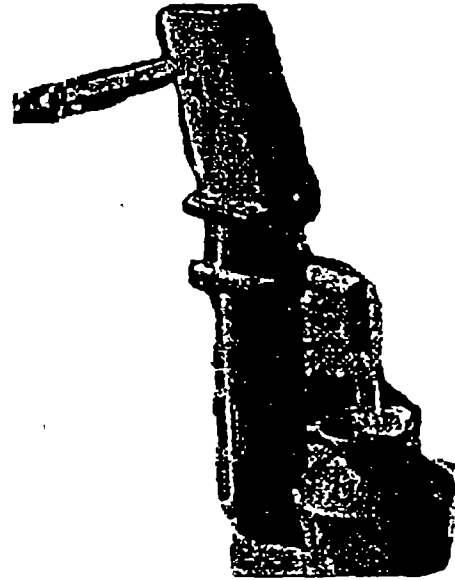


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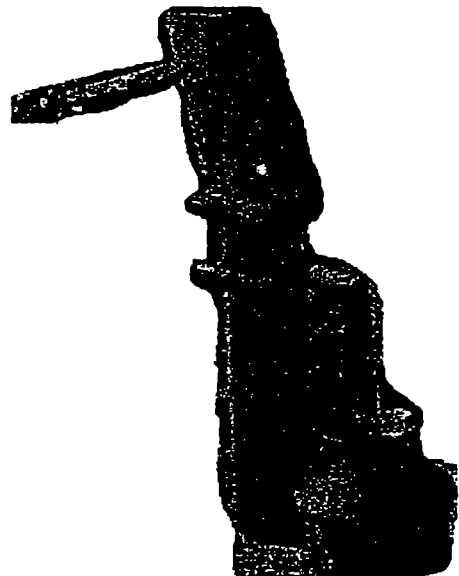
**Rajiv Gandhi National Drinking Water Mission  
Under Ministry of Rural Areas and Employment,  
Government of India**

**Conducted by**

*Department of Sanitary Engineering*  
**All India Institute of Hygiene and Public Health  
110, Chittaranjan Avenue  
Calcutta - 700 073.**

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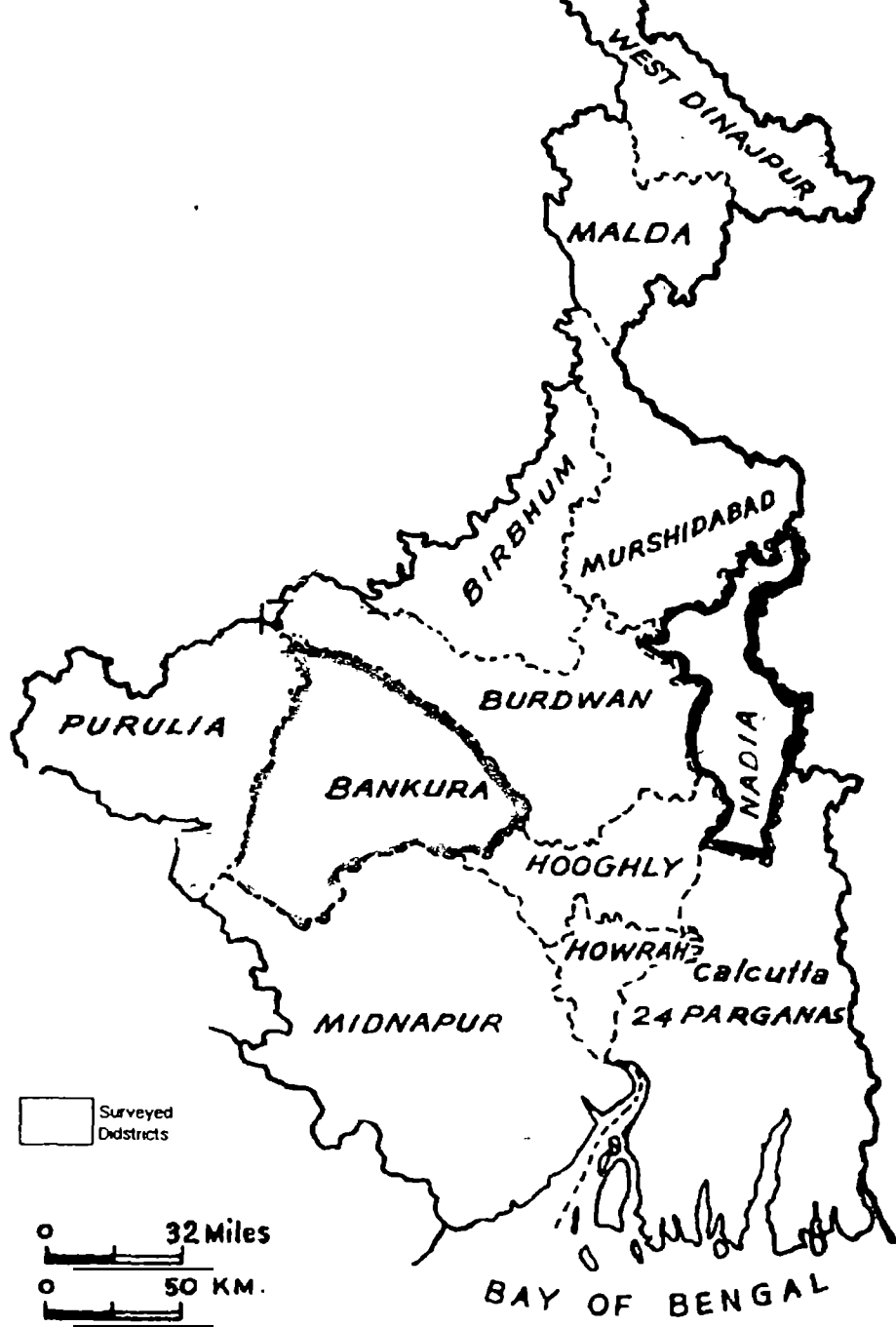
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Jalpaiguri

Bankura

Nadia

**Objectives of the study :**

1. *To assess the present coverage status of rural water supply and sanitation with a special emphasis on the coverage of backward classes / areas.*
2. *To evaluate the safe water supply coverage in areas where quality of drinking water was a major problem.*
3. *To monitor and evaluate peoples' response and perceptions about the coverage of rural water supply and sanitation.*
4. *To evaluate the community involvement in the planning and implementation of water supply schemes.*
5. *To investigate the operation and maintenance status of water supply schemes.*
6. *To monitor and evaluate contribution by the users in capital and recurring cost on rural water supply schemes.*
7. *To monitor current knowledge, attitude, practice of villagers on water supply & sanitation*





community regarding water supply situation in the respective villages and physically inspected the water sources used by the villagers. The main focus of collecting the informations was as follows :

- ◆ Actual Status of Drinking water sources (Tubewells,Dugwells, Public Stand Post, Springs & Others) : accessibility of the source & distances of the sources of water.
- ◆ Availability of water - adequacy and dependability of water throughout the year.
- ◆ Water quality issues - people's perceptions on the quality of water- potable or non-potable, sweet or saline, iron or other chemical quality problem.
- ◆ Testing of water - whether it is done at regular intervals or not.
- ◆ Operation and Maintenance of Rural Water Supply Schemes - cost recovery & prospects for additional cost recovery.
- ◆ Measures taken for the cleanliness of the handpump.
- ◆ Status of breakdown and repair of water sources - percentage working / not working , reasons for not working, down-time analysis.



*Parishad, Panchayat etc.*)

- ◆ Coverage by latrines - whether households are having latrine, whether all of them use it or not, what type of latrine they are using, their contribution for the construction of latrine; whether they like to have latrines in near future and whether they are agreeable to contribute for capital investment / labour for the construction of latrine; what type of latrine they would like to have; the reasons for not having latrine.
- ◆ Household treatment by the public - either by boiling or filter or addition of some chemicals like bleaching powder, potassium permanganate, alum, lime etc.
- ◆ Collection of water by men, women and children.
- ◆ Storage of drinking water inside the house and the practice to get water from the storage pot; type of material used for storage and collection of water.
- ◆ Hygiene of the family - how it is maintained by cutting nails regularly, by cleaning clothes, by washing hands with soap and water or otherwise, by regular bath, wearing shoes or chappals etc.
- ◆ Status of disposal of liquid waste by surface drain, soakage pit etc.



consultation with the officials of Public Health Engineering Dte., Govt. of West Bengal. Basic objective in selecting the above three districts was to have reflection of the status of Rural Water Supply & Sanitation in West Bengal.

The Jalpaiguri district is on the northern part, the Bankura district is on the western part and the Nadia district is on the eastern part of West Bengal. Their appropriate locations including headquarters are shown in Table No. 1

Location of the 3 districts under study

Table No. 1

District	Longitude	Latitude	Headquarters
<i>Jalpaiguri</i>	92°E	27°N	<i>Jalpaiguri</i>
<i>Bankura</i>	87°E	24°N	<i>Bankura</i>
<i>Nadia</i>	89°E	23°N	<i>Krishnanagar</i>

The average rainfalls in Jalpaiguri, Bankura and Nadia are 2000 mm, 1000 mm and 1000+mm respectively. The soil in Bankura is mostly laterite, but it is alluvial in the other two districts. The main agricultural products are Paddy & Jute in Bankura and Nadia district. But Jalpaiguri is rich in tea production. This district also produces some paddy.



ST constituting 16604 and 4273 i.e. 48.5% and 12.5% respectively.

The list of 5 villages as surveyed in Madarihat block has also been presented in Table No. 2.3. The 5 villages in this block cover total population of 16778 with SC and ST constituting 2332 and 5081 i.e. 13.9% and 30.3% respectively.

In Jalpaiguri district, in 15 villages total 281 families were surveyed (Table No. 5.1). That consisted of 122 SC families, 48 ST families, 28 OBC families and 83 general families. Out of total 1510 population, male, female and children 559, 490, 461 respectively.

In Bankura district, 5 nos of blocks namely Chatna, Sonamukhi, Gangajalghati, Bankura - II and Raypur - I were taken up for survey. The list of total 15 villages, 3 in each block has been presented in Table No. 3.1, 3.2, 3.3 & 3.4, 3.5.

In Chatna block, the 3 villages cover total population of 4244 with SC and ST constituting 1980 and 226 respectively, i.e. 46.7% and 5.3% respectively.

In Sonamukhi block, 3 villages cover total population of 2329 with SC and ST constituting 824 and 474 respectively, i.e. 35.4% and 20.4% respectively.

In Gangajalghati block, 3 villages cover total population of 8767 with SC and ST constituting 2330 and 650 respectively, i.e. 26.6% & 7.4% respectively.





and 111 general families. Out of total 1954 population male, female and children were 796, 666 and 492 respectively.

In Nadia district, 4 nos. of blocks namely Tehatta II, Santipur, Kaliganj and Chakdah were taken up for survey. The list of total 15 villages in these 4 blocks is tabulated in Table No. 4.1, 4.2, 4.3 & 4.4.

In Tehatta II block the 3 villages cover total population of 12730 with SC and ST constituting 4293 and 515 respectively i.e. 33.7% & 4.0% respectively.

In Santipur block, the 4 villages cover total population of 18115 with SC constituting 13442 i.e. 74.2%.

In Kaliganj, the 4 villages cover total population of 24410 with SC & ST constituting 5629 & 1277 respectively. i.e. 23.1% & 5.2% respectively.

In Nadia district, in total 15 villages 234 families were surveyed as per Table No. 5.3 out of which there were 92 SC families, 8 ST families 47 OBC families, 87 general families. Out of total 1402 population in the surveyed families male constituted 581, female 496 and children 325.



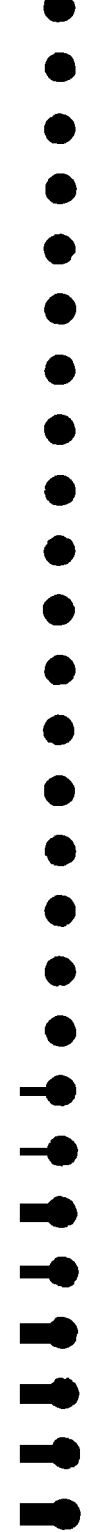
The majority is daily labourers.

From Table No. 7, it is seen that in most families there is only one earning members, a few families are having two, three or even upto six earning members.

From Table No. 8, it is seen that majority of the families have monthly income in between Rs. 500/- to Rs. 3,000/-. However, monthly income of around Rs. 5,000/- in a few family was also detected during the survey.

Table No. 9.1, 9.2 & 9.3 represent the water usage pattern of the three districts of West Bengal. Here we find in district Jalpaiguri, that majority of the people (60%) use water of handpump or public hydrants for drinking purpose. A good number of people use (40%) dugwell water for drinking purpose. In the district of Bankura, 52% of people use water from hand pump or piped supply for drinking purposes; 35% use dugwell water and still about 14% people use pond and river water for drinking. In district Nadia, the picture however is different. In this district 90% use handpump water and public hydrants for drinking, a few (9.4%) use dugwell water. But it is highly noted that river water & pond water is not used by anyone for drinking in this district.

In the said tables, it is also seen that most of the people (58%) use water of dugwell for cooking purpose in the district Jalpaiguri. A few (41%) takes



In the said tables it is seen that people use all sources for washing utensils and clothes & bathing purposes whichever source is available nearby. In Jalpaiguri district dugwell water is extensively used for washing utensils & clothes and bathing. But in Bankura district, we find river and pond water is extensively used for washing utensils and clothes and bathing. Again, in Nadia district handpump water is much used for washing utensils, clothes and bathing.

For latrine use, we find pond water is mostly used in general in 3 districts. But the use of dugwell & handpump is also not less in the districts. Handpump is extensively (51%) used in Nadia district for this purpose.

