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COWATER
INTERNATIONAL INC.

GTZ WATER SUPPLY AND SANITATION PROJECT

KURUNEGALA DISTRICT

Assessment of OTC-India Mark II Hand Pump Maintenance System

August 1992

**Cowater International,
Sri Lanka**

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CWSSP

**Assessment of OTC-India Mark II
Hand Pump Maintenance System**

**GTZ Water Supply and Sanitation
Project Kurunegala**

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Field work was carried out by the Cowater Team of Sisira Navaratne, Michael J. David, Suneetha Kuliypitiya, Kanti Rajapaksa and Michael McGarry. This report was prepared by Farhat Sultana, Project Manager.

1. Background

GTZ has been involved for several years in providing safe drinking water and sanitation facilities in the Kurunegala District of Sri Lanka. So far it has installed about 700 handpumps. It has also introduced OTC India Mark II handpump in about half the communities which has proven potential for being village operated and maintained (VLOM). At present, responsibility for maintenance and repair is held by the Pradeshiya Sabha (local government). However, village volunteers in all the communities have been trained in basic maintenance. But, under the present GTZ policy they are given very little responsibilities for actual maintenance.

During January-March 1992 Cowater International undertook an ethnographic review of on-going government, bilateral and NGO rural drinking water and sanitation projects in Sri Lanka. It included five GTZ supported projects in Kurunegala. It was observed that although the maintenance system was functioning, villagers were critical of the maintenance services provided by the Pradeshiya Sabha and expressed a desire to take over the maintenance functions themselves. Bringing community resources in to support maintenance would indeed be desirable, if a sustainable system could be designed which would ensure long term village support. There was a definite need to find more about village opinions and the community's ability to undertake long term maintenance responsibilities. This current study attempts to determine willingness of communities to take on maintenance responsibilities and provide some solid methodology to enable them to solve the problem.

2. Objectives

The following objectives were drawn from the initial TORs provided by GTZ:

- a. to assess the beneficiaries' opinions about Pradeshiya Sabha (HMU) support and their involvement in water supply,
- b. to determine the competence and willingness of the community to attend to repairs independently from the Pradeshiya Sabha's handpump maintenance unit (HMU),
- c. to assess whether the handpump can be the responsibility of an existing society or if there is a need for establishing a new organization,
- d. to assess the need for additional community support under a consolidated program.

From the above objectives the overall objectives of the study was:

to assess the roles, capacities and willingness of (1) existing societies, (2) Water Consumer Societies and (3) the Pradeshiya Sabhas in long term maintenance of the OTC handpump project,

and, if needed, to design alternative methods and systems for more community based self help operation, maintenance and repair.

3. Data Collection Methods

For more adequate and in-depth understanding of people's opinions, attitudes and practices related to maintenance, a participatory ethnographic approach was used. It enabled the community to contribute meaningfully to the design of new, more community based maintenance systems. Having villagers openly express their opinions and conceptualize their own roles in maintenance and repair system is very different than gathering data on physical conditions (such as distances to water sources). It demands open ended dialogue with the community and involving the people in identifying problems and designing solutions. This can only be achieved through participatory ethnographic methods.

During the second phases of the study a Rapid Participatory Assessment method was used for data collection. A brief description of the ethnographic and participatory assessment methods follows.

A. *The Ethnographic Method:*

The ethnographic approach allows the investigator, while in the village, to interact and understand the community better. He or she stays over-night in the community, spending time and sharing the evening meal while entering into informal unstructured discussion with the villagers. This creates a participatory atmosphere between the investigator and people, which is conducive to the sharing and creation of new ideas and concepts.

B. *Rapid Participatory Assessment:*

One method of encouraging the community to make its own assessment of options which is quickly becoming popular as a tool amongst leading rural development workers is RPA (Rural Participatory Appraisal). It involves villagers in participatory "tools/games" which encourage their active involvement and enhances their analytical capabilities in problem solving. The Rapid Participatory Assessment uses the same methods as RPA but focuses on assessment of specific options (in this case

maintenance systems). It is also designed for only half a day per community which enables a broader cross section of communities to contribute within the time frame.

4. Time Frame: Study Phases

The study was completed in six phases which are presented below:

4.1. GTZ/Cowater Planning: First Phase

During first two days of the work plan (Appendix A) both the Cowater team and GTZ staff met in Kurunegala and discussed study procedures, requirements and other management matters.

4.2. Ethnographic Studies: Second Phase

With the help of GTZ personnel, five communities were selected for the ethnographic study. These communities had an OTC handpump installed at least one year previously. The team included an applied anthropologist, two sociologists and a water supply specialist/engineer. Typically, the team arrived in a village at noon and departed 24 hours later. The evenings were spent in informal meetings with village leaders, members of water consumer society and/or "existing societies", women and other individuals. A checklist was used to keep the discussions on topic (Appendix B). Detailed notes on discussions were taken during the meetings.

The next morning, usually around 9 o'clock, open meetings were held with water consumer groups. Jointly, the village participants and the team members identify issues, problems and solutions related to maintenance and repairs. This covered such subjects as:

- perceptions and opinions about the handpump,
- village interaction with the GTZ Project,
- past experiences with self help projects
- the existing Pradeshiya Sabha based maintenance system
- experiences and opinions about maintenance and repairs
- existing (or potential) organization including the WCS, its capabilities, leadership, hierarchy, structure, and dynamics
- future system for maintenance and repairs

-roles and responsibilities

-management

-cost recovery

-spare parts

-training and refresher training

- roles and responsibilities held by village
- support system for monitoring and major repairs

4.3. Write-up and Analysis: Third Phase

During each meeting one team member took notes about the discussions. Later, team members met and discussed the important issues about the meetings. A short summary of the results was prepared after the ethnographic phase and was distributed to the workshop participants. One important outcome of the report were three alternatives options for the future maintenance system which were drawn from discussions in the villages. These were presented for further discussion at the interim workshop.

