

# WATER, ENVIRONMENT AND SANITATION

## Report on Qualitative Phase of Knowledge, Attitudes and Practices Study in Rural India (BENEFICIARIES)

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APRIL 1989



**United Nations Children's Fund**  
REGIONAL OFFICE FOR SOUTH CENTRAL ASIA  
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INDIA

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WATER, ENVIRONMENT AND SANITATION

A report on Knowledge, Attitude  
and Practices Study In Rural India

- Beneficiaries

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## CONTENTS

	Page No.
<b>INTRODUCTION</b>	
I Background	1
II Research objectives	3
III Methodology	6
IV Format of report	15
<b>DETAILED FINDINGS</b>	
<b>SECTION A : WATER</b>	
<b><u>AREA ONE : UNDERSTANDING OF WATER</u></b>	
1.1 Classification of water	17
1.2 Qualities of water	19
1.3 Safe drinking water	21
1.4 Water and health	24
<b><u>AREA TWO : PRACTICES REGARDING USE, COLLECTION AND STORAGE OF WATER</u></b>	
2.1 Available sources of water	28
2.2 Use by source of water	34
2.3 Perceptions regarding source of water	37
2.4 Collection patterns	42
2.5 Storage practices	45
<b><u>AREA THREE : ISSUES RELATED TO HANDPUMPS</u></b>	
3.1 Perceptions regarding handpump water	47
3.2 Problems with handpump	51
3.3 Installation and maintenance of handpumps	53

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
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14  
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93  
94  
95  
96  
97  
98  
99  
100

## SECTION B : SANITATION

AREA ONE : HYGIENE

1.1	Understanding of cleanliness	58
1.2	Personal hygiene	61
1.3	Household hygiene	66
1.4	Environmental hygiene	72
1.5	Link between health and hygiene	73

AREA TWO : DISPOSAL OF WASTE WATER, DUNG AND GARBAGE

2.1	Waste water disposal	76
2.2	Disposal of dung	84
2.3	Garbage disposal	91

AREA THREE : DEFECACTION

3.1	Current practices	92
3.2	Cleaning practices	94
3.3	Attitude to current practices	96
3.4	Link with health and diseases	101





AREA FOUR : LATRINES

4.1	Awareness	103
4.2	Attitude to latrines	107
4.3	Need for latrines	110
4.4	Maintenance	112
4.5	Barriers	114
4.6	Existence and use of community latrines	115
4.7	Motivations and barriers to use of community latrines	117
4.8	Government subsidy	119



INTRODUCTION

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## I BACKGROUND

In the International Drinking Water Supply and Sanitation decade (1981-1990) the government of India has set itself the enormous task of providing safe drinking water to the entire rural population in the Seventh Plan and low cost sanitation facilities to 25% of its rural population by 1990.

The social costs of poor water and sanitation facilities are high. It results in disease and poor general health which affect both productivity as well as quality of life.

It has been found that provision of safe water and sanitation system alone do not lead to a positive change in environmental hygiene or even in the use of the facilities provided. This is because the needs, priorities, and benefits as perceived by the intended beneficiaries are considerably different from that visualised by the city bred planner.

In order to bridge this gap so that the programme can be successfully implemented, it becomes important to understand the Knowledge, Attitude and Practices (KAP) of the rural population with regard to drinking water, environmental and personal hygiene and sanitation.

The KAP of the beneficiary group however cannot be really meaningful if studied in isolation, since it exists within a socio-cultural framework with different forces working on it. In the context of this programme, persons who could influence village people and implementers of the programme working directly with the villagers were seen as important change agents. The KAP of these two groups, to the extent that it affects the beneficiaries, therefore needed to be assessed.

With this aim in mind UNICEF commissioned IMRB to carry out a comprehensive study among rural population in eight states in India. The qualitative research module therefore covers three target groups :

- beneficiaries
- influencers
- implementers

in the states of Uttar Pradesh, Madhya Pradesh, Rajasthan, Gujarat, Tamil Nadu, Andhra Pradesh, West Bengal and Manipur.

The findings will be used to establish the nature of resistance to effective implementation of Water and Sanitation programme. They will help discover ways in which existing individual and community Knowledge, Attitudes and Practices can be exploited to help shape the programme and to develop effective IEC materials. The study will also serve as a baseline against which subsequent shifts in KAP and programme impact can be measured.

The study was designed in four phases. The qualitative research component is the second phase of the study.

This document is the report on the qualitative research among beneficiaries and defines the range of existing KAP in this group. Findings from this phase have been used to generate hypotheses and define data that needed to be quantified in order to be actionable.

## II RESEARCH OBJECTIVES

### 1 Purpose

'Beneficiaries' is a term used to define those respondents who represent all village persons for which the WES programme is intended. It is through their acceptance and use of the facilities provided by this programme that its success will be measured. Hence, it is critical to understand their KAP with regard to water, sanitation and environmental hygiene, for effective implementation of the programme.

### 2 Areas of enquiry

There were three broad areas in which knowledge, attitudes and practices (KAP) of the beneficiary segment were investigated. These were :

- water
- hygiene
- sanitation

A pilot study carried out by IMRB prior to submission of the research proposal helped to clarify the issues within each of these areas that needed to be focused on in the study. The issues that were covered are briefly outlined below :

#### A/ Water

- a. Classification of water on different dimensions. Relative importance of each of these dimensions. Criteria used for evaluating 'good' water.
- b. Practice with regard to water : collection, storage and use.
- c. Perceptions and problems with regard to water availability, quality, collection and storage.
- d. Link between water and health - understanding of 'safe drinking water', practices with regard to water purification.

- e. Attitudes to non-traditional water sources, problems, benefits, perception of water supplied.

B/ Hygiene

- a. Understanding and focus of cleanliness
- b. Definition and practices with regard to
  - personal hygiene
  - environmental hygiene and
  - household hygiene
- c. Understanding of the need for hygiene and consequences of poor hygiene
- d. Level of satisfaction with current hygiene-related practices.

C/ Sanitation

- a. Current practices with regard to disposal of :
  - waste-water
  - garbage
  - animal excreta
- b. Perceptions, problems and satisfaction with current practices of disposal.
- c. Human excreta disposal : Current defecation practices; site selection, cleaning practices, attitude and level of satisfaction with current defecation practices.
- d. Perceptions of the link between human excreta and diseases.
- e. Awareness, use of and attitudes to
  - household
  - community latrines
- f. Barriers and motivators to latrine usage; perceived need for a latrine.



D/ Village observation data

It was hypothesized that attitudes and practices with regard to water and sanitation would, to a large extent, be a function of the water and sanitation facilities available to the village.

In addition to the issues listed above, a detailed profile of the village was drawn with the help of an observation sheet. It was expected that a study of the KAP of villagers in light of the observation data would help in arriving at a better understanding of the emerging KAP.

### III METHODOLOGY

To obtain the information detailed above, 88 group discussions were conducted among men and women in rural India.

#### 1. Coverage

The study was conducted in all four zones in the country i.e North, South, East and West. From each zone two states were selected for this purpose, namely

North	:	Uttar Pradesh Rajasthan
South	:	Tamilnadu Andhra Pradesh
East	:	West Bengal Manipur
West	:	Madhya Pradesh Gujarat

Unicef provided the list of states in which the study was to be conducted.

#### 2. Research technique

Information regarding KAP of the beneficiaries was elicited with the help of focus group discussion.

This research technique comprises of getting together 7-9 persons who are matched on parameters such as age, sex, socio-cultural background and other parameters which may be considered specifically relevant. The issues for which knowledge, attitudes and practices were to be ascertained were discussed by an experienced moderator in a free flowing dialogue where respondents were encouraged to express their own individual views. The discussions thus triggered provided some very useful insights into behaviour that the respondent would not be able to or willing to express in a direct interview situation. Deep set beliefs, inhibitions, anxieties and attitudes emerged to provide a depth of understanding. In addition, the free-flowing dialogue pattern helped

reveal a wide range of KAP that could not have emerged from an equal number of individual interviews.

Moderators were briefed in detail and the areas of information to be covered were provided in a discussion guide. This was prepared after careful pilot work among appropriate rural respondents. Translations were developed and piloted by each of the zonal offices before finalisation.

### 3. Respondent definition

Focus groups were conducted separately for men and women. In order to be eligible for participating in the focus groups, respondents were selected with the help of a carefully designed recruitment questionnaire. The criteria for eligibility are listed below, separately for men and women.

#### MEN

Age : 25-40 years

Education : Literate and illiterate were chosen in numbers that represent the proportions of literate and illiterate adult males for that village (established from the village observation sheet).

Occupation : The main occupation groups comprised of farmers and labourers which are the main rural occupation. In addition some representation of other occupation (trade, service, skilled labour) was ensured once again in a manner which represented the occupation patterns of the village.

Earning status : Either main earning member or second most important earning member in their households.

WOMEN

Age : 25-40 years

Education : The participants in women's group discussions were either illiterate or had been schooled for a few years but none had completed schooling. This was again deliberately ensured since less than 16% of the rural population is literate\* and it is a known fact that literacy among women is lower.

Working status : Chief working person of the household.

Others : Mother of at least one child.

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\* Statistical Outline of India - 1988-89.

#### 4 Sampling of villages

##### 4.1 Introduction :

The objective of the qualitative phase of research was to obtain an understanding of the full range of KAP on the subject of water and sanitation. It was therefore important to select villages with varied social and cultural practices in the sample. Based on extensive experience in rural research IMRB had hypothesized that one of the differentiating factors between districts would be the level of economic development.

A multiple correlation analysis\* also indicated that as much as 35% - 60% of the variation in the levels of economic development between districts was explained by differences in :

- i. The extent of assured water availability in the district (measured by the average rainfall - in centimeters - over the past 20 years).
- ii. The literacy levels in the district.

It was hypothesised that these variables would also to a large extent, explain differences in KAP on the subject of water and environmental sanitation. It was therefore felt that a stratification of study areas by overall levels of development - using the TRMI - would be appropriate.

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\* A multiple correlation was conducted between the variables of interest i.e. water availability and literacy levels and the TRMI (Thompson Rural Market Indx). The TRMI is a widely accepted development indicator which is computed on the basis of 10 economic indicators. These 10 indicators deal with various aspects of rural and agricultural development and are :

1. Agricultural labourers
2. Gross cropped area
3. Gross irrigated area
4. Area under non-food crops
5. Pumpsets
6. Fertilizers
7. Tractors
8. Rural credits
9. Rural deposits
10. Villages electrified

#### 4.2 Sampling method

The districts falling under each of the eight selected states were classified into three categories namely :

	TRMI Range
A & B Category	40.00 - 100.00
C & D Category	20.00 - 39.99
E Category	Upto 20.00

To select villages with varied social and cultural practices from within each state, the following sampling method was decided.

- i. In each state three districts were to be chosen\* one in each of the following categories :
  - Beneficiary of the rural water supply programme i.e a district covered by the Technology mission as of January 1988.
  - District belonging to the upper end of the TRMI development categorization.
  - District belonging to the lower end of the TRMI development categorization.
- ii. Within each district, it was proposed that two villages be chosen keeping the following criteria in mind :
  - They were to be geographically distanced over the district. To ensure this the villages were selected from two tehsils that were geographically distanced in the district.
  - One village was to have a high level of public amenities such as potable water, schooling and medical facilities - a 'Good village'. And the other was to have a low level of these amenities - a 'Poor village'

---

\* Except Manipur where only one district was selected since all districts were of 'E' category.

The total number of villages to be selected were therefore :

Total states covered	8
Total districts covered (3 districts in 7 states plus 1 in Manipur)	22
Total villages covered (2 villages in each district)	44

#### 4.3 Selection of districts

The total number of A & B, C & D and E type of districts (as per TRMI) in each of the selected states were as follows :

	A & B	C & D	E
Uttar Pradesh	9 (1)	34 (1)	13 (1)
Rajasthan	1	6 (1)	19 (2)
Madhya Pradesh	1 (1)	5	4 (2)
Gujarat	2	12 (3)	5
Andhra Pradesh	6 (1)	11 (2)	5
Tamilnadu	7 (1)	4 (1)	4 (1)
Manipur*	-	-	6 (1)
	-----	-----	-----
	33 (6)	77 (9)	59 (7)
	-----	-----	-----

The figures in brackets indicate the number of districts finally selected under each category within each state. As can be observed the selection criteria of one district each at the

\* Adequate data about Manipur was not available to construct a TRMI. However, since all six districts of Manipur are classified as 'backward' they were treated as 'E' category.



upper end of the TRMI and the lower end of TRMI was not strictly adhered to in each state. However in the total sample there is a fair distribution of districts falling under the three TRMI categories.

To repeat, the above table presents the districts that were finally selected after a series of discussions between IMRB and UNICEF. To begin with IMRB selected three districts in each state following the selection criteria as specified earlier. That list underwent several alterations on the basis of :

- The districts recommended by the UNICEF zone offices
- Districts that were being covered by the technology mission
- The views expressed by Mr G Ghosh (Mission Director - Technology Mission on Water)

#### 4.4 Selection of villages

Two villages had to be selected from each district - one 'Good and one 'Poor'. A good/poor village was defined along the following parameters :

Parameter	Good village	Poor village
Health centre	PHC or hospital in the village	5-10 kms away or more
Education	PUC in village	5 kms away or more
Drinking water	Tap, handpump or tubewell in the village	No tap, handpump, tubewell in the village
Household number	No restrictions	100 households + 15%

As a first step - two geographically distance 'tehsils' were identified in each district. IMRB then used the 'District Census Handbook'\* (Based on the 1981 Census) for selecting a good/poor village in each Tehsil.

A 'Good' village was to be selected by identifying villages containing a PUC or a PHC (depending on the availability of both in the tehsil) and then selecting the village that qualified best on other issues.

A 'Poor' village to be selected by listing down all villages in that tehsil which qualified on either health or education and selecting the largest village without any of the amenities.

At the selection stage it was discovered that in certain tehsils there were no 'Poor villages' as defined by IMRB. In such cases the IMRB Executives used their judgement to select a village that was comparatively 'Poor' i.e. had very little of medical educational, drinking water facilities.

'Good' and 'Poor' villages were equally spread out in the sample. Therefore of the 44 villages covered 22 were 'Good' and 22 were 'Poor'.

The villages which were covered in the qualitative phase are listed in Appendix II.

## 5 Fieldwork

All group recruitments were conducted by trained interviewers of IMRB's General Field Force. They were specially trained and briefed for this specific project by the executive in charge of the project.

Fieldwork was carried out in June and July, 1988 in the eight states.

## 6 Training

IMRB with UNICEF's help trained interviewers and recruiters based on detailed background reading material, pictures and video cassettes with the objective of familiarizing the field personnel with all the issues involved, taking care however, to not create pre-determined notions, prejudices or biases.

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\* The District Census Handbook gives a detailed documentation of all the villages located in a district.

#### IV      FORMAT OF REPORT

The report has been structured as follows :

The main body on Detailed Findings follows this Introduction and is divided into two broad sections

- A. Water
- B. Sanitation

The chapters covered in each of these sections are sequenced as follows :

- A. Water
  - I. Understanding of water
  - II. Practices regarding water
  - III. Issues on Handpumps
- B. Sanitation
  - I. Hygiene
  - II. Disposal of waste water, dung, garbage
  - III. Defecation
  - IV. Issues on latrines



DETAILED FINDINGS

SECTION A : WATER



## AREA ONE : UNDERSTANDING OF WATER

In this area, the issues examined are :

- Classification of water
- Attitudes to good and poor water
- Understanding of safe water
- Link of water with health

The findings in this section, help to understand the existing perceptions among the village people on water and their attitudes to safe drinking water. This understanding would help estimate the gaps in KAP which would need to be bridged so that safe drinking water is sought by the villager on his own accord and purity becomes a salient attribute on which water is judged.

### 1.1 CLASSIFICATION OF WATER

Some of the salient dimensions on which water is classified spontaneously are :

- Source : The various sources mentioned are dug well, tubewell, canal, pond, tank, river, lake and piped water. Perceptions regarding different sources will be discussed in detail in the next section.
- Quality : The various aspects of quality are clean/dirty, fresh/stale, soft/hard thick/light, transparant/muddy and sweet/salty or brackish. These qualities had connotations for evaluating 'good' and 'bad' water.
- Taste : Taste emerged as an important criterion for judging water. Ideally, all wanted water to be sweet. Depending on the source, villagers often have to use salty or brackish water.
- Appearance : Water is described variously as reddish/blackish, yellowish or transparant. These differences are attributed to source or season.

End use : Water is also classified spontaneously by the different end uses for which it is put. Thus villagers speak of water for drinking, cooking, washing, bathing and irrigation.



## 1.2 QUALITIES OF WATER

The cues used for judging 'good' and 'poor' water are listed below. The dimensions on which water is judged can be broadly classified into three. These are :

- Before drinking/use
- On drinking/use
- After drinking/use

	Good water	Bad water
Before drinking/ use	<ul style="list-style-type: none"> <li>. Clean</li> <li>. Clear</li> <li>. Cool, Fresh</li> <li>. Odour free</li> </ul>	<ul style="list-style-type: none"> <li>. Dirty</li> <li>. Muddy</li> <li>. Stale, stagnant</li> <li>. Smelly</li> </ul>
On drinking/use	<ul style="list-style-type: none"> <li>. Sweet</li> <li>. Light</li> <li>. Food cooks fast &amp; well</li> <li>. Cooked food stays good</li> <li>. Soft</li> </ul>	<ul style="list-style-type: none"> <li>. Salty, sour, brackish, tasteless</li> <li>. Thick, heavy</li> <li>. Cannot cook food/ takes longer to cook</li> <li>. Cooked food does not keep</li> <li>. Hard</li> </ul>
After drinking/ use	<ul style="list-style-type: none"> <li>. Enables easy digestion</li> </ul>	<ul style="list-style-type: none"> <li>. Affects digestion negatively</li> </ul>

Among these, the two most salient characteristics across all states are taste and clarity of water. The attribute of sweetness is very strongly associated with good water. To get tasty water, people do not mind inconveniencing themselves and going long distance to the river or well.

Bad water is the converse of good water - it is dirty, bad to taste, does not quench thirst properly, is stale and is smelly.