Table No. 10 shows the details of water sources (Public) in the surveyed villages of West Bengal, wherein we find the major source is handpump & public hydrants with piped water supply system.. But in Jalpaiguri district, the public dugwell is also of appreciable quantity. (43%).

Table No. 11 replicates the yearwise installation of water sources for each district. It is seen that construction of public dugwells were limited after 1985 and the hand pump fitted tubewells were constructed in large numbers in last 15-20 years. It is also interesting to note that some of the tubewells which were constructed before 1980 is still in service. Piped water supply systems also started recently after 1991 in some places.



Table No. 13 shows the depth of dugwell (both Public & Private) in 3 districts. Mostly they are within the depth range of 8 m - 15 m; but dugwells of greater depth have been also observed in Jalpaiguri district.

Table No. 14 shows the perception of the users about the adequacy of water for different purposes. But in Nadia district, all villagers responded that they are getting adequate water for all purposes. But in Bankura district, people are not getting adequate water even for drinking and cooking; thus they are forced to use the river and pond water for drinking and cooking. They are not getting adequate water for washing clothes and utensils and bathing, though they are using mostly pond water and river water for this purpose; because in summer seasons there is less water in pond or river and sometimes they become completely dry. In Jalpaiguri district, people are not getting adequate water for all purposes. There is scarcity of water for washing clothes and utensils particularly in summer season when the dugwells and ponds become dry.

The distance of the water sources (Public Handpump or Dugwell) from the houses in 3 districts have been tabulated in Table No. 15, wherein we find that about 50% of the houses were within 50 m distance; about 44% of the houses are within 51-200 m distance; 3% of the houses are within 201 -500 m distance and 2% of the houses are beyond 500 m distance. It has been also noted from the





- The sources are too far.*
- Pump is not working due to damage / wear of some parts*
- Platform is not there or it is badly damaged causing stagnation of excess of water.*
- Sometimes the sources (particularly Dugwell) get dry in Summer Seasons.*
- Quality of water is also not acceptable in some cases.*

The villagers were interviewed to give their opinion about the nature of water they get, which has been reflected in Table No.17. Most of them responded that the water is of good taste, sweet and potable, while some of them(18.8%) opined that there is Iron Problem or Saline Problem(0.7%). Nobody responded for non potable.

In this report six water testing reports for six villages, two in each districts are enclosed (Vide Table No.18.1, 18.2 & 18.3) . From the result of water test reports it is seen that iron concentration is very high in all districts ranging from 1.80 to 6.0 mg/l as Fe. Fluoride is available to some extent (0.84 mg/l as F),in Bankura district.

Total dissolved solids are high in Nadia district and partially high in Bankura district. pH is on lower side in Bankura district. Turbidity is little high in Bankura and Jalpaiguri district. Total Hardness and Calcium Hardness is on the higher side in Nadia district. Total Hardness is little high in jalpaguri district. The



the five categories of conditions the hygienic condition is either good or satisfactory around the water sources in majority cases. A few are bad and a very few are very good or very bad. The figures are shown in Table No. 19.

Whenever the villagers were asked whether they take measures to clean the H. P. site, we get positive answers in about 65% cases and negative answer in about 35%cases. The detail figures are shown in Table No. 20.

The frequency of water supply in piped water supply has been evaluated and it has been observed that nearly 4 hrs./ day are supplied through public stand posts in morning, afternoon and evening time in Jalpaiguri & Nadia districts. But in Bankura district only two hours per day are supplied. One hour in the morning and one hour in the evening. The details have been shown in Table No. 21.

To ascertain the present status of Handpump fitted tubewell or Public Hydrants connected with Piped Water Supply System the villagers were asked to give their opinions, whether it is functioning good or not functioning or erratic functioning; or it is difficult or ordinarily satisfactory. The surveyor also gets confirmed on site inspection. The present status is shown in Table No. 22. Except in Jalpaiguri district, the status is not good. Mostly, they are satisfactory. In some cases, they are difficult also. In Bankura district, some sources(39 nos.) are not functioning also. In many cases, the water level goes down and in such cases India Mark-II handpump cannot be reinstalled easily. Again the repair of such



Department, Govt. of West Bengal. No fees are charged to the villagers for the maintenance of water sources.

An enquiry was also made for the involvement of the beneficiaries in the existing rural water supply scheme by way of planning, site selection, contribution of capital investment, donation of land or labour etc. The result is tabulated in Table No. 23. In many cases (about 15%) the villagers were consulted for site selection for H. P. or dugwell. The labour was donated by 45 nos. of houses in Bankura district. A few villagers (8 Nos. in Bankura district) donated land, but nowhere capital investment was contributed by the villagers. But about 80% of the beneficiaries were not involved at all.

Again, the beneficiaries were asked whether they like to be involved in planning or site selection or whether they are agreeable to contribute capital investment, to donate land or labour in future rural water supply scheme. Interesting comments were available as shown in Table No. 24. About 48% of the villagers are willing to be involved in planning and site selection in future R. W. S. scheme. About 69% of the villagers are agreeable to offer free labour but none agreeable to donate land. About 43% of the villagers are ready to contribute capital investment if better rural water supply scheme is implemented in their villages. About 4% of the villagers are willing to donate land. About 23% of the villagers are not willing to be involved in any future R. W. S. scheme.



agreeable to pay water tax, it is found that 50% of the people are agreeable to pay water tax varying from Rs. 1/- to Rs/ 20/- for operation and maintenance. The figures are tabulated in Table No. 25.

Regarding the status of latrine in the villagers it is a not a good picture. About 35% of houses have latrine in the form of septic tank, pour flush, or dugwell latrine. Table No. 26 represents the latrine status. Out of 3 districts Jalpaiguri is having latrine in 45% of the houses and in Nadia 57% of the houses. 65% of the houses have no latrine. But most of the villagers (82%) are willing to have their own latrine. Almost all (91.2%) agreed to contribute labour, many (39.1%) agreed to contribute labour and capital to some extent and only a few (8.8%) do not agree to contribute either labour or capital for construction of latrine. This is represented in Table No. 27. About 48% of the willing villagers like to have pour flush latrine, 15.5% like to have septic tank and 22% would like to have dugwell and the rest for borehole type of latrine. This is represented in Table No. 28.

When enquired about the reasons for not having latrine we find 17% of the villagers say they are too poor to construct. 52% of the villagers say they are habituated in the open air defecation and there is no problem for them as there is plenty of land and there is no need of latrine for them. Only 25% of the villagers





treating water at home, mostly by boiling. They add bleaching powder time to time in their private wells. The water from the hand pump or dugwell or Public Hydrants is mainly collected by women (vide) Table No. 31. After collection they keep the water in the collection container in 41.3% cases; or transfer to another container in 58.7% cases (vide Table No. 32). They get the drinking water from the storage vessel directly by pouring or by the container with / without handle (vide Table No. 33.). About 24% of people are in unhygienic habit in this respect. Mostly (50%), the villagers use metallic containers for collection and storage of water though plastic or earthen materials are also used for this purpose (vide Table No. 34). They are hygienic by covering the storage container (in 92.5% cases (vide Table No. 35).

The personal hygiene is to some extent good. They take regular bath and cut their nails in almost regular way (vide Table No. 36).. They wash their hands after defecation with water only in 44% cases. Only a few (12%) use soap for washing (vide Table No. 37). They wash their hands before eating at least with water (vide Table No. 38). The practice of wearing chappals or shoes is in 72% cases (vide Table No. 39)..



Generally, we find the cloth and skin of the respondent is clean (vide Table No. 42). Most of the villagers(65%) have idea about health problems on drinking pond or river water (vide Table No. 43).

Most of the families(55%) suffered from some water borne diseases (vide Table No. 44).





**List of Villages Surveyed in Jalpaiguri District of West Bengal****Block - Rajganj**

	<b>Name of Village</b>	<b>SC</b>	<b>ST</b>	<b>Total Population</b>	<b>No. of Water Sources</b>	<b>Status</b>
1	Panikuri	4673	52	5921	12	PC
2	Sikharpur	6087	2369	7221	17	PC
3	Sukhari	9902	121	24960	91	PC
4	Kamarbhita	3783	11	1913	12	PC
5	Kukurjan	4235	49	6856	21	PC
		<u>28680</u>	<u>2602</u>	<u>46871</u>		

Table No. 2.1

**Index :**

- FC      ♦ Fully Covered
- PC      ♦ Partially Covered
- NC      ♦ Not Covered



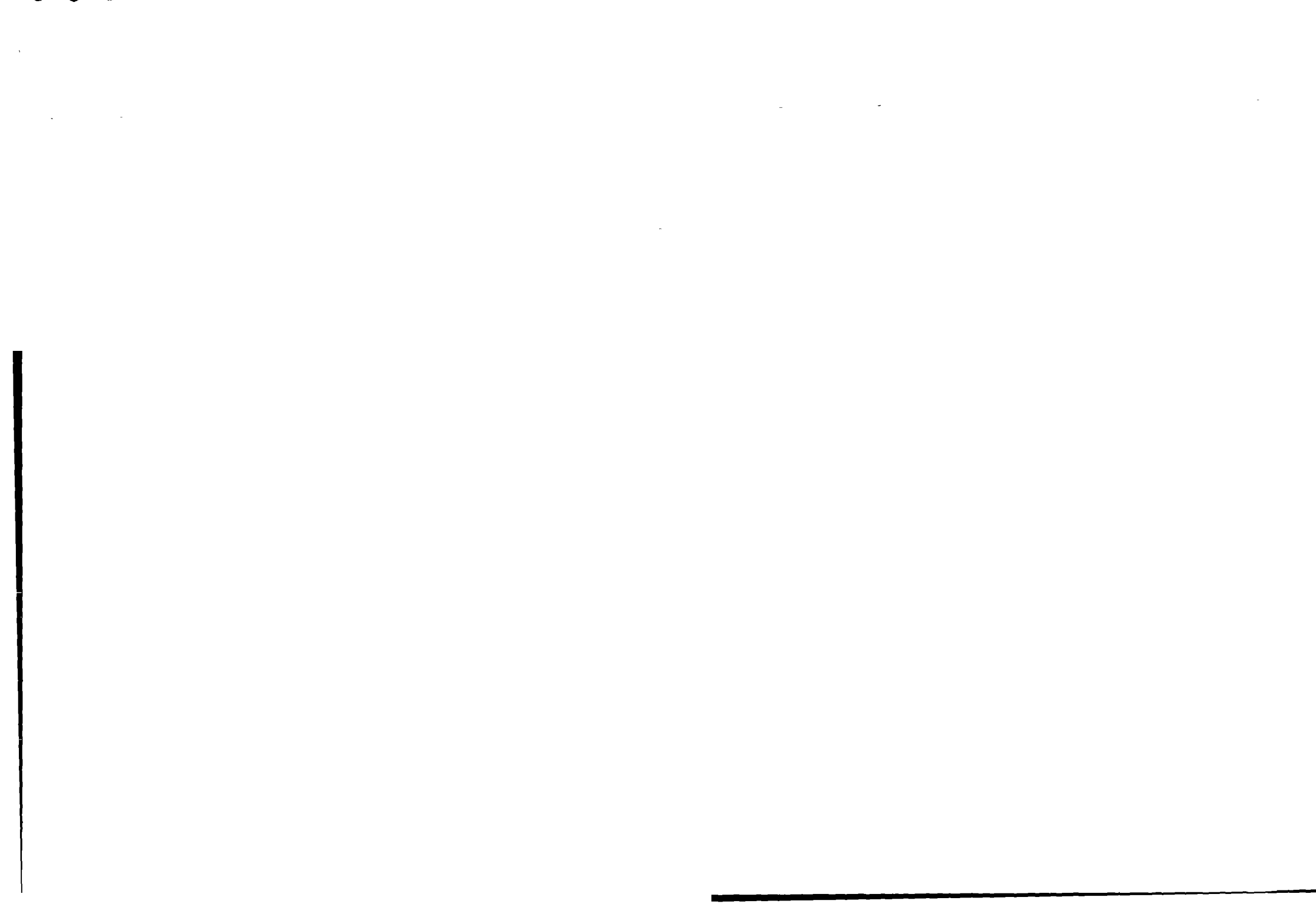
**Block - Malbazar**

	Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1	Lataguri	2149	596	7400	61	FC
2	Odlabadi	548	708	2200	10	FC
3	Karanti	5856	1211	9527	45	FC
4	Rajdanga	2571	1578	7640	37	PC
5.	Chakmoulani	5480	180	7469	23	FC
		<u>16604</u>	<u>4273</u>	<u>34236</u>		

Table No. 2.2

**Index :**

- FC --- -> Fully Covered
- PC --- -> Partially Covered
- NC --- -> Not Covered





**Block - Madarihat**

	<b>Name of Village</b>	<b>SC</b>	<b>ST</b>	<b>Total Population</b>	<b>No. of Water Sources</b>	<b>Status</b>
1.	Lankapara Tea Garden	1314	1810	5465	24	PC
2.	Ramjhara	409	1075	3640	15	FC
3.	Islamabad	131	178	2919	0	NC
4.	Uttar Sishubari	163	850	2106	7	PC
5.	Sishujhomra	315	1168	2648	9	PC
		<u>2332</u>	<u>5081</u>	<u>16778</u>		

Table No. 2.3

**Index :**

- FC      ▶ Fully Covered
- PC      ▶ Partially Covered
- NC      ▶ Not Covered



**List of Villages Surveyed in Bankura District of West Bengal**

**Block - Chatna**

	<b>Name of Village</b>	<b>SC</b>	<b>ST</b>	<b>Total Population</b>	<b>No. of Water Sources</b>	<b>Status</b>
1.	Bindna	480	44	1040	16	FC
2.	Ghoramuli	658	102	1290	7	FC
3.	Arrah	842	80	1914	11	FC
		<u>1980</u>	<u>226</u>	<u>4244</u>		

