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**AN EVALUATION STUDY  
ON  
HANDPUMPS  
IN  
HIMACHAL PRADESH**

PLANNING DEPARTMENT  
GOVERNMENT OF HIMACHAL PRADESH  
SHIMLA - 171 002.



## PREFACE

With a successful experiment in the installation of first handpump at Haritalyangar in district Bilaspur as on 7<sup>th</sup> January, 1990, Handpumps installation was introduced as a regular plan Programme in the year 1991-92. The programme was designed primarily to supplement State Government's efforts in providing adequate safe drinking water to the rural population of the State particularly for those living in drought prone and water scarcity areas. With an active support of the masses, the programme spread like a campaign and as many as 4609 handpumps were installed all over the State within a period of 5 years. At this stage, the Government decided to make a comprehensive review of this programme by conducting an evaluation study so as to make an impact assessment of the programme on the rural masses, particularly the weaker sections of the society, the women, SCs & STs.

In the beginning, it was decided to cover all the 10 non-tribal districts under this evaluation study but keeping in view that primary data was not coming forth smoothly from at least 5 districts the results of this study were restricted to only five districts viz. Bilaspur, Hamirpur, Kangra, Mandi and Una. For the purpose of this study a detailed questionnaire was canvassed to elicit a wide range of information on all aspects of the programme to generate primary data by adopting appropriate sampling technique. The bulk of secondary data was obtained from Irrigation and Public Health Department and State Council for Science Technology and Environment. The compilation of data, tabulation and report writing were done in the Evaluation Wing of the State Headquarter of the Planning Department.

I hope that readers and implementing agencies of the State Government will find this publication very useful for their research and planning purpose. I also hope that the Irrigation and Public Health Department would make a critical analysis of this study and take appropriate steps towards implementing the recommendations of this report.

20<sup>th</sup> June, 2000

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## CHAPTER - I

### PREAMBLE

1.1.1 Not only the Human race, but all the creatures on the earth need water to drink, air to breathe and food to eat. Among the basic needs, "water" is thought even more important than food. It is unfortunate that inspite of massive sums of money including a big share of aid funds, used for water resource development, large areas of the country still continue to face scarcity of water. Here water refers to the drinking water, which occupies the second place amongst the essential pre-requisites. Till India achieved independence and even a decade thereafter, the desirability to supply clean and safe drinking water to sub-urban and rural areas of the country was not given much importance. The people of such areas had to meet their requirements from any nearest available source. The problem had been more critical in the areas prone to drought.

1.1.2 Safe and sufficient water is the sine-qua-non for the maintenance of health and prevention of diseases. Contaminated water supply can cause wide-spread epidemics. Thus provision of clean drinking water not only to rural areas but also to the developing and developed cities has become a serious challenge to the Government. Though provision of potable water to all our countrymen is a basic minimum service, it has remained a distant dream to nearly one fifth of our villagers. At the national level, the problem was first realised in the mid-fifties when a programme of National Rural Water Supply was started with the main objective to provide safe and protected water to the villages. In all successive five year plans also, special mention has been made for solving this problem." Rural Water Supply" was included in the Minimum Needs Programme in the Fifth Five Year Plan and onwards.

1.1.3 There is a large section of urban population which does not have access to safe drinking water. In almost all the metropolitan cities, the people, particularly those who have been cursed to live in slums, are regularly confronted with the dearth of this essential fluid that sustains life. Due to indiscriminate exploitation of ground water, watertable in many parts of our country has already gone further down during the past several years. According to UNDP Human Development Report- 1998 there were, 19% ( 1990-96) population in India, without access to safe drinking water.

### 2. Water Supply Programme in Himachal Pradesh

1.2.1 At the time of independence, drinking water supply facilities in the State were practically negligible. Though programme of water supply was started from the beginning of planning process, yet effective results in this direction were extremely slow till the conclusion of Fifth Five Year Plan. Thereafter, the Government laid considerable emphasis on providing of piped drinking water supply to all the villages. The allocation for this purpose was enhanced considerably during the Sixth Plan. Prior to the beginning of Sixth Five Year Plan (1980-85), there were 6316 villages (3278 problem and 3038 easy) which stood covered under the drinking water supply schemes as on 31st March, 1980, in Himachal Pradesh.

1.2.2 According to 1981 Census, Himachal Pradesh had 16807 inhabited villages spread over 12 administrative districts. Out of these, 11887 were classified as problem



villages and 4920 otherwise. During the Sixth Five Year Plan (1980-85), an outlay of Rs.4900.00 lakh was earmarked to provide potable drinking water supply facilities in urban as well as in rural areas. Against this allocation, an expenditure of the order of Rs. 6163.20 lakh was incurred, thereby making an achievement of 125.78 percent as against the allocation for this purpose. During this period, 6318 villages were covered of which 5026 were problem villages and 1292 easy villages. With these efforts the cumulative coverage of villages provided with drinking water facilities reached upto 12634 by the end of Sixth Five Year Plan period 1980-85.

1.2.3 During the Seventh Five Year Plan (1985-90), 2621 additional villages were covered under potable drinking water supply schemes of which 2432 were problem and 189 easy villages. The decade 1981-90 was also declared as "International Drinking Water and Sanitation "Decade" primarily to make strenuous efforts in providing of basic facilities of drinking water and sanitation all over the world. The Govt. of India asked all State governments to reorient their programmes and ensure that basic minimum facilities of clean and safe drinking water were provided to all the habitations during this period. As mentioned above, considerable emphasis was laid to cover all problem and easy villages as early as possible. The year- wise coverage of all inhabited villages as per 1981 census is given in the table below:-

**TABLE-I**  
**Villages Covered During the Year**

Year	Unit	Villages covered		
		Problem	Easy	Total
1.	2.	3.	4.	5.
upto 3/80	Nos	3278	3038	6316
1980-81	"	1166	296	1462
1981-82	"	1180	420	1600
1982-83	"	1020	280	1300
1983-84	"	830	190	1020
1984-85	"	830	106	936
1985-86	"	544	61	605
1986-87	"	468	32	500
1987-88	"	568	28	596
1988-89	"	532	38	570
1989-90	"	320	30	350
1990-91	"	310	40	350
1991-92	"	374	51	425
1992-93	"	467	236	703
1993-94	"	-	74	74
Total :-		11887	4920	16807



1.2.4 During 1991-93, Government of India conducted a survey to find out the status of rural water supply schemes in the Pradesh and shifted the focus from census villages to habitations, both main and the other. The main objective of this survey was to assess the coverage of safe drinking water supply programme and left out population. In this survey, smallest unit was kept habitation instead of village. The habitations were further sub-divided into two categories:-

- i) Main habitations which goes by the name of census villages.
- ii) Other habitations, which forms a part of census villages (Main habitations).

1.2.5 As per this survey, 43781 habitations were identified in the State, out of which 10064 were NC (Not covered) 11,394 PC (Partially covered) and 22,323 FC (Fully covered) categories. Thereafter, an updated/validated survey was also carried according to which, 45,367 habitations have been identified in the Pradesh. The status of these habitations as on 1-4-1994 onwards after taking into account the yearly coverage as reported by I&PH Department is given in table below:-

**TABLE-2**  
**The Status of Habitations**

Status as on	NC	PC	FC	Total
1.	2.	3.	4.	5.
1.4.94	8054	15065	22248	45367
1.4.95	7516	14803	23048	45367
1.4.96	6738	14656	23973	45367
1.4.97	5582	14462	25323	45367
1.4.98	4590	14047	26730	45367
1.4.99	3750	13592	28025	45367

### **3. Hand Pump Installation Programme in Himachal Pradesh**

1.3.1 Himachal Pradesh is a hilly State having deep gorges and high mountains. The water supply system of the State is based on surface water which runs off and causes water problematic areas. The scarcity of water gets accentuated in the summer months, when the demand is at its peak for human consumption and cattle needs. The problem starts in the villages whether in high or at low altitudes where the natural springs, small rivulets and nallahs virtually dry up much faster.

