

**REPORT
ON
MONITORING AND EVALUATION STUDY
OF
RURAL WATER SUPPLY & SANITATION PROGRAMME**

ANDHRA PRADESH

JULY 1998

**OM CONSULTANTS (INDIA) PVT. LTD.
BANGALORE**

822 IN-17618

CONTENTS

	Page No.
1.0 INTRODUCTION	1
2.0 CURRENT GOVT. POLICY IN THE WATER & SANITATION SECTOR	3
3.0 OBJECTIVES & SCOPE	5
4.0 APPROACH & METHODOLOGY	6
5.0 SOCIO-ECONOMIC CHARACTERISTICS	9
6.0 WATER USE AND SANITATION PRACTICES	18
7.0 OPERATION AND MAINTENANCE OF WATER SUPPLY	28
8.0 WILLINGNESS TO PAY FOR WATER SUPPLY	31
9.0 SANITATION	35
10.0 CONCLUSION	37
ANNEXES	
Annex I - Habitation Profile Questionnaire	39
Annex - II - Household Questionnaire	43
Annex - III - List of selected Habitations	50

LIBRARY IRC
PO Box 97, 2500 AB THE HAGUE
Tel: +31 (0) 70 300 110
Fax: +31 (0) 70 300 104
BARCODE: 17618
LO:

022 INANG8

1.0 INTRODUCTION

- 1.01 Rajiv Gandhi National Drinking Water Mission (RGNDWM) was launched in August 1986 to accelerate the progress of drinking water supply in rural areas and to bring in cost effective science and technology inputs to improve the programme implementation. The primary objective of the programme has been to provide safe drinking water free from chemical and biological contamination. In addition, the programme has focussed on health and eradication of water-borne diseases, water quality surveillance, training, research, health education and awareness.
- 1.02 The Mission also launched the Centrally sponsored Rural Sanitation Programme (CRSP) in 1986 with the objective of improving the quality of life of the rural people and to provide privacy and dignity to the women. This programme was intended to supplement the efforts of the States which were implementing the Rural Sanitation Programme with their own resources. The guidelines of the programme were circulated to all the States in 1986.
- 1.03 In the implementation of the programme, much of the monitoring and evaluation of the present systems essentially focus on the quantitative progress of drinking water installations (that too mainly from the supply side of the programme) and achieving the target set for construction of Sanitary Latrines. There has been relatively no emphasis on looking at the systems from the point of view of user satisfaction and sustainability of operation and maintenance.
- 1.04 Also, since much of the reporting is based on reports from implementing agencies, there is little or no participative monitoring or user involvement. There is no measurement of user satisfaction in the present system. These issues were discussed at a workshop on Monitoring and Evaluation held at New Delhi with Secretary, Department of Rural Development (DRD) and Director and Senior Officers of RGNDWM on 29th Dec. 1997. It was felt during the discussions that there is need for a **quick study** to review of present status with reference to key issues in order to bring in changes in strategy and approaches. The findings from such a study would be useful for Policy Formulation and Development of suitable monitoring systems.

Om Consultants (India) Pvt. Ltd.

- 1.05 In this connection, M/s. Om Consultants (India) Pvt. Ltd., (OMCI) submitted a proposal in Jan. '98 for undertaking Monitoring and Evaluation Study on a sample basis. After due evaluation and scrutiny of the proposal the Rajiv Gandhi National Drinking Water Mission vide its letter Q-14019/42/97-TM(Stat) dated 18th March 1998 requested OMCI to go ahead with the study in the State of Andhra Pradesh. The scope of coverage as per the terms included conducting household survey on a sample basis in 3 sample Districts covering 15 habitations each and 15-25 households in each selected habitation based on the population of the habitation.
- 1.06 This report has been prepared based on extensive field data collected during the study and the discussions with the villagers and the implementing agency.
- 1.07 We wish to thank the Secretary, DRD, Govt. of India (GOI) and Director, RGNDWM for inviting us to carry out the study. We also thank the Principal Secretary, Rural Development & Panchayat Raj (RD&PR), Govt. of Andhra Pradesh, the Engineer-in-Chief, Panchayat Raj and his staff for the cooperation extended during our study. We are obliged to the people of the study habitations for patiently answering to the questions of the field staff, without whose cooperation, the study would not have been completed on time.

2.0 CURRENT GOVT. POLICY IN THE WATER & SANITATION SECTOR

Rural Water Supply

- 2.01 The Govt. of Andhra Pradesh (AP) has been giving high priority to both the water supply and sanitation sectors. Concerted efforts have been made to provide potable drinking water under the State Sector as well as under the Central Sector programmes. Also, bilateral assistance from Netherlands and UNICEF is being utilised.
- 2.02 The schemes are entrusted to Panchayat Raj Engineering Department for implementation. The maintenance of all Rural Water Supply schemes (excepting Hand Pump [HP]), rests with the Gram Panchayats as per the Panchayat Raj Act. Recently, the Govt. of A.P. is testing on a pilot basis. the maintenance of HPs by the Gram Panchayats.
- 2.03 As per the guidelines of the Technology Mission, the Govt. of Andhra Pradesh has set the norm of 40 LPCD as the basis for all the schemes. There are three types of schemes with the following guidelines for each :
- Piped Water Supply (PWS) schemes (Over Head Tank with distribution lines and Public Stand points) for habitations with populations exceeding 2000.
 - Mini Water Supply (MWS) schemes (consisting of Cisterns) for habitations with a population between 1000 and 2000.
 - Handpumps for a habitation with population less than 1000.
- 2.04 At the end of March '97, there were 380 "not covered", 38,752 "fully covered" and 30,600 "partially covered" habitations. The emphasis given was mostly for PWS and MWS schemes so as to achieve the prescribed standard required, besides continuing with borewell programmes. The work of revival of defunct PWS and MWS and augmentation of schemes are also being taken up.

Schemes under Bilateral assistance

- 2.05 An Integrated Fluorosis Control Project, funded by the Govt. of India and UNICEF, is being implemented in Anantapur District.
- 2.06 The Netherlands Assisted Programme (NAP) is underway in Prakasam and Nalgonda Districts.
- 2.07 It is proposed to go in for the World Bank assistance on a larger scale.

3.0 OBJECTIVES & SCOPE

Objective

- 3.01 The objective of the assignment is to assist RGNDWM in making a quick and independent assessment of the current status with respect to the following aspects :

DRINKING WATER

- (i) Present coverage status of the Rural Water Supply with special emphasis on the coverage of backward classes / areas
- (ii) Water quality problems and its coverage
- (iii) People's perception about the coverage
- (iv) Community involvement in the planning and implementation of schemes
- (v) Operation and Maintenance status of the Water Supply Schemes
- (vi) Contribution by the users towards capital and recurring costs.

SANITATION

- (i) Coverage of sanitary latrine
- (ii) Perception about sanitary latrines
- (iii) Usage of sanitary latrines
- (iv) Problems in implementation

- 3.02 The study covered 45 habitations in 3 districts (15 habitations per district). The districts were selected based on scarcity, quality and backward area characteristics.

4.0 APPROACH & METHODOLOGY

4.01 The following phasewise approach and methodology was adopted for the study in a systematic and organised manner.

Planning & Preparatory Phase

- Discussion with concerned nodal agency in the State / District / Taluk and collection of basic data (list of habitations, etc.)
- Detailed Planning
- Finalisation of survey tools (household questionnaire, checklist, habitation profiles, etc.)
- Training and orientation to field staff
- Computerised formatting of household questionnaire
- Finalisation of methodology
- Selection of sample habitations

Data Collection Phase

- Primary data collection through household questionnaire (Annex - I)
- Secondary data collection through habitation profile (Annex - II)
- Group discussions
- Participant observations

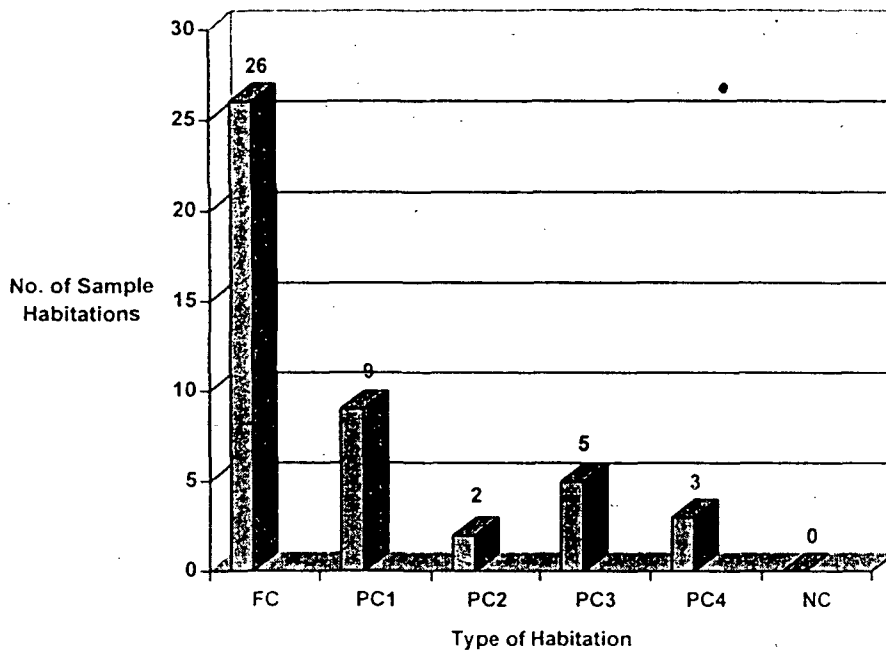
Data Analysis Phase

- Computerisation of household survey data
- Collation and analysis of data collected
- Summarizing of information

Report preparation Phase

- Finalisation of report and submission to RGNDWM

Table 4.1 - No. of Sample Habitations covered -
By type of Habitation



Selection of Sample Districts

4.02 The sample districts for the study were selected based on the following criteria :

- backwardness
- water quality problems
- scarcity

4.03 Based on the above criteria the districts of Nalgonda, Prakasam and Anantapur were selected. This was done in consultation with the Engineer-in-Chief and his staff of Panchayat Raj department.

Selection of Sample Habitations

4.04 The habitations were selected based on the proportionate coverage of the three types namely, Fully Covered, Partially Covered and Not Covered habitations. The distribution of sample habitations is given in the following table. The list of sample habitations covered is given in Annex - III.

Table 4.1 - Districtwise Total and Sample Habitations by Type of Habitation

Type of Habitation	Nalgonda		Prakasam		Anantapur		Total	
	Total	Sample	Total	Sample	Total	Sample	Total	Sample
Fully covered	1223	6	1484	10	2217	10	5924	26
Partially covered - 1	1292	6	163	1	263	2	1718	9
Partially covered - 2	97	-	209	1	142	1	448	2
Partially covered - 3	426	2	244	2	316	1	986	5
Partially covered - 4	317	1	147	1	310	1	774	3
Not covered	4	-	-	-	-	-	4	-
Total	3359	15	2247	15	3248	15	8854	45

[Partially covered 1,2,3,4 denote standard LPCD classification upto 10, 20, 30 & 40 respectively].

A graphical illustration appears in the opposite page.

Table 4.2 - No. of sample households per habitation by population of Habitation

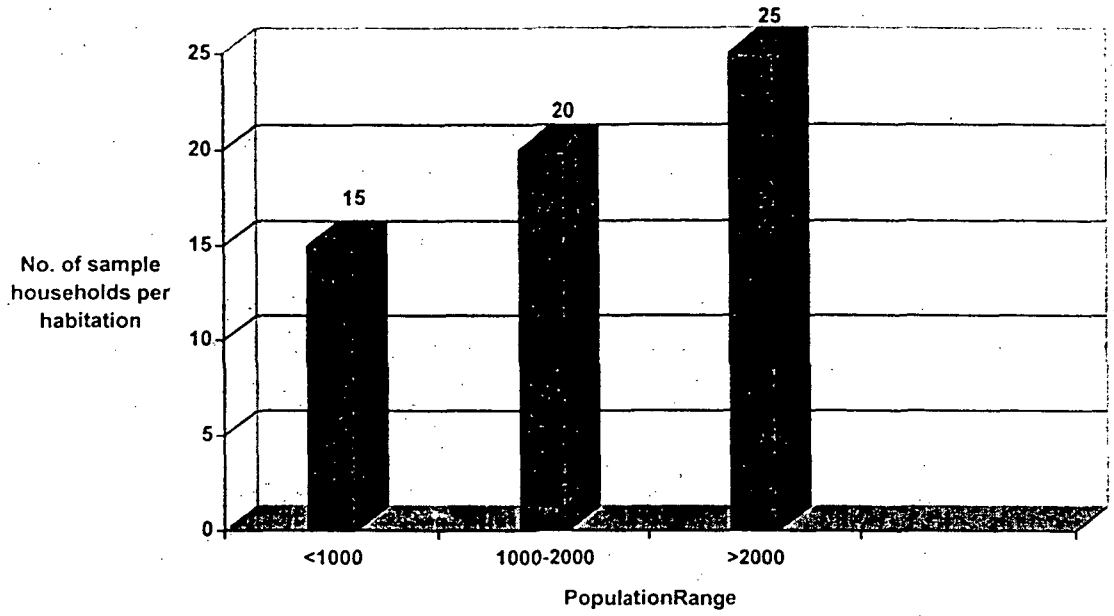
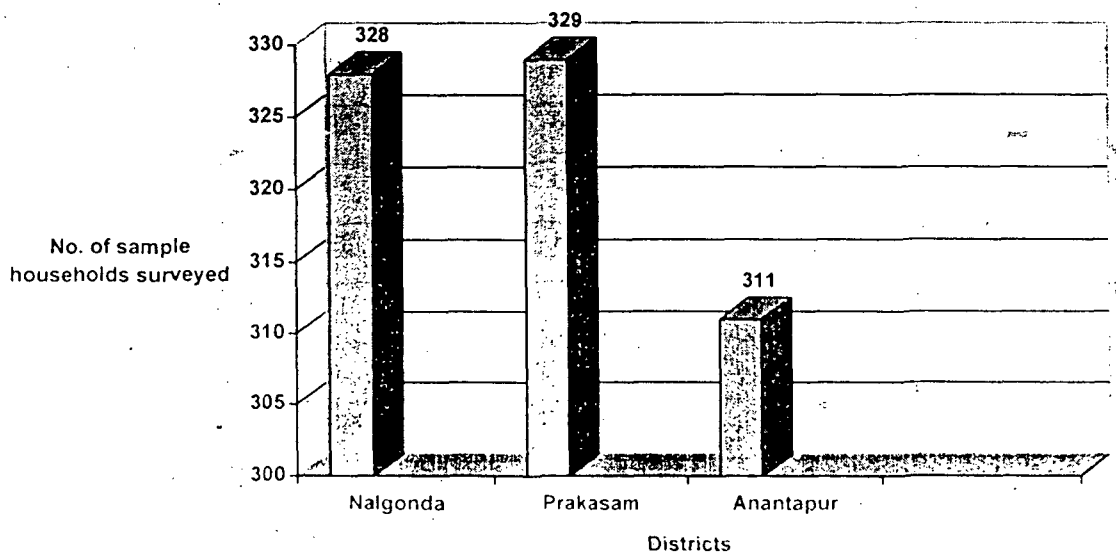


Table 4.3 - Number of Sample Households Surveyed



Selection of Sample Households

- 4.05 A sample of 15-25 households were surveyed in the selected sample habitations based on the population of the habitation.