4.4. Interim Workshop: Fourth Phase

A one day interim workshop was held in Kurunegala after 10 days of ethnographic field work. The major objectives of the workshop were:

- a. to review ethnographic findings
- b. to refine the model(s) of the maintenance and repair system(s) which were drawn from ethnographic study results

A total of 24 participants attended the workshop, of which 12 were villagers. Two representatives from each handpump consumer group were invited. All of them came. Other participants included staff from GTZ and Cowater teams.

The workshop was informal and participatory. Indeed, villagers were the driving force. With the help of two facilitators from the Cowater team, they took over the discussion about problems and solutions to the handpump maintenance. The outcome was a 6 point outline for the future maintenance system. For details see section on interim workshop below.

4.5. Rapid Participatory Assessment: Fifth Phase

The major objectives in this phase were:

1. to have several communities assess the maintenance model(s)
2. to further improve the maintenance system

3. to gain a broader understanding of success/failures of existing present maintenance system

The maintenance model designed by the villagers during the interim workshop was field tested in 34 communities. The two teams (each comprising one sociologist and a female field worker) visited two communities each day (one in the morning and one in the evening) and held participatory group meetings with the water consumer group. Participatory tools such as charts and open discussions were used to gather the information. For additional quantitative information a short questionnaire was used (Appendix C).

4.6. Concluding Workshop: Sixth Phase

A one day concluding workshop was held to finalize RPA findings along with the villagers. Both the community members and the Project team agreed upon a community based maintenance system which can be tried out in some selective communities later.

5. Ethnographic Study: Results.

5.1. Nature of Handpump Installation

All the five communities were randomly selected and were representative of typical villages in Sri Lanka. In reviewing discussion with villagers it became obvious that degree of community involvement at the implementation stage was minimum. In three communities people did not even know who had requested the handpump. In the other two communities it was the GN (Grama Niladhari) who approached the Project and made the request. It was not clear whether such a request was made formally. This left the communities with very vague understandings about the purpose of providing the handpump and no or little feeling of responsibility towards the facility.

The fact that handpumps were handed over to the Pradeshiya Sabha for maintenance and the communities were given only minimum responsibilities of minor caretaking has created a negative impact among the people. They considered the handpump government property and expected free service. In one community people thought that paying for repairs is like paying a tax on water! They insisted that government should provide water free of charge.

However, the sense of responsibility also varied among the communities, depending upon the degree of *need* for drinking water. In a community, located in a wet zone, people had no serious problem in the dry season so they were not willing to share the cost for future maintenance of the handpump. But at the other end of the spectrum were the communities in the dry zone where need for water was strong. These people were more willing to contribute for the repairs.

Similarly, in communities where handpumps were installed due to political influences and need was not strong people's response to maintenance was very poor. People used other sources such as privately owned open wells for drinking. The handpump was primarily used for bathing, washing clothes and making mud for house construction.

5.2. Handpump As A Drinking Water Source

Use of the handpump as a drinking water source depended upon water taste, availability of other water sources and distance from the households. People did not like brackish or rusty tastes. In such cases the handpump was less used as a drinking water source and more for bathing or washing clothes. However, in the severe dry season when the open well become dry people do use handpump water for drinking.



Study team undertaking the Ethnographic Survey.



Women participating in the Rapid Participatory Assessment.

Distance and availability of other water sources closer to the household also influenced choice of handpump as drinking water source. In the wet zone, families have open wells in their backyards. In that case a five minute walk to a handpump was considered a long distance. Women instead fetched water from their own wells.

In the five villages studied, during the wet season some 16 to 20 families used the handpump as their first source for drinking water. In the dry season, however, the number of users increased up to some 30 households per handpump.

5.3. Water Consumer Society: Role and Status

On the request of the GTZ Project, in all five study villages, handpump beneficiaries had formed a Water Consumer Society. The Society was expected to assist in minimal caretaking. For this purpose, two individuals, a caretaker and a volunteer technician, were identified from each handpump users group and given two days training in basic maintenance knowledge. Their principal role is, however, to grease the chain, collect Rs. 500 and inform the Pradeshiya Sabha's mechanic in case of a breakdown. At present, these Societies are not functioning and have become reduced to one person, the caretaker.

Discussing the reasons why the Water Consumer Society did not functioned properly, the villagers stated following opinions:

- Initiated by outsiders
- Beneficiaries are only a smaller group
- No regular activities
- In some cases handpump was not needed

They think that creating a new Society for handpump maintenance was not a good idea. The word "society" to them means an active body which has a larger membership and scope of work. They suggested changing its name to "Water Trust", which implies that it is a smaller group working only for water related objectives.

Similarly, beneficiary families, on GTZ Project instructions, have deposited 250 to 500 rupees in the Pradeshiya Sabha's account. But they had no clear understanding about the status of these funds. Common opinions indicated that this amount is for:

- All future repairs
- Pradeshiya Sabha's workers' payment
- Tax on water

In general the users were given the impression (during the formation of the Water Consumer Societies) that the 500 rupees were to be used for all kinds of future repairs.

5.4. Perception and Confidence in the Pradeshiya Sabha

In Kurunegala District, Pradeshiya Sabha's performance in handpump repairs has been good. This is mostly due to the fact that the GTZ Project is actively involved in monitoring Pradeshiya Sabha's activities and providing free spare parts. In many cases GTZ Project staff has provided the services. In cases where the handpump had been broken the waiting period was about one week. But again, most of these communities were located near a Pradeshiya Sabha's office or had some connection with its staff.

The users were told that the Pradeshiya Sabha is officially responsible for providing maintenance services. Therefore, they expected the Pradeshiya Sabha to take over the maintenance responsibilities. In some cases the community tried to fix the pump on their own but were told by the Pradeshiya Sabha and Project staff not to do so.

When people were asked what they thought of the Pradeshiya Sabha providing the service in future after the GTZ Project left; the responses were not very positive. Some of them are listed as follows:

- The PS will not be very efficient. They are under political influences which will effect their service efficiency
- They have few staff and limited money but large areas to serve
- The PS could increase the monthly/yearly water tax in which case people will not use the handpump

In general, people did not believe in the Pradeshiya Sabha's capacity to attend a large number of handpumps repairs. They also feared political influences and favors. Instead, they preferred having a trained person in the village, who could be an alternative in addition to the Pradeshiya Sabha's mechanic.