1.3.2 Despite the fact that massive investments were made by the Government to provide drinking water supply schemes to all the census villages by the end of March, 1994, shortage of drinking water still persisted in many drought prone areas called as Changer areas in Himachal Pradesh. The water availability in terms of per capita consumption was inadequate mainly due to ever increasing population pressure. Water scarcity was so acute during lean



season that public demand had to be met with by deployment of water tankers or trucks in such dry areas and in some cases it had to be provided through mules and other pack animals. In this process huge funds were spent in ensuring proper supply of water in scarcity areas. In other difficult and remote areas where this facility could not be provided, women were the worst sufferers, who had to spend most of their time in fetching water from long distances. This not only consumed their precious time, which otherwise could be utilised in other gainful pursuits, but also affected their health. In the backdrop of these constraints, the State Government thought of an alternate system of water supply which could be cost effective on the one hand, and benefit the rural masses, on the other. As a first step in this direction, it was decided to identify drought prone areas all over the State. The task was assigned to the Irrigation and Public Health department of the state government, who after thorough survey, identified as many as 3464 habitations as drought prone. Based on this survey, the circle-wise and district-wise break-up of drought prone habitations is given in table-3 below:-

**TABLE-3**  
**Drought Prone Habitations**

Sr. No.	Name of the Circle	Name of the District	Name of the Block	No. of Habitations
1.	2.	3.	4.	5.
1.	Chamba	Chamba	Bhattiyat	15
2.	Nurpur	Kangra	Nurpur	110
			Nagrota Surian	74
			Indora	46
			Pragpur	150
			Dehra Gopipur	70
				----
				450
				----
3.	Dharamsala	Kangra	Panchrukhi	3
			Lamba Gaon	38
			Baijnath	13
			Bhawarna	10
			Kangra	24
			Rait	21
			Nagrota Bagwan	11
				----
				120
				----



1.	2.	3.	4.	5.
4.	Shimla	Shimla	Mashobra	435
			Theog	287
		Solan	Nalagarh	19
			Dharampur	10
			Kunihar	21
			Solan	6
				-----
				778
				-----
5.	Rohru	Shimla	Chopal	54
			Jubbal- Kotkhai	153
			Rohru	4
				-----
				211
				-----
6.	Una	Una	Una	64
			Gagret	48
			Amb	51
			Dhundla	97
				-----
				260
				-----
7.	Sundernagar	Mandi	S/Nagar	32
			Karsog	54
			Chachiot	2
			Gopalpur	134
			Dharampur	221
			Rewalsar	28
			Chauntra	33
			Drang	11
			Sadar	16
				-----
				531
				-----
8.	Nahan	Sirmour	Nahan	17
			Sangrah	2
			Pachhad	3
			Paonta	15
			Shillai	2



1.	2.	3.	4.	5.
		Solan	Nalagarh	84
			Solan	4
				-----
				127
				-----
9.	Hamirpur	Hamirpur	Tira- Sujanpur	63
			Nadaun	87
			Hamirpur	30
			Bijhri	159
			Bhoranj	106
		Bilaspur	Ghurmarwin	66
			Geherwin	262
				-----
				773
				-----
10.	Kullu	Kullu	Nagar	11
			Kullu	8
			Banjar	6
			Ani	33
			Nirmand	24
				-----
				82
				-----
11.	Rampur	Lahul & Spiti	Spiti	117
				-----
			Grand Total	3464
				-----

1.3.3 Keeping this list of drought prone habitations in view, the Government decided to exploit the ground water potential of the State by assigning the responsibility of exploratory ground water surveys (to establish as to whether the installation of handpumps could be an alternative mode of water supply in hill areas or not) to the State Council of Science Technology and Environment.

1.3.4 After about two years of scientific investigation, it was proved beyond doubt that handpumps could be installed in all the districts of the State with some of the districts having more potential than the other. The first handpump, on an experiment basis, was installed by the Science, Technology and Environmental Council on 7th January, 1990 at Haritalayangar in district Bilaspur. Initially, the location of sites for handpumps installation was guided by the following factors:-



- a) Ground feasibility
- b) Accessibility
- c) Nearness to the habitations of SC/ST, common places like Schools, Hospitals, etc.

1.3.5 The remote sensing cell of Science, Technology and Environment Council carried out the ground water potential area identification surveys, and also assisted the I&PH Department in performing of the following functions:-

1. Identification of sites for ground water exploration.
2. Supervision of drillings.
3. Suggesting corrective steps for successful installation of handpumps.
4. Technical guidance to the department for installation of handpumps.

1.3.6 The handpump installation was introduced as a programme in the year 1991-92. At the first stage, handpumps were installed at road side villages, habitations /drought prone/ acute problematic areas, and areas where water was supplied by the tankers. The I&PH Department was entrusted with the installation of handpumps in various areas of the State, and the first handpump was installed by the department as on 20.10.91 at Nanhu in District Kangra.

1.3.7 By the end of 31st March,1999,as many as 7237 handpumps were installed in different parts of the State. The year wise details of handpump installation and expenditure incurred is given below:-

**TABLE-4**  
**Year-Wise Details Of Handpumps Installed And Expenditure Incurred**

Year	No. of Handpumps installed	Expenditure incurred (Rs.in lakh)
1.	2.	3.
1991-92	323	148.95
1992-93	789	534.30
1993-94	1496	854.31
1994-95	1000	860.01
1995-96	1001	625.16
1996-97	809	584.99
1997-98	1027	764.45
1998-99	792	842.24
<b>TOTAL</b>	<b>7237</b>	<b>5214.41</b>



1.3.8 The District-wise position of handpumps installed is depicted in table -5 below:-

**TABLE -5**  
**District-Wise Details Of Handpumps Installed**

Sr. No.	Name of the District	HANDPUMPS INSTALLED DURING THE YEAR							
		91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99
1.	Bilaspur	39	131	181	89	85	92	54	50
2.	Chamba	-	7	-	38	45	43	45	54
3.	Hamirpur	90	144	205	107	115	88	61	75
4.	Kangra	184	256	401	312	313	225	184	240
5.	Kinnaur	-	-	-	-	-	-	2	5
6.	Kullu	-	3	30	20	25	29	41	25
7.	Lahaul&Spiti	-	-	-	-	-	-	18	-
8.	Mandi	8	49	170	100	110	90	77	133
9.	Shimla	-	-	-	21	35	20	52	41
10.	Sirmour	-	5	56	106	95	50	53	40
11.	Solan	2	34	303	106	86	100	85	80
12.	Una	-	160	150	101	92	72	45	49
TOTAL		323	789	1496	1000	1001	809	717	792
Through D.C s.		-	-	-	-	-	-	-	-
Total									7237

1.3.9. The division-wise details of handpumps installed is given in table -6 below :-

**TABLE-6**  
**Division wise handpumps installed upto 3/99**

Sr. No.	Division	Handpumps installed during the year							
		91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1	Rampur	-	-	-	-	-	-	10	-
2	Jubbal	-	-	-	1	15	-	6	4
3	Rohru	-	-	-	9	1	6	6	-
4	Nerwa	-	-	-	-	-	-	5	2
Total upto 3/99									11.



1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
5 Shimla	-	-	-	11	19	14	15	25	84	
6 Suni	-	-	-	-	-	-	10	10	20	
7 Arki	2	25	130	41	28	39	27	25	317	
8 Nalagarh	-	-	80	65	29	29	21	30	254	
9 Solan	-	9	93	-	29	32	37	25	225	
10 Nahan	-	5	47	63	49	30	21	20	235	
11 Paonta	-	-	9	43	46	20	32	20	170	
12 Una-1	-	-	22	36	32	19	8	17	134	
13 Una-11	-	160	128	65	60	53	37	32	535	
14 Hamirpur	76	64	126	57	68	47	29	43	510	
15 Barsar	14	80	79	50	47	41	32	32	375	
16 Bilaspur	18	21	76	49	40	43	21	25	293	
17 Ghumarwin	21	110	105	40	45	49	33	25	428	
18 Chamba	-	4	-	-	13	7	15	23	62	
19 Dalhousi	-	3	-	32	18	22	10	17	102	
20 Salooni	-	-	-	6	14	14	20	14	68	
21 Nurpur	-	49	85	80	54	25	16	15	324	
22 Dehra	48	85	95	36	55	38	32	41	430	
23 Indora	-	-	-	37	36	24	15	19	131	
24 Jawali	-	-	-	-	-	28	36	30	94	
25 D/sala	28	27	138	86	95	19	15	25	433	
26 Palampur	108	95	65	48	47	39	22	40	464	
27 Sahapur	-	-	-	-	-	29	30	40	99	
28 Thural	-	-	18	25	26	23	18	30	140	
29 Mandi	-	-	-	24	24	21	12	21	102	
30 S/Nagar	-	-	7	31	20	16	15	44	133	
31 Sarkaghat	8	27	122	24	29	22	25	30	287	
32 Paddar	-	22	34	15	29	25	18	25	168	
33 Baggi	-	-	7	6	8	6	7	13	47	
34 Kullu-1	-	3	30	20	25	29	36	20	163	
35 Kullu-11	-	-	-	-	-	-	-	-	-	
36 Anni	-	-	-	-	-	-	5	5	10	
37 Pooh	-	-	-	-	-	-	-	3	3	
38 R/Peo	-	-	-	-	-	-	2	2	4	
39 Kaza	-	-	-	-	-	-	8	-	8	
40 Keylong	-	-	-	-	-	-	10	-	10	
Total:-		323	789	1496	1000	1001	809	717	792	6927
Through D.Cs.		-	-	-	-	-	-	-	-	310
							G.Total			7237



## CHAPTER-II

### THE EVALUATION STUDY-OBJECTIVES AND METHODOLOGY

#### 1. Need of the Study

2.1.1 As discussed in the previous chapter, handpumps were installed as a supplementary measure to provide safe drinking water facilities in drought prone and chronic water shortage areas. With successful experimentation, it was proved beyond doubt that handpumps could be an alternative mode of water supply in all the districts with some of the areas having more potential than the other. The handpump installation was started as a programme in the year 1991-92 and by the end of year 1995-96, 4609 Handpumps with an investment of Rs.30.23 crore were installed in different parts of the state. At this time, it was thought of a comprehensive review of this programme particularly to assess the impact on the society especially the women, who otherwise spent most of their time in getting drinking water from distant places. Keeping all these aspects in view, it was decided to undertake an evaluation study of this programme by the Planning Department.

