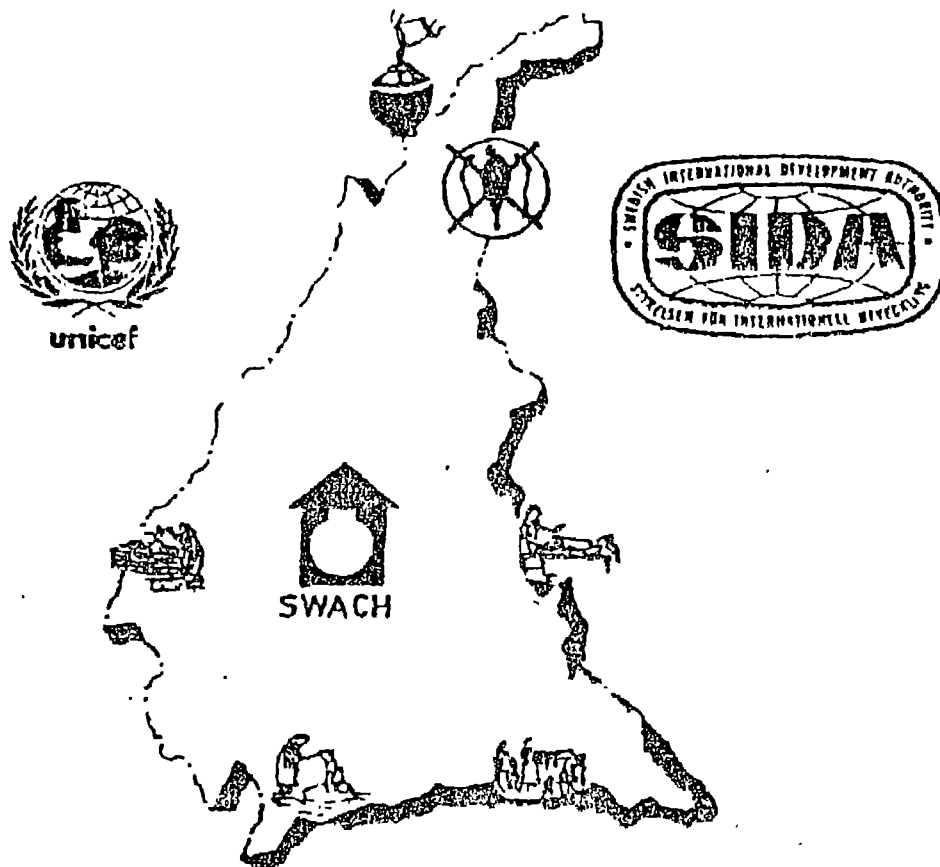


**KAP STUDY OF FAMILIES RESIDING IN SWACHH PROJECT
AREAS IN RELATION TO DRINKING WATER, VILLAGE AND
HOME SANITATION AND INCIDENCE OF WATERBORNE AND
COMMON SKIN DISEASES**



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KAP STUDY OF FAMILIES RESIDING IN SWACH PROJECT AREAS
RELATION TO DRINKING WATER, VILLAGE AND HOME SANITATION AND
INCIDENCE OF WATERBORNE AND COMMON SKIN DISEASES.

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SWACH

Consultancy

Saibaba Medical Research and Training Institute (SMRATI)
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FOREWORD

The Sanitation Water and Community Health project abbreviated as SWACH has been working for bringing about improvement in drinking water supply, sanitation and health in the tribal area of Udaipur, Banswara and Dungerpur districts of southern Rajasthan with special focus on eradication of guineaworm disease and control of other common waterborne diseases.

The project commenced in 1986 as joint project of Government of Rajasthan and UNICEF with financial assistance of SWEDISH INTERNATIONAL DEVELOPMENT AGENCY (SIDA). By the year 1993, there has been a dramatic reduction in the incidence of guineaworm disease from a figure of more than 10,000 cases in 1986 to only 02 cases as on 1.1.1994. This notable success has been possible owing to the implementation of integrated interventions in the fields of rural water supply through handpumps, conversion of step wells, environmental sanitation, effective surveillance and health management supported by active mobilization of the tribal beneficiaries, especially women.

After achieving the near eradication of guineaworm disease the project looks forward to bring about effective control of other waterborne diseases like diarrhoea, dysentery, intestinal worms, typhoid and infective hepatitis etc. To achieve this goal there is a need for careful study of knowledge, attitude and practices of targeted population so that effective interventions can be devised. In this context, SWACH engaged SMRATI to carry out the study. The findings of the study would go a long way in giving right directions to the future

activities of SWACHH project to reduce the sufferings of the people and
make their lives healthier.

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PREFACE

For various reasons waterborne and infectious skin diseases are commonly encountered in our country. The same stands true for Udaipur, Banswara and Dungepur districts of Rajasthan. These are the districts where Sanitation Water and Community Health Project (SWACH) is operating since 1986. With the support of UNICEF, Swedish International Development Authority (SIDA) and government of Rajasthan, it is endeavoring hard to reduce the incidence of various waterborne and sanitation related disease which because of poverty, ignorance, illiteracy, poor hygiene and sanitation are rampant in this tribal belt. These diseases, besides causing suffering, disability and mortality, also cause tremendous economic loss to the family and community and consequently hamper development.

Many extrinsic factors operate in the etiology and spread of these diseases. Such diseases require a "Preventive prescription" for their control which lies in improving the delivery and maintenance of safe drinking water supply, developing and moulding attitudes and practices of people in relation to water safety, hygiene and sanitation through a well developed system of health education and other hard and software technologies.

SWACH is deeply interested in developing and providing such "Preventive prescription" in its project areas. For this it wanted to assess the existing level of KAP of people on all these issues and also wanted to know the magnitude of the problem of waterborne and skin diseases. It therefore thought of conducting a study for this purpose which could guide to monitor the existing programs and suggest modifications, alterations and new strategies for better results. SMRATI

feels honoured and privileged to have been given the task of providing consultancy for this study which it conducted in collaboration with SWACHH it self.

We feel grateful to the dynamic and versatile Project Director of SWACHH, Shri J.C. Mohanty for not only providing us this opportunity but also for the guidance, support and foresighted suggestions which contributed a lot to the successful completion of this work. The valuable and indepth suggestions of Mrs. Eleanora De Guzman, Project Officer, UNICEF, Jaipur enriched the present study and guided us for the future tasks as well. The interest that Mrs. Shubhra Singh showed in the study soon after her joining as the Project Director of SWACHH speaks of her determination to improve the drinking water supply and the community health of the villagers.

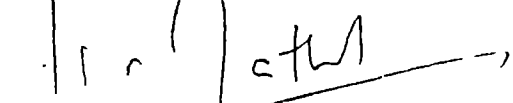
The suggestion and guidance of all members of the Expert Advisory Consultative group of SWACHH on the research design and formats is gratefully acknowledged.

A number of officers of SWACHH notably Shri Ravindra Singh, Project Manager, Shri Sohan Devpura, Project officer, Udaipur, Smt. Alka Shrimali, Asstt. Director, Education, Udaipur, Shri S.C. Audichya and Shri S.N. Dave, the Project Officers of SWACHH, Dunderpur and Banswara respectively involved themselves deeply with the study right from its planning level to the finish. Their support and assistance contributed a great deal in giving this shape to the study. Prof. L.N. Mathur, the President of SMRATI, my wife Shashi, Shri P.R. Jain, Shri V.B. Dave, Shri S.N. Sharma and Shri Hemant Mehta of SWACHH, Shri Sunil Sharma Shri Amit Mathur and other members of SMRATI and Amita Mathur provided the whole hearted support for the study.

A number of young Ayurved doctors, members of D.T.T., Animators and scouts toiled hard to collect the data. The influential persons of hamlets and the family heads spared their valuable time to provide information for the present study. The collected data were analysed by M/s Crystal Computers, 69, Subhash Nagar, Udaipur. We sincerely thank them all.

I hope the study serves the purpose for which it was planned and commissioned.

Date : 15 JUNE 1994



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SUMMARY

The study entitled "KAP STUDY OF FAMILIES RESIDING IN SWACH PROJECT AREAS IN RELATION TO DRINKING WATER, VILLAGE AND HOME SANITATION AND INCIDENCE OF WATER BORNE AND COMMON SKIN DISEASES" was carried out in the SWACH project areas of Udaipur, Banswara and Dungepur districts, Rajasthan during Nov. '93 to Feb. '94 period. The study was commissioned by Sanitation Water and Community Health Project (SWACH), Udaipur and was carried out with consultancy of SMRATI Udaipur. The main objectives of the study were:

1. To make an assessment of the knowledge, attitude and practices of families about drinking water, excreta and refuse disposal, home sanitation and personal hygiene practices.
2. To find out the incidence of common waterborne and skin diseases of infective origin in the families covered by the project.
3. To find out the sickness load on families at the time of survey.
4. To have a situational analysis of the villages about drinking water sources and sanitation around them.

The study was carried out in 116 villages/hamlets of Udaipur, 5 villages/hamlet of Dungepur and 30 villages/hamlets of Banswara Project areas. In all, information was collected from 4848 families. The villages/hamlets were selected by random sampling method and the families from them were selected by systematic sampling. On an average 23.64 families were studied from each village/hamlet. The study design and the formats were presented before the members of expert advisor consultative group of SWACH and their suggestions were taken into consideration.

The designed survey schedules (village and family) were pretested. The schedules had structured and open ended questions. The village schedules were filled in by interviewing influential persons of the village while information about family was obtained mainly by interviewing female/male heads of the families. The interviewers also assessed situation through their own observations. The interviewers were young Ayurved doctors and members of District Training Team (D.T.T.) of SWACH. They were trained before they were sent in to the field for the survey work. The survey work and supervision was planned and executed by the respective project officers of SWACH.

The consultant and supervisor from SMRATI also made visits to some villages and families and took a first hand view of the situation. They also assessed water keeping, sanitation and hygiene in some village restaurants (Dhabas), Schools & Anganwadi Centres.

Summarized observations under different areas of study are presented below :

1. FAMILY CHARACTERISTICS

Majority of families have been Hindus and most of them (66.48 percent) were tribals. 4.02 percent families of Banswara were Christians and 95.02 percent studied families of this area were tribal. Majority of the studied families were single. Literacy level of family heads (both males & females) were poor and poverty was rampant. 57.05% male heads & 86.84 percent female heads were illiterate. Schooling of children above 5 years of age was not encouraging. Only in 28.55% families, all male children above 5 years were sent to school, this figure for female children was only 14.44 percent. In 3.69 % of the families some or the other family female worked as a paraprofessional health worker.

2. WATER SAFETY AT RESERVOIR LEVEL

The knowledge of respondents as regards causes of contamination of water at reservoir level was not satisfactory. More than 1/3rd of respondents could not mention any reason of water contamination. Open field defecation as a cause of water pollution was known to 728 of the 4848 respondents. Majority preferred open field defecation and about 58.52 percent families went for it. Majority of families (58.52 percent) took bath and washed clothes near reservoirs of water-lakes, ponds, river and hand pumps. Easy availability of water and that too in plenty with minimum efforts were the reasons for this practice.

In recent years hand pumps have become the main source of drinking water in villages. It was the source of drinking water in 55.35, 55.4 and 58.51 percent families of Udaipur, Banswara and Dungepur project areas respectively. Maintenance of hand pumps and sanitation around them and surveillance as regards quality of water through regular system is an essential need as water collection were found near 31.97% of the hand pumps. Very few families (3.80 percent) drank water from step wells. 58.83 percent respondents were aware about water disinfection by chemicals.

3. WATER SAFETY AT DOMESTIC LEVEL

The source of drinking water in about 57 percent families was hand pump, 17.72 percent obtained drinking water from wells with pulley while 14.19 percent obtained it from wells without pulley. Only about five percent had drinking water from tap.

Mostly females of the family went out to fetch drinking water. Majority had to walk for about a kilometer or so for it and spent about

30 minutes or so for this task. Females during menstruation and for some time after delivery were forbidden to do this task.

Knowledge of respondents about safety measures at domestic level in relation to drinking water was moderate to good. A fairly good number mentioned about filtration, covering and keeping drinking water at elevated place. Drinking water was kept at elevated place in about ninety seven percent of families, about 92 percent had separate utensil for drinking water and most of them cleaned it daily. 98.56 percent respondents felt that drinking water should be definitely filtered, 0.37 percent felt no need of it while 1.05 percent were uncertain about it. In the opinion of 53.28 percent respondents, funnel with filter was the best item to filter water, while 16.90 percent mentioned double layered cloth as best. In 59.61 percent families of Udaipur project area, 86.98 percent of Banswara project area & 44.44 percent of Dungerpur project area, funnel fitted with filter (distributed by SWACH) was the filtering material used.

Though in the opinion of 73.97 percent respondents, ladle was the best utensil to withdraw water from pitcher, however it was found as a withdrawing utensil in less than ten percent families. Lotha was the most commonly used utensil (60.58 percent).

About 92 percent families were provided with some item of water safety by SWACH and in most instances it was the plastic funnel with filter. It was used by most families however its cleanliness was not well maintained.

Water keeping in 86.66 percent small restaurants (dhabas), seventy percent schools & sixty percent Anganwadi Centres was unsatisfactory.

4. KNOWLEDGE OF RESPONDENTS ABOUT WATERBORNE DISEASES

Majority of respondents (75.70%), maximum from Dungerpur (83.48 percent) were having the knowledge that dirty contaminated water can cause diseases and that men play an important role in contaminating drinking water at various levels. However knowledge about established modes of contamination like open field defecation and defecation near water sources, washing & bathing near water reservoirs, dipping fingers in water pitchers, long dirty nails etc. were known to comparatively much less respondents. Domestic fly can also play an important role in causation of WBD was known to only 24.17% respondents. Entry of G.W. patient in the water sources contaminate it, was known to 2189 respondents (45.15%) A high percentage of respondents (75.54 percent) mentioned malaria as a WAD. Association of G.W. and diarrhoea to contaminated water was known to 78.57 percent & 40.80 percent respondents. Association of jaundice and dysentery to contaminated water was known to only 4.43 & 4.35 percent respondents.

About 22.05 percent respondents could mention most causative factors of diarrhoea, however 31.80 percent respondents of Udaipur, 23.63 percent of Banswara & 12.20 percent of Dungerpur project area did not know any causative factor of diarrhoea. Very few respondents attributed diarrhoea to unhygienic bottle feeding & long & dirty nails.

Knowledge about use of ORS in feeding of diarrhoea case was average 30.14 percent of respondents of Udaipur 28.94 percent of Banswara & 39.97 percent of Dungerpur project areas were aware about ORS. Only 9.45 percent respondents could name all contents of ORS.

87 percent respondents were aware of the fact that guineaworm is caused by contaminated water. The knowledge of respondents from Dungerpur was the best. Step well & pond water was blamed for causation

of guineaworm by over sixty six percent respondents. Filtering water with double layered cloth or funnel fitted with filter would protect from guinea worm was known to 66.35 percent of the respondents. Now the usual treating agency for guineaworm disease is hospital/ SWACH and their workers doing the task privately too. Few people rely on traditional healers.

5. SANITATION AND HYGIENE

Eatables were kept covered in over 75 percent families, maximum in Dunderpur project area (87.01 percent) Refuse disposal was improper in a very large proportion of families. Over eighty five percent disposed it off indiscriminately. Out of all, Udaipur project families performed a bit better. In majority of families hands were washed before meals. Dunderpur families fared best (92.78 percent) in this regard & Udaipur worst (65.51 percent), nail manicuring was delayed in about sixty percent families. Most families of Dunderpur manicured them timely. Latrine was available in families of only 5.30 percent respondents. In majority of families, hands after ablution were washed with either soil (60.68 percent) or ash (29.91 percent). Soap was used for this purpose in 4.86 percent families of Udaipur, 2.41 percent families of Banswara and 6.06 percent families of Dunderpur project area. Emphasis on cleaning of terminal portion of fingers during washing of hands after ablution was given only in 23.38 percent families of Dunderpur, 16.59 percent families of Banswara and 12.89 percent families of Udaipur project area. Bathing practice in most families of all project areas was optimum. A separate towel was available for individuals in about 31.97 percent families maximum in Dunderpur (41.81 percent). Statistical tests of

significance were applied to study the effect of various variables on the occurrence of WBD.

6. INCIDENCE OF WATERBORNE DISEASES

The incidence of water borne diseases in the project areas has been pretty high. One or more cases of waterborne diseases occurred in 55.97 percent families of Udaipur 36.65 percent families of Banswara 35.6 percent families of Dunderpur project areas and 20.53 , 19.33 and 13.2 percent family members were affected by WBD in the three project areas in last 90 days period preceding survey . Diarrhoea, Dysentery and worm infestation the commonest W.B.D. encountered. Under five and school going children were maximumly affected age groups. Fewer episodes of WBD occurred in consumers of hand pump water (45.85 percent) as compared to consumers of well (54.07 percent) or step well water (57.60 percent)

Waterborne diseases were more common in scheduled caste families (66.14 percent) and amongst economically poor groups (53.06 percent). The impact of literacy level of family heads on occurrence of WBD could not be clearly understood on account of nonhomogeneous sample size in relation to literacy level. Families which filtered water with funnel or double layered cloth experienced fewer attacks of WBD (44.46 percent) in comparison to those who either did not filter water (55.20 %) or filtered it with ordinary cloth (51.88 %). A positive impact of use of ladle, washing hands before meals, timely manicuring of nails, proper washing of hands after ablution etc. were seen.

7. EPISODES OF SICKNESS ENCOUNTERED AT THE TIME OF SURVEY

Sickness at the time of survey was encountered in 1548 subjects of 965 families thus 6.31 percent persons and 19.90 percent families were

affected by one or the other sickness at the time of survey. Sickness was maximum in the families of Banswara project area. In terms of age group sickness was most rampant in the child age group (0-5 & 6-14 year - 38.11% & 25.06 percent). Sicknesses were encountered in these age groups. Fever and diarrhoea were the main illnesses encountered. Fever cases were either malaria cases or the fever was related to respiratory tract. 37.27 percent sickness could be attributed to G.I.T. and 44.44 percent to fevers of different etiology. Sickness was maximum amongst poor groups (21.66 percent) The impact of literacy level of family heads, religion, caste, socio economic status were not very well marked.

8. SKIN DISEASES

14.29 percent families and 3.89 percent persons of the studied families suffered from some or the other skin ailment in the last 90 days duration. Skin sickness was found to be maximum in the families of Udaipur project area families and minimum in the Dunderpur project area families. Caste-wise the incidence was maximum amongst scheduled castes (16.93 percent). Higher incidence was also observed amongst poor (18.18 percent). Families in which towels were shared, the incidence was slightly higher (15.19 percent). The incidence was also influenced by frequency of undergarment changing. Minimum sickness (12.87 percent) was observed in those who changed it daily as compared to 20.48 percent amongst those who changed it weekly. In families where the male & the female heads were illiterate the skin ailment were more common as compared to the ones in which the heads had education of primary or upper primary level. 33.95 percent respondents could not mention any preventive measure against skin disease. This included maximum respondents from Udaipur project area (41.97 percent) and minimum from

Dungerpur project area (15.30 percent). Cleanliness of clothes protect against skin disease was known to 35.40 percent respondents while bodily cleanliness was known to 44.87 percent of the respondents. A good proportion of respondents knew that domestic fly can transmit common skin diseases.

9. VILLAGE ANALYSIS

Tap water supply was available in a very small proportion of hamlets/villages. Over all only 9.75 percent hamlets had this facility. (10.34 percent, 6.67 percent and 10.17 percent studied hamlets of Udaipur, Banswara and Dungerpur project areas respectively) Out of the 1387 hand pumps in the study area, 996 (71.71 percent) were found to be in working order. Water collection was found near 26.17 % hand pump of Udaipur 19.17% of Banswara and 36.27 % of Dungerpur project area. There were 2088 wells used for drinking water. 920 (44.06 %) of them were provided with pulley. Water collection was found around 21.50 percent of the wells. Disinfection of well water was stated to be regularly done in 35.07 percent hamlets/ villages. In over thirty seven percent hamlets/ villages it was stated to be never done. In over fifty percent hamlets of Udaipur it was stated to be never done. Temephos application was regularly done in 44.88 percent of hamlets. The facility of public latrine was available in 12.93 percent hamlets of Udaipur, 13.33 percent of Banswara and 10.16 percent hamlet of Dungerpur project areas.

The incidence of waterborne diseases, skin diseases and sickness at the time of survey has been pretty high. It adversely affects the economy of the family. Every disease has multiple factors operating in its causation. The possible reasons for the high incidence of diseases in the area appear to be :

1. Majority of families going in for open field defecation.
 2. Indiscriminate disposal of refuse and garbage.
 3. Due to 1 & 2, poor quality of drinking water is available for the masses.
 4. Improper hand washing after ablution.
 5. Delayed nail manicuring.
 6. Improper utensil used for withdrawing drinking water.
- 4,5 & 6 further contaminate water at domestic level and also directly favour faeco oral transmission.
7. Poor knowledge about prevention of diseases.
 8. Sharing of clothes and beds by family members.

Hard and software support to rectify these defects should be provided like construction of sanitary latrines and compost pits supported by education and motivation to use them. Effective chlorination of drinking water must be ensured. Health education on various issues of water safety, hygiene, sanitation and the existing support that is being provided by SWACH should be continued and strengthened quantitatively as well as qualitatively.

WATER is a fundamental need for life. Men's dependency on water is direct as well as indirect. It is an integral part of his diet and most of the body processes are governed by it. Besides this water is also required for many day to day activities & other needs for human survival.

Nature has given us water in its most pure form (rain water), free from any impurities and harmful substances. Man by his deeds, actions and activities, determined and governed by his attitudes, practices and needs, pollute water in a variety of ways. Water is polluted physically, chemically, biologically & radiologically. Consequently when it is found to have become dangerous for health & survival, man tries to purify it. Is it not irony of fate!

Of all types of water pollution, biological pollution is the worst and unfortunately it occurs in abundance in our country. It is mainly through the human faeces that water is biologically polluted. A variety of micro organisms - bacteria, viruses, protozoa, helminthic ovas etc. get mixed up with water to cause various types of diseases amongst the users.

Water is polluted at its natural storage places in lakes, rivers, wells & ponds, during transportation through the pipe lines and during storage at domestic level. Water thus becomes a vehicle in the transmission of so many, so called WATERBORNE DISEASES viz. Diarrhoea, Dysentery, Typhoid, Infective hepatitis, Cholera, Poliomyelitis, Amoebiasis & Giardiasis, Parasitic infestation of intestines and Dracunculosis (Guineaworm) etc. These diseases are important from morbidity, mortality as well as disability point of view. Diarrhoea alone kill about 91,000 Rajasthani children each year, cholera in its

epidemic form take lives of many and poliomyelitis and Guineaworm disable many children and adults. These diseases which are of endemic nature in our country are responsible for a huge man power loss annually besides causing significant premature man loss. Practically all these diseases are preventable by water & food sanitation and proper personal hygiene. Flies by contaminating food, and dirty finger tips and nails also transmit and spread waterborne diseases. Therefore control of these diseases require action for:

1. Safeguarding drinking water
2. Minimising fly breeding
3. Protecting food from flies.
4. Good personal hygiene specially concerning fingers and nails.

Human attitudes and practices determine all these actions and hence development of right attitudes and inculcation of correct habits is the need of our country if the magnitude of waterborne diseases is to be brought under control.

No doubt it is the responsibility of the government to provide safe drinking water to its people. However one can not deny the fact that it is also the responsibility of each individual and each family to see that water is safeguarded and we do not pollute it so freely as we do it today. If we freely pollute water at all levels, no amount of purification measures can provide us safe drinking water. Besides the Government, many agencies, through special projects & plans, implement educative and supportive activities to create community awareness & participation of people for safe drinking water programmes. SWACH is an agency of such nature which is making intensive, innovative and dedicated efforts in this direction.

2. SWACH AND ITS EFFORTS IN PROVIDING SAFE DRINKING WATER, CONTROLLING GUINEAWORM DISEASE & PROMOTING COMMUNITY HEALTH:

Integrated Sanitation, Water, guineaworm control and Community Health project, abbreviated as SWACH operates in four southern districts of Rajasthan state of India viz. Dungeerpur, Banswara, Udaipur and Rajsamand. Till April '91, Rajsamand was a part of Udaipur district. The Hindi version of SWACH is "clean" and thus the very motto of SWACH is reflected in its name. The project is implemented by the Government of Rajasthan, supported by UNICEF and financially assisted by the Swedish International Development Authority (SIDA).

Topographically, the project covers an area which is predominantly tribal. The tribal proportion in the population is the highest when compared to other parts of the state. The population is comparatively poorer and under served with basic community amenities for human needs. For all these reasons the health status of the people of this area is not very sound. Guineaworm disease (Dracunculosis) has been an epidemic disease of the area and so are other infective waterborne diseases of faeco oral transmission.

SWACH project was launched in 1986 in Banswara and Dungeerpur districts of Rajasthan for a period of five years with the main aim of Guineaworm control. Encouraged by the success it met, the project was extended to the adjoining district of Udaipur in 1988. All the three districts had a very high incidence of dracunculosis i.e. guineaworm disease. Dracunculosis is a crippling disease which used to account for lot of manpower and economic loss. As per 1991 census, the project covers a population of 4.8 million involving 5270 villages of the four districts.