### 1.3 SAFE DRINKING WATER

The distinction between good water and safe water is not very clear in the minds of beneficiaries. 'Good' water, the attributes of which have been discussed in the earlier section is implicitly expected to be safe.

#### 1.3.1 Understanding of 'Safe' water

The two important criteria by which safe water is judged are :

- taste
- visual cleanliness

**Taste :** Sweet tasting water is 'light' in the mouth, quenches thirst, is more satisfying and is expected to be safer. In Andhra Pradesh, taste of water appears to be a critical parameter for classifying water as 'good'. Although, some are aware that the Godavari water which is sweet and good may not be safe, they still prefer it and give less importance to safety. Across all states, salty, brackish or tasteless water is not considered suitable for drinking or cooking. Unclean water is expected to have a taste which is sour (Gujarat) or bland (Andhra Pradesh & Tamilnadu).

In the coastal states of West Bengal and Tamilnadu, a taste like tender coconut water is considered ideal.

**Visual cleanliness :** Respondents believed that only physically clean water could be safe. Water had to be clear, and free from suspended impurities such as moss, grass, leaves or floating particles. In fact, this physical standard of cleanliness was the first level of inspection. Only when this was passed did taste come into consideration. Visually, if water was crystal clear (e.g like a mirror, completely 'white') it was a further reassurance on safety. Discoloured water, water that was yellowish or brownish in colour was not considered safe. To achieve this visual cleanliness straining water through a fine cloth was known to many, although practiced regularly by fewer people. Most villagers filtered water only

if there were visible impurities such as worms or excessive dirt in water as during the monsoons or in stored water.

Smell : The other cue used to judge safety of water was smell. All respondents were of the opinion that water which is smelly is unhealthy. Stale, stagnant water characterized by a bad odour was therefore considered unhealthy.

An important distinction that has emerged here is that of 'safety' versus 'suitability'. It was clear across almost all regions that people had a notion of the type of water that was suitable for drinking. It was also clear that respondents did not blindly or indiscriminately drink any water that was available

Suitable drinking water would be :

- Visually clean
- Sweet-tasting
- Refreshing
- Satisfying (thirst-quenching)

Though not verbalised, the conceptual extension of this discrimination was that water was unsuitable because it would harm the body and the health in some way. For example, at an extreme level, muddy water would be unsuitable because the mud could form into stones in the body. Similarly, salty or brackish water was unsuitable because it would harm the health though the exact form that this harm would take was not known.

To extend the thought process to a simplistic extreme, it is possible that the taste sensations were seen as reliable guardians of health; if something tasted 'unacceptable', it could prove harmful.

Uniformly, taste, visual cues, and smell are therefore the three main sensory cues to judge quality of water. Presence of invisible germs and infection in water was known to some along with the knowledge that invisible impurities could make water unsafe. However, it was also believed that there was no way in which the lay-person could judge that.

"Whether or not it contains germs, we don't come to know"

Gujarat, Rich

"Drinking water should be clean not just to look at - but actually so"

West Bengal, Poor

Besides being germ-free, water which was soft, light to drink (Rajasthan) which cook food fast and helped it keep longer was considered safe.

### 1.3.2 Cleaning practices

In this section, it is important to note that although knowledge of ways to purify water was fairly common, actual practice of such processes appears to be limited. Some of the ways in which water is cleared to make it potable are :

- Filtration
- Chemical purification
- Use of alum/sedimentation
- Boiling

Filtration :

Filtration to remove suspended impurities is known to all village people. The practice appears to be more common in Rajasthan, Madhya Pradesh and Gujarat. In the districts studied in these states, villagers mentioned having a special cloth for filtration - which is used solely for this purpose and kept separately. In Gujarat, a thick cloth is used which is often bought from the market at Rs 2 a piece. This is washed after filtration and hung to dry. In the districts of Rajasthan, village people report filtering water regularly in all seasons. In these districts chemical treatment of water by the Block authorities appears to be fairly common - although the reach in interior villages seems to be less. In Madhya Pradesh villagers report using a white cloth for filtration which is kept spotlessly clean.

Filtration was also mentioned in the states of Uttar Pradesh, Andhra Pradesh and Tamilnadu but the practice appears to be more casual with any cloth - even part of the saree or 'angocha' (a fine towel hung on the shoulder) - being used, for filtering water. The practice also appears to be more sporadic in these states.

#### Chemical purification :

Adding chemicals which have an anti-bacterial action in water is a method of water purification which is only practiced at the water source. The chemicals mentioned are bleaching powder, DDT and potassium permanganate. Some villagers simply see it as a "powder added to water" to kill germs. Chemical purification at source was mentioned more often in the villages of West Bengal, Rajasthan and Manipur. These disinfecting powders are mostly provided by the Block Development or Health authorities and applied either by the same organisation or given to the village people who spray/sprinkle it themselves. The first practice is reported more often in Rajasthan and West Bengal. This however tends to distance the village people from the possibility of cleaning water sources themselves. The attitude towards these bodies was negative with villagers complaining against the infrequent and superficial visits of the block people.

#### Sedimentation :

Use of alum to help precipitate suspended impurities so that water can be drunk from the top appears to be relatively more common in Tamilnadu and Andhra Pradesh.

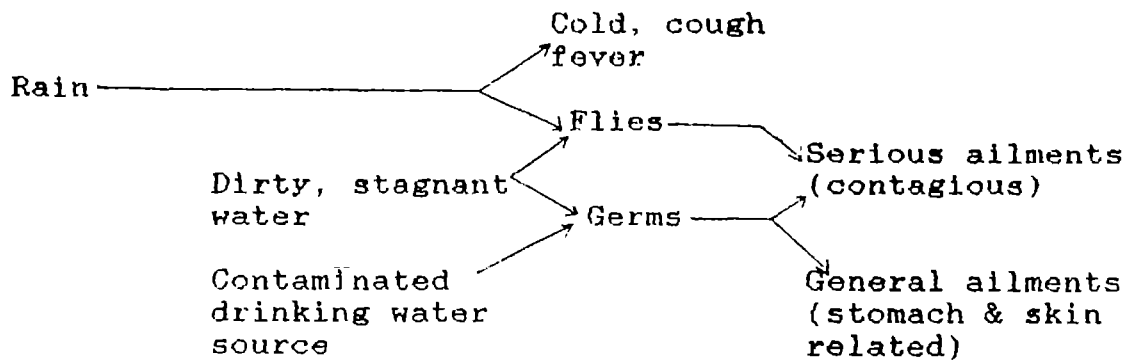
#### Boiling :

This was mentioned by a miniscule segment as a practice adopted during epidemics of water-borne diseases.

#### 1.4 WATER AND HEALTH

Village people generally do not see a direct link between water and health. Upon persistent questioning a vague and somewhat tenuous link with water was drawn. Water is crucial to life and concern is higher for availing sufficient quantities of water for their requirements rather than for safe drinking water which appears to be a higher order need sought only when basic requirements are met.

The different ways water and health are linked are represented below :



Although, the possibility of water-borne diseases is acknowledged, their salience appears to be low. However in pockets, where incidence of illness directly attributable to water were high, apprehensions regarding quality of water available were also high.

The ailments which are perceived to result from water are broadly three. These are :

- ailment related to stomach and skin infection
- serious water-borne diseases such as cholera, typhoid, jaundice
- colds, cough, fever.

Stomach/Skin related ailments :

Health problems arising from dirty, impure water are most commonly associated with stomach ailments such as stomach ache, stomach upsets, loose motion, vomiting, diarrhoea and dysentery. In fact, one of the attributes of 'bad' water is that it affects digestion negatively. In Uttar Pradesh and Tamilnadu dirt in water is reported to accumulate in the form of stones in the stomach. In West Bengal boils, sores, 'jipatu', 'jalbidha' and other problems affecting skin are believed to be caused due to working in dirty water.

Contagious water-borne diseases :

Dirty, stagnant water which collects in pits and pools during monsoon is seen to lead to flies, which carry infection and lead to serious illnesses such as cholera, typhoid, jaundice, gastro-enteritis.

The bulk of the mentions of these illnesses came from rich villages. This could either be because actual incidence of these illnesses in these over-populated villages was higher or it could simply be a reflection of higher literacy and therefore greater awareness of the name of the disease.

Diseases from germs/contamination :

Even where flies are not seen as the link between water and health, there is a growing perception of the existence of germs in visibly contaminated water. Chances of such contamination is seen to be high again in the monsoons when due to rains, dung, excreta and filth get washed into open water sources thus endangering health. In certain villages, link with germs appear to be more firmly established than the others. People here also speak of the need for boiling and medication in order to destroy germs. Such areas appear to have been visited in the past by health personnel who add bleaching powder or other chemicals to disinfect water. Even in the few villages in Uttar Pradesh, Gujarat, Madhya Pradesh and Rajasthan where germs in water is seen to cause diseases, the perception is limited mainly to men.

It is of interest that most people link germs with physical impurities. Thus water which has floating particles and is visually unclean is expected to harbour germs. Straining water to remove suspended matter is therefore seen to make it germ-free and reduce chances of water-borne diseases.

There were a few who seemed to have some knowledge about germs which would not be visible to the naked eyes. However, in actual experience they had used visually clean water and had not experienced any harmful effect on health, possibly because of immunity to bacteria and germs which may have been developed over time. Thus, conviction in such links tended to be low.

Diseases because of bad water :

In this phase of research, certain districts were chosen for study because of the high incidence of certain endemic water-borne diseases such as guinea-worm and fluorosis.

In villages where these diseases were reported, apprehensions did exist about the intrinsic quality of water - people spoke of a variety of symptoms arising from bad water.

Guinea worm, known as 'Naroo' in Rajasthan (Udaipur) and described as a long worm in Madhya Pradesh (Jhabua district) was one of the problems mentioned. There appeared to be an understanding of germs entering water from the body of an infected person which, when drunk would infect the next person. It was described as a "foot-long worm which comes out from the body, breaking the skin of the person suffering from it".

In Mehsana district of Gujarat, where incidence of fluorosis is high, village people spoke of teeth turning black or pale, of backs getting hunched, of joint pain and joint stiffening due to 'poor' water.

In a poor village in Udaipur district of Rajasthan premature blindness is reported to be high and attributed to bad water.



## Cold, Cough, Fever

Cold, cough, fever, headache and joint aches are also linked to water. Rainfall, particularly the first showers are considered harmful. In a village in Mirzapur district of Uttar Pradesh use of rain water was strongly associated with such problems. However, on closer examination these responses appear to be originating from a water-scarce village which has had to resort to rain water flowing down the slope and contaminated with dirt and dung, for drinking purposes in the absence of alternative options. It is possible that some of these problems arise from exposure to damp and cold or from drinking water contaminated during the monsoons by surface dirt which gets washed into water sources.

In Manipur it appears to be common practice to collect and use rain water. Here rain water collected before it falls to the ground is considered the purest and safest form of water.

Apart from the links discussed above, minor ailments are linked to change in drinking water sources. Certain villagers in the West Godavari district of Andhra Pradesh explicitly mentioned that water cannot lead to any health problems. On a second look this appeared to be a defensive reaction since in these villages there were others who openly stated their preference for sweet tasting Godavari water inspite of the knowledge that it was dirty.

## AREA TWO : PRACTICES REGARDING USE, COLLECTION AND STORAGE OF WATER

In this chapter, the sources available to the village people, the different function for which the various sources are used and collection and storage practices related to water are discussed.

### 2.1 AVAILABLE SOURCES OF WATER

A variety of water supply systems were used across the 44 villages studied. Given the wide variations in environmental and climatic conditions ranging from the dry desert region of Rajasthan in the West to the rain forests of Manipur in the East, this was to be expected. In the grid given below the sources of water for drinking and other household uses in the villages studied have been presented.

<u>State</u>	<u>District</u>	<u>Village type</u>	<u>Drinking water source</u>	<u>Water sources for other use</u>
Andhra Pradesh	Kurnool	Rich	. Piped water, public & private . Open dug wells . Handpumps (25)	. Piped water . Dug well, . Borewell
		Poor	. Only dug wells . 7 handpumps	. Dug wells
	West Godavari	Rich	. Dug wells . 3 handpumps (rarely used)	. Dug wells
		Poor	. Rainy Season: river . Winter/summer/season: lake, spring water-salty i.e not preferred	. River/lake
Karimnagar	Poor	. Dug well (main) Only 10 out 20 handpump work no drains in HP	. Dug well	

State	District	Village type	Drinking water source	Water sources for other use
ANDHRA PRADESH	Karimnagar	Rich	. Dug well (main ) . Tubewell/borewell (less often)	. Dug well
TAMIL-NADU	Periyar	Rich	. Fiped water (main) . 75 open dugwells . 15 HP (pvt)	. Piped water . Dug wells
		Poor	. Water tank . 2 handpumps	. River . Water tank
	Ramnad	Poor	. Canal (main) . 1 covered dugwell	. Canal . Piped water from water tank
		Rich	. Fiped water (main) from water tank . Dug well, public handpump (others)	. Public HP . Piped water from water tank
	S ARCOT	Poor	. Dug wells (main) . Public handpumps (Secondary)	. Dug wells
		Rich	. Handpumps (main) . Open dugwells (secondary)	. Private wells
GUJARAT	Panch-Mahal	Rich	. Public tubewell (Main) . Covered dug wells (Secondary)	. Open dug-well . Public tubewell
		Poor	. Dug well covered . River/public HP	. Lake/river . Public HP
	Mehsana	Rich	. Borewell water collected in tank distributed through pipe	. Public & pvt taps . Dugwell

<u>State</u>	<u>District</u>	<u>Village type</u>	<u>Drinking water source</u>	<u>Water sources for other use</u>
GUJARAT	Mehsana	Poor	. Lake (man-made) . Borewell (when lake dries)	. Rain water . Water scarcity
		Rich	. Public tap . Private tap	. Dug well
	Amreli	Poor	. Mechanised pump (well) (main) River (sec.)	. River
WEST BENGAL	Bankura	Rich	. Main : Dug well Sec. : Public HF (Drain into pond)	. Lake . Dug well
		Poor	. Public HF . River pond	. Pond
	Cooch Behar	Rich	. Public HF . Dug well . Pipe water	. Public HF
		Poor	. Dug well	. Dug well . River
	Midnapur	Rich	. Public HF (draoms onto pond)	. Pond water
		Poor	. Dug well . River, pond	. Pond . Canal . Dam

<u>State</u>	<u>District</u>	<u>Village type</u>	<u>Drinking water source</u>	<u>Water sources for other use</u>	
RAJASTHAN	Barmer	Rich	. Pipe water . Dug well	. Pipe water . Dug well	
		Poor	. 'Diggi' (water tank fed by canal) . Dug well (170 feet deep) . 'Tanko' (basement tank to collect rank water)	. 'Diggi'	
	Jhunjhunu	Rich	. Pipe water drawn by mechanised pump	. Pipe (tap)	
		Poor	. 'Diggi' with taps at the side (separate tap for Harijans)	. 'Diggi'	
	Udaipur	Rich	. Private tap . Public HP	. Public HP . Private tap	
		Poor	. Dug well . Public HP	. Dug well . Public HP	
	UTTAR PRADESH	Dehradun	Rich	. Fiped water (not purified) . Canal water	. Canal water
			Poor	. Private taps . River	. Private tap . River
		Mirzapur	Rich	. Dug well . Public tap (400 supply)	. Dug well . Pond
			Poor	. Dug well . Public tap (5) . Pools where rain water collects	. Dug well . Pond . River . Public HP

<u>State</u>	<u>District</u>	<u>Village type</u>	<u>Drinking water source</u>	<u>Water sources for other use</u>
UTTAR PRADESH	Saharanpur	Rich	. Private taps . HP	. Private tap . HP . Public taps (15)
		Poor	. Private tap (only 20) . Severe water scarcity caste based discrimination . Need to walk 10 kms for drinking water in summer	. Private taps
MADHYA PRADESH	Jhabua	Rich	. 'Jhiri' (a shallow pool dug by river side) . Public HP . Taps	. Public HP . Piped water . River
		Poor	. Dug well	. Dug well
	Shadel	Rich	. Dug well (75) . Public HP (drains onto road less used)	. Pond
		Poor	. Dug well . River	. Dug well . River
	Raipur	Rich	. Dug well . River (major water problem)	. Dug well
		Poor	. Dug well (50 pri- vate dug wells also exist . Public HP (5) (avoid using HP of creation of sludge)	. Dug well . Lake

<u>State</u>	<u>District</u>	<u>Village type</u>	<u>Drinking water source</u>	<u>Water sources for other use</u>
MANIPUR	Imphal Central	Rich	. Community pond . Public tap	. Private
		Poor	. River . (Pits besides river in rainy season) . Piped water from reservoir (inadequate supply) . During rainy season drink rain water collected in drums	. River

## 2.2 USE BY SOURCE OF WATER

The uses for which water is collected from a particular source depends on the convenience of accessing water from that source and perceptions regarding usability of that water. Thus, within a district and even within a village, people use different sources for the varying needs for which water is required.

Broadly the following uses are mentioned by each of the sources. These are listed below in an order which indicates the order of mention.

<u>Dugwell</u>	<u>Handpump Tubewell</u>	<u>Lake/Tank Pond/Dam</u>	<u>River/ Stream</u>	<u>Tap</u>
Drinking	Drinking	Drinking	Drinking	Drinking
Cooking	Washing clothes	Washing clothes	Washing clothes	Cooking
Irrigation	Bathing	Animal drinking	Animal drinking	Washing clothes
Washing Clothes	Cooking			
Animal drinking (cummers)				
Washing utensils				

There are differences across states, in the uses for which water is collected. In the villages of Rajasthan, Madhya Pradesh, Gujarat and East U.P where scarcity of water is more and there are no large 'bodies of' water close to the house, water needs to be fetched for practically all purposes. In other states where a lake, river or pond is situated close to or within the village, functions for which large volumes of water are required (such as washing clothes, bathing animals, cleaning utensils), are performed at the water source itself.