5.5. Competency and Willingness to Adopt a Community Based M&R System

The present set-up of handpump maintenance is functional, primarily because the GTZ Project is providing strong support, free spare parts and financial assistance. However, a large number of communities have still not deposited their Rs. 500 contribution towards the maintenance cost.

People had serious doubts about Pradeshiya Sabha's capabilities in meeting future requirements. When users were asked about the possibility of setting up an alternative community based maintenance system in addition to the Pradeshiya Sabha, their response was strongly positive.

Village groups considered a village based maintenance system as the best alternatives compared to the Pradeshiya Sabha's mechanic and/or a private technician. They stated that repairs managed by a trained village volunteer will not only save time but it would also improve the potential for cost recovery as it would all be within the control of the village.

They suggested that in the case of there being more than one handpump in a village, two trained volunteers would be adequate to provide the service.

When discussing the possibility of a private trained technician being available in the area, the responses were guarded and negative. The fear was that anyone outside the village would not always be available and would charge excessive fees.

In a few communities, villagers mentioned sharing the village trained volunteers with nearby villages. This way the people could be sure that there would always be a person whom they could contact in times of need.

5.6. Existing Societies

5.6.1. Nature and Functions

The following are some of the societies actively involved in performing different functions in the villages visited:

- Death Aid Society
- Temple Development Society
- Rural Development Society
- Farmers Organization
- SANASA (Credit Societies)
- Young Men's Buddhist Society
- School Development Society

- Janasaviya programme
- Peace Committee

The Death Aid Societies were the most active and organized in all the villages. The Temple Development Societies, Rural Development Societies and SANASA (Credit Societies) were the second most active village based organizations. All these societies had specific objectives, responsibilities and fund raising mechanisms.

5.6.2. Cost Recovery Mechanisms

The existing societies have different methods of collecting money to support their activities. The following are some of the ways which indicate their differences:

a. Admission Fee. Most of the village societies had membership fees ranging from five to ten rupees which each family has to pay in order to become a member.

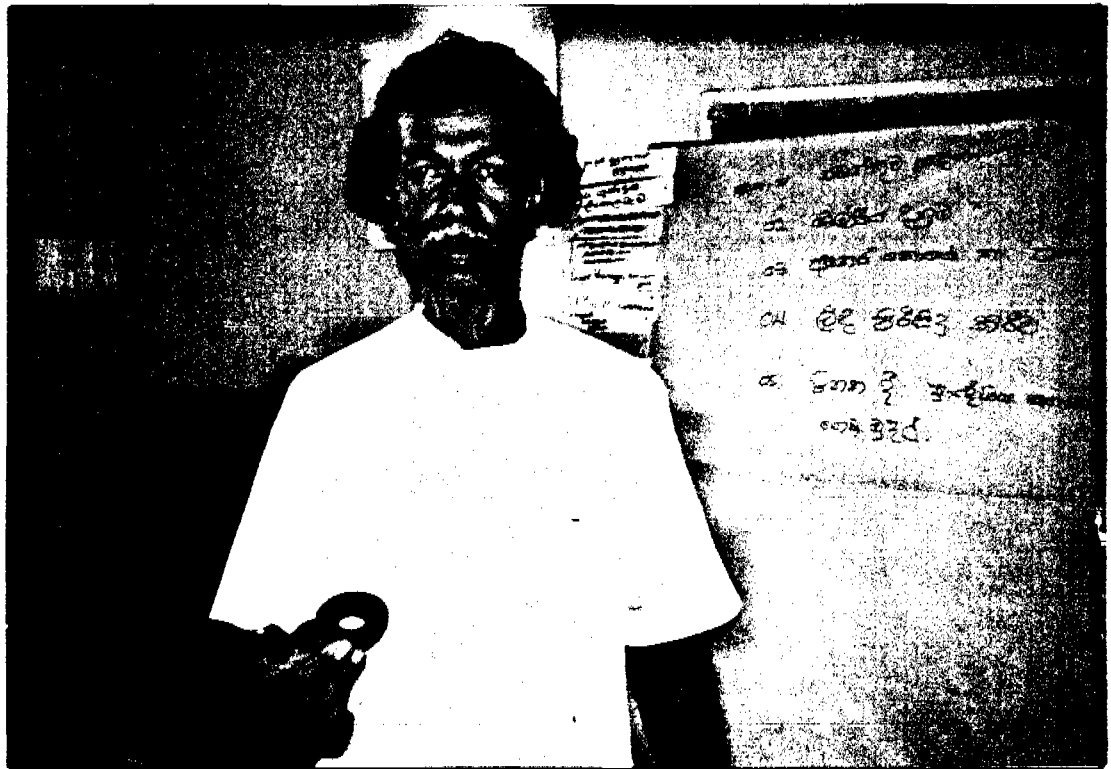
b. Monthly Fee. In some cases monthly fees, in addition to the membership fees, were also required. Society meetings were held every month and members were asked to bring their fees which ranged from five to ten rupees per month. Those who could not come to the meetings give their money later to the responsible person.

c. Paddy Donations. This was the most common cost recovery method used by the Death Aid Society. Members gave 20 to 25 Kilo of paddy each year at harvest time (worth approximately Rs. 300). Later this was sold in the market and cash deposited in the society bank account. In some cases some proportion of paddy was saved for consumption during a funeral.

d. Ad-hoc Donations. Often, established societies also raise money when needed on an ad-hoc basis. For example, if a Death Aid Society does not have enough funds to use for a funeral, then each member is asked to give one Kilo of rice and one coconut to the family in which a death has occurred. Similarly, the Temple Development Society raises ad-hoc funds by arranging Temple fairs where people buy donated goods at a higher price to support the Temple activities.



Villagers to villagers: An explanation of coliform bacteria in their water jars.



A villager explaining how he fixed his pump's footvalve with a village made washer.

