

## **PERSONAL AND ENVIRONMENTAL HYGIENE IN THE REMOTE VILLAGES: SOME EXPERIENCES IN WEST BENGAL, BIHAR AND ORISSA**

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Health and hygiene in some villages within the jurisdiction of six districts in West Bengal, Bihar and Orissa have been brought under consideration through their analysis in the background of ecology. The ecological approach of the diseases in human society pin-points the patterns of maladjustment of the human beings with their surrounding environment. Ecology has been taken up here as the key-word in the health philosophy. Through a broad-based field study the total behaviour-patterns of the rural people, their social education and their very attitudes towards day-to-day hygienic matters have been evaluated to understand the total ecocultural context to highlight the concerned peoples' integrated relationship between diseases and environment both social and natural.

India is mainly based on agrarian economy. Majority of our population (67%) live in the villages. The society has its remotes in villages and in the rural people. Beliefs, customs and practices of our village-folk in relation to health and hygiene are very little known to us. The factors affecting villagers' health status are still less known. The state of environmental sanitation and personal hygiene are important factors in determining the health status of a community.

The concept of "environment" is complex and all-embracing; it is not only physical factors like air, water and soil that form our environment but also the social and economic conditions within which we live. The environment is defined as "the aggregate of all external conditions and influences affecting the life and development of an organism, human behaviour or society" (Leavell and Clark, 1965). The internal and external environments comprise the total environment.

According to the ecological approach, disease represents a maladjustment of the human organism to his environment which is getting more complicated as man is becoming more ingenious. Human behaviour and their habits also constitute environment we are talking about. It has been established that "success of public health programmes often depends upon modifications in human behaviour".

Health is never static; it is dynamic and "fluctuates within a range". What is maximum today may be minimum tomorrow. The state of health varies from day to day. In this context, health is defined as "a flexible state of body and mind which may be described in terms of a range, within which a person may sway from the condition wherein he is at the peak of enjoyment of physical, mental and emotional experiences, having regard to environment, age, sex and other biological characteristics due to the operation of internal or external stimuli and can regain that position without outside aid" (Seal, 1963). Park defines health as "a state of relative equilibrium of body form and function which results from its successful dynamic adjustment to forces tending to disturb it. It is not passive interplay between body substance and forces impinging upon it but an active response of body forces working towards adjustment (1972). These definitions envisage health as a pendulum oscillating between a range or spectrum, one end of which represents the minimum and the other end the maximum. It implies that health is a 'state' not to be attained once and for all but ever to be renewed. There are degrees of well-being as there are degrees of severity of illness (Fig. 1).

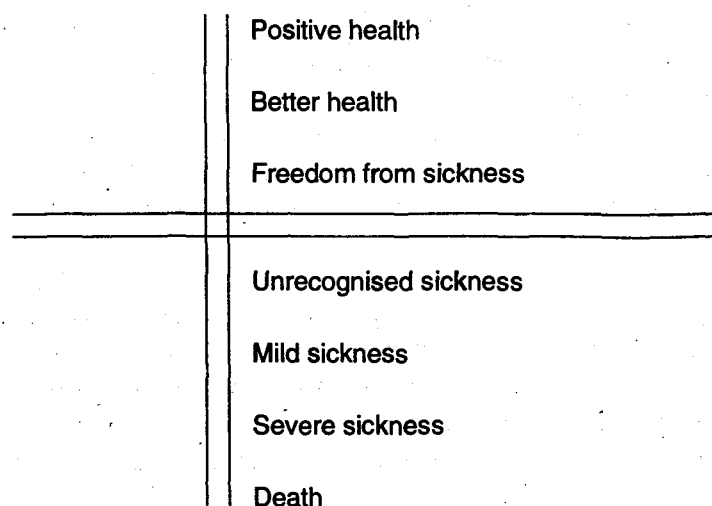


Fig. 1

### The Health-Sickness Spectrum

Ecology is a key-word in present-day health philosophy. It comes from the Greek "Oikos", meaning a house. Ecology is defined as the science of the mutual relationship between living organisms and their environment. "Human

ecology is concerned with the broad setting of man in his environment" (Hanlon, 1969). Ecology of health is the study of the relationship between variations in man's environment and his state of health. The basic theme of ecology "is that everything is related to everything else".