For drinking purposes, dependence on traditional sources such as wells, lake, tank, pond and river is much greater than on drilled sources such as tubewells or borewells. This is to be expected given that the drilled sources have a much lower penetration in rural India than dug sources. However, the fact that even when drilled sources of water are available, many village people indicate a preference for drinking water from traditional sources which are quite often not safe for drinking, is a cause for concern.

Reservations exist about using handpump water for cooking/drinking among people in some villages of Uttar Pradesh, Andhra Pradesh, Rajasthan and Tamilnadu. In these villages, river water is considered the most suitable source for drinking/cooking purposes. People even walk up to a distance of one or two miles to fetch water from the river/canal, since especially for cooking, water from other sources is considered unsuitable. It is only when this preferred source dries up that tap water or borewell water is used.

This is not to say however that tubewell/handpump water is not being used or preferred for drinking at all.

In certain villages in West Bengal village people prefer to use handpump water for drinking but for cooking purposes, pond water is used. There are others who do not use the 'bore water', only because it is too far.

Besides the typical water sources mentioned in the table earlier, certain other interesting modifications are noticed.

In Manipur, villagers report to have community pools kept exclusively for drinking and cooking water. Washing clothes, utensils and bathing are performed in private pools, attached to individual houses.

In Jhabua district in Madhya Pradesh, drinking water is not taken directly from the river or lake. It is instead taken from a 'jhiri', which is a shallow pit dug at a little distance from the main source (river). Water seeps through the soil from the adjoining river or lake and fills the pit or 'jhiri' with water. This appears to serve as a natural filter.

It must be noted that the 'jhiri' is not freshly dug each day; it is a pre-dug pit that keeps filling up with water and hence care is taken to remove the water already present in it before collecting the fresh water which seeps in.

### 2.3 PERCEPTIONS REGARDING SOURCE OF WATER

Sources of drinking water vary from village to village and even within a village depending on perceptions regarding the source and proximity to it. These perceptions are not so much carefully determined as arising from an evaluation of the relative advantages and disadvantages of these sources vis-a-vis other alternative water sources available.

Thus while in a particular village strong negatives of contaminated pond water may be voiced, in another, water from a similar pond may be considered quite good as the people there are habituated to it and have not had exposure to a cleaner water source.

Broadly speaking, sources can be classified as follows :

<u>Drilled source</u>	<u>Dug source</u>	<u>Flowing source</u>
Borewells, Mechanised pumps	Wells, ponds reservoirs, ponds	River, canal, lake

In the grid below, the positives and negative aspects of the different sources are given. This is followed with a more detailed discussion on perceptions regarding each of these sources. The yardstick against which these perceptions have been formed are given, to the extent possible.

Attitudes to and perceptions regarding handpumps which is of key focus in WES programme will be covered in detail in the following chapter.

<u>Source</u>	<u>Positives</u>	<u>Negatives</u>
Well/pond/ Reservoir/ Tank	. Acceptable water quality . Traditional water	. Open source . Dries in summer . Water can rot & smell bad if stagnant
River/Canal	. Flowing water . Sweet water	. Can have germs . Dirty in monsoons
Taps/piped water	. Convenient	. Irregular supply/pressure . Breakdown . Water quality poor (some)
Handpump/ Tubewell	. Safer . Available in summer too . Clean	. Water quality poor . Breakdown . Inadequate number . Distance

### 2.3.1 Wells, ponds, tank, reservoir

These are open sources with still (unflowing) water. The disadvantage in being open is that they get dirty easily with insects, leaves, dust and other kinds of garbage falling into it. The problem gets aggravated if these water sources are not used regularly because then the water stagnates and becomes extremely dirty. Quite often these sources do not have a boundary wall around them - this leads to major problems in the monsoons when all the dirt of the surrounding area gets washed into them. A well without a boundary wall is also dangerous in that, accidentally people particularly young children may fall into it.

In West Bengal, the village pond is reported in some places as the main water source and almost all functions viz. defecation, bathing, washing are performed by the source itself. The waste water of the village is also reported to go into the same pond. This water is seen to rot and develop a foul smell. Drinking or bathing in this water is expected to be harmful and lead to serious infection. However, in the absence of alternative water sources, most people have to use the same water for drinking, cooking, and bathing.

The other disadvantage of these sources is that many of them dry up in summer. This leads to severe water shortage.

Dug wells which on the whole appear to be the most widely used source of drinking water, also draw water from the water table below the surface of the earth, as with the drilled sources. Hence problems associated with taste and hardness of water, fairly salient drawbacks of tubewell and borewell water are shared to an extent with well water in certain pockets.

### 2.3.2 River/canal

Usually where the distance is not inconvenient and water relatively clean, rivers and canal emerge as the most preferred source of drinking water. The reason for preference is mostly on grounds of taste. River water where used is considered tastier than well or handpump water.

In terms of cleanliness however, these sources do not fare as well. People defecate by the river, bathe themselves as well as animals in the river and throw garbage and waste water into it. The perceived danger of falling ill after drinking such water is however mitigated because these are flowing sources and all dirt and impurities are expected to be washed away. In the monsoons when the level of suspended impurities become perceptibly higher, village people are more apprehensive.

In West Godavari district, where the underground water appears to have high mineral content leading to hardness, discolouration and problems with cooking, drinking and cooking water is brought from the Godavari river which is far from the village. People in these villages admit to germs and impurities in the river water but still prefer it for drinking because of its sweet taste.

### 2.3.3 Taps/piped water

Perceptions differ widely regarding piped water depending on the original source of water. Piped water appears to have primarily three different types of sources, across the villages studied. These were river, canal/reservoir, water tank and wells.

In villages in Uttar Pradesh, Manipur and West Bengal piped water where available is seen to originate from canals, reservoirs or rivers close to the village. If the canal or reservoir water is not considered too clean and no purification system at the source is apparent, then piped water is not usually taken for drinking. On the other hand, if it is from the river which is considered to have good water, pipe water is perceived as ideal. The factor of distance which makes river water difficult to access is solved with pipes coming upto one's doorsteps.

Taps attached to water tank are a feature observed in villages in Tamilnadu and Rajasthan. In the desert region of Rajasthan, these are huge tanks built at the outskirts of the village fed by water pipes laid out over very long distances. The water tanks in Tamilnadu are relatively small and pipes from these go to different points in the village from where water is collected. Water tanks are generally observed in water scarce areas and water from these is perceived to be of good quality.

There are yet other villages in the districts of Mehsana and Amreli in Gujarat where water from a borewell or dugwell is pumped up, collected in a tank and subsequently distributed with the help of pipes.

Water in pipes is transmitted either through the aid of electrically powered pumps or the force of gravity. If power fails or water level drops below a point where gravitational force cannot work, the supply of water fails. Irregular/limited supply or weak flow because of low pressure are thus drawbacks of this system that were mentioned. Occasionally, taps do not work. Overall, however reactions to piped water are favourable particularly if the number of outlets (taps) are large. The inconvenience of fetching water from long distance is entirely taken care of by this system.

#### 2.3.4 Rain water

Although use of rain water for drinking, does not appear to be common, this issue has been focussed on given the need of water conservation specially where alternative water sources are few.

In a 'poor' village in Mirzapur (East UP) district the recent drought has had people trying to harvest water by collecting rain water in small dams (bandh) made for this purpose. People in this village were not happy with the situation and the negatives feelings tended to be transferred to rain water. Rain water was considered bad from the point of view of health - leading to colds, coughs and other such ailments.

In Manipur villages, where rainfall is very heavy, rain water if collected before it touches the ground is considered the purest form of water. Traditionally, water falling on the roof of the house is collected into metal drum through a rain pipe.

'Tanko', a tank in the basement of the courtyard connected through a pipe on the roof was also reported by many in the villages of Barmer, Rajasthan, where rain water is collected. This however is used in case of water shortage and not regularly. Water stored in this 'tanko' was occasionally disinfected with the use of alum.

## 2.4 COLLECTION PATTERN

The practices and problems with regard to collection of water is discussed in this section. The questions which we have attempted to answer in this context are :

- who collects water
- for what purposes
- how often is it collected
- in what is it collected
- what are the problems faced in collection

### 2.4.1 Who collects

Across the eight states, collecting water for the house is primarily seen as a woman's duty - one of her regular household chores. The only exception to this is in Andhra Pradesh where men play an important role in collecting water especially if it is collected and carried over a long distance.

It is reported in Andhra Pradesh that men fetch water from the river in pots hanging on two sides of a stick which they bear on their shoulder. The existence of a special, traditional carrier for men points to a long standing practice.

In other states men occasionally help to fetch water but only if there are no able women in the household or if the woman is ill or has no time or the water source is very far. In some states, taboos on women touching any edible items during menstruation encompassed a ban on their fetching drinking water; in the absence of any other women in the house, the man would fetch water for a few days each month.

### 2.4.2 For what purposes

Water appeared to be collected mainly for cooking and drinking and to a lesser extent for other household uses, presumably because at least some of these other functions could be more conveniently performed at the water source itself.



Waiting time at dug wells and handpumps particularly when they are few in the village and have to cater to a larger group of people was a frequent complaint. Long queues, crowding and resultant disputes over queues and ranks within the queue, aggravates the problem. During summer, the flow of water weakens from handpumps, water level in dugwells recede and the number of usable water sources decrease. This leads to greater pressure on the few functioning sources resulting in even longer waiting periods.

Both distance and waiting time at the source, cuts into the village women's busy schedule. There is often a child left unattended at home, cooking and cleaning left incomplete and other work held up in order to fetch water, so crucial for existence. Women perceive these problems more strongly than men.

Physical strains, back ache, effort in drawing water from the well only compound the problems mentioned above. However, they do not appear to be salient because over time these have become an integral part of their daily lives, to which they are more or less resigned, in the absence of alternative options. The physical strain involved in carrying water over a long distance becomes a problem mainly during times of water shortage when women find that they have to go to water sources which are much further away.

Women see taps close to or in the house as the solution to the problems of water collection. People in village with a large number of tap connections perceive no problems related to water collection.



## 2.5 STORAGE PRACTICES

As has been mentioned before, there are certain villages where water collected in pots are subsequently transferred to a larger storage container.

Most women speak of throwing away the stale water and rinsing and cleaning the collection pot everytime they fill water.

In Madhya Pradesh, Rajasthan, and Gujarat women also mention using a cloth to filter the drinking water either at the point of collection or at home where water is transferred to a storage pot. Usually in these places, a specific cloth is used for filtration, although some did report using the end of the saree. The cloth used for filtration is rinsed and dried. Some also report hanging it in a special place in the kitchen. However, data seems to suggest that while knowledge of the need to filter is fairly widespread in these states, the actual practice is restricted to monsoons or when water is visually unclean.

Water for drinking and cooking is usually kept in the kitchen or inside the house in a place specially slotted for it. A platform above the ground made of wood or stone or a niche in the wall is made to keep drinking water. These are called variously as 'dhagali' (Madhya Pradesh), 'bire' (West Bengal), 'paniyaru' (Gujarat), 'panendi' (Rajasthan). This indicates that ensuring and using a special place for storing drinking water is a traditional practice suggesting the importance and care given to its storage.

Covering of drinking water either by a bowl, place or cloth is mentioned across all states. While this has not been actually verified it clearly implies that people are at least knowledgeable about the need to do so.

Water is taken out from the storage vessel by dipping in a utensil. In many places a special utensil is kept aside for this purpose which often has a long handle (ladle) to ensure that fingers do not get dipped into the water. The vessel for taking water from the storage container was referred to as 'dounga', 'lota' etc.

## AREA THREE : ISSUES RELATED TO HANDPUMPS

The qualitative research findings indicate that notwithstanding installation of handpumps, in many areas people prefer to use other sources of drinking water. It is important for the success of the WES programme that the demand for handpumps should come from the people - they should prefer to use handpump water for drinking and there should be participation from the community in maintaining these pumps.

In order to understand the factors which determine the acceptance or non acceptance of handpumps (HP), three broad areas of information are covered. These are :

- perceptions of handpump water
- problems with handpump
- maintenance of handpumps

### 3.1 PERCEPTION REGARDING HANDPUMP WATER

The perceived advantages and drawbacks of handpump water are discussed in this section. Differences by states are highlighted where they emerged.

#### 3.1.1 Positives

The understanding that water drawn from a handpump is less likely to be contaminated than surface water sources is appreciated by most villagers in the districts studied. In comparison to open dug wells which is often the alternative source, handpump has the advantage of being covered. This prevents dirt from falling in from the top. Chances of insects, filth and germs in this water are therefore unlikely and to that extent it is like filtered water. In Rajasthan, where extremes in climatic conditions exist, handpump water is perceived as being better than piped water, being warmer in winter and cooler in summer.

In West Bengal preference for handpump water appear to be the strongest essentially because it is seen as being safer. This must be looked at in light of the alternative sources available which is quite often the village pond beside which people defecate, bathe, wash utensils and clothes and which is also the waste water pit. Water in these ponds stagnates, tastes stale and often turns green in colour. Use of this water leads to skin infection. A handpump in comparison is perceived to be much safer and a 'characteristic feature of a clean village'.

In some villages in Madhya Pradesh and Rajasthan people are of the opinion however, that handpump water is clean only when new and that over a period of time it becomes dirty and rusty.

### 3.1.2 Negatives

Fairly strong negatives exist about handpump water with respect to drinking and cooking.

Taste : Taste, as has been reported earlier, is one of the most important criteria on which water is evaluated. Taste preferences are also a matter of habit. The taste of handpump water is different from river or well water which village people are traditionally used to. Handpump water, where it prompts negative reactions has a problem of a rusty, iron like taste. This is a complaint which is voiced across all states. The metallic taste in HP water is attributed by some to the rusty pipes (Uttar Pradesh, Rajasthan), others complain that the water contains iron (West Bengal) or excess minerals (Gujarat).

A diesel-oily taste possibly after handpump parts are lubricated, is also seen as a negative. Brackish taste in handpump water is also mentioned by a few and even within the same village the taste of water in different handpumps is seen to vary - with some yielding brackish water and some yielding sweet water.

Taste being an important criteria in evaluating drinking water, a metallic, odd taste or even an absence of taste, detracts from the overall acceptability of water. The alternative sources - dug wells, river, canal and streams score relatively better on taste. This is often the reason for continued use of water from these other sources although many are cognisant of the fact that these may be less safe.

Smell : Taste and olfactory perceptions are closely linked. Handpump water is described as smelly with people variously describing it as rusty, odd and smelling of iron. Perceptions regarding bad smell are particularly pronounced in West Bengal. The iron pipe, through which water flows up seems to be the cause of such smell. The pipe is expected to be rusty and some even mention fungus in pipe.

Two reasons which make handpump water unsuitable for cooking in some cases are :

- food takes long to cook
- food cooked in handpump water does not keep for long

The first drawback is attributed by some to be caused by the quality of water in handpumps because of which water takes longer to boil, rice and dal does not cook easily. This was mentioned in Tamilnadu, Andhra Pradesh and West Bengal.

In Tamilnadu and Andhra Pradesh, negatives because of food particularly rice, not keeping when cooked in handpump water emerged as a fairly strong negative. Rice turned yellow/brown when cooked in handpump water and it also got spoilt on being kept for a long time. This did not happen with well or river water. Tea made in handpump water was reported to look black.

Some of the other negatives of handpump water, besides those discussed above are :

- clothes washed in it develop a reddish tinge (Tamilnadu)
- hard water in handpump made it difficult to wash clothes and was also not satisfying to drink (West Bengal, Andhra Pradesh)
- Oily water, not considered fit for drinking (Andhra Pradesh).



### 3.2 PROBLEMS WITH HANDPUMP

The main problems with handpumps were related to :

- breakdown
- quality of water
- difficulty in use
- scarcity of handpumps

Perceptions regarding quality of water have been discussed in the earlier section. Details of the others are given below.

#### 3.2.1 Breakdown

Of the 44 villages studied, 32 villages had at least handpump. Of these, not a single village had all handpumps in working condition at the time of fieldwork and a majority of them, particularly the smaller villages with a few handpumps had as many as 50% in a state of dis-repair.

Villagers reported that frequency of breakdown is high. Reasons for this are the heavy load which the pumps have to bear due to which parts wear out. Rough handling especially by younger people, use of too much force and children playing with it, putting stones and grit into the handpump are seen as causes of breakdown.

Repair of breakdowns appear to be erratic with people in certain villages reporting quick repair, while others reporting non-repair for long periods. In certain villages, people had given up using handpumps and changed to using river water from a distance because the handpumps had broken down. In West Bengal, political rivalry appears to be one of the cause of non-repair or delay in repair of handpumps.

In places, where there were larger numbers of handpumps, the inconvenience caused by breakdowns was lower because, at any point in time, at least a few would be in working conditions.

### 3.2.2 Scarcity of handpump

Insufficient numbers of handpumps cause the load on the few installed to be very high and leads to their frequent breakdown.

In addition, shortage of pumps lead to crowds/queues at the source. Fights and disputes over who should take water first are frequently reported.

These problems get aggravated in summer or other times of water shortage when alternative source of water dry up and even the water table recedes, resulting in a very weak flow from the handpump. Clearly, women are more concerned about the scarcity of handpumps which results in queues, long waiting periods and fights and disputes over collecting water at the handpump.

### 3.2.3 Operational difficulties

Villagers, particularly women in some places mention that it is difficult to operate handpumps - takes too much effort to move the handle. It is also reported that often the water flow is weak and one has to operate the pump for a long time before water flows out. This problem was mentioned more often in Andhra Pradesh, Gujarat and Madhya Pradesh. The cause of the first problem appears to be friction at the fulcrum which may need to be lubricated. The second problem is possibly caused by a low water table.

### 3.3 INSTALLATION AND MAINTENANCE OF HANDPUMPS

#### 3.3.1 Site selection

On the whole, people do not appear to be dissatisfied with the sites at which handpumps have been installed. They are resigned to the fact, that given the few pumps installed, these are bound to be located in spots closer to some people than to others. The overall attitude to the process of site selection appears to be one, more of passive resignation rather than active acceptance. The villagers are not involved in the process at all and neither do they feel that it is possible for them to be. The sites according to them are pre-selected, since it is possible to install pumps only where there is water and these appear to be largely indicated by the people 'who came in motor cars, saw and went away'. At the village level, at best it is at best the panchayat member who are consulted. It is only in a rare village such as Samdari in Barmer district in Rajasthan that people explicitly mention being consulted. However, in view of the general perception that pumps are conveniently located, one can presume that normally the panchayat, in its role as the benevolent autocrat, does take the villager's convenience into consideration.

