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AFFORDABLE WATER SUPPLY AND SANITATION

## Participatory methods for health impact assessment

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IN ZIMBABWE great strides have been made to improve the country's rural water and sanitation supplies with large investments, all this justifiable on the basis that substantial health benefits will be gained by the provision and availability of improved water supplies and sanitation. The Zimbabwe National Water Master Plan of 1985 asserts that a combination of poor water supplies and inadequate sanitation has resulted in a situation where diarrhoeal diseases are estimated to kill 25 000 children every year and it has also been estimated that water related diseases account for at least 19% out of all patient cases in districts in Zimbabwe. However, to date no health impact studies have been conducted in the country, largely because methods of monitoring health impact studies are known worldwide to be very difficult, cumbersome, tiresome, and expensive. Therefore there was a recognised need to develop a health impact study which would use simple low cost, quick but effective methods to measure the effects of water and sanitation interventions in rural areas. Further these were to be methods which involved the community themselves so that they would be able to assess their own health status and relate or link this to the provision and use of improved water supplies and sanitation facilities.

We decided to use hygiene behaviour as our probable indicator i.e. as the intermediate variables between intervention and health impact. The following were the objectives for our study;

- 1. To review the water and sanitation classification system in terms of usage and compare this with the standard classification based on accessibility.
- 2. To determine the community's water use practices and factors affecting them.
- 3. To determine the community's sanitation use practices and factors affecting
- 4. To establish the communities perception of health and water and sanitation related diseases.
- 5. To determine factors influencing good hygiene practices.
- 6. To review the rapidity and effectiveness of the participatory research tool in measurement of health impact.

## Study design

The study was conducted in four different wards with different levels of water and sanitation interventions in Masvingo District of Masvingo Province situated in the south of Zimbabwe. 2000 households with one or more children under 5 years of age were selected and then classified according to standard classification for having improved water supplies and sanitation by their proximity to water and sanitation facilities as follows; those with Sanitation only which were the households with a ventilated improved pit latrine (VIP commonly known as Blair Latrine) in its homestead; those with Water only which were households with a borehole within 500m from homestead; those with both water and sanitation and finally those without water and sanitation, the no intervention group.

## What is participatory research?

Participatory research incorporates methods that facilitate a fuller understanding of behaviours and determinants of behaviours in their social, cultural, economic and physical context. It has its strength in its approach. It is a method that generates learning from the people involved, with the people involved, and by the people involved, something which is not generated from using the standard methods for gathering information on behaviour, ie. the observations and interviews. Further, participatory research has the capacity to deal with a larger group of community members at the same time, which is not the case with observations and interviews. It is therefore less time consuming. What is apparent is that the methods employed depend on fruitful interaction among participants and hence they require skilled facilitators to ensure success.

## The field methods used in this study

### Method 1: Community infrastructural mapping

This investigative activity called community infrastructural mapping concerns the drawing of a map or the building of a model by the participants to gather information about their community and its issues. In this way you are able to visualise important information such as a schools, community buildings, health units, public and private latrines, public and private water points, rivers, roads, refuse heaps, pot racks, etc. In our study, it entailed the members in the study group drawing their households toilets and water infrastructure. They then proceeded to indicate where they collected drinking water and water for other uses and were they went to use the toilet.

#### Method 2: Pocket - chart voting

The pocket chart consists of rows of pockets, usually four to six horizontally and six to ten vertically. A set of pictures is then attached above the top row of pockets. These pictures represent areas in which data are needed, choices, such as different sources of domestic water supply (river, pond, uncovered well, pump, family well and spring). Participants then put their voting slip in the pocket of their choice - for example the spring as a preferred source for drinking water. To ensure confidentiality, the voting maybe carried on out of sight from everyone. When everybody has voted, the pockets are emptied, usually by one of the community members, the votes counted and the findings discussed.

The voting therefore allows collection and analysis of data by using a pocket chart, and is therefore a tool that allows villagers to assess and analyze their own situation.

### Method 3: Dr. Tanaka's game

Dr. Tanaka's game is a game of people's perceptions of health and disease, a form of disease diagnosis of a community. It comprises of a lot of pictures of people of different ages and positions waiting to see the Doctor. The participants are then asked to say what they perceive the person is suffering from. During and after the exercise, a lot of information can be generated through debate and discussion about the occurrence and prioritisation of disease and illness in the community, their ideas on disease transmission and the possible relationship with water and sanitation.

#### Method 4: Three-pile sorting

The 3-Pile sorting method employs a set of pictures/ drawings which gives the participant the awareness to get to know the full extent of the positive or negative attitudes and implications of a variety of situations shown to them.

An example was a set of 10 to 15 pictures each with a picture of a scene which could be interpreted as "good", "bad" or "in-between" from the view point of health, sanitation or water supply. Participants are then asked to sort these out according to their choice and then later invited to share their conclusions and defend their choices to the whole group.