Table No. 3.1

**Index :**

- FC -----▶ Fully Covered
- PC -----▶ Partially Covered
- NC -----▶ Not Covered



**Block - Sonamukhi**

	Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1	Burangari	-	320	320	6	FC
2	Manikbazar	639	122	1363	20	FC
3	Natun Balarampur	185	32	646	10	FC
		<u>824</u>	<u>474</u>	<u>2329</u>		

Table No. 3.2

**Index :**

- FC      • Fully Covered
- PC      • Partially Covered
- NC      • Not Covered



Block - Gangajalghati

Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1 Gobindpatti	750	400	4500	14	PC
2 Nabagram	1020	250	3567	21	FC
3 Khata	560	-	700	8	FC
	<u>2330</u>	<u>650</u>	<u>8767</u>		

Table No. 3.3

Index :  
 FC Fully Covered  
 PC Partially Covered  
 NC Not Covered





**Block - Bankura - II**

	<b>Name of Village</b>	<b>SC</b>	<b>ST</b>	<b>Total Population</b>	<b>No. of Water Sources</b>	<b>Status</b>
1.	Bikna	939	15	2748	25	FC
2.	Keshmakol	1500	150	2850	17	FC
3.	Belboni	562	-	1450	3	PC
		<u>3001</u>	<u>165</u>	<u>7048</u>		

Table No. 3.4

**Index :**

- FC      ▶ Fully Covered
- PC      ▶ Partially Covered
- NC      ▶ Not Covered



**Block - Roypur - I**

	<b>Name of Village</b>	<b>SC</b>	<b>ST</b>	<b>Total Population</b>	<b>No. of Water Sources</b>	<b>Status</b>
1	Asambani	620	-	620	1	PC
2	Dhaw	620	-	982	3	PC
3	Machabor	-	400	400	2	FC
		<u>1240</u>	<u>400</u>	<u>2002</u>		

Table No. 3.5

**Index :**

- FC      ▶ Fully Covered
- PC      ▶ Partially Covered
- NC      ▶ Not Covered



**List of Villages Surveyed in Nadia District of West Bengal**

**Block - Tehatta II**

	Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1.	Komthana	184	407	1566	1	PC
2.	Natipata	1170	-	5989	66	FC
3.	Barnia	2939	108	5175	6	PC
		<u>4293</u>	<u>515</u>	<u>12730</u>		

Table No. 4.1

**Index :**

- FC ———▶ Fully Covered
- PC ———▶ Partially Covered
- NC ———▶ Not Covered



**Block - Santipur**

	Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1.	Baganchara	4511	-	5498	6	PC
2.	Bagdebitala					
3.	Nushingapur	7244	-	8501	13	
4.	Ghoralia	1692	-	3816	7	PC
		<u>13447</u>	<u>-</u>	<u>18115</u>		

**Table No. 4.2**

**Index :**

- FC -----> Fully Covered
- PC -----> Partially Covered
- NC -----> Not Covered





**Block - Kaliganj**

	Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1	Bhurulia	337	162	2278	5	PC
2	Debogram	3262	167	13004	179	FC
3	Dingel	421	189	2783	16	FC
4.	Kaliganj	1609	759	6345	21	PC
		<u>5629</u>	<u>1277</u>	<u>24410</u>		

Table No. 4.3

**Index :**

- FC ———▶ Fully Covered
- PC ———▶ Partially Covered
- NC ———▶ Not Covered

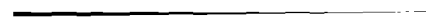


Block - Chakdah

Name of Village	SC	ST	Total Population	No. of Water Sources	Status
1. Punlia	528	363	4014	13	PC
2. Tapkur	709	332	1597	3	PC
3. Kamepur	496	17	2419	5	PC
4. Jagdishpur	213	-	447		NC
	<u>1946</u>	<u>712</u>	<u>8477</u>		

Table No. 4.4

Index :  
 FC - Fully Covered  
 PC - Partially Covered  
 NC - Not Covered



## Distribution of families surveyed in the villages of Jalpaiguri District

Name of Block	Name of Village	No. of families surveyed	Male	Female	Children	Total no. of people in the surveyed families
<i>Rajganj</i>	<i>Panikuri</i>	16	25	20	21	66
<i>Do</i>	<i>Shikarpur</i>	15	22	24	11	57
<i>Do</i>	<i>Sukhari</i>	25	63	50	47	160
<i>Do</i>	<i>Kamarbhita</i>	15	24	29	19	72
<i>Do</i>	<i>Kukurjan</i>	23	44	39	48	131
<i>Malbazar</i>	<i>Lataguri</i>	18	35	26	25	86
<i>Do</i>	<i>Odlabari</i>	18	34	27	23	84
<i>Do</i>	<i>Kranti</i>	23	41	34	43	118
<i>Do</i>	<i>Rajdanga</i>	15	21	25	24	70
<i>Do</i>	<i>Chakmoulani</i>	16	40	21	23	84
<i>Madaribut</i>	<i>Lankapara tea garden</i>	19	25	25	29	79
<i>Do</i>	<i>Ramjhora</i>	15	26	27	19	72
<i>Do</i>	<i>Islamabad</i>	25	78	73	84	235
<i>Do</i>	<i>Uttar Sishubari</i>	22	54	40	22	116
<i>Do</i>	<i>Sishujhomra</i>	16	27	30	23	80
Total		281	559	490	461	1510

Table No. 5.1



## Distribution of families surveyed in the villages of Bankura District

Block	Name of the Village	No. of family surveyed	Male	Female	Children	Total
Raypur - I	Dhaw	19	40	31	20	91
	Asanbani	16	36	30	24	90
	Machabor	12	30	25	16	71
Bankura - II	Bikna	19	59	54	39	152
	Keshiakol	21	68	53	48	169
	Belboni	20	76	64	28	168
Gangajalghati	Gobindadham	18	42	41	24	107
	Nabagram	20	79	61	35	175
	Khata	17	45	38	33	116
Sonamukhi	Buriangani	20	36	37	59	132
	Manik Bazar	20	58	42	28	128
	Natun Balarampur	20	43	44	41	128
Chatna	Bindna	20	60	47	30	137
	Ghoramuli	19	66	57	42	165
	Arrah	20	58	42	25	125
Total		281	796	666	492	1954

Table No. 5.2





## Distribution of families surveyed in the villages of Nadia District

Block	Name of the Village	No. of family surveyed	Male	Female	Children	Total
<i>Tebatta - II</i>	<i>Komthana</i>	17	33	36	27	96
	<i>Natipada</i>	21	39	42	20	101
	<i>Barnia</i>	19	58	45	22	125
<i>Santipur</i>	<i>Baganchara</i>	9	27	27	21	75
	<i>Nrisbingapur</i>	20	45	36	34	115
	<i>Bagdebitala</i>	19	47	42	28	117
	<i>Gboralia</i>	13	36	27	22	85
<i>Kaliganj</i>	<i>Bhurulia</i>	24	58	52	33	143
	<i>Debogram</i>	17	42	36	15	93
	<i>Dingel</i>	15	47	35	48	130
	<i>Kaliganj</i>	17	40	30	11	81
<i>Chakdah</i>	<i>Pumlia</i>	14	43	32	13	88
	<i>Itapukur</i>	6	18	12	4	34
	<i>Kamalpur</i>	16	32	31	11	74
	<i>Jagodisbpur</i>	7	16	13	16	45
<b>Total</b>		<b>234</b>	<b>581</b>	<b>496</b>	<b>325</b>	<b>1402</b>

Table No. 5.3



## Occupational Status of the families surveyed in three (3) Districts of West Bengal

Districts	Occupation									
	Farmers		Daily Labourers Including Agricultural Labourers		Govt. Service Holders		Private Service Holders		Businessmen	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	49	16.9	94	33.7	22	7.9	32	11.5	84	29.9
<i>Bankura</i>	236	41.0	245	42.6	33	5.8	16	2.8	45	7.8
<i>Nadia</i>	18	6.5	152	54.8	31	11.2	24	8.7	52	18.8
<i>Total</i>	303	26.7	491	43.4	86	7.6	72	6.3	181	16

Table No. 6



*No. of Earning Members (family wise) surveyed in three Districts of West Bengal*

District	One per family		Two per family		Three per family		Four per family		Five per family		Six per family	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	174	61.9	68	24.2	27	9.6	10	3.6	2	0.7	-	-
<i>Bankura</i>	156	55.5	69	24.6	22	7.8	18	6.4	16	5.7	-	-
<i>Nadua</i>	156	66.7	49	20.9	21	9.0	5	2.1	1	0.4	2	0.9
<i>Total</i>	476	60.5	186	23.7	70	8.9	33	4.2	19	2.1	2	0.3

Table No. 7

*Total Income per month per family surveyed in three Districts of West Bengal (in Rupees)*

District	< 500		501-750		751-1000		1001-1500		1501-2000		2001-2500		2501-3000		3001-3500		3501-4000		4001-5000		> 5000	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	8	2.4	56	19.8	66	23.4	52	18.4	33	11.6	29	10.3	14	5.0	13	4.6	7	2.5	3	1.1	-	-
<i>Bankura</i>	9	3.2	72	25.6	39	13.9	75	26.7	28	10	11	3.9	47	16.7	-	-	-	-	-	-	-	-
<i>Nadua</i>	16	6.8	1	8.1	30	21.4	74	31.8	39	16.7	18	7.6	18	7.6	-	-	-	-	-	-	-	-
<i>Total</i>	33	4.2	147	18.7	149	18.9	201	25.6	100	12.7	58	7.4	75	9.5	13	1.7	7	0.9	3	0.4	-	-

Table No. 8



### Water Usage Pattern in Jalpaiguri District of West Bengal

Source	Drinking		Cooking		Washing Utensils		Washing Clothes		Bathing		Latrine	
	No	%	No	%	No	%	No	%	No	%	No	%
<i>Dugwell</i>	113	40.2	164	58.3	173	61.6	186	66.2	202	71.9	26	20.6
<i>Hand pump</i>	137	48.8	91	32.4	77	27.4	45	16.0	45	16.0	41	32.5
<i>River</i>	-	-	-	-	2	0.7	2	0.7	2	0.7	-	-
<i>Pond</i>	-	-	-	-	14	5.0	42	14.9	26	9.2	52	41.3
<i>Piped / Tap Water</i>	31	11.0	26	9.3	15	5.3	6	2.2	6	2.2	7	5.6

Table No. 9.1





*Water Usage Pattern in Bankura District of West Bengal*

Source	Drinking		Cooking		Washing Utensils		Washing Clothes		Bathing		Latrine	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
<i>Dugwell</i>	120	34.5	140	47.6	102	34.7	78	26.5	67	22.8	7	29.2
<i>Hand pump</i>	165	47.6	90	30.4	28	9.5	36	12.2	41	13.9	7	29.2
<i>River</i>	28	8.1	25	8.6	14	4.8	84	28.6	47	16	-	-
<i>Pond</i>	20	5.8	25	8.5	149	50.7	96	32.7	139	47.3	1	41.6
<i>Piped / Tap Water</i>	14	4.0	14	4.8	1	0.3	-	-	-	-	-	-

Table No. 9.2



*Water Usage Pattern in Nadia District of West Bengal*

Source	Drinking		Cooking		Washing Utensils		Washing Clothes		Bathing		Latrine	
	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%	Nos	%
<i>Dugwell</i>	22	9.4	24	10.3	5	2.1	1	0.4	1	0.4	43	32.1
<i>Hand pump</i>	184	78.6	195	83.3	193	82.6	200	85.6	182	72.0	68	50.7
<i>River</i>	-	-	-	-	-	-	3	1.1	20	8.0	3	2.3
<i>Pond</i>	-	-	1	0.4	33	14.2	28	12	42	16.8	16	11.9
<i>Piped / Tap Water</i>	28	12	14	6.0	3	1.1	2	0.8	4	1.6	4	3.0

Table No. 9.3



*Details of Water Sources in the Surveyed Villages of 3 districts of West Bengal*

Water Sources	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
Hand pump fitted tubewell	38	33.9	68	69.4	82	44.1
Piped Water Supply System (with Public Stand Post)	26	23.2	14	14.3	62	33.3
Dugwell	48	42.9	16	16.3	42	22.6
<b>Total</b>	<b>112</b>	<b>-</b>	<b>98</b>	<b>-</b>	<b>186</b>	<b>-</b>

Table No. 10

*Year wise installation of water sources in 3 districts of West Bengal  
(as surveyed in 15 villages in each district)*

Year	District								
	Jalpaiguri			Bankura			Nadia		
	HP	Dugwell	PWS	HP	Dugwell	PWS	HP	Dugwell	PWS
<i>Upto 1980</i>	-	17	-	18	6	-	7	20	-
<i>1981-85</i>	5	13	-	6	10	-	12	18	-
<i>1986-90</i>	7	10	-	5	-	-	14	4	-
<i>1991-95</i>	11	8	17	10	-	-	24	-	50
<i>After 1995</i>	15	-	9	29	-	14	25	-	12
<b>Total</b>	<b>38</b>	<b>48</b>	<b>26</b>	<b>68</b>	<b>16</b>	<b>14</b>	<b>82</b>	<b>42</b>	<b>62</b>

Table No. 11



*Depth of Tubewell (Public & Private) in three Districts of West Bengal  
(as surveyed in 15 villages in each district)*