SWACH has been working with the following objectives:

1. To eradicate guineaworm disease from the project area.
2. To improve the quality of life and socio-economic conditions in the communities of southern Rajasthan, with particular reference to rural disadvantaged villagers, specially children.
3. To reduce the incidence of other waterborne diseases such as diarrhoea & dysentery among the rural population, specially the underserved scheduled castes & tribals.
4. To promote community involvement and self reliance in planning, implementation and maintenance of drinking water supplies, environmental sanitation and other project physical installations.
5. To encourage and sustain good health practices amongst the targeted population.
6. To assist villagers in upgrading their existing unsafe water sources such as step wells and ponds.
7. To provide new tube wells fitted with hand pumps to the communities with insufficient safe water supplies.

The major thrust of SWACH in the early years has been first on Guineaworm control and then eradication of this disease.

Through its unique strategy involving early case detection in pre-eruptive stage & its management at local level (in order to break the transmission cycle), health education of masses in a variety of ways, water management at community and domestic level, curative camps, engineering devices & IEC activities & disinfection of water at source, SWACH has been able to control guineaworm disease in its operational area to a great extent and is on the verge of its eradication which it hopes to achieve by 1994-95.

The strategy adopted by SWACH has been a strategy of "Active involvement of the community for its betterment & upliftment". This type of action is fundamental for long term benefits. For this SWACH works through its locally selected village level functionaries like the Scouts, Animators, Women's groups and local influential people. It finds, motivates & train them through various levels of training & orientation courses & then implement its various programmes in the field through them. The project thus develop linkages in the villages through these workers.

For better results with minimum additional inputs and to avoid duplication, SWACH integrates its activities with government department of Medical & Health, PHED, Development and Education etc. It provide support to their activities and also seeks their support for its activities.

3. THE GENESIS OF PRESENT STUDY

SWACH is aware of the fact that besides guineaworm disease, the villagers are faced with many other health problems, notably:

1. High incidence of other waterborne diseases of faeco oral transmission like diarrhoea, dysentery, typhoid, jaundice, cholera, poliomyelitis and intestinal worms.
2. High incidence of infective skin, eye and ear disorders like scabies, boils & furunculosis, conjunctivitis and otitis etc.
3. Poor status of health of mothers and children as is reflected through high Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), Under Five Mortality Rate (USMR), high fertility rates and high incidence of childhood diseases & anaemia in women folk.

Responsible factors in the background of all this community ill health is unsafe drinking water, poor environmental sanitation in and around houses, poor standard of personal hygiene, poverty, ignorance and under utilisation of preventive & promotive health services. These factors in turn are governed by knowledge, attitudes and practices of the people.

Therefore through its routine programmes as well as specific special programmes, SWACH is making efforts to improve drinking water supply, home & village sanitation. Through Health Education, it is making efforts to develop healthy attitudes and practices amongst rural masses for prevention of diseases at individual as well as community level. The appointed local scouts and animators guided and supported by higher level of SWACH functionaries are doing a good job in this direction. To support the existing programmes and to ensure women's

participation, women's groups are formed in the project villages to participate in the activities of SWACH.

To provide support to its village level workers and to give a shape of "Community Movement" to the SWACH programmes, an innovative scheme of "JAL MELA" organization has been recently introduced. Such Jal Mela Campaigns are being launched at village level in all districts covered by SWACH & RIGEP. During the campaigns following activities are organized.

1. Distribution of IEC material like funnel filters, water bottle with filter, ladle with long handle, earthen pitchers, pitcher lids and posters with messages of drinking water safety written on them.
2. Survey of the villages including survey of drinking water sources and incidence of guineaworm, waterborne and sanitation related diseases through P.R.A. method of mapping etc.
3. Quiz competition on guineaworm, water and sanitation.
4. Formation of women groups and holding women group meetings, selection of office bearers and depot holders for medicines etc.
5. Encouragement to villagers to construct compost pits, do plantation and drainage of waste water etc. by voluntary labour in exchange of sanitation items which SWACH provided to them.
6. Conduction of competitions like healthy baby competition, healthy women competition, clean house competition etc.
7. Arranging procession of school children and women to create awareness on issues of guineaworm eradication, safe drinking water, sanitation and personal hygiene.
8. Conduction of IEC programmes through cultural groups at schools or prominent places.

9. Carrying out health check up of children with the help of sector doctor of medical department & distribution of health cards.

The programmes are organised by the concerned Project officers with the help of other govt. departments, the village level functionaries of SWACH and the local influential people. The expenditure per mala excluding the cost of IEC material has been estimated to the tune of about rupees ten thousand. A population of 400-500 persons was benefitted by one 'Jal Mela'. The Jal Mela team used to comprise of one Ayurvedic doctor, 3 surveyors 3-4 cultural team members, one coordinator and the Animator/Scout of the concerned village.

It is hoped that all these efforts would bring about a reduction in the incidence of WBD and diseases linked with poor personal and environmental hygiene. It is also expected to provide thrust to the safe motherhood and child survival activities. To have an estimate of the incidence of waterborne and common infectious skin diseases and to have an idea about the knowledge, attitudes and practices of families residing in SWACH project areas about water, sanitation & related diseases, SWACH thought to conduct a KAP Study and a base line survey. In Oct.93 it invited proposals from Saibaba Medical Research and Training institute, Udaipur (SMRATI) to conduct this study in 25 percent families of 200 of its 800 villages/hamlets spread over Udaipur, Dungerpur and Banswara districts of Rajasthan, India.

The consultant from SMRATI held some discussion sessions with the Project Director and concerned officers of SWACH to obtain relevant information about SWACH, its objectives, activities and the scope of the proposed study. Thereafter SMRATI developed the study design for the said study and submitted it to SWACH for perusal. The study design was

studied by SWACH officers and a series of discussions were held between SWACH and SMRATI to finalize the study design. The formats of study were thoroughly discussed, the methodology of selection of the villages and families for the study were decided. SWACH took the responsibility of providing the surveyors and supervisors for the study and plan the survey work in the villages/hamlets which they selected as per the design of the study. SMRATI was assigned the task of developing the formats of study, train the surveyors in survey methodology and form filling, getting the collected information analysed through computer and writing the detailed report of the study with interpretations and recommendations.

4. THE STUDY AND ITS OBJECTIVES

The study was entitled

"KAP STUDY OF FAMILIES RESIDING IN SWACH PROJECT AREAS IN RELATION TO DRINKING WATER, VILLAGE AND HOME SANITATION AND INCIDENCE OF WATERBORNE AND SKIN DISEASES".

The focus areas of the study have been:

1. K A P of families in relation to drinking water, home & village sanitation and personal hygiene.
2. A situational analysis of drinking water sources of the villages.
3. Incidence of common waterborne and skin diseases in the families of project areas.

4.1. The Objectives

The broad objectives of the study have been :

1. To make an assessment of the knowledge, attitudes and practices of families about drinking water, excreta and refuse disposal, home sanitation and personal hygiene practices.
2. To find out the incidence of common waterborne and skin diseases of infective origin in the families covered by the project.
3. To find out the sickness load on families at the time of survey.
4. To have a situational analysis of the villages/ hamlets about drinking water sources & sanitation.

5. METHODOLOGY

5.1. The area of study & the sample

The study was planned for the 800 villages/hamlets of Udaipur, Dungeerpur and Banswara districts of Rajasthan, India. For drawing a representative sample for the study, the entire universe of 800 villages/hamlets spread in the three districts was divided into ten MACRO CLUSTERS of eighty villages/hamlets each. Each macro cluster was then further divided into eight MICRO CLUSTERS. Each micro cluster had ten villages/hamlets in it. Twenty five percent of the micro clusters (two) from each macro cluster were selected randomly for the purpose of study. Thus twenty micro clusters having 200 villages/hamlets were picked up for the study. They were all studied to have a situational analysis of drinking water supply and sanitation of the villages. On an average each of these 200 hamlets had about hundred families residing in it. For the purpose of KAP study of families, twenty five percent of these families (twenty five from each hamlet) were selected by systematic sampling in such a way that each community residing in the hamlet/village was represented in the sample. Thus about 5000 families were studied to assess KAP. The task of selection of micro clusters & families was done by the respective Project Officers of Udaipur, Dungeerpur and Banswara project areas. Finally data from about 5000 families has been analysed.

The district wise list of the hamlets of study are shown in appendix III.

DIAGRAMMATIC REPRESENTATION OF THE AREA OF STUDY.

a1	a2	a3	a4	b1	b2	b3	b4
	a				b		
a5	a6	a7	a8	b5	b6	b7	b8
c1	c2	c3	c4	d1	d2	d3	d4
	c				d		
c5	c6	c7	c8	d5	d6	d7	d8
e1	e2	e3	e4	f1	f2	f3	f4
	e				f		
e5	e6	e7	e8	f5	f6	f7	f8
g1	g2	g3	g4	h1	h2	h3	h4
	g				h		
g5	g6	g7	g8	h5	h6	h7	h8
i1	i2	i3	i4	j1	j2	j3	j4
	i				j		
i5	i6	i7	i8	j5	j6	j7	j8

ABCD -

The universe having 800 villages/hamlets in the three districts.

a - t o j

Ten macro clusters with 80 villages or hamlets each.

a 1 - a e t o j i j e

80 micro clusters - 8 in each of the ten macro clusters.

Each dot represent a hamlet thus 10 hamlets in each micro cluster.

Brief profile of the three Districts

The study relates to Udaipur, Dungepur and Banswara districts of Rajasthan state of India.

Rajasthan is the second largest state in India occupying about 10.43 percent of the total area of the country. Most of the area of the state is either arid or semi arid. The normal average annual rain fall is 58.64 cms. As per estimates of 1993 its population is 44005990. More than 3/4th of its population reside in rural areas. 12.44 percent of its population is tribal.

UDAIFUR DISTRICT

Location	:	Southern part of Rajasthan
Area	:	16016.12 Sq.kms
Blocks	:	Eleven
Type of Terrain	:	Hilly & Semiarid
Av.rain fall	:	645 mm
Population	:	2074695 (estimate of 1993)
Rural Population	:	82.90 percent
Male:Female ratio	:	1000:945
Density of population	:	180 per.sq.kms
Tribal population	:	46.70 percent
Literacy rate All	:	34.90 percent
Male	:	48.73 percent
Female	:	20.41 percent
Water Supply	:	Handpump, Tap & Well

THE STUDY AREA



1 RAJASTHAN IN INDIAN MAP

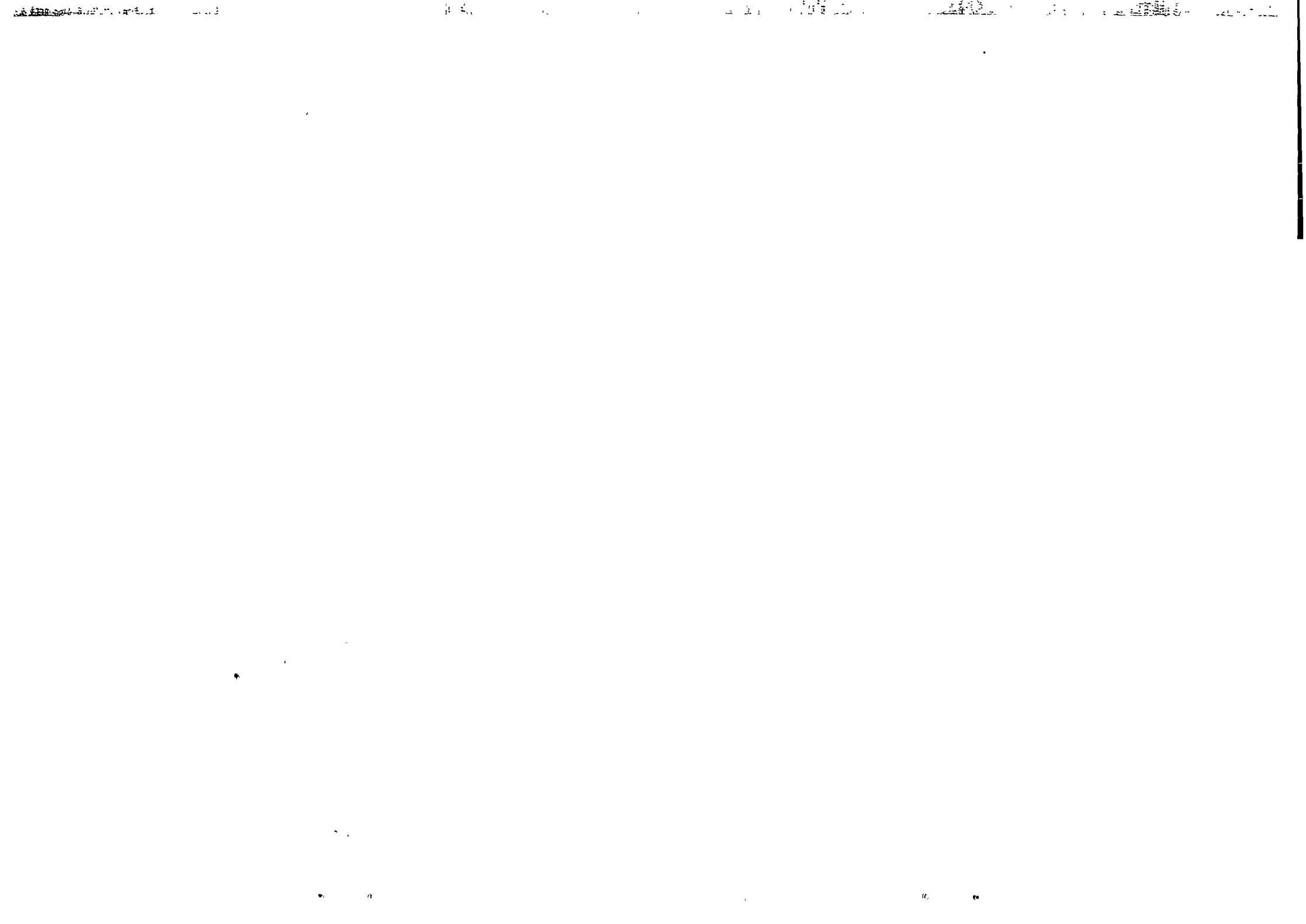
INDIA

RAJASTHAN

राजस्थान



2 LOCATION OF UDAIPUR
DUNGERPUR AND BANSWARA
IN RAJASTHAN MAP



DUNGERPUR DISTRICT

Location : Southern part of Rajasthan
 Area : 3770.00sq. kms.
 Blocks : Five
 Type of Terrain : Hilly & semiarid
 Population : 874549 (estimate of 1993)
 Av. rain fall : 761 mms
 Rural population : 92.70 percent
 Male/ Female ratio : 1000:995
 Density of population : 232.00/km
 Tribal population : 65.84 percent
 Literacy rate- All : 30.55 percent
 Male : 45.71 percent
 Female : 15.40 percent
 Water Supply : Handpump, Wells & Tap.

BANSWARA DISTRICT

Location : Southern of part of Rajasthan
 Area : 5037.00sq.kms.
 Block : Seven
 Type of terrain : Hilly & Arid
 Population : 1155600 (estimate of 1993)
 Av.Rain fall : 922 mms
 Rural population : 92.28 percent
 Male:Female ratio : 1000:969
 Density of population : 229.00/km
 Tribal population : 73.47 percent

1

Literacy rate- All : 75.79 percent
Male : 88.16 percent
Female : 43.42 percent

Water Supply : Handpump, well & tap

5.2. The Survey Schedules :

For collecting data from the selected villages/hamlets and the families, two sets of survey schedules were prepared viz. the village schedule & the family schedule.

- a. **The village Schedule :** It was designed to collect information about drinking water sources in the village and sanitation around them. The schedule also had scope to collect some information about public latrines, their use & maintenance. In all there were 20 questions in the schedule. Information about the village was obtained through this questionnaire by interrogating some influential persons of the village/hamlet & also by making own observations (Annexure 2).
- b. **The family Schedule :** This schedule was designed to collect information about the knowledge, attitudes & practices of families in relation to drinking water, sanitation in and around house, personal hygiene and causation and prevention of common waterborne and skin diseases. It also had scope to collect information about the episodes of waterborne and skin diseases that occurred in the members of the family in the last 90 days duration & the present prevailing sickness amongst the family members. The proforma had 9 questions pertaining to the following areas :

1. Family characteristics

2. KAP on relationship between water & diseases
3. KAP on water safety at community level.
4. KAP on water safety at domestic level.
5. KAP on sanitation & hygiene .
6. KAP on causation, prevention and management of diarrhoeal diseases.
7. KAP on causation, prevention and management of Guineaworm diseases.
8. KAP on causation, prevention and management of common skin diseases.

The questions were comprehensive yet they were simple to understand and answer. This was purposefully done looking to the limitations of the respondents as well as the interviewers. Most questions were structured while some were open. Some question were leading too.

Information about present sickness amongst family members as well as episodes of WBD & skin diseases that occurred in the last 90 days were recorded on a tabulated sheet. It was emphasised that as far as possible all information about family be obtained from the female head of the family failing which male head or other adult family members could be interviewed. The formats were printed in Hindi, however their English version was also prepared (Annexure I)

During the training course, the interviewers were emphatically explained to :

1. Collect information from respondents after developing rapport with them and after gaining their confidence.
2. Collect information through a set of sequential talking with the respondent rather than asking one question after another. Once it was done, if needed the answers to the left out question were obtained.

3. Verify the respondent's answers about practices by our observations. In case of discrepancies they should further probe and rely more on observation rather than the statements of respondents.
4. The very language of the questions & the structured answers were to give the interviewer, an idea as what is to be known from the respondent and what could be the possible answers. Emphasis was laid on the fact that they should try to obtain as correct answers as possible.

5.3. The Interviewers & their Training

SWACH utilized the young Ayurvedic doctors, and members of the District Training Teams (D.T.T.) working with it to act as interviewers for the study. The Ayurvedic doctors are formally educated and trained graduates in the Ayurvedic medical system. Most members of the DTT were also graduates & post graduates working with SWACH for its various activities.

A two day training programme for these workers was arranged in the SWACH Hq. Udaipur on 26 & 27th Oct. '93 in which 47 Ayurved doctor members of DTT, retired personnels of medical & health deptt. officials of SWACH & SMRATI took part. The training programme was organized to train the workers in the art of survey methodology & interview technique. In the training programmes emphasis was laid on the following issues.

1. Objectives & importance of the study.
2. Importance of the Survey work.
3. Survey methodology and interview technique.

4. P R A-technique.
5. Format explanation & discussions.
6. Practical training in filling in the formats.
7. Group formation duty and area allotment.
8. System of mobility & other arrangements in relation to survey work.

In addition to the initial training programme & repeated guidance, which the workers were provided by Project Officers & Supervisors, a one day retraining programme was again held on 19th January 1974. The trainings were jointly conducted by SWACH & SMRATI.

Thus an effort was made to see that the workers do justice to the task of survey work and elicit true information. For this a pilot testing was also done to see the adequacy of the schedules and the capability of the workers. Necessary corrections were subsequently made.

5.4. Presentation of the Study design before the Expert Advisory consultative group of SWACH.

SWACH has an Expert Advisory consultative group of specialists from different fields like Management, Economics, Social works, Sociology, Anthropology, Extension, Geography, Psychology, Community Medicine, Zoology and Luminology etc.

To have their expertise guidance, the study design of the study was presented before this group on Nov.20,1973. Experts from the field of Management, Economics, Anthropology, Social works, Sociology, Extension, Community Medicine, Psychology, Geography and Luminology were present in the session besides officers of SWACH and three members of the SIDA team who happened to be there on that day. Except for a few suggestions, the

expert group welcomed the study and approved the study design and the formats. The valuable suggestions were taken into consideration.

5.5. The survey work and supervision

The survey work in the field was planned by respective project officers of SWACH for their areas. In the first phase of the survey work, a team consisting of one ayurvedic doctor and one member of D.D.T. was sent to do the task in one hamlet or village for two days. The local animator/scout (a village level female/male functionary of SWACH) assisted the team. Each team was given a programme for 6 days and they moved from one area to another. Adjacent areas were given to a team. The staff of the P.O. Office acted as supervisors & guides. After six days working the teams used to report to the respective P.O. Office to deposit the filled in schedules and take programme and schedules for the next survey work. The filled in schedules were scrutinised by the supervisory staff & then they were passed on to SMRAII which did editing of samples & passed the schedules to Crystal Computers, Subhash Nagar, Udaipur which was engaged for the analysis work.

Some difficulties of supervision and scrutiny of the filled in schedules were felt with this type of system and hence it was revised. In the revised programmes 4-5 members of survey team were taken to one village/hamlet for one day and the filled in-forms were deposited in the P.O. Office the same day. The ayurvedic doctor and member of DTT worked independently.

The field working for one village/hamlet is represented below.

FOR SURVEY OF ONE HAMLET/VILLAGE

TASK.	MANPOWER	TIME	
1. Rapport development with influentials & family heads of 25 families 2. Mapping of hamlet by PRA technique. 3. Filling in of one village schedule. 4. Filling in of 25 family schedules.	One Ayurvedic doctor. One member of District Trg. Team 1 Scout/Animator	2 days	First phase
---Do---	4-5 members of survey team. One scout/animator	1 day	Revised phase

5.6 The respondent:

The respondents to provide information about drinking water sources of hamlets and sanitation around them were influential persons of hamlet/ village. However own observations of the interviewers was an added support. Respondents to provide information about families were in most instances the female heads of the families failing which the male heads/elderly members of families provided the information. Female heads were purposely chosen as the first choice respondent because in most instances drinking water is her domain & she is most versed with any

illness that occurs to family members. However her poor literacy level, shyness, fear etc. has been her limitations. They all were overcome to a great extent by rapport building with the help of local animator or scout.

5.7. Consultant's Observations

The consultant and supervisor from SMRATI visited fifteen villages/hamlets. Some of them were visited along with officers of SWACH and some independently. They for themselves took an idea about the situation in hamlets & families, had conversation with a number of family heads besides influential persons on various issues of the study.

Man drink water at various places—in his own family, houses of friends & relatives, offices, Dhabas (small restaurants) etc. Children drink water in schools (schools are the places of education too, so what ever a child observes in school, he develops attitudes & practices accordingly). To cause a sickness a single sip of contaminated water is sufficient. Taking all these factors into consideration, the consultant and supervisor from SMRATI visited a number of schools, offices, Anganwadi centers, and village & road side small restaurants to assess maintenance of drinking water keeping and personal hygiene of food and water handlers.

Thus the data for the study has been collected through:

- (a) Interview with the influentials & family heads through schedules.
- (b) Observations of the interviewers.
- (c) Observations and interaction of consultant & supervisors with influentials and family heads.

5.8. Period of Study

The data for the study was collected from November 1993 to Feb. 1994.

5.9. Analysis

The filled in formats of the study were passed on to Crystal Computers, Subhash Nagar, Udaipur. for the purpose of analysis. The consultant had conversation with the computer people and explained them all relevant points. The frames of tables to be prepared, the key of codes for open ended question etc. were all provided to it. The analysed data were then interpreted by the consultant who then wrote the detailed report of the study.

6. OBSERVATIONS AND DISCUSSION

6.1 FAMILY CHARACTERISTICS

Each family has got its own characteristics. Some of them are related to birth like the religion and caste while some are acquired such as education, socio economic status and occupation etc. They all have their influence on health. In this section we are presenting a few relevant characteristics of the families which have been studied in Udaipur, Banswara and Dungerpur SWACH project areas.