Table 4.2 - Number of Sample Households surveyed by Population of Habitation

Population	No. of Sample Households Surveyed
Upto 1000	15
1000 - 2000	20
> 2000	25

A graphical illustration appears in the opposite page.

- 4.06 The selection of sample households at the habitation level was done using the **(Circular Systematic Sampling method)**. Since, the households are concentrated according to the Social Status, the above type of sampling procedure ensures representation of all sections of the habitation with proper geographical representation as well.

Coverage

- 4.07 A sample of 968 households were covered in the three districts. The number of sample households covered in each district is given below :

Table 4.3 - Districtwise number of Sample Households Surveyed

District	No. of Sample Households Surveyed
Nalgonda	328
Prakasam	329
Anantapur	311
Total	968

A graphical illustration appears in the opposite page.

Data Collection

- 4.08 Data collection was carried out using a combination of the following approaches :

- ☛ Participatory group discussions
- ☛ Household Questionnaire (administered on the selected sample households)
- ☛ Data collection from Secondary sources

5.0 SOCIO-ECONOMIC CHARACTERISTICS

5.01 A description of Socio-Economic and cultural profile of the target population and its general awareness of programmes is essential to understand the interaction among decision making bodies, implementing agencies and their personnel on the one hand and households of the target population on the other. The degree of success of a programme depends to a great degree on the nature of the interaction. In the present study salient features of socio-economic, demographic characteristics of the sample households are described and their influence on the implementation of the programme are analysed.

General Conditions

5.02 The sample habitations covered are spread over three districts. Some of the characteristics of these sample habitations are :

- The population range between 300-6000 (1991 Census)
- Total number of households range between 50-1400 (1991 Census)
- Settlements are clustered castewise in all the habitations
- Only one habitation is a Mandal head quarter
- All the habitations are exclusive Panchayats.

Characteristics of Sample Households

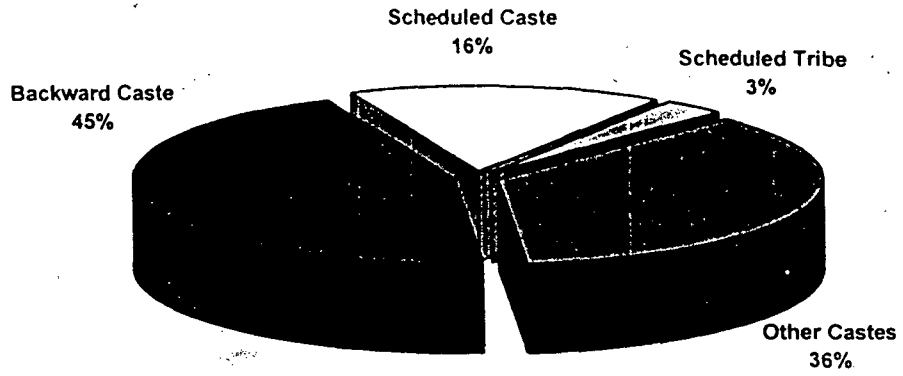
Distribution of sample Households

5.03 The distribution of sample households surveyed is given below in Table 5.1.

Table 5.1 - Districtwise number of Sample Households Surveyed

District	No. of Households Surveyed
Nalgonda	328
Prakasam	329
Anantapur	311
Total	968

Table 5.2 - Distribution of Sample Households by Caste



Community Composition

5.04 The composition of different community groups among the sample households surveyed is given in Table 5.2 below.

Table 5.2 - Districtwise Percentage distribution of Sample households by Caste

District \ Caste	Nalgonda		Prakasam		Anantapur		Overall	
	No.	%	No.	%	No.	%	No.	%
OC	97	29	148	45	104	33	349	36
BC	190	58	95	29	155	50	440	45
SC	35	11	82	25	37	12	154	16
ST	6	2	4	1	15	5	25	3
Total	328	100	329	100	311	100	968	100

Note : OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes; ST - Scheduled Tribe.

A pictorial illustration appears in the opposite page.

5.05 As seen from the above table, among the sample households surveyed, BCs are predominant in Nalgonda and Anantapur district while it is the OC in the case of Prakasam district. The composition of SCs is more in Prakasam district as compared to the other districts. On the whole, the BCs are predominant in the sample districts.

Gender distribution of Respondents

5.06 The gender distribution of respondents shown in Table 5.3 below, shows that 18-21 percent of respondents are women in the three districts. It is interesting to see that female respondents are significant among the STs of Nalgonda District and BCs of Anantapur District. Otherwise it is almost same among other cases. Responses of women will provide an insight into the problems related to water supply and sanitation as their role in procurement of water, storage and its utilisation for various purposes such as cooking, washing and cleaning, is quite significant at the household level. They are the ones who judge the quality of water while using it for cooking. Example, the thumb rule employed by women in testing quality of water is whether pulses get cooked well or not.

Table 5.3 - Distribution of Respondents by Sex

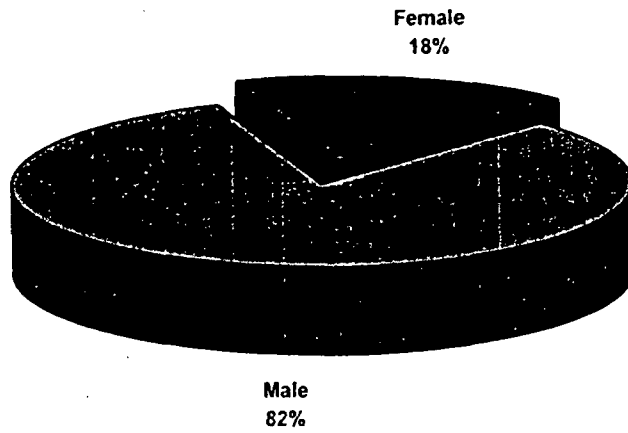


Table 5.4 - Distribution of Sample Population by Sex

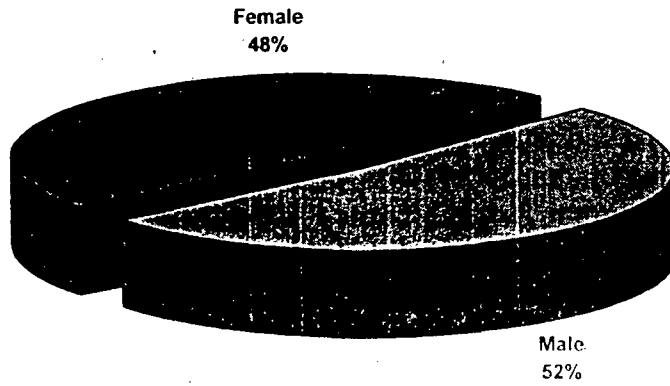


Table 5.3 - Districtwise Percentage distribution of Respondents by Sex and Caste

District Caste	Nalgonda			Prakasam			Anantapur			Overall		
	M	F	T	M	F	T	M	F	T	M	F	T
OC	82	18	100	83	17	100	86	14	100	84	16	100
BC	82	18	100	89	11	100	72	28	100	80	20	100
SC	83	17	100	80	20	100	86	14	100	82	18	100
ST	67	33	100	100	-	100	86	14	100	84	16	100
Total	82	18	100	84	16	100	79	21	100	82	18	100

Note : OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes; ST - Scheduled Tribe.

A pictorial illustration appears in the opposite page.

Demographic Features

5.07 The total population of the sample households surveyed is given in the following Table 5.4 and a pictorial illustration is given in the opposite page. It is seen that there is no significant differences in the proportion of male and female population across the districts.

Table 5.4 - Districtwise Percentage distribution of Sample Population by Caste and Sex

District Caste	Nalgonda			Prakasam			Anantapur			Overall		
	M	F	T	M	F	T	M	F	T	M	F	T
OC	53	47	100 (562)	51	49	100 (752)	55	45	100 (551)	53	47	100 (1865)
BC	52	48	100 (1143)	59	41	100 (514)	48	52	100 (898)	52	48	100 (2555)
SC	57	43	100 (220)	50	50	100 (545)	56	44	100 (227)	53	47	100 (992)
ST	48	52	100 (33)	62	38	100 (21)	45	55	100 (78)	48	52	100 (132)
Total	53	47	100 (1958)	53	47	100 (1832)	51	49	100 (1754)	52	48	100 (5544)

Note : (1) Figures in the brackets are sample population

(2) OC - Other Castes; BC - Backward Caste; SC - Scheduled Caste;
ST - Scheduled Tribe.

Table 5.5 - Average Household Size

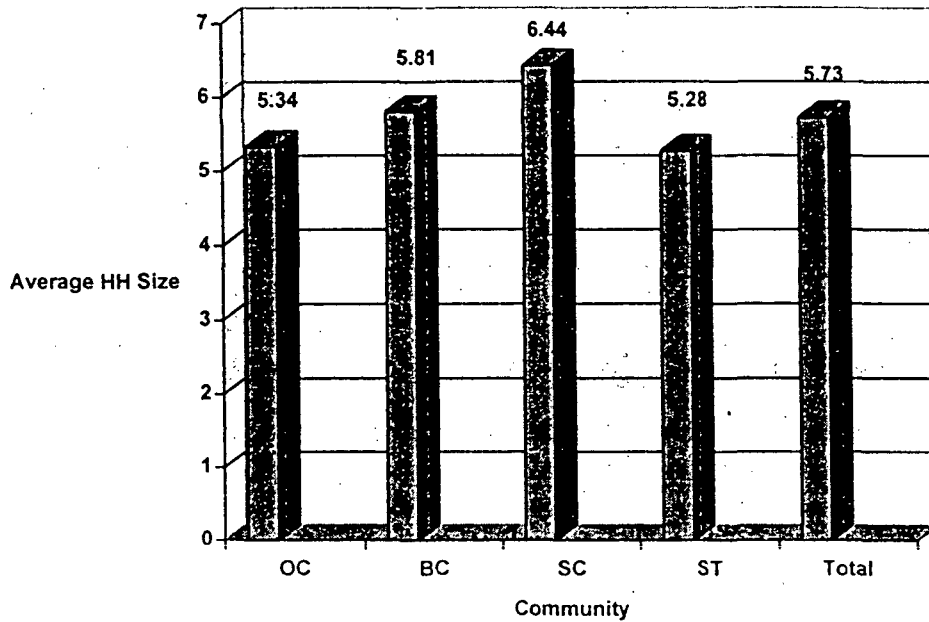
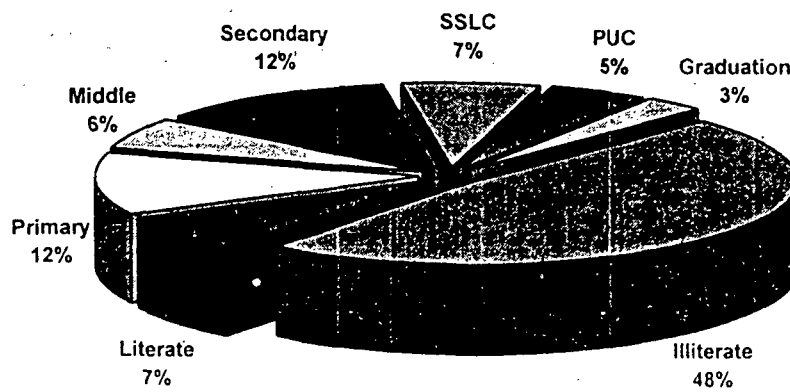


Table 5.6 - Distribution of sample population by Literacy Level



5.08 There is no significant differences observed in the average household size of the sample households in the three districts. It is seen that compared with other communities, the average size of the SC household is above 6 in all the districts. There is an exception in the case of the BCs of Nalgonda district. The following tables gives the average household size across the three districts. The size of the household is one of the determinants of quantity of water required.

Table 5.5 - Districtwise distribution of average household size by Caste

Caste	Nalgonda	Prakasam	Anantapur	Overall
OC	5.79	5.08	5.30	5.34
BC	6.01	5.41	5.79	5.81
SC	6.28	6.64	6.13	6.44
ST	5.50	5.25	5.20	5.28
Total	5.96	5.57	5.64	5.73

Note : OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes;
ST - Scheduled Tribe.

A graphical illustration appears in the opposite page.

Literacy

5.09 The literacy level of all the sample households surveyed is 52 percent. While, it is 59% in Nalgonda, 47% in Prakasam and 50% in Anantapur districts respectively. The percentage distribution of sample population by literacy levels is given in Table 5.6 below.

Table 5.6 - Districtwise Percentage distribution of Sample Population by Literacy Levels

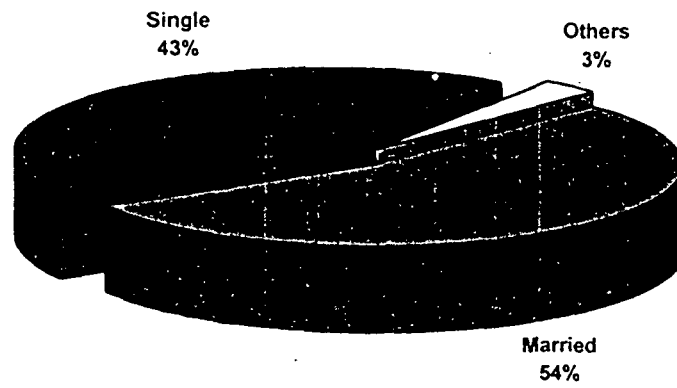
Sl. No.	Literacy Level	Nalgonda	Prakasam	Anantapur	Overall
1.	Illiterate	41	53	50	48
2.	Literate	8	6	6	7
3.	Primary	15	10	11	12
4.	Middle	6	4	7	6
5.	Secondary	13	10	12	12
6.	SSLC	8	7	6	7
7.	PUC	5	5	4	5
8.	Graduation	3	3	2	3
9.	Post-Graduation	-	1	1	Neg
10.	Vocational	1	1	Neg	Neg
	Total	100	100	100	100

Note : (1) Neg. - Negligible

(2) % do not add to 100 due to rounding off.

A pictorial illustration appears in the opposite page.

Table 5.7 - Distribution of Sample Population by Marital Status



- 5.10 The literacy level is high in Nalgonda district as compared to the other two districts. It is also observed that the school going population is 19% among all the sample households and varies from 15% to 22% across the three districts. The literacy levels are concentrated at the primary and secondary levels. As the level of education increases gradual dropping out is observed. It is seen that vocational education is given least importance in the sample habitation surveyed.

Marital Status

- 5.11 The distribution of sample population by marital status is given in the following Table 5.7. It is seen from the table that, more than half of the sample population are married.