According to the ecological approach, health is a state of dynamic equilibrium or adjustment between man and his environment. One can think of this graphically as a balanced scale with the pans representing the agent and human host and the fulcrum, the environment and health as a state of equilibrium between the disease agent and the human host. When this balance is disturbed for any reason, ill-health results.

Thus the trend in recent times has shifted from the study of 'Disease in Man' to 'Man in the midst of Disease'. In other words it is the study of man in his environment. As new ways of living have been developed by man, new ecological systems, including pathogens, have been formed. Urbanisation, industrialisation and other patterns of social organization all have their effects upon the composition of ecological systems (Rene, 1969). Since health programmes should take the cognizance of local practices it is important that we know what the local practices are so that a suitable programme may be designed to suit the need of the locality.

The present note attempts to document the local practices of hygiene and sanitation among some remote and backward villages of West Bengal, Bihar and Orissa. We consider village as remote and backward by the following characteristics:

- (i) Lack of infrastructural facilities (road connection with neighbouring villages, market places and towns are lacking).
- (ii) The majority of the households in the villages are resource-poor.
- (iii) Lack of diversification of occupations among different communities in the villages.

The area of investigation was six clusters of villages in West Bengal, Bihar and Orissa. The population inhabiting these are backward having all the characteristics mentioned above.

The census figures (1981) of total population in the said clusters of villages are as given in Table 1.

TABLE 1 — POPULATION BY SEX, CASTES, TRIBES AND LITERATES IN DIFFERENT VILLAGES OF THE AREA OF STUDY IN 1981

State	Districts	Villages	No. of Hhs	Population			Scheduled Castes		Scheduled Tribes		Literacy	
				Male	Female	Total	Male	Female	Male	Female	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
West Bengal	Purulia	Kaipara	158	354	355	709	87	90	61	41	124	18
		Bamu	81	191	231	422	12	3	2	2	93	3
		Khawaschi	55	167	152	319	—	—	—	—	32	4
	Birbhum	Milanchak	352	178	144	352	—	—	108	103	85	—
		Bandersole	163	83	80	163	NA	NA	—	—	43	19
		Gopalpur	229	117	112	229	NA	NA	52	44	57	34
Bihar	Ranchi	Bagda	48	170	190	360	36	13	12	15	45	1
		Beni	70	177	217	394	176	150	41	27	7	1
		Chirue	42	112	124	236	64	61	25	24	5	—
	Hazanibagh	Bajha	90	348	355	703	98	103	108	98	37	2
		Edla	44	173	178	343	39	31	38	29	73	27
		Dantokhurd	246	872	924	1796	151	141	439	468	194	43
Palamau	Hundru	96	284	246	530	23	13	211	193	109	1	
	Ghutua	218	566	520	1086	26	27	478	430	176	25	
	Demu	57	176	167	343	30	24	133	184	29	1	
Orissa	Denkhanol	Dholpusi	36	112	106	228	—	—	116	100	63	30
		Kairatangra	86	240	217	457	19	18	165	145	132	45
		Baghua	56	155	134	289	—	—	163	131	61	6

\* Source : Census data 1981.

During our field trip in early 1990, the population of the area was far greater than in 1981. But amenities shown in the Census of 1981 hardly improved during the decade. The amenities available in the villages are presented in the Table 2.

From the list of amenities provided in Table 2, it is clear that none of our study-villages except two had any medical facility. The Public Health Centre in the concerned villages again do not function. So, for all practical purposes there is no medical care facility within the villages. The distance between the village and nearest towns where medical facilities are available varies between 5 and 42 kilometers. Since majority of the villagers are very poor it is next to impossible for them to get proper medical care by going to the towns.

