheelanthi Mukku	60.71	PB	7000	2240	250-2000	K-	N	3	N	30
	Total	466.40		64909	15349						

Sl. no.	Name of Slum	Area in (ha)	Land ownership	Population	No. of households	Income (in Rs)	Pathways (kms.)	Drainage (Y/N/%)	Water supply	latrines	Street lighting
1	2	3	4	5	6	7	8	9	10	11	12
II	Cochin										
1.	Chakkandan	0.75	PR	729	120	200-800	P 1000	No	5	Nil	30
2.	Srampikkalparamba	0.20	PR	140	23	300-800	K 1000	No	5	4	1
3.	Kalathil Paramba	0.12	PR	76	14	250-650	K 4000	No	9	5	13
4.	Cheliparamba	1.00	PR	564	76	300-1000	P 3000	25-50	15	6	12
5.	Cherulaikadvu	2.00	PR	5800	800	600-750	SP 1000	0-25	10	12	12
6.	Mini Colony	1.04	PR	489	85	200-700	K 2000	No	3	Nil	Nil
7.	Kochuparamba & Valaiparamba	0.30	PR	2346	327	300-600	P 1000	50-75	8	20	5
8.	Kannaikatharaparamba	0.22	PR	800	75	200-700	K 500	No	7	Nil	12
9.	S.D.P.Y. Colony	0.40	PR	138	28	300-450	P 500	No	2	Nil	Nil
10.	Military Parambu	0.60	PR	223	40	300-600	K 500	50-75	14	Nil	12
11.	Perupadappu	1.00	PB	266	52	250-800	K 2000	No	4	Nil	12
12.	Panakassin Parambu	0.20	PR	325	40	100-700	P 1000	0-25	5	Nil	3
13.	Chilavannur H.C.	1.60	PB 20%	111	22	150-400	K 1000	No	2	3	Nil
14.	Kadathanathu Colony	0.20	PR	153	27	300-450	K 50	No	2	Nil	Nil
15.	Chandanpalli Colony	0.06	PR	64	8	450-500	Nil	25-50	1	Nil	3
16.	Peruvaram Railway Parambau	0.08	PB	135	32	250-600	N	No	1	No	Nil
17.	Rehmanya Paramba	0.20	PR	870	134	350-600	N	N	Y	Y	Y
18.	Eraveli	0.75	PR	1983	285	600-1000	P	N	Y	Y	Y
19.	Jwethan Paramba	0.20	PR	756	115	250-600	P	N	Y	Y	Y
20.	North of Varna Company	0.80	PR	369	65	200-600	N	N	Y	Y	Y
21.	Panayapilly Pawdikkudy	1.20	PB	761	114	250-900	N	N	Y	Y	Y
22.	Soudhi	0.12	PR	110	15	600-900	K	N	Y	N	Y
23.	M.K.S. Parambu	0.40	PR	1250	169	250-650	N	N	Y	Y	Y
24.	Adhikari Valappu	0.42	PR	935	138	200-1000	P	N	Y	Y	Y
25.	Thundi Parambu	2.00	PR	285	52	200-700	P	N	Y	Y	Y
26.	Malikal Parambu	0.80	PR	1076	142	300-700	P	Y	Y	Y	Y
27.	Cherulaikadavu	2.00	PR	1267	184	N	P	N	Y	Y	Y
28.	Kavilampally Padam	0.42	PB+PR	319	60	300-800	N	N	Y	Y	N
29.	East of St. Francis Cathedral	0.60	PR	308	50	N	N	Y	Y	Y	N
30.	Thanthonnithuruth	0.20	PR	311	53	300-600	N	N	Y	N	N