Table 5.7 - Districtwise Percentage distribution of Sample Population by Marital Status

Sl. No.	Marital Status	Nalgonda	Prakasam	Anantapur	Overall
1.	Married	52	59	49	54
2.	Single	43	38	47	43
3.	Widow	3	3	2	3
4.	Widower	1	Neg.	1	1
5.	Separated	1	Neg.	Neg.	Neg.
	Total	100	100	100	100

Note : (1) Neg. - Negligible

(2) % do not add to 100 due to rounding off.

A pictorial illustration appears in the opposite page.

Table 5.8 - Distribution of Sample Population by Main Occupation

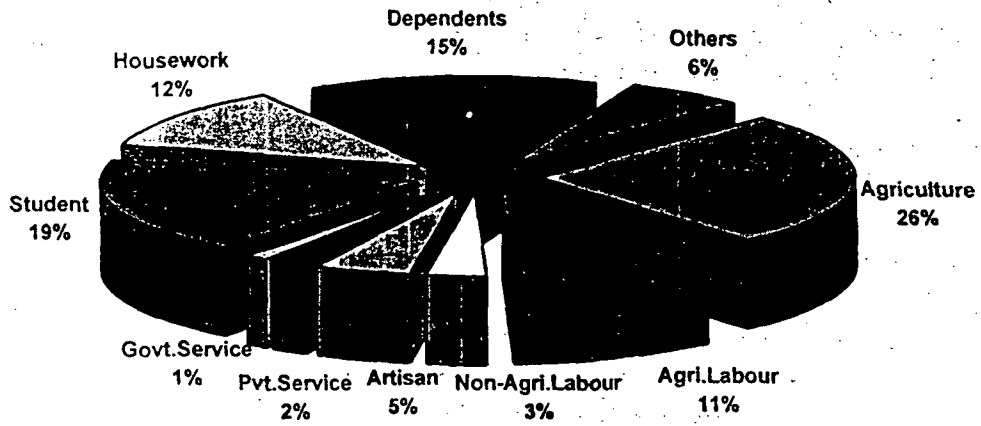
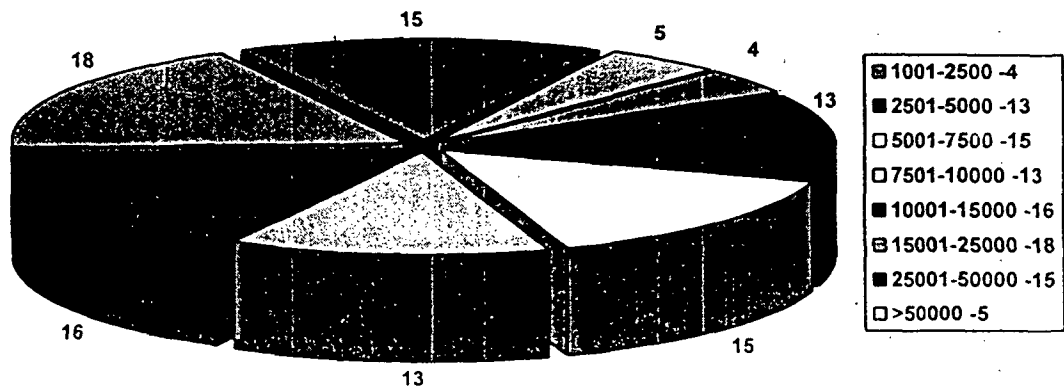


Table 5.9A - Distribution of Sample Households by Income level - Nalgonda District



Occupational Pattern

5.12 The occupational pattern of the sample population is presented in Table 5.8 below. It is seen from the table that the workforce constitute 54 percent. Agriculture labour is more predominant in Prakasam district as compared to Nalgonda and Anantapur districts while Agriculture is predominant in Anantapur district and Prakasam districts.

Table 5.8 - Districtwise Percentage distribution of Sample Population by Main Occupation

Sl. No.	Occupation	Nalgonda	Prakasam	Anantapur	Overall
1.	Agriculture	15	29	36	26
2.	Agriculture Labour	7	19	8	11
3.	Non-Agriculture Labour	6	1	2	3
4.	Cattle Rearing	1	Neg.	1	1
5.	Sheep / Goat Rearing	Neg.	Neg.	-	Neg.
6.	Artisan	10	3	1	5
7.	Private Service	3	2	3	2
8.	Govt. Service	1	2	1	1
9.	Student	22	15	20	19
10.	Housework	15	10	10	12
11.	Dependents	14	16	16	15
12.	Others	5	3	2	4
	Total	100	100	100	100

Note : (1) Neg. - Negligible

(2) % do not add to 100 due to rounding off.

A pictorial illustration appears in the opposite page.

Economy

5.13 The distribution of sample households by different income groups and communities is given in the following Tables 5.9A to 5.9D.

Table 5.9A- Percentage distribution of Sample Households by Caste and Income Group - Nalgonda District

Caste	Income Group (Rs. / Annum)									Total
	Upto 1000	1001-2500	2501-5000	5001-7500	7501-10000	10001-15000	15001-25000	25001-50000	>50000	
OC	-	-	12	12	8	16	18	22	11	100
BC	-	5	15	17	14	16	18	13	2	100
SC	-	3	11	14	17	20	20	11	3	100
ST	-	50	-	17	33	-	-	-	-	100
Total	-	4	13	15	13	16	18	15	5	100

Note : (1) OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes;

ST - Scheduled Tribe.

(2) % do not add to 100 due to rounding off.

A pictorial illustration appears in the opposite page.

Table 5.9B - Distribution of Sample Households by Income level - Prakasam District

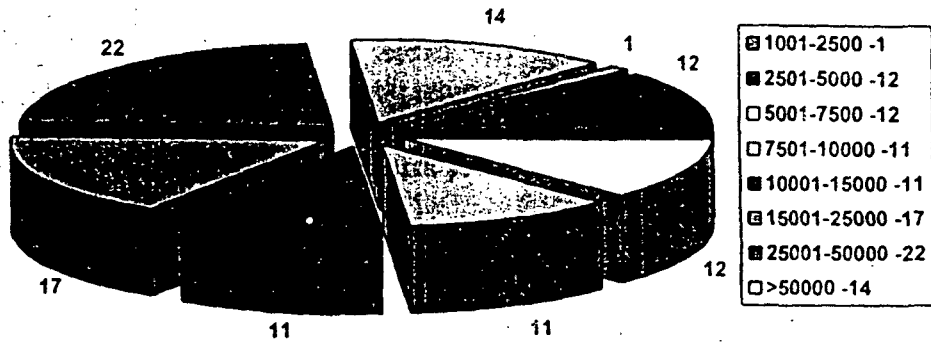


Table 5.9C - Distribution of Sample Households by Income level - Anantapur District

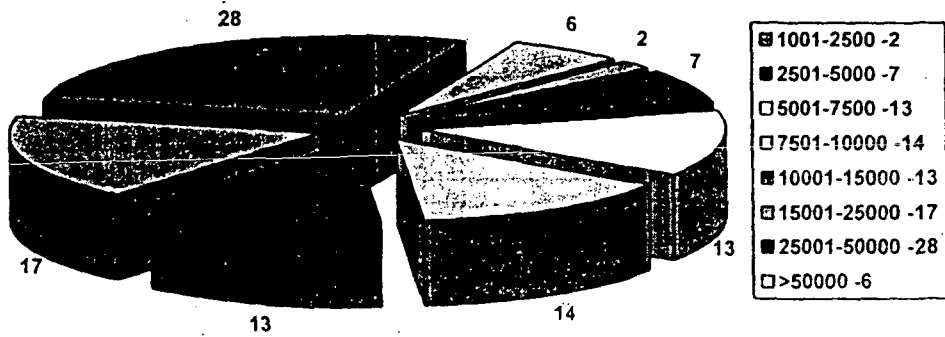


Table 5.9D - Distribution of Sample Households by Income level - Overall

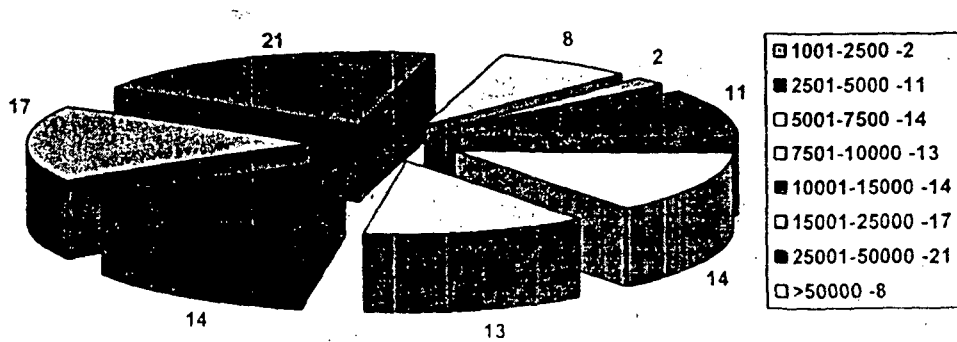


Table 5.9B - Percentage distribution of Sample Households by Caste and Income Group - Prakasam District

Caste	Income Group (Rs. / Annum)									Total
	Upto 1000	1001-2500	2501-5000	5001-7500	7501-10000	10001-15000	15001-25000	25001-50000	>50000	
OC	-	1	6	6	9	11	18	24	25	100
BC	-	2	14	9	18	11	14	26	5	100
SC	-	-	21	28	7	10	18	12	4	100
ST	-	-	-	-	-	-	33	67	-	100
Total	-	1	12	12	11	11	17	22	14	100

Note : (1) OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes; ST - Scheduled Tribe.

(2) % do not add to 100 due to rounding off.

Table 5.9C- Percentage distribution of Sample Households by Caste and Income Group - Anantapur District

Caste	Income Group (Rs. / Annum)									Total
	Upto 1000	1001-2500	2501-5000	5001-7500	7501-10000	10001-15000	15001-25000	25001-50000	>50000	
OC	-	-	2	10	10	14	16	42	7	100
BC	-	2	10	14	14	15	14	24	6	100
SC	-	6	6	26	17	8	29	8	-	100
ST	-	-	14	-	28	7	36	7	7	100
Total	-	2	7	13	14	13	17	28	6	100

Note : (1) OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes; ST - Scheduled Tribe.

(2) % do not add to 100 due to rounding off.

Table 5.9D - Percentage distribution of Sample Households by Caste and Income Group - Overall

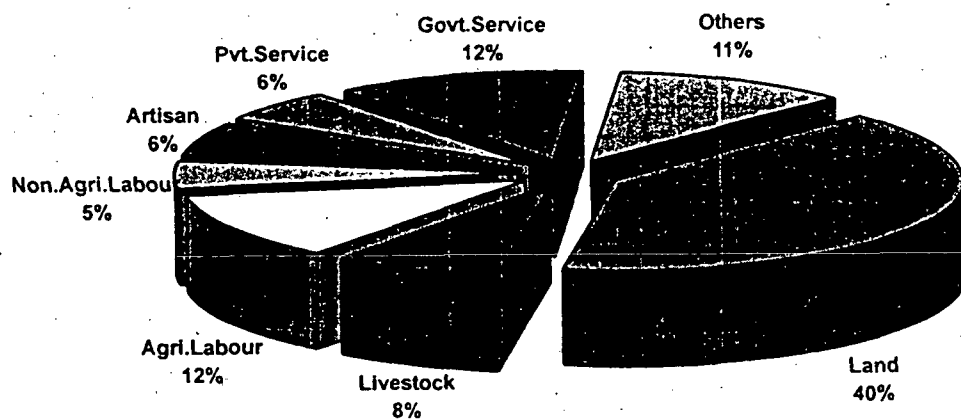
Caste	Income Group (Rs. / Annum)									Total
	Upto 1000	1001-2500	2501-5000	5001-7500	7501-10000	10001-15000	15001-25000	25001-50000	>50000	
OC	-	Neg.	7	9	9	13	17	29	16	100
BC	-	4	13	14	15	15	16	20	4	100
SC	-	2	15	24	12	12	21	11	3	100
ST	-	13	9	4	26	4	26	13	4	100
Total	-	2	11	14	13	14	17	21	8	100

Note : (1) OC - Other Castes; BC - Backward Caste; SC - Scheduled Castes; ST - Scheduled Tribe.

(2) % do not add to 100 due to rounding off.

Pictorial illustration of the above 3 tables appear in the opposite page.

Table 5.10 - Distribution of Income by different sources



5.14 As seen from the above tables, the percentage of households in higher groups varies as the social structure changes. It is seen that in Prakasam and Anantapur districts, more than one third of the sample households have income more than Rs.25,000 per year while it is only one fifth in case of Nalgonda district. But the concentration of sample households is in the range of Rs.5000 to Rs.25,000 category, which constitute more than 50 percent of the sample households irrespective of the districts.

5.15 Table 5.9A shows that in Nalgonda district OC households are economically better off than all other groups. 67% of the OC households have an income above Rs.10,000/- whereas this proportion is 59% among the BC, 54 among the SC and none among the STs. In the case of Prakasam district, the proportion of OC households with income above Rs.10,000/- is comparable to the households in Nalgonda (67%) and Anantapur (79%). The economic status is an indicator of political power of different communities. Economic status and political power are important variables in the dynamics of interaction among various groups in the villages.

5.16 The distribution of income by different sources is presented in Table 5.10 below. It is seen that income from land is the major source in Prakasam and Anantapur Districts. In Nalgonda district, though income from land is the major source but it is only 28%. Income from artisanal occupations is more in Nalgonda District (12%) as compared to Prakasam (5%) and Anantapur (2%) respectively. Income from Govt. Service is almost similar in all the three districts.