It is also apparent that drinking water facilities are scanty in the villages and few villages have working tube wells. The wells are not also perennial. River water and even water from Nallah is taken by the villagers. All kinds of water borne diseases might be due to the use of contaminated water. Provision of deep tube-well is a costly investment and people cannot afford to sink those on their own. The Government only may undertake such efforts to provide safe drinking water to the villagers.

Health-care is also a function of education. Since the large majority of villagers are illiterate in spite of the fact that some villages have own primary schools, they are not quite capable of having access to health care. If even they are aware that the ailments are dangerous, they can do nothing and feel helpless.

Again if one assumes that people have necessary money and awareness for medical treatment, communication facilities are so poor that it is difficult to have access to medical treatment. Even the post and telegraph facilities are non-existent. In case any epidemic breaks out there would be massive peril before the news reaches the block or subdivisional head quarters. The way to reach the news of such epidemic to relevant authorities is to go to them on foot for a substantial or the whole distance.

It has been observed during field trip in the rainy season that most of the villages remain virtually disconnected from outside world due to submerged road situation. Even when the water recedes the paths become so muddy and dangerous that one is to walk with a stick in hand if he intends to cross the slippery path. So, treatment of any ailment of any villager or transporting him to a health centre remains an impossible task.

TABLE 2 — AMENITIES AVAILABLE IN DIFFERENT VILLAGES OF THE AREA OF STUDY

Amenities available [(if not available within the village, distance from the village where available in broad ranges in bracket in Kms. i.e. "(-5 Kms)", "(5-10 Kms)" "(10+ Kms)"]											
State	District	Village	Education	Medical	Drinking water	Post & Telegraph	Day or Days of the Market/Hat	Communi-cations (Bus stop, Rail)	Approach road to village	Nearest town and Distance (Kms)	Power Supply
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
West Bengal	Purulia	Kaipara	P	— (10+kms)	W	— (-5 kms)	— (-5 kms)	Barabazar (10+kms)	Kuccha	Purulia 30	—
		Bamu	P	— (5-10 kms)	W	— (5-10 kms)	— (-5 kms)	Barabazar (-5 kms)	Kuccha	Balarampur 11	—
		Khawasdhi alias Loudhi	— (-5 kms)	— (5-10 kms)	W	— (-5 kms)	— (5-10 kms)	Barabazar (-5 kms)	Kuccha Kuccha	Purulia 28	—
West Bengal	Birbhum	Milanchak	— (-5 kms)	— (-5 kms)	W	— (-5 kms)	— (5-10 kms)	Dubrajpur (-5 kms)	Kuccha	Dubrajpur 5	—
		Bandersole	— (-5 kms)	— (-5 kms)	W, TW	— (-5 kms)	— (5-10 kms)	Dubrajpur (-5 kms)	Kuccha	Dubrajpur 6	—
		Gopalpur	P	— (5-10 kms)	W	— (5-10 kms)	— (5-10 kms)	Dubrajpur (5-10 kms)	Kuccha	Suri 16	—
Bihar	Ranchi	Bagda	P	— (10 km+)	W, TW	— (10 km+)	— (10 km+)	— (10 km+)	Kuccha	Ranchi 42	—
		Benti	P	— (10 km+)	W, TW	— (10 km+)	— (10 km+)	— (10 km+)	Kuccha	Ranchi 40	—