Peer pressure is applied to enhance the societies' income. Members are often asked about their dues in public meetings. Sometime the responsible persons also visit their homes for collecting money/paddy. If someone fails to pay his/her dues three times in a sequence, his/her names are eliminated from the society membership and no help is provided in case of need.

5.6.3. Why Successful?

Some of the common factors which made these societies function successfully are:

- They were created by the villagers themselves
- Common cause/need oriented
- Clear Objectives and responsibilities
- Whole village as beneficiaries
- Elected leaders and active membership
- Written constitution and bank account
- Regular Activities
- They are relatively transparent

A common reason, given by the villagers about why these societies are so active, is that they are initiated by the villagers themselves and serve the basic needs of the village people at a larger scale. The whole village is the beneficiary as compared to Water Consumer Society which are created by outsiders and only a small segment of the village benefits from the facilities.

Some general characteristics of the five ethnographic communities are presented in Table 1.

Table 1 Characteristics of Ethnographic Study Villages

Characteristics	HP # 779 Village: Eriyawa	HP# 732 Village: Dunupota	HP # 884 Village: Visinaidawa	HP # 739 Village: Panavewa	HP # 1108 Village Nikawewa
Users:Wet/Dry	20/50	10/25	20/30	10/20	20/30
Taste	Brackish	Good	Good	Good	Brackis
Need	Moderate	Moderate	Strong	No need	Strong
Request by the Community	GN	No	GN	No	No
Ownership	Govt	Govt	No one's	Govt	Govt
Other Societies					
Death Aid S ¹	X	X	X	X	X
Temple D S ²	X	X			
Rural D S ³	X				X
Farmers Org ⁴	X	X			
SANASA ⁵		X	X	X	
YMBA ⁶			X		
School D S ⁷				X	
Peace Committee ⁸			X		X
Janasaviya					
Status of WCS	Not Active	Not Active	Not Active	Not Active	Not Active
Funds Collected	250	500	250	500	500
Confidence in Pradeshia Sabha ⁹	No	No	No	No	Yes
Break Down Period	NA	6 days ¹⁰	4 days	3 days ¹¹	3 days ¹²
Repairs done by Villagers	No	Yes ¹³	No	No	No
Want Village Level Maintenance	Strongly	Strongly	Strongly	Strongly	Strongly
Private Mechanic	No ¹⁴	No	No	No	No

1= Death Aid Society,

2= Temple Development Society,

3= Rural Development Society,

4= Farmers Organization,

5= SANASA (Credit Societies),

6= Young Men Buddhist Association,

7= School Development Society,

8= A peace committee was initiated by the police,

9= Q was can Pradeshiya Sabha manage future repairs?

10= A villager was working in PS,

11= PS was very near,

12= Caretaker's friend repaired who works in GTZ workshop. Villagers paid Rs. 40 to buy the spare part.

13= In one group a woman said that they have repaired the HP on their own,

14= Villagers feared that a private technician would charge high fees.

5.7. Linking The WCS with Existing Societies

During the ethnographic phase of the study, detailed discussions were held with the villagers about functions of their village based societies and the possibility of merging the responsibilities of Water Consumer Society (WCS) with one of the existing societies. Villagers agreed that the WCS is not functioning properly. But the idea of linking it to another society did not appeal very much. It was frequently said that the WCS cannot be linked with another existing society because they were created to fulfill a specific objective and represent the whole village while the WCS is limited to a few households. However, they felt that it would have been possible if:

- the Project had previously approached one of the existing societies during the initial stages and asked for help in creating a sub-section within one of the societies,
- there was more than one handpump in the village and a larger group benefitted from them. Then an existing society as a whole might have agreed to support the maintenance programme.

The participatory discussions with the villagers illustrated the following options for future maintenance of handpumps. Their viability would depend, of course, on the particular village.

A. Existing Society

An active existing society could take over handpump management responsibilities. In most of the villages the Death Aid Society is very active. Its revenue base and management is strong. If it took on the hand pump maintenance there would be a high possibility of success.

The water user families could pay extra paddy or cash for handpump maintenance to the Death Society. For example, where all other families pay 40 rupees; the regular water users could pay Rs. 50 and other users who use the pump only during the dry season could pay Rs. 45. This amount could be deposited in the Death Society's bank account for buying spare parts and handling major repairs. A village level technician could be properly trained for handling the repairs.

B. The Water Trust

This would involve changing the name of the Water Consumer Society to the "Water Trust." It would include a leader(s) from the village (whether or not his family used the handpump). The GTZ Project could publicly give ownership to the direct users. A village volunteer could be trained and the Water Trust would collect funds on a regular basis.

C. *The Re-activated Water Consumer Society*

Another possibility would be to reactivate the existing Water Consumer Society. The Pradeshiya Sabha technician would continue to do the repairs. Funds would be collected when needed or through monthly collections which could be deposited in the Pradeshiya Sabha's account. These would be used for buying spare parts.

These options were considered during the subsequent workshop.

6. The Interim Workshop

To verify the above options and observations, a one day workshop was held after the 10 days ethnographic field work. During the field visits, water consumer groups were asked to send two representatives to the workshop.

The workshop was held on 5th of August at the community hall in Wariyapola, Kurunegala. There was a total of 24 participants; 12 villagers, 5 GTZ, 6 Cowater field staff and one Pradeshiya Sabha handpump technician. The workshop was conducted in a participatory fashion.

All the participants sat in a big circle and introduced themselves. After the introductions the community representatives were briefed about the purpose of the meeting and were told that it was their chance to talk about the problems related to handpump maintenance and suggest some solid solutions. Two Cowater team members acted as facilitators. Both GTZ and other Cowater team members sat silently in the back seats and observed the process. On some occasions they even went out of the room and left the villagers alone to talk among themselves.

