



14th WEDC Conference
Water and urban services
In Asia and the Pacific
Kuala Lumpur 1988

Disposal of excreta and sullage

C Kariyawasam

INTRODUCTION

Both safe water supply and sanitation are equally important in achieving health goals in communities (ref.2). However water supply projects has been able to attract the attention of the beneficiaries more than the sanitation projects. Major reason for this is the resulting convenience to beneficiaries from water supply projects. Despite this preference for water supply projects the governments and donor agencies have managed to focus the attention of people on sanitation projects, because of

- a) health hazards associated with exposed night soil
- b) desire of the society for a cleaner and aesthetic system which is a result of rising living standards and education
- c) peoples demand for doing away with the practice of human beings carrying night soil loads (ref. 3)

As the end users the people do always participate in sanitation projects. Peoples participation also can be obtained at the planning, design and implementation levels of a project. Even though this has become a popular theme among donor agencies active peoples participation at all these levels is obtained very rarely in sanitation projects. Major reason for this is the failure to understand the behaviour of the people (ref 1). To understand and predict the behaviour of people one must be aware of the knowledge, attitude, and practices of the beneficiaries. This paper presents the results of a survey carried out on the knowledge, attitude and practices of five different communities in Sri Lanka on the disposal of sullage and excreta.

DESCRIPTION OF THE SELECTED COMMUNITIES

The following five communities were selected for the study.

- a) a settlement scheme
- b) an urban area
- c) a traditional old village
- d) a fishing village
- e) an urban slum area

Galoya, the selected settlement scheme is located near the East coast of Sri Lanka. This is the largest single irrigation scheme in the country which was completed in 1950. Total irrigated area under this project is about 40,000 hectares. Majority of the farmers grow paddy. About 4000 hectares of sugar cane is also grown by a public agency. Originally farmers were allocated lots varying from one to ten hectares depending on their capability manage.

Panadura, the selected urban area is located about 27 km. South of Colombo, the capital city. This is a fast developing satellite town with all basic facilities. The soil in this area is sandy, and the groundwater table is relatively high.

Bandaragama, the traditional old village selected is located about 40 km. South-East of Colombo. The soil type in the area is sandy clay with several rock outcrops. The average elevation is about 15 meters above mean sea level.

The fishing village selected is located inside the city limits of Wadduwa, a town 35 km. South of Colombo. The rail track connecting Colombo and Galle, the capital of southern province, runs through this village. Being located near the beach the soil is sandy making it difficult to dig pits.

The urban slum area surveyed is located in Maradana, a suburb of the Colombo city. This is a squatter settlement that grew up during 1940's on previously unutilized land that belonged to the government. The soil in this area is sandy. The average elevation above mean sea level is about a meter.

SOCIO ECONOMIC CONDITION OF THE STUDY AREA

Majority of the people in the Galoya settlement scheme are paddy farmers. They grow paddy twice an year. As a result they receive their annual income in two instalments. These farmers have come from different parts of the country. As such they belong to different cultures, religions and castes. As part of the irrigation project the government has constructed semi permanent houses for the farmers. However with the addition of second and third generation farmers new houses had been constructed. As a result there are several temporary houses within the scheme. The average annual income of a farm family is about Rs. 18,000. At present (January 1988) one US dollar is about Rs. 30.

People in the Panadura area are monthly wage earners who work for the government or private firms in the city of Colombo. As such they leave their homes in the morning and come back late in the evening. There are few businessmen. In most families both husband and wife are employed. Majority of the people in the area have permanent houses. Most of the houses have three bed rooms a living room and a kitchen. The monthly wage earners generally obtain a long term loan on reduced interest rates from the government to construct a house. The average annual income of a family is Rs. 46,000.

Majority of the people in Bandaragama are part time farmers. They grow cash crops. There are few government servants who work in the nearby offices. Generally all families receive a regular income. In this community the houses are fairly old. Most of them constructed over 50 years ago. These houses generally consist of a large varendah, a living room, a large store room, a kitchen and about two bed rooms. The average annual income of a family is Rs. 25,000.

All the people in the fishing village are fisherman who work daily for a period of about 9 months. During the three months when the seas are rough they used to migrate to the east coast for fishing. However after the ethnic problems that cropped up in 1983 these fisherman do not migrate. As such they are not employed for about three months of the year. As expected various types of social and economic problems crop up in this community during these three months. All the 65 houses in this community are temporary ones.

Both roof and walls are made of cadjan. Generally they have one living room and a kitchen. Kitchen is used only on rainy days. On other days cooking is done outside. The average annual income of a family is about Rs. 11,000. As indicated earlier they receive this income over a period of 9 months.

People in the urban slum area are those who migrated from south where the unemployment rate is high. This community provides cheap labour for the Colombo city. All the houses in the area are temporary ones. There no water service or electricity connection to the houses. The houses do not have clearly marked access paths. There are no boundaries. About 90 houses are clustered within an area of about 0.5 hectare. There are about 900 people living in this area. In certain houses only half of the family can sleep inside at a time. As such half the family sleep till midnight while the other half loiter in the street. At midnight they swap. There is no source of regular income for these people. Most of them work as casual labourers. The only people who receive a fairly steady income are the astrologers, cobblers, and the street vendors. The income of the community drops drastically on rainy days. The average annual income of a family is Rs. 10,000.

Table 1 summarises the basic socio economic characteristics of the five different communities.