— Contd

TABLE 2 — AMENITIES AVAILABLE IN DIFFERENT VILLAGES OF THE AREA OF STUDY — Contd

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bihar	Hazaribagh	Chirue	P	— (5 kms)	W	— (5-10 kms)	— (5 kms)	— (5-10 kms)	Kuccha	Ranchi 34	—
		Bajha	P	— (-5 kms)	W, R	— (-5 kms)	— (-5 kms)	— (-5 kms)	Kuccha	Hazaribagh 26	—
		Edla	P	— (-5 kms)	W, R	— (-5 kms)	— (-5 kms)	— (-3 kms)	Kuccha	Hazaribagh 29	—
		Dantokhurd	P	Health Centre	W, TK, N	Post Office	Monday	— (10 km+)	Kuccha	Hazaribagh 32	—
Bihar	Palamau	Hundru	P	— (-5 kms)	W	— (-5 kms)	— (-5 kms)	— (-5 kms)	Kuccha	Latehar 2	—
		Ghutua	P	Public Health Centre	W	Post Office	— (5-10 kms)	— (5-10 kms)	Kuccha	Latehar 5	—
		Demu	— (-5 kms)	— (5-10 kms)	W	— (5-10 kms)	— (-10 kms)	— (5-10 kms)	Kuccha	Latehar 5	—
Orissa	Denkhanol	Dholpusi	P	— (12 kms+)	W	— (-5 kms)	— (-5 kms)	Bataguo (-6 kms)	Kuccha	Kamakhyanager 22 km	—
		Kairatangra	P	— (15 kms+)	W	— (-6 kms)	— (-6 kms)	Bataguo (9 kms)	Kuccha	Kamakhyanager 22 km	—
		Baghua	— (-5 kms)	— (15-18 kms)	W, TK	— (-7 kms)	— (-7 kms)	Batanguo (9-10 kms)	Kuccha	Kamakhyanager 27 km	—

Educational: P = Primary School, Drinking Water: W = Well, TK = Tank, R = River, TW = Tube well, N = Nallah  
Source: Census Data 1981.

Table 3 gives the provision of sanitation and treatment in different villages of the area of our study reported during our field trip to the villages. The sanitation reveals that the health and sanitation arrangements are not only inadequate but shamelessly absent. People still believe in Ojhas (magic cure) and indulge in all kind of prejudicial behaviour. The state of sanitation as well as scope of treatment presented in Table 3 shows how deplorable the conditions still are.

We enquired about the diseases that occur in those villages. The information gathered from the villagers in each of our study villages are presented in Table 4. It also further reveals which of the diseases occur very frequently, frequently and rarely each of the villages.

All kinds of water borne diseases, our data show, are frequent in villages where tube well drinking water are not available (Table 4 read with Table 2). It is common knowledge that villagers cannot afford the expenses of boiling and cooling the well-water for drinking purposes, poor as they are. Even people having resources suffer from water borne diseases when fuel is in short especially in the rainy season.

Moreover, health education is also not prevalent among the population as most of the villagers are illiterate. This is also another menace to the life and living of the people inhabiting the remote areas. Unless people are made literate, they cannot even realise the necessity of health education. It was found that a considerable number of villagers in each of the clusters of especially the village-elders are superstitious and believe in God's vengeance. They think small pox, cholera and other diseases are caused by God's wrath. They perform 'puja' to 'Manasa' (Goddess of snakes), Sitala, etc. to please them. Worse, they believe in ojhas for their cure from different ailments.

In the absence of medical facilities and the infra-structural facilities for availing of health facilities of the towns, the helpless people are forced to depend on quacks and ojhas, etc. for treatment.

During our trip to and stay in the villages we found that people are using contaminated drinking water from ponds, wells, tube wells, Nallah, pits ("Gaddha"). There is no arrangement of cleaning the wells and ponds. Specially ponds are serving as potential source of health hazards due to the nature of use of these ponds. Cattle-bathing, washing clothes and cooking utensils, defecation and all kinds of activities needing water by human and cattle population are done in the ponds.