Depth Range	Districts					
	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
<i>Below 20 m</i>	-	-	-	-	16	19.6
<i>20 m- 40 m</i>	15	39.5	-	-	14	17.0
<i>40 m- 60 m</i>	15	39.5	48	70.6	30	36.6
<i>60 m - 80 m</i>	6	15.8	20	29.4	17	20.7
<i>Above 80 m</i>	2	5.2	-	-	5	6.1
Total	38	-	68	-	82	-

Table No. 12

*Depth of Dugwell (Public & Private) in three Districts of West Bengal  
(as surveyed in 15 villages in each district)*

Depth Range	Districts					
	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
<i>6-8 m</i>	-	-	-	-	12	28.6
<i>8-10 m</i>	15	31.2	-	-	10	23.8
<i>10-12 m</i>	16	33.3	6	37.5	13	30.9
<i>12-15 m</i>	14	29.2	10	62.5	7	16.7
<i>above 15 m</i>	3	6.3	-	-	-	-
Total	48	-	16	-	42	-

Table No. 13





*Adequacy of Water (Perception of the users)*

Purpose	District											
	Jalpaiguri				Bankura				Nadia			
	Adequacy		Inadequacy		Adequacy		Inadequacy		Adequacy		Inadequacy	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Drinking	240	85.4	41	14.6	58	20.6	223	79.4	234	100	-	-
Cooking	248	88.3	33	11.7	69	24.6	212	75.4	234	100	-	-
Washing Clothes & Utensils	178	63.3	103	36.7	66	23.5	215	76.5	234	100	-	-
Bathing	227	80.8	54	19.2	68	24.2	213	75.8	234	100	-	-
Latrine	121	96.0	5	4.0	20	83.3	4	16.7	134	100	-	-

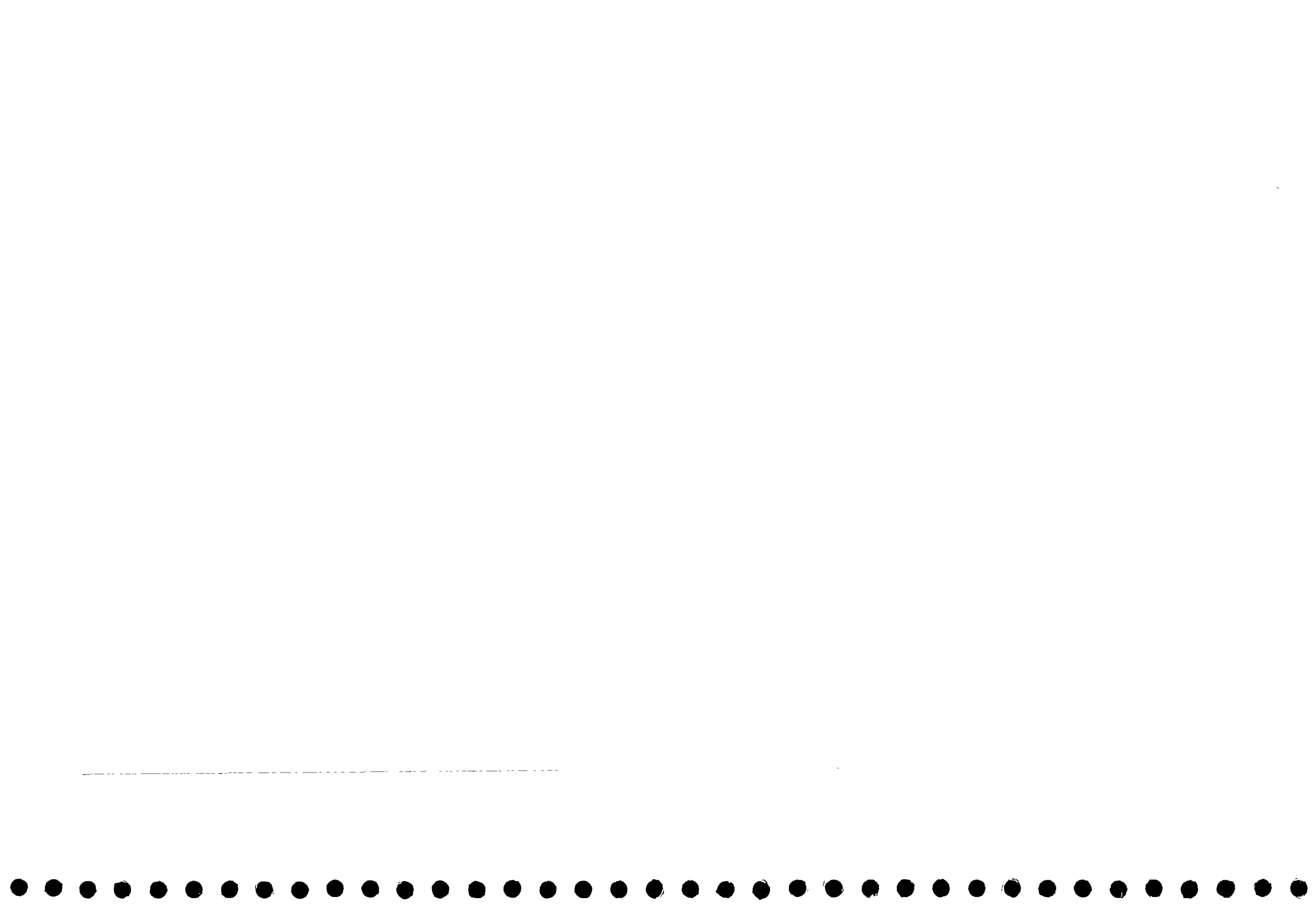
Table NO. 14

*Distance of Water Sources (Public) from the houses in three districts of West Bengal (Perception of the user)*

Distance	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
Less than 50 m	73	26.0	149	53.0	155	66.3
51 m - 100 m	165	58.7	48	17.1	42	17.9
101 m - 200 m	43	15.3	29	10.3	37	15.8
201 m - 500 m	-	-	27	9.6	-	-
501 - 1000 m	-	-	28	10	-	-
Total	281	-	281	-	234	-

*All the public dugwells are within 50 m distance from the houses*

Table No. 15



*Problems involved in the Sources in three Districts of West Bengal (Perception of the user)*

Type	Jalpaiguri		Bankura		Nadia	
	Nos.†	%	Nos.	%	Nos.	%
<i>Too far</i>	-	-	45	16.0	21	8.9
<i>Used to get dry</i>	-	-	38	13.5	46	19.7
<i>Poor quality</i>	27	9.6	52	18.5	79	33.8
<i>Other Problems</i>	-	-	17	6.0	16	6.8
<i>No Problem</i>	254	90.4	129	46.0	72	30.8
<b>Total</b>	<b>281</b>	<b>-</b>	<b>281</b>	<b>-</b>	<b>234</b>	<b>-</b>

Other Problems include :

- Sometimes they find pump is not working due to damage / wear of some parts.
- Platform is not there or it is badly damaged, causing stagnation of excess water.

Table No. 16

*Nature of water surveyed in the three (3) districts of West Bengal*

District	Sweet		Good Taste		Potable Normal		Saline		Iron Problem		Non Potable	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	102	36.3	107	38.0	145	51.6	-	-	27	9.6	-	-
<i>Bankura</i>	82	29.2	102	36.3	140	49.8	-	-	52	18.5	-	-
<i>Nadia</i>	112	40.0	48	17.2	135	57.7	6	2.1	79	28.2	-	-
<b>Total</b>	<b>296</b>	<b>35.2</b>	<b>257</b>	<b>30.5</b>	<b>420</b>	<b>52.8</b>	<b>6</b>	<b>0.7</b>	<b>158</b>	<b>18.8</b>	<b>-</b>	<b>-</b>

Table NO. 17

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## Chemical & Bacteriological reports on the water sources in the 3 districts of West Bengal

### District - Jalpaiguri

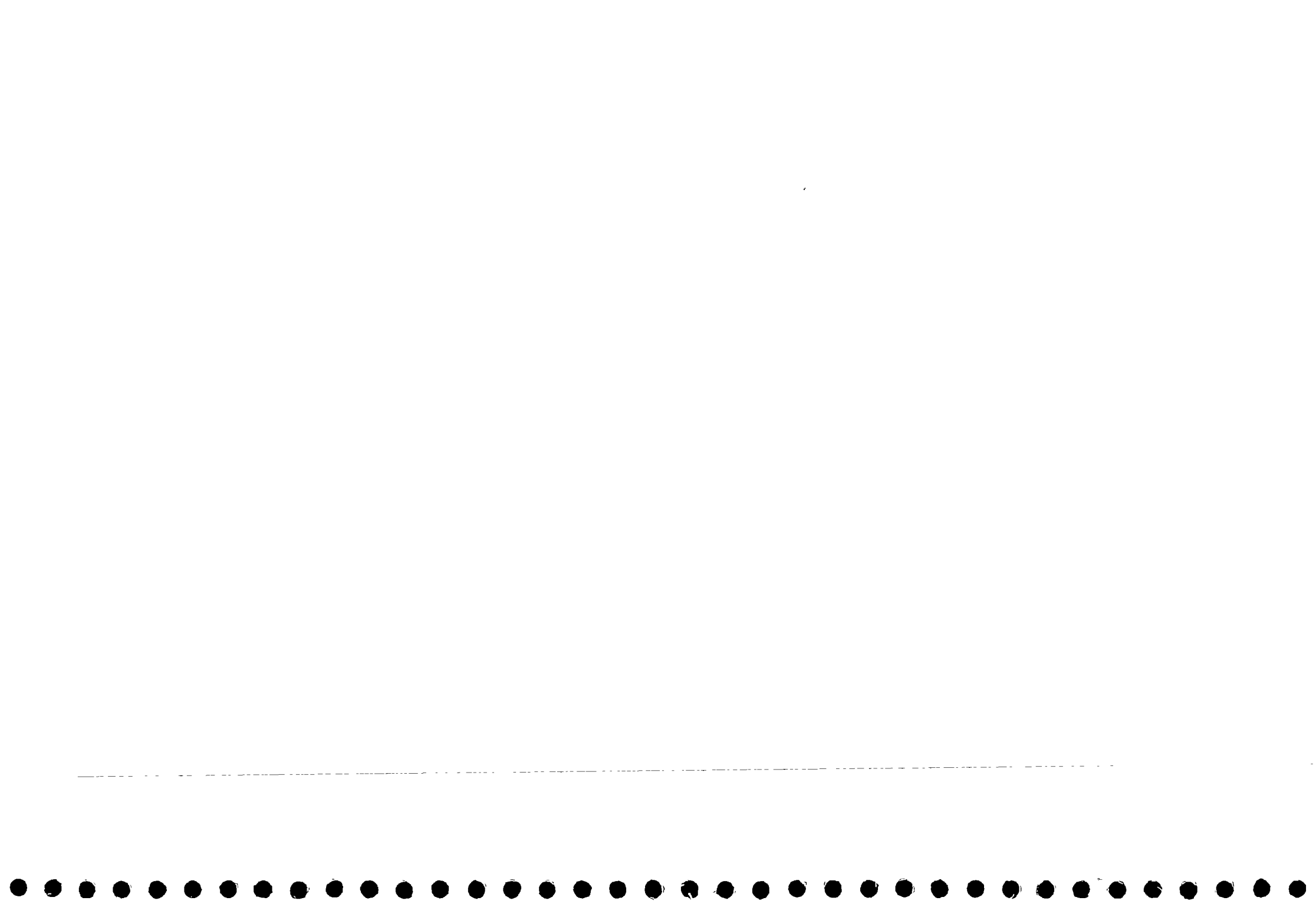
Block - Madarihat  
Habitation - Lankapara Tea Garden

Sl No.	Type of Source	Nature of problem and measurement													
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Bacteriological (MPN /100 ml)	
														Total Coliform	faecal Coliform
1	TW	180	00	251	6.86	5	176	230	120	18	00	13.60	75.00	-	-

Block - Madarihat  
Habitation - Sishu Jhumra

Sl No.	Type of Source	Nature of problem and measurement													
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Bacteriological (MPN /100 ml)	
														Total Coliform	faecal Coliform
1	TW	210	00	290	7.01	1	216	220	150	18	00	5.60	152.00	-	-

Table No. 18.1



District - Bankura

Block - Sonamukhi  
Habitation - Natun Balarampur

Sl. No.	Type of Source	Nature of problem and measurement												Bacteriological (MPN /100 ml)	
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Total Coliform	faecal Coliform
1	TW	2.50	0.0	126	6.85	55	80	40	40	10	0.0	0.0	44.66	-	-

Block - Bankura - II  
Habitation - Bikna

Sl. No.	Type of Source	Nature of problem and measurement												Bacteriological (MPN /100 ml)	
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Total Coliform	faecal Coliform
1	TW	1.90	0.84	683	6.90	4	250	250	30	10	0.0	6.10	19.14	-	-

Table No. 18.2





District - Nadia

Block - Kaliganj  
Habitation - Dingel

Sl. No.	Type of Source	Nature of problem and measurement											Bacteriological (MPN / 100 ml)		
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Total Coliform	faecal Coliform
1	TW	3.00	0.0	840	7.22	-	320	330	330	20	NDL	0.0	0.0	-	-

Block - Chakdaha  
Habitation - Kamalpur

Sl. No.	Type of Source	Nature of problem and measurement											Bacteriological (MPN / 100 ml)		
		Iron mg/l as Fe	Fluoride mg/l as F	Total dissolved solids (mg/l)	pH	Turbidity JTU	alkalinity mg/l as CaCO <sub>3</sub>	Hardness mg/l as CaCO <sub>3</sub>	Ca Hardness mg/l as CaCO <sub>3</sub>	Chloride mg/l as Cl	Arsenic mg/l as As	Nitrate Mg/l as NO <sub>3</sub>	Sulphate mg/l as SO <sub>4</sub>	Total Coliform	faecal Coliform
1	TW	6.0	0.0	1090	7.00	-	430	410	410	110	0.06	0.0	0.0	-	-