1	2	3	4	5	6	7	8	9	10	11	12
32.	Scavengers Colony S.R.M. Road	0.40	PB	224	47	M	600	M	Y	Y	Y
33.	Manthara Pulaya Colony	0.40	PB	99	16	M	200-700	M	Y	Y	M
34.	Arippakka Paramba	0.10	PR	118	18	K	600-700	M	Y	Y	M
35.	Pandaraparambu	0.02	PR	98	17	M	600-650	M	M	M	M
36.	Manapputti Parambu	2.40	PB	650	118	P	300-600	Y	Y	Y	M
37.	Puthiyavittil Parambu	0.12	PR	144	17	M	500-800	M	Y	Y	M
38.	Panakka Parambu	0.24	PR	66	12	P	450-700	M	Y	Y	Y
39.	Fishermen Colony Elamthin	2.00	PR	410	73	K	300-650	M	Y	Y	Y
40.	S.V. Puram	2.00	PR	455	61	K	300-600	M	Y	Y	Y
41.	Thammanam Labour Colony	1.20	PR	321	53	P	300-700	M	Y	Y	M
42.	Vettura Colony Thammanam	0.80	PB	148	29	K	300-700	M	Y	Y	Y
43.	Kissan Colony	1.20	PB	940	200	K	100-700	M	Y	Y	M
44.	Kudumbi Colony	1.60	PR	491	77	P	300-700	M	Y	Y	Y
45.	Perandoor Bridge Slum	4.80	PB	244	46	M	500-600	M	Y	Y	M
46.	Kayapilly Colony	3.60	PB+PR	460	71	K	300-800	M	Y	Y	Y
47.	Slum Near Anglo-Indian School	0.80	PB	251	43	M	300-500	M	Y	Y	Y
48.	Kochangady	0.20	PR	126	20	P	300-600	M	M	Y	M
49.	Kanpiri Colony	2.00	PR	352	62	M	300-600	M	Y	Y	Y
50.	Kudumbi Colony (Mattan Chery)	0.30	PR	111	22	M	300-750	M	Y	Y	Y
51.	Colony at East St. Anges Church	0.04	PR	21	5	M	300-450	M	M	M	M
52.	Fishermen Colony New Gandhi Square	1.40	PR	328	49	P	200-800	M	Y	Y	Y
53.	Vadayar Parambu	0.10	PR	45	8	K	100-300	M	M	Y	M
54.	Chirakkal Colony	0.50	PR	351	63	K	300-700	M	Y	Y	M
55.	Pulimoothil Parambu	1.60	PB	617	122	P	300-700	M	Y	Y	Y
56.	St. John's Pattan Colony	0.40	PB	181	28	K	300-700	M	Y	Y	Y
57.	Panambally Nagar (West)	0.20	PR	80	16	M	250-500	M	Y	Y	Y
58.	Panambally Nagar (East)	0.06	PR	25	5	P	300-450	M	M	M	M
59.	Velluparamba Colony	0.24	PR	130	26	M	150-700	M	Y	Y	Y
60.	Kothera Rehabilitation Colony	0.80	PR	292	55	K	300-700	M	Y	Y	M
61.	Murickathera Pararambu	0.20	PR	290	48	P	300-500	M	Y	Y	Y

1	2	3	4	5	6	7	8	9	10	11	12
62.	Fishermen Colony Theverkad	6.00	PR	1268	200	P	600-900	N	Y	Y	Y
63.	Moopa Colony	2.60	PR	151	20	K	100-600	N	Y	Y	N
64.	Chularzath Parambu	2.00	PR	84	137	K	300-1000	N	Y	Y	Y
65.	Kanachathara Parambu	0.22	PR	348	53	N		N	Y	Y	N
66.	Pidhiyakava Slum	0.06	PR	51	9	-	-	-	-	-	-
67.	Kannan Kulangara	0.06	PR	51	12	-	-	-	-	-	-
68.	Karingachira	0.12	PR	27	6	-	-	-	-	-	-
69.	Vallethara H.C.	1.20	PR	248	43	-	-	-	-	-	-
70.	Kunnara H.C.	1.20	PR	288	49	-	-	-	-	-	-
71.	One lakh Colony near market	0.05	PR	107	24	-	-	-	-	-	-
72.	One lakh colony	0.80	PR	223	36	-	-	-	-	-	-
73.	Chelat Railway Colony	0.21	PB	552	115	K	200-600	N	Y	N	N
74.	South Padiyath Colony	0.25	PB	181	41	N	200-750	N	Y	Y	N
75.	Thevara Canal Colony	0.75	PB	357	59	K	600-1200	N	Y	Y	Y
76.	Thuruthy Colony	1.20	PR	1943	287	P	350-1000	N	Y	Y	Y
77.	Ettir Kettu	0.40	PR	234	43	K	750-1000	N	N	Y	N
78.	Padathukulam	0.12	PB	132	27	N	300-500	N	N	N	N
79.	Vennalappara	0.12	PB	109	22	N	200-600	N	N	N	N
80.	E.S.I. Colony	0.08	PB	69	15	N	150-300	N	N	N	N
81.	E.R.G. Road	0.12	PB	81	15	N	150-400	N	N	N	N
82.	Sakuparambu Power House Road	0.02	PB	30	7	N	200-400	N	N	N	N
83.	Padivattam	0.20	PB	205	43	N	250-400	N	N	N	N
84.	Kaithara Thodu	0.30	PB	299	73	N	150-600	N	N	N	N
85.	Elamkara Temple	0.02	PB	37	10	N	150-600	N	N	N	N
86.	Vannara Temple	0.03	PB	46	9	N	150-600	N	N	N	N
87.	Ambothuchira	0.06	PB	111	22	N	250-450	N	N	N	N
88.	Chilarannur	0.30	PB	60	13	N	300-600	N	N	N	N
89.	Cheruthod Colony	0.40	PB	43	9	N	N	N	N	N	N
90.	Velloparambu	0.12	PR	53	10	N	300-600	N	N	N	N
91.	Karithala Colony	0.14	PB	344	90	N	300-600	N	N	N	N
92.	St. Agens Church	0.12	PR	40	8	K	300-450	N	N	N	Y
93.	Valunnel Colony	0.30	PB	300	30	K	150-200	N	Y	N	N
94.	Pallichal Colony	0.25	PB	105	21	K	N	N	N	N	N
95.	D.L.B. Colony Pallarathy, Qr. No. 18	4.05	PR	2000	200	K	500	Y	Y	N	Y
96.	Pandarachira Colony	0.60	PR	300	60	P	N	Y	Y	N	Y