TABLE 3 — PROVISION OF SANITATION AND TREATMENT IN DIFFERENT VILLAGES OF THE AREA OF STUDY\*

State	District	Village	Sanitary latrine			Sanitation and Treatment			Health care training course (ever in village)	Dai	Ojha	Aayurved	
			Regd. private practitioner	Unregd. Allopathic practitioner	Unregd. Homeopathic practitioner	Dispensary	Unregd. Homeopathic practitioner	Regd. Homeopathic practitioner					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		
West Bengal	Purulia	Kaipara	—	—	—	P	—	P*	—	P	P		
		Bamu	—	—	—	—	—	—	—	—	—		
		Khawasdhi	—	—	—	P	—	—	—	—	P		
Bihar	Ranchi	Milanchak	—	—	—	—	—	—	—	—	—		
		Bandersole	—	—	—	P	—	—	—	—	P		
		Gopalpur	—	—	—	—	—	—	—	—	—		
Orissa	Denkhanol	Bagda	—	—	—	P	—	—	P	P	—		
		Benti	—	—	—	P	—	—	—	P	P	—	
		Chirue	—	—	—	—	—	—	—	—	—	—	
Orissa	Hazaribagh	Bajha	—	—	—	—	—	—	—	—	—		
		Edla	—	—	—	—	—	—	—	—	—		
		Dantokhurd	—	—	—	—	—	—	P	P	P	P	
Orissa	Palamau	Hundru	—	—	—	—	—	—	—	P	P	—	
		Ghutua	—	—	—	—	—	—	—	—	P	P	—
		Demu	—	—	—	—	—	—	—	—	—	—	
Orissa	Denkhanol	Dholpusi	—	—	—	—	—	—	—	—	—	—	
		Kairatanga	—	—	—	—	—	—	P	P	P	P	
		Baghua	—	—	—	—	—	—	—	—	P	—	

Note: P = Present. — = Does not exist

\*Source: Primary Survey Data in 1990.



TABLE 4 — REPORTED INCIDENCE OF 'DISEASES' IN DIFFERENT VILLAGES OF THE AREA OF STUDY

Sl. No.	Reported incidence of diseases	West Bengal										Bihar						Orissa			
		Purulia				Birbhum			Ranchi			Hazaribagh			Palamau			Denkhanol			
		Kaipara	Bamu	Khawasdhi	Bandersole	Millanchak	Gopalpur	Bagda	Benti	Chirue	Bajha	Edla	Dantokhurd	Hundru	Ghutua	Demu	Dholpuri	Kairatangra	Baghua		
1	Enteric fever	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
2	Gastre enteritis	1	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2		
3	Malaria	1	1	0	0	1	1	1	2	2	2	2	2	2	2	2	2	2	2		
4	Scabies	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
5	Fluoresis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
6	Cough	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
7	Dysentery	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1		
8	Ricket	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1		
9	Diarrhoea	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1		
10	Ringworm	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1		
11	Typhoid	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1		
12	Boils	0	1	1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1		
13	Influenza	0	1	1	1	1	0	1	1	1	1	0	1	1	1	0	1	1	1		
14	Jaundice	0	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1		
15	Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	T.B.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
17	Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	Chicken Pox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
19	Night blindness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note : 2 = Very frequent; 1 = Frequent; 0 = Rare.

Source : Primary Survey Data (1990-91).

However, the limitation of the information presented in Table 4 is that the present investigator not being a medical man had to record the diseases as reported by the villagers. We did not find any medical doctors around to check whether the diseases reported by them were correct. But we thought that the knowledgeable villagers must be reporting correctly and it would be better to collect those information than collecting none at all. The second limitation of the information is that we could not get the age-sex composition or ethnic composition of the persons attacked by these diseases. The collection of data was done through group meetings and opened discussion and we could not make household based enquiry on these issues due to time and resource constraints.