#### 3.3.2 Repair & Maintenance

For the continued use of a handpump which is, after all a mechanical device and in light of reports of frequent breakdown of handpumps, repairs as well as preventive maintenance become important issues. To study attitude of village people on these issues the areas of information covered were as follows :

- procedure followed to ensure repair
- perceived responsibility for the handpump
- willingness to pay for maintenance

a/ Procedure :

Normally, on breakdown of a handpump, village people report the problem to the panchayat. The panchayat gets it repaired if the problem is not major through a private mechanic, either within or outside the village. If that is not possible, or if the repair is major, the panchayat union sends an application to the Block Development authorities. Most complain however that this is an extremely long and time-consuming process and sometimes futile. This complaint was particularly received from Uttar Pradesh, Andhra Pradesh, Tamilnadu and Rajasthan.

However, there were other villages where the link between the Block authorities and village people were seemingly strong because repair was carried out by people deputed for this job in a fairly short time as, for example, in Andhra Pradesh and Gujarat. In Tamilnadu, some attempt at decentralization seems to have been made since there were people within the village in several villages who were able to handle the repairs themselves.

b. Responsibility of maintenance :

The handpump was considered by many as the government's property. The responsibility of maintaining handpumps was therefore to rest with the government in a large number of villages in various states (Rajasthan, Gujarat, Andhra Pradesh, West Bengal).

- "Since government has got the handpump installed you feel it is their responsibility
- "Because there are various procedures in it. One sends a complaint then inquiry begins, what have you taken out, why did you fiddle with it without seeking permission. Hence villae people do not want to get involved with it"

It was explicitly mentioned in two villages - in Andhra Pradesh and West Bengal that villagers have no role in maintenance, and that it is solely the government's responsibility to maintain public handpump. These villages are the ones which are completely dependent on the Block Development authorities for repair and maintenance and presumably have never had to undertake responsibility for repairs themselves.

The other set of responses suggests that no person in the village bothers about repairs and maintenance and once a handpump breakdown it lies in a state of disrepair. The reason for this apathy is probably because the demand for these handpumps did not originally come from the village people; the handpump was gifted from outside. They had earlier lived without it and presumably could continue to do so.

In contrast, there were at least three rich villages - Moolanur in Periyar district, Malom Tuliya in Imphal Central and Kathla village in Panchmahal district where the cleaning of dug wells and pools was done by the co-operative effort of the village people or by a person specifically appointed for this purpose. However in Chinnampattu village in South Arcot district in Tamilnadu, people explicitly mention repairing a handpump immediately and on their own since it is the only drinking water source for them.

There are two other hypothesis, the first of which can be checked out from the results of the quantitative study. These are :

- i. Apathy towards getting a handpump repaired would be inversely related to the perceived quality of handpump water - the better the perceived quality, the lower the apathy - and to the extent to which the water is used - the greater the usage and therefore the habit, the lower the apathy.

- ii. Since water collection is almost entirely a woman's responsibility, a broken or non-functioning handpump would cause her more inconvenience than to men. However, reporting a breakdown to a panchayat member or getting a message to the B.D.O would be the responsibility of men. In conservative societies, a woman would not be expected or encouraged to address a man directly if he was not related to her by birth or marriage. Therefore, a woman would be unable to report a breakdown without the cooperation of her husband/father/brother. These men, not being directly inconvenienced, may not be cooperative or at least not promptly so. This mis-match between the beneficiary and the person who had to take steps for repair could account for handpumps remaining unrepaired.

Willingness to pay :

Villagers report willingness to pay different sums from RS 2 (Andhra Pradesh) to RS 20 (Uttar Pradesh) on a regularly basis depending on their affluence and the criticality of handpump as a water source. In villages where repairs were undertaken by villagers themselves it was common for the people to contribute toward the expense. However, this does not appear to be a regular month to month contribution but happens only when the handpump actually breaks down.

There appears to be reservations about regular, monthly payments from all villagers in certain villages in Uttar Pradesh, West Bengal and Gujarat. The problem here appears to be one of whether all villagers would be able to pay. There are yet many other who are of the view that no one would pay since these are public handpumps (Uttar Pradesh, Andhra Pradesh, Rajasthan and Gujarat) and the sense of belongingness towards the handpumps is very low.

SECTION B : SANITATION





## AREA ONE : HYGIENE

### 1.1 UNDERSTANDING OF CLEANLINESS

Cleanliness is understood as a wholistic concept emanating from within the person - from his thoughts and behaviour and extending to his physical self, home and environment.

Environmental cleanliness appears to be relatively less important to the people in villages; a greater focus is placed on household and personal cleanliness. This is more true of poorer villages.

Washing hands, washing clothes and keeping clean is mentioned universally in the context of physical cleanliness. The need to keep children and their surroundings clean is also felt to be important. In the house, the kitchen where food is cooked and kept is seen to be a high focus area.

Environmental hygiene was considered necessary in all eight states but very little action takes place on this front. Villagers voice the need for systems by which the cleanliness of village can be maintained such as roads, waste water disposal systems and drains.

Awareness of cleanliness is high, people believe in the adage "cleanliness is next to godliness". However, time and money are seen to be major constraints in achieving the desired level of cleanliness.

"If all basic amenities are present, people will have an interest in cleanliness"

(Tamilnadu, rich)

"One has to go to work, no time, so house is unclean"

(Rajasthan, poor)

Besides economic well-being, hardwork is seen as a mandatory input particularly with respect to household cleanliness.



Village people see a high correlation between resources such as time and money and different aspects of hygiene. The link appears to be as follows :

#### Resources

Personal hygiene

Household hygiene

Environmental hygiene

"We should have enough money for fresh food and clean clothes"

(Andhra Pradesh, poor)

"If people are healthy, they have the stamina to keep the house clean"

(Tamilnadu, rich)

"The houses are unclean that is why the villages are unclean"

(Uttar Pradesh, poor)

It would appear that cleanliness is important but the effort required in just making ends meet and in ensuring the basic needs of food, clothing and shelter leaves neither the time nor energy for "luxuries" such as cleanliness. It is a desirable ideal but more for people who can spare the effort and resources; for others, it sinks low on the priority list by default.

Link of hygiene with health is known to most respondents. This will be discussed more fully in the last section of this chapter.

## 1.2 PERSONAL HYGIENE

Bathing regularly and washing/changing clothes emerge as the two aspects of personal hygiene most which are uppermost in people's consciousness of personal hygiene. The need for hygiene is seen to be even more important for children.

### 1.2.1 Bathing

Frequency of bathing :

Daily baths necessary to keep clean is spoken of in all states except Rajasthan. For rural people involved in heavy manual work one of the important reasons to have a bath is to remove the smell of perspiration. In the dry state of Barmer, this does not appear to be a problem and people mention not having a bath for almost a fortnight with equanimity. Awareness of the need to bathe daily does not indicate however that people are actually doing so. This being a sensitive issue, it may well be social desirability which leads people to report regular baths. Certain responses very clearly suggest infrequent baths, particularly in Tamilnadu and Andhra Pradesh.

"The ones who bathe daily are religious"

(Gujarat)

"Old people take bath once in two days"

(Tamilnadu)

"Most bathe daily"

(Tamilnadu)

"Ladies bathe more often than men do"

(Tamilnadu)

"Elders need not bathe everyday but  
small babies must"

(Andhra Pradesh)

"Young girls like to take bath daily"

(Tamilnadu)

#### Bathing place :

Most people bathe at the main water source viz well, river/stream, lake, pond. Farmers report bathing at the tubewell, or canal supplying water to the field. Bathing cubicles, which are indicative of urbanisation, and economic status, were mentioned in rich villages where their numbers are higher than in poor villages. Districts in West Bengal and Madhya Pradesh were conspicuous by the near absence of bathing cubicles in the village.

#### Bathing ingredients :

Most report bathing ordinarily with water and sometimes with ash (Manipur), multani mitti (Rajasthan), black mud (Gujarat), shikakai and soap nut (Tamilnadu and Andhra Pradesh). Soap is considered an ideal cleanser. However, its use is reserved for only very special occasions which could be a festival or the uncommon treat of going out of the village to visit relatives. These occasions would be more special for women since their lives, more than those of men, would lack the excitement of a change from the daily routine and of travel. The major constraint in the use of soap is money. Regular users of soap are negligible. In Andhra Pradesh some express reservations against use of soap as it is not effective in hard water and considered to have a drying effect on skin. Alternative cleansers such as flour and soap-nuts are spoken of.

Special baths are taken on auspicious days, festivals and when people go to visit their relatives outside the village. Use of soap in bathing is reported for these occasions. Various traditional cleansers and oil would also be used, particularly for festive occasions.

There are implications of this "luxury image" of something as ordinary (in the urban context) as soap that were not voiced by respondents but that have been gleaned from several comments. One, that soap would not be placed at an easily available, open space near a water source, even inside a private dwelling. Soap would be kept in a soap-case or box in a special place to be taken out and

used for special occasions. The natural corollary would be that hands (after defecation or other work) would be washed with water and mud/ash, if available, but not with soap. The urban act of reaching out for the ever-present cake of soap near a wash basin would be alien in the rural context.

Two, this 'luxury' image could act as a deterrent even for those rural persons who were hygiene conscious; but not affluent. The desire to use soap continuously (as in the act of washing hands) could bring upon them enough or criticism and peer-pressure to desist from doing so. Till such time as soaps are cheaply and universally available, their easy use would remain rare.

### 1.2.2 Washing and changing clothes

The act of bathing and of washing and changing clothes appeared to go hand-in-hand and were mentioned in all states. Most people are cognisant of the fact that washing clothes with soap, 'surf' (a brand name which has taken on generic overtones and is used to mean any detergent powder) and soda leads to better cleaning. However, the levels of poverty at which they live make regular washing of clothes, even with just water, impossible. The very poor possess only one set of clothes and do not have another set into which to change after a bath. To maintain the standards of hygiene which are considered desirable, financial resources are considered necessary.

"If he has money, he will have clean clothes, since he can have more than one set of clothes"

(West Bengal, poor)

"We should have enough money for fresh food and clean clothes"

(Andhra Pradesh, poor)

Some farmers and labourers who work with mud and earth, consider changing clothes regularly to be futile. This is because clothes would anyway become dirty in no time at all.

The act of washing clothes appears to be performed at the water source itself. Only those for whom the main water source is very far, wash clothes at home, trying to do with a small quantity of water from secondary sources.

### 1.2.3 Cleaning teeth

In all states, cleaning teeth everyday was mentioned. The element of social desirability appears to be at play here as well. There are many who confess that they clean teeth irregularly, as and when they have time. Chewing sugar cane and other such rough fibrous products are quite often made to suffice.

The mode of cleaning teeth is commonly by use of a datun\*, stick, twig. Toothpowder, charcoal, ash of cow dung cakes, tobacco, sand, salt are various abrasive powders mentioned to clean teeth. Infrequent mentions of brush, toothpaste and 'Colgate' also comes up.

The need to clean teeth is believed necessary to control bad breath.

### 1.2.4 Footwear

The need for footwear is not as clearly established as that of the hygiene practices discussed above viz bathing, washing clothes and cleaning teeth. Although many mention it 'necessary', the statement lacks conviction. Actual usage of footwear is low and infrequent.

The need for footwear is expressed for two fundamental reasons. These are :

- to protect feet from pain and injury
- to protect feet from slush and dirt

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\* These refer to twigs of the "neem" tree which has recognized germicidal properties.

People spoke of thorns, stones and heat which can cause hurt; they also referred to the possibility of snakes and scorpion bites in the absence of footwear. Shoes and slippers were therefore seen to protect feet from such physical injuries. The other benefit was seen as the prevention of contamination from dirt, slush, spit and excreta. This protection was valued for two reasons. On the one hand, items like spit and excreta are considered physically dirty and people were repelled at the thought of having to stamp on them; on the other, they were also considered harmful to health because of the germs and infections present in them. This link with germs was seen by only a few people, but among those who were aware of it, it emerged as a strong motivation for wearing footwear. The recognition of feet being carriers of such filth from outdoors has also led to two practices which are still practiced in traditional households in several parts of India. One is that of washing feet with water upon entering the house, the other is that of removing footwear outside the house and entering a house with bare (but clean) feet. In fact, not entering a kitchen with footwear is practiced even in urban households since footwear is associated with outside dirt. Mention of hookworms and bacteria entering the foot because of absence of footwear is mentioned in West Bengal and Tamilnadu.

The need to wear footwear is mentioned by many, both men and women but is more strongly felt by men. Footwear is customarily worn only outside the house and for this reason women who work within the house perceive the need to a lesser extent.

Footwear, a relatively non-traditional part of the attire of a village person, has certain interesting image connotations. It is seen as a sign of urbanisation. In the rural community, urbanisation and status are closely inter-related. Thus occasions which demand wearing of good clothes also demand use of footwear; all the care taken in grooming is seen to be incomplete without footwear. However, if a woman wears footwear (and this was reported in richer villages) she is vulnerable to criticism for trying to appear too urbanised.



The major constraints in using footwear are the lack of habit and cost. Footwear is considered a luxury. People who own footwear use it carefully and report wearing it only on special occasions or when going out of the village.

#### 1.2.5 Washing hands

This was an area of special focus in the group discussions given that washing of hands plays an important role in breaking the cycle through which germs and bacteria enter our bodies.

Washing hands and feet was mentioned, unprompted, in discussion across all groups as an important aspect of personal hygiene. The most frequent mention of washing hands was before and after meals. Other occasions when hands are washed are

- after coming home from work
- after touching cow-dung (Uttar Pradesh, West Bengal)
- when perceived to be dirty
- when cooking food (women).

Usually hands are washed only with water. Soap is used rarely only when hands are very dirty, such as after handling cow-dung or grease. In Manipur and Tamilnadu use of soap is seen to be compulsory after handling pesticides. A little more common than soap was the use of traditional cleansers such as mud, sand and ash which are used for washing hands after defecation, where soap may not be available.

In conclusion, it appears that awareness of personal hygiene is high but it often exists only at a theoretical level. In practical terms, shortage of time and money and sometimes a lack of conviction with regard to its necessity causes people to be careless about these aspects of hygiene.

### 1.3 HOUSEHOLD HYGIENE

Household hygiene plays an important role in people's perceptions of hygiene and cleanliness. For women in particular, involvement with household hygiene is high. The attitudes and practices related to household hygiene have been discussed below under two main sections. These are :

- cleaning of the house
- washing of utensils

#### 1.3.1 Cleaning of the house

The rural woman is house-proud, within the constraints of time and the dictates of tradition. Traditionally, the focus appears to be on kitchen/dining space followed by the sleeping area.

House :

The first step towards household hygiene is an orderly, neat and clean house. There are no resource constraints in achieving this, excepting time and effort on the part of the housewife which may be at a premium. However, respondents stated that, in their opinion, even the poorest woman could keep a neat house, and those who did not do so were seen to be lazy. The stress is on visible cleanliness and those who do not achieve this meet with social disapproval.

Sweeping and swabbing the house regularly is mentioned universally and considered an integral part of the cleaning up process. This was believed to be necessary to make the house free from dust, cobwebs, insects and filth.

Plastering floors with mud and dung was a practice followed in villages across the country. Regular plastering not only cleaned the floor but also smoothened it out, thus adding to the cosmetic appeal. Cowdung plastered on the wall also helped to smoothen out the cracks. The perceived advantages of using cow-dung to plaster will be discussed in the chapter on disposal (Chapter III).

This plastering is particularly important in 'kuccha' i.e. mud houses. In Andhra Pradesh cow-dung water, 'colappu' was sprinkled in front of the house.

Basic cleaning up was seen as being necessary but not sufficient to satisfy a house-proud woman. Decorating the house, adding to its aesthetic appeal was a part of tradition - and, in different states, different ways of beautifying the house were mentioned. Growing flowers, applying 'kolam'\* (Tamilnadu), white washing or colour washing the walls, applying 'gara' (Rajasthan) or cow-dung plaster (Andhra Pradesh) were means of decorating the house.

In some of the richer villages, cleaning ingredients such as phenyl (Gujarat), and glycerine were mentioned. There was also an occasional mention of the need for keeping the area around the house free from weeds, moss and slush by providing good drainage systems. This was seen to help keep the inside clean and free from mosquitoes and flies. Plastering walls with lime, and airing the mattress were considered necessary to prevent bugs and insects (West Bengal).

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\* Kolam : A decorative design on the floor at the entrance of the house. The floor is plastered with cow-dung and a design in white powder is created. This is considered auspicious as well as decorative.

### Cooking area :

The area where food is cooked or eaten came across in every discussion as the focus of cleanliness. The reasons for this are two fold. One, that this is the area where food is cooked, stored and eaten. Sometimes water is also stored here and uncleanness in this area will lead to flies and insects which cause health problems. Secondly, this is the workplace of the housewife and most of her activities revolve around this area. She is therefore particular about cleanliness of the kitchen. Traditionally, the cooking and dining space, as also the 'pooja' (worship) room, has been imbued with a certain degree of sanctity. Maintaining cleanliness in this area therefore has religious overtones. Usually the housewife cleans the kitchen after every meal to ensure that there are no food particles on the floor and that left over ash and other garbage is swept away. Plastering the kitchen floor with mud (Madhya Pradesh, West Bengal, Gujarat), red soil (Andhra Pradesh), sand (Manipur) is a regular practice in these states. The cooking stove or 'chulha' is also paid attention to and if made of mud, plastered and cleaned regularly.

### Food and water :

It must be noted that awareness of need for hygiene with regard to food and water was known by most. However, those who spoke of hygiene related practices in this context reported that most villagers including themselves are negligent and usually do not follow these practices as rigorously as they should.

The need to wash and eat food and give children pure food was mentioned in Gujarat.

Food in the poverty stricken communities of rural India is treated respectfully. Villagers are aware of the need to cover food to prevent flies and other insects which carry infection, to sit on food and contaminate it. It is understood that cleaning the kitchen regularly will prevent flies and insects.