#### 2. Objectives of the Study

2.2.1. *The main objectives of the study were as under:-*

- i) To study the functionality aspect of the programme with a specific aim to ascertain as to whether these handpumps were functional during summer season or in droughts or these also get dry .
- ii) To study the impact on weaker and down-trodden sections of the society, particularly the SCs/STs.
- iii) To make an assessment of the time saved by the women beneficiaries in rural areas.
- iv) To study the views of local representatives regarding location, functionality, availability of water and maintenance aspects of the programme.

#### 3. Data Requirements

2.3.1 To realise the above objectives of the study, data on various parameters of physical and financial performance, implementation and impact of the programme was to be collected from all concerned. Primary level data was collected direct from the beneficiaries through questionnaire designed for this specific purpose whereas the secondary level data was obtained from the Irrigation & Public Health department, State Council for Science, Technology and Environment and D.C. offices of the State.



#### **4. Sampling Design**

2.4.1 For the conduct of this survey; different sampling designs were considered keeping in view various factors like spatial / temporal distribution of the sample and geographical conditions of the State. Finally, multi- stage stratified systematic random sampling technique was chosen for determination of the sample. For selection of the sample, division was taken as the first stratum and within the strata the selection was to be done in the following manner:-

##### **2.4.2 Second Stratum**

All the handpumps installed in a division were to be divided into two categories:

- (a) Handpumps installed in non-covered localities.
- (b) Handpumps installed in partially covered /fully covered areas.

##### **2.4.3 Third Stratum**

Handpumps installed in non-covered localities and partially and fully covered localities were to be further divided into two categories:

- (a) Handpumps installed in non-chronic water shortage areas.
- (b) Handpumps installed in chronic water shortage areas.

Further, it was decided that 20% sample from each category will be selected at random for the purpose of this study.

2.4.4 Before launching of actual survey, the District Planning Officers and Statistical Assistants posted in the districts were given thorough training explaining to them the objectives of the study, methodology and to substitute the handpumps beneficiaries, wherever necessary. The details of aggregate number of handpumps installed were obtained from the field offices of Irrigation and Public Health Department in each district. For the conduct of the study selection was made from out of the universe by the concerned District Planning Officers.

#### **5. Scope and Coverage of study**

2.5.1 Initially, it was decided to cover ten out of twelve districts of Himachal Pradesh under this study except two tribal districts of Kinnaur and Lahaul & Spiti. All out efforts were made to collect the requisite information, but this task could not be accomplished even after four years of initiation of the study. Since the response from the district level officers / officials involved in the programme as well as in the conduct of study was not upto the desired level, it was decided to prepare a Report on the basis of data received from five districts namely Bilaspur, Hamirpur, Kangra, Mandi and Una. These districts accounted for 70 percent of the total handpumps installed and also had about 62 percent of the drought prone habitations of the State.



2.5.2 In aggregate, 859 schedules were received from seven districts, out of which 497 schedules contained requisite details while 362 were found full of discrepancies. Thus the final figure of 497 handpumps have been taken as ultimate sample size for the report. The details of district-wise number of handpumps installed, schedules received and after scrutiny number of schedules found correct are depicted in Table-7 below

**TABLE-7**  
**Total No. of Handpumps**

Sr. No.	Name of the District	Total No. of Handpumps installed	No. of Schedules received	No. of Schedules found Correct
1.	2.	3	4.	5.
1.	Bilaspur	NA	120	112
2.	Hamirpur	714	143	141
3.	Kangra	1500	270	88
4.	Kullu	114	24	-
5.	Mandi	500	72	54
6.	Solan	605	121	-
7.	Una	529	109	102
Total		3962	859	497

## 6. Schedule

2.6.1 For the conduct of field survey a schedule as appended at Annexure-" A" was devised. The schedule contained following information:-

2.6.2 Block -I of the schedule was designed to get locational information of the handpumps which included name of the block, I&PH sub-division, circle, name of the village, panchayat, hamlet, number of families in the hamlet and estimated population of the hamlet.

2.6.3 Block-II of the schedule was designed to seek information on year of the installation of handpumps, location, coverage of population, profile and functionality aspect of the handpumps.

2.6.4 Block-III of the schedule was designed to get information from local representatives on location of handpumps, water availability, maintenance, social groups living around the handpumps, actual users, traditional sources of water and their maintenance



and number of handpumps installed in the village and their views about the installation under VMJS.

2.6.5 Since women were the actual users of the handpumps, block-IV of the schedule was designed to seek information from women beneficiaries of the area (actual users of the handpumps) on usefulness of handpumps, sources of water and distance of water sources before installation and their views on utilisation of time saved due to easy water availability from the handpumps installed in their villages.

## **7. Field work**

2.7.1. The field work of this survey was done by the Statistical Assistants of Planning Department posted in the District Planning Cells by adopting personal interview/investigation method. These Statistical Assistants conducted direct interviews with the concerned officials of Irrigation and Public Health department, local representatives and women beneficiaries of the selected handpumps after taking them into confidence and also explaining to them the objectives of the study.

## **8. Supervision**

2.8.1. The supervision of the field work was done by the District Planning Officers of the Planning Department posted in each district.

## **9. Compilation and Analysis of data**

2.9.1. The compilation and analysis of data was done in the Evaluation Division of Planning Department.

## **10. Reference period**

2.10.1. The reference period of the study according to information received relates to the year 1994-95 to 1996-97 and in some cases upto 1998.



## CHAPTER-III

### Analysis of the Data

3.1.1 To fulfil the outlined objectives of this study, data on various aspects of the scheme was collected from the field. As mentioned in the previous chapter, data collection was done by the enumerators of Planning Department under the supervision of District Planning Officer of the respective district. However, in district Kangra this job was assigned to the Gram Panchayat Vikas Adhikaries / other officials under the supervision and guidance of District Planning Officer, Kangra. Textual presentation of data collected from the districts under study is given in the following tables:-

#### 2. Year-wise Installation of Selected Handpumps

3.2.1 District-wise and year-wise details of the selected handpumps is given in table – 8 below:-

**Table-8**  
**Installation of Handpumps**

Sr No	Name of the District	No. of Handpumps	Year of Installation								
			1991	1992	1993	1994	1995	1996	1997	1998	N.R.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Bilaspur	112(22.53)	5	17	35	15	17	21	2	-	-
2.	Hamirpur	141(28.37)	-	14	46	22	28	21	8	2	-
3.	Kangra	88(17.71)	4	15	13	10	8	20	17	-	1
4.	Mandi	54(10.87)	2	11	15	10	10	5	-	-	1
5.	Una	102(20.52)	-	38	19	20	19	6	-	-	-
	<b>Total :</b>	497(100.00)	11 (2.22)	95 (19.12)	128 (25.75)	77 (15.49)	82 (16.50)	73 (14.69)	27 (5.43)	2 (0.40)	2 (0.40)

Figures in parenthesis are percentages

3.2.2 The above table shows that of the 497 handpumps selected for the analysis of the data in five districts, highest number of handpumps i.e.141 being 28.37% of the aggregate were installed in Hamirpur district followed by 22.53 % in district Bilaspur, 20.52% in Una, 17.71% in Kangra and lowest 10.87% in Mandi district. The data also shows that highest number 25.75% were installed in the year1993, 19.12 % in the year 1992 and lowest 0.40% in the year 1998.

3.2.3 However, it is also clarified that aggregate number has been determined on the basis of scrutiny of data done at the headquarter. Initially, the study was confined to 1996 but due to delay in collection of data, some of the officers/ enumerators had collected data up to 31.3.98.



### 3. Chronic Water Shortage Area

3.3.1 An attempt was made to elicit information with regard to installation of handpumps in chronic water shortage areas and other areas. The gathered information is presented in table -9 below:-

**Table – 9**  
**Details of Chronic Water Shortage Areas**

Sr. No.	Name Of the District	No. of Handpumps	Whether the Handpumps were installed in Chronic Water Shortage Areas		Not Reported
			Yes	No	
1.	2.	3.	4.	5.	6.
1.	Bilaspur	112(22.53)	41 (36.61)	71 (63.39)	-
2.	Hamirpur	141(28.37)	91 (64.54)	50 (35.46)	-
3.	Kangra	88(17.71)	55 (62.50)	33 (37.50)	-
4.	Mandi	54(10.87)	34 (62.96)	19 (35.19)	1 (1.85)
5.	Una	102(20.52)	22 (21.57)	80 (78.43)	-
	<b>Total :</b>	<b>497(100.00)</b>	<b>243 (48.89)</b>	<b>253 (50.91)</b>	<b>1 (0.20)</b>

Figures in parenthesis are percentages

3.3.2 The above table shows that out of the total 497 handpumps selected for the study only 243 handpumps (48.89%) were installed in the chronic water shortage areas whereas 253 (50.91%) were in non-chronic water shortage areas. In accordance with the Government policy, emphasis should have been in chronic water shortage areas rather than in other areas. The data indicates that the programme did not follow the basic objective of reaching drought prone /chronic shortage areas in as large a measure as was envisaged.