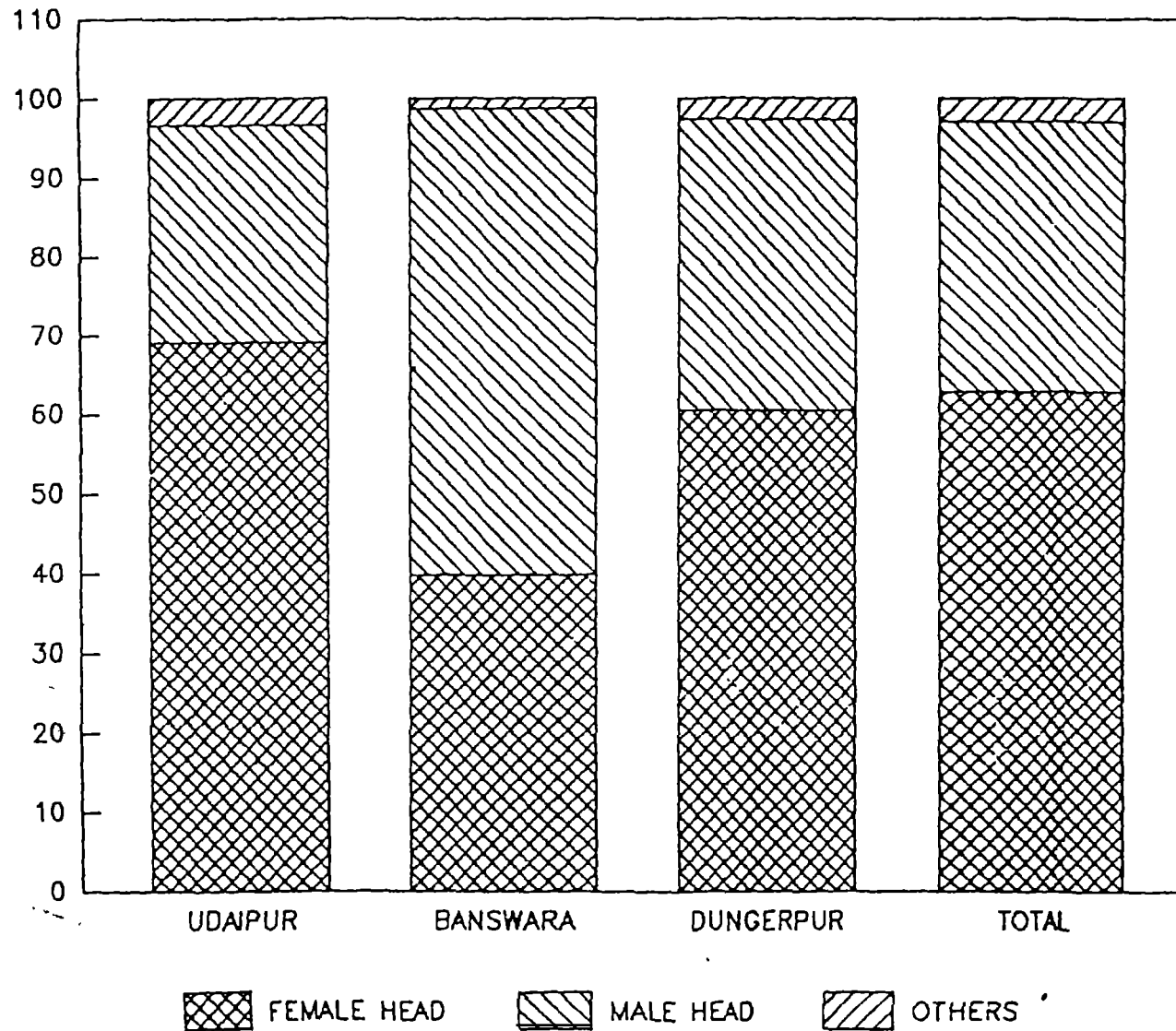
In all 4848 families from the three districts have been studied against the target figure of 5000. 152 (3.04 percent) has been the sample loss on account of various reasons. To study these families, 116 hamlets of Udaipur project, 30 of Banswara project and 59 of Dungerpur project area were visited. An average of 23.64 families were studied from each hamlet/village. The average has been maximum for Udaipur (24.06) (T.No.6.1.1.).

T.6.1.1
DISTRIBUTION OF THE STUDIED FAMILIES AREA WISE

	UDAIFUR	BANSWARA	DUNGERPUR	TOTAL
NUMBER OF VILLAGES/HAMLETS	116	30	59	205
STUDIED FAMILIES	2840	622	1386	4848
AV. STUDIED FAMILIES PER VILLAGE/HAMLET	24.06	20.73	23.49	23.64

It was envisaged to obtain the IAP information of the family mainly through the female head. Collectively taken 62.87 percent of the family schedules were filled in by interrogating the female head of the family.

DISTRIBUTION OF RESPONDENTS OF FAMILY STUDY



She has been the main respondent in Udaipur (69.08%) and Dungerpur (60.53%) districts, however in Banswara district male heads have been the main respondent (59.00%) 34.22 percent schedules were filled in by interviewing male heads and 2.91 percent by interviewing some other adult member of the family. Non-availability of female head, extreme ignorance, illiteracy and shyness on her part has been the reasons for getting about 37 percent form filled in by interviewing male heads & others (T.6.1.2.).

T.6.1.2
DISTRIBUTION OF RESPONDENTS OF FAMILY STUDY

RESPONDENTS	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
FEMALE HEAD	1962 69.08%	247 39.71%	839 60.53%	3048 62.87%
MALE HEAD	782 27.54%	367 59.00%	510 36.80%	1659 34.22%
OTHERS	96 3.38%	0 1.27%	37 2.67%	141 2.91%
Total	2840	622	1386	4848

Majority of the families which were studied were Hindu by religion (98.68%). This was the situation in all the three districts. However 25 (4.02%) studied families from Banswara were Christian by religion (T.6.1.3).

7.6.1.3
RELIGION WISE DISTRIBUTION

RELIGION	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
HINDU	2807 78.84%	594 95.50%	1383 99.78%	4784 98.68%
MUSLIM	33 1.16%	3 0.48%	3 0.22%	39 0.80%
CHRISTIÁN	0 0.00%	25 4.02%	0 0.00%	25 0.52%
Total	2840	622	1386	4848

Udaipur, Banswara and Dungerpur are predominantly tribal districts. They have the highest proportion of tribal population in the state. The same has been reflected in the caste distribution of the studied families. Over all 66.48 percent of the studied families were found to be tribals. This figure for Banswara district was as high as 95.02 percent. The proportion of schedule castes in the three districts has been 21.09, 2.73 and 14.79 percent respectively. 16.58 percent of the families were non SC/ST (T. 6.1.4). They included Rajputs, Brahmins, Mahajan etc. SC and ST communities are downtrodden and under served segments of the society which have suffered for ages. Only for the last few years many programmes aimed at their upliftment have been implemented and they have been put on priority list. More and more privileges are being provided to them.

T.6.1.4.
CASTE WISE DISTRIBUTION

CASTE	NUMBER OF FAMILIES			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
SCHEDULED TRIBE (ST)	1758 61.90%	591 95.02%	874 63.06%	3223 66.48%
SCHEDULED CASTE (SC)	599 21.09%	17 2.73%	205 14.79%	821 16.93%
NON SC/ST	483 17.01%	14 2.25%	307 22.15%	804 16.58%
Total	2840	622	1386	4848

Over sixty percent (62.97%) of the studied families were single families. Maximum proportion of single families was found in Banswara project area where 76.21 percent belonged to this category. Very few families (0.37%) were three generation families. Rest were joint families. Joint families have their own advantages in economic and social crisis (T.6.1.5).

T.6.1.5
DISTRIBUTION BY TYPE OF FAMILY

TYPE OF FAMILY	NUMBER OF FAMILIES			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
JOINT	1050 36.97%	146 23.47%	581 41.92%	1777 36.65%
SINGLE	1774 62.46%	474 76.21%	805 58.08%	3053 62.97%
THREE GENERATION	16 0.56%	2 0.32%	0 0.00%	18 0.37%
Total	2840	622	1386	4848

Literacy is prerequisite for development. Literacy wise Rajasthan has been a backward state. It stands far behind the nation's literacy

level. The same is true for Udaipur, Banswara and Dungepur when within the state they are compared with other districts. The figures for male and female literacy in Rajasthan (1991) is 55.07 and 20.84 percent respectively. This figure for the studied families has been 42.95 and 13.16 percent respectively. 57.05% male heads & 86.84% female heads of the studied families were illiter . Dungepur stood at top out of the three project areas in this respect where about 62 percent males and about 25 percent female heads had some level of education. Only about six percent male heads and less than one percent female heads had education of secondary and higher level. (T.6.1.6 & 6.1.7). With more and more stress that is being given to education of under privileged masses and the female group, we can expect a better situation in times to come. The adult education programme has definitely contributed in converting many illiterate adults as "just literate".

7.6.1.6
DISTRIBUTION BY LITERACY LEVEL OF MALE HEAD

LITERACY LEVEL MALE HEAD	NUMBERS OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
ILLITERATE	1863 65.60%	376 60.45%	527 38.02%	276 57.05%
JUST LITERATE	338 11.90%	92 14.79%	311 22.44%	74 15.28%
PRIMARY	355 12.50%	79 12.70%	311 22.44%	74 15.37%
UPPER PRIMARY	150 5.28%	36 5.79%	115 8.30%	30 6.21%
SECONDARY	114 4.01%	29 4.66%	98 7.07%	24 4.97%
COLLEGE	15 0.53%	10 1.61%	24 1.73%	49 1.01%
TECHNICAL	5 0.18%	0 0.00%	0 0.00%	5 0.10%
Total	2840	622	1386	4848

T.6.1.7
DISTRIBUTION BY LITERACY LEVEL OF FEMALE HEAD

LITERACY LEVEL FEMALE HEAD	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
ILLITERATE	2594 91.34%	572 91.96%	1044 75.32%	4210 86.84%
JUST LITERATE	96 3.38%	18 2.89%	232 16.74%	346 7.14%
PRIMARY	123 4.33%	20 3.22%	68 4.91%	211 4.35%
UPPER PRIMARY	21 0.74%	8 1.29%	30 2.16%	59 1.22%
SECONDARY	4 0.14%	3 0.48%	12 0.87%	19 0.39%
COLLEGE	0 0.00%	1 0.16%	0 0.00%	1 0.02%
TECHNICAL	2 0.07%	0 0.00%	0 0.00%	2 0.04%
Total	2840	622	1386	4848

It is certainly a difficult task to assess the economic status of any individual or family. Under the IRDP scheme, with the assistance of villagers the government has prepared a list of poor families to be provided assistance. An effort has been made to utilise this data in assessing the economic status of the families. Only about four percent of the studied families had an average annual family income of Rs. 11000/- and above. 75.28% families from Udaipur project area, 51.61% from Banswara project area and 46.39% from Dungerpur project area were very poor. (T.6.1.8.). Economic status affects the way of living which in turn determines nutritional and the health status. Infective and

nutritional diseases are known to prosper in poverty as such a high incidence of such diseases can be expected in the families studied.

T.6.1.8
DISTRIBUTION BY ECONOMIC STATUS

ECONOMIC STATUS AS PER IRDP SCHEME	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
ABOVE 11000	113 3.98%	25 4.02%	51 3.68%	189 3.90%
6001-11000	589 20.74%	276 44.37%	692 49.93%	1557 32.12%
0-6000	2138 75.28%	321 51.61%	643 46.39%	3102 63.99%
Total	2840	622	1386	4848

The government through its national education policy is making sincere efforts to see that children are sent to schools. Special efforts are made to improve the schooling of female children as it is thought that female education would have positive impact on development in every sphere of life including health. An effort was therefore made to see this aspect in the present study by asking about the schooling of male & female children, above five years of age. It was distressing to observe that it was only in 28.55 percent of the families that all male children above five years were sent to school. This figure for female children was only 14.44 percent. In 41.90 and 63.13% families of Udaipur project area some male and some female children were sent to school. These figures for Bnawara and Dungerpur areas have been 39.23 & 53.70 percent and 32.25 and 49.28 percent respectively (T.6.1.9. & 6.1.10).

T.6.1.9
SCHOOLING OF MALE CHILDREN ABOVE FIVE

SCHOOLING OF MALE CHILDREN ABOVE FIVE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NOT APPLICABLE	275 7.68%	75 12.06%	160 11.54%	510 10.52%
NONE	508 17.89%	136 21.86%	429 30.95%	1073 22.13%
ALL	867 30.53%	167 26.85%	350 25.25%	1384 28.55%
SOME	1190 41.70%	244 39.23%	447 32.25%	1881 38.80%
Total	2840	622	1306	4848

T.6.1.10
SCHOOLING OF FEMALE CHILDREN ABOVE FIVE

SCHOOLING OF FEMALE CHILDREN ABOVE FIVE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NOT APPLICABLE	401 14.12%	150 24.12%	224 16.16%	775 15.99%
NONE	242 8.52%	70 11.25%	251 18.11%	563 11.61%
ALL	404 14.23%	68 10.93%	228 16.45%	700 14.44%
SOME	1793 63.13%	334 53.70%	683 49.28%	2810 57.96%
Total	2840	622	1306	4848

Further efforts were made to find out the reasons for not sending children to school. The important reasons that were found are: (i) engaged in domestic work (54.95 percent), (ii) no school in hamlet /village (5.96 percent) (iii) Do not feel the need of it (5.28 percent). About 1/3rd could not mention any reason for it (T.6.1.11).

T.6.1.11
REASONS FOR NON SCHOOLING OF CHILDREN

REASONS FOR NOT SENDING CHILDREN ABOVE FIVE TO SCHOOL	AREA OF STUDY			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NO SCHOOL IN VILLAGE / HAMLET	210 7.39%	57 9.16%	22 1.59%	289 5.96%
ENGAGED IN DOMESTIC WORK	1566 55.14%	284 45.66%	814 58.73%	2664 54.95%
DON'T FEEL THE NEED	141 4.96%	15 2.41%	100 7.22%	256 5.28%
NO REASON	923 32.50%	266 42.77%	450 32.47%	1639 33.81%
Total	2840	622	1386	4848

There is no excuse for not sending children to school. In children's education we see a prospering future of the nation. All efforts therefore should be made to see that parent send their children to schools and the government provide facility for it closest to peoples' residence.

People's participation in the health programmes has been recognised as an important way to improve community health status. A good number of programmes having health care as one of its activity are in operation in rural areas & they utilise the services of village women. Anganwadi worker of I.C.D.S., Animator of SWACH, Sathins of District Women Development Agency and female workers of NGO's are examples. These para professional health workers are trained and then made to work for community health. If a female of the family works in this capacity, she is likely to improve the family health through her knowledge and motivation. It was found that in 4.01 percent of families of Udaipur project area, some or the other family female was working as a para

professional health worker. This figure for Banswara and Dungerpur has been 4.50 and 2.67 percent respectively (T.6.1.12.)

T.6.1.12
INVOLVEMENT OF FEMALES AS PARA PROFESSIONAL H.W.

INVOLVEMENT OF FEMALES AS PARA PROFESSIONAL HEALTH WORKERS	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
INVOLVED PRESENTLY	114 4.01%	28 4.50%	37 2.67%	179 3.69%
NOT INVOLVED PRESENTLY	2712 95.49%	590 94.86%	1342 96.83%	4644 95.79%
INVOLVED IN PAST	14 0.49%	4 0.64%	7 0.51%	25 0.52%
Total	2840	622	1386	4848

6.2 WATER SAFETY AT RESERVOIR LEVEL

The water that we drink through out the year is stored in community reservoirs of water as surface water (lakes, ponds & rivers) and under ground water (well etc.). Various human activities contaminate water at reservoir level and make it dangerous for human health. In this respect, the wrong deed of one, put many at risk. It is important to educate people to keep water safe at reservoir level. For this it is necessary to know the knowledge, attitudes and practices of people about known factors responsible for water contamination at reservoir level. With this intention in mind, a few questions pertaining to this issue were included in the family study schedule.

The respondents were asked to narrate the practices which if practiced would keep water safe at reservoir level. A key of codes was prepared to fit in the answers obtained. The observations are depicted in table 6.2.1. The knowledge of respondents from each project area was found to be poor. 1703 (35.14%) respondents did not give any answer to this question. Open field defecation is a practice that biologically pollute water to cause so many waterborne diseases. We can keep community water reservoirs safe by avoiding open field defecation was known to only 728 respondents out of 4848. However 1988 (41.00%) knew that by avoiding defecation near a water source, we can protect water at reservoir level. Not washing clothes and not taking bath near water sources to minimise contamination of water was known to 22.78 percent family heads of Udaipur project area. This figure for Banswara and Dungerpur has been 36.82 and 44.08 percent respectively. 19.15 percent families of Udaipur, 25.40 percent of Banswara and 45.89 percent of Dungerpur were aware of water disinfection as a safety measure. By

bathing animals near water reservoir, we contaminate water was known to 7.46 percent families of Udaipur, 9.41 percent of Banswara and 16.10 percent of Dungerpur project area. It is obvious that there is great need to educate people about various ways in which we pollute water at reservoir level and make it unsafe for human consumption.

T.6.2.1

KNOWLEDGE OF RESPONDENTS ABOUT WATER SAFETY AT RESERVOIR LEVEL

HOW CAN WATER BE KEPT SAFE AT RESERVOIR LEVEL	NUMBER OF RESPONDENTS			
	UDAIPUR n=2840	BANSWARA n=622	DUNGERPUR n=1386	TOTAL n=4848
BY NOT DEFECCATING NEAR WATER RESERVOIR	905 34.68%	231 37.13%	772 55.70%	1988 41.00%
BY NOT WASHING CLOTHES & TAKING BATH NEAR WATER RESERVOIR	647 22.78%	229 36.82%	611 44.08%	1487 30.67%
BY HELPING IN MAINTENANCE OF WELLS & HAND PUMPS	29 1.02%	27 4.34%	14 1.01%	70 1.44%
BY NOT CREATING DIRTINESS NEAR WATER RESERVOIR	649 22.85%	71 11.41%	334 24.10%	1054 21.74%
BY AVOIDING OPEN FIELD DEFECCATION ANY WHERE	245 8.63%	170 27.33%	313 22.58%	728 15.01%
BY NOT BATHING ANIMALS NEAR WATER SOURCES	212 7.46%	59 9.41%	222 16.10%	493 10.17%
BY GETTING WATER DISINFECTED	545 19.15%	158 25.40%	636 45.89%	1339 27.62%
NO KNOWLEDGE	691 24.33%	242 38.91%	770 55.55%	1703 35.14%

Washing clothes and taking bath near water reservoir is an unhealthy practice but is a way of life in our villages. As per opinion of about 55 percent respondents, bathing & washing clothes near water sources is a good practice. 28.42 percent respondents from Udaipur, 25.56 percent from Banswara and 45.60 percent from Dungerpur labelled it as bad practice while the rest kept quiet over this question (T.6.2.2.).

When this issue was judged from practical practice point of view majority regularly went for bathing & washing near one or the other water reservoir (61.73, 55.14 and 53.46 percent from the three districts) only about 17 percent did not involve in this practice (T.6.2.3).

T.6.2.2
RESPONDENTS OPINION ABOUT PRACTICE OF WASHING
CLOTHES OR TAKING BATH NEAR WATER SOURCES

OPINION	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
GOOD	1649 58.06%	342 54.98%	677 48.85%	2668 55.03%
NOT GOOD	807 28.42%	159 25.56%	632 45.60%	1598 32.96%
DO NOT KNOW/NOT REPLIED	384 13.52%	121 19.45%	77 5.56%	582 12.00%
Total	2840	622	1386	4848

T.6.2.3
PRACTICE OF FAMILIES ABOUT BATHING & WASHING
NEAR WATER SOURCES

PRACTICE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES, ALWAYS	1753 61.73%	343 55.14%	741 53.46%	2837 58.52%
NO	409 14.40%	112 18.01%	402 29.00%	923 19.04%
OCCASIONALLY	678 23.87%	167 26.85%	243 17.53%	1088 22.44%
Total	2840	622	1386	4848

Respondents have been asked to mention reasons for taking bath and washing clothes near water reservoirs. A key of codes was prepared to fit in the obtained answers. 80.96 percent families involved in this

practice on account of no tap in house & hence if they wash & bath in house they will be required to carry huge amount of water. 15.27 percent said that it was an age old practice to go to lake, pond or well for this purpose (T.6.2.4). More than one reason was mentioned by some families.

T.6.2.4
REASONS FOR WASHING & BATHING NEAR WELL, POND, LAKE

REASON	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NO TAP IN HOUSE	2431 85.59%	510 81.99%	984 70.99%	3925 80.96%
NO PLACE IN HOUSE	460 16.19%	183 29.42%	328 23.66%	971 20.02%
AGE OLD PRACTICE	401 14.15%	155 24.96%	183 13.22%	739 15.27%
AUTOMATIC WALKING	142 5.01%	8 1.29%	14 1.01%	164 3.39%
NOT KNOWN	145 5.10%	24 3.86%	170 12.26%	339 6.99%
Total Families (N)	2840	622	1386	4848

Defecating in open fields is certain to cause contamination of water. A couple of questions were asked about most preferred place for defecation and place of defecation in the families of respondents. As depicted in T.6.2.5 majority of respondents from the three districts preferred open field defecation - 66.55, 70.90 and 84.05 percent in Udaipur, Banswara and Dungerpur districts respectively. About 21 percent preferred domestic latrine. In practice, the figures for open field defecation were still higher - about 94.06 percent went for open field

defecation (Udaipur 94.58%, Banswara 91.48% and Dungerpur 94.16%) (T.6.2.6).

T.6.2.5

OPINION OF RESPONDENTS ABOUT MOST IDEAL PLACE FOR DEFECAATION

PREFERRED PLACE FOR DEFAECATION	NUMBER OF RESPONDENTS			TOTAL ⁹
	UDAIPUR	BANSWARA	DUNGERPUR	
OPEN FIELD	1890 66.55%	441 70.90%	1165 84.05%	3496 72.11%
PUBLIC LATRINE	213 7.50%	34 5.47%	84 6.06%	331 6.83%
DOMESTIC SANITARY LATRINE	737 25.95%	147 23.63%	137 9.88%	1021 21.06%
Total	2840	622	1386	4848

T.6.2.6

PLACE OF DEFECAATION IN THE FAMILIES OF RESPONDENTS

PLACE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
OPEN AIR	2686 94.58%	569 91.48%	1305 94.16%	4560 94.06%
PUBLIC LATRINE	67 2.36%	27 4.34%	30 2.16%	124 2.56%
DOMESTIC LATRINE	56 1.97%	22 3.54%	46 3.32%	124 2.56%
SOME IN LATRINE & SOME IN OPEN	31 1.09%	4 0.64%	5 0.36%	40 0.83%
Total	2840	622	1386	4848

More than half of the respondents (58.83%) were aware about disinfection of water by chemicals. This figure was maximum for Dungerpur district (70.27 percent) (T.6.2.7).

T.6.2.7
AWARENESS OF RESPONDENTS ABOUT DISINFECTION OF DRINKING WATER BY
CHEMICALS

AWARENESS	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	1453 51.16%	425 68.33%	974 70.27%	2852 58.83%
NO	1387 48.84%	197 31.67%	412 29.73%	1996 41.17%
Total	2840	622	1386	4848

Installation of hand pumps as a source of drinking water has definitely improved the situation to a great extent. It is a comparatively safer reservoir of drinking water. Fortunately 55.35, 55.47 and 58.51 percent families from Udaipur Banswara and Dungerpur project areas respectively had hand pump water as the main source of drinking water (T.6.3.1.). There is scope for more and more hand pumps to be installed so that still higher proportion of population uses it. However a point of concern is their maintenance and periodical surveillance as regards quality of water. There should be a system of regular chemicals & bacteriological monitoring of this water looking to the high mineral contents in the soil of this area and the habits of open field defecation which favor biological contamination.

Recent reports from these project areas by Prof. V.S. Durve "Status of hand pumps investigated in the three districts of south Rajasthan in respect of total & faecal coliform" indicated that water from 66.66 percent of the hand pumps was found to have coliform organisms or faecal coliform in it. Though the sample size was only 76 hand pumps yet it is a matter of concern.

Conversion of step wells into draw wells attached with pulley has gone a long way in bringing down the incidence of guineaworm disease. Only 3.80 percent families used its water for drinking purpose (T.6.2.1.). SWACH has done a good job in this direction. Covering these draw wells, their regular bleaching and a system of monitoring would further improve the quality of drinking water.

No amount of purification measures can provide us safe drinking water if we continue to pollute it at reservoir level. Hence there is urgent need to educate and check people on these issues.

6.3. WATER SAFETY AT DOMESTIC LEVEL

Each family procures its drinking water supply from some source and they store it in a vessel for using it for a particular duration of time. Drinking water filling by family is usually replenished every day/alternate day.

The quality and potability of water depends on several factors like its source, storage vessel and its cleanliness, keeping place & keeping ways, way of filtering and way of withdrawing. They all operate at domestic level. The knowledge, attitudes and practices of people as regards domestic level activities of water keeping vary from family to family. A safe & wholesome water may be rendered unsafe due to incorrect domestic level activities, while the quality may be slightly improved by sanitary domestic level activities. Unsafe (contaminated) water can cause a number of diseases. A few questions exploring these aspects were included in the family questionnaire. These aspects were further probed into by the discussions that the consultant had with family heads during his visit to some families.

The main source of drinking water of the families in all the three project areas has been hand pumps (55.35, 55.47 and 58.51 percent respectively for Udaipur, Banswara and Dungerpur). Wells were the next common source. 17.72 percent families collected drinking water from wells with pulley while 14.19 percent obtained it from lachha well without pulley, tap was the source in only about five percent families, step well was source in 3.80 percent while ponds & others were the source in 2.35 percent families. Comparatively more families of Dungerpur drank safer water (T.6.3.1.).

T.6.3.1
DRINKING WATER SOURCE OF FAMILIES OF RESPONDENTS

DRINKING WATER SOURCE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
TAP	130 4.58%	20 3.22%	89 6.42%	239 4.93%
PUBLIC TAP	28 0.99%	1 0.16%	7 0.51%	36 0.74%
HAND PUMP	1572 55.35%	345 55.47%	811 58.51%	2728 56.27%
STEP WELL	132 4.65%	14 2.25%	38 2.74%	184 3.80%
LACCHA WELL (WITHOUT PULLEY)	414 14.58%	100 16.08%	174 12.55%	688 14.19%
FACCA WELL (WITH PULLEY)	491 17.29%	104 16.72%	264 19.05%	859 17.72%
POND & OTHER	73 2.57%	38 6.11%	3 0.22%	114 2.35%
Total	2840	622	1386	4848

Alternate sources were to be utilised by families in summer and drought time when the hand pump water at some places was not obtainable. Since the areas usually still have moderate rainfall, water scarcity is not very acute. Hand pumps have come as a big relief for villagers as far as drinking water supply and its quality is concerned. More and more hand pumps have been dug in as near to people's houses as possible. The maintenance and repair of them is also very important.