The area where water is stored is also singled out for attention. Villagers report the need to cover water and maintain cleanliness around the water stand (Gujarat, Madhya Pradesh). In Tamilnadu it is mentioned that the water pot needs to be kept clean. Washing storage pot with shikakai powder every Tuesday and Friday which are considered as auspicious days is reported here.

Other focus areas :

After the kitchen/dining space, cleanliness was considered most important in the latrines, and bathrooms (reported in the households owning them) and the sleeping area. An unclean toilet leads to flies and ants in the house (Gujarat, Tamilnadu and Andhra Pradesh). A clean bed and aired mattress were considered important to prevent bugs. The room where the family members sleep had to be swept and cleaned regularly to ensure that there were no insects, or scorpions in that area.

The 'pooja' room where people worship and the part of the house visited by guests and therefore open to scrutiny were also spoken of as areas where need for cleanliness was high. We believe that the rural housewife was being subjected to two kinds of pressures. One was the pressure of tradition which told her to ensure a clean kitchen at the very least. The other was the social pressure which made her keep the "visible" portions of the house clean. It would appear from the discussions that, between traditional and social pressure, the latter was stronger although each reinforced the other.

### 1.3.2 Cleaning of utensils

Washing and cleaning utensils after every meal appears to be the norm across all states.

Utensils are normally cleaned within or just around the house. Within the house, they would be cleaned in the courtyard or kitchen from where a drain would usually lead off outside the house. In

households where there is a lack of space, housewives would clean utensils just outside the home, next to the roadside drain. In West Bengal, the more common practice is to carry the utensils to the pond besides which it is cleaned.

Ash, mud, soap are the most frequently used scourers. In certain rich households, Vim\*, and soda are used to clean utensils. Natural scrubbers such as grass, husk, straw, coconut fibre are used for scrubbing.

### 1.3.3 Attitude to household cleanliness

Need for cleanliness within the house is emphasized in the rural communities. A clean house is associated with less sickness (Gujarat) and well being of the family members; it is considered auspicious; the converse is true of a dirty house.

Hindu tradition (which is also internalized by urban households) dictates that 'Laxmi' the goddess of wealth and good fortune, does not enter a dirty house. She is most likely to visit around Diwali (Gujarat) when a special festival is held in her honour, known as "Laxmi pooja". In preparation for this day, housewives clean the house from 'attic to cellar'. In other parts of the country (Tamilnadu, Andhra Pradesh) Laxmi is believed to visit every morning at sunrise and will enter a house if she finds a clean, swept courtyard decorated with 'kolam' (powder design). If she finds a dirty house, she could leave in anger and good fortune could stay away from the house. Clearly, traditional societies had woven these charming lores to motivate women to keep a clean house, with a rather clever use of the modern day "carrot and stick" approach, intervening the hope of reward with the fear of punishment. At a more practical level, women perceived the advantages of a clean house in the form of fewer flies and insects which are not only tiresome but also carry infections and germs.

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\* As with the word "Surf", "Vim" is also used in a generic sense to mean a scouring powder and would not actually refer to the brand.

Household cleanliness emerges as the responsibility of the housewife. Her role in this area is of paramount importance and she is judged by the extent to which she can maintain hygienic standards. A housewife whose household is dirty is considered lazy and she meets with strong social disapproval.

Household cleanliness is therefore an area of high involvement and village women take great pride in being able to maintain these standards.

If one imagines a continuum beginning from within a person and extending in an outward direction to the outside world, the spiritual aspects of personal cleanliness forms one end of the continuum and environmental hygiene the other end, furthest from the person. The locus of control as perceived also decreases from personal cleanliness to environmental hygiene i.e. a man believes that his practices cannot affect the conditions of environmental hygiene and tends to adopt a fatalistic attitude towards what currently exists.

#### 1.4 ENVIRONMENTAL HYGIENE

Village people were able to speak of the factors which differentiate a clean village from a dirty one. These are :

- good roads
- availability of clean water
- absence of stagnant water
- absence of mosquitoes and flies.

Good, preferably "pucca" roads without pits and furrows characterize a clean village. In many of the poorer villages which are, by definition more remote, the problems of inadequate transport and communication facilities is strongly perceived. This is felt more sharply when a person is unwell and has to travel for medical help, urgently.

Availability of clean water is another consideration mentioned in all states, particularly by men.

Adequate drainage facilities, to prevent water logging and the resulting slush appears to be an important criterion. Absence of stagnant water pools, and garbage littered all over will lead to fewer flies and mosquitoes. Absence of flies and mosquitoes is a characteristic feature of a clean village.

Presence of latrines, trees and plants, electricity and other amenities are expected in a clean village.

Opinion is divided on relative cleanliness of cities and villages. The balance appears to be tilted slightly in favour of villages because inspite of inadequate facilities village have fresh air, do not have open sewers, overcrowding or latrines within the house. On the other hand presence of civic facilities including paid sweepers are the advantages perceived in a city.



## 1.5 LINK BETWEEN HEALTH AND HYGIENE

A major objective of the WES programme is to reduce incidence of disease by promoting hygienic practices in rural India. In order to do so it would be necessary to understand the rural person's definition of health, the common health problems from which he suffers and the extent to which he currently links health and hygiene.

### 1.5.1 Definition of health

The physical appearance of a person : the condition of his hair, eyes, complexion and physique are used to judge his health.

According to village people, economic well being is a prime determiner of physical well-being. A healthy person is expected to follow a regular routine, appear well dressed, look happy and be at peace with himself. Education and culture are also considered as determiners of health, in Tamilnadu and West Bengal.

To ensure good health, good diet and cleanliness were seen as the most important factors, universally across all states. Material comforts, clean water, mental well-being, pollution-free environment and good habits are mentioned as inputs to good health across the eight states but with less regularity than good diet and cleanliness.

While women pay greater stress on mental peace, happiness and harmony within the family, men consider medical care/facilities, and education important for maintaining good health. The need to work (possibly to afford good food, clothes and medical facilities) and abstinence from bad habits was also mentioned.

### 1.5.2 Health problems

The health problems most frequently mentioned in all eight states are :

- fever, cold, cough, headache, bodyache
- diarrhoea
- water borne diseases (worms, cholera, jaundice)
- malaria, encephalitis, brain fever.

Chicken pox, skin diseases, boils, rashes and conjunctivitis are spoken of fairly often. Men also speak of tuberculosis and other rarer diseases more often than women.

### 1.5.3 Causes of ill-health

Lack of cleanliness emerged as the prime cause of ill-health according to the respondents. This relates both to personal cleanliness i.e. not bathing, staying dirty and to environmental cleanliness i.e. dirty surroundings, filth and garbage. However personal cleanliness received greater stress, except in the states of Gujarat and MP where environmental cleanliness appeared to have greater salience. Practices related to household hygiene such as sweeping, swabbing, plastering are so much a part of the daily routine even in the poorest household that it rarely emerged as a potential cause of ill-health.

Water was widely mentioned as a cause of illness. The problems of stagnant water and impure/contaminated drinking water leading to ill-health was mentioned in rich as well as poor villages by both men and women. It needs to be clarified however that this was usually in response to probing except in villages where the incidence of water-borne diseases were conspicuously high.

Stale, rotten or 'unsuitable' food was often seen to be the cause of ill-health. The problems resulting from eating wrong kinds of food were related mainly to stomach ailments which emerged as being fairly salient in the list of health problems. The main reasons for eating such food and for not making the effort to ensure clean good food were lack of time and a negligent attitude.

Mosquitoes and flies were also seen as a major cause of ill-health, but were spoken of usually in conjunction with lack of cleanliness. In richer villages, the link between mosquitoes/flies and ill-health appears to be more strongly perceived.

Financial hardship was mentioned in the two southern states and in West Bengal. Financial difficulties lead to lack of sufficient food and resources for maintaining cleanliness. Health therefore suffers.

Factors which were seen to contribute to ill-health discussed above, clearly indicate that hygiene or cleanliness related aspects are linked to health problems. In summary, hygiene related factors and general factors seen as causes of ill-health are given below in order of importance.

#### CAUSES OF ILL-HEALTH

<u>Hygiene related</u>	<u>General</u>
. Lack of cleanliness - personal - environmental	. Financial hardship
. Dirty, contaminated water	. Mosquitoes, flies
. Unclean, stale food	. Unsuitable diet
. Lack of sanitation, pollution	. Bad irregular habits . Overwork . Contamination due to pesticides

Some of the quotes indicating link between poor hygiene and illness/disease are given below :

"If we don't keep house clean, diseases spread"

(Madhya Pradesh, poor)

"If a dirty place is there then villagers will get diseases"

(Rajasthan, poor)

"Flies which sit on dirt, sit on food causing uncleanliness"

(Andhra Pradesh, poor)

"If we eat without washing our hand, dirt and germs are carried inside"

(Tamilnadu, rich)

## AREA TWO : DISPOSAL OF WASTE WATER, DUNG AND GARBAGE

In this chapter, practices and attitudes related to disposal of waste water, dung and garbage have been discussed. Correct disposal practices play a critical role in the improvement of environmental sanitation.

### 2.1 WASTE WATER DISPOSAL

Waste water is generated from washing of clothes, utensils, animal and from personal washing and urination. Practices and systems of waste water disposal, belief with regard to responsibility for waste water disposal, attitude to and level of satisfaction with current waste water disposal systems are covered in the sections which follow.

#### 2.1.1 Practices of waste water disposal

Systems of disposing waste are given separately for the various functions from which it is generated.

##### a) Household washing

Utensils :

Commonly, household utensils are washed in the courtyard, in the 'mori' (Uttar Pradesh), 'chowki' (Gujarat) or 'takt' (Rajasthan)\*. This water passes off through a drain outside into a larger roadside drain or onto the lane itself. There are yet others who clean utensils in the kitchen and throw the waste water thus generated into the courtyard.

In the absence of a courtyard in the house, many clean utensils just outside the house, beside the roadside drain.

Few in West Bengal, Tamilnadu and Manipur report cleaning utensils near the water source, beside pond or next to the well.

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\* All these words denote a specially demarcated or constructed area for washing purposes.

Most report cleaning utensils a minimum of twice a day and many, after every meal. The quantity of waste water generated therefore in washing utensils is quite substantial.

House :

Waste water from household cleaning is thrown out over the threshold onto the compound or simply onto the road outside. Sometimes it is simply swept into the corner of the courtyard where it presumably gets soaked into the ground or forms a stagnant pool. If there is a roadside drain waste water passes into it. In Madhya Pradesh, all waste water from household cleaning is thrown into the 'gurwa' in the corner where it eventually dries up. In some place waste water is collected temporarily in a pit or a vessel and then thrown off altogether (Madhya Pradesh, Rajasthan, Tamilnadu, Gujarat).

Clothes :

Clothes are washed, by and large, at the water source, possibly because of larger quantities of water required. Very few (Tamilnadu and Andhra Pradesh) wash clothes at home. Waste water generated in case of clothes washed at open water sources (rivers, lake, tank) flows back into the water source. At other sources such as

wells or handpumps, water would flow into the roadside or nearby low-lying areas.

b) Bathing animals

This is another function which needs large quantities of water. Most people spoke of bathing animals at the water source - pond, river or beside the well. The few who bathe them in the village do so at the 'badi' (a patch of land behind the house), 'cow shed' or in the courtyard. Waste water thus generated is left as it is.

c) Personal washing

The topic of disposal of waste water generated from bathing and urination was covered in the discussion.

Bathing :

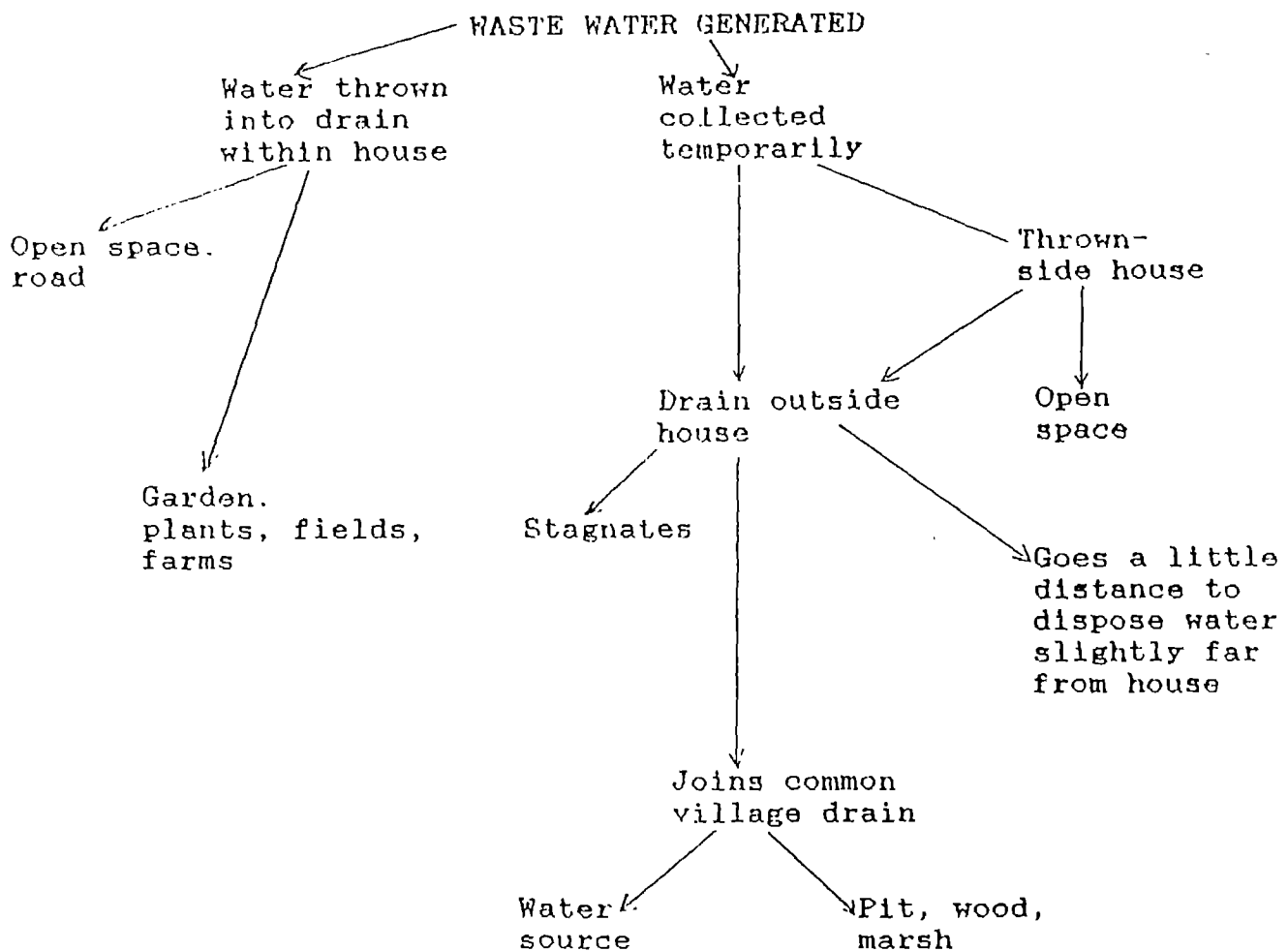
Normally people, both men and women, bathe at the water source such as the river, pond or handpump. This seems less common however in Rajasthan, Andhra Pradesh and Tamilnadu. The prevalent practice here was to bathe at home in the courtyard or compound where the land absorbs the waste water. Presence of bathing cubicles in the house is spoken of by some, possibly the more affluent. Water from these drains off outside the house.

Urination :

Adults report urinating in open space, drains, or places which offer some privacy such as back of the house or behind bushes. Young children normally urinate just outside the house (into the drain if there is one). Children below the age of 5 - 6 years urinate inside or outside the house, sometimes in the corner of a courtyard. Water is poured onto this place and swept away. In some of the richer villages (Madhya Pradesh, Rajasthan and Tamilnadu) women have an area marked for this purpose in the courtyard or garden, enclosed by a bamboo curtain or plants. Water is poured on this area if it stinks. In Madhya Pradesh, sprinkling the area with cowdung water is believed to clean it.

2.1.2 Current drainage systems

In trying to understand how waste water is disposed and eventually how it drains off we found that varying patterns emerged even within a village. The figure below charts out the various drainage patterns which can exist.



Where the land is flat, drains were cut into the ground; in sloping land the natural drainage flow of the land is followed.

Waste water thrown or swept into drain within the house could simply open out onto the street; or it could join the drain dug by the side of the road. When the first happens, it leads to the formation of slush and stagnant pools just outside the house unless the land is so dry as in Rajasthan that water gets absorbed. In the second option, it does not accumulate outside the house provided that the roadside drain is properly sloped and cleaned. Quite often this is not the case leading to stagnation of waste water in the drain.

Directing water to plants or a garden was mentioned in Tamilnadu but does not appear to be a common practice. Directing waste water to field or farm is mentioned in Gujarat, West Bengal and Uttar Pradesh, possibly practiced by those whose house is adjacent to or on their fields.

As is learnt from the practices of waste water disposal, some respondents reported collecting water temporarily in a vessel and subsequently throwing it into the roadside drain while others just throw it outside the house.

In the latter case, water could simply follow the natural slope of the land and spread out into an open area or collect in the pits and hollows in the ground. If the water is thrown into the road some of it would also flow into the drain outside the road.

From the roadside drain, waste water would flow and join the common village drain which ended in a pit, in the roads, in a marsh, river or sometimes, as reported in West Bengal, into the pond which is the water source. The drain outside the house does not at all times join a larger drain but sometimes carries waste water only a little distance to dispose it away from the house. Water also stagnates in the roadside drain as has been described earlier, if it is full of garbage or does not have a slope.

### 2.1.3 Responsibility of waste water disposal

Maintaining sanitary conditions is considered the responsibility of the housewife within the boundaries of the house. At best she may clean the area just outside her house, since waste water accumulated at her doorstep could create problems for the family.

Environmental sanitation is universally, considered the responsibility of the Gram Panchayat, Block Authorities and Gram Sewaks. They are expected to get the village area cleaned.