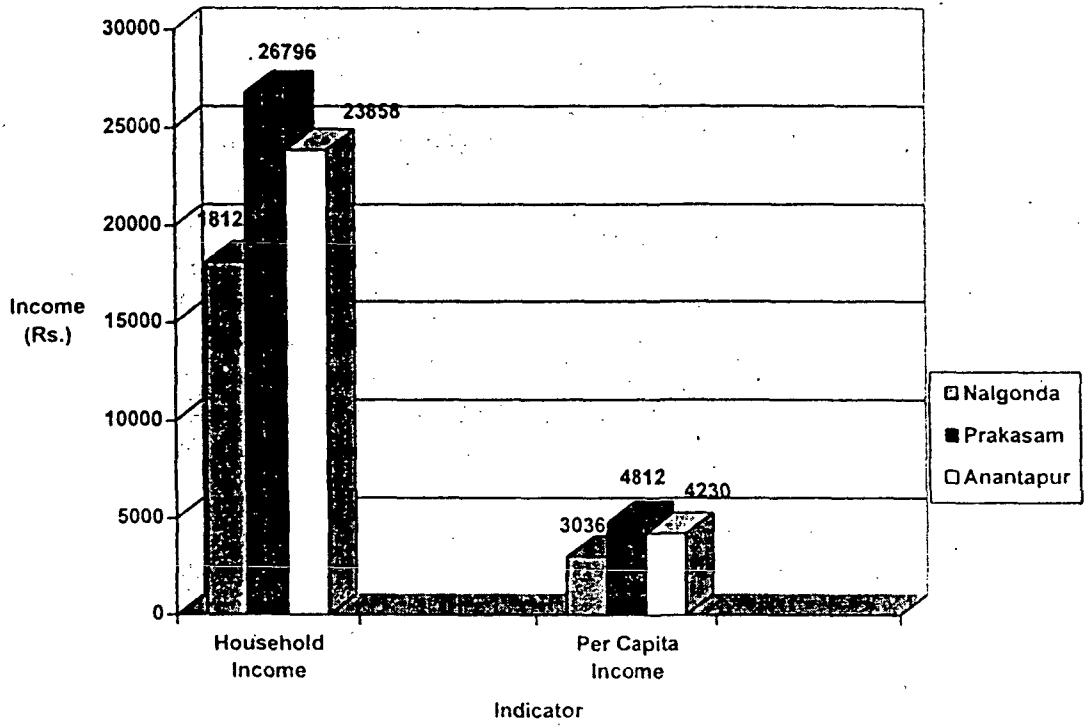
Table 5.10 - Districtwise Percentage distribution of Income by different Sources

Sl. No.	Source	Nalgonda	Prakasam	Anantapur	Overall
1.	Land	28	43	47	40
2.	Livestock	5	8	11	8
3.	Agriculture Labour	11	12	11	12
4.	Non-Agriculture Labour	9	4	4	5
5.	Artisan	12	5	2	6
6.	Private Service	6	5	9	6
7.	Govt. Service	12	11	11	12
8.	Others	18	12	4	11
	Total	100	100	100	100

Note : % do not add to 100 due to rounding off.

A pictorial illustration appears in the opposite page.

Table 5.11 - Average HH and Per Capita income (Rs.) of Sample Households



5.17 Table 5.11 below gives the average household and percapita income of sample households. It is seen that the average household income and percapita income is substantially low in Nalgonda district as compared to the other two districts.

Table 5.11 - Districtwise Average Household Income and Per Capita Income

District	Average Household Income (Rs.)	Per Capita Income (Rs.)
Nalgonda	18125	3036
Prakasam	26796	4812
Anantapur	23858	4230
Overall	22914	4000

A graphical illustration appears in the opposite page.

6.0 WATER USE AND SANITATION PRACTICES

Present Status

6.01 The present status of habitations by availability of water in the State is given below (Table 6.1).

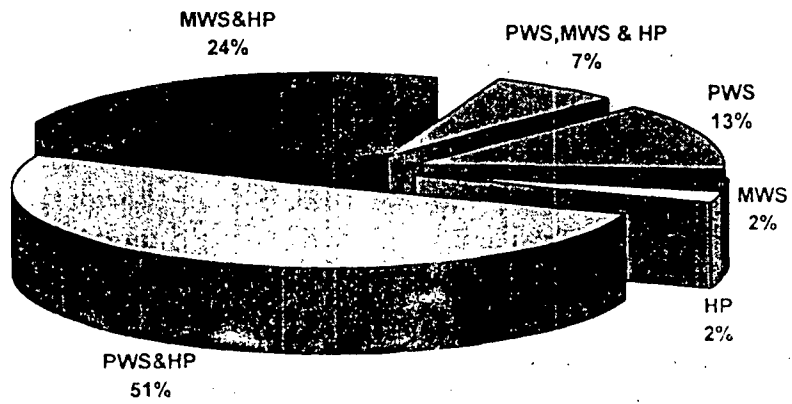
Table 6.1 - Status of Habitations as on 1.4.1997

District	Habitations						
	NC	PC1	PC2	PC3	PC4	FC	Total
Srikakulam		583	316	396	300	2226	3821
Vizianagaram	13	229	173	284	303	1804	2806
Visakhapatnam		766	291	1029	516	2776	5378
East Godavari	24	727	250	257	258	1297	2813
West Godavari		590	91	115	95	1295	2186
Krishna		287	494	291	127	1349	2548
Guntur	57	247	258	232	125	735	1654
Prakasam		163	209	244	147	1484	2247
Nellore		705	405	406	163	1469	3148
Chittoor	39	2096		720		7671	10526
Cuddapah	8	512	68	129	60	3498	4275
Ananthapur		263	142	316	310	2217	3248
Kurnool		622	230	264	147	225	1488
Mahabubnagar		704	187	293	386	1621	3191
Rangareddy		720	188	11	112	1023	2194
Nalgonda	4	1292	97	426	317	1223	3359
Medak	17	366	221	245	241	1083	2173
Nizamabad	57	495	309	338	87	241	1527
Warangal	62	1462	195	166	81	1000	2966
Khammam	99	529	178	161	420	1501	2888
Karimnagar		593	238	202	198	866	2097
Adilabad		585	141	157	168	2148	3199
Total	380	14536	4681	6822	4561	38752	69732

Source : PR Dept. A.P.

6.02 It is seen from Table 6.1 above, that 56% of the total habitations in the State are fully covered with Potable Water Supply, while the remaining have a varying degree of water availability. The complete coverage across different districts varies from 15% (Kurnool) to 82% (Cuddapah) respectively. It is also seen from the above table, a substantial number of habitations (21%) are getting less than 10 LPCD of potable water.

Table 6.3 - Distribution of Number of sample habitation by type of Water distribution



6.03 The number of sample habitations covered with different levels of Potable Water Supply in the three districts is given below (Table 6.2)

Table 6.2 - Districtwise distribution of Habitations by Status

Type of Habitation	Nalgonda		Prakasam		Anantapur		Overall	
	Total	Sample	Total	Sample	Total	Sample	Total	Sample
Fully covered	1223	6	1484	10	2217	10	5924	26
Partially covered - 1	1292	6	163	1	263	2	1718	9
Partially covered - 2	97	-	209	1	142	1	448	2
Partially covered - 3	426	2	244	2	316	1	986	5
Partially covered - 4	317	1	147	1	310	1	774	3
Not covered	4	-	-	-	-	-	4	-
Total	3359	15	2247	15	3248	15	8854	45

Type of Water sources

6.04 Ground water is the only source of Potable Water Supply in the sample habitations. It is to be noted that there are other sources like Irrigation wells, Canals etc., used by the households in addition to the protected water source.

Type of Water distribution

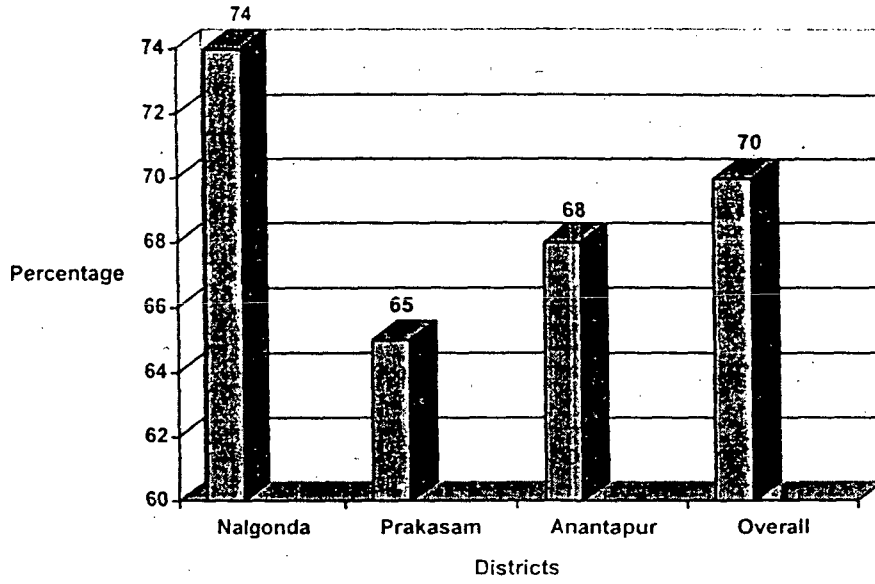
6.05 Ground water is the only source of protected water supply in all the 45 sample habitations. The distribution of water supply is either through PWS or MWS schemes in most of the villages. However, HPs are alternate sources in all the villages. The distribution of sample habitations with different types of water installation is presented in the following table (Table 6.3).

Table 6.3 : Districtwise number of Sample Habitation by type of Water Distribution

District	PWS only	MWS only	HP only	PWS & HP	MWS & HP	PWS, MWS & HP	Total
Nalgonda	-	-	1	8	4	2	15
Prakasam	5	1	-	7	2	-	15
Anantapur	1	-	-	8	5	1	15
Overall	6	1	1	23	11	3	45

A pictorial illustration appears in the opposite page.

Table 6.5 - Percentage of HP working in Sample Habitations



6.06 It is seen from Table 6.3 that in only one sample habitation the HP is the only source of water supply. While in all the other cases it is either PWS or MWS or both in few cases. Wherever augmentation of the existing source is not possible, additional systems are being installed. This is because of the availability of yield to store water in the same reservoir.

Status of HP

6.07 The status of Handpumps in the State of Andhra Pradesh as on end March 1998 is given in the following Table 6.4.

Table 6.4 : Status of Handpumps in the State of Andhra Pradesh as on 31.03.1998

Code	District	No. of Pumps	Seasonal Pumps	Pumps breakdown			Repaired during Week			Balance to be repaired			% to be repaired
				O.B.	New	Total	No.	Avg.	Max.	No.	Avg.	Max.	
01	Srikakulam	6002	106	18	247	265	240	1	7	25	6	19	0.42
02	Vizianagaram	6348	258	44	374	418	379	0	17	39	19	30	0.61
03	Visakhapatnam	8675		16	273	289	268	0	7	21	9	15	0.24
04	East Godavari	3882	55	7	90	97	89	1	5	8	19	27	0.21
05	West Godavari	2790	47	3	89	92	89	0	2	3	15	16	0.11
06	Krishna	5074	27	16	186	202	181	1	10	21	12	16	0.41
07	Guntur	10190		47	565	612	580	1	7	32	7	24	0.31
08	Prakasam	12311	87	4	318	322	322	1	3	0	0	0	0.00
09	Nellore	9220		29	264	293	261	1	18	32	14	30	0.35
10	Chittoor	18557		18	345	363	345	1	66	18	21	70	0.10
11	Cuddapah	13211		57	83	140	107	2	9	33	25	30	0.25
12	Anantapur	12488		109	360	469	367	2	22	102	12	23	0.82
13	Kurnool	9663		8	324	332	319	1	10	13	2	13	0.13
14	Mahabubnagar	12246	501	5	88	93	88	1	4	5	12	15	0.04
15	Rangareddy	7711	428	6	46	52	46	2	9	6	3	10	0.08
16	Medak	9731	122	0	58	58	58	1	4	0	0	0	0.00
17	Nizamabad	9622		1	194	195	193	1	6	2	12	15	0.02
18	Adilabad	10666		16	463	479	455	1	10	24	1	3	0.23
19	Karimnagar	10259	515	76	210	286	222	3	19	64	6	18	0.62
20	Warangal	10636	559	14	356	370	354	1	5	16	4	17	0.15
21	Khammam	14640	388	66	396	462	348	1	2	114	0	7	0.78
22	Nalgonda	14482	262	21	155	176	159	2	18	17	0	1	0.12
	Abstract	218404	3355	581	5484	6065	5470	1	66	595	9	70	0.27

Source : PR Dept.

6.08 In the sample habitations, the status of Handpumps is given below (Table 6.5).

Table 6.5 : Districtwise working status of Handpumps (HP)

District	Total No. of HP	No. Working	% of Working
Nalgonda	159	118	74
Prakasam	114	75	65
Anantapur	114	77	68
Overall	387	270	70

A graphical illustration appears in the opposite page.

6.09 As seen from the above, percentage of non-working HPs is considerably low (30%) in all the sample habitations. It ranges between 26-35% across the districts.

6.10 The main reason for the non-working is the lowering of water table leading to drying up of the source. Otherwise, it is observed that the installation of HPs are in good condition.

Water Supply

6.11 Sourcewise dependency of sample households in different seasons for different purposes is given in Table 6.6 below.

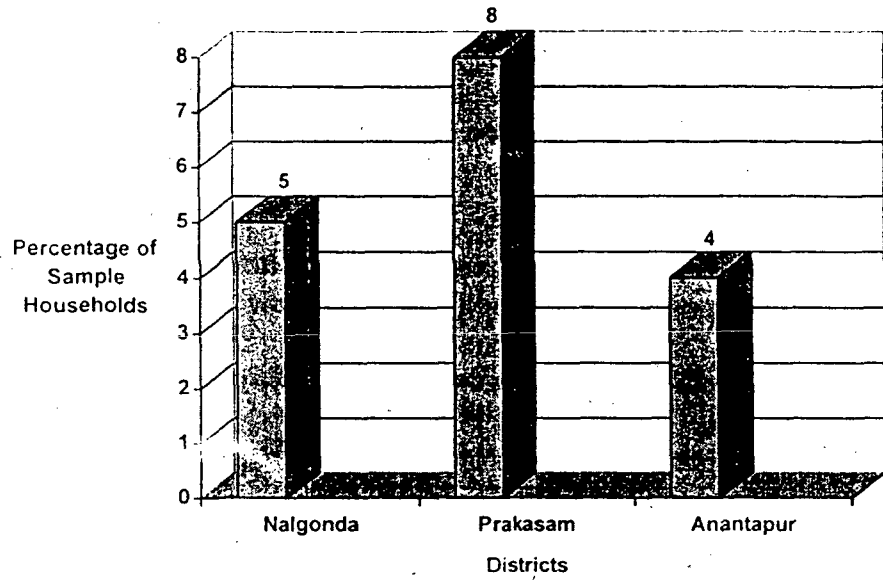
Table 6.6 : Sourcewise dependence of Sample Households in different seasons

Source	PURPOSE			
	Cooking / Drinking		Other Purposes	
	Summer	Other Season	Summer	Other Season
Nalgonda District				
PWS	56	56	51	51
MWS	26	24	22	21
HP	50	52	58	58
Wells	9	9	10	9
Others *	4	4	4	4
Prakasam District				
PWS	57	51	56	50
MWS	7	6	11	10
HP	13	13	28	27
Wells	33	32	20	17
Others *	14	12	19	16
Anantapur District				
PWS	68	64	69	64
MWS	30	31	28	28
HP	41	41	41	41
Wells	2	2	1	2
Others *	-	-	-	-
Overall				
PWS	60	57	58	55
MWS	21	20	20	19
HP	35	35	42	42
Wells	15	15	10	9
Others *	6	5	8	7

Note : * - Canals, Ponds, Tanks

6.12 It is seen from the above table that households have access to different water sources other than the Protected Water sources, PWS, MWS & HP. There are no significant differences observed in the usage of water sources in different seasons in all the sample habitations. The dependency on multiple sources is due to lack of availability of total quantity of water from a single protected source.