Table 1: Socio economic characteristics of the selected communities

Community	Population	Area in Ha	Population Density in persons/Ha	No of people per house	Average annual income in Rs.	Annual per Capita Income (Rs)	Value of land in Rs/Ha
a)	70,000	1200		6.2	18,000	2903	100
b)	5,000	300		4.8	46,000	9583	2400
c)	2,200	500		5.3	25,000	4716	1300
d)	1,100	9		8.1	11,000	1358	4500
e)	950	0.5		12.8	10,000	781	20,000

Note: The area allocated for farming activities was not considered in computing the population density

KNOWLEDGE OF THE PEOPLE

Majority of the people interviewed, including the ones who had a formal education did not consider that there is a health hazard in improper disposal of excreta. Only 11, 16, 5, 2, and 2 percent of the people respectively, in each community considered that proper disposal of excreta is required for health reasons. About 32 percent of the people of all communities were of the opinion that proper disposal of excreta is required for aesthetic reasons and to avoid social embarrassment.

As expected low income group people of all communities were less knowledgeable about sanitation in general. However, some educated people felt that the governments exaggerate the hazards associated with the improper handling of excreta and sullage. They argued that excreta is a natural product that is as old as the human race, and before the introduction of latrines people have been defecating in open areas without major problems.

Poor knowledge is a result of low literacy rate in low income groups. Even large colour posters specially designed for illiterate people were understood only by the literate people. The reason for this is that the people who are illiterate are also generally visually illiterate.

ATTITUDE OF THE PEOPLE

People in the urban area generally considered having an expensive western type bathroom as a symbol of progress. About eighty percent of the people who had western type of bathrooms did not use them. They had a separate inexpensive toilet and bathing facilities for their use. The western type bathroom was reserved for the guests and visitors. There was one house with two expensive bathrooms, but they had a separate toilet outside for their use.

Farmers in the settlement scheme considered having their own toilet as a status symbol. In this community the second and third generation farmers shared the toilets with the original settlers. The attitude of the people in the old village on the disposal of excreta and sullage was similar to that of the irrigation settlement. They had their own toilets, generally about 20 yards away from the house.

There was not a single toilet in the fishing village or in the urban slum area. These people did not place a high priority for constructing toilets. In the fishing village the major reason was the non availability of funds. In the slum area the constraint was the land. The value of land in this area was very high. As such they could use the land for other 'profitable' purposes than constructing toilets.

During the survey they were asked what they would like to do if they receive Rs. 10,000. They were given five options. Construct a toilet, buy a colour television, buy a refrigerator, buy a motor cycle, or go abroad for each employment. Each activity requires about Rs. 10,000. They were also asked to assume that they do not have any of the above items. Results of this part of the survey are presented in Table 2.

Table 2: Priorities of people in different communities expressed as a percentage

Community Employment	Toilet	TV	Refr.	Mo.Cyc	
a)	60	12	8	15	5
b)	95	3	2	0	0
c)	65	13	12	10	0
d)	3	35	12	30	20
e)	0	60	0	5	35

It can be seen that people in the urban slum area and in the fishing village considered having a colour television more important than having a toilet.

PRACTICES OF THE PEOPLE

People in the old village were the ones who were very much concerned about proper disposal of excreta. They cleaned their bodies with soap and water after using the toilets. Since this village is located within the wet zone of the country there is no shortage of water in this village. Each person used about 10 litres of water for this purpose. People in the settlement scheme used the toilets when they are at home. Being located in the dry zone of the country there is a shortage of water in this area. as such people use very much less water for cleaning after defecating. The average consumption is about 2 litres. There were some people who used about half a litre. The adults generally spend most of their time in the paddy fields. As such during day time they use a drainage ditch or a jungle for defecating.

Children in the age group 4 to 12 use to go to an irrigation canal bank, jungle, or an unoccupied land for defecating. The adults discouraged the children from using the latrines for safety reasons. However the risk of children using the toilets designed for adults depends on the type of toilets. Table

3 summarises the different types of toilets that were available in the communities studied.

Table 3: Types of toilet systems used by people in different communities expressed as a percentage

Community	CFWC	CFSP	PFSP	VL	NVL
a)	4	12	68	5	11
b)	44	15	21	20	0
c)	2	13	71	14	0

Notation:

CFWC	- Cistern flush water closet
CFSP	- Cistern flush squat plate
PFSP	- Pour flush squat plate
VL	- Ventilated latrine
NVL	- Non ventilated latrine

The rubbish collected were burnt or deposited in a pit dug for this purpose. There seems to be no major problem with sullage in the old village or in the settlement.

In the fishing village people go to the beach or the rail track to defecate. At the beach they hand dig a pit of about 30 cm. deep for this purpose. After using they cover the pit. The sullage is thrown to the sea or to the rail track.

In the slum area people go to the open storm sewer to defecate. At night they go to the road side. Women use a public latrine which is located about a kilometre away.

REFERENCES

1. KARIYAWASAM C. Peoples participation in the operation and maintenance of irrigation schemes, Journal of Agrarian Research, June 1986 1-10
2. KALBERMATTEN J.M., AND JULIUS D.S., Appropriate technology for water supply and sanitation - A Planner's Guide, World Bank, 1980
3. ROY A.K., CHATTERGIE P.K. and GUPTA K.N., Manual on the design, construction and maintenance of low cost pour flush latrines, World Bank, TAG Technical Note 10, 1980