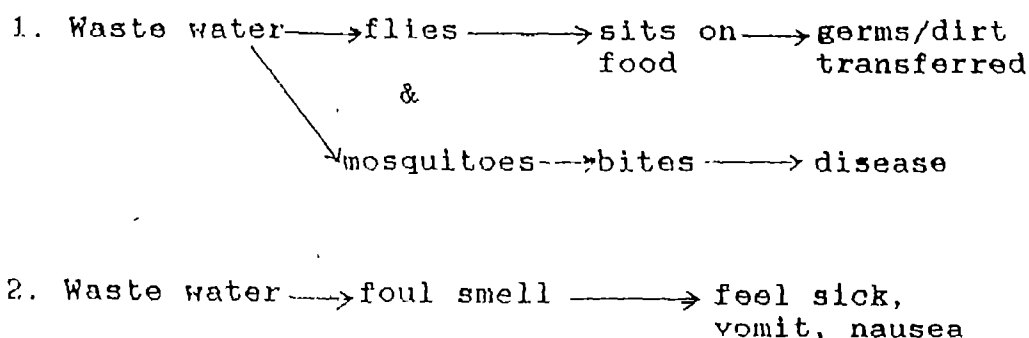


A frequent complaint from the village people was that although the responsibility of maintaining environmental sanitation lay with the Panchayat or Block, they did not pay enough attention to solving these problems.

There were others who felt that there was no one responsible for cleaning the village and even if there were problems, there was nothing that a village person could do about them. However, the study shows that while the overall attitude to waste water disposal is one of indifference, if and when the problem of water stagnation does reach critical proportion as during monsoons, the villagers do get together, often under the direction of the panchayat to find a solution to that problem.

#### 2.1.4 Link of waste water with health

Two broad links between waste water and health are perceived by the villagers. These are presented below :



The range of diseases or problems attributed to flies and mosquitoes bred in waste water varies from general ailments such as fever, cough, vomiting, diarrhoea, stomach upset, dysentery, itching, sores, boils (West Bengal) to specific ailments such as conjunctivitis, chicken pox, malaria, jaundice, cholera and brain fever (Andhra Pradesh).

A few, in particular women, attribute health problems such as nausea, giddiness and illness to the foul smell arising from stagnant waste water.

The link of diseases with waste water while acknowledged by most did not emerge as a salient concern. That stagnant water can prove to be a health hazard is accepted at a theoretical level but does not translate into concern. The 'dirt', slush, slime and muck is disliked more because it is repugnant and causes inconvenience rather than because of the possible harm to health.

#### 2.1.5 Attitude to waste water disposal

On the whole, disposal of waste water is not perceived to be a problem. Most appear to be indifferent to the situation - even those who face a problem have accepted it or are resigned to it.

The problem of waste water accumulation is perceived most strongly during the monsoons. Stagnation of water due to poor drainage leads to :

- an increase in number of flies and mosquitoes which become a major irritant
- slush and filth, which cause inconvenience as they are difficult to wade through. Walking through slush also leads to dirt being carried into the house
- foul smell arising from stale stagnant water
- an increase in flies and mosquitoes which carries germs and leads to diseases and is also tiresome
- fight and quarrels between neighbours - a problem spoken of by the women.

In areas where the land is dry (Rajasthan) or where the topography of the land helps natural draining, waste water is not a problem in any season.

In villages of West Bengal, apart from stagnation, a major problem is the contamination of water source due to poor disposal practices. However even here where rationally the dangers of contaminated water are known, the apathy, possibly arising out of helplessness, to amend the disposal system is apparent.

Three types of suggestions were received for improvement in drainage :

- Those villages where there were no drainage facilities at all wished for some method - any method - of ensuring that waste water would be carried from the villages.
- Those who lived in villages built on flat ground and which had some drainage systems but not efficiently designed or maintained expressed the need for a proper, effective drainage system.
- Those villages (which were the richer villages) who had some drainage facilities expressed the need for a more sophisticated system in the form of covered and cement-lined drains.

## 2.2 DISPOSAL OF DUNG

Animal dung can be a source of diseases and correct collection and storage practices are necessary to maintain sanitary conditions in the village. In this section, perceptions and uses of different types of animal dung, and current practices with regard to collection and storage of dung as well as satisfaction with the current system of dung disposal has been discussed.

### 2.2.1 Perception of dung

All animal dung is not categorised into the same group. Cow dung is perceived to be different from other types of animal dung and will be discussed separately.

#### a/ Cowdung

Cowdung has traditionally been used in India spanning vast time periods and geographical area. It has stood the test of time and of use by generations of people. This widespread and continued use have resulted in some strong positive perceptions on the same. The positives of cowdung which are accepted universally are given below.

Cowdung is seen to :

- kill germs and provide antiseptic protection (Rajasthan). The cow is revered as a 'mother' traditionally and therefore cowdung is not expected to be harmful
- prevent mosquitoes, flies and insects (Andhra Pradesh, Tamilnadu). These expectations were not just based on hope or belief but had been reinforced by satisfied users.
- be useful in lieu of cement especially, for 'kuccha' (mud walled) houses. It serves to bind the plastering of floors, walls and for repairing cracks in both.
- have economic value. It forms an integral part of the rural economy by virtue of being used for manure and fuel.

- absorb bad smell and water and considered a hygienic cleaner.

- be holy, auspicious with beneficial powers

"Cowdung has 'shakti' (power) that absorbs current from earth" (Rajasthan)

The negatives of cowdung are that it :

- stinks, particularly when kept over time

- rots if stored in damp conditions; can develop worms and insects

- breeds mosquitoes and flies

- creates filth

- can cause serious diseases. This last mentioned association of cowdung with health is however very rare.

The apparent discrepancy between the positives and negatives mentioned above can be explained by differentiating between fresh cowdung and dried cowdung. Fresh cowdung is susceptible to emit a foul smell and, if not well stored can breed insects and germs. Once it has decomposed and dried however, the negatives attributed are no longer present.

b. Other animal dung

Animal faeces are generally not considered harmful - only if they are left open at close vicinity and start rotting that they can prove to be harmful.

The problem experienced with animal faeces are :

- a foul smell, which can be harmful

- generation of flies, mosquitoes

- creation of filth

- that they lead to diseases. However, opinion was divided on this score. Some respondents believed that the flies and mosquitoes generated by dung could cause disease, while others were more skeptical of its harm to health.

Differences existed across states with respect to the type of animal dung that was considered harmful. In Gujarat, horse dung is considered harmful, while excreta of pigs are considered harmful in Uttar Pradesh, Andhra Pradesh and West Bengal. Excreta of the hen is not used in Gujarat, Rajasthan, Madhya Pradesh and Uttar Pradesh.

At a rational level, dung is seen to be potentially harmful. However, there is a lack of conviction because

"We have been living with it for years and nothing happened"

(Tamilnadu)

These perceptions affect the use to which different types of dungs are put.

### 2.2.2 Uses of dung

The uses of dung are discussed below separately for cow dung and other types of animal dung.

#### a/ Cow dung

The sacredness of the cow stems from its combination of being an extremely useful animal on the one hand and extremely gentle and harmless on the other. This admiration grows when all the uses to which cowdung has been traditionally put are considered. These can be broadly classified into

- manure
- floor plaster
- wall plaster
- fuel
- other uses

Manure : Cowdung is universally used as manure. In most villages respondents reported storing it until it decomposes and then using it as manure. There are occasional mentions of throwing wet dung directly into the field. In the agriculture based rural economy, cowdung therefore has a valuable role and it is rarely ever left uncollected. It is difficult for the villagers to conceive that cowdung which is invaluable to them on one hand could in any way be injurious to health. It is possible that there could be some rub-off of the benevolent image of the cow onto cowdung, too.

#### Plastering of floors :

Cowdung is mixed with mud or sand (Gujarat, Rajasthan) and plastered on the floor. This was mentioned as a very regular feature of household hygiene. A major reason for doing so was to smoothen and clean the floor. Plastering with cowdung is to mud floors what washing is to concrete floors. Regular plastering not only helps to keep the floor looking neat and smooth but is aesthetically appealing, as well. Plastering also helps in preventing dust from rising from floor. It is also considered hygienic since it is believed to prevent germs, flies and insects.

In a room where a delivery has taken place or if a child urinates or defecates within the house, the floor is wiped clean with cowdung. The cleansing action of dung is believed in widely. It is also seen to prevent dampness and considered to have a de-odourizing action (Andhra Pradesh).

The positive perceptions of cowdung in this regard appear to be the strongest in Andhra Pradesh, and to a large extent in Tamilnadu as well.

Substitute for cement :

Dung with its fibrous content has a strong binding action when mixed with mud. It is considered to be the poor man's cement. Besides floors, cowdung is plastered on chipping walls, on the roof to hold the beams and for filling cracks and holes on the walls.

Fuel :

Dung cakes are used universally as fuel. Even the poorest villager not having his own land or cattle will collect dung from the road to make dung cakes. These dung cakes are called by various names as 'kandas' (U.P); 'pidaklu' (A.P); 'upplas' (Gujarat). They are made from a mixture of dung and mud which is dried. In the monsoons, cow dung does not dry easily into fuel cakes leading to a scarcity of fuel.

Dung is also used in gobar gas plants, in a few villages.

Other uses :

The ash from dung cakes is used for cleaning teeth and utensils. Dung plaster is also applied on grain silos to prevent dampness from seeping in, in case of rain.

b. Other types of dung

The uses of other types of dung are much more limited than of cow dung.

In some states, respondents specifically mention not collecting dung of certain types of animals such as hens, pigs and dogs since they are perceived to be harmful.

Use as manure emerges as the primary application of most other types of dung. There are reservations against its use for plastering floor and other functions to which cowdung is put. Goat, sheep dung appears to have greater acceptability among the other types of animal dung. In fact, in Gujarat, sheep dung is considered an even better manure than cow dung.



In Rajasthan, dependence is higher on horse dung which is used for plastering the 'choolah' (mud stove) and making mudpots. Camel dung is used as fuel.

### 2.2.3 Collection practices

In this section, the questions answered with relation to collection practices of dung are :

- who collects
- how collected
- where stored/collected
- how stored

Who collects ?

Responsibility of collecting cow dung clearly emerges as that of the owners.

In Rajasthan, Gujarat, Tamilnadu and Madhya Pradesh it is considered as the responsibility of ladies. Young males are reported to collect dung in Manipur. However there are no rigid norms.

From where collected ?

In households owning cattle, dung is collected mainly from the animal/cowshed. It is not often that dung is collected from outside the compound of the house particularly in the affluent households. Dung collected for purpose of plastering mud floors is always fresh and would be taken from within the house rather than off the street. Those who do not own cattle however have no alternative but to pick up dung from the roads.

One of the reason that dung disposal does not prove to be a problem is that most of it is collected and subsequently used. This is more true of cow dung than of the dung of other animals. Its very value ensures its collection; the resultant cleanliness is an unwitting, additional benefit.

Where stored/collected ?

Cowdung is collected and stored with care. Dung is collected in basket called 'topla' (Madhya Pradesh) or by hand and temporarily kept at one place. Fuel cakes and dung for plastering are prepared with fresh dung.

Dung to be used for manure is stored in a compost pit. This feature is more apparent in the rich villages. In poorer villages dung is sometimes stored in a garbage dump or simply in a corner of the house.

Manure is prepared in the compost pit by alternately layering dung with mud.

The length of storage in this pit varies from a period of three to six months and is applied on the fields usually after the end of the harvest season.

Fixed season or festivals viz. Baisakhi, Sankranti are used as milestones to mark application time.

#### 2.2.4 Satisfaction and suggestions regarding dung disposal

On the whole there appears to be little dissatisfaction with the system of dung disposal. According to villagers, dung is of such immense value to them that it is rarely left uncollected long enough to pose a problem.

The few who complain also appear to be resigned as they believe that there are no alternative options which they are aware of or they lack funds to implement a better system (Gujarat, Tamilnadu). Those who see a problem, relate it mainly to insects and flies which breed in dung. Rotting dung in which water has got mixed, as during the monsoons, is often a breeding ground for worms (West Bengal).

If a better disposal system has to be organised the initiative is expected to come from the panchayat.

## 2.3 GARBAGE DISPOSAL

Qualitative research appears to indicate that in the villages studied, the current home - based practices with regard to garbage disposal are more hygienic in comparison to those practiced with regard to waste water and dung disposal.

Garbage disposal is a function for which housewives are responsible with men having few comments to make on the issue. Broadly, three common practices are followed with regard to garbage disposal :

- To throw it directly into a garbage dump (usually done if garbage dump is close to home)
- To collect it temporarily in a tin, bin or basket and later throw in a garbage dump
- To throw it outside the house, in an open space closeby. This is expected to be eaten by cows and dogs later.

In some, possibly richer households garbage viz. vegetable peels etc are tipped into personal garbage pits where they subsequently decompose into manure.

There are others who directly throw organic waste products such as kitchen wastes into the fields where it serves as compost.

In villages where the houses are closely built, garbage disposal appears to be a problem, since there is no place close to the home where it may be disposed. Garbage heaps are seen as the source of disease because of the flies, insects and worms they generate, besides being physically dirty. The ill-effects on health that could arise from garbage are clearly perceived by villagers.

Usage of garbage pits, although spoken of appears to be sporadic. There also appears a lack of system of disposing garbage from within the village to distant quarters, necessary to maintain sanitary conditions. Presence of garbage dumps at street corners and the filth caused by it, is a problem spoken of by many villagers, particularly in large, overcrowded villages.

### AREA THREE : DEFECATION

This area will throw light on current practices with regard to defecation with the focus on cleaning practices. Attitudes to these practices, levels of dissatisfaction or satisfaction with these practices and the perception of the link of health and disease with the same, have also been discussed

#### 3.1 CURRENT PRACTICES

In the villages, the universal norm is to defecate in the open. The criteria for site selection are :

- a distance from the village
- a measure of privacy
- availability of water source
- unused place
- not in fields with grown crop

Faeces are considered to be dirty and harmful and all adults take care to defecate outside the village boundaries to the extent possible. This is done to reduce chances of stamping on faeces and spreading it and also so that flies and insects bred in the faeces do not harm the village people.

The second important criteria is that the place of defecation should provide a measure of privacy. Thus, a place covered with bushes, rocks, or hillocks which provides cover is ideally sought. This is particularly important for women. Between members of the same sex, reservations appear to be fewer among men who often report that they enjoy going to defecate in the open, as it gives them an opportunity for a 'morning chat'. However, between the two sexes, inhibitions are very strong.

Women report in many places that they go out to defecate before sunrise or after dusk. Darkness as well as a different timing from men ensures privacy. There is also an implicit understanding of separate areas for men and women. This inhibition or social modesty extends to limits that are understandable but potentially harmful. Women report that they find it embarrassing that any man whom they encounter as they walk through the village on their way to the fields or forest should know that they are on their way to the defecation

site. Some report that they do not carry water to clean themselves as doing so would be an open proclamation of their purpose and therefore embarrassing. The same inhibition prevents them from entering a public latrine.

Availability of water sources close to the place of defecation is preferred as it is convenient since it does away with the need to carry water. River banks and ponds therefore are often choice places for defecation.

Faeces, as mentioned before is considered impure and dirty and people are repelled at the sight or the thought of even accidentally stepping on human excreta. Thus special care is taken to choose a place which looks unused and clean.

Fields and farms are areas commonly chosen for open air defecation. However, when there are grown crops (before harvesting) defecation in the field is prohibited since fresh excreta in the soil is seen as being harmful to the grown crops. This leads very often to a great deal of inconvenience as the area available for defecation gets limited.

Young children between 2-4 years defecate closer to the home - often in the drain just outside the house and sometimes within the house itself. Garbage dumps are also used for defecation by children. Even adults mention using garbage dumps or defecating by the roadside if they find it inconvenient to walk a distance, as for example at night.

### 3.2 CLEANING PRACTICES

These practices can be broadly classified into two. These are related to :

- Cleaning of the area of defecation
- Self cleaning

#### 3.2.1 Cleaning of area of defecation

Human excreta, outside the boundaries of the house is never touched, cleared or covered. It is expected to dry up, or to get eaten up. Young children who are not old enough to go out, defecate within the house, normally on a litter of straw, paper or leaf. This is picked up by the mother and thrown in the garbage pit or drain. If the child defecates on the floor, the place is washed and cleaned with mud/cow dung and water. The same holds true if the child defecates just outside the house. However, beyond the periphery of the house, no responsibility is taken for cleaning the excreta.

#### 3.2.2 Self-cleaning

Adults normally clean themselves with water at the point of defecation itself or close to it. Water is either taken directly from the water source, when people defecate close to it, or is carried in a container. Less commonly, villagers clean themselves with a stone or a leaf (reported by tribals in Madhya Pradesh) or clean up after coming home.

The logistics of the operation work out differently for men and women. Usually, women go out for defecation before sunrise and return home before others awake. Having a bath before starting work in the kitchen is prescribed in several castes and communities. She returns from defecation and bathes (ideally) before starting the day's work. Men, on the other hand defecate on their way to the field for the day's work. Subsequently, they have a bath either in the field or when they come back home in the afternoon. Defecation and bathing for men appear to be separate and distinct activities. For women in many cases, these are contiguous activities.

Hands are cleaned after defecation by adults as well as by children. Mothers who clean the young children wash their hand after cleaning them. Hands are usually washed only with water. This is the water left over from cleaning of self at the defecation site itself. In some cases hands are cleaned at the water source. There are yet others who wash hands after coming home or at the well. Mud, sand or clay is also used, as available. Soap is rarely used as a cleansing agent, with a clear perception that it is only the rich who can afford it. There are others who believe that mud, sand, clay clean better than soap. Women seem to be marginally more careful of washing hands after cleaning themselves. A few of them stress thorough washing if other cleaning agent is not available.

Some people report washing hands and legs after defecation (Tamilnadu, Gujarat, Andhra Pradesh, West Bengal).

### 3.3 ATTITUDE TO CURRENT PRACTICE

As the current practice appears largely to be one of open air defecation, positive and negative attitudes to this practice are discussed in this section.

On the whole, more negative factors have been mentioned with regard to open air defecation than positive. However, the habit of defecating in the open is so deeply entrenched, and the absence of acceptable alternative options so glaringly clear that villagers do not give much thought to it.