6.1. Villagers Perception of Problems

As an initial step, community representatives were given a piece of coloured paper, a marker pen and were asked to write down what they thought were the most important problems facing handpump maintenance. The following lists some of their perceived problems:

- Community dependency on government
- No delegated authority to community
- Lack of awareness regarding use of water
- Difficulty collecting funds for repairs
- Community not having ownership of the handpump
- Problem with funding major repairs such as flushing
- Availability of spare parts

Each participant villager wrote down her/his problem on a card and then was asked to pin it on the board and explain. They were later asked to choose the three most important problems. They decided on:



At the concluding Workshop, villagers plan their maintenance system



.... outside, Project staff await their conclusions.

1. Lack of funds (particularly for flushing)
2. lack of spare parts, technical knowledge, and ownership
3. lack of tools and responsible organization

There were intensive discussions about these problems among the participant villagers and later with the GTZ/Cowater teams. Once the villagers had certain questions answered about their problems they divided into two groups. Each group sat in a small circle and talked about possible solutions. After an hour both groups came back with their solutions written on large sheets and pinned them on the board.

Once again, everyone sat in a big circle and there was another round of discussions between the group and the GTZ/Cowater teams about villagers proposed solutions. The common points in both group solutions were:

- Villagers could form active Water Trusts. Money could be deposited in its bank account. People cannot provide large amounts for the major repairs such as for flushing or replacing PVC pipe. For this external help could be needed. Pradeshiya Sabha could provide back up support.
- A village volunteer could be trained in managing the repairs. This would also encourage villagers to bear the cost of minor/major repairs.
- The trained village volunteer could be given a tool box. This box could be either kept by the Water Trust or with an respected individual. A set of tools should be given free to the trainee.
- Spare parts should be made locally available at minimum cost. One group suggested using the Pradeshiya Sabha as a store.
- The Water Trust could be given legal ownership of the handpump.

At this point the workshop broke up for lunch.

After lunch the three organizational options (see section 5.5) which were identified during the five village ethnographic study were presented to this group and asked for their opinions about them.

The participants were left alone again to discuss the three options. After an hour later they reported their findings in the form of seven common points agreed by consensus.

6.2. Proposed Alternative for Community Based Maintenance

- a. There are two levels of maintenance (1) regular maintenance (minor repairs) for which spare parts cost 25-300 rupees/year and (2) flushing cost Rs. 3000 every four years,
- b. Further training of village volunteers in handpump repairs and provision of tools would be required if the village was to take on handpump maintenance,
- c. A community based organization (CBO) would be responsible for handpump maintenance,
- d. This organization (CBO) would collect charges either regularly or on ad-hoc basis. Rates would be different for dry season and year round users,
- e. Funds would be kept in a bank account, controlled by the organization, and
- f. The Pradeshiya Sabha would remain involved as a back-up, providing training and keeping spare parts to be purchased by the villagers.

7. Rapid Participatory Assessment

7.1. Objectives

The major objectives to be achieved in this phase were:

- to have several communities assess and further improve the maintenance model which was designed by the villagers during the ethnographic village studies and in the interim workshop, and
- to gain a broader understanding of villagers perceptions about maintenance and their roles in it, as well as their capabilities, needs and willingness to assume responsibilities.

7.2. Methodology

Thirty six communities were randomly selected from the GTZ handpump location map. Each of the two teams (each comprising a male sociologist and a female community worker) visited two communities each day (one in the morning and one in the evening) and held group meetings with the handpump beneficiaries. Table 2 shows the 34 studied handpumps and their locations.

Participatory methods such as open group discussions and writing on large sheets of paper were used to involve the villagers in the process of problem identification and solution. Villagers were encouraged to write their anticipated or experienced problems with maintenance on these sheets after discussing the points among themselves. Meanwhile the research team left the group and went away for 10 to 15 minutes. This enabled the villagers to express their opinion free of leading questions and external "guidance." The results were frequently unexpected but always more representative of real community feelings and perceptions.

Involving people in identifying their own problems, suggesting solutions and expressing their viewpoints about the presented maintenance model was a very useful exercise. They were surprised at the methodology. On a few occasions they stated that it was a new thing for them to think on these lines such as who's pump is it? or how should funds be managed for future maintenance?

The quantitative results from Rapid Participatory Assessment phase of the study are presented in the following sections.

Table 2 Study Communities and Locations

No	Handpump #	Village Name	AGA Division
1	1096	Degodathuruwa	Polpitiyagama
2	782	Hunugulawa	Galgamuwa
3	708	Rathmalgas wewa	Kobeigane
4	457	Nakolagama	Maho
5	716	Henegedara	Kobeigane
6	939	Nabadewa	Galgamuwa
7	641	Halabegala	Kotawchera
8	735	Hettigama	Hettipola
9	246	Ihaladeniya	Galgamuwa
10	790	Eriyawa	Galgamuwa
11	1195	Kungukadawala	Galgamuwa
12	587	Galpothuyaya	Polpitiyagama
13	642	Nalagamuwa	Kotawchera
14	931	Ambakadawara	Wariapola
15	638	Unala	Kotawehera
16	948	Pailigama	Maho
17	659	Itewa	Kotawehera
18	1318	Galagedara	Nikaweratiya
19	582	Hathpokuna	Polpitiyagama
20	746	Bandarigalagoda	Bingiriya
21	1205	Udawela	Bingiriya
22	532	Udunowa	Kotawehera
23	1166	Walpaluwa	Giribawa
24	848	Gampola	Giribawa
25	882	Ihala Giribawa	Giribawa
26	1134	Leekolawewa	Kobeigane
27	1154	Koonwewa	Hettipola
28	572	Kumbukwewa	Ibbagamuwa
29	847	Sangappaliya	Giribawa
30	719	Withikaliya	Kobeigane
31	1030	Ullalipola	Maho
32	1060	Trambarawa?	Wariapola
33	552	Patalayuedara	Wariapola
34	1056	Demataluwa	Maspota?

7.3. Description of the Present Situation

The Rapid Participatory Assessment results are similar to those found in the five ethnographic study villages in the earlier phase. A brief summary of the results is presented in the following paragraphs. Table 3 also shows a summary of the RPA results. For more detail see Appendix D which presents summarized results on each handpump unit. This information was drawn from the detailed field notes and participatory observations.