What however was apparent, the children in each of the villages were affected by the diseases. From appearance they seemed to be under-nourished and sick. Table 5 presents the number of villages affected by

TABLE 5 — VILLAGERS' REPORT ON INCIDENCE OF "DISEASES" IN DIFFERENT VILLAGES OF WEST BENGAL, BIHAR AND ORISSA

Sl. No.	Reported incidence of "diseases"	In 6 villages of West Bengal			in 9 villages of Bihar			in 3 villages of Orissa		
		2	1	0	2	1	0	2	1	0
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Enteric fever	2	4	—	9	—	—	3	—	—
2	Gastro enteritis	2	4	—	9	—	—	3	—	—
3	Malaria	—	4	2	8	1	—	3	—	—
4	Scabies	—	6	—	—	9	—	—	3	—
5	Fluorosis	—	6	—	—	9	—	—	3	—
6	Cough	—	6	—	—	9	—	—	3	—
7	Dysentery	—	5	1	—	9	—	—	2	1
8	Ricket	—	5	1	—	9	—	—	2	1
9	Diarrohoea	—	4	2	—	9	—	—	2	1
10	Ringworm	—	5	1	—	8	1	—	2	1
11	Typhoid	—	5	1	—	8	1	—	2	1
12	Boils	—	4	2	—	8	1	—	2	1
13	Influenza	—	5	1	—	7	2	—	2	1
14	Jaundice	—	3	3	—	3	6	—	1	2
15	Cholera	—	—	6	—	—	9	—	—	3
16	T.B.	—	—	6	—	—	9	—	—	3
17	Leprosy	—	—	6	—	—	9	—	—	3
18	Chicken Pox	—	—	6	—	—	9	—	—	3
19	Night Blindness	—	—	6	—	—	9	—	—	3

Note : 2 = Very frequent; 1 = Frequent; 0 = Rare.

Source : Primary Survey Data in 1990.

[Figures indicate the number of village reported to be affected in last two years].

diseases in West Bengal (where 6 villages were studied), in Bihar (where 9 villages were studied) and in Orissa (where 3 villages were studied). Most of the villages in each state suffer from similar ailments. From this one may summarise that there is not much difference in health and sanitary status in the villages of Eastern India states and the status is very poor.

Table 6 presents the number of villages in a summary form showing how frequently or rarely the reported diseases occur in the 18 villages under our study. We would now try to narrate what are the local practices and habits of the rural population which may have direct impact on health situation of the villages and the health status of villagers.

**TABLE 6 — VILLAGERS' REPORT ON INCIDENCE OF "DISEASES" IN TOTAL NUMBER OF VILLAGES OF THREE STATES DURING THE LAST 2 YEARS**

Sl. No.	Reported incidence of "diseases"	Disease position in 18 villages of 3 States		
		Very frequent (2)	Frequent (1)	Rare (0)
(1)	(2)	(3)	(4)	(5)
1	Enteric fever	14	4	—
2	Gastro enteritis	14	4	—
3	Malaria	11	5	2
4	Scabies	—	18	—
5	Fluorosis	—	18	—
6	Cough	—	18	—
7	Dysentery	—	16	2
8	Ricket	—	16	2
9	Diarrhoea	—	15	3
10	Ringworm	—	15	3
11	Typhoid	—	15	3
12	Boils	—	14	4
13	Influenza	—	14	4
14	Jaundice	—	7	11
15	Cholera	—	—	18
16	T.B.	—	—	18
17	Leprosy	—	—	18
18	Chicken Pox	—	—	18
19	Night Blindness	—	—	18

Note : Total number of villages in three States = 18.  
(in West Bengal — 6, in Bihar — 9 and in Orissa — 3).  
Source : Primary Survey Data in 1990.

#### FOOD HABIT

Most of the villagers are so poor that they cannot even afford to have two meals a day throughout the year. There are some villages where only poor, marginal farmers and landless labourers live. In our study area we found that villagers take two meals a day. Only after the harvesting season, they generally take rice, leafy vegetables gathered from the field and sometimes pulses. In rainy season they sometimes catch fish and eat. The average appearance of a village-folk give an impression of starvation.

There are some villages where middle and big farmers, teachers, small businessmen also live. Their normal intake of food is thrice or four-times a day. They can afford 2 to 3 meals a day for the whole year. They generally take rice, roti, pulses, vegetables (sometimes purchased), egg, fish or milk when available.