Table 6.7 - Percentage of Sample Households having PHC



Private House Connections (PHC)

- 6.13 It is commonly observed that people desire that water should be available at their door step with little or no cost. This is true of rural areas as there is interaction with their counterparts in urban areas. Since, rural water supply schemes are not designed for taking PHCs, the design capacity will not sustain the pressure of house connections thus creating scarcity in the habitations.
- 6.14 The access to PHCs in the sample habitations is given in the following Table 6.7.

Table 6.7 : Districtwise number of Households having Private House Connection (PHC)

District	Total No. of Sample Habitations	No. of Sample Habitations having PHC	Total No. of HHs in the Sample Habitations having FHC	Total No. of HHs having PHC	No. of Sample HHs having PHC
Nalgonda	15	12 (80)	7188	1944 (27)	94 (5)
Prakasam	15	6 (40)	5267	1240 (24)	98 (8)
Anantapur	15	7 (47)	3815	293 (8)	12 (4)
Total	45	25 (55)	16270	3477 (21)	204 (6)

Note : Figures in the brackets are percentages.

A graphical illustration appears in the opposite page.

- 6.15 It is seen from the above table that 55% of the sample habitations have PHCs. This varies from 40% in Prakasam to as high a figure as 80% in Nalgonda District.
- 6.16 It is interesting to note from Table 6.7 that, though in Nalgonda district 80% of the sample habitations have PHCs as compared to 40% in Prakasam and 47% in Anantapur districts, it is in Prakasam district the households have more accessibility to PHCs as compared to the other two districts. It is comparatively high in Prakasam district (24%) while it is least in Anantapur district (8%).
- 6.17 Among the sample households, the percentage of households having PHC varies from 4% to 8% across the districts.

Table 6.8A - Seasonwise Average distance travelled - Cooking / Drinking

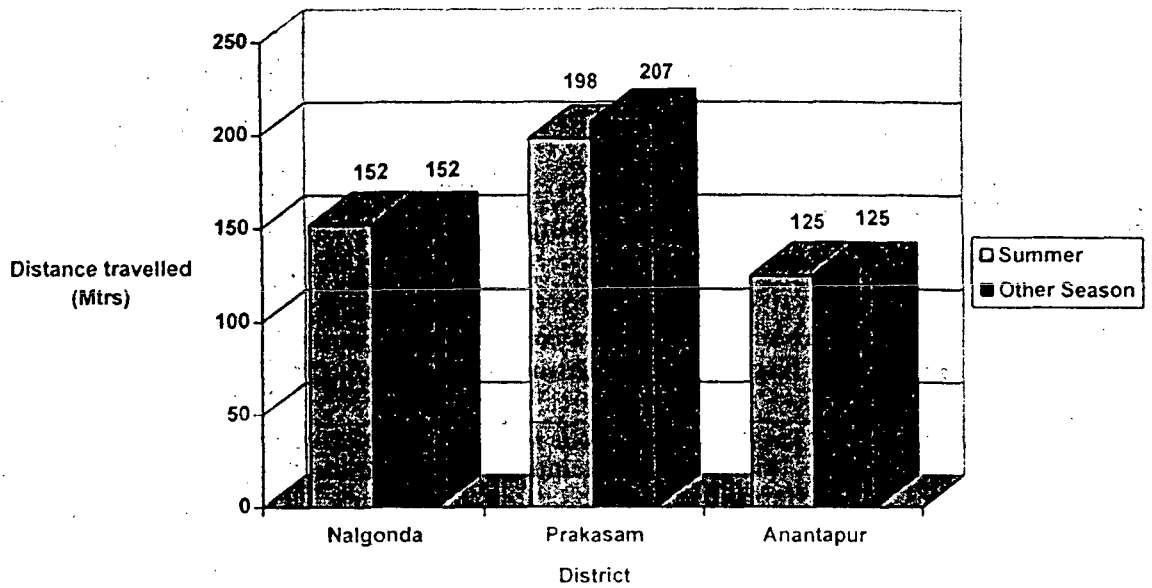
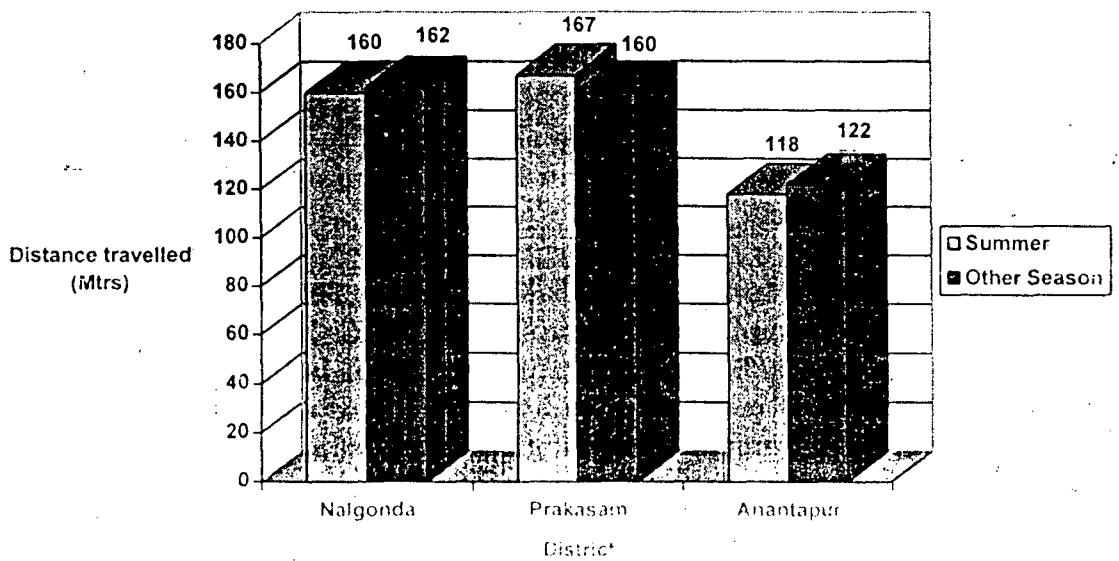


Table 6.8A - Seasonwise Average distance travelled - Other Domestic Purposes



6.18 It is observed that in Prakasam district, in one of the Panchayats, some of the economically well off households have got two private house connections - one for household consumption and another for the cattle shed. This creates pressure on the supply system and households at the tail-end of the distribution system especially the poorer households and SC households do not get adequate water. The pressure on the system leads to other problems. The Slow Sand Filters (SSFs) cannot supply filtered water at the increased quantities because not enough time is given for filtering process. Under pressure the Panchayat has been resorting to a supply of either a mixture of raw water and filtered water or only raw water. This affects the quality of water. In this situation some households collect water from traditional wells for cooking purposes. This was observed in another Panchayat also. It is obvious that private house connections should be restricted keeping in view the capacity of the water supply system.

Distance

6.19 Distance to different water sources varies (other than those having PHCs). The average distance travelled to get water from all the sources varies from 125 meters to 198 meters across the district. There is only a marginal difference between seasons. The average distance travelled by the sample household in different seasons is presented in Table 6.8A below. As mentioned earlier, whenever households do not get adequate quantity and quality water, they collect water from traditional wells or irrigation wells. This increases the distance that has to be covered. It was observed that generally women go to traditional well whereas men go on bicycles to irrigation wells to collect water.

Table 6.8A : Seasonwise Average Distance (Mtrs) travelled to collect water for different purposes

District	PURPOSE			
	Cooking / Drinking		Other Domestic Purposes	
	Summer	Other Season	Summer	Other Season
Nalgonda	152	152	160	162
Prakasam	198	207	167	160
Anantapur	125	125	118	122

A graphical illustration appears in the opposite page.

Table 6.8B - Sourcewise Average distance travelled to collect water - Cooking / Drinking

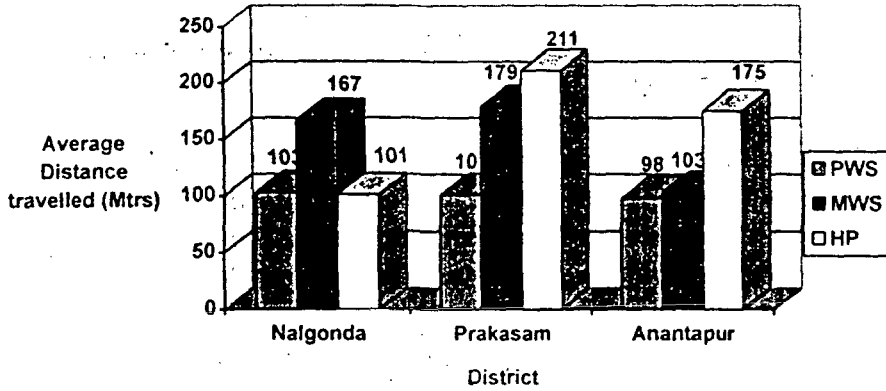


Table 6.8B - Sourcewise Average distance travelled to collect water - Other Domestic Purposes

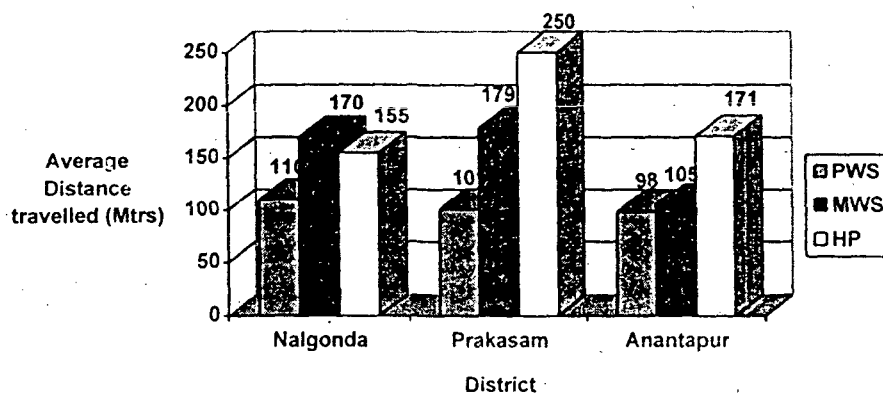
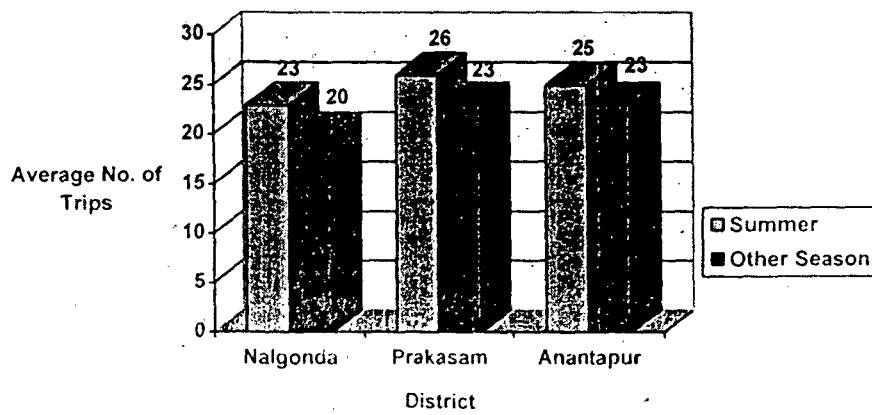


Table 6.9 - Average number of trips made per day to collect water



6.20 The average distance travelled for different protected water sources is given below (Table 6.8B).

Table 6.8B : Sourcewise average distance (Mtrs) travelled to collect water for different purposes

Source	PURPOSE	
	Cooking / Drinking	Other Domestic Purposes
Nalgonda District		
PWS	103	110
MWS	167	170
HP	101	155
Prakasam District		
PWS	101	101
MWS	179	179
HP	211	250
Anantapur District		
PWS	98	98
MWS	103	105
HP	175	171

Graphical illustrations appear in the opposite page.

Number of Trips

6.21 The sample households in a day make an average 23-26 trips during summer and 20-23 trips in other seasons across the districts. It is seen that most of the collection will be during morning time only.

The average number of trips made per day to collect water is given below (Table 6.9).

Table 6.9 : Average number of trips made per day to collect water

District	Summer				Other Seasons			
	Morning	Afternoon	Evening	Avg./day	Morning	Afternoon	Evening	Avg./day
Nalgonda	16	1	6	23	14	1	5	20
Prakasam	17	1	8	26	15	1	7	23
Anantapur	18	1	6	25	16	1	6	23

A graphical illustration appears in the opposite page.

Time taken to collect water

6.22 Collection of water from protected water sources like PWS and MWS depends on the availability of electricity. Generally in rural areas electricity availability is poor. In a day about 1-2 hours of power supply will be available to run the motor for water storage. It is a common sight to see vessels kept in queue at standposts to collect water when the supply is given.

Table 6.10 -Average time taken per day to collect water.