The study team covered 36 villages, but in two villages not many people attended the meetings. These villages were omitted from the sample.

7.3.1. The HandPump As a Drinking Water Source

As far as the number of handpumps per village are concerned, a total of 20 communities had one handpump, 12 communities had 2 handpumps and only two communities had three. The number of users varied according to the wet and dry seasons. An average of 17 households used the handpump in the wet season. However, the average number of handpump users increased up to 35 households in the dry season.

In most cases (18) the handpump was used for all purposes: drinking, washing, bathing and other activities. In 10 communities the people used the handpump only for drinking, while some 6 handpumps were used only for washing and bathing. In the latter cases it was mostly because the water tasted brackish or rusty. People were very concerned about the taste and its impact on health. Brackish or rusty water was considered humorally heavy to digest and to cause stomach-ache. Brackish or rusty water was also not used for cooking. It was mentioned that food takes longer to cook and does not taste good. However, in the dry season some of these handpumps were used for drinking.

7.3.2. Need for a Handpump

The need for a handpump, was estimated by the study team considering the availability and distance of other water sources in the community. It was strong in most communities (26 out of 34). The other eight handpumps were in areas where need was moderate. In general, need for drinking water is higher in northern parts of the district, which is the driest zone.

Table 3 Summary Results of Rapid Participatory Assessment Study

Indicators	
Average number of households per village	106
Number of villages having one handpump	20
Number of villages having two handpumps	12
Number of villages having three handpumps	2
Average number of users per village (households)	
Wet Season	17
Dry Season	35
Perceived ownership (No of villages)	
Do not know	3
Government	10
Communities	2
Public	17
Care taker	1
Missing information	1
Degree of water need (No of villages)	
Strong	26
Moderate	8
Missing information	1
Water Taste (No of villages)	
Good	21
Brackish	12
Rusty	1
Handpump mostly used for (No of villages)	
Drinking only	10
Drinking/Washing/Bathing	18
Washing/Bathing	6
Repairs History (No of villages with repair type)	
None	16
Chain	2
Cup washer	9
Footvalve	6
Pipe broke	6
Rod broke	2
Tube removed	1
Average waiting period (No of villages)	
Not Applicable	16
1 week	6
2 weeks	16
3 weeks and more	4

Indicators	No of villages
Repairs done by	
Not Applicable	16
GTZ	17
Pradeshiya Sabha	7
Villagers	1
No action taken	1
Have confidence in Pradeshiya Sabha's services in the long term	
Yes	5
No	20
No comments	8
Missing information	1
Would accept responsibility for major repairs	
Community	23
Government	7
Pradeshiya Sabha	4
Would accept responsibility for minor repairs	
Community	33
Government	1
Would offer village level technician	
Yes	34
No	0
Preferred cost recovery mechanism	
Add-hoc collections	5
Monthly collections	17
Annual collection	1
Missing information	11
Would want different charges for dry season users	
Yes	11
No	13
Will decide	7
Only from regular	3
Would want to set up a bank account	
Yes	27
No	7
Would want Pradeshiya Sabha as back up:	
Yes	33
No	1
Recommended organization for maintenance:	
Water Trust	19
Existing Society	4
Indeterminate answer	11



Villagers are introduced to the Project team.



.... get the results on paper, participation can also be fun.

Although need was high in the majority of the communities, the initial request for the handpump was often not made by the people. The Project and/or government officials selected the villages to be served.

7.3.3. Perceived Ownership

Sense of ownership plays an important role in long term functional sustainability of a water scheme. Ten communities felt that the handpump was owned by the government, while seventeen communities considered it a public property. Only two communities said that it belonged to them, and one community said that the caretaker owns it because it was on his land. In all cases there was a general understanding that the public could use the handpump free of charges.

It is important to note that by saying "it is the community's property" villagers do not mean that the community owns it. Instead they are suggesting that it is public property like a "road" or "a post office" given by the Project or government to the community to use. In the two communities where people thought the handpump was their own the need for water was very strong. In one case the alternative drinking water source was about half a mile away.

The lack of perceived ownership was a result of the way handpumps were introduced into the community. That is, with little or no planning authority or decisions being taken by the users. Also, many of the handpumps have legally been transferred over from the Project to be owned by the Pradeshiya Sabha (local government).

7.3.4. Maintenance History

Most of the handpumps included in the Rapid Participatory Assessment were three to four years old and subject to breakages. Some 18 handpumps had been broken once or twice. The most common repairs as reported were replacement of cup washer (9), footvalve washer replacement (6), and riser pipe fracture repair (6). Two handpumps had their chains replaced and another two had broken rods fixed.

The waiting period for repairs was not long. Usually within two weeks the repairs were attended to (16). However, it should be noted that most of the repairs (17 out of 26) were done by GTZ staff from Wariapola. Pradeshiya Sabhas made only seven repairs. The community members found it more effective to come to the Project's central maintenance unit for quick service. In cases where Pradeshiya Sabha were involved, a few communities complained about slow service. In one case the community could not wait for the Pradeshiya Sabha's mechanic and changed the footvalve washer themselves.

7.3.5. Confidence in Pradeshiya Sabha in the Long Term

In the majority of cases (20) people expressed lack of confidence in the Pradeshiya Sabha's long term capability to provide satisfactory maintenance service. Even in cases where the Pradeshiya Sabha did provide quick service the people were concerned about its efficiency once the GTZ Project closed down.

Their major fear is that the Pradeshiya Sabha is a government institution with limited financial and technical resources and is highly subject to political influences.

The response was especially negative from those communities who had previous experience with the Pradeshiya Sabha system. In one case the community waited for three months for the Pradeshiya Sabha to replace the footvalve washer.

On the other hand, however, there were a few communities where people felt that the Pradeshiya Sabha could provide long term service. They argued that "it was government's duty to provide free service, that is why the Pradeshiya Sabha was created." Interestingly, these were the groups who were either in the "Janasaviya" programme or had conflicts between themselves so did not want to shoulder common responsibilities.