The present investigator felt that the food intake of the villagers are not quite sufficient. Moreover the food is not always properly cooked. The water used for cooking is also contaminated in many places.

#### TYPES OF HOUSING

Most of the houses in the surveyed villages have only a short front door but no windows. As a result, air does not enter freely into the houses. Less space between two houses prevent entry of sunlight inside the houses. Maximum number of the houses being mud walled, these become damp during rainy season. The houses are infested by infectious germs and mosquitoes causing health problems. Cattle-sheds are adjoined to the houses and calves and young livestock sometimes are tied inside the houses aggravating flies and insects. Most of the houses are made by kuchha mud wall with thatched roofs while very few are pucca houses with brick or stone walls and plastered. There are some semi pucca houses also. The overall situation is poor in the sense that proper ventilation and sunlight is not available to the occupants of majority of the houses.

#### SANITARY HABIT OF THE POPULATION

Most houses in the villages are ill-lighted and ill-ventilated. The source of drinking water are open to contamination. There are small tanks, kuccha wells and pucca wells in each of the studied villages. In some villages there are tube well as a source of drinking water. The tanks in these villages which are used

for bathing and cleaning utensils, clothes are again used as source of drinking water. Cattles are also bathed. Cattle drink water from the same tanks. Some of the families collect water from the pucca well and tube well for drinking purposes. Generally cooking is done with the water from the kuccha well. During the summer the wells are dried up and so tanks are used in these days for drinking purposes. During the rains these sources get badly contaminated and give rise to many types of enteric troubles and this lead to cholera and other diseases. The poor children drink contaminated water where only a few affluent children are provided with proper drinking water. Even the school going children drink water either from the tank or from the well both being contaminated. These should not be used for drinking purpose from the health point of view.

It has been observed that the adult male and female go to the field in morning and evening for defecation. Females go to the field in the morning, old aged persons (male and female) and children usually go for toilet purpose around the houses. It is also noted that not only child but adult male and female also urinate around their houses. The only difference between adult and child in this regard is that the child urinates inside the house during the day hours but the adult do so only at night. Children up to the age of 5/6 ease anywhere in the house.

Children above this age but below 12 years usually ease themselves anywhere in the lane or around his house. Thus the lanes are dirty with human-waste. They sometimes use water for cleaning themselves, sometimes they use dry leaf after easing. The existing habits of defecation may be responsible for ill health in those areas. It may be pointed out that the diseases are caused by parasites, 'Aracris lumbricoidis' which are conveyed from a diseased person to other healthy persons by reason of contamination and it may spread through the indiscriminate defecation. The germs of cholera, typhoid and dysentery i.e., vibrio cholera, salmonella typhi and entamoeba hystolitica are adequately present in the stool of affected men. During rainy season these germs are mixed with stream water and this contaminated water are used by the villagers and thus they suffer from these diseases. The present investigator talked to a doctor in local township and the aforesaid observations were discussed with him. They are not habituated to use boiled water for drinking purpose. It has been observed that the villagers walk on bare foot in the village excepting when they go out for marketing or other purposes. These parasitic infections can be controlled by providing sanitary facilities and by wearing of shoes in order to protect the feet from larval contact.

## PERSONAL HYGIENE

Environmental factors as well as personal hygiene affect the community health. Here an attempt has been made to describe the bodily cleanliness and other practices regarding personal hygiene of the people of these villages.

*Cleaning of teeth* : Some village-folks appear to be less conscious of the utility of teeth cleaning. Very few use tooth paste and tooth brush to clean their teeth. Most use mud, ash, and tobacco for the purpose of teeth cleaning and do not even wash their teeth properly after this. This irregular habit of teeth cleaning creates foul breath from their mouths and cause tooth decay among them.