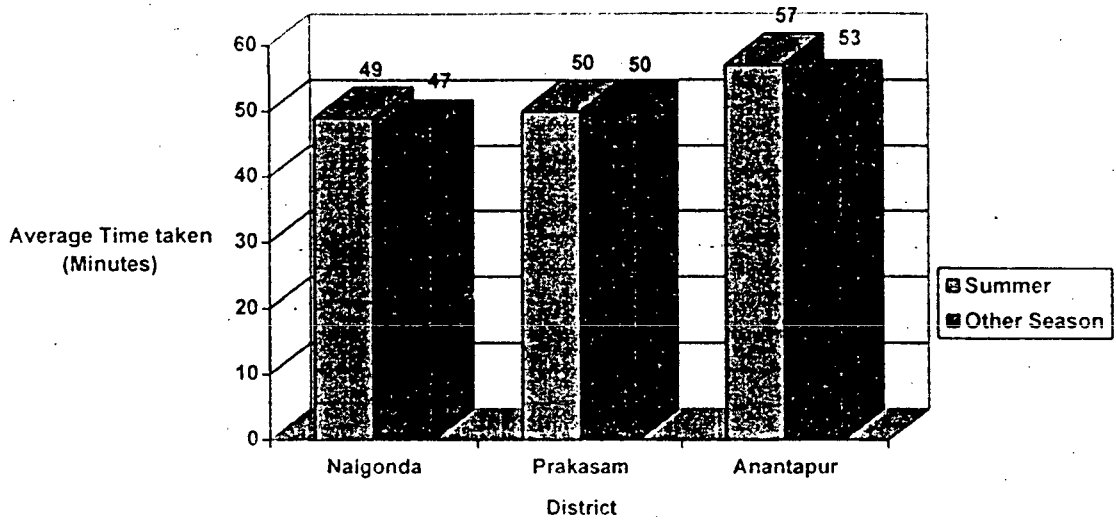
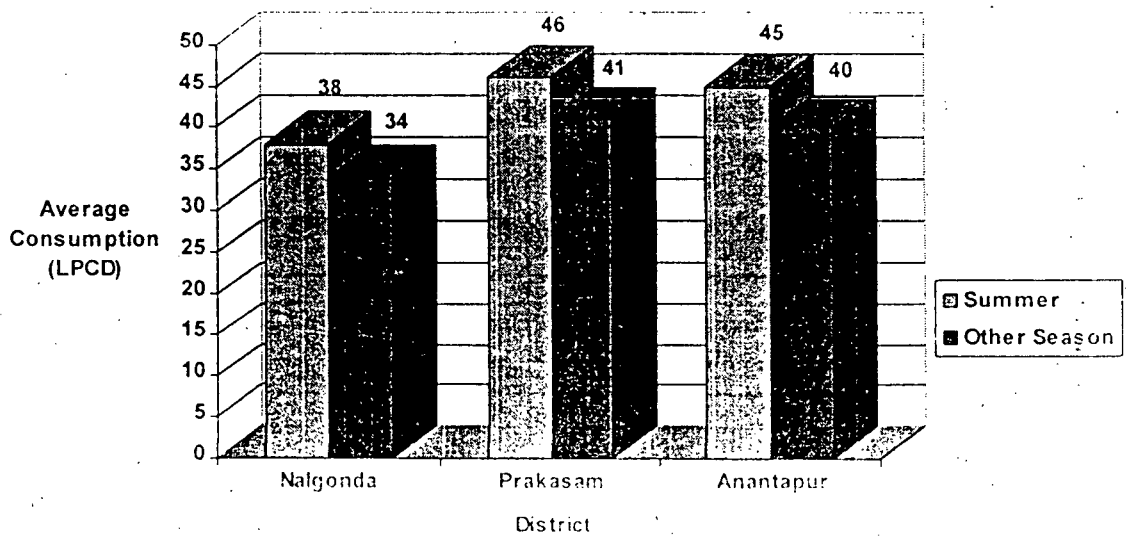


Table 6.11 - Average water consumption (LPCD) from all sources



6.23 The average time taken to collect water from all sources is given in Table 6.10 below.

Table 6.10 : Average Time (Minutes) taken per day to collect water

District	Summer				Other Seasons			
	Morning	Afternoon	Evening	Avg./day	Morning	Afternoon	Evening	Avg./day
Nalgonda	54	35	47	49	51	34	45	47
Prakasam	56	21	43	50	54	27	41	50
Anantapur	70	30	42	57	66	30	36	53

A graphical illustration appears in the opposite page.

6.24 It is seen from the above table that on an average, one hour is spent in collection of water (mainly during morning hours) irrespective of the season.

Water consumption

6.25 Water consumption for all purposes (working / drinking, other domestic purpose & livestock) from all sources varies marginally across the districts and seasons. This is presented in the Table 6.11 given below.

Table 6.11 : Average Per capita daily water consumption (LPCD) from all sources

District	Summer	Other Season
Nalgonda	38	34
Prakasam	46	41
Anantapur	45	40

A graphical illustration appears in the opposite page.

6.26 It is interesting to observe that there is a marginal decline in consumption level during other seasons as compared to the summer season. It is to be noted that this level of consumption is from all sources.

Water Quality

6.27 The perception of the sample households about the quality of water from different sources is given below (Table 6.12)

Table 6.12 : Percentage distribution of sample households perception on Quality of Water

	Quality					Total
	Good	Brackish	Fluoride	Smell	Others	
Nalgonda District						
PWS	53	15	26	-	6	100
MWS	33	17	45	1	4	100
HP	27	33	32	1	7	100
Prakasam District						
PWS	62	12	10	12	5	100
MWS	48	11	32	-	9	100
HP	21	43	35	1	1	100
Anantapur District						
PWS	69	12	17	2	-	100
MWS	71	21	4	-	3	100
HP	71	15	14	-	-	100

Note : % do not add to 100 due to rounding off.

6.28 It is seen from the above table the quality of water from PWS sources is perceived as 'Good' by more than half of the sample households. At the same time it is to be noted that more than one third of the sample households in Nalgonda and Prakasam districts have perceived fluoride contents from MWS and HP sources while it is less as compared to PWS sources. It is to be noted that both Nalgonda and Prakasam districts are high fluoride zones. In Prakasam district, water supply systems depend on flowing water from rivers (which is collected in Ponds before filtering through SSFs), as source. The ponds into which water is collected, develop a lot of growth of weeds in the summer season. Several members complained that the water from such ponds create skin allergy and irritation.

6.29 We could observe that the youth are quite aware of the need to maintain quality of water. In one of the SC habitations in Prakasam district, the youth were very vocal in pointing out the problems of maintenance of the summer storage tank. One college going youth pointed out that in summer, water is 'green' in colour. If they take bath they develop itching. They showed positive attitude towards paying contributions for maintaining water supply system. The educated youth have to be involved in maintaining the system.

Problems in the present water supply

6.30 The problems prevailing as perceived by the sample households regarding the present water supply system is presented in Table 6.13 below.

Table 6.13 : Percentage distribution of sample households views on the problems in present water supply system

Problems	Nalgonda	Prakasam	Anantapur
Scarcity	78	41	21
Quality	3	14	8
Electricity	2	7	29
Bas Installation	1	3	Neg.
Lack of Maintenance	1	19	22
Distance	-	7	1
No Problem	12	8	18
No Response	2	1	1
Total	100	100	100

Note : % do not add to 100 due to rounding off.

6.31 Scarcity of water is the major problem faced by 78% of sample households in Nalgonda district, while it is 41% in Prakasam and 21% in Anantapur districts. It is interesting to observe from the above table that lack of maintenance in the present water supply is observed as a problem by nearly one-fifth of the sample households in Prakasam and Anantapur districts.

6.32 Fluctuations in power supply is more severe in the case of Anantapur district as compared to the other two districts. Though the community as a whole have expressed that due to fluctuations in the voltage, timings of water release and quantity of collection is becoming problematic. This is more so during summer season when the water table declines.

Perception about a better System

6.33 It is observed that in all the habitations, people want timely release and adequate quantity, of protected water. They were not in a position to give ideas for improvements. The only suggestion that was made was that they want more water and the facility of PHCs with big OHTs.

7.0 OPERATION AND MAINTENANCE OF WATER SUPPLY

Present Status

- 7.01 At present the Operation and Maintenance (O&M) is the responsibility of the Grama Panchayats (GP). All the GPs have a pump operator who looks after the O&M of the PWS and MWS schemes. There is nobody to look after the HP maintenance.
- 7.02 In all the sample habitations, the operator is not paid by the GP. He collects from each household every month Rs.5-10 as his wages. Though the GPs have permitted PHCs by taking deposits, no tariff has been fixed for water consumption. In some GPs, though the tariffs been fixed in the range of Rs.5-15, the recovery is very poor.
- 7.03 During the discussions with the GP members it was observed that tariff fixation is very difficult. Due to local political situation the members expressed their inability due to the opposition from others. The oft-quoted phrase used was **"the previous members did not collect any tariff and now you are asking for it"**. This dilemma of the present GP members have put them into a difficult situation. Also, they relate the fixation and collection to the quality and quantity of water being supplied. In some GPs where tariff has been collected, it has not been spent on maintenance of the water supply scheme. It has been diverted for purposes such as buying street lights.
- 7.04 However, during a discussion with the cross section of the villagers, they have expressed that, **"we will pay, provided the service level is improved"**. To quote the statement made by a middle aged person in one of the high fluoride habitation, **"because of the scarcity and quality of water, we are facing problems in getting brides for the boys in our village"**. In some of the habitations, the GP President and members asked the study team how much tariff should be levied for sustenance and also would it lead to any administrative problems if the levy were imposed.
- 7.05 It is also observed that PHCs have been permitted in MWS schemes which is a gross violation of the rules. But due to local political set up, no body is adhering to the rules and regulations for proper maintenance of the schemes. Since, the RWS schemes are not designed for PHCs, the scarcity issue arisès. This has been brought to the notice of the GP members and also to the villagers during the survey. But they say, they are helpless.

It is to be noted that there are no electricity charges for RWS in Andhra Pradesh as it is fully subsidised. Hence, there is no energy charges for the consumption of water. This is one of the reasons why there is lack of motivation and interest in fixation and recovery of tariff, leading to poor O&M.

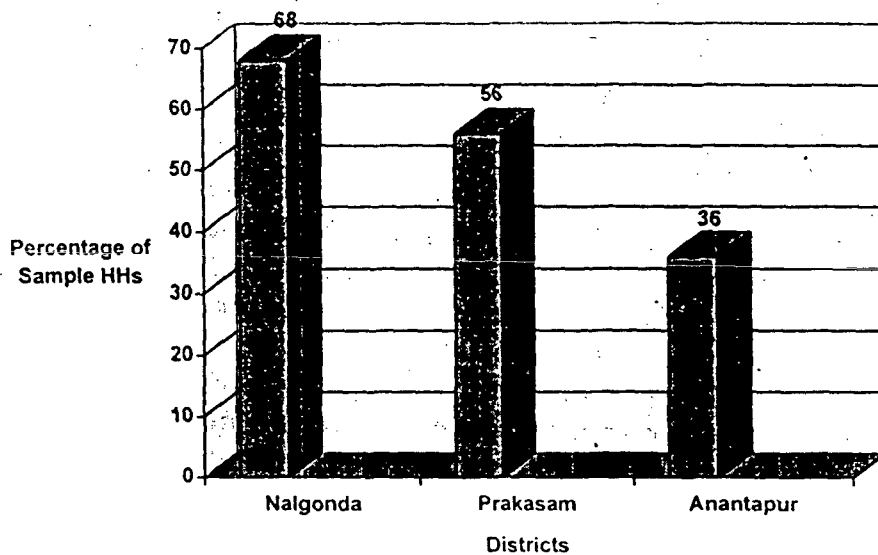
- 7.06 There are no maintenance committees, either formal or informal, for any of the water supply schemes. User groups have not thought about such arrangements in any of the sample habitations. The user communities legitimacy is questioned by people. This has to be looked into. How to make the committee legitimate is a serious problem.
- 7.07 At the time of breakdown of the system, the operator, through the GP President, informs the concerned Zilla Parishad (ZP) Engineers for rectification. The Section Officer in charge visits the village within a week and rectifies the system. It depends on the motivation and concern of the Section Officer, in minimising the delay in rectification. Otherwise it may take more than a month to rectify.

Location of Overhead Storage Reservoir (OHSR)

- 7.08 Location of OHSRs in some situations has become a contentious issue. In one of the Gram Panchayats in Prakasam district, the OHSR is located closer to the households of upper castes. As a result, the locality / hamlet of the SC households, which are generally away from the main village are at the tail-end of the distribution system. One of the respondents interestingly said that they never got 'Netherland water' [as the scheme was launched with assistance from Netherlands (NAP)]. The SC Hamlet is 1^{1/2} Km away from the main village. We observed the SC households do not get water at all. They depend on a Pond adjacent to their locality. They said they have given up hopes of getting water from the OHSR. They also raised money to maintain the Pond by sprinkling bleaching powder and keeping a watch on the Pond. However, the Pond is not enclosed. When we went to see the Pond we could see buffaloes and dogs entering the Pond. Members of the SC households respond that the water is not safe for drinking as several children were affected by water-borne diseases like diarrhoea. They suggested that a separate OHSR exclusively for the SC locality should be built. They had sent several petitions to ZP but had not received any response. They wanted a separate OHSR for the SC Hamlet.
- 7.09 In another village in Anantapur district the OHSR is located near the SC locality. Members of the upper caste households complain that the SC household tap a lot of water and the upper caste households being at the tail-end, receive less water.

- 7.10** These two instances show that the location of OHSR is an important issue. In future RWS officials should consult the members of all social groups and communities and select a spot which is technically feasible and socially acceptable. Another problem that affects the distribution of water is removal of taps from the pipes. With a result that water gets wasted. This has to be checked by the Gram Panchayats, by involving members drawn from a cross section of households belonging to different communities.
- 7.11** In one of the divisions of Prakasam district, the RWS maintains a pipeline from the source. This was installed under NAP and feeds water to OHSR at the Gram Panchayat. The officials complain that the pipeline has been damaged by the farmers enroute to draw water for their fields. The officials reported that inspite of surveillance, farmers have resorted to this. The officials expressed that they caught some farmers redhanded and had handed them over to police. There is a need to educate farmers about the implications of such action which is tantamount to being anti-social.
- 7.12** In Prakasam district, where the source of supply is a river, there are specific problems. In Gram Panchayats which are closer to the sea, in summer the river dries up and sea water enters in the reverse direction. The water becomes brackish and hence cannot be used for drinking. Further, in surface water sources such as irrigation canals, a lot of weeds start growing in the summer storage tank along with water. In summer season, water supplied from such storage tanks through OHSRs creates health problems like skin allergies and intestinal disorder according to members of a village in Prakasam district.
- 7.13** RWS officials are under constant pressure. The RWS engineers, unlike engineers of the irrigation department and PWD, work directly under political executives. At the village level, sometimes contradictory demands are made on the engineers by rival factions in the villages. Engineers at the level of JEs and sometimes Dy.EEs unwillingly get drawn into the factional politics. One of the Dy.EEs felt that as the GPs are not in a position to maintain the schemes due to paucity of funds and factionalism. The RWS schemes can be maintained better if they are taken out of the purview of the Panchayats and put under the jurisdiction of RWS of Panchayat Raj.

Table 8.1 - Willingness to pay for Capital Cost



8.0 WILLINGNESS TO PAY FOR WATER SUPPLY

- 8.01 At present, there is no cost sharing for public utility services, as provision of water is the responsibility of the Government. Hence, access to water, free of cost, is considered to be "a right".
- 8.02 However, since last year, the Govt. of Andhra Pradesh under the 'Janmabhoomi' programme is contemplating cost sharing in development programmes. The community has to contribute 30% of the capital cost of the scheme in terms of either cash, material or labour. It is observed that in some of the sample habitations, cost sharing in terms of labour has been provided by the community. The community in particular localities have dug trenches for laying pipelines for water distribution. Some resourceful Panchayats in Prakasam district have in addition, built concrete top roads. In one of the GPs, in Prakasam district, the Sarpanch has put in enormous efforts to raise money, to protect the summer storage tank with a barbed wire fence. One could see the role of a dynamic leader in the implementation of the scheme.
- 8.03 At present the GP is collecting water connection charges for PHCs only. It ranges from Rs.300 - Rs.1500. But there is no monthly fixed tariff for water consumption either for PHCs or Standpost users. The operator collects from the PHC users a monthly amount ranging between Rs.5-15. This too is not being paid regularly.
- 8.04 The willingness to pay for the capital cost and monthly tariff (if improved water is provided) has been analysed in the following paragraphs.

Willingness to pay for Capital Cost

- 8.05 Table 8.1 given below, gives the willingness to pay towards the Capital Cost for installation of better water system. A graphical illustration appears in the opposite page.