7.3.6. Community Based Maintenance: An Alternative.

Following the ethnographic study which revealed a great deal about villagers perspectives and capabilities, the interim workshop succeeded in bringing out the villagers' opinions and recommendations for the future long term maintenance system. Naturally, there were differences of opinions especially between the economically better off villagers which were self-help oriented and those funded by government's Janasaviya programme which preferred to remain dependent.

The interim workshop highlighted seven principal issues which were eventually agreed by all. They are listed in the interim workshop section. These points describe the basis of the new maintenance system alternatives.

During the Rapid Participatory Assessment phase, these points were presented and discussed with groups in 34 communities. The responses were very strong and positive. All 34 villages in the RPA showed interest and willingness to give it a try.

The following is a general description of people's responses to these points.

A. Acceptance of responsibility for major/minor repairs

The vast majority (23) of the communities agreed that with a properly trained village level technician and active organization they could manage most of the minor repairs such as fixing the fractured pipe or rod. Their concern was not the costs involved, which the project planner often assume is, but the lack of confidence about their technical abilities to maintain the facility. They feared that if they did something wrong while fixing the pump they would have no one to turn to. Where to go for advice or help, and how to get spare parts not available in the local market were some of the most frequently asked questions.

They saw the Pradeshiya Sabha as a back-up supporting agency. They also suggested that some of the spare parts could be stored at Pradeshiya Sabha from where the villagers can purchase them. However, considering the political interferences, they wondered if spare parts can be available in open market.

All communities mentioned that they can handle minor repairs on their own, provided they received training, tools and authority to do the repairs.

B. Further training for village level technician

All 34 communities strongly supported the idea of being given further technical training. They felt that two to three days of practical training in fixing the handpump would enable them to maintain the handpump at the village level. It was suggested that such training should be given in the villages so other people would understand the handpump structure.

C. Preferred cost recovery mechanism

All of the communities had deposited Rs. 500 or less with their Pradeshiya Sabhas with the understanding that this amount would be enough for all future repairs. So when asked what type of cost recovery system would they preferred, villagers had questions about their Rs. 500 deposit. However, their concern did not last long. Once they understood the situation and realized that they might have control over their own funds, the majority (17 out of 34) of the communities wanted to set-up a monthly fee system. Some five communities preferred ad-hoc collections. The latter was true in cases where people were not united, handpump water was brackish and/or not much needed. They argued that it would be easier to collect money when the handpump was broken and need was high as in dry season.

Paying with paddy was mentioned as one mechanism of the cost recovery, but none of the 34 communities mentioned it as a preferred mechanism.

D. Different charges for dry season users

One of the problems most of the regular handpump users face is the dry season users. In the dry zone the number of handpump users almost doubles in the dry season when other water sources dry up. The majority of the communities complained that dry season users do not contribute to maintenance costs. All 34 communities to some extent agreed that these occasional users should share some of the maintenance cost. Some 11 communities said that they should pay half the amount which a regular user has to pay, but 13 communities felt that they should be paying equally. Only three communities stated that it was very difficult to make these dry season users pay therefore they should not even be asked. Another seven communities preferred to decide about it later among themselves.

E. Need for a bank account

The majority of the communities (27) wanted to keep their funds within the community under a CBO's bank account. They saw it as a positive step to encouraging the villagers to realize their own responsibilities. It was often mentioned that a bank account will make the whole thing credible. It was also mentioned that having a Water Trust bank account will give people the feeling that they had control over their money.

F. Pradeshiya Sabha as back up support

In all cases, some degree of back-up support was required. The communities agreed that the Pradeshiya Sabha can play a role of supporting agency and provide help to strengthen the community based maintenance system. They viewed this in the form of storing spare parts and providing its mechanic's help in cases of major problems. Some communities, however, still doubted the Pradeshiya Sabha's efficiency in providing the needed help but they did not see any other agency taking over this role.

G. Preferred CBO to be responsible for maintenance

All of the communities realized that there is a strong need to have an active organization if they want a community based maintenance system. At present, none of the water consumer societies which were established with the help of the Project teams are active. Unfortunately, these societies were formed a year or two after the installation of the handpumps. Therefore people had no involvement in planning or installation and have only a very vague understanding of their roles and responsibilities.

After discussing the benefits of community based maintenance, users were asked to identify a community based organization which would represent them and could take over maintenance responsibilities. Some 19 communities preferred the Water Trust concept. Only four communities felt that handpump maintenance can be managed by an existing society such as Rural Development Society, School Development Society or SANASA. Most of these communities were small in size and had strong group unity.

The other 11 communities had indeterminate answers to this question. This was probably because they did not understand the questions.

In summary, It was obvious that the communities were willing to re-activate their efforts but needed a clear guideline and participatory approach to achieve independency in managing their handpumps.

8. The Concluding Workshop

After the RPA (Rapid Participatory Assessment) a concluding workshop was held in Wariapola, Kurunegala. The main objective of this workshop was to discuss the RPA findings with the villagers and GTZ field staff. In many ways it was a repetition of the earlier interim workshop, however, it was needed to share the information with the community and get their opinions before finalizing the outcome of this study.

It was a successful learning experience shared between the three parties involved in this study: GTZ, Cowater and the community members. The workshop participants included nine villagers, representing different communities, one local government officer, six Cowater team members, and five GTZ field and management staff.

The participatory approach was used to discuss the proposed community based maintenance system with the villagers. After introductions and a briefing session, the Project staff left the villagers group alone to discuss pros and cons of the proposed seven points. The group had debate among themselves. They were asked to write down their ideas on a large sheet. Meanwhile the Project staff and Cowater team members stood outside the room and discussed related problems among themselves.

An hour later the both parties met again and had a discussion about the villagers' capabilities in handling the repairs on their own and alternatives to provide back-up support. To make a strong impression on the Project staff, a villager presented a footvalve washer, which was made in the village. He also said that he has been doing minor repairs on his own and if given proper training and authority he could manage his own handpump and others in his neighborhood as well.

The Project teams learned a great deal from the villagers' discussion. In short, the workshop was very positive about the adaptation of new alternative maintenance system and was very willing to give it a try.