1	2	3	4	5	6	7	8	9	10	11	12
97.	S.P. Puram North S.P. Puram South	0.25	PR	175	35	P	N	Y	Y	N	Y
98.	Kumalangi Vazhi	0.30	PR	256	43	K	200-350	N	Y	N	Y
99.	Vatturuthy Slum	5.00	PB	4000	550	P	200-500	Y	Y	2	Y
100.	Shipyard Kudikidappu Colony	0.70	PR	200	32	K	300-700	Y	Y	2	Y
101.	Kaniampuzha Colony	25.00	PR	200	25	K	200-300	N	Y	N	Y
102.	Kadupathu Harizan Colony	10.00	PR	153	21	K	300-500	N	Y	N	N
103.	Cheru Vithuppu Colony	1.40	PR	210	41	P	500-750	Y	Y	N	N
104.	Pullethundil Harisan Colony	0.60	PB	175	30	K	300	Y	Y	N	Y
105.	Fisherman Colony - Elankkara	1.25	PR	410	41	P	500	Y	Y	N	Y
106.	Perandoor Bridge Colony	0.40	PR	350	70	K	300-800	N	Y	2	Y
107.	Vennala Harizan Colony	8.00	PB	325	62	K	500-750	N	Y	N	Y
108.	Thareparamla Colony	0.30	PR	225	38	P	200-450	N	Y	N	Y
109.	Anamtheereethu Labour Colony	0.08	PR	200	23	K	250	N	Y	N	N
110.	Anakettu Parambu	3.60	PR	538	90	N	N	N	Y	N	Y
111.	Pallichal Colony Slum	3.24	PB	1000	200	K	300	N	Y	N	Y
112.	K.M.P. Oil Hill	0.20	PB	305	61	K	150-250	N	N	N	N
113.	Northern Side of Pipe Line Road	4.05	PB	2000	400	K	500	Y	Y	N	T
114.	Khadebhapan	2.42	PR	584	144	K	200	N	Y	N	Y
115.	Southern Side of Pipeline Road	4.05	PB	1000	200	K	500	Y	Y	N	Y
116.	Pollully Colony	0.24	PR	180	27	K	750	N	Y	N	Y
117.	Jagjeewan Ram Colony	0.40	PR	117	22	K	500	N	Y	N	Y
118.	Koothappally Parambu	3.20	PR	443	88	K	600	Y	Y	N	Y
119.	Elankulam Harizan Colony	0.70	PB	400	19	K	300-500	N	Y	N	N
120.	Company Parambu	0.19	PR	610	103	K	150	N	Y	N	Y
121.	Kacheripady Kannath Haridan Road	5.00	PB	930	100	K	200-400	N	Y	N	Y
122.	Labour Colony Palikavu Temple	1.21	PR	550	80	P	300-400	N	Y	N	Y
123.	Fisherman Colony near Vaduthala Housing Colony	2.00	PR	385	77	P	500	N	Y	N	Y

1	2	3	4	5	6	7	8	9	10	11	12
124.	Mangalathu Paramba Slum Qr. No. 3	0.89	PR	1000	75	P	200-300	Y	Y	2	Y
125.	Cheliparamba Slum	1.00	PR	350	35	P	250-350	Y	Y	2	Y
126.	Gelasethu Paramba	3.44	PR	1000	75	P	250-350	Y	Y	3	Y
127.	Hassan Colony Slum	0.40	PR	600	48	P	N	Y	Y	N	Y
128.	Moolankuzhy Slum	2.48	PR	920	84	K	200	N	Y	N	Y
129.	Southern Side of Colony	0.50	PR	550	60	P	200-300	Y	Y	2	Y
130.	Chirakapadom Slum	2.01	PR	132	28	G	200	N	Y	N	N
131.	Northern Side of Sujatha Theatre	0.80	PB	500	95	P	300-500	Y	Y	N	Y
132.	Anakettu Parambu Slum	2.78	PR	500	60	P	250-350	Y	Y	N	Y
133.	Kocherry Parambu Colony	2.12	PR	400	40	P	250-350	Y	Y	N	Y
134.	Pulaya Colony	1.14	PR	1200	100	G	300-400	Y	Y	N	Y
135.	Soudi Colony	0.20	PR	100	15	K	200	N	Y	3	Y
136.	Kanneth Colony	3.20	PR	700	120	K	500-750	Y	Y	N	Y
137.	Fisherman Colony Shanmupapuram	19.00	PR	1600	309	K	300-500	Y	Y	5	Y
	Total	198.21		67112	10385						