Table No. 18.3



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*Hygienic Condition around the Water Sources*

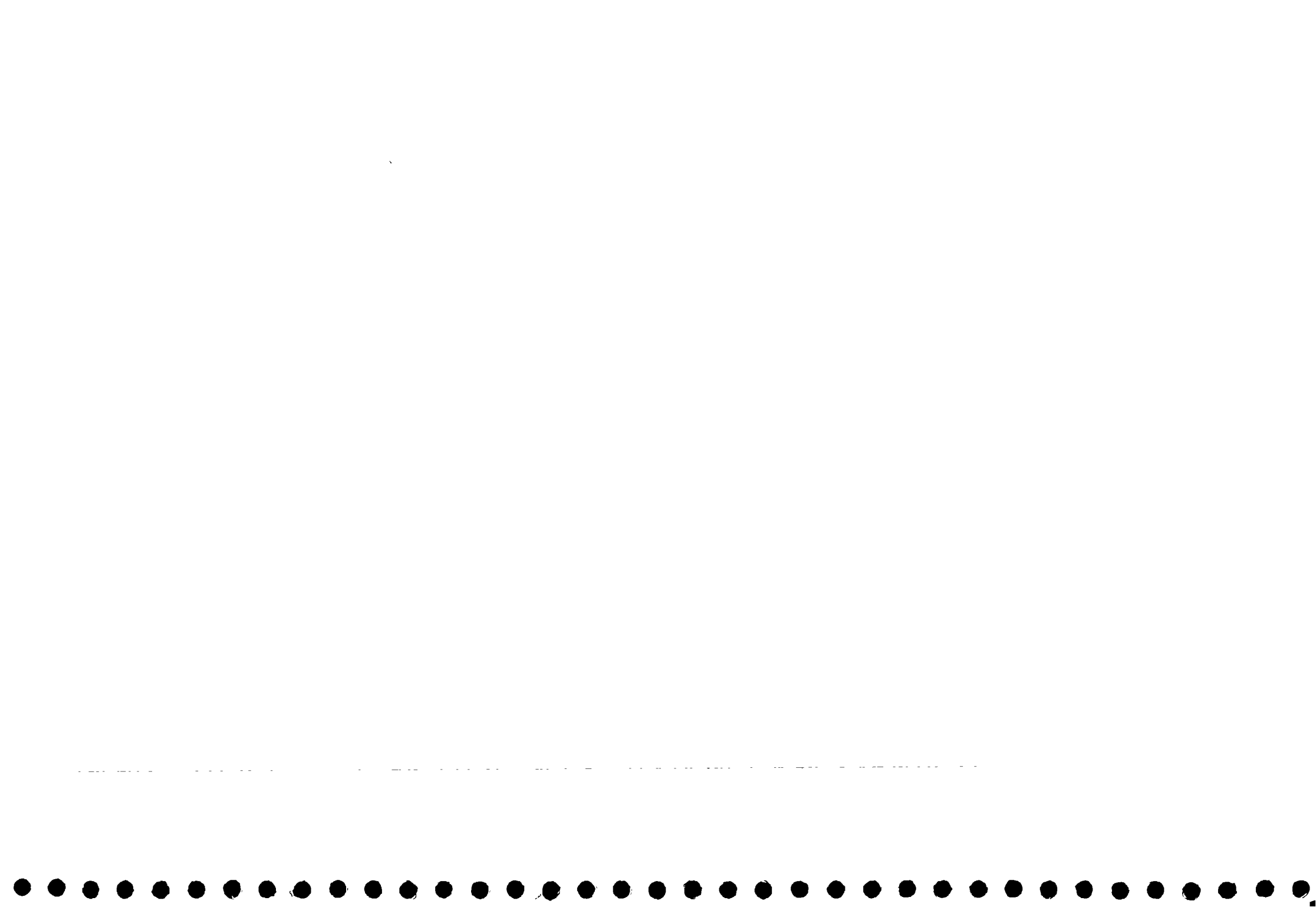
District	Very Good		Good		Satisfactory		Bad		Very Bad	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	6	2.1	146	52.0	77	27.4	46	16.4	6	2.1
<i>Bankura</i>	-	-	85	30.2	168	59.8	28	10	-	-
<i>Nadia</i>	-	-	72	30.8	103	44.0	59	25.2	-	-

Table No. 19

*Measures taken by the villagers for cleanliness of H. P. Site*

District	Yes		No	
	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	233	82.9	48	17.1
<i>Bankura</i>	165	58.7	116	41.3
<i>Nadia</i>	125	53.4	109	46.6

Table No. 20



*Frequency of Water Supply in case of PWS*

District : Jalpaiguri

<b>Morning (6.30-8.30 AM)</b>	<b>Afternoon (11.30 -13 hrs.)</b>	<b>Evening (17-18. PM.)</b>	<b>Total</b>
2 hrs.	1.5 hr	1 hr	4.5 hrs. / Day (average)

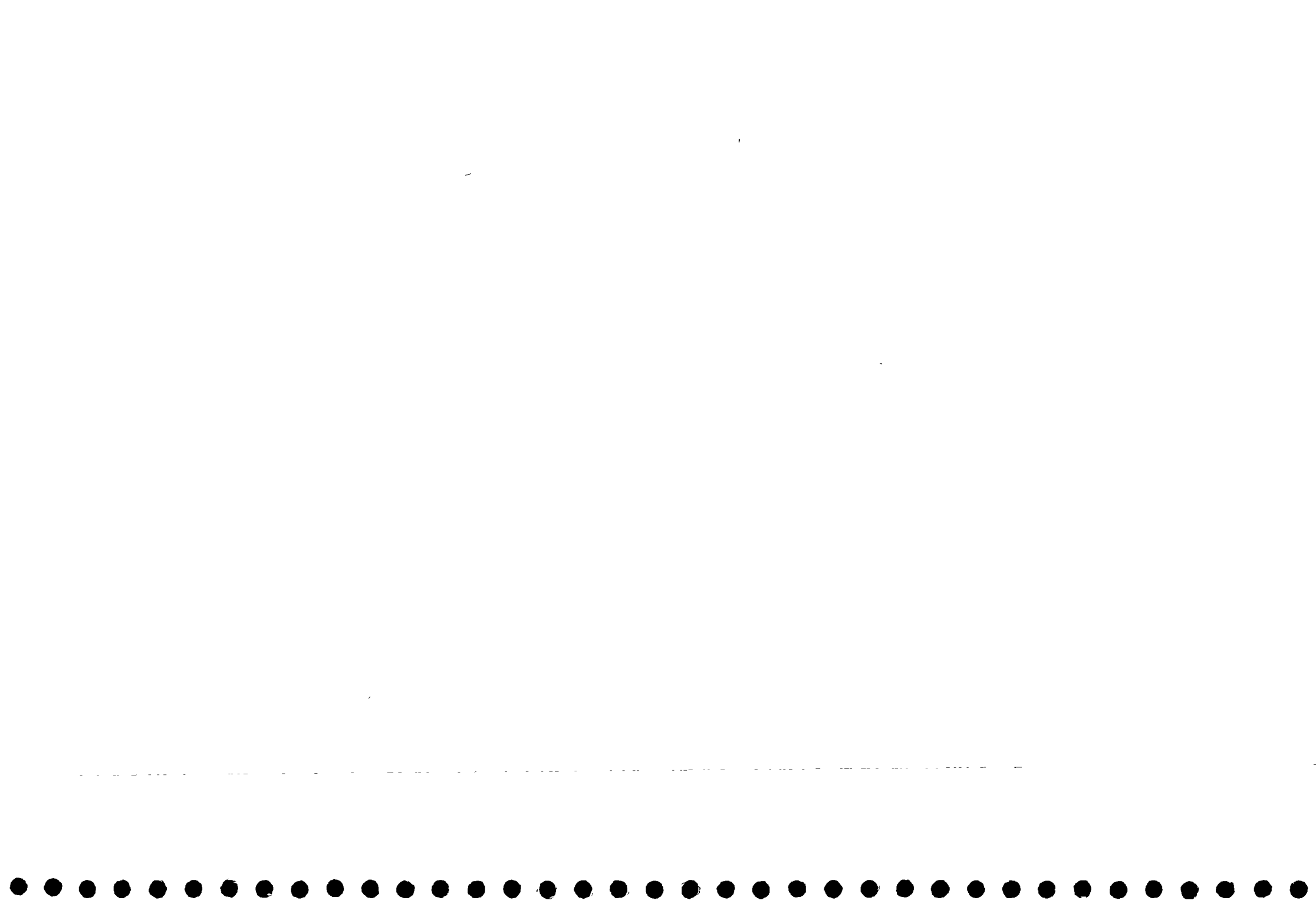
District : Bankura

<b>Morning (7-8 AM.)</b>	<b>Afternoon (11-13 hrs.)</b>	<b>Evening (5-6 PM)</b>	<b>Total</b>
1 hr	Nil	1 hrs	2 hrs. / Day

District : Nadia

<b>Morning (6-7 AM.)</b>	<b>Afternoon (11-1 PM)</b>	<b>Evening (5-6 PM)</b>	<b>Total</b>
1 hr	2 hrs.	1 hr	4 hrs. / Day (average)

Table No. 21



*Present Status of HP / PWS / Borewell Water etc. (Perception of the Villagers)*

Status	Districts					
	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
Good	146	52	57	20.2	43	18.4
Satisfactory	112	39.9	137	48.8	145	62.0
Difficulty	23	8.1	48	17.1	45	19.2
Erratic functioning	-	-	-	-	1	0.4
Not functioning	-	-	39	13.9	-	-
Total	281	-	281	-	234	-

Table No. 22

*Involvement of the beneficiaries in the existing Rural Water Supply Scheme*

District	Yes								No	
	By Site selection		Contribution of Capital Investment		Donation of Land		Donation of Labour			
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Jalpaiguri	43	15.3	-	-	-	-	-	-	238	84.7
Bankura	56	19.9	-	-	8	2.8	45	16.0	198	70.5
Nadia	30	12.8	-	-	-	-	-	-	204	87.2

*Not associated with eye of WP!*

Table No. 23



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*Willingness of the beneficiaries in the future Rural Water Supply Scheme*

District	Yes								No	
	By Site selection		Contribution of Capital Investment		Donation of Land		Donation of Labour		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%		
<i>Jalpaiguri</i>	259	92.2	43	15.3	7	2.5	154	54.8	29	10.3
<i>Bankura</i>	42	14.9	157	55.9	28	10	225	80.1	62	22.1
<i>Nadia</i>	80	28.15	145	51.6	-	-	171	60.9	89	31.7

Note Percentage calculated on the basis of total no. of houses surveyed.

Table No. 24

*Operation & Maintenance of Rural Water Supply Schemes*

District	Suggestion / Measures to be taken							Agreement to pay water tax				
	Local village committee to be formed		Training needed		Govt. contribution		No suggestions		Yes		No	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	24	8.5	36	12.8	52	18.5	201	71.5	24	0.5	257	91.5
<i>Bankura</i>	84	29.9	102	36.3	42	14.9	67	23.8	69	24.6	212	75.4
<i>Nadia</i>	61	26.1	31	11.0	112	39.9	35	12.5	148	63.2	86	36.8

*In Nadia people wanted the spare parts of H.P. must be supplied by the Govt.*

*In Jalpaiguri district people agreed to pay water tax between Rs. 5/- to Rs. 20/- (per month)*

*In Bankura district people agreed to pay water tax between Rs. 1/- to Rs. 20/- (per month)*

*In Nadia district people agreed to pay water tax between Rs. 5/- to Rs. 20/- (per month)*

Table No. 25



*Status of Latrine in the Districts of West Bengal*  
(As per surveyed villages)

		Jalpaiguri		Bankura		Nadia	
		Nos.	%	Nos.	%	Nos.	%
Houses having latrine	Septic Tank	36	28.6	12	50	14	10.4
	Bore Hole	42	33.3	-	-	52	38.8
	Pour Flush	10	7.9	7	29.2	30	22.4
	Dug Well	38	30.2	5	20.8	38	28.4
	Total	126	44.8	24	8.5	134	57.3
Houses not having latrine		155	55.2	257	91.5	100	42.7
Houses willing to have own latrine		155	100	167	65.0	97	97.0
Houses not willing to have own latrine		-	-	90	35.0	3	3.0
No Comment		-	-	33	23.9	-	-
Water used for Anal Cleaning		126	100	24	100	134	100

In Bankura district, 7 nos. of Pour Flush latrines were constructed by subsidy from Govt. (Pan, Trap, Squatting plates, supplied free from Govt.)  
In Nadia district, 12 Pour Flush latrines were constructed by subsidy from Govt. (Pan, Trap, Squatting Plates supplied free by Govt.)