SWACH has done a commendable job of converting step wells in to draw wells, construction of hand pumps and creating and training a band of hand pump mechanics at village level.

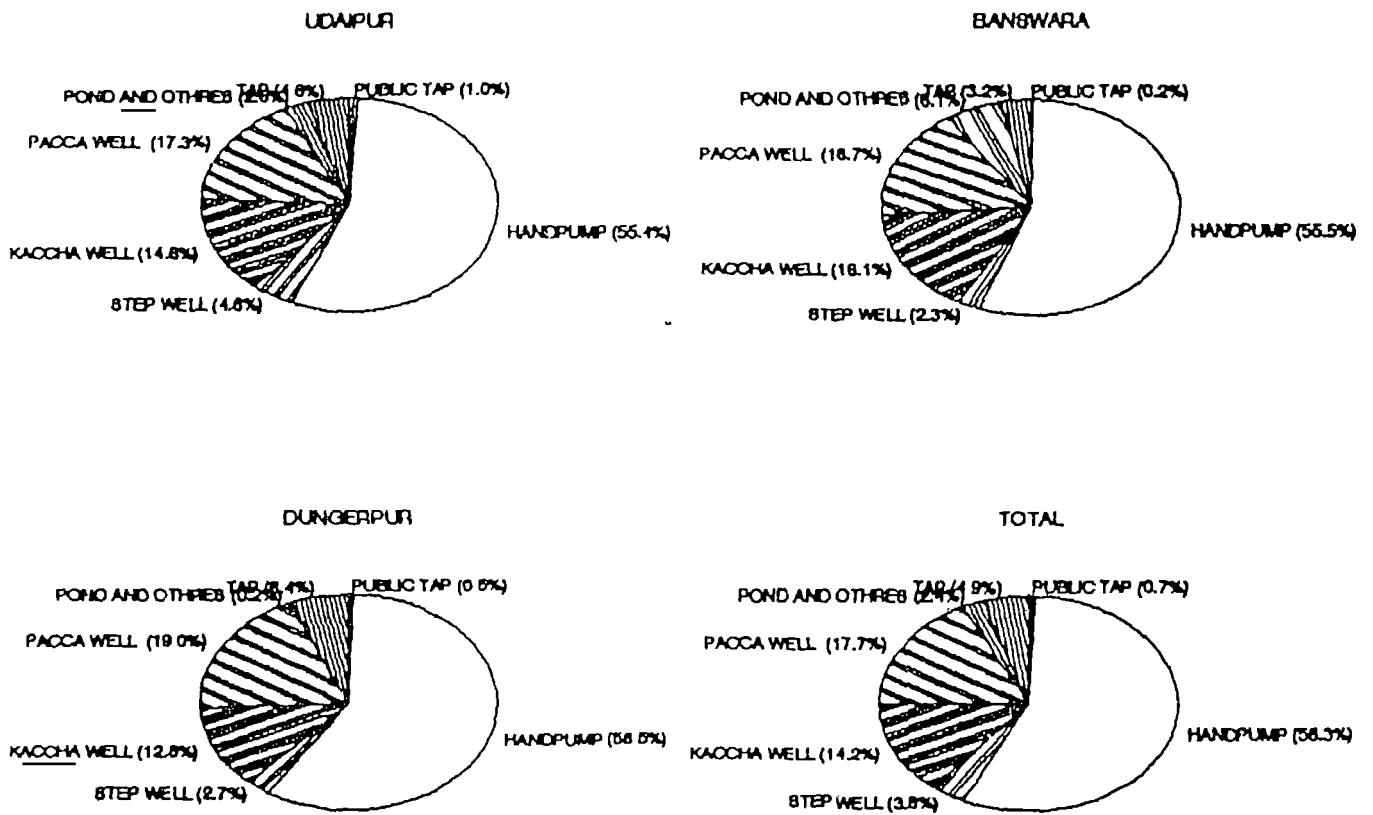
Since most families had to go out to fetch water, the water fetcher had to walk some distance and spare some time for this family activity.

It was enquired from the respondents that what this distance was (both ways) and how much time per round (both ways including filling and waiting time) was spent for it. About 90 percent families did this task within 30 minutes & another 7.52 percent within 60 minutes. Only 1.41 percent (5.65 percent in Banswara project area) spent more than two hours for this task (T.6.3.2). In terms of distance that the water fetcher had to travel, about 9.32 percent had to travel up to 0.5 km for it. 88.37 percent up to one kilometer and 0.43 percent more than two kilometers (T.6.3.3.).

T.6.3.2
TIME CONSUMED IN FETCHING DRINKING WATER

TIME CONSUMED	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
LESS THAN 0.5 HR.	2489 91.84%	511 84.88%	1124 86.66%	4124 89.47%
0.5-1 HR.	158 5.83%	52 8.64%	137 10.56%	347 7.52%
1-1.5 HRS.	21 0.77%	5 0.83%	25 1.93%	51 1.11%
1.5-2 HRS.	13 0.48%	0 0.00%	9 0.69%	22 0.48%
MORE THAN 2 HRS.	29 1.07%	34 5.65%	2 0.15%	65 1.41%
Total	2710	602	1297	4609

DRINKING WATER SOURCE OF FAMILIES OF RESPONDENTS



T.6.3.3
DISTANCE TRAVELLED FOR FETCHING DRINKING WATER

DISTANCE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
LESS THAN 0.5 K.M.	208 7.67%	58 9.63%	164 12.64%	430 9.32%
0.5-1 K.M.	2449 90.36%	529 87.87%	1095 84.43%	4073 88.37%
1-1.5 KMS.	20 0.73%	6 0.99%	27 2.08%	53 1.15%
1.5-2 KMS.	30 1.10%	2 0.33%	1 0.07%	33 0.71%
MORE THAN 2 KMS.	3 0.11%	7 1.16%	10 0.77%	20 0.43%
Total	2710	602	1297	4609

The consultant during his visits to the villages enquired & observed that mostly the females of the house went out to fetch water. They carried metal/earthen pots on their heads for this purpose. The filling utensils were usually washed at the source. Mostly two pots were carried at a time but some times they carry three, two on the head & one controlled between the side of chest wall & arm. Sometimes children of the family also accompany women & helped in the task. It was a fun for them. Women during menstruation and for some days after delivery were forbidden to carry on this task.

The respondents were asked to mention methods by which water could be kept safe at domestic level. All replies were not spontaneous, a bit of prompting helped in extracting the answers. A fairly good number of respondents knew about filtration of water covering water, keeping it at elevated place and withdrawing water with clean utensil. While 42.27 percent of respondents mentioned about filtration of water by funnels,

23.85 percent knew about double layered filter cloth to filter water. By keeping water covered, we can keep it safe at domestic level was the view of 83.02 percent of respondents. Only a little over quarter (27.35 percent) made a mention of ladle to keep water safe. 467 (9.63%) did not reply. A few respondents mentioned use of alum $\text{Al}_2(\text{SO}_4)_3$ to keep water safe (1.6.3.4).

T.6.3.4
KNOWLEDGE OF RESPONDENTS ABOUT HOW TO KEEP DRINKING WATER SAFE AT HOME

METHOD	NUMBER OF RESPONDENTS			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
FILTER WITH CLOTH	712 25.07	147 23.95	208 15.00	1067 22.05
FILTER WITH DOUBLE LAYERED CLOTH	817 28.76	113 18.16	312 22.51	1242 25.87
FILTER WITH FUNNEL	1005 35.38	207 33.27	817 58.94	2029 42.27
KEEP WATER COVERED	2470 86.97	403 64.77	1112 80.23	3985 83.02
KEEP WATER AT ELEVATED PLACE	1872 65.91	513 82.47	879 63.41	3264 67.32
WITHDRAW WITH CLEAN UTENSIL	1703 59.96	312 50.16	817 58.94	2832 58.41
WITHDRAW WITH LADLE	627 22.07	278 44.69	408 29.43	1313 27.35
WASH HANDS BEFORE TAKING OUT WATER	30 1.06	10 1.60	21 1.51	61 1.25
KEEP UTENSIL & WITHDRAWING UTENSIL CLEAN	37 1.30	35 5.62	42 3.03	114 2.35
ADD ALUM/POT PREMAGNATE	12 0.42	5 0.80	7 0.50	24 0.49
NOT REPLIED	240 8.45	72 11.57	155 1.18	467 9.63
Total NUMBER	2840	622	1386	4848

There are many traditional practices that continue in families. One such practice is to keep drinking water at an elevated place. Most families in all the project areas kept drinking water at elevated place. Minimum families of Banswara project area (80.06%) and maximum families in Dungerpur project area (95.24%) had separate elevated place called

"Harandah" to keep drinking water pots (T.6.3.5). The consultant also observed this fact and in many families that he visited, found well constructed and clean pots. They were mostly constructed outside the main room.

PROVISION OF ELEVATED PLACE FOR KEEPING DRINKING WATER	NUMBER OF FAMILIES			
	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
YES	2730 6.13%	596 95.82%	1366 98.56%	4692 96.78%
NO	110 3.87%	26 4.18%	20 1.44%	156 3.22%
Total	2840	622	1386	4848

In most families there was separate utensil to keep drinking water- 92.02 percent (Udaipur 93.06, Banswara 80.06 and Dungerpur 95.24 percent). In about 7.98 percent families the water from same utensil was also used for cooling and utensil washing purpose (T.6.3.6). This situation was seen in 19.94 percent families of Banswara. During visit, the consultant observed in some families that the water kept in metal pot (Charu/dekchi) & lying near cooling place was used for drinking purpose also.

Drinking water utensil as per the statement of respondents was cleaned daily in most of the families (T.6.3.7). However the consultant and supervisors during their visit to families found that the water keeping utensil were not that clean in about 25 percent of families as a daily cleaned utensil would look like.

T.6.3.6
UTENSIL FOR DRINKING WATER KEEPING

UTENSIL	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
SEPARATE	2645 93.06%	498 80.06%	1320 95.24%	4461 92.02%
NOT SEPARATE	197 6.94%	124 19.94%	66 4.76%	387 7.98%
Total	2840	622	1386	4848

T.6.3.7
CLEANING OF DRINKING WATER UTENSIL

CLEANING	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
CLEANED DAILY	2804 98.73%	615 98.87%	1383 99.78%	4802 99.05%
NOT CLEANED DAILY	36 1.27%	7 1.13%	3 0.22%	46 0.95%
Total	2840	622	1386	4848

Drinking water is usually kept in earthen pitchers in our country. They are timely changed. When the respondents were asked about frequency of changing, 37.40 percent replied that they change it when it breaks. This response was given mostly by the families of Banswara Project area (45.66 percent) and minimum from Dungerpur project area (19.84 percent). In 33.83 percent families they are changed in about three months time. Change at this frequency was observed in 48.70 percent of Dungerpur, 28.91 percent of Udaipur and 23.15 percent families of Banswara project area. 5.47 percent families said that they change it on important festivals also (T.6.3.8).

T.6.3.8
FREQUENCY OF CHANGING EARTHEN POTS IN FAMILIES

FREQUENCY OF CHANGING	NUMBER OF FAMILIES			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
MONTHLY	250 8.80%	28 4.50%	256 18.47%	534 11.01%
EVERY THREE MONTH	821 28.91%	144 23.15%	675 48.70%	1640 33.83%
EVERY SIX MONTH	260 9.15%	113 18.17%	152 10.97%	525 10.83%
EVERY YEAR	37 1.30%	24 3.86%	10 0.72%	71 1.46%
ON FESTIVALS	218 7.68%	29 4.66%	18 1.30%	265 5.47%
AS AND WHEN IT BREAKS	1254 44.15%	284 45.66%	275 19.84%	1813 37.40%
Total	2840	622	1386	4848

All except 3.16 percent families kept the drinking water covered. The best performance in this respect again came from Dungerpur project area families where only 0.65 percent kept it uncovered (T.6.3.9).

T.6.3.9
COVERING OF DRINKING WATER UTENSIL

PRACTICE OF COVERING	NUMBER OF FAMILIES			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
KEPT COVERED	2744 96.62%	574 92.28%	1377 99.35%	4695 96.84%
NOT KEPT COVERED	96 3.38%	48 7.72%	9 0.65%	153 3.16%
Total	2840	622	1386	4848

The drinking water obtained from various sources besides having dissolved and microscopic impurities also have suspended impurities. Cyclops which can be seen by naked eye are also contained in water from

various sources. Though ordinary filtration would not be able to retain the microscopic germs of various waterborne diseases, it certainly filter out suspended impurities including the cyclops (the vector in the causation of guineaworm). Culturally and aesthetically also drinking water before filling it in the pitcher is usually filtered. The respondent's knowledge, attitudes and practices on the aspect of filtering of drinking water were assessed by asking them a few questions related to this issues. Majority (98.56 percent) of respondents felt that drinking water should be definitely filtered, 19(0.39 percent) felt no need of it while 51 (1.05 percent) were uncertain in their minds about it (T.6.3.10).

T.6.3.10

KNOWLEDGE ABOUT NECESSITY TO FILTER DRINKING WATER

KNOWLEDGE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	2802 98.66%	618 99.36%	1358 97.98%	4778 98.56%
NO	7 0.25%	3 0.48%	9 0.65%	19 0.39%
UNCERTAIN	31 1.09%	1 0.16%	19 1.37%	51 1.05%
Total	2840	622	1386	4848

The respondents were further asked as to which is the best filtering material in their opinion. In the opinion of 53.28 percent respondents, funnel with filter was the best while in the opinion of 16.90 percent respondents, double layered cloth was the best. When figures for these two best identified filter material for different project areas are considered, it is found that Banswara had the highest figure for funnel with filter (72.19 percent), Dungerpur had minimum

figure for it (37.59 percent). This table totally turned when figures for double layered cloth were considered - maximum for Dunderpur (22.88 percent and minimum for Banswara project area (7.56 percent) 15.60 percent respondents from Udaipur, 11.41 percent from Banswara and 11.47 percent from Dunderpur felt that there is no need to filter water (T.6.3.11). Though about 14 percent respondents felt that there is no need to filter drinking water (T.6.3.11) it was regularly filtered in 97.26 percent families while 1.49 percent filtered it irregularly (T.6.3.12). The figures for the three project areas were very much similar.

1.6.3.11
OPINION OF RESPONDENTS ABOUT BEST FILTERING
MATERIAL FOR DRINKING WATER

FILTER MATERIAL	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNDERPUR	
NO NEED TO FILTER	443 15.60%	71 11.41%	159 11.47%	673 13.88%
ORDINARY CLOTH	329 11.58%	55 8.84%	389 28.07%	773 15.94%
DOUBLE LAYERED CLOTH	455 16.02%	47 7.56%	317 22.88%	819 16.90%
FUNNEL WITH FILTER	1613 56.80%	449 72.19%	521 37.59%	2583 53.28%
Total	2840	622	1386	4848

T.6.3.12
PRACTICE OF FILTERING DRINKING WATER IN FAMILIES

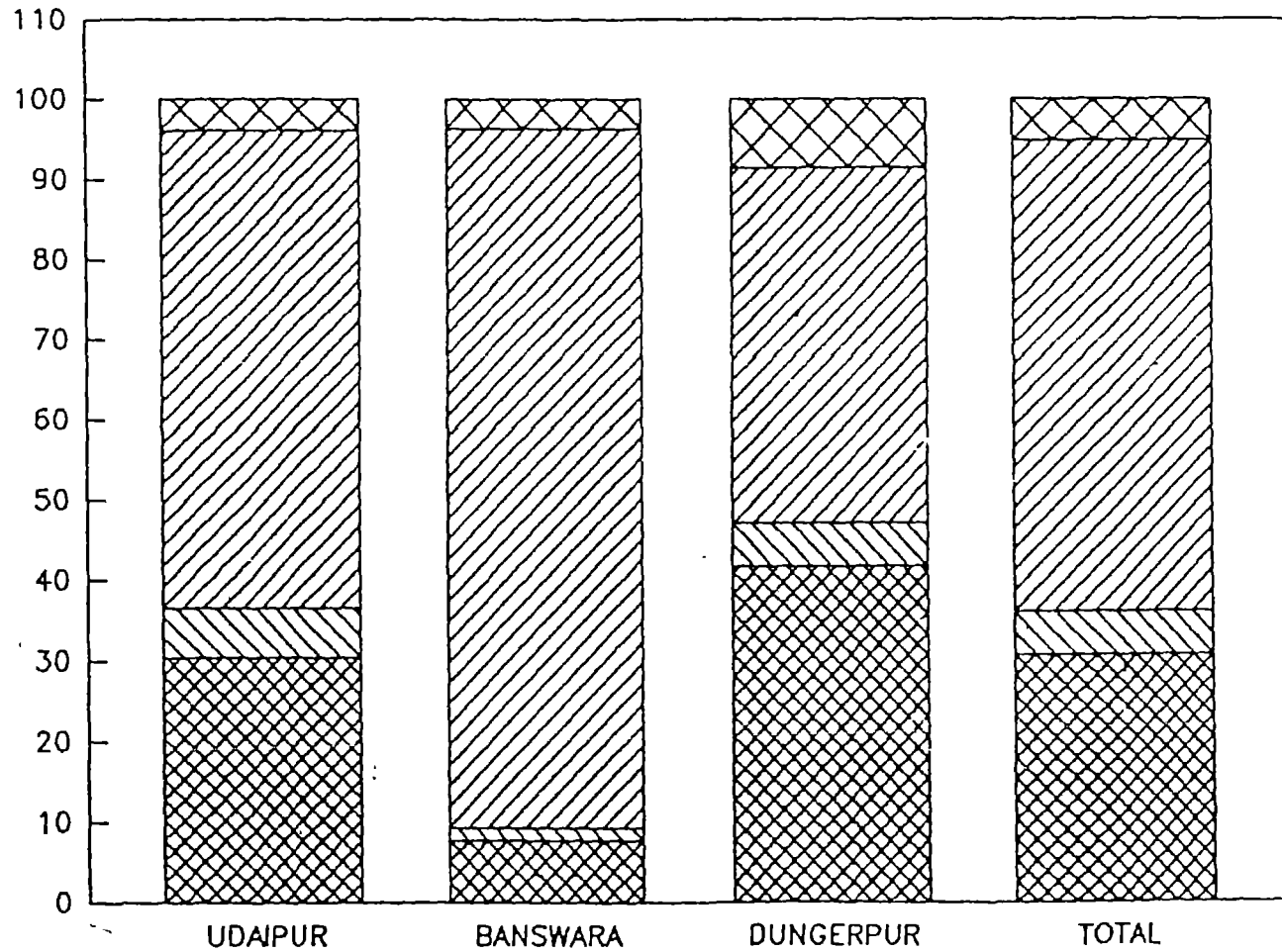
PRACTICE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES.ALWAYS	2747 96.73%	612 98.39%	1356 97.84%	4715 97.26%
NO	47 1.65%	1 0.16%	13 0.94%	61 1.26%
YES.OCCASIONALLY	46 1.62%	9 1.45%	17 1.23%	72 1.49%
Total	2840	622	1386	4848

The respondents were further asked to mention the filter material used to filter water in their families. In 59.61 percent families of Udaipur area, 86.98 percent of Banswara and 44.44 percent families of Dungerpur area, the filter material used was funnel with filter. 41.70 percent families of Dungerpur filtered it with ordinary cloth as against 7.72 percent families of Banswara project area (T.6.3.13) Drinking water was not filtered in 5.16 percent families.

T.6.3.13
FILTER MATERIAL USED TO FILTER DRINKING WATER IN FAMILIES

FILTER MATERIAL USED	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
ORDINARY CLOTH	862 30.35%	48 7.72%	578 41.70%	1488 30.69%
DOUBLE LAYERED CLOTH	176 6.20%	10 1.61%	74 5.34%	260 5.36%
FUNNEL WITH FILTER	1693 59.61%	541 86.98%	616 44.44%	2850 58.79%
NOT FILTERED	109 3.84%	23 3.70%	118 8.51%	250 5.16%
Total	2840	622	1386	4848

FILTER MATERIAL USED TO FILTER DRINKING WATER IN FAMILIES



ORDINARY CLOTH



DOUBLE LAYRED CLOTH



FUNNEL WITH FILTER

The consultant and supervisors also found funnel with filter as the most common material to filter water. However its cleanliness was not adequately maintained in almost two third of the families. In two families, the filter of the bottom nut was punctured with pin to improve the filtration rate.

A utensil is needed to withdraw water from the pitcher. Different types of utensils are used for this purpose. Opinion of respondents was sought as regards best utensil to withdraw water with. In the opinion of 73.97 percent respondents, ladle was the best utensil. Maximum respondents from Udaipur area (77.96%) and minimum from Dunderpur project area (66.81%) thought so. However in the opinion of 9.53 percent respondents, any item was equally good (T.6.3.14).

T.6.3.14
OPINION OF RESPONDENTS ABOUT BEST UTENSIL FOR
WITHDRAWING WATER FROM PITCHER

UTENSIL	NUMBER OF RESPONDENTS			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
LADLE	2214 77.96%	446 71.70%	926 66.81%	7586 73.97%
GLASS	264 9.30%	91 14.63%	368 26.55%	723 14.91%
GADDI	58 2.04%	0 0.00%	19 1.37%	77 1.59%
ANY ITEM	304 10.70%	85 13.67%	73 5.27%	462 9.53%
Total	2840	622	1386	4848

Though maximum respondents felt that ladle is the best utensil to withdraw water from pitcher, in practice it was found only in less than ten percent families (maximum 13.92% in Dunderpur project area & minimum 3.22% in Banswara), lotha (a type of small round tumbler) was the most

commonly used item (60.58%), glass was used in 30.01 percent families (T.6.3.15). This fact was also confirmed by consultant & supervisors.

T.6.3.15
UTENSIL USED FOR WITHDRAWING DRINKING WATER IN FAMILIES

UTENSIL USED	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
GLASS	825 29.05%	255 41.00%	375 27.06%	1455 30.01%
LOTHA	1772 62.39%	347 55.79%	818 59.02%	2937 60.58%
LADLE	243 8.56%	20 3.22%	193 13.92%	456 9.41%
Total	2840	622	1386	4848

In order to support and improve the drinking water supply of the families, amongst various activities, SWACH also managed to distribute some items related to water safety, free of cost or in lieu of labour provided in the construction of compost pit/soak pit/grahvatika/plantation near hand pump or digging in of holes for tree plantation. The items were a specially designed plastic funnel with filter (SWACH developed a funnel type filter with a removable filter cloth cap and fabricated it. As filter, bolting sill. No. 30 was used), laddle & the bottom nut of filter (as a replacement).

92.60 percent studied families (91.63% of Udaipur, 98.20 percent of Banswara and 92.71% in Dungerpur project were provided with some or the other item of water safety by SWACH (T.6.3.16). On discussion with officials of SWACH it was found out that funnel with filter was the most commonly distributed item, only a few families were provided laddle. This vast disparity in the distribution of the two items was probably the

reason why filter was available and used in majority of families. ladle was available in only a few.

T.6.3.16
ITEMS PROVIDED BY SWACH IN CONNECTION WITH WATER SAFETY

ITEMS	PERCENTAGE			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
PROVIDED	91.63%	98.20%	92.71%	92.60%
NOT PROVIDED	8.37%	1.80%	7.29%	7.40%
Total	100.00%	100.00%	100.00%	100.00%

The items that were provided by SWACH were regularly used by about 85 percent of the families. In the Banswara project area maximum families used them regularly (96.14 percent) while 85.42 percent in Udaipur and 76.84 percent in Dunderpur project area used them regularly (T.6.3.17).

T.6.3.17
USE OF ITEMS PROVIDED BY SWACH

USE	PERCENTAGE OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
REGULARLY USED	85.42%	96.14%	76.84%	84.34%
NOT USED	10.28%	0.96%	19.12%	11.61%
OCCASIONALLY	4.30%	2.89%	4.04%	4.04%
Total	100.00	100.00	100.00	100.00

About thirty percent of families who received some or the other item from SWACH, felt some difficulty in procuring the replenishment, about forty percent felt no difficulty and another thirty percent did not need the replenishment so far (T.6.3.18). On probing about the difficulties that were encountered, most respondents said that it was

not available when demanded and some felt that it was not delivered at their respective homes. The community should not be over promised and made over dependent. It was felt by the consultant on his visits to villages that the community people have become too dependent and always expect some benefit or the other for any thing that we want from them though it may be for their own benefit. Social marketing of these items supported by education and advertisement may help community to actively participate rather than be a passive gainer.

T.6.3.10

DIFFICULTY ENCOUNTERED IN PROCURING REPLENISHMENT OF
ITEMS/PARTS PROVIDED BY SWACH

DIFFICULTY ENCOUNTERED	PERCENTAGE OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	26.16%	26.21%	39.54%	29.97%
NO	38.20%	48.39%	38.02%	39.46%
NOT YET NEEDED	35.63%	25.40%	22.44%	30.55%
Total	100.00	100.00	100.00	100.00

Over all it can be said that drinking water keeping at domestic level has been moderate. If for some issues one project area families showed better performance, the other was better on other issues. However it was a matter of concern that while majority of families filtered water through comparatively reliable material, ladle was missing in most of the families as withdrawing utensil.