Sl. no.	Name of Slum	Area in (ha)	Land ownership	Population	No. of households	Income (in Rs)	Pathways (kms.)	Drainage (Y/N/%)	Water supply	latrines	Street lighting
1	2	3	4	5	6	7	8	9	10	11	12
III	Calicut										
1.	Kappakkal	15.00	PR	2810	407	N	K-300	N	4	N	19
2.	Kudithondu & Chittodi Thazham	4.20	PR	275	54	200	K-50	N	3	N	N
3.	Podannayil	5.25	PR	1784	240	200	K-200	N	10	N	39
4.	Thaivelappu	11.75	PR	723	122	100	P-200	N	5	N	15
5.	Thiruthu Paramba	0.50	PR	192	24	150	K-100	N	1	N	N
6.	Chevarambalam	1.50	PR	66	12	200	K-50	N	1	N	N
7.	Pallikkandi (East)	0.65	PR	254	35	150	K-100	N	N	N	N
8.	West Hill	2.90	PB 10%	1011	198	200	K-25	N	2	N	N
8.	Vellayill	21.00	PR	8598	1173	N	P-1000	0-25	30	72	50
10.	Milloth Colony	0.36	PR	288	39	150	P-300	50-75	5	N	5
11.	Kannanparamba	2.90	PR	2125	279	N	P-500	50-75	7	4	35
12.	Pandarathilvalappu	0.90	PR	327	47	250	P-200	N	5	N	10
13.	Vellayil (South)	10.00	PR	4473	584	150	K-200	N	7	6	13
14.	Nainanvalappu & Pallikkandi (West)	10.00	PR	3909	524	200	K-200	N	11	N	62
15.	Kalluthakadavu	1.2	PB	320	68	200	N	N	N	N	N
16.	Veliyancherry	2.4	PR	709	138	150	N	N	Y	Y	Y
17.	Vattkundu	2.9	PR	1596	226	150	N	N	Y	Y	Y
18.	Nodinagar	9.35	PR	2353	385	N	N	N	Y	Y	Y
19.	Kottaparamba	0.6	PR	276	39	150	N	N	Y	Y	Y
20.	Mukadar	5.25	PR	1724	242	200	N	N	Y	Y	Y
21.	Mannenpadam	1.20	PR	190	34	150	N	N	Y	Y	Y
22.	Acharathoppu	3.0	PR	634	87	175	N	N	Y	Y	Y
23.	Puthiyathppu-toduka	7.0	PB 10%	1100	136	200	N	N	Y	Y	Y
24.	Chamundivalappu	0.3	PR	156	23	-	N	N	N	N	N
25.	Thalayathuparamba	1.4	PR	971	110	200	N	N	Y	Y	Y
26.	Perukuzhipadam	1.3	PR	528	94	N	N	N	Y	Y	Y
27.	Thirumunbu Nilam	6.0	PR	1011	168	200	P	N	Y	Y	Y
28.	Thadanilam	1.75	PR	404	55	250	N	N	Y	Y	Y
29.	Puthiyappa	0.25	PR	67	13	200	N	N	N	N	N
30.	Paliyarakkal	1.40	PB 10%	302	52	250	N	N	N	N	N