Table No. 26



*Status of Houses willing to have own latrine*

District	Agreement to Contribute				Not agreed to contribute anything	
	Labour Only		Both Labour & Capital		Nos.	%
	Nos.	%	Nos.	%		
<i>Jalpaiguri</i>	118	76.1	45	29.0	37	23.9
<i>Bankura</i>	167	100	77	46.1	-	-
<i>Nadia</i>	97	100	42	43.3	-	-

Table No. 27

Type of Latrine Desired	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
<i>Septic Tank</i>	27	17.4	27	16.2	11	11.3
<i>Bore Hole</i>	33	21.3	27	16.2	-	-
<i>Dug Well</i>	63	40.6	30	18	-	-
<i>Pour Flush</i>	32	20.7	83	49.6	86	88.7
<b>Total</b>	155	-	167	-	97	-

Table No. 28

Reasons for not having latrine	Jalpaiguri		Bankura		Nadia	
	Nos.	%	Nos.	%	Nos.	%
<i>No fund available</i>	-	-	16	17.8	-	-
<i>Plenty of land available so no problem / habituated</i>	-	-	48	53.3	-	-
<i>Suitable land is not available for construction</i>	-	-	21	23.3	3	100
<i>No need</i>	-	-	5	5.6	-	-
<b>Total</b>	-	-	90	-	3	-

Table No. 29



*Home treatment of water for drinking*

Districts	Yes		No		Boiling		Filter		Addition of bleaching powder	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	55	19.6	226	80.4	49	89	6	11	-	-
<i>Bankura</i>	11	3.9	270	96.1	7	63.6	4	36.4	-	-
<i>Nadia</i>	12	5.1	222	94.9	5	41.7	2	16.6	5	41.7
Total	78	7.8	718	90.2	61	78.2	12	15.4	5	6.4

Table No. 30

*Who Collects water*

	Male		Female		Children	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	23	8.2	246	87.5	12	4.3
<i>Bankura</i>	35	12.5	233	82.9	13	4.6
<i>Nadia</i>	48	20.5	186	79.5	-	-
Total	106	13.3	665	83.5	25	3.2

Table No. 31





Storage of drinking water

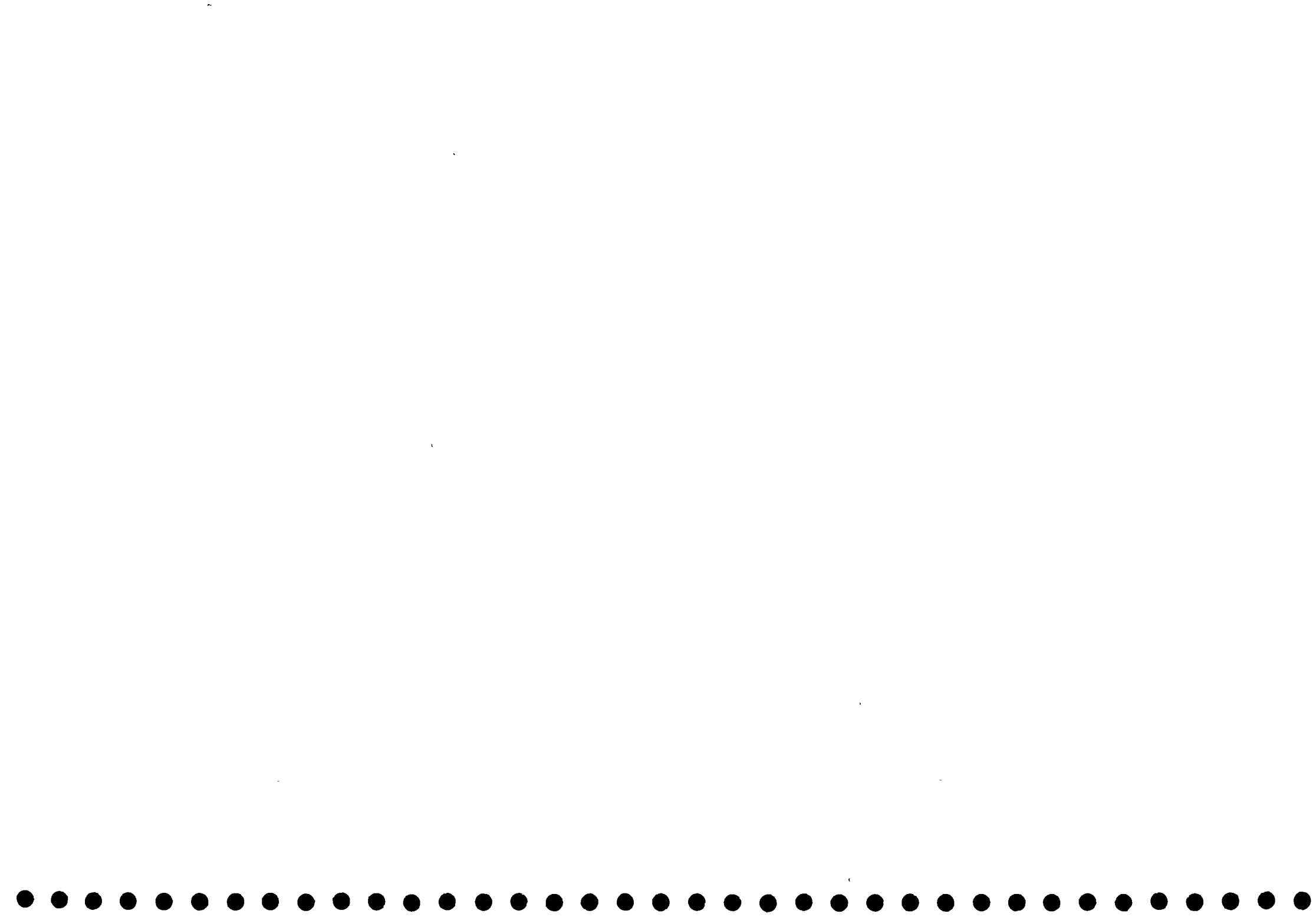
Districts	Stored in collection container		Transferred to another container	
	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	43	15.3	238	84.7
<i>Bankura</i>	120	42.7	161	57.3
<i>Nadia</i>	166	70.9	68	29.1
<b>Total</b>	<b>329</b>	<b>41.3</b>	<b>467</b>	<b>58.7</b>

Table No. 32

Use of drinking water from storage pot

Districts	Container with handle		Container without handle		Poured from the vessel	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	129	45.9	67	23.8	85	30.3
<i>Bankura</i>	50	17.8	86	30.6	145	51.6
<i>Nadia</i>	129	55.1	37	15.8	68	29.1
<b>Total</b>	<b>308</b>	<b>38.7</b>	<b>190</b>	<b>23.9</b>	<b>298</b>	<b>37.4</b>

Table No. 33



*Type of material for storage and collection container*

Districts	Plastic		Metal		Earthen	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	129	45.9	86	30.6	66	23.5
<i>Bankura</i>	81	20.1	192	47.6	130	32.3
<i>Nadia</i>	17	7.3	162	69.2	55	23.5
Total	227	24.7	440	47.9	251	27.4

Table No. 34

*Condition of storage container*

Districts	Covered		Uncovered	
	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	243	86.5	38	13.5
<i>Bankura</i>	259	92.2	22	7.8
<i>Nadia</i>	234	100	-	-
Total	736	92.5	60	7.5

Table No. 35



*Personal Hygiene (I)*

*Bathing & Cutting of nails*

Districts	Regular Bath		Regular cutting of nails		Irregular cutting of nails	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	281	100	281	100	-	-
<i>Bankura</i>	281	100	221	78.6	60	21.4
<i>Nadia</i>	234	100	155	66.2	79	33.8
Total	796	100	657	82.5	139	17.5

Table No. 36

*Personal Hygiene (II)*

*Washing hands after defecation*

Districts	With soap & water		With water only		With mud & water	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	61	21.8	153	54.4	67	23.8
<i>Bankura</i>	20	7.1	132	47.0	129	45.9
<i>Nadia</i>	17	7.3	62	26.5	155	66.2
Total	98	12.3	347	43.6	351	44.1

Table No. 37



*Personal Hygiene (III)*  
*Washing hands before eating*

Districts	With soap & water		With water only		Occasionally with soap	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	37	13.2	203	72.2	41	14.6
<i>Bankura</i>	9	3.2	260	92.5	12	4.3
<i>Nadia</i>	42	17.9	137	58.6	55	23.5
Total	88	11.0	600	75.4	108	13.6

Table No. 38

*Personal Hygiene (IV)*  
*Practice of wearing chappals*

Districts	Yes		No		Occasionally	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	251	89.3	21	7.5	9	3.2
<i>Bankura</i>	176	62.6	64	22.8	41	14.6
<i>Nadia</i>	143	61.1	18	7.7	73	31.2
Total	570	71.6	103	12.9	123	15.5

Table No. 39





### General environment of the houses (I)

#### *Disposal of liquid waste*

Districts	Surface drain		Soak Pit		To pond etc.		No drainage	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	189	67.9	5	1.8	6	2.1	81	28.8
<i>Bankura</i>	64	22.8	4	1.4	158	56.2	55	19.6
<i>Nadia</i>	45	19.2	9	3.9	19	8.1	161	68.8
Total	298	37.4	18	2.3	183	23.0	297	37.3

Table No.40

### General environment of the houses (II)

#### Refuse Collection & Disposal

Districts	Household Bin		Manure Pit		Community Bin		Thrown indiscriminately	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	-	-	31	11.0	23	8.2	227	80.8
<i>Bankura</i>	1	0.4	45	16.0	-	-	235	83.6
<i>Nadia</i>	18	7.7	19	8.1	15	6.4	182	77.7
Total	19	2.4	95	11.9	38	4.8	644	80.9

Table No. 41



## Personal Hygiene (V)

### General observation of the respondent / family

Districts	Cloth				Skin			
	Clean		Unclean		Clean		Dirty	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	227	80.8	54	19.2	243	86.5	38	13.5
<i>Bankura</i>	257	91.5	24	8.5	264	94.0	17	6.0
<i>Nadia</i>	190	81.2	44	18.8	186	79.5	48	20.5
Total	674	84.7	122	15.3	693	87.1	103	12.9

Table No. 42

### General cleanliness of the family

#### Awareness of the family about health problem on drinking pond/river water

Districts	Yes		No		Do Not know	
	Nos.	%	Nos.	%	Nos.	%
<i>Jalpaiguri</i>	174	61.9	78	27.8	29	10.3
<i>Bankura</i>	182	64.8	49	17.4	50	17.8
<i>Nadia</i>	160	68.4	26	11.1	48	20.5
Total	516	64.8	153	19.2	127	16

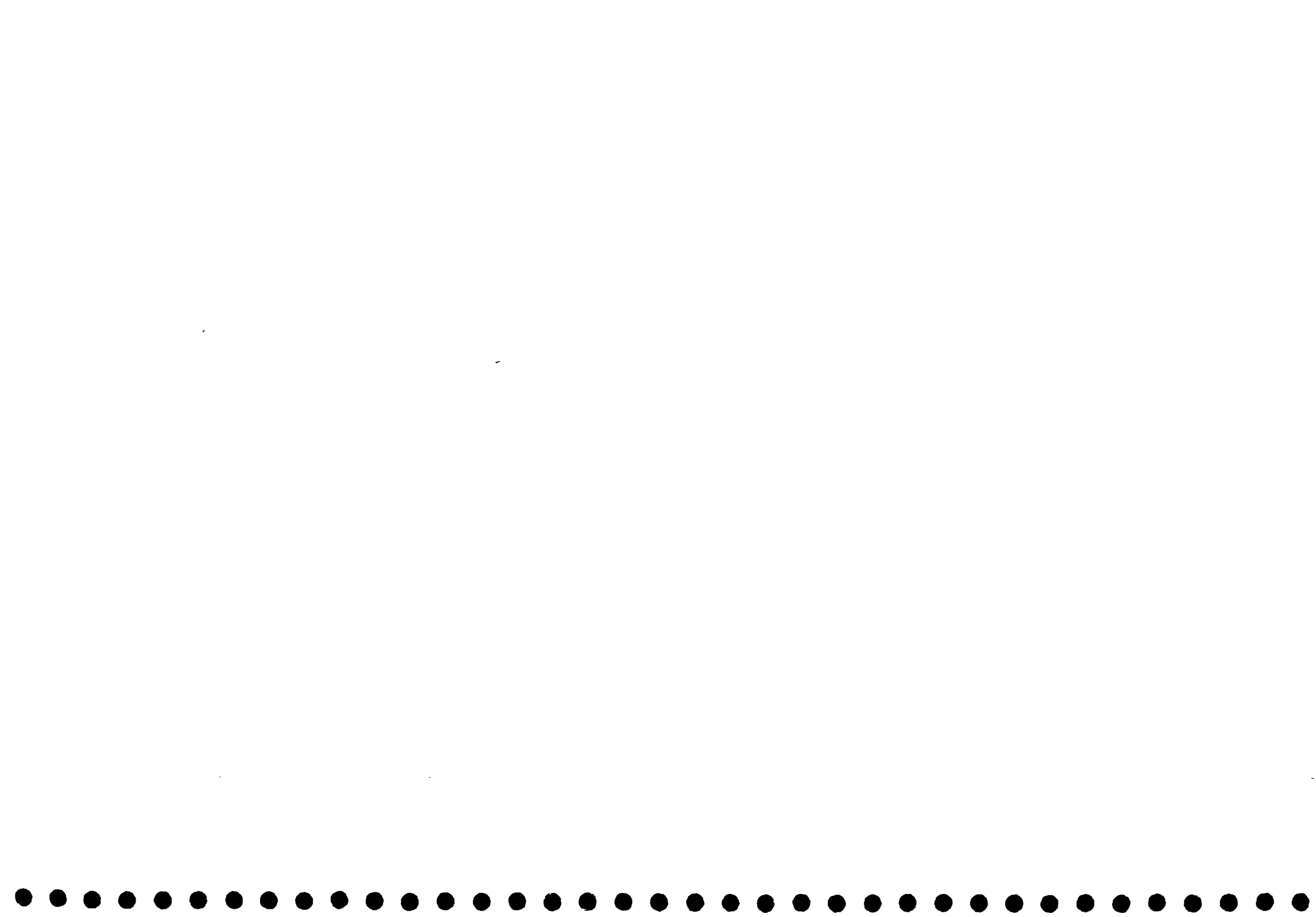
Table No. 43



*Families suffering from water borne diseases in the last 3 months*

Districts	Nos.	%
<i>Jalpaiguri</i>	196	69.8
<i>Bankura</i>	140	49.8
<i>Nadia</i>	100	42.7

Table No. 44



But there are also some dugwells and public hydrants connected with piped water system. In our study, out of total 796 families surveyed in 3 districts, SC, ST and OBC families constitute 328 nos.(41.2%), 87 nos.(10.5%) and 100 nos.(12.6%) respectively i.e. total of 515 families(64.7%) under backward classes. So a good amount of backward classes / areas have been covered in the study.