The water keeping in almost eighty percent of restaurants (dhabas), schools and offices that were visited by consultant and supervisors were found to be unsatisfactory. The drinking water pitchers/tanks were dirty to very dirty, not properly covered, the filtration was not properly done and ladle was not available in almost all of them. The personal

hygiene regarding fingers and nails of the dhabba waiters was poor in 27 of the 30 waiters (T.6.3.19).

T.6.3.19

WATER KEEPING, IN SMALL RESTAURANTS (DHABAS), SCHOOLS AND A.W. CENTRES

WATER KEEPING	SMALL RESTAURANTS	SCHOOLS	AW CENTRES	TOTAL
SATISFACTORY	2 13.33%	2 40.00%	1 20.00%	5 20.00%
NOT SATISFACTORY	13 86.66%	3 60.00%	4 80.00%	20 80.00%
Total,	15	5	5	25

6.4 KNOWLEDGE OF RESPONDENTS ABOUT WATERBORNE DISEASES

A good number of infectious diseases of digestive system viz. diarrhoeas, dysentery, typhoid, cholera, jaundice, intestinal worms, poliomyelitis, amoebiasis, giardiasis etc. are collectively termed as "waterborne diseases" though besides water other agencies like fly, dirty fingers, filth and contaminated food are also involved in their transmission and causation. Water management at different levels has been identified as effective intervention technology to control the magnitude of these diseases. Water management incorporates two aspects-- minimising its pollution and its purification. No amount of purification measures alone would be successful if pollution freely continues. For minimising pollution community support is a must. Before seeking community support, it would be logical to know whether the community also feels what we consider to be correct. If they don't feel alike, the first task would be to educate and convince them for it. Some questions were therefore included in the family schedule to know the level of knowledge that the community possess in this regard i.e. do they feel that water which is so much essential for life can cause diseases, and does men pollute water and how etc.

Since diarrhoeas are a very common disorder found in India and guineaworm disease is a local endemic disease, some questions about their causation, prevention & management have also been included. The findings as regards these issues are discussed below.

Dirty or contaminated water can cause diseases was in the knowledge of fairly a good number of respondents. 71.48% respondents from Udaipur project area, 77.65% from Banswara and 83.48% from Dunderpur held this view. Out of the rest a few said 'No' for it while about 22.55% did not

T.6.4.1
CONTAMINATED WATER AS A CAUSE OF DISEASES

CAN CONTAMINATED WATER BE THE CAUSE OF DISEASES	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	2030 71.48%	483 77.65%	1157 83.48%	3670 75.70%
DO NOT KNOW/NOT REPLIED	810 28.42%	139 22.35%	229 16.52%	1178 24.30%
Total	2840	622	1386	4848

T.6.4.2
MEN'S ROLE IN POLLUTING WATER

ARE MEN MAINLY RESPONSIBLE FOR POLLUTING WATER	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	1990 70.07%	413 66.40%	1197 86.36%	3600 74.26%
DO NOT KNOW/NOT REPLIED	850 29.93%	209 33.60%	189 13.64%	1248 25.75%
Total	2840	622	386	4848

give any reply to this question (1.6.4.1). A near identical number (70.07, 66.40 and 86.36 percent) agreed that men play an important role in polluting water at various levels. The rest either had negative opinion on this issue or were uncertain in their minds (T.6.4.2). These figures give us an idea that a big segment of community is aware about contaminated water as a cause of diseases & are also aware that men by his wrong activities pollute water. It was further tried to know as to how men pollute water. The obtained answers were fitted in to the key of codes incorporating the common known possible causes of water pollution. About 25.75% respondents did not know how men pollute water. By entry of urine/worm patient in water source, men pollute water was the commonest answer. This answer was given by 45.15% respondents. By defaecating near water source, men pollute water was known to about forty percent of respondents (41.00%). 22.54 percent respondent from Udaipur, 8.1 percent from Banswara and 11.40 percent respondents from Dungeerpur felt that by spreading dirtiness near water sources men pollute water. By dipping finger lips in to water pitcher, men pollute water, but the fact of polluting water was known to less than two percent of respondents.

T.6.4.4
KNOWLEDGE OF RESPONDENTS ABOUT ROLE OF DOMESTIC FLY IN CAUSING
WATERBORNE DISEASES.

ROLE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	770 27.11%	188 30.23%	214 15.44%	1172 24.17%
NO	2070 72.89%	434 69.77%	1172 84.56%	3676 75.83%
Total	2840	622	1386	4848

Long and dirty nails have also been recognised as an important cause of WBD. To a question that do long & dirty nails play a role in the causation of WBD, only about twenty five percent respondents agreed to this statement spontaneously & on a little probing. Dungerpur respondents fared worst to this question - 12.99 percent T.6.4.5.

T.6.4.5
KNOWLEDGE ABOUT LONG & DIRTY NAILS AS A CAUSE OF WATER BORNE DISEASE

ROLE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NO	2025 71.30%	437 70.26%	1206 87.01%	3668 75.66%
YES	815 28.70%	185 29.59%	180 12.99%	1180 24.34%
Total	2840	622	1386	4848

There are a number of diseases which are known to be caused by contaminated water. They all have some symptoms. Even common men is aware with these symptoms and the names of some of the common diseases. The knowledge of the respondents in this regard was assessed by asking respondents to name some diseases/symptoms in the causation of which contaminated water play an important role. A high percentage of

T.6.4.3
HOW MEN POLLUTE WATER

	N =	UDAIPUR 2840	BANSWARA 622	DUNGERPUR 1386	TOTAL 4848
BY DEFECATING NEAR WATER SOURCE		985 34.68%	231 37.13%	772 55.70%	1988 41.00%
BY WASHING CLOTHES NEAR WATER SOURCE		647 22.78%	229 36.81%	611 44.08%	1487 30.67%
BY WASHING UTENSIL NEAR WATER SOURCE		17 0.60%	6 0.96%	15 1.08%	38 0.78%
BY THROWING INDUSTRIAL REFUSE IN WATER		78 2.75%	9 1.45%	9 0.65%	96 1.98%
BY DIPPING HANDS IN STORAGE VESSEL		28 0.99%	13 2.09%	41 2.96%	82 1.69%
BY ENTRY OF GUINEA WORM PATIENT IN WATER SOURCE		1072 37.75%	322 51.77%	795 57.35%	2189 45.15%
BY BATHING OF ANIMALS		212 7.46%	57 9.41%	222 16.10%	493 10.17%
BY SPREADING DIRTINESS NEAR WATER SOURCE		640 22.54%	51 8.20%	158 11.40%	849 17.51%
NOT REPLIED		850 29.93%	209 33.60%	189 13.64%	1248 25.75%
TOTAL NUMBER		2840	622	1386	4848

Domestic fly is also an important carrier of WDD, but this fact was known to only 770 of the 2840 respondents (27.11%) of Udaipur project families & 30.23 and 15.44 percent of Banswara and Dungerpur families (T.6.4.4).

Majority of the respondents felt that hand pump water is the safest water to drink in order to keep away from disease. Overall 86.34 percent respondents held this view. This figure was above eighty percent for all project areas with maximum figures from Udaipur project area - 88.87 percent. 6.15 percent mentioned well water to be the best, while 4.15 percent mentioned tap water as best water (T.6.4.7). Since tap water is a rare facility found in remote villages, many respondents are unaware about it. Step well water was rated as most unsafe. 79(1.63%) did not reply to this question while 24 (0.50 percent) thought that water from all sources was identical (T.6.4.7).

T.6.4.7

KNOWLEDGE OF RESPONDENTS ABOUT RELATION OF SOURCE OF DRINKING WATER TO DISEASE PREVENTION

BEST SOURCE OF DRINKING WATER FOR DISEASE PREVENTION	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
WELL	121 4.26%	64 10.29%	113 8.15%	298 6.15%
STEP WELL	23 0.81%	6 0.96%	31 2.24%	60 1.24%
TAP	112 3.94%	11 1.77%	78 5.63%	201 4.15%
HAND PUMP	2524 88.87%	510 81.99%	1152 83.12%	4186 86.34%
ALL EQUAL	17 0.60%	3 0.48%	4 0.29%	24 0.50%
DO NOT KNOW/NOT REPLIED	43 1.51%	28 4.50%	8 0.58%	79 1.63%
Total	2840	622	1386	4848

respondents (75.54%) mentioned malaria as a waterborne disease which is wrong. Malaria is a mosquito transmitted disease (which breeds in water collection). Guinea worm as a waterborne disease was known to 78.90% (78.57%) respondents while loose motion (diarrhoea) was mentioned as WB by 1970 of the 4848 respondents (40.80%). Of these 40.32 percent were from Udaipur, 43.40 percent from Banswara and 40.62 percent from Dungerpur. Only 4.13 percent could name jaundice (piliya), 3.77 percent cholera (Haiza) and 4.35 percent dysentery (blood and mucous mixed motion), as waterborne disease. 296 respondents (6.11 percent) did not give any reply to this question (T.6.4.6).

1.6.1.7
KNOWLEDGE OF RESPONDENT ABOUT WATER BORNE DISEASE & SYMPTOMS

W B D/ SYMPTOMS	N =	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
LOOSE MOTION		2840	622	1386	4848
		1145	270	563	1978
		40.32%	43.40%	40.62%	40.80%
GUINEAWORM		2215	472	1122	3809
		78.90%	75.88%	80.95%	78.57%
DYSENTERY		120	15	76	211
		4.20%	2.40%	5.58%	4.35%
TYPHOID		11	4	26	41
		0.37%	0.64%	1.88%	0.85%
CHOLERA		38	62	83	183
		1.34%	9.97%	5.99%	3.77%
JAUNDICE		63	39	113	215
		2.22%	6.27%	8.15%	4.43%
INTESTINAL WORMS		4	2	1	7
		0.14%	0.32%	0.07%	0.14%
POLIO		11	2	51	64
		0.39%	0.32%	3.68%	1.39%
MALARIA		1987	451	1224	3662
		67.86%	72.51%	88.31%	75.54%
DO NOT KNOW		140	82	74	296
		4.93%	13.18%	5.34%	6.11%

About 22.05 percent respondents either spontaneously or on getting a hint could make a mention about most causative factors of diarrhoeas like contaminated water, contaminated food, long and dirty nails and unhygienic bottle feeding (22.57, 18.65 and 22.51 percent for the three areas). However, 31.84 percent respondents of Udaipur, 23.79 percent of Banswara and 12.20 percent of Dungerpur did not know about any factor. It was distressing to note that very few respondents attributed diarrhoea to unhygienic bottle feeding or dirty and long nails which have been recognised as very important causes of childhood diarrhoea (T.6.4.8). 1092 (22.52%) respondents further mentioned contaminated food as a cause of diarrhoeas. We can thus say that the knowledge of respondents about causation of diarrhoea was not satisfactory.

T.6.4.8
KNOWLEDGE OF RESPONDENTS ABOUT DIFFERENT
CAUSATIVE FACTORS OF DIARRHOEAS

CAUSATIVE FACTORS	NUMBER OF RESPONDENTS			
	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
CONTAMINATED WATER	909 32.01%	301 48.39%	827 59.67%	2037 42.02%
CONTAMINATED FOOD	580 20.42%	151 24.27%	361 26.04%	1092 22.52%
DIRTY & LONG NAILS	183 6.44%	75 15.27%	211 15.22%	469 10.08%
UNHYGIENIC BOTTLE FEEDING	223 7.85%	121 19.45%	196 14.14%	540 11.13%
ALL ABOVE	641 22.57%	116 18.65%	312 22.51%	1069 22.05%
DO NOT KNOW	904 31.84%	148 23.79%	169 12.20%	1221 25.18%
Total respondents (N)	2840	622	1386	4848

Feeding is an important part of diarrhoea management. It is though on scientific grounds that a diarrhoea case should be fed with normal routine diet besides plenty of liquids. Only a little over half of the respondents (55.16 percent) had moderately correct knowledge about feeding of diarrhoea case. 51.97 percent respondents of Udaipur, 47.59 percent of Banswara and 29.08 percent of Dunderpur area had wrong knowledge about feeding of diarrhoea (T.6.4.9). Respondents of Dunderpur fared the best.

1.6.4.7
KNOWLEDGE ABOUT FEEDING OF DIARRHOEA CASE

KNOWLEDGE	NUMBER OF RESPONDENT			TOTAL
	UDAIPUR	BANSWARA	DUNDERPUR	
CORRECT KNOWLEDGE	1365 48.06%	326 52.41%	983 70.92%	2674 55.16%
WRONG KNOWLEDGE	1475 51.93%	296 47.59%	403 29.08%	2174 44.84%
Total	2840	622	1386	4848

Oral rehydration solution (ORS) was a highly hailed therapy for management of diarrhoea cases at domestic level. It was hailed as a discovery that would save lives of millions of children each year who used to succumb to death due to diarrhoea and dehydration. ORS was advertised extensively at all levels through all medias as "

". However, only 30.14 percent respondents of Udaipur, 28.96 percent of Banswara and 39.97 percent of Dunderpur project area were aware about ORS. Rest did not know about it inspite of mass advertisement (T.6.4.10). The respondents who were aware about ORS were further interrogated, if they knew about the various contents of ORS and their proportion. It was distressing and disappointing to note that only

151 out of 1590 (9.49%) could name all the contents of ORS, the rest had incomplete knowledge about the contents & their proportion (T.6.4.11). It is very important that ORS should be correctly constituted otherwise instead of benefitting it may harm the patient. Knowledge of respondents on this issue was poor in all the project areas.

T.6.4.10
AWARENESS ABOUT ORS

AWARENESS ABOUT ORS	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	306 30.14%	180 28.94%	554 39.97%	1590 32.80%
NO	1984 69.86%	442 71.06%	832 60.03%	3258 67.20%
Total	2840	622	1386	4848

T.6.4.11
KNOWLEDGE ABOUT CONTENTS OF ORS

KNOWLEDGE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
KNOW ALL CONTENTS	69 8.06%	36 20.00%	46 8.30%	151 9.49%
KNOW SOME CONTENTS	787 91.94%	144 80.00%	508 91.70%	1439 90.50%
Total	856	180	554	1590

Guineaworm disease has been an endemic disease of this area. It has been a crippling disease which used to disable thousands each year and was a cause of economic and manpower loss. It was for the control of this disease that the SWACH project was launched in 1986 in Banswara and Dungerpur districts. Udaipur district was also included in 1988. The project has been able to reduce the incidence of this disease considerably and is on the verge of its eradication.

Majority of the respondents from each district were aware about the fact that guineaworm disease is caused by contaminated water. Overall 87.00 percent respondents agreed with this fact while 13.00 percent disagreed with it (T.6.4.12). Knowledge of respondents from Dungerpur was found to be the best.

T.6.4.12
KNOWLEDGE OF RESPONDENTS ABOUT RELATIONSHIP OF CONTAMINATED
WATER TO CAUSATION OF GUINEAWORM DISEASE

KNOWLEDGE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	2459 86.58%	497 79.90%	1262 91.05%	4218 87.00%
NO	381 13.42%	125 20.10%	124 8.95%	630 13.00%
Total	2840	622	1386	4848

Water from certain sources is notorious for guineaworm transmission. To a question that which sources of drinking water are most related to guineaworm causation, over sixty five percent blamed step well and pond water for it. 22.88 percent thought well water to be responsible. Surprisingly 41.77 percent respondents from Dunge held this view (T.6.4.13). Tap water and hand pump water were considered as safest.

T.6.4.17
KNOWLEDGE ABOUT RELATIONSHIP OF SOURCE OF DRINKING
WATER & GUINEAWORM DISEASE

SOURCE OF DRINKING WATER	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
TAP	43 1.51%	5 0.00%	27 1.95%	75 1.55%
WELL	437 15.39%	93 14.95%	579 41.77%	1109 22.88%
HAND PUMP	67 2.36%	15 2.41%	42 3.03%	124 2.56%
STEP WELL	1696 59.72%	222 35.69%	578 43.15%	2516 51.90%
POND	458 16.13%	179 28.78%	78 5.63%	715 14.75%
DO NOT KNOW	139 4.89%	108 17.36%	62 4.47%	309 6.37%
Total	2840	622	1386	4848

An attempt was made to assess the knowledge of the respondents about preventive measures for guineaworm control. Filtering water with double layered cloth or funnel fitted with filter would protect from guineaworm was known to 3217 respondents out of 4848 (66.35 percent). Similarly 3160 respondents suggested not to drink step well water while 1796 had the knowledge that by preventing a guineaworm patient to enter water source, we can prevent transmission of guineaworm (T.6.4.14). 1822 (37.58%) respondents mentioned a few more preventive measures which included-- drink tap water only, boil drinking water, do not sleep with GW patient, do not share drinking water utensil or eat left over food of GW patient and pray God.

T.6.4.14
KNOWLEDGE OF RESPONDENTS ABOUT DIFFERENT PREVENTIVE MEASURES FOR
GUINEAWORM CONTROL

PREVENTIVE MEASURES	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
FILTER WATER WITH DOUBLE LAYERED CLOTH/FUNNEL	2009 70.74%	343 55.14%	865 62.41%	3217 66.35%
DO NOT DRINK STEP WELL WATER	1765 62.14%	438 70.41%	957 69.05%	3160 65.18%
PREVENT GUINEAWORM PATIENT TO ENTER WATER SOURCE	1093 38.49%	59 9.49%	644 46.46%	1796 37.04%
GET WATER DISINFECTED	29 1.02%	13 2.09%	13 0.93%	55 1.13%
ABOVE ALL	10 0.35%	2 0.32%	2 0.14%	14 0.29%
NO KNOWLEDGE	52 1.83%	75 12.05%	39 2.81%	166 3.42%
OTHERS	842 29.64%	163 26.20%	817 58.95%	1822 37.58%
TOTAL NUMBER	2840	622	1386	4848

Extraction has been the main treatment of guineaworm. Besides hospitals, the hospital paramedical workers, SWACH and its workers and some magic healers provide treatment for this crippling disease by extraction. SWACH after its inception is laying emphasis on identification and treatment of cases in 'pre-eruptive stage' in order to break the transmission cycle. Information was obtained from the respondents as regards the treatment agency that they/people utilise for treatment of guineaworm. As per 69.89 percent respondents of Udaipur, 46.14 percent of Banswara and 67.10 percent of Dungerpur, hospital/health worker were the agency. As per 30.73 percent family heads SWACH is the treatment agency (T.6.4.15).

T.6.4.15

TREATING AGENCY USUALLY AVAILED BY FAMILIES FOR GUINEAWORM DISEASE

TREATING AGENCY	NUMBER OF FAMILIES			TOTAL
	UDAIPIUR	BANSWARA	DUNGERPUR	
NOT REPLIED	110 3.87%	24 3.86%	19 1.37%	153 3.16%
HOSPITAL/HEALTH WORKERS	1985 67.87%	287 46.14%	930 67.10%	3202 66.05%
SWACH	742 26.13%	311 50.00%	437 31.53%	1490 30.73%
BHOFA MAGIC & TRADITIONAL HEALER	3 0.11%	0 0.00%	0 0.00%	3 0.06%
Total	3840	622	1386	4848

6.5 SANITATION AND HYGIENE

Sanitation and hygiene are a way of life. The scope of sanitation and hygiene is very broad. It encompasses various dimensions of health & disease. The causation of waterborne and skin diseases is highly influenced by them. While bad sanitation and poor hygiene invites them, a good standard protect people from their menace. A good number of sanitary and hygienic practices are linked with the causation of waterborne diseases as the infective waterborne diseases are diseases of faeco oral transmission. In the causation of these diseases, besides the contaminated water, the flies, fingers and food also play an important role. Similarly the bodily cleanliness and the cleanliness of clothes has an important bearing on the causation of common infective skin diseases. Some questions focusing on PAF aspect of these issues were included in the questionnaire. The findings are presented below.

Keeping eatables covered protect them from flies which carry the germs of waterborne diseases. In about 75 percent of the studied families the eatables were kept covered. It was also observed by the consultant and supervisors during their visit to families. In fact very few cooled eatable items are found in the families of tribals. The kitchen items were usually found neat and clean (T.6.5.1).

T.6.5.1
COVERING OF DOMESTIC CATABLES IN FAMILIES

PRACTICE OF COVERING	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	DANSWARA	DUNGERPUR	
YES, ALWAYS	2025 71.30%	437 70.26%	1206 87.01%	3668 75.66%
NO	24 0.85%	12 1.93%	21 1.52%	57 1.18%
YES PARTIALLY	791 27.85%	173 27.81%	159 11.47%	1123 23.16%
Total	2840	622	1386	4848

It is in the heaps of refuse and garbage, that the flies breed. The main refuse in the families of the project areas has been dust and animal refuse and a bit of kitchen garbage. Ideally the refuse & garbage should be disposed off in sanitary manure or compost pits to minimise fly breeding. It was observed that such state was found in only about 2.5 percent of the families. About 12.31 percent (mainly Udaipur project families) families threw it at fixed places in the vicinity of their houses. Majority (85.23%) threw it indiscriminately here and there near their staying place (T.6.5.2.). This leads to fly breeding and in the monsoon season also pollute reservoirs of water. Only 24.17 percent of the respondents were aware of the fact that domestic flies act as carrier of waterborne diseases (T.6.5.3). Though SWACH is making efforts to get compost pits digged in, yet at many place visited, the consultant and supervisors saw heaps of garbage & refuse. SWACH has taken up an ambitious programme of motivating people & supporting them to construct compost pits.

T.6.5.2
DISPOSAL OF DOMESTIC REFUSE & GARBAGE

DISPOSAL PLACES	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
INDISCRIMINATELY ANY WHERE	2203 77.57%	588 94.53%	1342 96.83%	4133 85.25%
SANITARY MANURE PIT	96 3.38%	8 1.29%	14 1.02%	118 2.44%
AT FIXED PLACE	541 19.05%	26 4.18%	30 2.16%	597 12.31%
Total	2840	622	1386	4848

T.6.5.3
KNOWLEDGE OF RESPONDENTS ABOUT DOMESTIC FLY AS A CARRIER OF
WATERBORNE DISEASES

KNOWLEDGE	NUMBER OF RESPONDENT			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	770 27.11%	188 30.23%	214 15.44%	1172 24.17%
DO NOT KNOW/NOT REPLIED	2070 72.89%	434 69.77%	1172 84.56%	3676 75.83%
Total	2840	622	1386	4848

Washing hands before meals is a hygienic practice to prevent the dirt of hands enter our gut & cause diseases. Majority of respondents from each project area said that they wash their hands before meals (65.51, 90.82 and 92.78 percent in the three areas). In 32.05 percent families of Udaipur project area, some members washed hands while others did not (T.6.5.4).

T.6.5.4
PRACTICE OF WASHING HANDS BEFORE MEALS

PRACTICE OF WASHING HANDS	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	1862 65.51%	565 90.82%	1286 92.78%	3713 76.56%
NO	69 2.43%	4 0.64%	28 2.02%	101 2.07%
SOME WASH & SOME DO NOT	909 32.05%	53 8.53%	72 5.19%	1034 21.35%
Total	2840	622	1386	4848

The dirt including faecal matter containing the germs of various waterborne diseases get deposited underneath the nails of many who do not timely manicure them. This is then passed to the gastro intestinal tract of man along with food. Though there is no fixed time interval for manicuring nails, however biweekly and weekly frequency appear ideal. In the Dungerpur project area about 70% families timely manicured nails. In the other two districts nail manicuring has been found to be delayed. In more than sixty percent families of these districts the frequency has been fortnightly or more (T.6.5.5). This practice on verification was found to be near about correct. The consultant himself examined children in some schools and Anganwadi centers and found that the nails of most of the children were long and dirty. Thirty waiters of small restaurants in villages of the three districts were examined for cleanliness of nails and interrogated for washing hands & the material used to wash them after ablution. They are the people who cook food, fill water and serve them to large number of customers. In 24 (eighty percent), the hygiene was found to be unsatisfactory. Various studies have shown positive correlation between long and dirty nails and high

incidence of waterborne diseases. If the magnitude of water related disease is to be reduced, one of the software intervention would be education and motivation of masses to timely manicure their nails & keep finger tips clean. Schools and AW centers appear ideal situation for this education and motivation for long term effect and adult education centers, mahila mandals for immediate gains.