Women appear to be less satisfied with current practice of open air defecation compared to men.

It also appears that in villages which are crowded or where there is a shortage of open space for defecation or less privacy due to deforestation, levels of satisfaction are lower. The problems associated with open air defecation are more in these cases.

#### 3.3.1 Positives

Open air defecation is considered a preferable system by many because of the perceived advantages of this method as well as because of the negatives associated with the usage of latrines.

Some of the advantages of open air defecation are :

- access to fresh air
- absence of smell
- no requirement for maintenance

Latrines on the other hand were associated with :

- accumulated, visible excreta
- strong smell/gas
- need to clean

The morning walk to the field is considered invigorating and fresh air stimulating. It is perceived to be good for health. The open, fresh environment early in the morning is associated with cleanliness and appears to negate the uncleanness and dirt associated with faeces.



"The morning walk clears the head, fresh air is good for health"

(Male, Rich, Uttar Pradesh)

"If we go outdoor for defecation we will get fresh air. Whereas in latrines we don't get fresh air. Outside will be clean"

(Males, West Bengal)

Absence of smell is an important benefit of open air defecation. Foul smell is probably one of the most negative features of human excreta and the basis of the feeling of revulsion and dirt associated with it. In open air defecation, the problems of bad smell are fewer. People speak of sitting, facing the wind in the open so that the bad smell is carried away.

"In latrines there is gas and foul smell. This is not so in open air"

(Males, West Bengal)

Latrines, on the other hand are poorly maintained where they exist and therefore smell foul. We hypothesize on the basis of clues gathered from the discussions that the experience of villagers with latrines had been unpleasant.

Firstly, in a majority of cases, respondents appear to have seen only dry latrines which are associated with open, visible, piled-up excreta and with strong stench. People who are habituated to looking for a clean place for defecation and to moving on if a place had been used before, were revolted at the idea of using a place which had visibly been used by several people before.

Secondly, community or even personal flush latrines, if improperly used and maintained, become a concentrated area of filth and stink as inspection of any public latrine in any small town in India will prove. The combined experiences left villagers with the belief that their system was clearly superior to the alternative available.

In the case of outdoor defecation the malodour associated with accumulated excreta is never a problem. Human excreta either dries up and turns to dust or gets eaten up by animals in the open. The feeling of revulsion and dirtiness associated with the place where another person has defecated is also not a problem in open air defecation because a person does not have to sit at the same spot again. People not habituated to latrines find a major conceptual barrier in the idea of having to defecate at the same place used by someone else before.

The practice of open air defecation is therefore considered cleaner and more hygienic.

Finally, there is absolutely no maintenance required in the system of open air defecation. In fact, negative associations with human excreta are so strong that people report leaving the place promptly on defecation and cleaning themselves at another spot. Used to this system the hassles of maintaining a latrine are perceived as enormous. It is unanimously felt that most people would not bother to pour water and clean the pan after having used it and unless someone takes the responsibility of cleaning it, the latrine would get dirty in no time at all.

It would appear therefore that in the promotion of latrines in villages which are not yet crowded and where private spaces away from the village are available, the government is in a difficult 'marketing situation'. The product being promoted viz. latrines is not only perceived to be inferior to the currently available option but would also 'cost' more both in terms of money and more importantly in terms of effort, and habit change. We will study the issue at greater length in chapter four.

### 3.3.2 Negatives

Although the negatives of open air defecation are many they still do not appear to outweigh the negatives of latrines. Open air defecation proves problematic :

- during monsoons
- during illness, particularly diarrhoea
- at night
- for old people

During the monsoons there is a problem in walking a long distance because a person could get wet, as the fields become full of water and there would be slush everywhere.

At night, people are apprehensive of going out for the fear of stepping on excreta, or being bitten by snakes, insects, dogs or wild animals.

During illnesses, particularly when suffering from repeated loose motions having to walk to an open space at a distance can prove to be tiring and difficult. This is also true for the aged and the invalid.

These problems as can be seen are only occasionally encountered by the average person. On a regular basis these are pertinent only for narrow target segments. For regular use by the general public, open air defecation still emerges as the preferred option. The scenario is somewhat different for women, many of whom are considerably inconvenienced with open air defecation but have to accept the system because there is no other option. The difficulties faced by women with regard to open air defecation relate mainly to

- lack of privacy
- risk of personal safety
- lack of cleanliness at popular sites

Lack of privacy particularly vis-a-vis the opposite sex is mentioned by men too, but the intensity of the problem appears to be substantially greater for women. The segregation of the sexes is a common practice in most of rural India. The 'purdah' system is followed to differing degrees in different parts of the country. Women are shy of coming out in front of men. It is even more embarrassing to have men see them going to defecate.

Discussions reveal that women not only shy away from obvious defecation related practices (e.g. carrying of water in a small container, or using a community latrine) but also suffer actual discomfort caused by their inhibitions. Thus if they see a man while defecating, they promptly stand up and suffer much discomfort as a consequence. To achieve a measure of privacy, women go to defecate when it is dark or in jungles or open places where they are unlikely to come across anyone. The risk to personal safety is however high at these times and places. Women report the need to take 'someone' along with them for security reasons. Insects, snakes, wild animals are also feared particularly if they, seek privacy behind the cover of bushes, woods and shrubs.

In villages, shortage of open spaces is on the increase. Growing population and deforestation puts pressure on the land currently available for defecation. Over-crowding at 'popular sites' leading to a lack of privacy and to dirtiness are the emerging problems in some of the richer and larger villages.

### 3.4 LINK WITH HEALTH AND DISEASES

Human excreta is universally considered dirty and any contact with it is avoided as far as possible. The link with health is drawn widely but not spontaneously. The negative association is with pollution or dirt associated with spread of excreta via feet/footwear rather than with ill-health. Thus it was felt that if excreta were deposited far from the village it would be unlikely to cause any harm. There are yet others who report that excreta rarely remained open in place where a person had defecated. It dried up or got eaten away by animals. Thus the likelihood of it causing diseases was low.

The two commonly appearing links with health are given below.

Excreta	Flies	Sit on food	Dreaded diseases
	Mosquitoes	Bites	

Excreta	Foul smell	Routine diseases
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The second link appears to be more prevalent among women, among the less educated and in poorer villages. Respondents believed that even the sight of human excreta could make a person physically sick.

The ailments possible are nausea, vomiting, dizziness, loss of appetite. It is interesting that these were reported as ailments though we would believe that these are just symptoms of the feeling of revulsion caused by the sight and smell of excreta.

There is also a belief that if cattle eat human excreta their milk would not be fit for consumption and could cause illness (Rajasthan, Gujarat).

Excreta of older children was spoken of as being as harmful as that of adults. However, there appeared to be an unspoken tolerance with regard to a child's excreta which would not hold for adult excreta. Excreta of unweaned infants is believed to be made up of milk only and therefore not expected to be harmful.

## AREA FOUR : LATRINES

Construction of latrines is being advocated as a possible solution to the problems associated with open air defecation. The demand for these would need to come from the people, if their acceptance and use was to be ensured.

In this section, we have focussed on the need for, perceptions of and attitudes to latrines in order to assess their likely acceptance, and to understand the facilitators and barriers to their use. Reactions to community latrines were significantly different from household latrines, with their own unique problems of acceptance. These have therefore been covered separately. The issues covered are :

- awareness and understanding of latrines
- attitude to latrines vs outdoor defecation
- perceived need for latrines
- issues related to maintenance of latrine
- conditions facilitating and inhibiting the use of latrines
- existence and use of community latrines
- conditions and barriers to the use of community latrines
- awareness of government subsidy

### 4.1 AWARENESS AND UNDERSTANDING OF LATRINES

Two different types of latrines were discussed during the study. These were :

- water-seal-pour-flush latrines which could be cleaned either by pouring water or pulling chain
- dry latrines with or without a vent.

When speaking of latrines, villagers most commonly referred to the dry type of latrine, usually without a vent.

Water-seal-pour-flush latrines were not unknown to village people. They however exist in only a handful of affluent households in richer villages. Awareness of this type of latrine has been created through exposure to and use of these in cities, railway stations, dispensaries, hospitals and schools. There were occasional mentions of a water-seal latrine which "would get cleaned by pulling a chain".

#### 4.1.1 Terminology used

Water-seal-pour-flush latrines are known as flush latrines (in Uttar Pradesh and Madhya Pradesh) or "permanent sanitary type" (in West Bengal). They are characterized by the need to pour water whereupon the excreta gets flushed away through the hole into a pipe. The latrines with septic tanks are called 'septic latrines' (Andhra Pradesh, West Bengal); in Madhya Pradesh, latrines are called 'paikhana kholi'; they are called 'sauchalaya' in Rajasthan and 'kakkus' in Tamilnadu. The dry type of latrine is called 'khata paikhana' in West Bengal.

#### 4.1.2 Understanding of sub-structure

Understanding of sub-structures is limited. After passing through the pipe, excreta is expected to collect in a pit/well, septic tank or pass into the sewage system. Awareness of a two-pit latrine was uncommon.

Confusion regarding sub-structure appeared to be rooted essentially in two issues. These are :

- the frequency with which pits would need to be cleaned and
- the condition of the excreta that would be found in the pit.



Frequency of cleaning :

There were some respondents who felt that pits would be cleaned as frequently as once in a week. There were, at the other extreme, respondents who believed that pits would only need to be cleaned once in 10 - 12 years. The bulk of opinions lay within this range.

Both extremes of opinion can hinder acceptance of latrines. The former perception would lead to the impression that maintenance is extremely bothersome, while the latter would create dissonance when the need for more frequent cleaning is realized.

The other source of confusion was the condition of excreta that would be found in the pit. Pit cleaning as an issue has not been given much thought by village people since most have not even considered building a private latrine. However, among those who may have perceived the need for latrine, disposal of excreta collected in the pit appears to be a barrier. Some spoke of finding a liquid, slushy stinking mess; they were either confusing pits with septic tanks or were unaware of the porous structure of the pit or both. Others spoke of accumulated excreta which would have to be removed; the understanding of decomposition which would leave excreta in the form of harmless, odourless manure did not appear to be widely prevalent.

Once again, these perceptions could become barriers to even the demand for latrines. The notion of having to clean (or get cleaned) a pit full of stinking excreta once every month or so would be sufficient to turn away the most willing of the villagers.

These negative perceptions appear to have emanated from watching the cleaning operations of a single pit or septic tank where in the decomposition of excreta is not complete. The residue in these cases comprises of partially decomposed excreta, has a foul smell and is in a semi-solid form making it difficult to handle. It is only in a few of the richer villages where double pit latrines have been in use for years and people have seen that the residue is dry, decomposed and can be manually handled, that barriers related to disposal of excreta, do not exist. Moreover pit cleaning was believed to be an expensive proposition since the need for sweepers to clean the pit was expected.

Finally, there was confusion, among the non-experienced, about the disposal of the matter that would be removed from the pit. Some were aware that it would be usable as a manure; others were not. Some seemed to believe that the excreta would have to be transferred to another pit dug for the purpose and were understandably demotivated at the notion that at some point in the future the landscape would be dotted with innumerable pits filled with excreta!

## 4.2 ATTITUDE TO LATRINES

Latrines are the alternative to open air defecation, which is currently practiced by an overwhelming majority of rural people. The advantages and drawbacks of latrines vis-a-vis open air defecation is discussed below :

### 4.2.1 Advantages of latrines

The positives of latrines as known to urban dwellers are :

- convenience
- cleanliness
- absence of filth and therefore fewer health problems
- fewer flies/mosquitoes
- saving of time

Convenience is the most strongly perceived advantage of latrines. Open air defecation invariably means walking a long distance outside the village or searching for a place which offers privacy. All these problems would be taken care of, particularly if latrines were close to the home. The benefit would be greater for women who are more concerned about privacy which open air defecation does not provide.

Saving of time and effort in walking to a distance for open air defecation contributes to the perception of convenience and is appreciated. The perceived need for latrines because of the convenience they offer will be discussed at length in the section pertaining to need for latrines.

Latrines, which ensure that excreta, an extreme form of impurity, does not lie in the open are seen to promote cleanliness. Use of latrine, by the whole community would reduce the worry of having to stamp on human excreta and of defiling oneself as well as the surrounding area.

Related to the advantage of cleanliness were implications of fewer health problems. Excreta left open is likely to spread and contaminate the surrounding area and lead to diseases.

Open human excreta is also seen as the breeding ground for flies and mosquitoes which carry germs and infection. Since excreta gets washed away, latrines are also seen to be more hygienic. However, this link between latrines and cleanliness was drawn by only a few. In fact, insufficient understanding of the link between open excreta and ill-health appears to be the cause for the complacent attitude to open air defecation, notwithstanding certain inconveniences.

#### 4.2.2 Negatives of latrines

The major drawback of latrines were ;

- stink
- dirtiness
- lack of habit
- likely ill-effects on health
- barriers to "accumulated excreta"

The village people's experience with latrines have been mainly with dry-type latrine. In the absence of a vent, most of these latrines would tend to stink. Some of the practices adopted to alleviate this problem are of putting sand or layers of mud into the pit. This helps the decomposition process and prevents the smell of excreta from rising from the pit.

The main reason which explains the strong inhibition to latrine usage is the poor maintenance particularly with respect to community latrine. Apart from the handful who have their own latrines, for most, experience with latrines have been limited to community latrines at public places which were unclean, poorly maintained, dirty and smelly. The association of filth and smell with latrines therefore appears to have been strongly established.

Even those who at a rational level accept that latrine usage would be a hygienic and healthy practice, feel that there would be problems in using a latrine because people were not habituated to doing so.

Defecating in the open or outdoor is considered beneficial for health. Villagers find their 'morning stroll' in a fresh cool environment invigorating. The foul smell of excreta tends to diffuse in the open and therefore is not strongly unpleasant. Within a closed latrine, on the other hand, the foul smell of accumulated gas affects the person negatively. Air within the latrine is considered polluted and harmful for health.

Many people while perceiving the advantages of a latrine are however averse to the idea of building one at home. Even though the latrine is superficially clean, the concept of excreta accumulating close to or inside the house arouses negative reactions. Human excreta is considered as impure and in the East and South zones, a bath after defecation to purify oneself is recommended.

People feel that a latrine should preferably be constructed at a distance from the house.

Some of the other drawbacks of latrines are :

- the negative attitude towards defecating at a place used by another
- the need to make an effort to maintain and clean latrines, a bother completely absent in open air defecation.
- the need to carry water for pouring as well as cleaning oneself. In open air defecation a site next to water source solved this problem. Secondly, the quantity of water required for cleaning self is relatively small so that even if it does have to be carried, it would not pose a major problem. In the case of latrines the quantity of water required for flushing purposes would be much more. The burden of fetching this additional water for the whole family would fall on the housewife.
- a feeling of claustrophobia because of the absence of air and light. Some even feel that in a latrine the polluted air or gas enters one's stomach and causes harm to health.

#### 4.3 NEED FOR LATRINES

On being questioned, the majority of respondents did not say that latrines were not needed. In fact, they cast their votes in favour of latrines. We believe however, that this was motivated by :

- a) the knowledge that modern, urban, educated people favoured latrines and, in doing so a person would at least not appear to be an illiterate, rural, backward person.
- b) latrines, if they could be afforded, were a nice asset to have and did improve the status of the owner in the eyes of his peers.

A real need for latrines was however strongly felt in villages where land available for defecation had become scarce. Increasing population, deforestation and increasing areas falling under cultivation had put greater pressure on the little land currently available. The popular sites were crowded and dirty making it difficult to find a clean spot. These problems are more in larger, more populated village.

The second factor which helped in building a positive attitude towards use of latrines was education.

The occasions when latrines would be needed and appreciated are :

- during monsoons when going outdoors is difficult
- in an emergency - either during sickness or if one wants to defecate during the day
- at night when outdoor defecation could be unsafe.

The people for whom latrines would be useful are :

- for ladies who need privacy as well as security which outdoor defecation does not provide. Privacy offered by latrines also allows a woman to use the latrine whenever she wants to.

- for old people, young children and the invalid who have a problem walking a long distance
- for guests, particularly from the cities who are unused to defecate in the open.

All these advantages are infact the problems in outdoor defecation and have been discussed in detail earlier.

The need for latrines is also felt, especially among those economically better off, because of the built-in image connotations. There is status associated in owning a personal household latrine. Latrine-owners are considered richer, more educated, modern and urbanised and these traits are aspired by the rural populace. The need for latrine is sharply felt when there are guests from the city who are not habituated to outdoor defecation.

#### 4.4 MAINTENANCE

It is clear to the villager that problems associated with latrines such as stink and filth can to a large extent be attributed to lack of maintenance. Maintenance is therefore understood as being vital for the continued use of latrines. While routine maintenance is not expected to be a problem by some, for others even that is expected to be bothersome and prohibiting.

The "willing" segment is characteristic of the progressive, urbanised villages where household latrines are in existence and use. Pouring water to clean the pan and use of phenyl, acid, kerosene and surf are mentioned. Households which currently have latrines are relatively more affluent. Family members using latrine pour water after use and the weekly cleaning, with special cleansing agent, is done by the paid sweeper. Those who cannot afford sweepers however see it as a task which can be performed by the owner of the latrine or the housewife, if so required.

The "unwilling" segment perceive routine maintenance to a problem because of

- misunderstanding of concept
- force of habit
- need for more water

In this segment, experience with latrines is limited to badly maintained household latrines and community latrines which were unclean and often in dilapidated condition. The perception therefore is that routine cleaning after usage is difficult and would not be done because people are not habituated to doing so.

Cleaning latrines also brings along with it visions of having to clean dirty pans and pits filled with accumulated excreta. The negative attitude to routine maintenance appears therefore to be really emanating from a lack of understanding of what it involves.



Water which is essential for routine maintenance, is expected to be in short supply. Unless a water source could be made available close to the latrine, carrying water for cleaning oneself as well as flushing the pan would be bothersome. This scarcity of water or the reluctance to carry the water will lead to a lack of cleanliness.