### 4. Location

3.4.1 With a view to ascertain locationing of the installed handpumps, information collected for all the 497 selected handpumps is presented in table - 10 below:-



**Table - 10**  
**Location of Handpumps.**

Sr. No	Name of the District	No. of Handpumps	Location of Hand Pumps			Not Reported
			In NC locality	In PC locality	In Fully Covered locality	
1.	2.	3.	4.	5.	6.	7.
1.	Bilaspur	112(22.53)	5 (4.46)	61 (54.47)	46 (41.07)	-
2.	Hamirpur	141(28.37)	-	83 (58.87)	58 (41.13)	-
3.	Kangra	88(17.71)	7 (7.95)	13 (14.77)	67 (76.14)	1 (1.14)
4.	Mandi	54(10.87)	2 (3.70)	48 (88.89)	4 (7.41)	-
5.	Una	102(20.52)	2 (1.96)	72 (70.59)	25 (24.51)	3 (2.94)
	<b>Total :</b>	<b>497(100.00)</b>	<b>16 (3.22)</b>	<b>277 (55.73)</b>	<b>200 (40.24)</b>	<b>4 (0.81)</b>

Figures in parenthesis are percentages

3.4.2. It is seen from the above table that out of 497 handpumps selected for this study, 16 handpumps(3.22%) were installed in non-covered localities, 277 (55.73%) were installed in partially covered localities, while 200 (40.24%) were in fully covered localities. Thus it appears that most of the installations were not done in accordance with the Government policy.

3.4.3. As per Government policy, highest priority should have been given to non-covered localities, which suffered from water shortages and where government was unable to provide drinking water facilities either by lift or gravity water supply schemes. However, one of the reason for less coverage of non-covered localities could be the difficult hilly terrain or inaccessible areas where rigging machines or other excavating machines were difficult to be taken to make bores in the ground.

## **5. Population Coverage**

3.5.1 As a part of this study , data on the population coverage was also collected and classified on caste basis. The details are given in table-11 below:-



**Table – 11**  
**Distribution of Population**

Sr. No	Name of the District	No. of Handpumps	Population Covered by Handpumps			
			SCs	STs	Others	Total
1.	2.	3.	4.	5.	6.	7.
1.	Bilaspur	112(22.53)	7460 (22.67)	385 (1.17)	25058 (76.16)	32903 (21.56)
2.	Hamirpur	141(28.37)	6999 (20.93)	-	26445 (79.07)	33444 (21.92)
3.	Kangra	88(17.71)	10405 (23.73)	120 (0.27)	33321 (76.00)	43846 (28.73)
4.	Mandi	54(10.87)	7726 (40.27)	1565 (8.15)	9896 (51.58)	19187 (12.57)
5.	Una	102(20.52)	7730 (33.30)	-	15485 (66.70)	23215 (15.22)
	<b>Total :</b>	<b>497(100.00)</b>	<b>40320 (26.42)</b>	<b>2070 (1.36)</b>	<b>110205 (72.22)</b>	<b>152595 (100.00)</b>

Figures in parenthesis are percentages

3.5.2

The data given in table No. 11 above reveals that out of the aggregate, 1,52,595 persons served by 497 selected handpumps, maximum benefitted 1,10,205 persons (72.22%) were from the general categories, 40,320 (26.42%) were SCs while 2,070 (1.36%) were from STs. The SCs almost got benefitted in the same proportion as their aggregate population to the total population in the State. In so far as STs population is concerned, the benefits seem to be appropriately apportioned keeping in view that STs are sparsely populated in all the five districts covered under this study.

## 6. Functioning of Handpumps.

3.6.1

With a view to know functioning /non-functioning of the installed handpumps, the collected data is displayed in the table given below :-



**Table – 12**  
**Functional and Non-Functional Handpumps**

Sr. No	Name of the District	No. of Handpumps	Functional	Non-functional
1.	2.	3.	4.	5.
1.	Bilaspur	112(22.53)	107 (95.54)	5 (4.46)
2.	Hamirpur	141(28.37)	137 (97.16)	4 (2.84)
3.	Kangra	88(17.71)	80 (90.91)	8 (9.09)
4.	Mandi	54(10.87)	50 (92.59)	4 (7.41)
5.	Una	102(20.52)	84 (82.35)	18 (17.65)
	<b>Total :</b>	<b>497(100.00)</b>	<b>458 (92.15)</b>	<b>39 (7.85)</b>

Figures in parenthesis are percentages

3.6.2. The above table shows that of 497 handpumps selected for this study, 458 (92.15%) were functional whereas remaining 39(7.85%) were non-functional. It generally indicates that investigation of watertable was appropriately done before making actual installation.

3.6.3. The other details about the number of handpumps which were not in a proper working condition or remained out of order in a year are given in table-13-below :-

**Table-13**  
**Details of Non-Functional Handpumps**

Sr. No.	Name of the District	No. of Handpumps	Non-functional Hand Pumps (Nos.)	If not functioning, how often it Remains out of order		
				Permanently Non Functional	Jan. to March	April to June
1.	2.	3.	4	5.	6.	7.
1.	Bilaspur	112	5	4 (80.00)	-	1 (20.00)
2.	Hamirpur	141	4	3 (75.00)	-	1 (25.00)
3.	Kangra	88	8	6 (75.00)	-	2 (25.00)
4.	Mandi	54	4	3 (75.00)	-	1 (25.00)
5.	Una	102	18	13 (72.22)	-	5 (27.78)
	<b>Total :</b>	<b>497</b>	<b>39</b>	<b>29 (74.36)</b>	<b>-</b>	<b>10 (25.64)</b>

Figures in parenthesis are percentages



3.6.4 It is observed from the above table that of the total 39 non-functional handpumps, 29 (74.36%) were permanently non-functional, 10 (25.64%) were non-functional from April to June. These remain out of order primarily due to the reason that water table generally declines in the summer season.

3.6.5 As already stated in para 3.6.2. above, out of 497 handpumps selected for the study, 39 were non-functional on the date of survey. An attempt was also made to find out reasons for their non-functioning. The data collected in this regard is presented in table – 14 below :-

**Table – 14**  
**Reasons for Non-Functioning**

Sr No	Name of the District	No. of Handpumps	Non-functional Handpumps Nos.	Reasons for not functioning			
				Non Repair	Water Shortage	Installation defective	Mishandling
1	2	3	4	5	6	7	8
1.	Bilaspur	112	5	3	1	1	-
2.	Hamirpur	141	4	1	1	2	-
3.	Kangra	88	8	3	2	3	-
4.	Mandi	54	4	2	1	1	-
5.	Una	102	18	9	5	4	-
	<b>Total :</b>	<b>497</b>	<b>39</b>	<b>18</b>	<b>10</b>	<b>11</b>	<b>-</b>

3.6.6 It is seen from the above table-14 that out of 39 non-functional handpumps, 18 were non-functional for want of repairs, 10 were non-functional due to water shortages whereas 11 were non-functional due to defective installations.

## **7. Views of Local Representatives**

3.7.1 In order to know about the impact of this scheme on rural masses, views of the Gram Panchayat Pradhan / Up- Pradhan / Ward Member were also solicited to assess the general operational conditions, water availability, maintenance and traditional sources of water prior to the installation of these handpumps. One local representative each from the area selected for this study was interviewed. In all, 497 representatives were contacted. The details are given in table -15 below:-



**Table -15**  
**Status –wise Details of Local Representatives**

Sr.	Name of the District	No. of Representatives contacted	Pradhan	Up-Pradhan	Ward Member	Others	Not Reported
1.	2.	3.	4.	5.	6.	7.	8.
1.	Bilaspur	112	39	-	73	-	-
2.	Hamirpur	141	56	2	83	-	-
3.	Kangra	88	42	4	25	3	14
4.	Mandi	54	24	3	20	7	-
5.	Una	102	62	17	12	-	11
	TOTAL	497	223 (44.87)	26 (5.23)	213 (42.86)	10 (2.01)	25 (5.03)

Figures in parenthesis are percentages

3.7.2 The above table shows that out of 497 representatives contacted, 223(44.87%) were Pradhans, 26(5.23%) were Up-Pradhans and 213(42.86%) were Ward Members. In the case of others, status were not known.