T.6.5.5
PRACTICE OF MANICURING NAILS

FREQUENCY OF MANICURING	NUMBER OF FAMILIES			TOTAL
	UDAIFUR	BANSWARA	DUNGERPUR	
TWO TIMES IN A WEEK	124 4.37%	14 2.25%	127 9.16%	265 5.47%
WEEKLY	583 20.53%	215 34.57%	837 60.39%	1635 33.73%
FORTINIGHTLY	663 23.35%	106 17.04%	225 16.23%	994 20.50%
MONTHLY	261 9.19%	91 14.63%	26 1.88%	378 7.80%
NOT FIXED	1209 42.57%	196 31.51%	171 12.34%	1576 32.51%
Total	2840	622	1386	4848

For all purposes, ideal place for defecation is a sanitary latrine. However culture old practice in our country is to defecate in open and that too indiscriminately & leave the faecal matter uncovered. This practice makes the faecal matter accessible to flies which transmit it to food & then to mouth of man. This also causes contamination of the surface as well as underground water, more so in the rainy and post rainy weather. Open field defecation is an important reason for high incidence of waterborne diseases & this fact has been verified by

numerous scientific studies. As per most respondents (72.11%) of the present study, open fields are the most ideal place of defaecation. In Dungerpur project as many as 84.05 percent families had this opinion. Only 25.95% families in Udaipur project area, 23.63% in Banswara and 9.88% in Dungerpur project area felt that domestic sanitary latrine is most ideal for defecation (T.6.5.6).

T.6.5.6

OPINION OF RESPONDENTS ABOUT MOST IDEAL PLACE FOR DEFECACTION

IDEAL PLACE DEFECACTION	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
OPEN FIELD	1890 66.55%	441 70.90%	1165 84.05%	3496 72.11%
PUBLIC LATRINE	213 7.50%	34 5.47%	84 6.06%	331 6.83%
DOMESTIC SANITARY LATRINE	737 25.95%	147 23.63%	137 9.88%	1021 21.06%
Total	2840	622	1386	4848

Latrines were available in the families of only 5.30 percent respondents and in these families also not all the members used it. Open field was the place of defaecation in 94.06% families and near identical figures in this respect were observed in all the three project families. About 2.5% families used public and domestic latrines for defecation (T.6.5.7 & T.6.5.8). Software as well as hardware support in this respect is very much needed.

1.6.5.7
AVAILABILITY OF LATRINE IN FAMILIES OF RESPONDENTS

LATRINE AVAILABILITY	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
AVAILABLE	112 3.94%	38 6.11%	107 7.72%	257 5.30%
NOT AVAILABLE	2728 96.06%	584 93.89%	1279 92.28%	4591 94.70%
Total	2840	622	1386	4848

1.6.5.8
PLACE OF DEFECACTION IN THE FAMILIES OF RESPONDENTS

PLACE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
OPEN FIELD	2606 94.50%	569 91.48%	1305 94.16%	4560 94.06%
PUBLIC LATRINE	67 2.36%	27 4.34%	30 2.16%	124 2.56%
DOMESTIC LATRINE	56 1.97%	22 3.54%	46 3.32%	124 2.56%
SOME IN LATRINE & SOME IN OPEN	31 1.09%	4 0.64%	5 0.36%	40 0.83%
Total	2840	622	1386	4848

The hands, specially the terminal portion of fingers are most dirty and contaminated after defecation wash. They are required to be washed most thoroughly and with the best washing material. For want of this, likelihood of waterborne diseases increase. Certain question were therefore included in the schedule to probe into this aspect. When the opinion of respondents was sought as regards the best washing material to wash hands after ablution, majority put soil (45.01%) and ash (31.17%) on top of the list. Only 21.66 percent favoured soap in this regards. 42.96 percent from Udaipur, 65.76 percent from Banswara and

39.90 percent from Dunderpur mentioned soil to be the best washing material (T.6.5.9.). When the same point was assessed in terms of practice it was found that soap was used as washing material only in 4.89 percent families and majority used soil for this purpose (U-63.10%, B-72.35% and Dunderpur 50.51%). 4.52 percent families simply washed with water only. (T.6.5.10).

T.6.5.9
OPINION ABOUT WASHING MATERIAL TO BE USED FOR WASHING HANDS
AFTER DEFECACTION

WASHING MATERIAL	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNDERPUR	
ONLY WATER	61 2.15%	23 4.50%	16 1.15%	100 2.17%
SOIL	1220 42.96%	409 65.76%	553 39.90%	2182 45.01%
ASH	836 29.44%	105 16.88%	570 41.13%	1511 31.17%
SOAP	723 25.46%	80 12.86%	247 17.82%	1050 21.66%
Total	2840	622	1306	4840

T.6.5.10
MATERIAL USED IN FAMILIES FOR WASHING HANDS AFTER ABLUTION

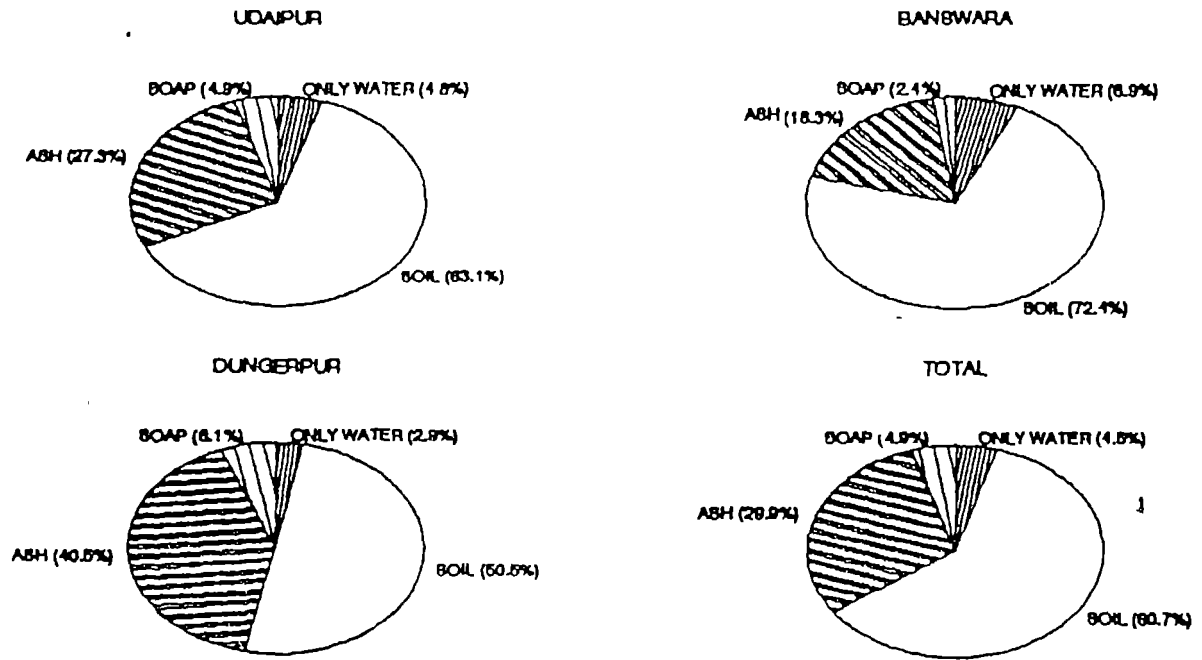
MATERIAL USED	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
ONLY WATER	136 4.79%	43 6.91%	40 2.89%	219 4.52%
SOIL	1792 63.10%	450 72.35%	700 50.51%	2942 60.68%
ASH	774 27.25%	114 18.33%	562 40.55%	1450 29.91%
SOAP	138 4.86%	15 2.41%	84 6.06%	237 4.89%
Total	2840	622	1386	4848

Since the terminal portion of finger tips is most likely to get dirty and contaminated after the act of defecation and this also touches the mouth while eating, cleanliness of this part is most important. The routine hand washing practice in our families lay emphasis on washing of palm and its back rather than the finger tips. Reply of respondents to a question on this aspect revealed this fact - only 16.36 percent respondents mentioned that emphasis was laid on cleaning finger tips also (T.6.5.11).

T.6.5.11
OPINION & PRACTICE ABOUT EMPHASIS ON CLEANING TERMINAL
PORTION OF FINGERS AFTER ABLUTION

EMPHASIS & PRACTICE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NOT GIVEN	2474 87.11%	518 83.41%	1062 76.62%	4054 83.64%
GIVEN	366 12.89%	104 16.59%	324 23.38%	794 16.36%
Total	2840	622	1386	4848

MATERIAL USED IN FAMILIES FOR WASHING HANDS AFTER ABLUTION



The latrine of children is equally dirty and infectious. Since children suffer from repeated attacks of diarrhoea and dysentery, it is likely to be more dangerous. Washing of hands after cleaning children toilet is very essential as it is with the same hands that the mother feeds the child. Unfortunately 90.99 percent mothers in Udaipur project area, 85.04 percent in Banswara and 84.77 percent in Dungerpur project area did not properly wash hands after cleaning children toilet (T.6.5.12).

T.6.5.12

PRACTICE OF HAND WASHING AFTER CLEANING CHILDREN'S TOILET

PRACTICE	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
NOT WASHED PROPERLY	2584 90.99%	529 85.44%	1175 84.77%	4288 88.44%
WASHED PROPERLY	256 9.01%	93 14.95%	211 15.22%	560 11.55%
Total	2840	622	1386	4848

As per majority of respondents, bathing was a regular practice in their families and over ninety percent respondents mentioned it as a daily activity in summer and about a little less than half (43.58 percent) in winter. In 31.68 percent families, bath was taken on alternate days and in 16.56 percent biweekly in the winter season. The frequency of bathing was poorest in Udaipur project area and optimum in Dungerpur project area (T.6.5.13 & T.6.5.14). The hard manual work, the work in the field make bathing an essential requirement.

T.6.5.13
PRACTICE OF BATHING IN FAMILIES OF RESPONDENTS

FREQUENCY (SUMMER SEASON)	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
DAILY	2441 85.94%	597 95.78%	1374 79.13%	4412 91.00%
TWO TIME IN A DAY	266 9.37%	24 3.86%	9 0.65%	297 6.17%
ALTERNATE DAY	125 4.40%	1 0.16%	2 0.14%	128 2.64%
BIWEEKLY	5 0.18%	0 0.00%	0 0.00%	5 0.10%
WEEKLY & ABOVE	3 0.11%	0 0.00%	1 0.07%	4 0.08%
Total	2840	622	1386	4848

T.6.5.14
PRACTICE OF BATHING IN FAMILIES OF RESPONDENTS

FREQUENCY (WINTER SEASON)	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
DAILY	751 26.44%	335 53.86%	1027 74.10%	2113 43.58%
ALTERNATE DAY	1034 36.41%	187 30.06%	315 22.73%	1536 31.68%
BIWEEKLY	736 25.92%	28 4.50%	39 2.81%	803 16.56%
WEEKLY	319 11.23%	72 11.58%	5 0.36%	396 8.17%
Total	2840	622	1386	4848

Though in 70.73 percent families, the respondents had the perception that there should be separate towel for each individual, in practice it was found in less than one third of the families (25.14, 34.57 and 44.81 percent in Udaipur, Banswara and Dunderpur

project areas respectively). In 68.03 percent families the towels were shared (T.6.5.15 & 16) Towel sharing favour the spread of skin diseases.

T.6.5.15
KNOWLEDGE ABOUT USEFULNESS OF SEPARATE TOWEL FOR
INDIVIDUALS OF FAMILY

KNOWLEDGE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	1884 66.34%	417 67.04%	1128 81.39%	3429 70.73%
NO	57 2.01%	56 9.00%	36 2.60%	149 3.07%
DO NOT KNOW	899 31.65%	149 23.95%	222 16.02%	1270 26.20%
Total	2840	622	1386	4848

T.6.5.16
AVAILABILITY OF SEPARATE TOWEL FOR EACH INDIVIDUAL

AVAILABILITY	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES	714 25.14%	215 34.57%	621 44.81%	1550 31.97%
NO	2126 74.86%	407 65.43%	765 55.19%	3298 68.03%
Total	2840	622	1386	4848

The garments, if changed regularly, give feeling of freshness besides reducing chances of skin problems. Over 55 percent respondents felt the need of daily changing of under garments, (maximum in Dungerpur project area 75.04 percent) as a practice it was followed in about 1/3rd of families (34.14 percent). In Udaipur project area only 23.59 percent changed undergarments daily, 16.34 percent on alternate day, 17.71 percent biweekly and 37.99 percent only when very dirty (T.6.5.17 & 18) In Dungerpur project area over eighty percent either change it daily or

on alternate days. This figure for Banswara project area was about 75 percent.

T.6.5.17

ATTITUDE OF RESPONDENTS ABOUT FREQUENCY OF CHANGING UNDERGARMENTS

FREQUENCY OF CHANGING UNDERGARMENTS	NUMBER OF RESPONDENT			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
DAILY	1384 48.73%	329 52.89%	1040 75.04%	2753 56.79%
ALTERNATE DAY	501 17.64%	163 26.21%	283 20.42%	947 19.53%
BIWEEKLY	214 7.54%	53 8.52%	17 1.23%	284 5.86%
WEEKLY	106 3.73%	14 2.25%	7 0.51%	127 2.62%
AS AND WHEN VERY DIRTY	635 22.36%	63 10.13%	39 2.81%	737 15.20%
Total	2840	622	1386	4848

T.6.5.18

PRACTICE OF CHANGING UNDERGARMENT IN THE STUDIED FAMILIES

FREQUENCY OF CHANGING UNDERGARMENT	NUMBER OF FAMILIES			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
DAILY	670 23.59%	277 44.53%	708 51.08%	1655 34.14%
ALTERNATE DAY	464 16.34%	191 30.71%	428 30.88%	1083 22.34%
BIWEEKLY	503 17.71%	69 11.09%	97 7.00%	669 13.80%
WEEKLY	124 4.37%	18 2.89%	24 1.73%	166 3.42%
AS AND WHEN VERY DIRTY	1079 37.99%	67 10.77%	129 9.31%	1275 26.30%
Total	2840	622	1386	4848

Sanitation and hygiene is a "preventive prescription" for so many diseases including the waterborne & skin diseases. Many of the insanitary practices, practiced by one, put health of many at risk. This preventive prescription which protect the individual as well as the community is practically cost free to the consumers. It only requires a change in the life style. Continuous and sincere efforts are needed to educate and motivate the ignorant and illiterate masses on these issues, for which a system should be developed rather than occasional patchy efforts.

6.6 INCIDENCE OF WATERBORNE DISEASES

Waterborne diseases are endemic diseases found in our country. In Udaipur, Banswara and Dungepur areas also, they occur regularly throughout the year. Epidemiologically they show an upward trend in summer, rainy and post rainy seasons. Improper excreta and refuse disposal, fly breeding and poor personal and food hygiene are the factors that contribute to the high incidence of these diseases. They affect persons of all age groups and both genders are vulnerable to them. All of them except poliomyelitis can occur repeatedly. The commonest encountered waterborne diseases are diarrhoeas, dysentery, typhoid, jaundice, cholera, guineaworm, amoebiasis, giardiasis intestinal worms and poliomyelitis etc. While poliomyelitis & guineaworm cause disability, diarrhoea, cholera, jaundice etc. kill many directly and indirectly. Together they cause lot of manpower & economic loss and hamper development.

Enquiry based on recall method was made from respondents to know the magnitude of the problem of WBD. The respondents were asked to mention if any person from their family suffered from any WBD in the preceding three months period. This three months period fell between Sep.93 to Dec'93. By explaining the various symptoms, the respondents were guided to understand the concept of waterborne diseases.

Since water acts as a vehicle in the transmission of these diseases, the quality of water and its maintenance has got a bearing on their causation. Various family characteristics affect water maintenance & hence they too may have a bearing on the incidence of WBD. An effort has been made to study the correlation between various variables and the incidence of WBD.

One or the other waterborne disease occurred in 2312 out of 4848 families studied during the preceding three month period (47.69 percent). There were 24518 individuals in the studied families & of them 4562 suffered attacks of WBD, thus persons affected with WBD has been 18.61 percent (T.6.6.1). This certainly shows that the incidence of waterborne diseases in the studied families has been pretty high. The incidence was maximum in Udaipur project area and minimum in Dungerpur project area. These figures indicate that intensive, more elaborate as well as specific efforts are required to be made for prevention of waterborne diseases. For this, strong and weak links are needed to be identified, upon which software & hard ware support should be built up.

T.6.6.1
EPISODE OF WATER BORNE DISEASE ENCOUNTERED DURING LAST 90 DAYS
IN DIFFERENT PROJECT AREAS

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
TOTAL NO OF FAMILIES	2840	622	1386	4848
TOTAL NO. OF SUBJECTS	16063	2349	6106	24518
TOTAL NO. OF FAMILIES IN WHICH EPISODES ENCOUNTERED	1590	228	494	2312
TOTAL NO. OF SUBJECTS IN WHOM ENCOUNTERED	3299	454	809	4562
PERCENTAGE OF FAMILIES AFFECTED	55.98	36.65	35.64	47.69
PERCENTAGE OF PERSONS AFFECTED	20.53	19.33	13.25	18.61

The most common waterborne diseases that have been identified in the families in the last 90 days duration has been diarrhoeas, dysentery and jaundice etc. A total of 4562 individuals suffered from WBD and

almost two third of them had attack/attacks of diarrhoea, about sixteen percent had dysentery while seventeen percent passed worms in stool (T.6.6.2.). Pain abdomen and vomiting etc. have been shown as "others".

T.6.6.2
TYPES OF WATER BORNE DISEASE

WATER BORNE DISEASE	NUMBER OF PERSON AFFECTED & %	TOTAL EPISODES OF SICKNESS	EPISODE PER AFFECTED PERSON
DIARRHOEA	2808 (66.55)	4828	1.72
DYSENTRY	735 (16.11)	1116	1.51
JAUNDICE	25 (0.54)	25	1.00
POLIOMYELITIS	12 (0.26)	12	1.00
WORM INFESTATION	818 (17.93)	1213	1.48
GUINEAWORM	12 (0.26)	12	1.00
OTHERS	152 (3.33)	318	2.09
TOTAL	4562	7524	1.65

The source of drinking water has got a bearing on its potability. Minimum attacks of waterborne diseases were encountered in those families which used tap water for drinking (34.73 percent) followed by hand pump users (45.85 percent). In the consumers of well and step well water, comparatively higher proportion of families faced episodes of WBD (48.42 to 57.60 percent). The high incidence (52.78 percent) in public tap users can be attributed to very small sample. The difference was found to be highly significant statistically (T.6.6.3).

T.6.6.3
WATER BORNE DISEASE BY DRINKING WATER SOURCE OF FAMILY

DRINKING WATER SOURCE	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
TAP	239	83	34.73
PUBLIC TAP	36	19	52.78
HAND PUMP	2728	1251	45.85
STEP WELL	184	106	57.60
KACCHA WELL	688	372	54.07
PACCA WELL	859	416	48.42
POND & OTHER	114	65	57.01
TOTAL	4848	2312	47.69

Religion wise waterborne diseases affected the highest proportion of Christians families (84.00 percent) in comparison to Hindus (47.69 percent) and Muslims (64.10 percent). The difference is significant statistically however the fact that there has been very few Muslim and Christian families, invalidates it (T.6.6.4).

T.6.6.4
WATER BORNE DISEASE & RELIGION

RELIGION	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
HINDU	4784	2266	47.37
MUSLIMS	39	25	64.10
CHRISTIANS	25	21	84.00
TOTAL	4848	2312	47.69

66.14 percent scheduled caste families encountered an attack of waterborne disease while. This figure for non SC/ST and scheduled tribe families has been 46.51 and 43.28 percent respectively (T.6.6.5). The difference was found to be statistically significant.

T.6.6.5
WATER BORNE DISEASE IN RELATION TO CASTE

CASTE	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ST	3223	1375	43.28
SC	821	543	66.14
NON SC/ST	804	374	46.51
TOTAL	4848	2312	47.69

The impact of literacy of female & male heads on the occurrence of waterborne diseases can not be very clearly appreciated. In case of females a large majority are illiterate & a few literate up to primary level only. The same is true for male literacy also where about twelve percent are educated up to upper primary & secondary level. The occurrence of WBD has been minimum in the upper Primary group where in either case less than forty percent families encountered an attack of WBD in the last 90 days duration. This figure was highest for families which had technical level of educated heads (fifty & sixty percent). This appears rather paradoxical, however it can be explained by the fact that there were only two & five families in these groups. Thus we can say that impact of literacy level on occurrence of WBD can not be well appreciated for the want of homogeneous sample size (T.6.6.6 & 6.7.7.). However we do observe a higher rate of episodes in families with illiterate heads than in families with heads educated up to some or the other level.

T.6.6.6
WATER BORNE DISEASES IN RELATION TO LITERACY OF FEMALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODE ENCOUNTERED	PERCENTAGE
ILLITERATE	4210	2036	48.36
JUST LITERATE	346	138	39.88
PRIMARY	211	105	49.76
UPPER PRIMARY	59	23	38.98
SECONDARY	19	9	47.37
COLLEGE	1	0	0.00
TECHNICAL	2	1	50.00
TOTAL	4848	2312	47.69

T.6.6.7
WATER BORNE DISEASES IN RELATION TO LITERACY TO MALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ILLITERATE	2766	1401	50.65
JUST LITERATE	741	338	45.61
PRIMARY	745	333	44.69
UPPER PRIMARY	301	120	39.86
SECONDARY	241	109	45.22
COLLEGE	49	8	16.32
TECHNICAL	5	3	60.00
TOTAL	4848	2312	47.69

Waterborne diseases were more rampant in the poorer families. 1646 families (53.06 %) out of 3102 of the lowest economic group experienced one or more episodes of waterborne diseases in the last 90 days as compared to about 38 percent in the other two groups (T.6.6.8). The difference was highly significant statistically.

T.6.6.8
WATER BORNE DISEASES IN RELATION TO ECONOMIC STATUS

ECONOMIC STATUS	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ABOVE 11000	187	72	38.10
6001-11000	1557	594	38.15
0-6000	3102	1646	53.06
TOTAL	4848	2312	47.69

There was a marginal difference in the episodes of WBD that occurred in the families having an elevated place to keep drinking water and the ones which did not have it. (47.33 and 58.33 percent respectively). However here again the sample of families, not having an elevated place, was too small (156) in comparison to the ones which did have it (4692--T.6.6.9.).

T.6.6.9
WATER BORNE DISEASE BY DRINKING WATER KEEPING PLACE

ELEVATED PLACE	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
YES	4692	2221	47.33
NO	156	91	58.33
TOTAL	4848	2312	47.69

Filtration of water has been recognised as a healthy practice to keep domestic water safe. Different filtering materials have different efficacy. This technique correctly and adequately applied had a big contributory effect in reducing the guineaworm morbidity in the project areas. When the incidence of WBD was assessed in relation to the use of different filtering material it was observed that the highest incidence of WBD was observed in those families which do not filter drinking water

(55.20 percent). It was 51.80, 46.15 and 44.15 percent in families were filtering water with ordinary cloth, double layered cloth funnel with filter respectively. The difference was significant statistically (T.6.6.10).

T.6.6.10
WATER BORNE DISEASES IN RELATION TO FILTERING MEDIUM

FILTER MATERIAL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENT
DO NOT FILTER	250	138	55.20
ORDINARY CLOTH	1408	772	51.80
DOUBLE LAYERED CLOTH	260	120	46.15
FUNNEL WITH FILTER	2850	1282	44.15
TOTAL	4848	2312	47.69

It is necessary to withdraw water from the pitcher in a hygienic way i.e. without allowing the fingers to touch it and the use of utensil. In the absence of these, each time we withdraw water from pitcher, impurities are added to it. There were comparatively more episodes of WBD in those families which used ladle rather than the pitcher in which water was withdrawn with a utensil without handle (33.99 and 49.11 percent respectively (T.6.6.11)). The difference was significant statistically. Here again the number of families using ladle has pretty less.

T.6.6.11
WATER BORNE DISEASES IN RELATION TO WITHDRAWING UTENSIL

UTENSIL USED	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENT
WITHOUT HANDLE	4392	2157	49.11
WITH HANDLE (LADLE)	456	155	33.99
TOTAL	4848	2312	47.69

Those who do not wash their hands before meals are likely to ingest the dirt along with which micro organisms of waterborne diseases are likely to enter the gut. The same is reflected in terms of figures in T.6.6.12 where it is clear that the incidence of waterborne diseases was about 18 percent higher in families who were not washing hands before meals (65.34 percent) as compared to those who were washing (47.05 percent). The difference was significant statistically.

T.6.6.12
WATER BORNE DISEASES BY PRACTICE OF WASHING HANDS BEFORE MEALS

PRACTICE OF WASHING	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
YES	3713	1747	47.05
NO	101	66	65.34
SOME WASH & SOME DO NOT	1034	499	48.25
TOTAL	4848	2312	47.69

As mentioned earlier long and dirty nails too play a role in the causation of waterborne diseases. When the occurrence of episodes of WBD was compared by the habit of nail manicuring, it was found that those who manicured them timely (biweekly & weekly) had fewer episodes of WBD (41.88 & 43.00 percent) as compared to those who do not timely manicured them (54.25 & 57.40 percent). The difference is highly significant statistically (T.6.6.13).

T.6.6.13
 WATER BORNE DISEASES BY HABIT OF NAIL MENCURING

FREQUENCY OF MENCURING	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
TWO TIMES IN A WEEK	27	111	41.88
WEEKLY	161	703	43.00
FORTHNIGHTLY	99	426	42.85
MONTHLY	221	217	57.40
NOT FIXED	1576	855	54.25
TOTAL	4843	2312	47.69

Waterborne diseases are also called as diseases of faeco oral transmission. Proper washing of hands after ablution prevent faeco oral transmission to a considerable extent & thus reduces the chances of WBD. This has been reflected in our observations too. Only 91 families out of 237, where soap was used to wash hands after ablution, experienced episode of WBD (38.39 percent) in comparison to 53.44 percent families who washed with soil, 45.58 percent who washed with ash and 47.94 percent who just washed with only water. The difference was highly significant statistically (T.6.6.14). It should be noted that there were comparatively fewer families who either just washed with water (219) and who used soap for this purpose (237). Ash users had fewer episodes of WBD in comparision to soil users.