1	2	3	4	5	6	7	8	9	10	11	12
31.	Palliyarathazhath	1.50	PB 10%	212	41	150	N	N	Y	N	N
32.	Pallikande (West)	2.00	PB 10%	429	68	250	N	N	N	N	N
33.	Perumalkandi	1.40	PB 10%	280	47	150	N	N	N	Y	N
34.	Thaikootam	2.00	PB 10%	469	80	150	N	N	Y	N	Y
35.	Puthiyakadava Beach	1.60	PB 10%	1063	150	N	N	N	Y	N	Y
36.	Thoppayil	2.11	PB 10%	1304	187	200	N	N	Y	N	N
37.	Thalappanthoduka	0.40	PR	438	58	150	N	N	Y	N	N
38.	Thottulipadam	12.00	PR	2759	362	200	N	N	Y	Y	Y
39.	Poovalappu	2.50	PR	893	121	150	N	N	Y	Y	Y
40.	Vellerithodu	10.50	PR	1595	223	150	N	N	Y	Y	Y
41.	Manaripadam	1.70	PR	434	78	200	N	N	Y	Y	Y
42.	Kambram	7.00	PR	1059	168	N	P	N	Y	Y	Y
43.	Cherottuvayal	9.75	PR	3406	431	200	N	N	Y	Y	Y
44.	Chappayil	4.50	PR	1877	274	150	N	N	Y	Y	Y
45.	Puthiyakadappuram	5.00	PB 10%	843	104	N	N	N	Y	Y	Y
46.	Chirakuziapadaanna	2.20	PR	576	100	200	N	N	Y	Y	Y
47.	Satharam Compound	0.16	PB 10%	183	36	350	N	N	Y	Y	Y
48.	Kalluthunanda	2.60	PR	844	147	250	N	N	Y	Y	Y
49.	Veneervayal	1.20	PR	250	37	N	N	N	Y	Y	Y
50.	Chalikara	4.00	PR	720	117	200	N	N	Y	Y	Y
51.	Thiruthivalappu	12.5	PR	1651	224	150	N	N	Y	Y	Y
52.	Maruthanuli Paramba	23.5	PR	2593	357	200	N	N	Y	Y	Y
53.	Koyavalappu	30.5	PR	1472	197	100	N	N	Y	Y	Y
54.	Puthiyarapadanna	1.0	PR	481	75	150	K	N	Y	Y	Y
55.	Illathayal	1.8	PR	235	48	600	K	N	Y	Y	Y
56.	Kavilthazham	2.3	PR	278	44	200	N	N	Y	Y	Y
57.	Thiruthivayal	10.00	PR	1535	253	200	N	N	Y	Y	Y
58.	Valakandathazham	7.00	PR	1030	165	200	P	N	Y	Y	Y
59.	Kallorthazham	13.75	PR	1451	233	N	N	N	Y	Y	Y
60.	Pandaranitam vayal	1.40	PR	198	32	150	N	N	N	N	Y
61.	Kalathithazham Nilam	2.50	PR	284	56	150	N	N	N	Y	N
62.	Thirunilam Paramba	3.00	PR	678	95	350	-	-	-	-	-
63.	Chandunninair Padanna	4.65	PR	1479	214	200	P	N	Y	Y	Y
64.	Valappilthody	1.01	PR	188	25	N	-	-	-	-	-
65.	Kalathil Paramba	5.00	PR	722	121	200	K	N	Y	Y	Y
66.	Pattar Colony	2.00	PR	252	43	N	N	N	N	N	N
67.	Thaltilpudika	0.75	PR	84	18	150	N	N	Y	N	N
68.	Chettair Housenilam	1.25	PR	378	67	150	N	N	Y	Y	Y
69.	Ayappoan Kothazham	12.00	PR	963	168	150	N	N	Y	Y	N
70.	Chakkumkadov	24.00	PR	5086	681	150	P	N	Y	Y	Y

1	2	3	4	5	6	7	8	9	10	11	12
71.	Mallorkunu	1.5	PR	221	36	125	N	N	Y	Y	Y
72.	Kaneerthodi	0.75	PR	115	23	350	N	N	Y	Y	N
73.	Kaizher Madam	3.00	PR	678	95	N	N	N	Y	Y	Y
74.	Mundadithazham Voyal kothi	1.50	PR	120	24	200	N	N	Y	Y	N
75.	Kothi	5.25	PR	3711	534	150	N	N	Y	Y	Y
76.	Chitadithazham	4.20	PR	325	46	150-250	N	N	Y	N	Y
77.	Karaparamba	0.40	PR	200	31	500-1000	K	Y	Y	N	Y
78.	Kattuvayal	0.70	PR	400	67	500-1000	K	Y	Y	4	Y
79.	Kothi South	52.50	PR	4000	534	300-500	K	N	Y	N	Y
80.	Payyanakkal	0.25	PR	110	16	500-1000	K	Y	Y	N	Y
81.	Vellayiland Eastern side of Beach Road	21.00	PR	10000	1156	300-650	K	Y	Y	4	Y
82.	Puthiyapalam Thikke Padanna 1986	9.60	PR	2000	238	350-500	K	Y	Y	N	Y
83.	Konnery Ecess land Colony Area	11.70	PR	500	62	250-450	K	N	N	N	Y
84.	Kavithazham	134.50	PR	1900	228	300-500	K	N	Y	N	Y
	Total	613.09		104128	14643						

Note :

1. Y = Yes (available)
   N = No (Not available)
   PB = Public
   PR = Private (includes trust land in Cochin)
   P = Paved
   PP = Partially Paved
   K = Kutcha

2. Figures against Water Supply, Latrines and Street Lighting whereever they are available, denote the number of units existing in the slums.

APPENDIX - III

Slum on Critical Locations
in the Three Cities of Kerala
(Broad Type - 1)