#### 8. Views about Locationing :

3.8.1. With a view to know as to whether installations were made in central places, views of the representatives were obtained in affirmative or negative form as the case may be and are presented in table No. -16 below:-

**Table-16**  
**Location of Handpumps.**

Sr. No	Name of the District	No. of Pradhans /Ward Members Interviewed	Whether properly Located		If Not, reasons			
					It is far from main population	The deptt.'s decision was not proper	Problem of water table	Located adjacent to existing source
			Yes	No.				
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	Bilaspur	112	111 (99.11)	1 (0.89)	-	-	-	1
2.	Hamirpur	141	140 (99.29)	1 (0.71)	1	-	-	-
3.	Kangra	88	82 (93.18)	6 (6.82)	1	-	5	-
4.	Mandi	54	50 (92.59)	4 (7.41)	2	1	1	-
5.	Una	102	86 (84.31)	16 (15.69)	-	-	16	-
	TOTAL	497	469 (94.37)	28 (5.63)	4	1	22	1

Figures in parenthesis are percentages



3.8.2 The data in table-16 reveals that majority of Pradhans/Up-Pradhans/Ward Members i.e. 469(94.37%) were of the view that site selection for the installation was appropriate, while 28 (5.63%) replied in negative. Of the 28 representative who replied in negative, 4 thought that the location was outside population concentrated area, one termed it as a bad decision by the department while 22 reported problem of water table, whereas one reported that the location was adjacent to the existing source of water.

## 9. Water Availability

3.9.1. The local representatives were also interviewed to know about the water availability from the handpumps selected for this study. The data collected in this regard is presented in table No-17 below:-

**Table- 17**  
**Water Availability from Handpumps**

Sr. No	Name of the District	No. of Pradhans/Ward Members Interviewed	Water Availability		
			Inadequate	Adequate	Excess
1.	2.	3.	4.	5.	6.
1.	Bilaspur	112	10 (8.93)	101 (90.18)	1 (0.89)
2.	Hamirpur	141	12 (8.51)	129 (91.49)	-
3.	Kangra	88	29 (32.96)	38 (43.18)	21 (23.86)
4.	Mandi	54	9 (16.67)	43 (79.63)	2 (3.70)
5.	Una	102	18 (17.65)	84 (82.35)	-
	TOTAL	497	78 (15.69)	395 (79.48)	24 (4.83)

Figures in parenthesis are percentages

3.9.2. It is seen from the data given in the table above that of 497 local representatives interviewed, 395 (79.48%) told that the water availability was adequate while 78 (15.69%) thought it not to be in accordance with their demands. However, 24 (4.83%) reported that they were getting even excess water over and above their daily needs.

## 10. Maintenance :

3.10.1 The local representatives were also asked to express their views on the maintenance of these handpumps. The information collected in this regard is presented in table No-18.



**Table – 18**  
**Maintenance Responsibility**

Sr. No.	Name of the District	Pradhans/Ward Members Interviewed	Who is maintaining the Handpump			No. body
			I&PH Deptt.	Gram Panchayat	Local People	
1.	2.	3.	4.	5.	6.	7.
1.	Bilaspur	112	110 (98.21)	-	-	2 (1.79)
2.	Hamirpur	141	141 (100.00)	-	-	-
3.	Kangra	88	82 (93.18)	2 (2.27)	1 (1.14)	3 (3.41)
4.	Mandi	54	54 (100.00)	-	-	-
5.	Una	102	102 (100.00)	-	-	-
	TOTAL	497	489 (98.39)	2 (0.40)	1 (0.20)	5 (1.01)

Figures in parenthesis are percentages

3.10.2 The above table reveals that out of the total 497 local representatives, 489(98.39%) indicated that maintenance liability rested with I&PH Department whereas 2 (0.40%) reported that these were being maintained by the local Gram Panchayats, while 5 (1.01%) did not have any idea as to who shouldered the maintenance responsibility.

## 11. Maintenance Quality

3.11.1 In order to know the quality of maintenance, all 497 representatives were interviewed and gathered information is being displayed in table No.-19 sub -joined below:-



**Table - 19**  
**Maintenance details of Handpumps**

Sr. No.	Name of the District	Pradhans/ Ward Members Interviewed	Whether selected Handpumps were Maintained Properly		If No, Reasons				
			Yes	No	No Complaint was Registered with the Deptt.	Deptt. did not take any Action	Due to Local dispute	Dirty Water	Not Reported
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	Bilaspur	112(22.53)	105 (93.75)	7 (6.25)	1	3	1	2	-
2.	Hamirpur	141(28.37)	128 (90.78)	13 (9.22)	-	13	-	-	-
3.	Kangra	88(17.71)	81 (92.05)	7 (7.95)	3	4	-	-	-
4.	Mandi	54(10.87)	45 (83.33)	9 (16.67)	3	4	-	2	-
5.	Una	102(20.52)	85 (83.33)	17 (16.67)	3	10	-	3	1
	<b>Total :</b>	<b>497(100.00)</b>	<b>444 (89.34)</b>	<b>53 (10.66)</b>	<b>10</b>	<b>34</b>	<b>1</b>	<b>7</b>	<b>1</b>

Figures in parenthesis are percentages

3.11.2 It would be seen from the data given in the above table that of the 497 local representatives interviewed to ascertain the quality of maintenance, majority of representatives i.e. 444 (89.34%) told that handpumps were being maintained properly while 53 (10.66%) replied in negative. For knowing reasons for non-maintenance, 10 interviewed for the purpose told that non-maintenance was due to non- registration of complaint with the I&PH Department while 34 were of the opinion that I&PH Department was responsible for not attending to non-functioning complaints.

## 12. Social Groups Living Around the Handpumps

3.12.1 In order to find out as to which social groups lived around the installed handpumps, the data was collected in this regard and displayed in table given below:-



**Table -20**  
**Social Groups Living Around the Handpump**

Sr. No	Name of the District	No. of Selected Handpumps	SCs	STs	OBCs	Others	Total
1.	2.	3.	4.	5.	6.	7.	8.
1.	Bilaspur	112(22.53)	7460 (22.67)	385 (1.17)	-	25058 (76.16)	32903 (21.56)
2.	Hamirpur	141(28.37)	6999 (20.93)	-	150 (0.45)	26295 (78.62)	33444 (21.92)
3.	Kangra	88(17.71)	10405 (23.73)	120 (0.27)	13348 (30.45)	19973 (45.55)	43846 (28.73)
4.	Mandi	54(10.87)	7726 (40.27)	1565 (8.15)	370 (1.93)	9526 (49.65)	19187 (12.57)
5.	Una	102(20.52)	7730 (33.30)	-	5705 (24.57)	9780 (42.13)	23215 (15.22)
	<b>Total :</b>	<b>497(100.00)</b>	40320 (26.42)	2070 (1.36)	19573 (12.83)	90632 (59.39)	152595 (100.00)

Figures in parenthesis are percentages

3.12.2 It is seen from table given above that 1,52,595 persons got benefitted with the installation of 497 handpumps selected for the purpose of this study. Of this 26.42% belonged to SCs, 1.36% STs and 12.83% OBCs. This implies that the locations were social group neutral and were largely need based.

### 13. Traditional Sources of Water

3.13.1 With a view to find out as to how the beneficiaries were fulfilling their water requirements with traditional water sources prior to the installation of handpumps, the local representatives of the selected districts were interviewed. The data collected is being presented in the subsequent paras :-



**Table -21**  
**Traditional Sources of Water**

Sr No	Name of the District	Pradhans/Ward Members Inter-Viewed(Nos.)	Whether Served		Traditional Sources of water			
			With piped Water supply		Village Well	Bouri	Nallah / Stream	More than one source of water
			Yes	No				
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	Bilaspur	112(22.53)	110 (98.21)	2 (1.79)	16 (14.29)	45 (40.18)	25 (22.32)	26 (23.21)
2.	Hamirpur	141(28.37)	141 (100.00)	-	62 (43.97)	61 (43.26)	2 (1.42)	16 (11.35)
3.	Kangra	88(17.71)	51 (57.95)	37 (42.05)	27 (30.68)	40 (45.46)	3 (3.41)	18 (20.45)
4.	Mandi	54(10.87)	52 (96.30)	2 (3.70)	3 (5.56)	24 (44.44)	5 (9.26)	22 (40.74)
5.	Una	102(20.52)	102 (100.00)	-	90 (88.24)	3 (2.94)	-	9 (8.82)
	<b>Total :</b>	<b>497(100.00)</b>	456 (91.75)	41 (8.25)	198 (39.84)	173 (34.81)	35 (7.04)	91 (18.31)

Figures in parenthesis are percentages

3.13.2 The above table reveals that 456 local representatives (91.75%) reported that they were already served with piped water supply schemes prior to the installation of Handpumps, whereas 41 (8.25%) reported that they were without piped water supply. The above table also reveals that out of 497 local representatives contacted, 91 (18.31%) reported more than one source of water, 198 (39.84%) reported that their traditional source of water were wells while 173 (34.81%) reported bowli as their traditional source. This data indicates a paradox that handpumps got located in the localities already served by piped water supply, further implying that either the piped water supply scheme were very old and inadequate and needed augmentation in water availability or locationing decision were guided by consideration other than felt need. In essence, the handpump locationing should have followed the "Not-Covered" locations on priority. Locations with piped water supply do not qualify to be N.C habitations.