T.6.6.14
WATER BORNE DISEASES AND HABIT OF WASHING HANDS AFTER ABDUCTION

HAND WASHING MATERIAL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ONLY WATER	219	105	47.94
SOIL	2942	1341	45.58
ASH	1450	775	53.44
SOAP	237	91	38.39
TOTAL	4848	2312	47.69

Over all, the observations reveal that the incidence of waterborne disease encountered in the preceding 90 days of survey has been rather high. Since September to December is not the peak period of WBD, the magnitude appears still serious. The main sickness has been diarrhoeas, dysenteries, worm infestation and prolonged fever etc. Age-wise under five and school age group was the most frequently affected group. Varied degree of correlation could be established between attacks of WBD and possible contributory causative factors.

6.7. SICKNESS AT THE TIME OF SURVEY

Diseases of various nature occur in the individuals of every family from time to time. They occur in children, adults & old, males and females. The two extremes of life - the childhood and the old age are more vulnerable to illness. Some illnesses are of short duration while others are chronic and continue to trouble the sufferer for years & might be life long. The example of the former group are infectious diseases like diarrhoea, dysentery, worms, typhoid, measles chickenpox pneumonia, scabies and boils etc. while the examples of later diseases are mainly associated with degeneration, congenital anomalies etc. e.g. diabetes, high blood pressure, arthritis, malignancy etc. The diseases can also be grouped on the basis of the system of the body that has been affected.

The interviewers on their visit to family also made an enquiry if there was any sick person in the family. If there was a sick person, they enquired about the main symptoms that the sick person was suffering from. These symptoms were noted down at the appropriate place in the schedule. While analysis they were grouped system wise. The sickness were also assessed in relation to different parameters.

Sickness at the time of survey was encountered in 1548 subjects of 965 families. Thus 6.31 percent persons and 19.90 percent families were affected by one or the other sickness at the time of survey. Sickness was maximum in Banswara project families (13.45% subjects & 24.28% families) while minimum percent of subjects were affected in Udaipur project, minimum percent of families were affected in Dunderpur area (T.6.7.1). This is a high proportion of sickness & indicate that the sickness load in project areas is pretty high.

T.6.7.1
EPISODES OF SICKNESS ENCOUNTERED AT THE TIME OF SURVEY
IN DIFFERENT PROJECT AREAS

	UDAIPUR	RANSWARA	DUNGERPUR	TOTAL
TOTAL NO OF FAMILIES	2840	622	1386	4848
TOTAL NO. OF SUBJECTS	16063	2349	6106	24518
TOTAL NO. OF FAMILIES IN WHICH EPISODES ENCOUNTERED	587	151	227	965
TOTAL NO. OF SUBJECTS IN WHOM ENCOUNTERED	858	316	374	1548
PERCENTAGE OF FAMILIES AFFECTED	20.67	24.20	16.30	19.90
PERCENTAGE OF PERSONS AFFECTED	5.34	13.45	6.13	6.31

Maximum sickness was observed in the 0-5 age group. Out of all sickness observed, 38.11 percent occurred in children upto 5 years of age. Next group to be affected was that of school age group - 25.06 percent of sickness occurred in them. 16.54 percent sickness were observed in person above 45 years of age. Demographically children upto 5 yr constitute about 15 percent of population whereas 38 percent sickness were found in this age group clearly indicate that for various reasons children catch illnesses more frequently and that preventive programmes to reduce childhood diseases are not adequately utilised by masses in the project families (T.6.7.2.).

T.6.7.2
SICKNESS BY AGE GROUP

AGE GROUP	NUMBER OF SUBJECTS IN WHOM SICKNESS ENCOUNTERED	PERCENTAGE
0-5	590	38.11
6-14	308	25.06
15-24	142	9.17
25-45	172	11.11
45-+	256	16.54
TOTAL	1548	100.00

Sickness was assessed through symptoms. 44.44 percent of sickness was on account of fevers of various etiology. It appeared that most cases were having fever either on account of respiratory illness or malaria. Next in order were sickness of gastro intestinal system (37.27 percent) and most of these sicknesses were diarrhoea, dysentery or pain abdomen. 7.24 percent sickness was due to skin involvement & 3.88 percent due to some urinary trouble (T.6.7.3.).

T.6.7.3
SYSTEMWISE SICKNESS

SYSTEM/SYMPTOM	NUMBER OF SUBJECTS IN WHOM SICKNESS ENCOUNTERED	PERCENTAGE
G.I.T	577	37.27
FEVER (MAINLY RESPIRATORY AND MALARIA)	688	44.44
SKIN	112	7.24
URINARY	60	3.88
OTHERS	111	7.17
TOTAL	1548	100.00

Though table T.6.7.4 reveals that sickness was very prevalent in the Christian group of families where 22 of the 25 families had some or the other sickness at the time of survey (88.00 percent) in comparison to

Hindu. (19.46 percent) and Muslim families (30.77 percent). This difference on comparison can not be relied upon due to vast difference in the number of families that were assessed in each group.

T.6.7.4
SICKNESS IN RELATION TO RELIGION

RELIGION	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
HINDU	4784	931	19.46
MUSLIMS	39	12	30.77
CHRISTANS	25	22	88.00
TOTAL	4848	965	19.91

In scheduled tribe families comparatively more sickness was observed at the time of survey (20.63 percent families) as compared to scheduled castes (19.00 percent) and non SC/ST (17.91 percent), however the difference was very marginal (T.6.7.5).

T.6.7.5
SICKNESS IN RELATION TO CASTE

CASTE	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
SCHEDULED TRIBE (ST)	3223	665	20.63
SCHEDULED CASTE (SC)	821	156	19.00
NON SC/ST	804	144	17.91
TOTAL	4848	965	19.91

The impact of literacy of male & female heads of the family are shown in T.6.7.6 and T.6.7.7. The impact can not be reliable assessed & judged for two reasons - comparatively very few families with high literacy levels (collage & technical in case of male heads and upper primary and above in case of female heads) and the fact that very little difference in literacy level, say for example illiterate and just

literate or just literate and up to primary level literate can not bring about appropriate difference in attitudes and practices.

T.6.7.6
SICKNESS IN RELATION TO LITERACY LEVEL OF MALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ILLITERATE	2766	563	20.35
JUST LITERATE	741	142	19.16
PRIMARY	745	159	21.34
UPPER PRIMARY	301	47	15.61
SECONDARY	241	45	18.67
COLLEGE	49	9	18.36
TECHNICAL	5	0	0.00
TOTAL	4848	965	19.91

T.6.7.7
SICKNESS IN RELATION TO LITERACY LEVEL OF FEMALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ILLITERATE	4210	836	19.85
JUST LITERATE	346	66	19.07
PRIMARY	211	40	18.95
UPPER PRIMARY	59	17	28.81
SECONDARY	19	6	31.58
COLLEGE	1	0	0.00
TECHNICAL	2	0	0.00
TOTAL	4848	965	19.91

Assessment of sickness in relation to socio economic status revealed that maximum sickness at the time of survey was found in the lowest socio economic group where 672 families out of 3102 (21.66 percent) had some or the other sickness in comparison to 16.69 and 17.46 percent in the other two groups (T.6.7.8). The difference was significant statistically.

T.6.7.8
SICKNESS IN RELATION TO SOCIO ECONOMIC STATUS

ECONOMIC STATUS	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ABOVE 11000	189	33	17.46
6001-11000	1557	260	16.69
0-6000	3102	672	21.66
TOTAL	4848	965	19.71

6.8 SKIN DISEASES

Skin diseases of infective origin like scabies, impetigo and furunculosis (boils) etc. occur commonly in poor segment of population. Over crowding, poor personal and cloth hygiene help in the causation and spread of these diseases. Scabies is such a disease which when enters a family, affect one member after another. They are very common in children including school going children. The questionnaire included some questions to assess the knowledge, attitude and practices of families in connection with etiological factors of skin diseases. Some of the observations in this regard have been presented in the section of "Sanitation and Hygiene" (6.5) while some are presented here. Besides this an enquiry was also made about the occurrence of these diseases, sore eyes and infections of pinna (otitis externa) in the members of the family in preceeding 90 days period. Sore eye (Conjunctivitis) and infections of external ear (otitis externa) have near identical etiology and mode of spread. The findings are presented below.

Respondents were asked to narrate if they know any preventive measures against skin diseases. About 1/3 (33.95 percent) could not mention any method of prevention. In this group maximum contribution was from Udaipur project area (41.97 percent) and minimum from Dunderpur project families (15.30 percent). While cleanliness of clothes was mentioned by about 35.48 percent respondents, only 8.29 percent mentioned about bodily cleanliness. About thirty eight percent respondents mentioned about not using other's cloths to avoid skin diseases. 13.66 percent knew about keeping away from a patient of skin disease. Nourshing food was mentioned as a preventive method by 14.50 percent respondents. The knowledge of respondents from Dunderpur was

found to be the best out of all the groups (T.6.8.1). Immediate treatment of the disease was narrated as a preventive measure by 14.15 percent respondents.

T.6.8.1

KNOWLEDGE OF RESPONDENTS ABOUT PREVENTIVE MEASURES AGAINST COMMON SKIN DISEASES

KNOWLEDGE	NUMBER OF RESPONDENTS			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
CLEANLINESS OF BODY	1159 40.80%	314 50.48%	729 52.59%	2202 44.84%
CLEANINESS OF CLOTHES	756 33.66%	170 27.33%	594 42.86%	1720 35.48%
DO NOT USE OTHERS CLOTHES	870 30.63%	755 40.99%	713 51.34%	1878 37.91%
IMMEDIATE TREATMENT	432 15.21%	127 20.42%	127 9.16%	686 14.15%
AVOID BODILY CONTACT WITH DISEASED PERSON	331 11.65%	114 18.32%	211 15.22%	656 13.68%
TAKE NOURISHING FOOD	372 13.07%	118 18.97%	206 14.86%	696 14.50%
NO KNOWLEDGE/NOT REPLIED	1192 41.97%	242 38.91%	212 15.30%	1646 33.95%
Total	2840	622	1386	4848

Besides direct body touch and contact with infected clothes, the houseflies also help in the spread of skin diseases. The respondents were asked if they feel & knew that house fly help in the transmission of common skin diseases. 82.68 percent from Dungerpur, 62.38 percent from Banswara and 58.38 percent from Udaipur knew about the role of housefly in transmitting skin diseases. Out of the rest 1.59 percent could confidently say that they do not transmit while the remaining 1579 (32.57 percent) respondents did not reply (T.6.8.2).

1.6.8.2

KNOWLEDGE OF ROLE OF HOUSE FLY IN TRANSMISSION OF COMMON SKIN DISEASES

KNOWLEDGE	NUMBER OF RESPONDENT			TOTAL
	UDAIPUR	BANSWARA	DUNGERPUR	
YES-THEY TRANSMIT	858 50.38%	238 62.39%	646 82.68%	1742 65.84%
NO-THEY DO NOT TRANSMIT	34 1.20%	24 3.86%	19 1.37%	77 1.59%
NOT REPLIED	1948 40.42%	360 33.76%	721 15.95%	1579 32.57%
Total	2840	622	1386	4848

Members of 693 families out of 4848 families encountered one or more attacks of skin diseases in the last 90 days period (14.29 percent). Similarly out of 24518 subjects, 953 experienced an attack of skin disease (3.89 percent). The incidence was maximum in Udaipur project area (4.84%) and minimum in Dungerpur project area (1.88% - 1.6.8.3). These figures indicate a high incidence of skin diseases.

1.6.8.3

EPISODES OF SKIN DISEASES ENCOUNTERED IN LAST 90 DAYS PERIOD IN DIFFERENT PROJECT AREAS

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
TOTAL NO OF FAMILIES	2840	622	1386	4848
TOTAL NO. OF SUBJECTS	16063	2349	6106	24518
TOTAL NO. OF FAMILIES IN WHICH EPISODES ENCOUNTERED	571	40	82	693
TOTAL NO. OF SUBJECTS IN WHOM ENCOUNTERED	778	60	115	953
PERCENTAGE OF FAMILIES AFFECTED	20.10	6.43	5.91	14.29
PERCENTAGE OF PERSONS AFFECTED	4.84	2.55	1.88	3.89

Episodes of skin diseases occurred more commonly in scheduled caste families (16.93 percent) as compared to 14.27 percent in scheduled tribes & 11.69 percent in non SC/ST group of families. The difference was significant statistically (T.6.8.4).

1.6.8.4
SKIN DISEASES BY CASTE

CASTE	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ST	3223	460	14.27
SC	821	179	16.93
NON SC/ST	804	94	11.69
TOTAL	4848	693	14.27

The skin diseases were most rampant in poor people. The likely reasons can be environmental and hygienic. Out of 3102 families which belonged to the poorest of the group, (annual income below 6000 Rupees) episodes of skin diseases were encountered in 564 families (18.18 percent) as compared to 4.23 and 7.77 percent in higher and middle income group (T.6.8.5). On statistical analysis it was found to be significant.

1.6.8.5
SKIN DISEASES BY ECONOMIC STATUS

ECONOMIC STATUS ANNUAL FAMILY INCOME (Rs.)	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ABOVE 11000	139	8	4.23
6001-11000	1557	121	7.77
0-6000	3102	564	18.18
TOTAL	4848	693	14.27

As with sickness at the time of survey and incidence of WBD the effect of literacy level of male and female heads on the incidence of

skin diseases could not be reliably assessed and judged for identical reasons pointed out earlier. The observation as regards skin disease and literacy level are presented in T.6.8.6 & T.6.8.7.

T.6.8.6
SKIN DISEASES BY LITERACY LEVEL OF MALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ILLITERATE	2766	477	17.25
JUST LITERATE	741	75	10.12
PRIMARY	745	79	10.60
UPPER PRIMARY	301	28	9.30
SECONDARY	241	28	11.62
COLLEGE	49	5	10.20
TECHNICAL	5	1	20.00
TOTAL	4848	693	14.29

T.6.8.7
SKIN DISEASES BY LITERACY LEVEL OF FEMALE HEAD

LITERACY LEVEL	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
ILLITERATE	4210	629	14.94
JUST LITERATE	346	23	6.65
PRIMARY	211	26	12.32
UPPER PRIMARY	59	8	13.56
SECONDARY	19	6	31.58
COLLEGE	1	0	0.00
TECHNICAL	2	1	50.00
TOTAL	4848	693	14.29

When towels and other clothes are shared, the chances of skin diseases & their transmission increase. T.6.8.8 shows that in families where towels were shared the episodes of skin diseases occurred in 15.19 percent families, as compared to 12.38 percent families where towels were usually not shared. However the difference was not significant statistically.

1.6.8.8
SKIN DISEASES BY TOWEL SHARING

TOWEL SHARING	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
NO	1550	172	12.70
YES	3298	501	15.19
TOTAL	4848	673	14.27

Those who did not change under garments regularly have more chances of having and spreading skin diseases. The families where undergarments were timely changed, less than 13 percent families experienced skin diseases in the last 90 days as compared to 20.48 percent families who changed undergarments weekly (1.6.8.9). The difference was significant statistically.

1.6.8.9
SKIN DISEASES BY FREQUENCY OF CHANGING UNDER GARMENTS

FREQUENCY OF CHANGING	TOTAL FAMILIES	NUMBER OF FAMILIES IN WHICH EPISODES ENCOUNTERED	PERCENTAGE
DAILY	1655	213	12.87
ALTERNATE DAY	1983	137	12.83
BIWEEKLY	669	93	13.90
WEEKLY	166	34	20.48
AS AND WHEN VERY DIRTY	1275	214	16.78
TOTAL	4848	673	14.27

6.9 SITUATIONAL ANALYSIS OF VILLAGES/HAMLETS

Though our country is a country of villages and about eighty percent of our population reside there, yet the living conditions over there is yet not satisfactory even after forty seven years of independence. In spite of so many plans, schemes and programmes that have been made and launched for rural masses, even today very basic amenities are not available to them. As a consequence of this, they have to suffer a lot. One of such basic amenity is safe drinking water and another one is facility for excreta disposal. On account of this infectious diseases of various nature are rampant amongst our villagers which further add to their agony and hamper development.

Through a set of questionnaire. (appendix II) a situational analysis of the studied villages/hamlets as regards facilities for drinking water and excreta disposal was attempted. The information was collected by the interviewers from village leaders - formal or non formal. It was further verified by the interviewer's own observations. The collected data reveal the following facts.

Tap water supply is regarded as safest of all. The government is committed to provide safe drinking water to masses. Out of 205 villages/hamlets studied only 20 (9.75 percent) had the facility of tap water supply. Only two of the thirty hamlets of Banswara project, 12 (10.34 percent) villages/hamlets of Udaipur project area and 10.17 percent of Dungerpur project area had tap water facility. (T.6.9.1) This clearly indicate that the supposed safest drinking water was available to a very small proportion of the studied villages /hamlets.

1.6.9.1
NUMBER OF HAMLETS HAVING TAP WATER SUPPLY

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
NUMBER OF VILLAGES/HAMLETS	116	30	59	205
NUMBER WITH TAP WATER SUPPLY	12	2	6	20
PERCENT	10.34%	6.67%	10.17%	9.76%

Hand pumps have come as a big rescue for villagers as far as drinking water supply is concerned. It is a comparatively safer source of drinking water which is available to villagers with lesser efforts. Besides their provision, the maintenance of hand pumps is also of utmost importance. When so many people use them in their own way, the maintenance of hand pumps is not an easy task. Availability of drinking water throughout the year from them is also difficult. It was observed by the interviewers and supervisors that about 30 percent of the hand pumps (maximum in Dungerpur - 40.0%) were not in working order. 487 of the 661 hand pumps of Udaipur project area (73.68%), 216 of the 240 hand pumps of Banswara (90.0%) and 297 out of 483 hand pumps of Dungerpur were in working order. These figures pertain to Nov.-Feb. period. In summer months when the yield of water decreases & demand increases, the likelihood of more hand pumps to go out of order is logical. SWACH has developed a team of women hand pump mechanics from the villages themselves to solve this problem of repairing (1.6.9.2.).

T.6.9.2
NUMBER OF HAND PUMPS AND THEIR CONDITION

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
NUMBER OF HAND PUMPS	661	240	488	1389
NUMBER IN WORKING ORDER	487	216	293	996
PERCENT	73.68%	90.00%	60.04%	71.71%

When hand pumps are constructed, a round plate form along with a animal trough and a drain is also constructed so that the drained out water do not get collected near the hand pump to damage the platform & the base. This collection of water is likely to contaminate the underground water and also became an ideal situation for mosquito breeding. An assessment was made about water collection near hand pumps. Water collection was found near 31.97 percent of the hand pumps. The figure for Udaipur, Banswara and Dungerpur project area has been 26.17, 39.17 and 36.27 percent respectively (T.6.9.3.).

T.6.9.3
WATER COLLECTION NEAR HAND PUMPS

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
NUMBER OF HAND PUMPS	661	240	488	1389
NUMBER WITH WATER COLLECTION AROUND	173	94	177	444
PERCENT	26.17%	39.17%	36.27%	31.97%

Wells have been one of the main source of drinking water supply for villagers. They are available in plenty in rural areas. Depending upon its construction, the wells can be divided into kaccha well (without any

boundary wall, inside lining or pulley) and step wells (where there are steps to walk to the level of water). Most of the wells in rural areas used to be either Taccha well or step wells. In the recent years there has been lot of emphasis on improving water supply of villages. A number of step wells have been converted in to draw wells & provided with pulley. This on one side makes water safer and on other side also reduces chances of drowning accidents.

In all there were 1134 drinking water wells in the studied Udaipur project area, 379 in Banswara project area and 575 in Dungerpur project area (total 2088). Out of these 545 in Udaipur, 124 in Banswara & 251 in Dungerpur (total 920) were having the facility of pulley (44.06 percent - T.6.9.4.).

T.6.9.4
DISTRIBUTION OF WELLS BY PROVISION OF PULLEY

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
TOTAL WELLS	1134	379	575	2088
WELLS WITH PULLEY	545	124	251	920
PERCENT	48.06%	32.72%	43.65%	44.06%

The habit of washing utensils etc. near well lead to accumulation of water near the well site if the drainage is not proper. Collection of water around well can be the cause of water contamination as well as mosquito breeding. Moderate amount of water collection was found near about 21.50 percent of the wells. This type of situation prevailed in 235 wells of Udaipur project area (20.72%), 54 wells of Banswara project area (14.25%) and 160 wells of Dungerpur project area families (27.83% - T.6.9.5.).

1.6.9.5
COLLECTION OF WATER NEAR WELLS

	UDAIPUR	DANSWARA	DUNGERPUR	TOTAL
TOTAL WELLS	1134	379	575	2088
NUMBER WITH WATER COLLECTION AROUND	235	54	160	449
PERCENT	20.72%	14.25%	27.83%	21.50%

To make the well water safe from point of view of drinking, a system of periodic disinfection of well water with bleaching powder has been developed. Bleaching of water reduces the chance of various water borne diseases. Similarly, in order to kill cyclop, the well water is periodically disinfected with temephos. Disinfection of well water has been one of the function of Primary Health Center and its functionaries since their beginning (1952). Lately SWACH has also entered in this field in relation to Guinea worm control.

Information about disinfection of water at source level by bleaching powder and temephos was obtained from the local leaders. Bleaching was regularly done by the health workers in 37.07, 16.67 and 33.90 percent villages of Udaipur, Banswara and Dungerpur project areas, it was irregularly done in 12.07, 56.67 and 47.46 percent villages of the three project areas (1.6.9.6.).

T.6.9.6
DISINFECTIION OF WELLS BY BLEACHING POWDER

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
REGULARLY DONE	43 37.07%	5 16.67%	20 33.90%	68 33.07%
IRREGULARLY DONE	14 12.07%	17 56.67%	28 47.46%	59 28.69%
NEVER DONE	59 50.86%	8 26.67%	11 18.64%	78 37.27%
TOTAL	116	30	59	205

T.6.9.7
DISINFECTIION OF WELLS BY TEMEPHOS

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
REGULARLY DONE	64 55.17%	5 16.67%	23 38.98%	92 44.88%
IRREGULARLY DONE	31 26.72%	19 63.33%	25 41.37%	75 36.59%
NEVER DONE	21 18.10%	6 20.00%	11 18.64%	38 18.54%
TOTAL	116	30	59	205

Disinfection with temephos was regularly done in 44.88% hamlets/villages. This figure for the three areas has been 55.17, 16.67 and 38.98 percent (T.6.9.7.).

Ideal places for defecation is a sanitary latrine. However open field defecation is a very common practice in our villages. This has been the place of defecation in 94.06% studied families (T.6.5.8.). Open field defecation leads to aesthetic nuisance, fly nuisance and the problem of water contamination. By construction and providing sanitary public latrines in the villages, the village sanitation can be improved

and more and more people can be persuaded to construct latrine in their houses & use them. The village panchayats should take a lead in this direction and the government should provide support for it. In this regard the situation in the villages/hamlets studied was not at all encouraging.

Public latrine were found in only 25 (12.20%) studied villages/hamlets. The figures for the three areas were near identical (1.6.9.8). Maintenance wise, 5 (20.00%) of public latrine were moderately maintained, rest were ill maintained (1.6.9.9.).

T.6.9.8
DISTRIBUTION BY FACILITY OF PUBLIC LATRINES

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
NUMBER OF VILLAGES/HAMLETS	116	30	59	205
NUMBER WITH PUBLIC LATRINE	15	04	06	25
PERCENT	12.93	13.33	10.16	12.20

T.6.9.9
DISTRIBUTION OF PUBLIC LATRINES BY THEIR MAINTENANCE

	UDAIPUR	BANSWARA	DUNGERPUR	TOTAL
PROPER	2 20.00%	1 9.09%	2 50.00%	5 20.00%
NOT PROPER	8 80.00%	10 90.91%	2 50.00%	20 80.00%
TOTAL	10	11	4	25

CONCLUSION AND RECOMMENDATIONS

Knowledge of the family heads on different issues of water safety is just fair. Knowledge, attitudes and practices in relation to water safety at reservoir level, sanitation and hygiene and prevention of diseases were unsatisfactory & hazardous while as regards drinking water keeping at domestic level they were moderate to good. The knowledge gained is yet to be fully translated into practice.

Defecating in open fields is a very common practice. The refuse and garbage disposal is indiscriminate. These practices directly contaminate water at reservoir level. Thus the water that is made available to consumer at domestic level is unsafe and contaminated with microorganisms responsible for WBD. The prevalent practices of improper hand washing after ablution, delayed nail manicuring, handle less utensil to withdraw drinking water from pitcher further contaminate the drinking water kept in the domestic pitcher. This is all done because people are not well versed with the role of these practices in the causation of diseases. In fact the wrong deeds of one put many at risk. Chlorination of water is an effective technology for combating water contamination by killing most disease producing organisms, oxidising the organic matter present and destroying some taste and odour producing constituents.