#### 4.5 BARRIERS

The barriers to constructing household latrines are :

- inability to afford one
- unwillingness to spend
- high construction costs (perceived)
- lack of space
- lack of water facility

On being questioned on their need for household latrines many respondents said "we need latrines". However, it does not appear in most cases to be a salient need. Among those who appear to genuinely need a latrine, one barrier in its construction would be the high perceived cost. Costs of building household latrines, are not really known but expectations range from Rs 2000 to Rs 10,000,

The segment for whom latrines is a low priority need, is not willing to spend any money of their own in constructing latrines but do not mind having a latrine, if it is provided to them free. This segment is satisfied with their current practice of open air defecation and find latrines beneficial only for emergencies.

Apart from the costs, lack of space and non-availability of adequate water supply are constraints in constructing latrines. People prefer to have the latrines outside the house but do not have the land for doing so. It is also believed that a water source either within or close to the latrine is essential, in the absence of which its upkeep would be a problem.

#### 4.6 EXISTENCE AND USE OF COMMUNITY LATRIENS

Community, latrines exist in only a few villages but experience with these outside the village - in the city, railway stations, hospital have led to increased awareness of the concept. The experience however, has rarely been positive.

In the few villages, where community latrines exist, most of them are in a state of disrepair and not functioning. There are others which have not been used since the day they have been built because of poor drainage facilities or lack of water.

Overall attitudes to and perceptions regarding community latrines are extremely unfavourable. They are seen to be poorly maintained as there is none to take responsibility of cleaning these latrines. There is a great deal of skepticism about each individual person cleaning up after use. Part of the problem is due to an indifferent attitude to public property and part due to lack of adequate water facilities.

A finding which emerges clearly is the need for paid sweepers to regularly clean these latrines and keep them fit for use. But even this is not possible unless availability of water could be ensured.

If all the above needs are incorporated, then community latrine will be used except :

- by those staying far from the latrine who would be unlikely to come from a distance to use the latrine. If they did, they would be likely to find a queue and discover that a waiting period was needed. Farmers, working on their respective fields are also unlikely to use the community latrine unless it is on the way to their farms.
- by those having their own private latrines

- by those preferring outdoor defecation - young men who have no difficulty walking a long distance and the very old whose habits of defecating in the open will be hard to change are therefore not seen as likely users of community latrines.
- by those who feel embarrassed at having people know they are going for defecation. While women and older girls are expected to be the prime target segment in most states, in villages of West Bengal there are doubts about whether they would be comfortable defecating in a 'public' spot.

## 4.7 MOTIVATORS AND BARRIERS TO USE OF COMMUNITY LATRINES

### 4.7.1 Facilitators

On the whole women express a greater need for community latrines since lack of privacy and walking a long distance to the open are difficulties they face in open air defecation. In a couple of villages, community latrines have been specially built for women and are being used. In Tal village in Rajasthan, an enclosure was observed in the middle of the village built for women for defecation. Some of the conditions necessary if community latrines are to work, as stated by respondents are given below. These are :

- separate latrines for men and women. In private latrines this is not a problem but for reasons of personal security and privacy from members of the opposite sex, it is essential that community latrines be built separately for men and women.
- separation by caste emerges as a moot point with some perceiving the need for different latrines for different castes while others not perceiving this need. The majority however belong to the second category. Such separation is necessary only in villages where the caste systems are very rigid and is probably felt more by the upper caste people.
- a community latrine allotted to a few houses within an area. This idea appears to have potential for ensuring maintenance of latrines. If responsibility for maintenance was given to a few households it would be more likely to be assumed rather than if left to the entire community.
- adequate water supply. This has been discussed before and its need cannot be overemphasized.
- paid cleaner without which maintenance of community latrines are not realistically possible, given the current barriers to individuals cleaning them on their own.

#### 4.7.2 Barriers

The barriers mentioned by respondents were primarily related to non-maintenance because paid cleaner were seen as being essential for cleaning but they were expected to be neither affordable nor available. The attitude in most villages was that 'community latrines do not succeed'. Village people repeatedly expressed their preference for private latrines vs. community latrines.

Some of the other negatives of community latrines were the feeling of uncleanliness at having to use a place where all of the village had defecated.

Many people defecating at the same spot goes against their traditional practice of searching for a clean spot not used earlier and is therefore psychologically uncomfortable. People speak of gas forming due to large quantities of excreta accumulating. Additionally, long queues and crowds in the morning would be a demotivator. The queues are expected to prove bothersome, taxing and time consuming.

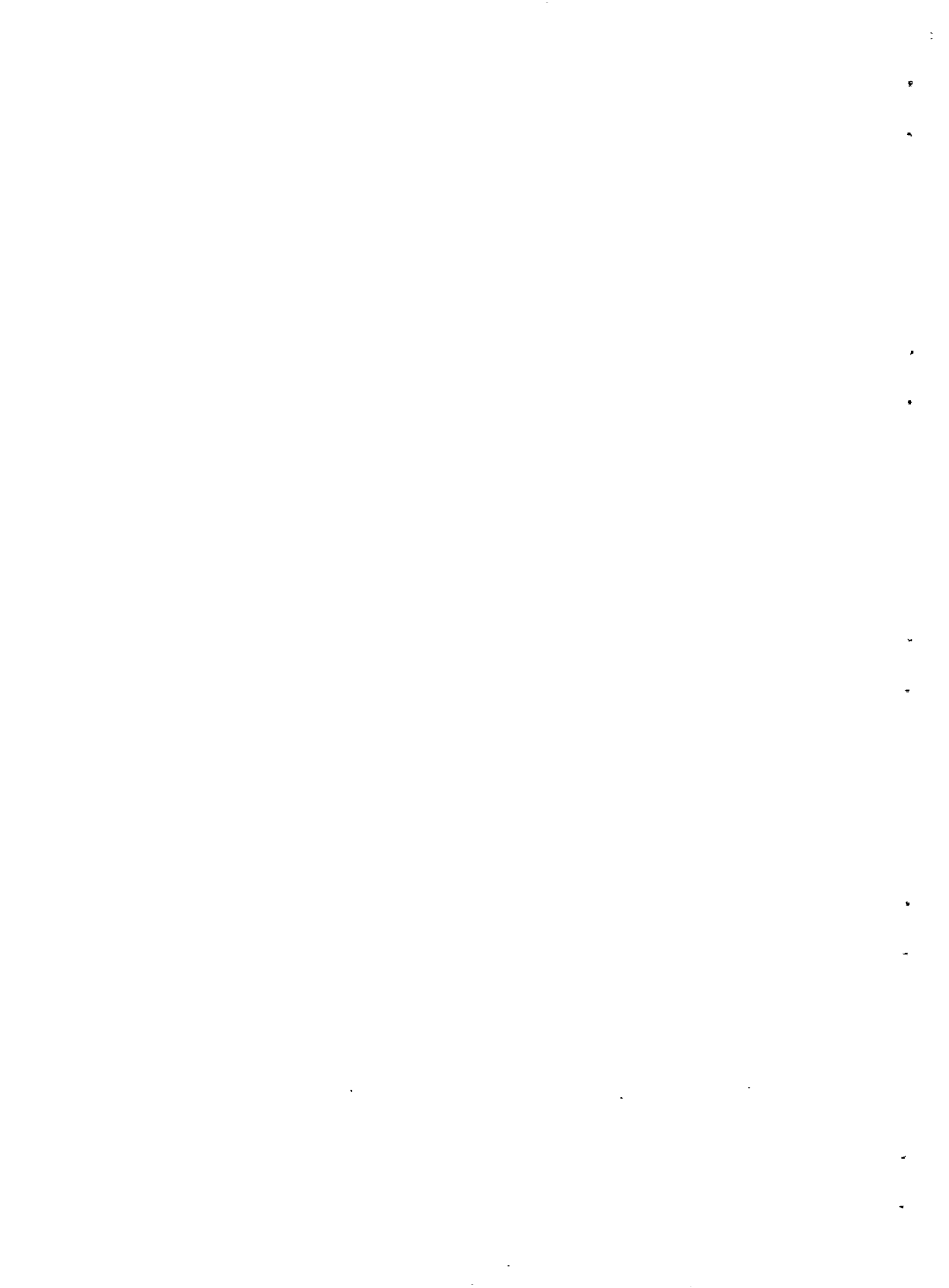
#### 4.8 GOVERNMENT SUBSIDY

There was a high level of non-awareness with regard to government subsidy. Even in villages where there is awareness of this subsidy, the exact terms and conditions were not clearly known.

It is interesting that many people who were not aware of the government subsidy had in any case expected - that it would be the government's 'duty' to provide financial help. Government aid and subsidy in the past for similar issues might have led to this high level of expectation. There were others who had negative experiences on this front earlier and therefore did not expect the aid if given, to finally reach them. The latter segment in fact speak of trying to generate the money through their own means, if so required, rather than depending on government subsidy.

The economic advantage of a subsidy for latrines was perceived as being attractive. People as in Bhagawanpur village in Saharanpur district, who were aware of neighbouring villages which had benefited from this programme were extremely keen to avail of it. In such villages, the expressed need for community latrines was high.

Thus in conclusion it appears that government subsidy needs to be selectively given when applied for. A slower but successful implementation of these community latrines would have a trickle - down effect and will gradually promote their demand. On the other hand setting up community latrines where the demand is non-existent is likely to lead to poor maintenance which would further reinforce the negative perceptions of community latrines and increase future barriers.





APPENDICES







APPENDIX II

LIST OF VILLAGES

<u>State</u>	<u>District</u>	<u>Poor village</u>	<u>Rich village</u>
UTTAR PRADESH	Saharanpur	Chuk Ababa- kapur	Bhagwanpur
	Dehradun	Dumet	Majriganj
	Mirzapur	Jharokhas	Lalganj
RAJASTHAN	Barmer	Jaisinghdar	Samdari
	Jhunjunu	Ghumondser	Dundlod
	Udaipur	Banjara	Tal
MADHYA PRADESH	Raipur	Shadoli	Dhabadi
	Jhabua	Kedikuwa	Jhabua Chaktala
	Shadol	Maghigunwa	Buduwa
GUJARAT	Panchmahal	Kathla	Sahera
	Amreli	Untiya	Moti Kukawa
	Mehsana	Kathi	Kukarwada
ANDHRA PRADESH	West Godavari	BiyappuThippa	Polluvaram
	Kurnool	Indreshwaram	Alur
	Karimnagar	Sultanabad	Renikunta
TAMILNADU	South Arcot	Chinnampattu	Chinnapatnam
	Periyar	Kothamangalam	Moolanur
	Ramnad/Kamraj	S. Parokodi	Watrap
WEST BENGAL	Midnapur	Murabani	Reyapara
	Bankura	Bhuteshwar	Kualpara
	Cooch Behar	Fulka Dabri	Hoglabari
MANIPUR	Central	Kangla	Malom
	Imphal	Sangom	Tuliyama



APPENDIX III

EXCERPTS FROM TRANSCRIPTS

Problems with latrines/Positives of open air defecation

"Q. Do the people like something in excreting in in an open place. If they like something in open, what do they like ?

This only you feel the wind

What wind ? We do not have any other means !

You get diseases less if you go out for excretion

You see you feel the air, when we go to the latrine you have to smell foul air. When we go outside we sit facing the direction of the wind. You then get fresh air so it won't smell"

(U.P/poor/male)

"Q. You will not spend money for building a latrine ?

- No, from where are we going to spare. If we were in a position to spend money then why should we suffer and go to open places"

(Gujarat/poor/female)

"Those who can afford a latrine have also dropped the idea because there is no water to drink so where will they get water for cleaning latrines"

(Tamilnadu/poor/male)

Benefits of latrine/ problems with outdoor defecation

"We are hardworking people we don't feel tired to go long distance

But in emergency it is a problem to go long distance.

When people are sick then it is a problem.

When people are suffering with frequent motions then it is a problem"

(A.P/poor/male)

"My income is not very high but I was forced to make a latrine because my house is near the market. It is a problem for us to defecate outside. Had my house been in the interior I would not have had to spend beyond my ability"

(W.Bengal/rich/male)

"I don't like it because any man can follow

It is very scary at night but then no one can see  
It is O.K to go at night but you can't see anything at night

During night time there is fear of snakes or other insects"

(W.Bengal/poor/female)



Factor motivating/impeding use of community latrines

"We are salaried people who struggle to even buy a kilo of rice - so we can't afford to build a latrine

If there is a pipe from which you can take water to clean up nearby we will use latrines

No one goes to the school latrine as it is quite far away

Latrine should be made separately for men and women as well as for separate castes

The sweeper to clean latrine will have to be paid more than Rs 300 for such a dirty job"

(Tamilnadu/poor/female)

"If these are constructed streetwise all the people will use

If water facility is there it will be clean. Otherwise it will become dirty and then it will be useless.

If they have own latrine they will not use community latrine"

(A.F./rich/male)

"Q. If common latrines are built should they be separate for different communities ?

No, you see people of different communities live in different areas of this village. So if latrines are built in different areas there will not be any problem. If the latrine is built in the Hindu area however the Muslims won't go there. If it is built here then they will not come"

(W. Bengal/rich/male)

"This area is such that all people cannot come to the same spot.

Q. What is the reason ?

- Because one house is here and the other, one kilometer away. So the one who is near can come and one who is far cannot. So latrines should be built for separate areas"

(U.P/poor/female)

#### Awareness of Government subsidy

Q. Do you know that you can get government help for getting latrines constructed ?

Yes, Block will give aid

They will give cement and brick. Some people have got it done.

One man got two sacks of cement with which he built a tank. The things on which you sit are however still lying in the cowshed.

No one has got it constructed not even one. What is need of getting lavatory made when there are so many fields"

(U.P/male/poor)

#### Link of open air defecation to health

"Mosquito bites, flies, cholera, malaria, dysentery

Diseases will be there due to this"

(Tamilnadu/Rich/Male)

Q. Excreta if it is left open is it harmful ?

No it just smells and hence we have to cover our noses

Yes sometimes the head pains, we get fever also and sometimes we even vomit

Ofcourse diseases occur, it is harmful to our health

Even contagious diseases can occur"

(W.Bengal/rich/female)

Q. What inconveniences are caused ?

No water

We have to walk a long distance

No privacy, we won't want to go but we don't have any other way.

Q. Children till 2 years defecate near the house so do you face any problem about it ?

Diseases are caused

(U.P/poor/male)

You see, the people who own the field, they are farmers. We are poor people if we go to their field and the owner sees us he abuses us, asks us to get out and even beats us"

(U.P/poor/male)

Positives in open air defecation

"Q. Why do the people like to defecate in the fields ?

As there is no place for them, no other way

Q. what other reasons ?

Can defecate freely"

(M.P/poor/male)

"Once we go to the field we can see them

See the farmers have to work on the field the whole day. So whenever they have to go they just find place where water is available and sit there. They get used to this

The people like the openness

If we sit there for half an hour its O.K the air feels good'

In the closed bathroom, there is a dirty smell

There is no dirty smell in the open ground, you get all the facilities there

If you go to a bathroom and sit there for half an hour afterwards you feel lazy

You get fresh air. After a nights sleep you get all the news

You can smoke beedis"

(Gujarat/Rich/Female)

This practice is good. If we defecate at home it will be dirty

Outside defecation is good

It is hygenic to defecate in the open area

If we go for outdoor defecation we will get fresh air whereas in latrines we don't get fresh air. Outside we will be clean

Yes in this current system no disposal system therefore it is good

We are habituated with this practice, we don't feel much problem regarding privacy

Moreover we don't sit together 30-40 members. We have lot of area. People will defecate here and there

If excreta is near the house, or near to us then it will cause harm to health. If people defecate outside then it will not be harmful to health"

(A.P/Poor/Male)

#### Characteristics of 'good' water

"Q. How do you come to know that the water is good or not ?

By drinking it we come to know

Either it is sweet or bitter"

If it is lying there for many days, it starts smelling

If the water is sweet, no diseases will be caused.

It should be light

Proper digestion of food

If you drink it once you won't feel thirsty for an hour

The soap is properly used while washing clothes

It is good for preparing vegetables, dal, dal dissolves very soon"

(Rajasthan/Rich/Male)

"Water should be clean absolutely

It should be light

It should be 'taral' (clean), filtered, white

(Rajasthan/rich/male)

"Q. How can you judge if water is good ?

First we give water from a new well to a small animal only then we drink it ourselves. If the animal does not die then the water is good"

(Rajasthan/rich/male)

### Cleaning practices for water

"Whenever we feel that water is not clean then we will filter the water at the time of collection"

"We will do filter always or sometimes. Only in rainy season and whenever we feel that water is not good"

"Recently some people came and mixed some powder in the water. Some people mixed some powder in the wells"

(A.P/Poor/Male)

"Q. So you all use Yendrapakaya and Patika to purify water ?

- Yes, we only use this in rainy season, where as in summer we don't because the water will be clean"

(A.P/Rich/Female)

"We filter it in it (khadi), we filter it only when it is dirty"

"We filter water of all sources, whether it is tap, well or tubewell"

(Rajasthan/rich/male)

### Uses of water

"Q. Which water do you use for washing hands & feet ?

We use well water . Godavari water is precious so we use it for drinking. We use pipe or well water for bathing or washing hands and feet"

(A.P/Rich/Male)

"Q. What will happen if you cook with well water ?

The rice will get spoiled and become paste

If the food is cooked in Goadavari water in the morning it will remain unspoiled till night whereas food cooked with well water will spoil by evening"

(A.P/poor/female)

### Problems with collection of water

"Yes, there are problems, like suddenly while cooking we will run short of water. Child will be crying and, at that time going far away to take water is a big problem. So if we ask our wives why cooking is not done all these problems are mentioned

If we have to bring a lot of water then it will be a problem"

(Tamilnadu/Rich/male)

"The quality of handpump water is good but we find it difficult to pump. It will be better if there is a tap

Each house should have one tap

Yes, we get chest pain if we carry water from outside. There is a lot of fighting also

There will be at least 30 people standing in the queue. We have to waste time even if the baby cries or the child is in a hurry to go to school. So it will be better if they provides a tap"

(Tamilnadu/Rich/male)

### Site selection for handpump

"The officer came from outside in a car. He saw the place and decided the spot and went away. Now they don't care"

(Gujarat/Poor/Male)