*Addiction* : Smoking is the common and cheapest means of recreation in the village. The villagers are very much habituated to smoking. They generally use the locally made cheap tobacco for smoking purpose which is very harmful for lungs. 'Khaini' and locally brewed 'wine' are also taken by the villagers. Most of the villagers use *Chuta* (tobacco packed in sal-leaf) for smoking purpose. They prepare it at home. Even young boys and women pick up smoking habit.

*Bathing habit* : Most of the villagers do not clean their skin regularly and properly. The skin care is related with bathing habits of an individual. Villagers use only a small quantity of water on the body especially in summer. During winter they take only a quick bath. Again 3-4 days' gap in bathing is very common among them. Only few of the villagers use soap to wash their bodies.

## ENVIRONMENTAL MANAGEMENT

The degradation of the rural environment is not only due to the poor quality of the infrastructure and facilities created but also due to the large scale destruction of the natural setting and imbalance in the ecological system. In the rural areas, there is no agency which is armed with legal powers to enforce environmental protection. Of course, the local bodies like Gram Panchayat maintain and protect some of the physical assets created by them. But their field operation is very limited.

Another problem is the merciless cutting of the trees. There is large-scale destruction of forests for wood and fuel in the rural areas. This has resulted in soil erosion and silting of water bodies. Although there are programmes like social forestry and afforestation, they are going at a very slow pace. It is necessary to enact legislation for the protection of forests. Water

pollution is another serious problem which needs adequate attention. The untreated human excreta and sewage are disposed in the water bodies. Most of the rural ponds are often polluted by the human excreta.

Considering the fact above it is clear that only through the creation of such facilities which prevent pollution the quality of life of the rural people can be improved. Legal and social attention should be given to the rural environment. The rural local bodies should be provided with adequate legal powers to enforce environmental protection.

#### SUGGESTIONS

From the discussion above we may suggest the following improvement of sanitary situation:

The common man is to be made conscious about health and hygienic matter. In this regard special efforts are needed *to educate* the masses. It is desirable to introduce environmental education in the school curriculum right from the primary level. This would enable the students to become environment conscious and motivate them to protect the environment.

Some of the basic principles to be reckoned with while planning the strategies to be adopted in environmental improvement are as follows:

In rural areas, special attention should be given for disposal of excreta and other refuse which may be used as manure also. It is not economically feasible proposition to provide flush-type of latrines and sewerage facilities to all the households in the villages. Even basehole of leach-type latrine will be costly for the villagers. Therefore, appropriate latrines suitable for the area and the people may be set up. Appropriate latrine should satisfy the following conditions:

- a) It should have proper walls and roof to provide safety from adverse atmospheric condition.
- b) It should be self-cleaning and should not cause odour.
- c) It should be located away from the living rooms, wells, ponds, etc.
- d) The latrine type should be acceptable to the users.
- e) The excreta should not be exposed to flies and other disease carriers.

Ground water being the main source of safe drinking water, Government should give priority to the provision of drinking water or its villagers through suitable programmes which may also be maintained as well as supplemented by the State Government. Treatment technologies for purification of water and water conservation will have to be taken up to ensure the availability of safe drinking water in a sustained manner. So, Government should introduce shallow well, hand pumps, pucca well in each of the villages. This will ensure supply of quality-drinking water in sufficient quantity in rural areas and it can be promoting low cost technologies especially the hand pump. So, it is suggested that several new initiatives should be taken for prevention of the water borne diseases in the following areas:

- a) Scientific investigation into the sources of drinking water (hydrological survey).
- b) Promoting community awareness with the help of Panchayat bodies regarding sanitary habits especially safe drinking water.
- c) Emphasis on water quality by setting up water-quality testing infrastructure.

Great attention and importance need be given to the protection and management of the environment. In the villages it is quite apparent that education is poor, other facilities like sanitation, drinking water, drainage, roads etc. are inadequate and the development of these facilities are not commensurate with the increase in population. These have resulted in the degradation of the rural environment. Environmental education should be emphasized in the school curriculum.

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