### Method 5: Focus group discussion (FGD)

The administration of each of the above 4 tools (i.e mapping; pocket chart voting; Dr Tanaka's game and 3-Pile Sorting) was followed by extensive focus group discussions and a further explanation of the various issues raised by the respective tools.

Focus groups are a method designed to gather information primarily about beliefs, values and understanding. Group dynamics facilitate the collection of relatively detailed information on prevalent attitudes and ideas, conflicts and contradictions. In the discussion, the emphasis is on a free exchange of views and experience. The discussion maybe recorded on tape but a note-taker is usually present. The interviewer's role is to act as a facilitator, stimulating the participants to keep discussing the subject. For this, a skilled facilitator is essential. The note takers's role is not to participate in the discussion but to observe non-verbal interactions, document these exchanges and the general content of the discussion.

## Some results of the study

### Water use practices and factors affecting them

Infrastructural mapping determined that in some instances families that had initially been assumed to have a water facility were there was a borehole 500 metres away were not using that facility because it had broken down, or it was too far according to them. Pocket Chart Voting - further established that for the households which have a protected borehole and which indicated that they were actually using the borehole, there was no variation of use during the different wet and dry season for these families since all put their voting slips under the same source during the dry and rainy period.

The questions asked and most common responses obtained during the focus group discussions are shown on Table I below:

Focus group discussions indicated that all groups understood 'safe' water as 'protected' water and that river and shallow well water was unsafe but if the borehole was not available, far or broken down, then they had no choice but to resort to these unsafe sources.

Table I			
Question		Most Common Response	
1.	What influences the amount of water used in your home	1. Family size	
		2. Domestic chores	
		3. Season	
2.	What is your priority activity when water is scarce.	1. Drinking/cooking	
		2. Washing dishes	

Table 2				
Most Common Place for Defecation	Households with Latrines	Households Without Latrines		
1. During the day	Latrines	1. Nearby field on garden		
		2. Bush		
		3. Behind hill		
2. At night	1. Latrine	1. Nearby field or garden		
	2. Nearby field	2. Behind house		

# Sanitation use practices and factors affecting them

Findings on defecation practice are as shown in Table II.

# Other hygiene practices and factors affecting them

## This objective was addressed using the **three pile sorting method**.

In general, all groups, regardless of their level of improvements were able to identify the good hygiene practices as depicted by the sorting of the pictures. However, during the focus group discussion it was apparent that actual behaviour practices were different from their apparent knowledge.

a. **Hand washing** - this was mainly associated with eating and preparation of meals and not with latrine use. The dangers of not washing hands was recognised, but there were no handwashing facilities available for those households with latrines hence people just did not bother to wash hands. Young children were not monitored when using the bush or latrine, hence it was quite likely that they too did not wash their hands after defecation.

- b. **Communal handwashing** the risks of washing in someone's dirty water was also recognised but it was explained this practice was a 'norm', a culture and washing separately only wasted water.
- c. **Bathing** this was reported as a daily routine by the mothers in terms of personal hygiene. However, children washed less frequently depending on the weather, availability of time and task performed.
- d. **Dish-washing** this was a very common practice performed routinely after the three main meals of the day. The task took up a lot of the domestic water, apart from laundry and bathing.

# Perceptions of health and disease as related to water and sanitation.

This objective was achieved using "Dr Tanaka's" Game of disease diagnosis and intensive focus group discussion.

## Conclusion

This report provides baseline information and highlights some of the prevalent water and sanitation related behaviours and attitudes that prevail in the communities in our

Table 3					
Illness	Most common resposes on causes of illness	Most common responses on methods of prevention			
Diarrhoea	<ul> <li>Dirty Food; Dirty Water; fontanelle (nhova); Teething; Natural Childhood illness</li> </ul>	<ul> <li>Keep water and food clean and covered; Keep away flies; Cannot be prevented</li> </ul>			
Eye infections	<ul> <li>flies; same towels used for drying faces of different children</li> </ul>	<ul> <li>Keep flies away; Use different face cloths for drying different children's faces.</li> </ul>			
Skin infections	<ul><li>bathing in the same water</li><li>don't know</li></ul>	<ul> <li>Separate bathing for children; Separate towels for children when drying after bathing.</li> </ul>			

project area Masvingo district. Further analysis is still being conducted to be able to make actual comparisons between the four water and sanitation status groups.

For the Range of Diseases: - Diarrhoea, eye infections, measles, kwashiorkor, Sexually Transmitted Diseases (STD), Pelvic Inflammatory Disease (PID) and Tuberculosis (TB) were the most commonly mentioned illnesses by all the four groups. This was their priority list in their communities. For **di**sease transmission routes, prevention and treatment methods, the most common responses obtained in all four groups of different levels of water and sanitation are shown on Table III above.

Evaluating the effectiveness and rapidity of the participatory research tools in meeting the study objectives

will be of crucial importance for future health impact assessments.

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