The response of the people and their perception about the coverage of water supply & sanitation have been obtained through various questions and enquiries as shown in the questionnaire of the format (Annexure - I). Generally, we find most of the people (about 65%) use water of handpump or public hydrants for drinking. About 28% of the population take dugwell water for drinking & 5% use pond & river water for drinking. For cooking purposes, 60% of the people use handpump water or water from public hydrants. About 33% of the people use dugwell water for this purpose and the rest people(7%) use water from pond, river etc.

It is seen that people use all sources for washing utensils and clothes & bathing purposes whichever source is available nearby. In Jalpaiguri district dugwell water is extensively used for washing utensils & clothes and bathing. But in Bankura district, we find river and pond water is extensively used for washing utensils and clothes and bathing. Again, in Nadia district handpump water is much used for washing utensils, clothes and bathing. For latrine use, we find pond water is mostly in general in 3 districts. But, the use of dugwell and handpump is





water for this purpose; because in summer season there is less water in pond or river and sometimes they become completely dry. In Jalpaiguri district, people are not getting adequate water for all purposes. There is scarcity of water for washing clothes and utensils particularly in summer season when the dugwells and ponds become dry.

The tubewells are mostly constructed at a depth range of 40 m - 80m. But in Nadia(37%) and Jalpaiguri(40%), a good number of tubewells were installed below 40m depth because mostly they are in alluvial zone. In Nadia district some tubewells (6%), were installed even below 80m depth, possibly to avoid arsenic layer, as arsenic problems are found in some parts of Nadia district.

Mostly the dugwells are within the depth range of 8 m - 15 m; but dugwells of greater depth have been also observed in Jalpaiguri district.

It is seen that construction of public dugwells were limited after 1985 and the hand pump fitted tubewells were constructed in large numbers in last 15-20 years. It is also interesting to note that some of the tubewells which were constructed before 1980 is still in service. Piped water supply systems also started recently after 1991 in some places.



water sources. But in Bankura and Nadia district people responded that there are some problems e.g.

- The sources are too far.*
- Handpump is not working due to damage / wear of some parts*
- Platform is not there or it is badly damaged causing stagnation of excess of water.*
- Sometimes the sources (particularly Dugwell) get dry in Summer Seasons.*
- Quality of water is also not acceptable in some cases.*

Most of the villagers responded that the water is of good taste, sweet and potable while some of them opined that there is iron problem or saline problem. But nobody responded for non-potability. As the quality of drinking water in the existing sources is not a major problem in the areas surveyed, the water as available from the handpump sources and other protected sources is considered to be safe. But, the testing of all water sources is not done regularly in chemical aspects. There are no reports on bacteriological quality of water.

From the result of water test reports in six villages, two in each district under survey it is seen that iron concentration is very high in all districts ranging from 1.80 to 6.0 mg/l as Fe. Fluoride is available to some extent (0.84 mg/l as F) in Bankura district.



Emphasis must be given on regular examination of water in respect of chemical, bacteriological and toxicological aspects.

The hygienic condition around the water sources is mostly good or satisfactory but there are some sources where we find they are very badly maintained causing stagnation of water in and around the sources. Also in some cases, there is no existence of platforms or drains. All the villagers are also not cooperative in cleaning the handpump sites.

While all time water is available from the handpump fitted tubewells in piped water supply system it has been observed that nearly 4 hrs./ day are supplied through public stand posts in morning, afternoon and evening time in Jalpaiguri & Nadia districts. But in Bankura district only two hours per day are supplied. One hour in the morning and one hour in the evening.

The present status of Handpump fitted tubewell or Public Hydrants connected with Piped Water Supply System is not good in Jalpaiguri district. Mostly, they are satisfactory. In some cases, they are difficult also. In Bankura district, some sources are not functioning also. In many cases, the water level goes down and in such cases India Mark-II handpump cannot be reinstalled easily. Again the repair of such handpumps cannot be done by ordinary tubewell



Engineering Department, Govt. of West Bengal. No fees are charged to the villagers for the maintenance of water sources.

In existing rural water supply schemes only a few villagers (15%) were consulted for site selection for H. P. or dugwell. The labour was donated by 45 nos. of houses in Bankura district. A few villagers (8 Nos. in Bankura district) donated land, but nowhere capital investment was contributed by the villagers. But about 80% of the beneficiaries were not involved at all.

In future rural water supply schemes we find that about 48% of the villagers are willing to be involved in planning and site selection. About 69% of the villagers are agreeable to offer free labour but none agreeable to donate land. About 43% of the villagers are ready to contribute capital investment if better rural water supply scheme is implemented in their villages. About 4% of the villagers are willing to donate land. About 23% of the villagers are not willing to be involved in any future R. W. S. scheme.

Regarding operation and maintenance of rural water supply schemes, about 21% of the villagers opined that local village committee to be formed for better operation and maintenance. The same percentage of the villagers think that some training of the villagers for this purpose will be useful. About 26% of the villagers think that without Govt. contribution/ involvement the programme would not be





and in Nadia 57% of the houses. 65% of the houses have no latrine. But most of the villagers (82%) are willing to have their own latrine. Almost all (91.2%) agreed to contribute labour, many (39.1%) agreed to contribute labour and capital to some extent and only a few (8.8%) do not agree to contribute either labour or capital for construction of latrine. About 48% of the willing villagers like to have pour flush latrine, 15.5% like to have septic tank and 22% would like to have dugwell and the rest for borehole type of latrine.

As economic status of the villagers is very low, it is very difficult for many of them (17%) to construct latrine. 52% of the villagers say they are habituated in the open air defecation and there is no problem for them as there is plenty of land and there is no need of latrine for them. Only 25% of the villagers say they cannot construct latrine as there is no suitable land.

On the basis of the survey to get the idea, habit and attitude of the villagers in respect of water supply and sanitation for the 3 districts of West Bengal we find many information.

It has been observed that only 7.8% of the houses are treating water at home, mostly by boiling. They add bleaching powder time to time in their private wells. The water from the hand pump or dugwell or Public Hydrants is



cut their nails in almost regular way. They wash their hands after defecation with water only in 44% cases. Only a few (12%) use soap for washing. They wash their hands before eating at least with water. The practice of wearing chappals or shoes is in 72% cases.

There is no proper disposal system for liquid waste. The waste water is stagnated in 37% houses, though surface drains (mostly kutchra in nature) are existing in 37% cases.

There is less(4.8%) community bin for refuse collection. It is thrown indiscriminately in 81% cases. Some houses (12%) have manure pits and a very few(2.2%) have household bins.

Generally, we find the cloth and skin of the respondent is clean. Most of the villagers(65%) have idea about health problems on drinking pond or river water.

Most of the families(55%) suffered from some water borne diseases in all the districts.





for drinking and they will not be forced to use the river or pond water for drinking and cooking. It is important to maintain the quality of water for drinking.

Where the people depend on river/pond for washing utensils or for bath and these sources get dry in summer seasons, a comprehensive planning is required so that the people get adequate water in all seasons.

- ◆ All non-covered villages should be taken up on top priority basis for providing water supply sources. Partially covered villages should be also taken so that can be fully covered soon.
- ◆ Whenever the ground water shows salinity, iron, fluoride or arsenic problems or any other chemical problems it will be necessary to choose surface water with proper treatment or ground water to be suitably treated to remove the undesired chemicals.
- ◆ In arsenic prone areas of West Bengal care should be taken to select the depth of the tubewell so that it is free from arsenic contamination. If suitable aquifer is not available, surface water should be chosen so that after suitable treatment it can be supplied to the villagers. In such areas, if arsenic is not found initially, but detected in later stage, proper treatment facilities with awareness programme should be instituted. This last choice should be taken in extreme cases only.
- ◆ Wherever possible piped water supply system should be installed, particularly where the users are interested to have house service connections. In that case water tax can be levied without any problem. All piped water supply system should be disinfected regularly. In fact, in piped water supply system quality control can be maintained easily.



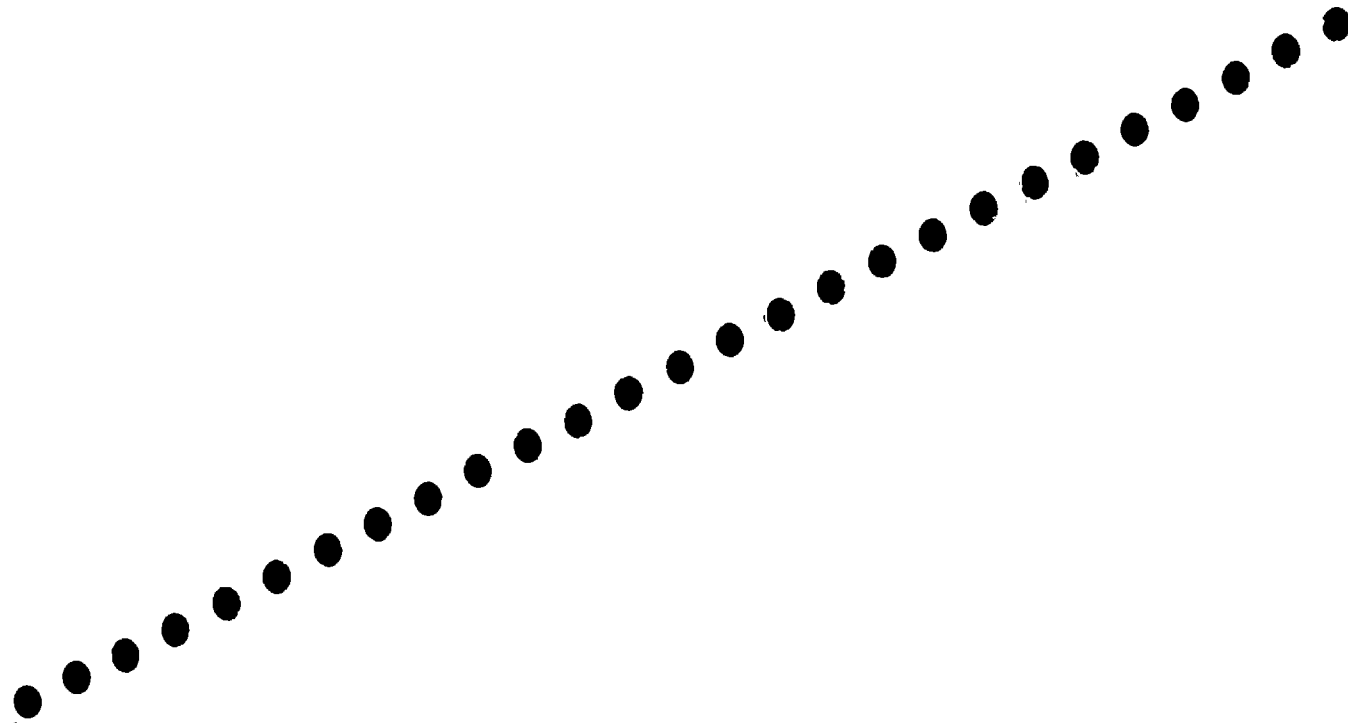
- ◆ The public wells should be protected with proper lining and maintained in a sanitary manner. Use of individual rope and bucket should be discarded. Wherever possible a handpump should be installed with proper cover over the dugwell. There should be no stagnation of excess water around any source.
- ◆ Water testing of all water sources, particularly used for drinking is to be done regularly in chemical, bacteriological and toxicological aspects. The result is to be published in local newspapers. If any result shows that the water is unfit for human consumption the matter should be brought to the notice of the public immediately. In case of emergency, the villagers will use bleaching powder or halogen tablets to be supplied by the Govt. departments ; they can boil water for drinking purposes.
- ◆ The villagers should be more involved in the future planning and implementation of rural water supply schemes. There should be arrangement for group discussion with the villagers for any new water supply project. In that case, the villagers would be able to contribute some amount of capital investment and donate labour or cooperate in any manner in the successful implementation of the project. If better or improved water supply is installed, as for example, with house service connections, a good amount of capital may be expected from the beneficiaries.
- ◆ For operation and maintenance of rural water supply projects, the young men of the village should be trained by the Engineers of PHE, Govt. of West Bengal. In future they will be the caretaker of rural water supply projects in their area. There should be total control over their work by Govt. machinery particularly in respect of use of spare parts and other fittings of RWS. The young men should be paid remuneration by the village committee while the spare parts and other





There should be Awareness Camp for the villagers at least once a month to discuss.

- I. Healthy habits to be followed in regular bath, nail cutting, cleaning clothes etc.
- II Collection of water should be made equally by men and women (if they are able).
- III To use water properly without wastage and to keep the water container always covered while carrying it or storing at house. They should take the water from the storage pot either directly pouring from the vessel or by container with handle.
- IV. To use safe water only for drinking, cooking and final washing of utensils. The villagers should not use pond / river / canal water or any unprotected water for drinking and cooking.
- V. To keep all public water sources clean.
- VI. Habit of washing hands before taking food, particularly with much care for the children. If possible some training can be imparted to the children at school level for clean habit, use of safe water and latrine.
- VII. Habit of wearing chappals and shoes particularly when they will go outside.
- VIII To keep the latrines always clean for better use by every member of the family.
- VII. To wash the hands with a little soap powder after defecation.