#### 14. Maintenance of Traditional Sources

3.14.1 It was considered important to get the views of local representatives regarding maintenance of traditional sources. The data collected in this regard is given in the table No. -22.



**Table – 22**  
**Maintenance of Traditional Water Sources**

Sr No	Name of the District	Pradhan / Ward Members Interviewed (Nos)	Who maintains these Traditional Sources			Reasons for non-maintenance				
			Government	Panchayat	Local People	No Body	Now not required	Gone beyond Repairs	Gone dry	No funds available
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1	Bilaspur	112(22.53)	87 (77.68)	2 (1.79)	19 (16.96)	4 (3.57)	3 (75.00)	1 (25.00)	-	-
2	Hamirpur	141(28.37)	136 (96.45)	-	4 (2.84)	1 (0.71)	1 (100.00)	-	-	-
3	Kangra	88(17.71)	49 (55.68)	16 (18.18)	23 (26.14)	-	-	-	-	-
4	Mandi	54(10.87)	17 (31.48)	4 (7.41)	26 (48.15)	7 (12.96)	1 (14.28)	3 (42.86)	3 (42.86)	-
5	Una	102(20.52)	3 (2.94)	4 (3.92)	53 (51.96)	42 (41.18)	2 (4.76)	2 (4.76)	-	38 (90.48)
	<b>Total :</b>	<b>497(100.00)</b>	<b>292 (58.75)</b>	<b>26 (5.23)</b>	<b>125 (25.15)</b>	<b>54 (10.87)</b>	<b>7 (12.96)</b>	<b>6 (11.11)</b>	<b>3 (5.56)</b>	<b>38 (70.37)</b>

Figures in parenthesis are percentages..



3.14.2 It is seen from the above table -22 that out of 497 local representatives interviewed, maximum number i.e. 292 (58.75%) reported that traditional sources were being maintained by the government, 26 (5.23%) reported that these were being maintained by the panchayats, 125 (25.15%) told that these were being maintained by the local people while 54 (10.87%) reported that these were not being maintained by anybody.

3.14.3 Those who replied in negative, were also asked to tell about the reasons of non-maintenance. In its reply 38 representatives, (70.37%) told that these were not being properly maintained because funds were not available, 7 reported that they did not feel any necessity to maintain traditional sources while 6 felt that the conditions of the traditional sources had deteriorated to the extent that these were not worth maintaining while three told that their traditional sources had gone dry and were without any water.

3.14.4 If we sum-up the views of the local representatives, we come to the conclusion that non-provision of maintenance funds were the main hinderance which were not being provided either by the Govt./ any other agency or by the local administration. The other aspect is the mindset attitude of the people who felt that maintenance of any asset or water source was the responsibility of the State Govt. So the replies given by the representatives were based on presumptions rather any reality.

## 15. Total Requirement of Handpumps

3.15.1 Keeping in view the number of handpumps already installed, an attempt was made to find out total requirements of handpumps in the village. Data collected in this regards is displayed in table-23 below:-

**Table – 23**  
**No. of Hand Pumps Installed in the Village**

Sr. No.	Name of the District	Pradhans/ward Members Interviewed (Nos.)	Total No. of Hand Pumps Installed so far	Total requirement	Additional Requirement of Handpumps
1.	2.	3.	4.	5.	6.
1.	Bilaspur	112(22.53)	212	413	201
2.	Hamirpur	141(28.37)	326	419	93
3.	Kangra	88(17.71)	294	486	192
4.	Mandi	54(10.87)	107	177	70
5.	Una	102(20.52)	228	379	151
	<b>Total :</b>	<b>497(100.00)</b>	<b>1167</b>	<b>1874</b>	<b>707</b>

Figures in parenthesis are percentages



3.15.2 The above table shows that the selected local representatives reported that in aggregate 1167 handpumps were installed in their villages by the date of survey against their total requirement of 1874 handpumps. Thus they put an additional demand of 707 hand pumps. However, the demand does not seem to be realistic keeping in view the fact that almost all the villages were already served with water supply schemes. This is also in contradiction with the findings already reported in paragraphs 3.9.1 and 3.9.2 earlier

## 16. Installation of Handpumps Under VMJS

3.16.1 In this section, an attempt was made to analyse the views of local representatives regarding installation of handpumps under VMJS, and maintenance under RMJS and through public contributions. The data collected in this regard is displayed in the table No.-24..

Table No. 24

No. of hand pumps installed in the village

Village	Hand pumps installed under VMJS	Hand pumps installed under RMJS	Hand pumps installed through public contributions	Total
1	10	20	10	40
2	15	25	15	55
3	20	30	20	70
4	25	35	25	85
5	30	40	30	100
6	35	45	35	115
7	40	50	40	130
8	45	55	45	145
9	50	60	50	160
10	55	65	55	175
11	60	70	60	190
12	65	75	65	205
13	70	80	70	220
14	75	85	75	235
15	80	90	80	250
16	85	95	85	265
17	90	100	90	280
18	95	105	95	295
19	100	110	100	310
20	105	115	105	325
21	110	120	110	340
22	115	125	115	355
23	120	130	120	370
24	125	135	125	385
25	130	140	130	400
26	135	145	135	415
27	140	150	140	430
28	145	155	145	445
29	150	160	150	460
30	155	165	155	475
31	160	170	160	490
32	165	175	165	505
33	170	180	170	520
34	175	185	175	535
35	180	190	180	550
36	185	195	185	565
37	190	200	190	580
38	195	205	195	595
39	200	210	200	610
40	205	215	205	625
41	210	220	210	640
42	215	225	215	655
43	220	230	220	670
44	225	235	225	685
45	230	240	230	700
46	235	245	235	715
47	240	250	240	730
48	245	255	245	745
49	250	260	250	760
50	255	265	255	775
51	260	270	260	790
52	265	275	265	805
53	270	280	270	820
54	275	285	275	835
55	280	290	280	850
56	285	295	285	865
57	290	300	290	880
58	295	305	295	895
59	300	310	300	910
60	305	315	305	925
61	310	320	310	940
62	315	325	315	955
63	320	330	320	970
64	325	335	325	985
65	330	340	330	1000
66	335	345	335	1015
67	340	350	340	1030
68	345	355	345	1045
69	350	360	350	1060
70	355	365	355	1075
71	360	370	360	1090
72	365	375	365	1105
73	370	380	370	1120
74	375	385	375	1135
75	380	390	380	1150
76	385	395	385	1165
77	390	400	390	1180
78	395	405	395	1195
79	400	410	400	1210
80	405	415	405	1225
81	410	420	410	1240
82	415	425	415	1255
83	420	430	420	1270
84	425	435	425	1285
85	430	440	430	1300
86	435	445	435	1315
87	440	450	440	1330
88	445	455	445	1345
89	450	460	450	1360
90	455	465	455	1375
91	460	470	460	1390
92	465	475	465	1405
93	470	480	470	1420
94	475	485	475	1435
95	480	490	480	1450
96	485	495	485	1465
97	490	500	490	1480
98	495	505	495	1495
99	500	510	500	1510
100	505	515	505	1525



Table - 24

Figures in parenthesis are percentages..



3.16.2 The above table reveals that majority of the representatives 406 (81.69%) were unwilling for installation of handpumps under VMJS and only 85 (17.10%) were willing to make contribution under VMJS. Similarly, 437 representatives were not in favour of maintenance of handpumps under RMJS.

3.16.3 As many as 448 (90.14%) reported that people were not ready to contribute public share for installation purpose, whereas 39 reported people's willingness to make public contribution. The remaining 10 representatives did not give any specific opinion.

3.16.4 These findings donot augur well with the emerging concept of people's participation and clearly bring out the over-dependence of people at large on the government.

## 17 Information from Women Beneficiary

3.17.1 One of the objective of the study was to assess the impact of the programme on women beneficiaries in the rural areas. For this purpose 493 women one each from the area selected for this study were interviewed in five districts while 4 handpumps were installed in school premises. The data so collected is being displayed in the following table :-

**Table – 25**  
**Information from the Women beneficiary**

Sr. No	Name of the District	Women beneficiary Interviewed (Nos.)	Whether the Handpump is useful or not			
			No use because it has Inadequate water	Very useful because it saves time		
1.	2.	3.	4.	Yes	No	N.R.
1.	Bilaspur	108(21.91)	9 (8.33)	99 (91.67)	-	-
2.	Hamirpur	141(28.60)	3 (2.13)	134 (95.03)	-	4 (2.84)
3.	Kangra	88(17.85)	8 (9.09)	80 (90.91)	-	-
4.	Mandi	54(10.95)	7 (12.96)	47 (87.04)	-	-
5.	Una	102(20.69)	18 (17.65)	84 (82.35)	-	-
<b>Total :</b>		493(100.00)	45 (9.13)	444 (90.06)	-	4 (0.81)

Figures in parenthesis are percentages

3.17.2 The above table reveals that out of 493 women beneficiaries contacted, 444 (90.06%) expressed their satisfaction about the utility of installed handpumps. They reported that the installation of handpumps saved their valuable time while 45(9.13%) reported no use because it did not provide adequate water. However, 4 did not say any thing.