City/Slum		Area (h)	Population	No. of H.H.
I.	Trivandrum			
1.	Valiyathura Fishermen Colony	3.00	1998	380
2.	L.S. Road Shnphumugham	4.00	1320	243
3.	New Block Colony in Poonthura	1.20	1749	310
4.	Kollur Bund Colony	0.20	212	55
5.	Kannanthura	1.50	536	141
6.	Thekkumoodu Bund Colony	0.30	311	87
7.	V.F.I. Colony, Muttathara	0.30	251	49
8.	Kodukhonam Kulathinkara	0.08	37	7
9.	Fisherman Settlement from Veli to Sangumugham	10.08	2609	533
10.	Slum near Kuriathy	0.08	64	13
11.	Plamoodu Thottvarambu	0.40	281	71
12.	Paruthikuzhi Attuvarambu	0.50	408	85
13.	Uppidamoodu (I)	0.08	38	7
14.	Uppidamoodu (II)	0.07	36	9
15.	Fisherman Settlement Poonthura	61.00	11831	2102
16.	Chullagi Padinjara Thekkumbhapoom	0.03	21	5
17.	Korakulam near M.G. College	0.07	41	7
18.	Murinaapalam Bund colony	0.06	21	8
19.	Perunelly at Kamleshwaram	80.94	5500	2000
20.	Pettah Railway Station	0.81	450	80
21.	Voyyamoola	40.47	2500	650
	Total	205.09	30314	6842

City/Slum		Area (h)	Population	No. of H.H.
II.	Cochin			
1.	Padathukulam	0.12	132	27
2.	Vennalappara	0.12	109	22
3.	ESI Colony	0.08	69	15
4.	ERG Road	0.12	81	15
5.	Sakuparambu Power House Road	0.02	30	7
6.	Padivattam	0.20	205	43
7.	Kaithara Thodu	0.30	299	73
8.	Elamkara Temple	0.02	37	10
9.	Vennara Temple	0.03	46	9
10.	Ambothuchira	0.06	111	22
11.	Chilarannur	0.30	60	13
12.	Cheruthod Colony	0.40	43	9
13.	Velloparambu	0.12	53	10
14.	Karithala Colony	0.14	344	90
15.	Kaniampuzha Colony	25.00	200	25
16.	Anamtheereethu Labour Colony	0.08	200	23
17.	Southern side of Pipe Line Road	4.05	1000	200
18.	Chirakapadom Slum	2.01	132	28
	Total	33.17	3151	641

City/Slum		Area (h)	Population	No. of H.H.
III.	Calicut			
1.	Kalluthakadavu	1.20	320	68
2.	Puthiyappa	0.25	67	13
3.	Paliyarakkal	1.40	302	52
4.	Palliyarathazhath	1.50	212	41
5.	Pallikandi (West)	2.00	429	68
6.	Perumalkandi	1.40	280	47
7.	Thaikootam	2.00	469	80
8.	Puthiyakadava Beach	1.60	1063	150
9.	Thalappanthoduka	0.40	438	58
10.	Satharam Compound	0.16	183	36
	Total	11.91	3763	613

APPENDIX - IV

Slums on Normal Locations
in the Three Cities of Kerala
(Broad Type II)

City/Slum		Area (h)	Population	No. of H.H.
I.	Trivandrum			
1.	Anchanda	7.20	1362	289
2.	Chirakulam	0.50	499	118
3.	Pound Kulam	0.90	646	158
4.	Vadavathu Colony	2.00	1304	267
5.	R.C. Street Kunnukughy	1.30	1280	257
6.	Oorkulam	0.60	346	68
7.	Slum war Sewerage Farm	1.50	821	155
8.	Slum near Titamum	3.50	750	148
9.	Krishnapillee Nagar	1.50	1192	236
10.	Karimadom Colony	2.80	2311	493
11.	Barloon Hill	3.00	1778	372
12.	Puthenkotta Burial Ground	0.40	239	46
13.	Tagore Garden	0.35	108	25
14.	Thiricharapuram Colony	2.00	443	103
15.	Kunnurila Colony	0.10	78	18
16.	Charurilakathu Slum near M.C. College	0.08	40	7
17.	Alamthara Vazhavilakulam	0.10	65	11
18.	Krishna Pillai Nagar (East)	2.00	733	151
19.	Pourasamithy Colony (Balanagar Colony)	44.52	2500	850
20.	St. Mary's H.S. Vettucard	23.47	2100	400
21.	Modhavapuram	60.71	3000	875
22.	R.C. Church Thappu	1.60	3000	620
23.	Puthan Road Mukku	40.47	3000	600
24.	Cheelanthi Mukku	60.71	7000	2240
	Total	261.31	34595	8507