XI The health problems due to consumption of water from river, pond or any unprotected source, not wearing chappals or shoes whenever they go out of their houses or non-provision of sanitary latrines in their houses.

XII Some of the awareness camps should be specially organised for women and children in the villages. Health workers and N.G.O. should be involved in more numbers.



4. a) Village  
 b) Population
- i) SC  
 ii) ST  
 iii) Others  
 iv) Total
5. Location / Ward No., etc :
6. Name of the Respondent :  
 (Villager)
7. Date of Visit :
8. Household Identification :
- a) Total number of members in the family
- i) Male .....nos
- ii) Female .....nos
- iii) Children .....nos
- iv) Total .....nos
- b) Occupation
- c) No. of earning members
- d) Total income / month
- e) Whether belong to Scheduled Caste/Tribe/OBC



Piped Tap Water (inside house)						
Spring						
Public Hydrant						

- b) Do you have access to
- i) Public Dugwell/Public Tubewell
- Yes/No      Yes/No
- c) Depth of the Dugwell (in metre) :      Public      Private
- d) Depth of the Tubewell(in metre) :      Public      Private
- e) Quantity of the water collected /day(litres) :
- f) Distance of the source (in meter)
- i) <50
- ii) 51-100
- iii) 101-200
- iv) 201-500
- v) 501-1000
- vi) 1001-1500
- g) Who collects water mainly
- i) Men
- ii) Women
- iii) Children
- h) Time taken for collection of water
- i) per trip      mins
- ii) Total      mins
- i) Problems involved in the sources (specify)





2. a) Details of water sources

i) HP

ii) HWS

iii) PWS

iv) Others

b) When the source was installed

Year.....Month.....

c) Whether all community people have access to source

i) Regular access

ii) Occasional access

iii) No access

iv) N.A.

d) If no, the main reason

e) Nature of water (Quality)

i) Sweet

ii) Good Taste

iii) Normal

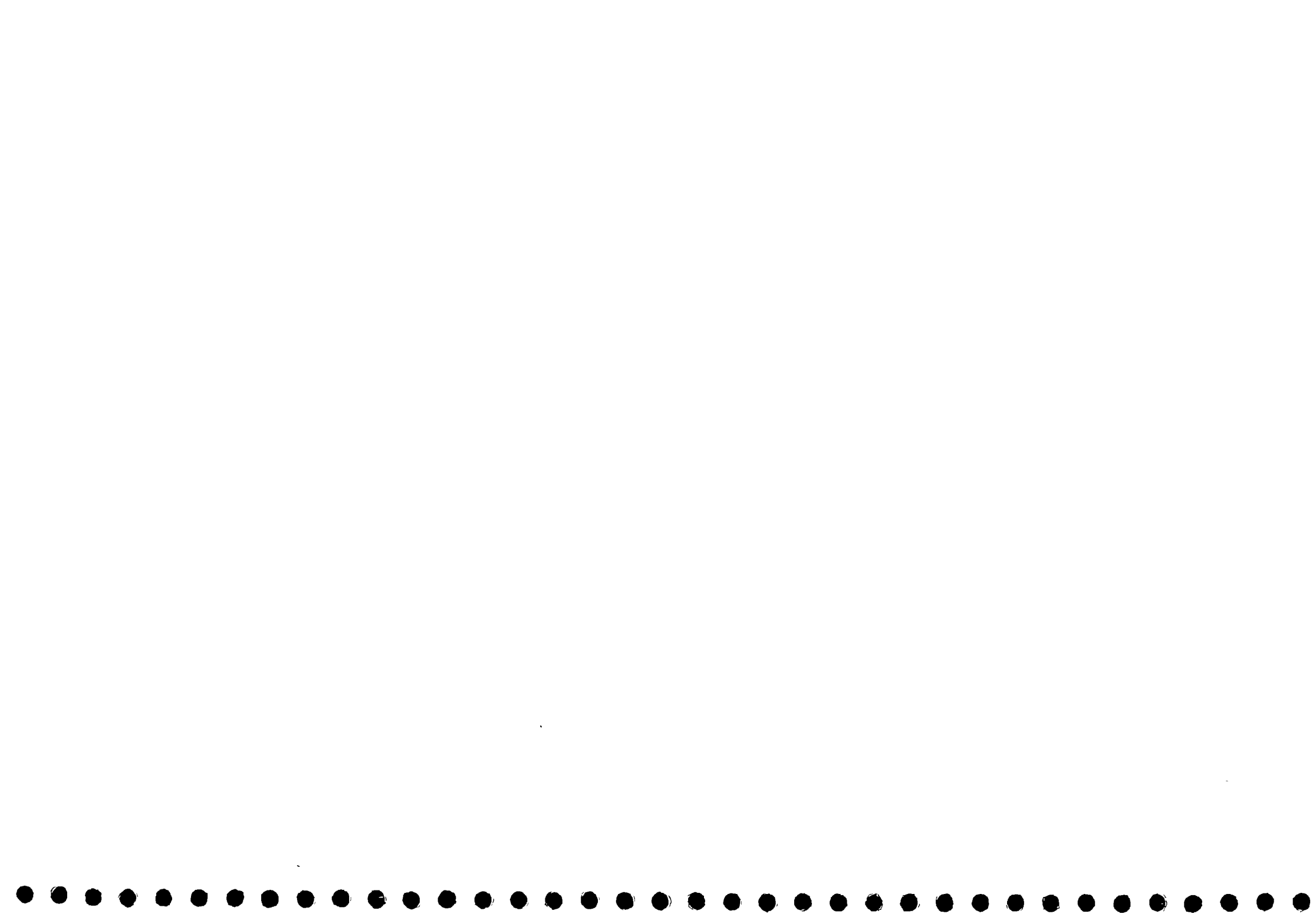
iv) Saline

v) Iron Problem

vi) Non - Drinkable

vii) Hardness problem

viii) Others



during scarcity month  
during non-scarcity period

3

Present Status of HP/PWS/Borewell Water etc

a) Present functional status

- i) Good
- ii) Satisfactory
- iii) Difficulty
- iv) Erratic function
- v) Not functioning

b) If not functioning, since how long

- i) < a week
- ii) < a fortnight
- iii) < a month

c) What is the main reason for the source going out of order ?

- i) Improper use
- ii) Damaged due to natural calamities
- iii) Damaged by miscreants
- iv) Theft of parts
- v) Water level goes down
- vi) Parts damaged or broken
- vii) Others

d) Who is mainly responsible for the maintenance and repair of the source ?

- i) PHE/RDD
- ii) Village Panchayat
- iii) NGO
- iv) Special committee formed

e) Any fee charged for the maintenance



5. Have you contributed for the capital investment for public water supply system ? If so, how much.

6. Would you like to be involved in the planning and implementation of rural water supply schemes ?

Yes / No

If yes , in which way.

7. a) Would you agree to contribute for capital investment, if new sources are installed ?  
If so, how much ?

b) Would you agree to contribute labour for a new source to be installed ?

8. What measures are suggested for the maintenance and operation of the system ?

9. Would you pay, if any rate is fixed, for the maintenance and operation of the source ?  
If so, how much ?

10. Remarks, if any  
(Status of FC Habitation)

HP	Handpump
HWS	House Water Supply
PWS	Public Water Supply
MWS	Municipal Water Supply
FC	Fully Covered
NA	Not Applicable



iv) Have you constructed your latrine  
with your own fund ? : Yes/No  
If no, who have contributed ?  
How you have contributed ?

b) If no

i) Do you like to have your own  
latrine : Yes/No

If yes,

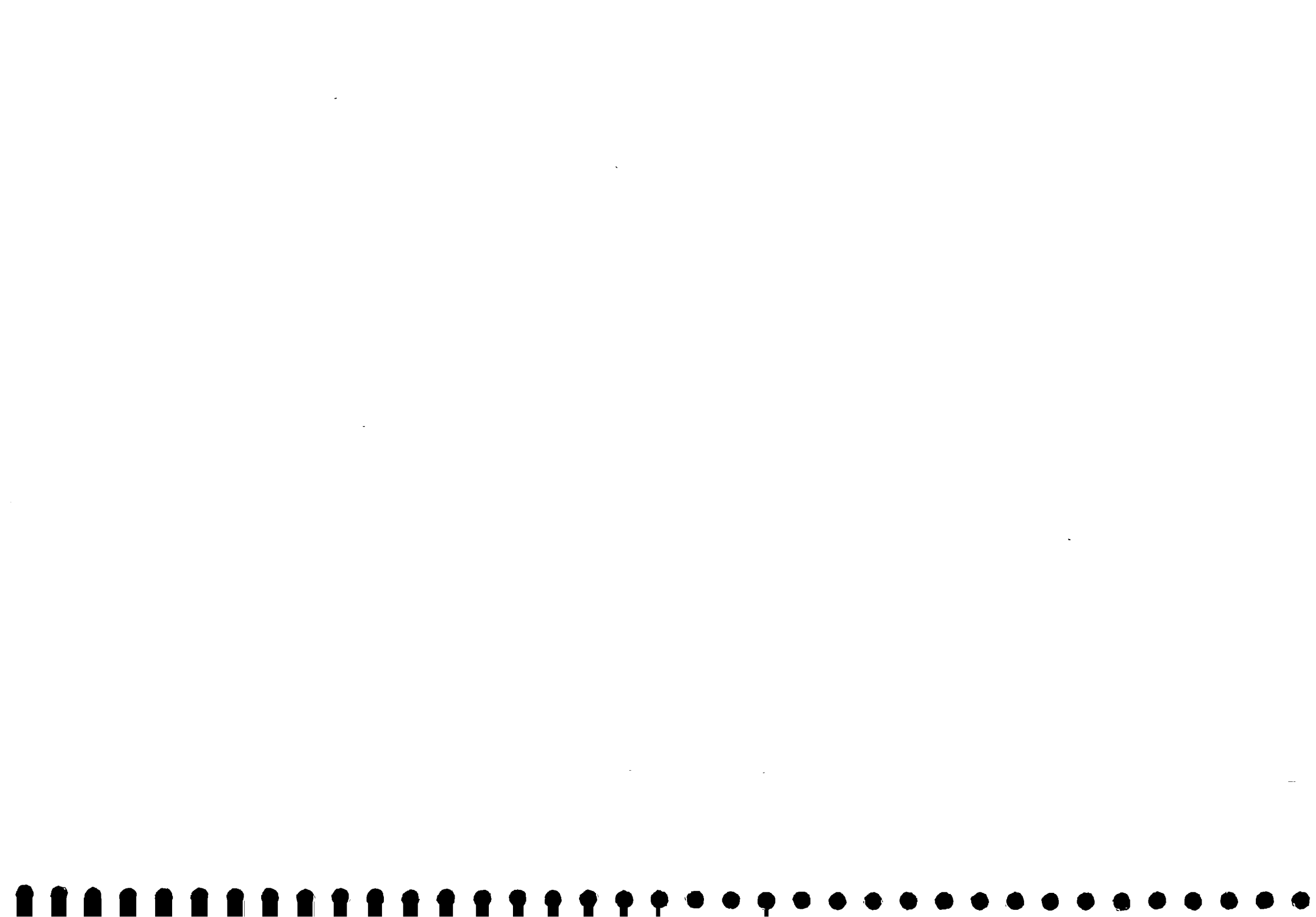
Would you agree to contribute  
for capital investment : Yes/No

or  
labour : Yes/No

ii) What type of latrine you like  
to have ? : PF/ST/DW/BH/OTHERS

iii) If no, give reasons

PF = Pour Flush  
ST=Septic Tank  
DW=Dug Well  
BH=Bore Hole





- a) Female
- b) Male
- c) Children

3. Storage of drinking water

- a) Stored in collection container Yes/No
- b) Transferred to another container Yes/No

4. Use of drinking water from storage pot.

- a) Container with handle.
- b) Container without handle.
- c) Poured from the vessel.

5. Type of material of storage and collection container.

- a) Plastic
- b) Metal
- c) Earthen
- d) Other (specify)

6. Whether storage container is covered ? Yes/No

7. Do you cut your nails regularly (weekly) ? Yes/No



- |     |   |   |                             |
|-----|---|---|-----------------------------|
| 10  | Do you bathe regularly ?  | : | Yes/No                      |
| 11  | Disposal of liquid waste  |   |                             |
|     | a) Underground Sewerage.  |   |                             |
|     | b) Surface Drain  |   |                             |
|     | c) Soak Pit   |   |                             |
|     | d) Nearby pond/river/canal  |   |                             |
|     | e) No drainage.   |   |                             |
| 12  | Refuse collection & disposal  |   |                             |
|     | a) Household bin  | : | Present/Absent              |
|     | b) Manure Pit   | : | Present/Absent              |
|     | c) Thrown indiscriminately  | : | Yes/No                      |
|     | d) Community Bin  | : | Yes/No                      |
|     | e) Any other (Specify)  | : |                             |
| 13. | Do you wear chappal/shoes when you go out from house ?              | : | Yes/No/Occasionally         |
| 14. | Do you think drinking pond/river water causes any health problems ? | : | Yes/No/Do Not Know          |
| 15. | Personal hygiene of family member ?                                 | : | Good/Bad/Moderate           |
| 16. | General observation of the respondent                               |   |                             |
|     | Cloth   |   | Clean/Not clean             |
|     | Nail  |   | Cut & clean/not cut & clean |
|     | Skin  |   | Clean/Dirty                 |



Diseases of skin, subcut, tissue							
Other (specify)							

F=Few Day  
M=Month  
R=Recovered  
S=Suffering

18. What was your family's medical expenses in the last 3 months ?

Date

Signature of the Enumerator

Name