### 18 Source of water before installation of handpumps :

3.18.1 With a view to know the other water sources of the benefitted women prior to the installation of these handpumps the data was collected and displayed in the following table:-

**Table – 26**  
**Source of water Prior to installation of Handpumps**

Sr. No	Name of the District	Women beneficiary Interviewed (Nos.)	Well	Pond	River	Bouri/ Chasma	Others
1.	2.	3.	4.	5.	6.	7.	8.
1.	Bilaspur	108 (21.91)	8	-	2	44	54
2.	Hamirpur	141 (28.60)	56	2	11	57	15
3.	Kangra	88 (17.85)	27	9	3	40	9
4.	Mandi	54 (10.95)	1	-	3	24	26
5.	Una	102 (20.69)	87	-	-	3	12
	<b>Total :</b>	493 (100.00)	179 (36.31)	11 (2.23)	19 (3.85)	168 (34.08)	116 (23.53)

Figures in parenthesis are percentages

3.18.2 It is seen from the above table that 179(36.31%) women beneficiary were using water of traditional wells in the villages, 11(2.23%) were using pond's water, 19(3.85%) used river water while 168(34.08%) were using water of bouri/chasma and 116(23.53%) were using water of other sources.

### 19. Distance of Water Source

3.19.1 In order to know the distance covered by the women beneficiaries to fetch water for drinking purpose and other uses prior to the installation of these handpumps, 493 women beneficiaries were interviewed . The data collected is displayed in the following table:-



**Table – 27**  
**Distance of water Source from Residence**

Sr No	Name of The District	No. of Women Beneficiary	Distance of water Source			
			< 500 Meter	500-1000 Meter	1000-2000 Meter	More than 2000 Meter
1.	2.	3.	4.	5.	6.	7.
1.	Bilaspur	108 (21.91)	21 (19.44)	87 (80.56)	-	-
2.	Hamirpur	141(28.60)	71 (50.35)	45 (31.91)	19 (13.48)	6 (4.26)
3.	Kangra	88(17.85)	64 (72.73)	21 (23.86)	2 (2.27)	1 (1.14)
4.	Mandi	54(10.95)	43 (79.63)	8 (14.81)	3 (5.56)	-
5.	Una	102(20.69)	44 (43.14)	58 (56.86)	-	-
	<b>Total :</b>	493(100.00)	243 (49.29)	219 (44.42)	24 (4.87)	7 (1.42)

Figures in parenthesis are percentages

3.19.2

It is seen from the above table that 243 out of 493 (49.29%) women beneficiaries were having an easy access to the water source prior to the installation of handpumps as they had to cover only a distance of less than 500 mtrs. from their houses, 219 (44.42%) women beneficiary were to cover a distance between 500 – 1000 mtrs., whereas 24 (4.87%) were to cover a distance of 1000 – 2000 mtrs. in one round to fetch water for various uses. There were 7 other beneficiaries (1.42%) who told that they were to cover distance more than 2000 mtrs. to fetch a pale of water from their traditional sources.

## **20. Assessment of Benefits Realised by the Women Beneficiaries**

3.20.1

As stated earlier, principle objective of the study is to find out the benefits percolated to women folk in the rural areas, who were to spend most of their time in fetching water for drinking purposes and other uses. With the installaton of handpumps, the pressure of work particularly fetching of water got reduced considerably and it were the women who got benefitted at large. Certainly, the women beneficiaries saved precious time, which they now utilised on various other purposes. In order to find out as to how they used their saved time which otherwise they were to utilise in fetching water from their traditional sources, the data was collected and is presented in the following table:-



**Table – 28**  
**Use of Time Saved Due to Installation of Handpumps**

Sr. No	Name of the District	No. of women beneficiary Interviewed	Farming	Domestic Affairs	Self employment	Another work	N.R.
1.	2.	3.	4.	5.	6.	7.	8.
1.	Bilaspur	108 (21.91)	-	97 (89.81)	1 (0.93)	1 (0.93)	9 (8.33)
2.	Hamirpur	141(28.60)	1 (0.71)	131 (92.90)	2 (1.42)	-	7 (4.97)
3.	Kangra	88(17.85)	12 (13.64)	65 (73.86)	3 (3.41)	-	8 (9.09)
4.	Mandi	54(10.95)	3 (5.56)	43 (79.63)	1 (1.85)	-	7 (12.96)
5.	Una	102(20.69)	46 (45.10)	35 (34.31)	3 (2.94)	-	18 (17.65)
	<b>Total :</b>	493(100.00)	62 (12.58)	371 (75.25)	10 (2.03)	1 (0.20)	49 (9.94)

Figures in parenthesis are percentages

- 3.20.2 It is seen from the above table that 371(75.25%) women beneficiaries utilised their saved time in other domestic activities while 62 (12.58%) utilised their saved time on farming activities. There were 10 such beneficiaries (2.03%) who told that they started self employment ventures in the saved time. However, 49 (9.94%) did not divulge their views on time saved and its use.



## CHAPTER-IV

### SUMMARY OF FINDINGS AND RECOMMENDATIONS

#### 4.1 Summary of Findings:-

- 4.1.1 The data available on the year of installation of 497 selected handpumps revealed that maximum number of handpumps 128 (25.75%) were installed in the year 1993 and lowest 2 (0.40%) in the year 1998. It was also found that highest number i.e. 141 (28.37%) handpumps were installed in Hamirpur District and lowest 54(10.87%) in Mandi District.

(Table-8, para 3.2.2)

- 4.1.2 It was found that out of the total 497 handpumps installed, 48.89% were in chronic water shortage area while 50.91% is non-chronic water shortage areas and in case of one handpump, no such information was given.

(Table-9, para 3.3.2)

- 4.1.3 As far as the location of handpumps is concerned, it was found that of the total 497 handpumps, 3.22% were installed in non-covered localities, 55.73% were in partially covered localities while 40.24% were in fully covered localities

(Table-10, para 3.4.2)

- 4.1.4 As regards the coverage of population, the proportion of SC,ST and other general category population covered under handpumps scheme were 26.42 percent, 1.36 percent and 72.22 percent respectively.

(Table-11, para 3.5.2)

- 4.1.5 As regards the functioning of the installed handpumps, of the total 497 handpumps selected for this study, 458 (92.15%) were functional where as remaining 39(7.85%) were non functional.

(Table 12, para 3.6.2)

- 4.1.6 It was found that out of 39 non functional handpumps, 18 were non functional for want of repairs, 10 were non functional due to water shortages whereas 11 were non functional due to defective installation..

( Table-14, para 3.6.6)

- 4.1.7 As regards site selection for installation, of the total 497 representative contacted, 94.37% thought site selection as proper while 5.63% did not think it a suitable place for installation of handpumps.

( Table-16, para 3.8.2)



4.1.8 It was found that of the total 497 local representatives contacted, 395 (79.48%) reported water availability as adequate and as per their requirements while 78 (15.69%) thought it to be inadequate while 24 (4.83%) reported that they were getting even excess water over and above their daily needs.

(Table-17, para 3.9.2)

4.1.9 A large percentage 98.39% of the local representatives reported that maintenance of handpumps were done by the Irrigation and Public Health Department while (0.40%) reported these to be maintained by the local Gram Panchayats whereas 1.01% thought it to be maintained by none.

(Table-18, para 3.10.2)

4.1.10 As far as the maintenance quality is concerned, it was found that a majority of the local representatives 89.34% reported that these were being maintained properly while 10.66% replied in negative.

(Table-19, para 3.11.2)

4.1.11 A large percentage (91.75%) of the Gram Panchayat Pradhans/Up Pradhans/Ward Members reported that they were already served with piped water supply prior to the scheme of the installation of handpumps, whereas 8.25% reported that they were without piped water supply.

(Table 21, para 3.13.2)

4.1.12 As regards traditional sources of water, 39.84% reported wells, 34.81% reported bouri, 7.04% told nallah/streams while 18.31% reported that they had more than one source of water.

(Table-21, para3.13.2)

4.1.13 58.75 % local representatives reported that the maintenance of traditional sources of water was being done by the government, 5.23% reported that these were being maintained by the panchayats, 25.15% reported by the local people, while 10.87% reported these to be maintained by none.

(Table-22, para 3.14.2)

4.1.14 Majority of the representatives(81.69%) were unwilling to make public contributions under VMJS while only 17.10% were willing to make contribution under VMJS.