The indiscriminate disposal of refuse & excreta besides causing water contamination at reservoir level also lead to fly breeding which transmit faecal matter containing microorganisms to food items to contribute in the causation of water borne diseases and also help in the spread of common infective skin diseases. Sharing of bed and clothes by

family members due to poverty and intimate contact of children with each other while playing help in the spread of skin diseases.

All these factors working together have led to high incidence of waterborne and skin diseases in the surveyed families. Out of all the three project areas, the incidence of diseases has been lesser in Dunderpur project families. Comparatively more percentage of families have also exhibited better knowledge and practices in this project area.

Controlling waterborne and infective skin diseases is a comparatively difficult task than controlling guineaworm disease because of the multiple causes and multiple routes of transmission involved in their causation and spread. The vector of guineaworm (the infected cylop) which contaminate water is visible and filtrable while the agents of different WBD and skin diseases are neither easily filtrable/removable, nor they are visible. They can also be transmitted through the agency of food, fly and finger to cause WBD and by direct and indirect contact to cause skin diseases. Multipronged action is therefore needed to have a control over them. The following actions are therefore recommended and suggested to improve the state of affairs.

1. STRENGTHEN AND SUPPORT CHLORINATION OF DRINKING WATER

Chlorination is an effective technology to disinfect water and make it safe for human consumption. Chlorination supported by other healthy practices of drinking water keeping is likely to bring down the incidence of waterborne diseases whereas healthy practices of drinking water keeping alone (filtration, covering, keeping at elevated place in clean utensil and withdrawing with ladle etc.) are not capable of disinfecting and purifying the water once it has been contaminated.

Chlorination of water at reservoir level is the assigned task to PHED department and the Primary Health Centre network of medical and health department. However for various reasons it is not effectively done. Chlorination of drinking water must be ensured. To be doubly sure giving CHLORINATION in consumer's hand and arranging "Social marketing" of Chlorine tablets and solution can also be thought of as an alternative strategy.

2. SUPPORT CONSTRUCTION OF SANITARY LATRINES AND COMPOST PITS

To have a check on the practice of open field defecation, it would be worthwhile to continue and accelerate the support for construction of sanitary latrines and compost pits at family as well as community level. It should also be supported by education and motivation activities so that more and more people use them.

3. ESTABLISH EPIDEMIOLOGICAL AND HEALTH EDUCATION UNITS

Controlling a group of diseases in a defined geographical area requires an epidemiological approach. Epidemiology studies the distribution and determinants of disease process in community and help in developing scientifically sound health programmes, interventions and policies for promoting health and preventing diseases. Such units can regularly monitor water quality, disease incidence and other related issues which are vital for planning and management of disease control programmes.

Health Education is an integral part of every soft and hardware support. It aims at bringing about desired changes in aptitude and practices of people which is so fundamental for health promotion and

disease prevention. Health Education is also a skilled and specialised task. Too much is talked about it, however it is always taken very casually. In order to make Health Education effective we must :

- (a) Prepare Effective Health Educators by arranging "certificate courses" in Health education for them rather than patchy repeated trainings. This would prepare efficient manpower for Health Education who can also cover fields like Safe motherhood and child survival, Family welfare, Malaria and T.B. control as they are also very important health problems of our nation and must be attended to on priority in order to achieve Health for All by 2000 A.D.
- (b) Develop interesting Health Education tools to suit to the local needs and local problems.
- (c) Develop regular system of Health Education including impact assessment.

SWACH has been working for control of diseases and improvement in community health. Well developed EPIDEMIOLOGICAL and HEALTH EDUCATION units should have been an integral part of SWACH. They must be developed as soon as possible to provide technical support for various activities and for regular monitoring of drinking water supply and health situation through various parameters.

4. CONTROL STUDIES TO BE UNDERTAKEN FROM TIME TO TIME

From time to time control studies should be planned and undertaken to show the impact of the interventions applied.

5. ATTITUDES AND PRACTICES -- EASIER TO FORM -- DIFFICULT TO CHANGE

Aptitudes and practices determine health to a considerable extent. Sound aptitudes and practices keep diseases away while unhealthy ones invite diseases and make even efficient treatment difficult. They are formed and inculcated in childhood. A sound health education system in school curriculum supported by conducive environment in schools and homes would inspire children to develop healthy aptitudes and practices which would protect their as well as community's health all through. It is a fact that it is very difficult to change the formed aptitudes and practices. While continuing our efforts to educate and motivate the adult community on issues of health, it is very important and crucial to pay deep attention to educate and motivate the young ones in their formative years of life - in schools and outside the school setting to give the wanted shape of habits and practices in them. This would certainly make the task easier in long run.

6. SWACH ACTIVITIES -- NEED TO CONSOLIDATE AND EXPAND

SWACH has done a good job in providing comparatively safer drinking water to the poor tribal segment of the society living in its project area. Consequently Guineaworm disease is on the verge of eradication. It must CONSOLIDATE in the existing areas so that the achieved gains are further strengthened quantitatively and qualitatively. It must also EXPAND its activities to other areas like schools, Anganwadi and other non formal education centres, small sized restaurants and urban slums as safe drinking water is the need of all and in these situations water keeping has been found to be very unsatisfactory.

7. THE NOMENCLATURE "WATERBORNE DISEASES" -- IS IT JUSTIFIED ?

Microorganisms are the cause of various waterborne diseases. Life food, fly and fingers, water also happens to be involved in their causation and spread. We know that water is fundamental need for life and survival. It has given us life, food and pleasure. It is ritual and religious too. All civilizations initially developed near it. For all ill effects caused by microorganisms and the wrongful deeds of human beings themselves, why only WATER the symbol of life and survival should be putt to a blame -- why not find some other name for WATERBORNE DISEASES.

Inspite of the significant accomplishments of the U.N. International drinking water supply and sanitation decade (1981-91) in bringing safe water and sanitation coverage to more and more people, even today the situation in rural areas is gloomy. Honest political commitment supported by sustained dedicated efforts are required to improve the state of affairs.

ANNEXURE I

LAP STUDY OF FAMILIES RESIDING IN SWACHH (UDAIPUR) PROJECT AREAS IN RELATION TO DRINKING WATER, VILLAGE AND HOME SANITATION & INCIDENCE OF WATER BORNE AND COMMON SKIN DISEASES.

FAMILY SURVEY SCHEDULE

Note:

1. This proforma is to be filled in through personal interview with the female (preferentially) or male head of the family in their family situation. If they are not available then some other adult member of the family may be interviewed.
2. Information about the illness amongst the family members is to be filled in part C of the format. As far as possible interview female head about the presently prevailing illness and the illness about water borne and common skin diseases that occurred in family members in last three months period.
3. Verify the answers concerning practices and facilities.

DISTRICT	TEHSIL	PANCHAYAT	VILLAGE / HAMLET
S.No. OF VILLAGE / HAMLET	INTERVIEW DATE	INTERVIEWER WITH DESIGNATION	RESPONDENT MALE HEAD : FEMALE HEAD : OTHER (SPECIFY)
A. FAMILY INFORMATION			
1. Head (Name)		Male	Female
2. Type of Family		Joint/ 1.	Single/ 2. Three generation 3.
3. Religion		Hindu/ 1. Muslim/ 2.	Christian 3.

4. Caste Schedule/ Schedule/ Other
Tribe / Caste / (Specify)
1 2 3
5. Number of units (couples) and members in the family Units _____ Total Members _____
Average per unit _____
6. Literacy level of heads
Male: Illiterate Just Literate
1. 2.
Primary Upper Primary
3. 4.
Secondary College
5. 6.
Technical
7.
Female: Illiterate Just Literate
1. 2.
Primary Upper Primary
3. 4.
Secondary College
5. 6.
Technical
7.
7. Do children above five years of age go for schooling
Male children
Yes, all/ yes, some/ None/ N.A.
1. 2. 3. 4.
Female children
Yes, all/ yes, some/ None/ N.A.
1. 2. 3. 4.
8. If male and female children above five yrs., do not go to school mention reasons
No school in Engaged in
village/hamlet domestic work
1. 2.
No need others, specify N.A.
3. 4. 5.
9. Mention the occupation of the earning members of the family
Member Occupation
1.
2.
3.
10. Is any female of the family working/has worked as AWW/Sathin/Scout Nurse?:
Yes No Previously she worked
1. 2. 3.
11. Socio economic status of family
Upper/Middle/Lower
1. 2. 3.

9. If you do not consume piped or hand pump water, mention reason? Not available in near vicinity
1.
Do not like/ other(specify)/N.A
2. 3. 4.
10. If for fetching drinking water, you have to go out of house, mention how much time you have to devote for it every day and how much distance have you to walk (both ways) for it? Time .5 1 1.5 2 2
(hours)

Distance .5 1 1.5 2 2
(kms.)
11. Is it proper to wash clothes and take bath near wells & lakes? Yes/ No/ Do not know
1. 2. 3.
12. If yes, why? 1. Get pleasure
2. No need to carry water home
3. Water available in plenty
4.
5.
6. N.A.
13. Do you go to wells and lakes to take bath or wash clothes? Yes always/ No/ Occasionally
1. 2. 3.
14. If yes, Why? 1.No tap in house
2.No place in house
3.Traditional family practice
4.Automatic walling
5. N.A.
15. Is Defecating near lakes & other water sources, a correct practice. Yes/ No/ Do not know
1. 2. 3.
16. Mention practices to keep domestic drinking water safe? 1.
2.
3.
4.
5.
17. Mention the names of diseases/ symptoms caused by polluted water. 1.
2.
3.
4.
5.

18. Which is the best utensil to withdraw water from pitcher?
 Ladle/ Glass/ Gaddi/
 1. 2. 3.
 Any utensil
 4.
19. Which is the best material for filtering drinking water?
 No need/ Ordinary cloth/
 1. 2.
 Double layered cloth/
 3.
 Funnel with filter
 4.
 Do not know
 5.
20. What are the reasons of diarrhoeal diseases?
 Polluted water/Contaminated food
 1. 2.
 Dirty and long nails
 3.
 Unhygienic bottle feeding/ All above/ Do not know
 4. 5. 6.
 Others specify
 7.
21. Should a patient of diarrhoeal disease be fed with liquids & routine ordinary food
 Yes/ No/ Do not know
 1. 2. 3.
22. Have you heard of oral rehydration solution?
 Yes/ No
 1. 2.
23. If yes, mention the source of information?
 Health worker/ Radio/ T.V.
 1. 2. 3.
 Magazines/ Newspaper/ Friends
 4. 5. 6.
 In trg. programmes.
 7.
24. What are the main constituents of oral rehydration solution.
 1.
 2.
 3.
 4.
 5.
 6. Do not know
25. Can water be purified by some chemicals?
 Yes/ No/ Do not know
 1. 2. 3.
26. Which is the best source of drinking water?
 Hand pump/ Tap/ Step well/ Well/
 1. 2. 3. 4.
 Pond/ Do not know.
 5. 6.

27. Is polluted water the cause for guineaworm disease? Yes/ No/ Do not know
1. 2. 3.
28. Water of which source is most capable of causing guineaworm disease? [ap/ Well/ Hand pump/ Step well/ Pond/ Do not know
1. 2. 3. 4.
5. 6.
29. Can you recognise guineaworm disease? Yes/ No
1. 2.
30. Since Oct./Dec.'92, till now, has any member of your family suffered from guineaworm? Yes/ No
1. 2.
31. How can guineaworm disease be prevented? 1.
2.
3.
4.
5.
32. Have you ever seen workers disinfecting the water of well or step well in your village? Yes/ No.
1. 2.
33. Should there be separate utensil for drinking water in family? Yes/ No
1. 2.
34. Do you have a separate utensil for drinking water in your family? Yes/ No
1. 2.
35. If you use earthen pitcher to keep drinking water in your family, how frequently you change it? Every month/ Every three month
1. 2.
Every six months/ Every year/
3. 4.
On festivals/
5.
as and when it breaks
6.
36. Is it necessary to keep drinking water covered? Yes/ No/ Do not know
1. 2. 3.
37. Do you keep drinking water covered in your family? Yes/ No
1. 2.
38. Should drinking water be kept at an elevated place? Yes/ No
1. 2.

39. Do you keep drinking water at an elevated place in your family
Yes/ No
1. 2.
40. Is it necessary to clean the utensil daily with which drinking water is filled in?
Yes/ No
1. 2.
41. Do you clean those utensils daily?
Yes/ No
1. 2.
42. If yes, with what material you clean them?
Only water/ Clay/ Ash/
1. 2. 3.
Detergent Powder/ N.A.
4. 5.
43. Is it necessary to filter drinking water?
Yes/ No/ Do not know
1. 2. 3.
44. Is drinking water filtered in your family?
Yes/ No/ Some times
1. 2. 3.
45. If yes, what is the filtering material?
Ordinary cloth/
1.
Double layered cloth
2.
Funnel with filter/ N.A.
3. 4.
46. Which utensil should be used to withdraw water from pitcher?
Glass/Lotha/Ladle/Any utensil
1. 2. 3. 4.
47. Which utensil is used in your family to withdraw drinking water from pitcher?
Glass/ Lotha/ Ladle
1. 2. 3.
Any utensil
4.
48. Have you been provided with any item of drinking water kit by SWACH or any other agency (mention agency, if other than SWACH)?
Plastic funnel with filter
1.
Double layered straining cloth
2.
Ladle/ Bottom nut/ None
3. 4. 5.
49. Do you use these items?
Yes/ No/ Occasionally/ N.A.
1. 2. 3. 4.
50. Do you face any difficulty in the replenishment of the items?
Yes/ No/ Not needed so far
1. 2. 3.

51. Which is the best place for defecation ?
 Open field/ Public latrine
 1. 2.
 Sanitary domestic latrines
 3.
52. Do you have a latrine in your house?
 Yes/ No
 1. 2.
53. If yes, Is it sanitary?
 Yes/ No/ N.A.
 1. 2. 3.
54. Where do members of your family defaecate?
 Open field/ Public latrine
 1. 2.
 Domestic Latrine/
 3.
 Some in open air and some in latrine
 4.
55. With what material, hands after ablution should be washed?
 Only water/ Clay/ Ash/ Soap
 1. 2. 3. 4.
56. What material is used in your family to wash hand after ablution?
 Only water/ Clay/ Ash/ Soap/
 1. 2. 3. 4.
 Just dry up
 5.
57. Is it necessary for mother to wash her hand after cleaning children's toilet?
 Yes/ No
 1. 2.
58. Are hands washed after cleaning the toilet of children in your family? If yes, with what?
 No/ Yes / Soap/ Clay/ Ash/
 1. 2. 3. 4. 5.
 Only water
 6.
59. Is it necessary to pay attention to cleaning of finger tips and nails while washing hands?
 Yes/ No
 1. 2.
60. Is it practiced in your family?
 Yes/ No
 1. 2.
61. Where should the domestic and cattle shed refuse & garbage be thrown?
 Any where/ In manure pits/ At
 1. 2. 3.
 fixed place
62. Where do you throw your family refuse & garbages?
 Any where/ out side house
 1. 2.
 Manure pit/ Fixed place
 3. 4.

63. Should the eatables be kept covered? Yes/ No
1. 2.
64. Do you keep eatables covered in your family? Yes/ No/ Partially
1. 2. 3.
65. Can domestic fly also spread water borne diseases? Yes/ No/ Do not know
1. 2. 3.
66. Are dirty and long nails, the cause of diseases? Yes/ No/ Do not know
1. 2. 3.
67. How frequently one should manicure ones nails? Twice a week/Once a week/
1. 2.
Fortnightly/ Once in a month
3. 4.
No need
5.
68. How frequently your family members manicure nails? Biweekly/ Weekly/ Fortnightly
1. 2. 3.
Monthly/ No fixed routine
4. 5.
69. Does washing hands before meals prevent diseases? Yes/ No/ Do not know
1. 2. 3.
70. Do your family members wash their hands before meals? Yes/ No/ Some wash
1. 2. 3.
71. What are the main reasons of boils, impetigo and scabies (Skin diseases)
Deficiency of food
1.
Body uncleanliness
2.
Uncleaned clothes
3.
Dirty water/ contaminated food
4. 5.
Do Not know
6.
72. How scabies is transmitted from one person to another? Contact with clothes/
1.
Body contact/Both the above
2. 3.
Do not know
4.
73. How can skin diseases be prevented? 1.
2.
3.
4.

74. Do flies also help in the spread of Boils/Scabies/Impetigo?
Yes/ No/ Do not know
1. 2. 3.
75. Routinely, how frequently a man should take bath?
In winter:
Daily/ Alternate day/ Biweekly/
1. 2. 3.
Weekly
4.
In summer:
Daily/ Alternately/ Biweekly/
1. 2. 3.
weekly/ Twice a day
4. 5.
76. What is the frequency of bathing in your family?
In winter
In summer
77. From the point of view of health, is it necessary to have separate towels for each person?
Yes/ No/ Do not know
1. 2. 3.
78. Do you have separate towel for each individual in your family?
Yes/ No
1. 2.
79. How frequently the undergarments and other clothes be changed?
Daily/ Alternate day/ Biweekly/
1. 2. 3.
Weekly/ When appear dirty
4. 5.
80. How frequently do you change your clothes?
Daily/ Alternate day/ Biweekly
1. 2. 3.
Weekly/ When appear dirty.
4. 5.

Note : A key of codes has been prepared for open question.

VILLAGE SURVEY SCHEDULE

Information about village water resources and sanitation around them.

Distt	Tehsil	Panchayat	Village/Phala	Date of survey
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* Name of the village leader or influential person from whom information collected (with his signature)

:

* Information obtained by whom & his designation

:

* Population of the village/ phala & number of families.

Population
No of families

1. Does the village/phala has water works Dept. to supply water?

Yes/ No
1 2

2. If yes, how many families have pipe water supply connection?

3. How many public taps are there in the village/phala?

4. Does water remain collected near public taps?

Yes/ No/ N.A.
1. 2. 3.

5. Is there provision of bleaching of water in the public distribution system.?

Yes/ No/N.A.
1. 2. 3.

6. Is this provision regular?

Yes/ No/ N.A.
1. 2. 3.

7. Is there proper facility to store bleaching powder?

Yes/ No/ N.A.
1. 2. 3.

8. How many Hand pumps are there in village/hamlet ?

9. How many there are in perfect condition?

10. Around how many of them water remain collected?

11. How many drinking water wells are there in the village/phala?

12. Around how many of them water remain collected?

13. How many of these wells have pulley?

14. How many of these well are sanitary?

Complete/ Incomplete/ Insanitary
Sanitary/ Sanitary
1. 2. 3.

15. How many step wells are there in village/ phala from where people drink water?

16. Are the well & step wells disinfected by workers of Health Dept./SWACH/Other agencies?

Yes regular/ irregular/ Never
1. 2. 3.

Name of Agency _____
Name of disinfectant _____

17. Are the well & step well bleached by there workers?

Yes regular/ Irregular/ Never
1. 2. 3.

Name of agency _____

18. Are there public latrines in the village/phala?

Yes / No
1. 2.

19. If yes, How many?

20. Do the villagers use public latrine?

Adequately/Only Few/No/N.A.
1. 2. 3. 4.

21. Does the village Panchayat maintain their cleanliness?

Yes/No.
1. 2.

LIST OF THE VILLAGES/HAMLETS

PROJECT AREA : UDAIPUR

A. PANCHAYAT SAMITI - SARADA

1. Advas (Ghatla phala)
2. Javad (Moti kankar)
3. Naihhar (Jhanati phala)
4. Davana
5. Sallara (Badi Dungari)
6. Bahuti
7. Mayar
8. Sagtara
9. Fal nimbadi
10. Shyampura
11. Surkhand Kheda
12. Bagthala
13. Nal Alankar
14. Madava
15. Katanvada
16. Chhani
17. Bandoli
18. Ambala
19. Thana
20. Lalpura
21. Dingari
22. Baijpur
23. Semal
24. Karodiya
25. Virpura
26. Lalpuria
27. Kantoda
28. Kolar
29. Malar
30. Vali
31. Senthai
32. Kunda

B. PANCHAYAT SAMITI - JHADOLE

1. Magvas
2. Khakan (Gopeshwar phala)
3. Lakhgoda
4. Godavada
5. Damana
6. Kirat
7. Koliyari
8. Jalampura
9. Dhala upla
10. Sisvi

C. PANCHAYAT SAMITI - GODUNDA

- 1. Godaval
- 2. Gundala
- 3. Paner
- 4. Farda
- 5. Hanji Pa guda
- 6. Katiya Iheda
- 7. Morval
- 8. Ghata
- 9. Morbi
- 10. Nal

D. PANCHAYAT SAMITI - GIRWA

- 1. Ranapal
- 2. Amarpura
- 3. Tidi
- 4. Baran
- 5. Chadawada
- 6. Choti undari
- 7. Popalty
- 8. Faliwas
- 9. Jhawala
- 10. Sarar

E. PANCHAYAT SAMITI - SALUMBER

- 1. Gharot
- 2. Gund
- 3. Dagar (Lambi Dugri)
- 4. Bandarwada (Ghati phala)
- 5. Fholeri
- 6. Bamaniya
- 7. Fhorwara
- 8. Fhandora
- 9. Noli
- 10. Randela
- 11. Borag
- 12. Baroliya
- 13. Bara
- 14. Baliya Iheda
- 15. Ramina
- 16. Funda
- 17. Fhajuri
- 18. Bedawal
- 19. Jambuda
- 20. Sailpur

F. FANCHAYAT SAMITI - PHERWADA

1. Fipli I
2. Fipli II
3. Kalaliya kand
4. Kikawat
5. Balevadi
6. Ghodi
7. Nichla madva
8. Barna
9. Masaro ki obri (Sumlired phala)
10. Kagdhan bhatia
11. Samdar
12. Mandav phala
13. Garawat Gorimba
14. Ugmana kotra
15. Kalawat
16. Somawat
17. Kanupada (Darbara phala)

G. FANCHAYAT SAMITI - KUMBHALGHAR

1. Ghata
2. Morcha
3. Badgam
4. Khedaliya
5. kuncholi (Ghata ki Bhagal)
6. Kesar (Quyra phala)
7. Jhadpha
8. Pipla
9. Machada (Boliya)

H. FANCHAYAT SAMITI - DHARIYAVAD

1. Sodala
2. Chaparia
3. Dhavadi
4. Angad (Pavti phala)
5. Dani Talai
6. Devaliya
7. Gholiya
8. Lifafa

PROJECT AREA - DUNGIRPUR

A. PANCHAYAT SAMITI - DUNGIRPUR

1. Dolver upli
2. Dolver nichali
3. Phari - I
4. Phari - II
5. Mathu gamma I (Gadat phala)
(Hariyat phala)
6. Mathu gamma II (Deval phala)
(Taphra phala)
7. Futado
8. Galand (Harlad dungli)
9. Balvada (Beral)
10. Bhachadiya (Nichla phala)
11. Phajuriya (Modra phala)
12. Talaj
13. Baccipal
14. Bassi
15. Semai Ghata
16. Ghotiamli
17. Gole
18. Untiya
19. Rehla
20. Talal ghala
21. Hatai
22. Odvadiya
23. Satu
24. Balvania
25. Charwade

B. PANCHAYAT SANITI - BAGWARA

1. Pani Talai
2. Sunderpur
3. Saroda
4. Tesarpura
5. Larda
6. Samaliya
7. Shivraj pura
8. Doli

C. PANCHAYAT SANITI - BICCHIWADA

1. Baladit
2. Gungna (Tarala pada)
3. Padardi
4. Sisond (Amedar Phala)
5. Mana Talai
6. Gamdi Ahada

D. PANCHAYAT SAMITI - SIMALWADA

1. Rasta (Mandali vadi)
2. Boda mali (Madariya)
3. Dhuvad (Holi Phala)
4. Ihar (Bhagora Phala)
5. Badesa
6. Badgoam
7. Kodariya
8. Basia
9. Adiva
10. Mewara (Rajput phala)
11. Bavdi

E. PANCHAYAT SAMITI - ASFUR

1. Khalil
2. Ghani Khajuri
3. Pachlase chota
4. Galaiyana
5. Bhivadi
6. Funjpur
7. Raiki
8. Panch lasa vada
9. Katisor

PROJECT AREA : BANOWARA

A. PANCHAYAT SAMITI - SAJJANGARH

1. Lasodiya
2. Garadiya
3. Mahudi
4. Agoriya
5. Semal Kheda
6. Chor bada

B. PANCHAYAT SAMITI - ANANDEPUR

1. Dad
2. Bared
3. Obla

C. PANCHAYAT SAMITI - QUATOL

1. Motagoam
2. Belu pada
3. Dudhla
4. Doli Kheda
5. Baman pada
6. Amarpura
7. Dhindoriya
8. Nareda
9. Garnawar
10. Morar
11. Fotmagri
12. Funda

D. PANCHAYAT SAMITI - LUSHAL GARH

1. Gira lot
2. Lala fund
3. Macha
4. Darajniya
5. Bod
6. Choti ganvada

E. PANCHAYAT SAMITI - DAGIDORA

1. Pothi wada
2. Gamana decor
3. Danan