City/Slum		Area (h)	Population	No. of H.H.
II.	Cochin			
1.	Chakkamdam	0.75	729	120
2.	Srampikkalparamba	0.20	140	23
3.	Kalathil Paramba	0.12	76	14
4.	Cheliparamba	1.00	564	76
5.	Cheruliakadavu	2.00	5800	800
6.	Mini Colony	1.04	489	85
7.	Kochuparambu & Valaiparamba	0.30	2346	327
8.	Kannakatharaparamba	0.22	800	75
9.	S.D.P.Y Colony	0.4	138	28
10.	Military Parambu	0.60	223	40
11.	Perupadappu	1.00	266	52
12.	Panakassin Parambu	0.20	325	40
13.	Chilavannur H.C	1.60	111	22
14.	Kadathanathu Colony	0.20	153	27
15.	Chandanpalli Colony	0.06	64	8
16.	Peruwaram Railway Parambau	0.8	135	32
17.	Rehmanya Paramba	0.20	870	134
18.	Eraveli	0.75	1983	285
19.	Jwethan Paramba	0.20	756	115
20.	North of Varma Company	0.80	369	65
21.	Panayapilly Pardikkudy	1.20	761	114
22.	Soudhi	0.12	110	15
23.	M.K.S. Parambu	0.40	1250	169
24.	Adhikari Valappu	0.42	935	138
25.	Thundi Paramba	2.00	285	52
26.	Malikal Paramba	0.80	1076	142
27.	Cherulaikadavu	2.00	1267	184
28.	Kavilampally Padam	0.42	319	60
29.	East of St. Francis Cathedral	0.60	308	50
30.	Thanthonnithuruth	0.20	311	53
31.	Pannoth Slum	0.40	135	29
32.	Scavengers Colony S.R.M. Road	0.40	224	47
33.	Manthara Pulaya Colony	0.40	99	16
34.	Arippakka Paramba	0.10	118	18
35.	Pandaraparambu	0.02	98	17
36.	Manapputti Parambu	2.40	650	118
37.	Puthiyavittil Parambu	0.12	144	17
38.	Panakka Parambu	0.24	66	12
39.	Fishermen Colony Elamuthin	2.00	410	73
40.	S.V. Puram	2.00	455	61
41.	Thammanam Labour Colony	1.20	321	53

City/Slum	Area (h)	Population	No. of H.H.
42. Vettura Colony Thammaham	0.80	148	29
43. Kissan Colony	1.20	940	200
44. Kudumbi Colony	1.60	491	77
45. Perandoor Bridge Slum	4.80	244	46
46. Kayapilly Colony	3.60	460	71
47. Slum Near Anglo-Indian School	0.80	251	43
48. Kochangady	0.20	126	20
49. Kanpiri Colony	2.00	352	62
50. Kudumbi Colony (Mattan chery)	0.30	111	22
51. Colony at East St. Anges church)	0.04	21	5
52. Fishermen Colony-New Gandhi Square	1.40	328	49
53. Vadayar Parambu	0.10	45	8
54. Chirakkal Colony	0.50	351	63
55. Pulimoothil Parambu	1.60	617	122
56. St. John's Pattan Colony	0.40	181	28
57. Panambally Nagar (West)	0.20	80	16
58. Panambally Nagar (East)	0.06	25	5
59. Velluparamba Colony	0.24	130	26
60. Kothera Rehabilitation Colony	0.80	292	55
61. Murickathera Parambu	0.20	290	48
62. Fishermen Colony Theverkad	6.00	1268	200
63. Moopa Colony	2.60	151	20
64. Chularzath Parambu	2.00	84	137
65. Kanachatharaparambu	0.22	348	53
66. Pidhiyakava Slum	0.06	51	9
67. Kannan Kulamgara	0.06	51	12
68. Karingachira	0.12	27	6
69. Vallethara H.C.	1.20	248	43
70. Kunnara H.C.	1.20	288	49
71. One lakh colony near market	0.05	107	24
72. One lakh colony	0.80	223	36
73. Chelut Railway colony	0.21	552	115
74. South Padiyath colony	0.25	181	41
75. Thevara canal colony	0.75	357	59
76. Thuruthy colony	1.20	1943	287
77. Ettir Kettu	0.40	234	43
78. St. Agnes Church	0.12	40	8
79. Valummel colony	0.30	300	30
80. Pallichal colony	0.25	105	21

City/Slum	Area (h)	Population	No. of H.H.
81. D.L.B. colony pallarathy	4.05	2000	200
82. Pandarachira colony	0.60	300	60
83. S.P. Puram North S.P. Puram South	0.25	175	35
84. Kumlalangi Vazhi	0.30	256	43
85. Vatturuthy slum	5.00	4000	550
86. Shipyard Kudikidappu colony	0.70	200	32
87. Kadupathu Harizan colony	10.00	153	21
88. Cheruvithuppu colony	1.40	210	41
89. Fisherman colony Elamkkara	1.25	410	41
90. Pullethundil Harizan Colony	0.60	175	30
91. Perandoor Bridge Colony	0.40	350	70
92. Vennala Harizan colony	8.00	325	62
93. Thareparambu colony	0.30	225	38
94. Anakettu Parambu	3.60	538	90
95. Pallichal colony slum	3.24	1000	200
96. K.M.P. Oil Mill	0.20	305	61
97. Northern side of Pipe line road	4.05	2000	400
98. Khadebhapom	2.42	584	144
99. Pollully colony	0.24	180	27
100. Jagjeewan Ram colony	0.40	117	22
101. Koothappally Puramba	3.20	443	88
102. Elamkulam Harizan colony	0.70	400	19
103. Company Parambu	0.19	610	103
104. Kacheripady Kammath Haridan Road	5.00	930	100
105. Labour colony Palikavu Temple	1.21	550	80
106. Fisherman colony near Vaduthala Housing colony	2.00	385	77
107. Mangalathu Parambu slum	0.89	1000	75
108. Cheliparamba slum	1.00	350	35
109. Gelasethu Parambu	3.44	1000	75
110. Hassan colony slum	0.40	600	48
111. Moolam Kuzhy slum	2.48	920	84
112. Southern side of colony	0.50	550	60
113. Northern side of Sujatha Theatre	0.80	500	95