(Table 24, para 3.16.2)

4.1.15 A large percentage (90.14%) of the local representatives reported that people were not ready to contribute public share for the installation of handpumps.

(Table-24, para 3.16.3 )



4.1.16 It was found that of the total 493 women beneficiaries interviewed, 444(90.06%) expressed their satisfaction about the utility of handpumps, while 45 (9.13%) reported no use because it did not provide adequate water.

(Table- 25, para 3.17.2)

4.1.17 It was found that of the total 493 women beneficiaries interviewed , 36.31% were using water of traditional wells, 2.23% were using pond's water, 3.85% river water whereas 34.08% were using water of bouri/chasma and 23.53% were using water of other sources.

(Table 26, para 3.18.2)

4.1.18 It was found that 49.29% of the women beneficiaries were having easy access to water source prior to installation of handpumps as they had to cover only a distance of less then 500 mtrs.

(Table 27, para 3.19.2)

4.1.19 As far as the use of time saved due to installation of handpumps is concerned, it was found that 75.25% women beneficiaries utilized their saved time in other domestic activities, 12.58% in farming activities, while 2.03% reported that they utilised the time in self employment ventures.

(Table 28, para 3.20.2.)

## **4.2 Recommendations :-**

4.2.1 As mentioned in the earlier chapters, handpumps installations were made as a supplementary measure to provide drinking water facilities in chronic water shortage areas where rural masses particularly the women spent most of their valuable time in getting water for various uses. Keeping in view the findings of the study, the programme has succeeded in achieving its aims to a greater extent. Despite these achievements, it is not free from blemishes rather suffers from deficiencies which can be overcome after making some modifications in some of the facets of the programme. Some of the recommendations are given as under:-

- i) One of the basic objective of the programme was to make installations in chronic water shortages areas but the executing agencies seem to have departed from this plank as we noticed in the main findings that more than 50% of the installations were made in non chronic water shortage areas. The department may take a serious note of this lapse and in future, installations be made in scarcity prone areas which cater to the needs of masses in large number. The department may formulate afresh guidelines wherein all these aspects may specifically be taken into account The executing agencies may be instructed to execute the programme strictly as per guidelines. If needed, the Planning Department may also be consulted before framing these guidelines.



- ii) While going through the findings, one will notice that wherein installation process went on swiftly and smoothly, maintenance aspect was found to be completely missing. In case defective installations are not checked in time and corrective measures are not initiated, the whole investment may turn out to be infructuous. The department may also evolve a system wherein some user charges may be levied which later on would be utilised on the maintenance. But keeping in view that repair of handpumps is a mechanical and specialised job which cannot be handled by an ordinary plumber, the maintenance responsibility may lie with the I&PH department. The department of I&PH may devise some system wherein the Junior Engineer of the concerned division may pay a regular visit to the installations after every quarter.
- iii) An intensive monitoring system may also be devised by which the operational status of each handpump is known by a regular reporting. The overall responsibility of maintenance should remain with Irrigation and Public Health department. However, keeping in view the large network of handpumps installed in the state, it seems to be very difficult for Irrigation and Public Health department officials to look after all the handpumps for their maintenance. Under such a situation, it is recommended that Gram Panchayats may be asked to send their report on problematic installations to IPH department so that department could send their mechanics for carrying out necessary repairs.
- iv) While knowing the reasons for non-maintenance, it was found that some of the residents were not interested in getting their handpumps repaired owing to reasons that these pumps discharged dirty/muddy water which was not found fit either for consumption of human beings or the animals. It calls for a strict vigil and constant physical monitoring wherein water samples may be taken on a regular basis and analysed in the laboratories to ensure that the people get safe drinking water devoid of water born diseases.
- v) As would be seen from chapter I, handpumps in large numbers have been installed all over the State. It is not possible for the government agencies alone to look after maintenance without active participation of the gram panchayats/villagers. Hence, Gram panchayats should be effectively involved in the implementation of the programme. Their involvement may be in the form of helping the implementing agency in identification of the suitable sites so that installation process is not effected by the influential persons and appropriate installation sites are chosen without any favour, preferences or prejudices.
- vi) People in general have not favoured the idea of making public contributions for installations. This can be understood by the mindset



attitude of people who feel that providing of any or every facility is the responsibility of Govt. Agencies . An awareness drive needs to be launched atleast amongst the local elected representatives or awareness course may be organised wherein they may be told in clear and definite terms that unless public make contributions, services can not be provided alone at the Govt. expenses. As such people may be persuaded to make public contributions to get handpumps installed under Vikas Main Jan Sehyog Programme. The Govt. can hardly afford public funds for making installations without public contribution. This step will bring down the burden on the state exchequer on the one hand and make the people fully involved in the programme on the other.



Annexure 'A'

Government of Himachal Pradesh  
"Planning Department"

Evaluation Schedule for Hand-Pump Scheme

Block-I  
(Locational Information of the Handpump)

- 1.2. Name of the Block.....
- 1.3. Name of the I&PH Sub Division.....
- 1.4. Name of the I&PH Circle.....
- 1.5. Name of the village .....
- 1.6. Name of the Panchayat.....
- 1.7. Name of the Hamlet.....
- 1.8. Number of families in the hamlet.....
- 1.9. Estimated population of the hamlet.....

Block-II  
(Information Regarding the Handpump)

- 2.1. Month/ Year of Installation.....
- 2.2. Is it a chronic water shortage area ? Yes/No
- 2.3. Is the location
  - a) -NC locality
  - b)- PC locality
  - c)- fully served locality
- 2.4. Population profile covered by the Handpump (Number)
  1. SC.....
  2. ST.....
  3. Others.....
  - Total. ....
- 2.5. Whether the handpump is functioning.....Yes/No



2.6. If not, how often it remains out of order in a year; (Please tick)

1. Permanently.....
2. Never .....
3. Jan to March.....  
(1-3 months)
4. April to June .....
5. July to Sept.....
6. Oct. to Dec.....

2.7. What are the reasons for non functioning of the handpump.  
(Please give one of the main reasons & their order of merit)

1. Not repaired.....
2. Water Shortage.....
3. No proper instatallation.....
4. Mishandling by the people.....

Block-III  
(Information of Pardhan/Panchayat/Ward Member)

Name & Status of the person.....

3.1. Is this proper location for this handpump ? Yes/No

3.2. If No, then :

1. Is it far from the main population/Hamlèt Yes/No
2. Is it because of the arbitrary decision of the deptt. Yes/No
3. Is it because of the problem of the water level Yes/No
4. Is it located adjacent to existing source of water Yes/No

3.3. Water availability from Handpump :  
(Please tick)

1. Inadequate
2. Adequate
3. Surplus

3.4. Who is maintaining the Handpump ? .....



3.5 Is this handpump being maintained properly Yes/No .

3.6. If No, reasons:

1. Because of no complaint was registered with the deptt.
2. Because deptt. did not take any action.
3. Because of some local dispute

3.7. Which are the Social groups living around the Handpump :

(Population)

Sr No.	Name of Hamlet	SC	ST	OBC	Other	Total
1.						
2.						
3.						
4.						
5.						

3.8. Out of above, who are the actual users.

1. All
2. If not all, then name the castes using the Handpump.

Castes

Population

- 1.
- 2.
- 3.
- 4.

3.9. What are the traditional sources of water in the village ?

1. Village Well (No.).....
2. Bouri (No) .....
3. Nallah/Stream (No).....
4. Rain water (No)  
Water storage structures.....
5. Piped Water Supply.....



3.10. Who maintains these traditional sources ?  
(Please tick)

- 1 Govt.....
- 2 Panchayat.....
- 3. Local people.....
- 4. No body .....

3.11. If traditional/Existing sources are not maintained, then give reasons;

- 1. Now not required .....
- 2. Gone beyond repairs.....
- 3. Gone dry.....
- 4. No funds available.....

3.12. How many handpumps have been installed in your village ?

- 1. Total Number .....
- 2. How much is the total requirement.....
- 3. Difference .....  
(1-2)

3.13. Should these handpumps be installed under VMJS ?

Yes/No

3.14. Should these handpumps be maintained under RMJS ?

Yes/No

3.15. Are the people ready to contribute for the public share ?

Yes/No

Block-IV  
(Information from the Women beneficiary)

4.1. Name of the women beneficiary .....

4.2. Name of the Father/Husband .....

4.3. What is the use of this handpump to you

1. No use because it has inadequate water

Yes/No

2. It is very useful because it saves time

Yes/No



4.4. From where you were getting water before this handpump was installed (Please tick)

1. Well
2. Pond
3. River
4. Bori/Chashma

4.5. How far was this water source (Meters)

1. 500m
2. 500-1000m
3. 1000-2000m
4. More than 2000m

4.6. How do you use your time saved, if any, due to water access from this handpump (Please tick)

1. Farming
2. Domestic affairs
3. Self employment venture
4. Any other work (Name)

Name of the investigator

Date of survey.....