Table 8.1 : Willingness to pay for Capital Cost

District	Yes	No	Total
Nalgonda	68	32	100
Prakasam	56	44	100
Anantapur	36	64	100

Table 8.2 - Contribution type

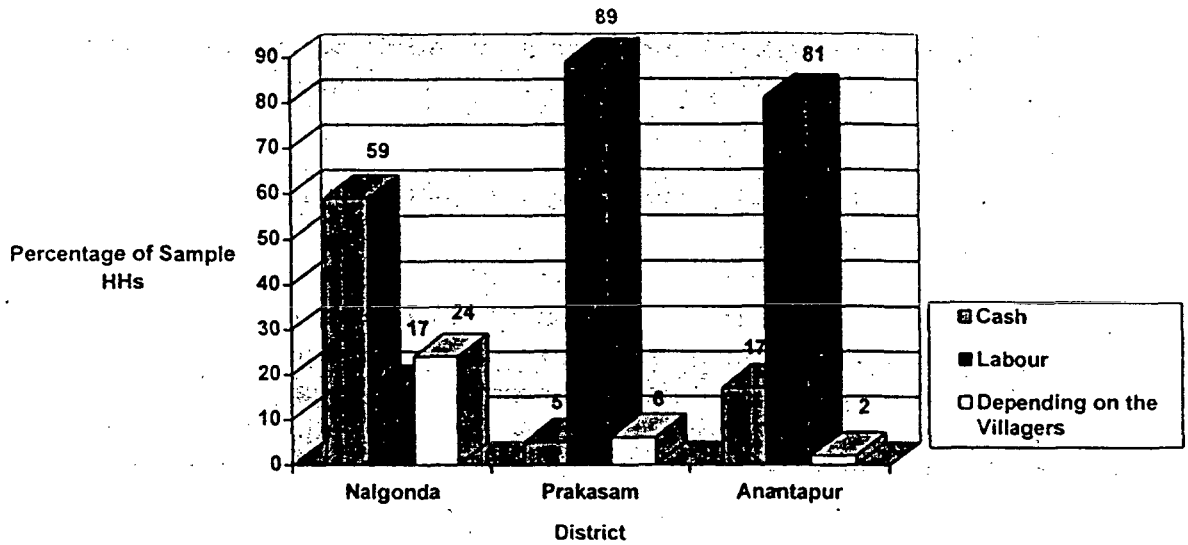
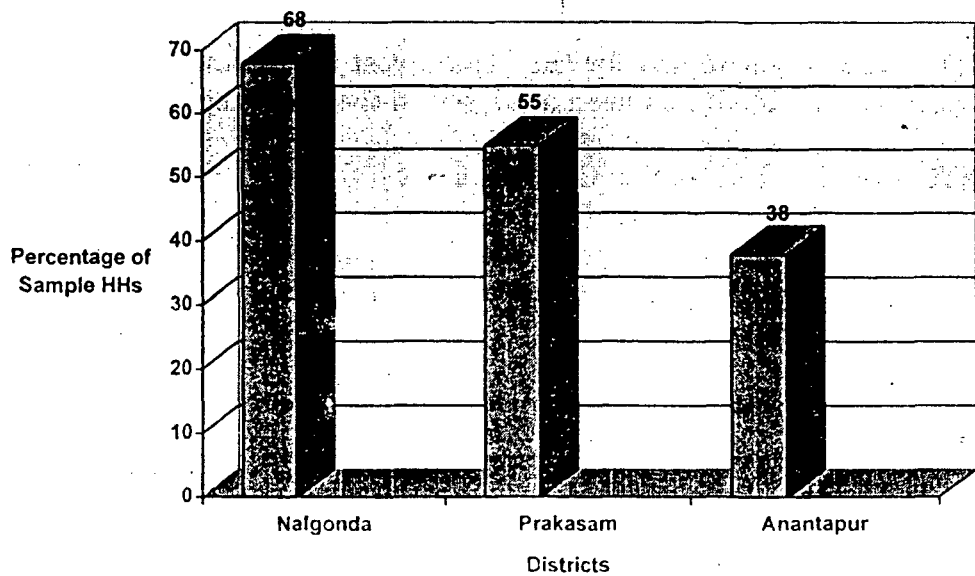


Table 8.3 - Willingness to pay for O&M



- 8.06 As seen from the above table, there is a positive response for sharing of capital cost in Nalgonda and Prakasam districts. In Nalgonda district, this attitude is due to severe fluoride problem and community wanted surface water sources instead of ground water source.
- 8.07 The analyses of the different types of contribution by the community who are willing to share the Capital Cost is given in Table 8.2 below and is graphically illustrated in the opposite page.

Table 8.2 : Type of contribution for Capital Cost Sharing (%)

	Nalgonda	Prakasam	Anantapur
Cash	59	5	17
Labour	17	89	81
Depending on the villagers	24	6	2
Total	100	100	100

A graphical illustration appears in the opposite page.

- 8.08 As seen from the above, the labour contribution is more predominant. This is because at present, under 'Janmabhoomi' programme, 30% share of the community is only in terms of labour component.

Willingness to pay for O&M

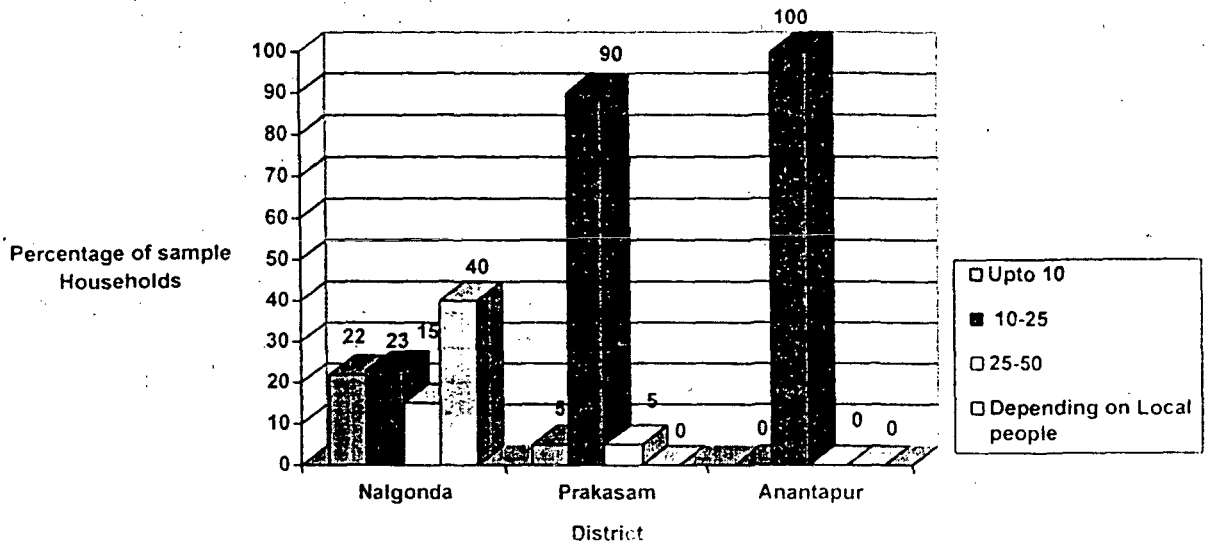
- 8.09 The willingness to pay for O&M is given in Table 8.3 below and is graphically illustrated in the opposite page.

Table 8.3 : Willingness to pay for O&M (%)

District	Yes	No	Total
Nalgonda	68	32	100
Prakasam	55	45	100
Anantapur	38	62	100

- 8.10 It is seen that people are willing to pay for O&M of the system provided the service levels are improved. It is more so in case of Nalgonda and Prakasam districts. Our discussions with the youth regarding formation of water users' committee to oversee the maintenance, revealed that such committees do not have legitimacy. Appropriate policy guidelines have to be evolved to make such committees legitimate. Perhaps along with elections for Panchayats, office bearers of the water users' committee also could be elected. This will give the required legitimacy to the committees. It is needless to say that the position of such committees vis-a-vis the GP has to be spelt out in clear terms.

Table 8.4 - Percentage of sample households willing to pay different levels of monthly tariff



8.11 Sometimes, community resources meant for maintenance of water supply system are not utilised properly. In Prakasam district, in one of the GPs, an old Pond was converted into a summer storage tank for the water supply system. This old Pond was the source of water for all the villagers including the SC hamlet. According to some SC members, about 18 acres of land was bequeathed by a Brahmin family towards the maintenance of the Pond. The land is administered by the endowments department of the Government. The land is auctioned for lease periodically. The proceeds of the auction were supposed to be used for maintenance of the Pond (SST). It was reported that (a) the lease is auctioned at low price and (b) that money is not paid in time by the leaseholders generally from rich upper caste. As a result, the maintenance of the tank is seriously affected. In the process, the water supply is not adequate. Again as the SC households are at the tail-end they don't receive adequate water. In the locality of upper castes there is an OHSR. The SC members demanded a separate OHSR for the SC Hamlet.

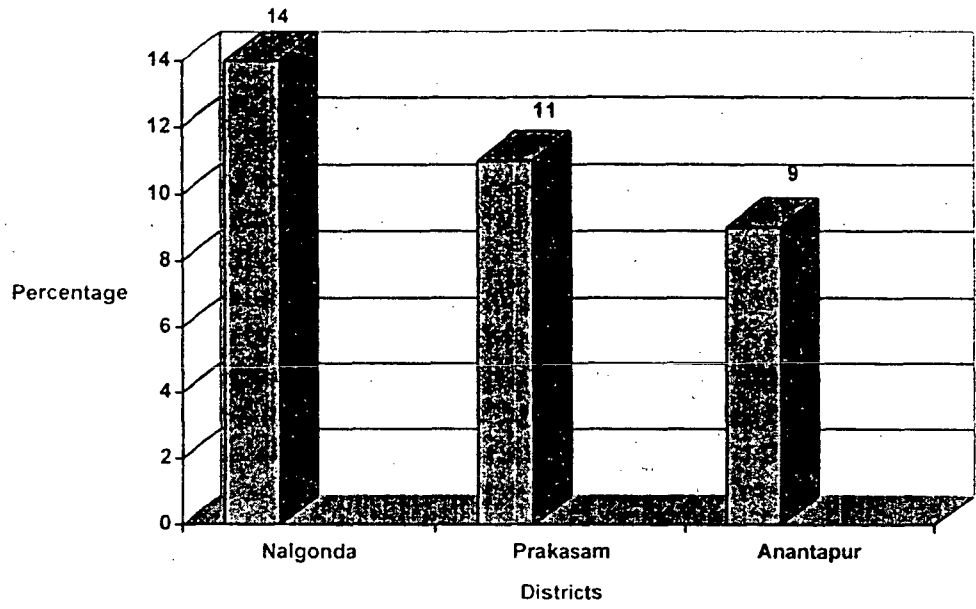
8.12 The level of monthly tariff that the community is willing to pay is presented in the following Table - 8.4 and is graphically represented in the opposite page.

Table 8.4 : Percentage of Sample households willing to pay different levels of monthly tariff

Monthly tariff level (Rs.)	Nalgonda	Prakasam	Anantapur
Upto 10	22	5	-
10 - 25	23	90	100
25 - 50	15	5	-
Depending on local people	40	-	-
Total	100	100	100

8.13 As seen from the above table, the community is willing to pay Rs.10-25 per month for O&M in Prakasam and Anantapur districts while it is spread over in Nalgonda district. In cases where water supply schemes are implemented in exclusively SC habitations, there are serious problems relating to O&M. The Panchayat in SC habitations do not have any resources nor can they raise resources from households as they are exempted from paying any taxes such as house tax, let alone contribution towards O&M of water supply schemes. This affects both quantity and quality of the water supply. In one SC habitation in Prakasam district the President of the Panchayat is an SC woman. She said that the GP does not have any resources to maintain the water supply scheme based on slow sand filter mechanism which requires periodic cleaning, de-weeding, etc. An inspection of the installation revealed that the Pond or SST (Summer Storage Tank) is full of weedy growth and according to villagers there is also silt accumulation. As the Panchayat does not have resources they have not been able to attend to the maintenance of the SST. The SST is not protected against the entry of animals. A clear policy guidelines needs to be evolved, regarding the provision of financial resources to SC habitations.

Table 9.1 - Percentage of Sample Households having Latrine



9.0 SANITATION

9.01 Sanitation is a means of prevention of diseases by eliminating or controlling the environmental factors which forms links in the chain of transmission. Improper disposal of excreta, garbage and waste lead to transmission of diseases.

Sanitary Latrines

9.02 The extent of use of sanitary latrines in the sample habitations is low. This is because of low priority, low affordability, lack of space and traditional beliefs against having latrines within the premises. Also, it depends on the availability of water. In the absence of sanitary latrines, women are put to a lot of inconvenience. They have to go out to fields or open places in the evening to answer nature's call under the cover of darkness.

9.03 The availability of sanitary latrines in the sample households is given in Table 9.1 below and is graphically illustrated in the opposite page.

Table 9.1 : No. of Sample households having Latrines

District	Total Sample HHs	No. of HHs having Latrines	% to Total Sample HHs
Nalgonda	328	47	14
Prakasam	329	36	11
Anantapur	311	29	9

9.04 It is seen from the above table that 14% of the sample households in Nalgonda district have access to individual sanitary latrines, while it is 11% & 9% each in Prakasam and Anantapur districts. In one of the villages in Anantapur district, the latrines were converted into extra rooms for storage!

- 9.05 The Govt. of Andhra Pradesh is providing latrines in rural areas. One of the drawbacks in this programme, is that the incentive or subsidy is paid, only after the completion of the unit. Also, the household has to deposit Rs.500 to the Govt. for having accepted the scheme, before construction. This leads to financial constraints for many of the interested and needy households. This programme is being utilised mostly in the Mandal Headquarter level itself and the acceptance at the GP level is minimal. Our discussions with individuals in several GPs revealed that they were either unaware of the scheme or they were not willing to pay Rs.500/- before the construction of the sanitary latrine. In one of the GPs of Prakasam district, which is exclusively a SC habitation, there are no latrines. The SC households are not in a position to make the initial investment. A special provision has to be made for GPs which are exclusively SC habitations. By contrast, in habitations where there are affluent households, they have built their own latrines without seeking subsidy.

Drainage

- 9.06 Provision of drains is not perceived as a high priority in the sample habitations. With the available funds, patches of drains are seen instead of continuous stretches. This has led to water logging due to waste water disposal.

Health aspects

- 9.07 Uniformly recorded data in a standard format on mortality, incidence of diseases and morbidity is not available. It is only through observation and discussions with community that the health status is analysed.
- 9.08 It is observed that ailments such as fever, throat infections, etc., are common. There are no water borne or water related diseases as explained by the villagers. The only problem that the community is facing, is excess of fluoride content in the water supply. They have opined that because of drinking fluoride water, their energy levels had come down and they were looking old. One of the villagers explained that "my father and grandfather did not give importance to quality of water, but I do not want my children and the coming generation to suffer the same which I have undergone". This statement throws light on how people are badly in need of potable water. Improperly maintained summer storage tanks have led to skin allergies.