City/Slum	Area (h)	Population	No. of H.H.
114. Anakettu Parambu slum	2.78	500	60
115. Kocherry Parambu colony	2.12	400	40
116. Pulaya Colony	1.14	1200	100
117. Soudi slum	0.20	100	15
118. Kanneth colony	3.20	700	120
119. Fisherman colony shammupapuram	19.00	1600	309
Total	165.04	63961	9744

City/Slum		Area (h)	Population	No. of H.H.
III.	Calicut			
1.	Kappakkal	15.00	2810	407
2.	Kudithoudu & Chittodi Thazham	4.20	275	54
3.	Podannayil	5.25	1784	240
4.	Thaivelappu	11.75	723	122
5.	Thiruthuparambu	0.50	192	24
6.	Chevarambalam	1.50	66	12
7.	Pallikkandi (East)	0.65	254	35
8.	West Hill	2.90	1011	198
9.	Vellayill	21.00	8598	1173
10.	Milloth colony	0.36	288	39
11.	Kannanparamba	2.90	2125	279
12.	Pandarathilvalappu	0.90	327	47
13.	Vellayil (south)	10.00	4473	584
14.	Nainanvalappu & Pllikkandi (west)	10.00	3909	524
15.	Veliyancherry	2.40	709	138
16.	Vattkundu	2.90	1596	226
17.	Nodinagar	9.35	2353	385
18.	Kottaparamba	0.60	276	39
19.	Mukadar	5.25	1724	242
20.	Mannenpadam	1.20	190	34
21.	Acharathoppu	3.00	634	87
22.	Puthiyathpputhduka	7.00	1100	136
23.	chamundivalappu'	0.30	156	23
24.	Thalayathuparamba	1.40	971	110
25.	Perukuzhipadam	1.30	528	94
26.	Thirumunbu Nilam	6.00	1011	168
27.	Thadanilam	1.75	404	55
28.	Thoppayil	2.11	1304	187
29.	Thottulipadam	12.00	2759	362
30.	Poovalappu	2.50	893	121
31.	Vellerithodu	10.50	1595	223
32.	Manaripadam	1.70	434	78
33.	Kambram	7.00	1059	168
34.	Cherottuvayal	9.75	3406	431
35.	Chappayil	4.50	1877	274
36.	Puthiyakadappuram	5.00	843	104
37.	Chirakuziapadanna	2.20	576	100
38.	Kalluthunanda	2.60	844	147
39.	Veneervayal	1.20	250	37
40.	Chalikara	4.00	720	717
41.	Thiruthivalappu	12.50	1651	224
42.	Maruthamuli Paramb	23.50	2593	357

City/Slum		Area (h)	Population	No. of H.H.
43.	Koyavalappu	30.50	1472	197
44.	Puthiyarapadanna	1.00	481	75
45.	Illathayal	1.80	235	48
46.	Kavilthazham	2.30	278	44
47.	Thiruthivayal	10.00	1535	253
48.	Valakandathazham	7.00	1030	165
49.	Kallorthazham	13.75	1451	233
50.	Pandaranitam vayal	1.40	198	32
51.	Kalathithazham Nilam	2.50	284	56
52.	Thirunilam Paramba	3.00	678	95
53.	Chandunninair Padanna	4.65	1479	214
54.	Valappilthody	1.01	188	25
55.	Kalathil Paramba	5.00	722	121
56.	Pattar colony	2.00	252	43
57.	Thaltilpudika	0.75	84	78
58.	Chettair Housenilam	1.25	378	67
59.	Ayappoankothazham	12.00	963	168
60.	Chakkumkadov	24.00	5086	681
61.	Mallorkunu	1.50	221	36
62.	Kaneerthodi	0.75	115	23
63.	Kaizher Madam	3.00	678	95
64.	Mundadithazham Voya kothi	1.50	120	24
65.	Kothi	5.25	3711	534
66.	Chitadithazham	4.20	325	46
67.	Karaparamb	0.40	200	31
68.	Kattuvayal	0.70	400	67
69.	Kothi South	52.50	4000	534
70.	Payyanakkal	0.25	110	16
71.	Vellayiland Eastern Side of Beach Road	21.00	10000	1156
72.	Puthiyapalam Thikka Padann, 1986	9.60	2000	238
73.	Kommery Ecess land colony areas	11.70	500	62
74.	Kavithazham	134.50	1900	228
	Total	601.18	100365	14030