10.0 CONCLUSION

10.01 Based on the sample study in three sample districts, the following observations are made :

- There is lack of maintenance of the systems in all the sample habitations.
- Community involvement in the maintenance of schemes is absent. This is a serious problem in habitations which are socially heterogeneous and economically differentiated.
- There is no fixed rules laid down by the respective Grama Panchayats in recovery of tariffs.
- Private House Connections are being encouraged by the Grama Panchayats where MWS schemes are operating.
- Energy charges are fully subsidised by the Government.
- The sanitation programme guidelines seem to restrict the motivation for coming forward to construct Individual Latrines. This calls for review of the guidelines.
- The Gram Panchayat members are hesitant to fix the tariff for Operation and Maintenance of the schemes.
- Water quality problems persists in fluoride zone areas. In other areas, due to lack of maintenance of storage tanks, water quality is affected.
- There is a lack of interaction between the implementing agency and the community. The RWS officials should consult a cross section of people from different castes and class backgrounds to find out problems.
- Participation of community during Planning and Implementation is lacking.
- The Govt. is making temporary arrangements by drilling additional borewells, during scarcity period, instead of making long term sustainable schemes.
- Private House Connections are increasing though the system has not been designed for sustaining it.
- It is difficult to clearly indicate the change in the service levels due to non-availability of yield tests at regular interval so also on the quality of water.
- Lack of knowledge in maintaining the defluoridation units.

10.02 In most of the habitations, the worst affected are SC households and poorer households of other caste groups. As mentioned earlier, the SC Hamlets tend to be away sometimes one to one and a half kms from the upper caste locality in the village. Generally the OHSR is located near the upper caste locality. The SC Hamlet becomes the tail-end of the distribution system, as a result they do not get adequate water. Wherever possible either a separate OHSR should be built for SC Hamlet or the location of the OHSR should be such that it does not lead to deprivation of poorer sections.

10.03 In exclusively SC habitations, there must be a provision to provide resources towards operation and maintenance of the water supply system and also for building sanitary latrines. Steps should be taken to see that raw water is not supplied.

10.04 A water users' committee or maintenance committees should be formed and legitimised. It may be a good idea to elect office bearers of these committees at the time of Panchayat elections so that they acquire legitimacy. Women should be encouraged to contest for the elections for the positions in these committees.

10.05 The district Panchayat department should organise periodic meetings between RWS officials and village community members wherever possible. This will help in building rapport between people and RWS officials. As mentioned earlier, even the location of an OHSR becomes a contentious issue. The RWS officials should combine the criteria of technical feasibility and social acceptability. This involves active contact with people belonging to different castes and classes to arrive at consensus.

10.06 Short term orientation courses on social dynamics of rural society may help in increasing the level of understanding, efficiency and competence of the implementing personnel as they have to deal with different sections of the village communities on the one hand and the political executives on the other.

10.07 In Anantapur district, in one of the Panchayats people wanted a water connection at the village Temple. A place of worship - temple / church / mosque is the site of congregation of all sections of a community. It is advisable to provide a stand post at the places of worship wherever there is a felt need. This is a service to the community as a whole.

RAJIV GANDHI NATIONAL DRINKING WATER MISSION**STATUS OF CENTRALLY SPONSORED RURAL WATER SUPPLY AND SANITATION
PROGRAMME IN ANDHRA PRADESH - SAMPLE STUDY****HABITATION PROFILE****1.0 IDENTIFICATION**

1.1	District	
1.2	Taluk	
1.3	Panchayat	
1.4	Habitation	

2.0 GENERAL**2.1 Population (1991)**

Total	Male	Female

2.2 Different Caste / Community Groups in the Village

Caste / Community	No. of Households

3.0 WATER SOURCES, DISTRIBUTION AND STATUS

3.1	Type of Water Sources in the Village (Surface Water - 1 ; Ground Water - 2 ; Both - 3)	
3.2	Type of Water Distribution (Piped Water Supply - 1 ; Mini Water Supply - 2; Hand Pump - 3 ; Open Wells - 4 ; Surface Water - 5)	

3.3 Distributing Points and Status

Type of Point	No. of Points	No. of Working Points	Discriminated groups	Quality perception	Condition of Installation	Condition of Surroundings
A	B	C	D	E	F	G
Standpost						
Cistern						
Hand Pump						
Open Well						
Others						

Note : D : Specify Groups;

E : Good - 1; Brackish - 2; Fluoride - 3; Smell - 4; Muddy - 5; Others(specify) - 6;

F : Good - 1; Mal-construction - 2; lack of Maintenance - 3; Both (2&3) - 4;

G : Good - 1; Human Activities - 2; Cattle - 3; Both (2&3) - 4;

3.4 What are the reasons for not working ?

4.0 Present Collection System

4.1	No. of Private House Connections (PHC)	
4.2	Present water charge collection for PHC (Monthly - 1; Bimonthly - 2; Half Yearly - 3; Yearly - 4)	
4.3	Amount of Tariff fixed for PHC (Rs.)	
4.4	When was this amount revised (Year)	
4.5	Collection for Public Standposts, Mini Water Supply (MWS) and Hand Pump (HP) - (Yes - 1 /No - 2)	
4.6	If Yes, collection pattern (Monthly - 1; Bimonthly - 2; Half Yearly - 3; Yearly - 4)	
4.7	Amount (Rs.) of Tariff fixed for	
	Public Standpost	
	MWS	
	HP	
	ALL	
4.8	When was this amount revised (Year)	
4.9	Who collects Tariff	
4.10	Is collection of Tariff regular (Yes - 1 / No - 2)	
4.11	If No, Give reasons	

5.0 Operation and Maintenance of Water Supply

5.1	Who is responsible for Maintenance and Repair of the System ?		
5.2	Are there caretakers/pump operators at the habitation level (Yes -1/No -2)		
	HP		
	MWS		
	PWS		
5.3	If Yes, No. of caretakers/pump operators	Male	Female
	HP		
	MWS		
	PWS		
5.4	Do people know caretakers/pump operators (Yes-1/No-2)		
5.5	Who maintains water installations in the absence of caretakers/pump operators		
5.6	Does community take action in repair and maintenance of the system (Yes - 1/No - 2)		
5.7	How frequently Mechanics & Engineers from sub-division visit the village ? (Once a Week - 1; Once a Month - 2; Once in 6 Months - 3; Rarely - 4; Never - 5)		
5.8	Is water testing being done at regular intervals ? (Yes - 1/No - 2)		

5.9 Frequency of water releases in case of PWS/MWS

Time	Number of hours water release	
	Summer	Other Seasons
Morning		
Evening		

6.0 SANITATION

6.1	Caste / Religion	No. of households having latrines

6.2	No. of households given subsidy	
	Central Scheme	
	State Scheme	
	Others	
6.3	Demand for individual latrines	
6.4	Are there community latrines in the habitation (Yes-1/No-2)	
6.5	If Yes, No. of community latrines	
6.6	Is it being used regularly (Yes - 1/No - 2)	
6.7	If No, Why ? (Not Clean -1; Dilapidation - 2; Water not Available - 3; No Privacy - 4; Not Accessible - 5)	
6.8	What are the popular places for defecation ? (Near Water Points - 1; Elsewhere in the settlement - 2; Outside the settlement -3)	

6.9 What are the problems associated with the above ?

**STATUS OF
CENTRALLY SPONSORED RURAL WATER SUPPLY
AND SANITATION PROGRAMME
IN ANDHRA PRADESH**

A SAMPLE STUDY

HOUSEHOLD QUESTIONNAIRE

RAJIV GANDHI NATIONAL DRINKING WATER MISSION

**OM CONSULTANTS (INDIA) PVT. LTD.
BANGALORE**

CONFIDENTIAL

HH.SL.NO.

--	--	--	--	--

RAJIV GANDHI NATIONAL DRINKING WATER MISSION

**STATUS OF CENTRALLY SPONSORED RURAL WATER SUPPLY AND SANITATION
PROGRAMME IN ANDHRA PRADESH - SAMPLE STUDY**

HOUSEHOLD QUESTIONNAIRE

1.0 IDENTIFICATION

1.1	District	
1.2	Taluk	
1.3	Panchayat	
1.4	Habitation	

2.0 GENERAL PARTICULARS

2.1	Name of the Head of Household			
2.2	Name of the Respondent			
2.3	Relationship with Head of Household (see relationship code)			
2.4	Sex (Male - 1; Female -2)			
2.5	Religion (Hindu -1; Muslim - 2; Christian - 3; Others - 4)			
2.6	Caste (see caste code)			
2.7	Tribe			
2.8	Total Number of Members in the Household	Male	Female	Total
2.9	Income Group			

*Income Group (Rs) : < 1,000 - 1; 1,001 to 2,500 - 2; 2,501 to 5,000 - 3; 5,001 to 7,500 - 4;
7,501 to 10,000 - 5; 10,001 to 15,000 - 6; 15,001 to 25,000 - 7;
25,001 to 50,000 - 8; more than 50,000 - 9;*

4.0 ANNUAL INCOME

SL. NO.	SOURCE	AMOUNT (Rs.)
1	Land	
2	Livestock	
3	Agriculture Labour	
4	Non Agricultural Labour	
5	Artisan	
6	Service - Private	
7	Service - Government	
8	Others	
9	Total	

5.0 WATER

5.1 Different Water Sources used by the Household and Distance

Season	Purpose					
	Cooking / Drinking		Other Domestic Purpose		Livestock	
Summer	Source	Distance	Source	Distance	Source	Distance
Other Season						

Source Code :

Tap (own) - 1; Public Stand Post - 2; Mini Water Supply Cistern - 3; Hand Pump - 4; Community Well - 5; Own Well - 6; Others Well - 7; River - 8; Canal - 9; Tank - 10; Irrigation Well - 11;

Distance Code :

0 (with in the House) - 1; less than 50 Mtrs - 2; 50 to 100 Mtrs - 3; 101 to 200 Mtrs - 4; 201 to 500 Mtrs - 5; 501 Mtrs to 1 Km - 6; more than 1 Km - 7;

5.2 What is the Quality and Colour of different Water Sources used ?

Source	Quality	Colour

Quality Code :

Good (sweet) - 1; Bnakish (salt) - 2; Fluoride - 3; Smell - 4; Others - 5;

Colour Code :

Clear - 1; Muddy - 2; Brown - 3; Others (specify) - 4;

5.3 Number of Trips made and average time taken per trip by the household members to collect water

Time	Summer		Other Season	
	No. of Trips	Time*	No. of Trips	Time*
Morning				
Afternoon				
Evening				

Code for Time : < 15 Minutes - 1; 15 to 30 Minutes - 2; 30 Minutes to 1 Hour - 3; > 1 Hour - 4;

5.4 What are the problems In the present Water Supply Systems ?

5.5 What improvements can be made to the present Water Supply Systems?

5.6 What do you think would be a better system ?

6.0 COMMUNITY PARTICIPATION

6.1 Did any of the members of your household involved during the Planning & Implementation of the Scheme ? YES - 1 / NO - 2

6.1.1 If Yes, Describe.

6.2 Did you contribute towards the Capital Cost of the scheme ? YES - 1 / NO - 2

6.2.1 If yes, how did you contribute, Describe.

6.3 Is there a fixed rate for operation and maintenance of the present water supply system ? YES - 1 / NO - 2

6.3.1 If Yes, are you paying ? YES - 1 / NO - 2

6.3.1.1 If Yes, how much are you paying ?

6.3.2 If No, what are the reasons for non payment ?

6.4 If better water supply system is installed, will you contribute towards the Capital Cost to be incurred ? YES - 1 / NO - 2

6.4.1 If yes, how will you contribute ?

6.5 If the rate for operation and maintenance of the system is fixed, will you pay the fixed rate ? YES - 1 / NO - 2

6.5.1 If yes, how much will you pay ?

7.0 SANITATION

7.1	Is there a Latrine in your house ? (Yes - 1 / No - 2)	
7.2	If Yes, mention the type of Latrine (Pit Latrine - 1; Septic tank - 2; others - 3)	
7.3	When was it constructed ?	
7.4	Have you received subsidy for the latrine from the Government ? (Yes - 1 / No -2)	
7.5	Where is the Latrine located ? (Attached to House - 1; back Yard - 2; Front Portion of the House - 3)	
7.6	Who are using the Latrine ? (All - 1; Women only -2; Children only - 3; Men only - 4; Women & Children - 5; Women & Men - 6; Men & Children - 7; None - 8)	
7.7	Is any member of your house not using the Latrine ? (Yes - 1 / No - 2)	
7.8	If Yes, What is the reason for non usage ? (Not in the Habit - 1; Prefer Open Space - 2; Meant for Women only - 3; Water Scarcity - 4)	

7.9 If Latrine is not available in the house where do the household members go for defecation ?

	Men	Women	Children
Place			

Place Code :

**Open Ground - 1; Agricultural Fields - 2; Road Side - 3; Dilapidated Structures - 4;
Near Surface Water Source - 5; Community latrine - 6; Neighborhood latrine - 7;**

7.10 What are your views in having a Latrine in your house ?

Investigators Name

Date

LIST OF SELECTED HABITATIONS

Sl. No.	Habitation	Panchayat
A	NALGONDA DISTRICT	
1	Sarvaram	Tipparty
2	Ram Nagar	Tipparty
3	Yellareddyguda	Narketpally
4	Regatta	Kanagal
5	Kanagal	Kanagal
6	Donepamula	Chandur
7	Tallavellamula	Chityal
8	Nereda	Chityal
9	Puligilla	Valigonda
10	Valigonda	Valigonda
11	Singram	Rajapet
12	Nemila	Rajapet
13	Mutakodur	Yudagirigutta
14	Velpupalli	Turkapalli
15	Mailaruguda	Y'Gutta

Annex - III (Contd..)

Sl. No.	Habitation	Panchayat
B	PRAKASAM DISTRICT	
1	Sankuvanigutta	Kottapatnam
2	Ulich	Ongole
3	Karavadi	Ongole
4	Peddivaripalli	Eddanapudi
5	Adusumilli	Parchur
6	Kunkalamarru	Karamchedu
7	Gotlagattu	K K Mitla
8	Katragunta	K K Mitla
9	K V Palem	Karamchedu
10	Veerayapalem	Darsi
11	Peddaraveedu	Peddaraveedu
12	Kondepalli	Markapuram
13	Bhbupathipalli	Markapuram
14	Ravipadu	Cumbum
15	Lanjarlakota	Cumbum

Sl. No.	Habitation	Panchayat
C	ANANTAPUR DISTRICT	
1	B K Samudram	B K Samudram
2	Kottapalli	B K Samudram
3	P...Palli	Raptadu
4	Talupur	Atmakur
5	Golla	Kalyandurg
6	Borampalli	Kalyandurg
7	Narinja G.Palli	Belugappa
8	74. Udegolam	Raydurg
9	Netrapalli	Gummagatta
10	K.V.Palli	Penugonda
11	Patarlapalli	Roddam
12	Chalakuru	Somandepalli
13	Dhanapuram	Parigi
14	Bullasamudram	Madakasira
15	B.Manepalli	Lepakshi