9. Conclusions: Alternatives For Maintenance and Repair

The above sections on ethnographic RPA surveys strongly indicate that the key to achieve long term functional sustainability is in identifying viable alternatives which provide the village options. If there are alternatives, then keeping the handpump in working order is assured as long as the village feels the need to have it repaired and is willing to pay the cost.

Currently, the village has two alternatives: the GTZ Project's Central Maintenance Unit (CMU) and the Pradeshiya Sabha's Handpump Maintenance Unit (HMU). The CMU will come under the Water Board once the GTZ Project has closed down (1994). In the future then, there will only be one alternative: the government. This has two major disadvantages which apply in such situations everywhere and not only in Sri Lanka. Government can be overloaded, lacking financial and technical resources and government services can become politicized. It was for these reasons that all the villages but one in the RPA survey expressed doubts about the effectiveness of the handpump maintenance services by government once the GTZ Project pulled out.

Establishing a viable handpump maintenance systems is difficult. The Pradeshiya Sabha system is now established in Kurunegala and demonstrating its effectiveness. It should not be replaced but it could and should be augmented. This would reduce the workload on the Pradeshiya Sabha which would be welcomed by all concerned. This could be accomplished by shifting some of the responsibilities from the Pradeshiya Sabha to the village. It would relieve the Pradeshiya Sabha (and the Water Board) and at the same time ensure long sustainability of the handpumps.

The proposed community based maintenance systems raises two principal issues:

- what conditions and preparations are necessary for the villages to mobilize their resources, and
- what is required to ensure that the two systems (HMU/CMU and village based system) can function smoothly together without conflict or competition.

The villagers responses in the ethnographic survey, the RPA and the workshops were almost unanimous that the community based maintenance option was desirable and should have the following characteristics:

- a. there are two levels of repair under consideration: minor repairs costing some 25-300 Rs per year and major consisting of flushing once every four years approximately costing Rs 3000 per flushing. All communities indicated they could pay for the minor repairs, while two thirds said that they could pay for flushing. The concern was not price but management of the funds.
- b. village volunteers should be trained and provided tools,
- c. a self-reliant community based organization should be responsible.
- d. a community based organization should be collect funds (regular/ad-hoc). Charges should be made of both wet and dry season users. In general these charges should differ according to use.
- e. funds should be kept in a bank account under control of the responsible organization.
- f. the Pradeshiya Sabha maintenance system should not be replaced but be a back-up to and support the village based maintenance system.

- g. the organization responsible in the village for maintenance should be either a Water Trust (WT) including a existing village leader(s) but otherwise restricted to handpump users or an existing organization willing and able to take on the responsibility.

A third alternative (beyond PS, GTZ Project and the Village) was identified in the private sector. This would have entrepreneurs receiving training and offering their services at cost to the villages who were willing and able to pay them. Such a system was not favored by the villages surveyed in light of "uncontrollable prices". It will not be advocated here. However, it is likely to be an off-shoot of the village based maintenance system as the "Volunteer Village Technicians" take their skills outside of their villages and charge fees for service. The private sector system is viable but requires training of many technicians before competition ensures stabilized prices.

Considerable attention has also been given to which minor repairs could be made by a trained village technician with tools. This matter was discussed with GTZ hydrogeologists, engineers, handpump specialists, the head of the Central Maintenance Unit and, of course, the villagers themselves. It is concluded that the following repairs can be made by the trained village volunteer.

Table 4 Community Based Maintenance/Repairs System

Repair	Frequ- ency*	Cost of Spares	Comment
Bearing replacement	7	Rs 300	Could be replaced by trained village technician but also could be taken to garage in local town, all spare parts are standard and available on local town market
Riser pipe repair	2	Rs 50	Can be replaced by village with care to adjust length correctly, spare parts are available on the local market
Handle	1	Rs 150	Simple welding and bending at welding shop in local town
Rod thread	7	Rs 50	Rethreading rod at garage at local town
Rubber cup washer replacement	30	Rs 20	Seal can be obtained direct from manufacturer by mail or purchased in Colombo
Foot valve washer replacement	1	Rs 15	Village can make temporary washer or purchase one from manufacturer in Colombo
Flushing by bailer	25	Rs 200	Flushing by bailer can only be done in 50% of tubewells, the others must be flushed using a compressor (see below)

Notes * Frequency of repairs based on 358 GTZ Mark II OTC (installed since March 1987) pumps over 2 to 3 years use. Unit is number of repairs per 100 pumps per year.

There are other rare repairs such as wearing out of the riser pipe due to misplaced rod guides, which with proper training, villagers can also fix. However there are two types of major repairs which the villagers would find difficult to do on their own. These are the flushing of the well and casing of a collapsed well.

The first would occur in half of the tubewells every four years (according to GTZ records). These would need flushing by a compressor. This costs an estimated Rs 3000 per flushing, which (according to the survey) is affordable by the majority of the villages in real need of the handpump, provided that there is an organization within the village able to collect and save the funds. There are good examples of such organizations in nearly all the villages (such as Death Societies) with proven capability of collecting and managing far larger sums. However, the village would definitely need external technical help. The alternative would be to use a "deep well kit" which would not do such a good job, but is worthy of further investigation.

The collapsing of a tube-well is rare. It can happen in a hard rock situations. This would occur within a few weeks of well installation and would therefore be considered the responsibility of the installer. In completely encased boreholes it can occur much later (3 to 6 years). In this case, recasing would cost Rs 15,000 and would need a drilling rig. However, this repair is rare indeed. Only 2 out of the 700 wells which GTZ is responsible, has this happened.

Another type of problem is blockage by a falling stone from a fracture in an uncased section of the well. This again is very rare but may happen. In such cases, external help will also be required.

Based on the above facts, it can be concluded that the trained village technician can repair (and the village can afford the cost) all minor repairs and half of the flushings using the bailer. The other flushings (compressor type) require external support although most of the villages are able to purchase such help if it were available on the market or through government. Thus, external support is needed but only rarely. It can be afforded by the villages in all but the rare cases of collapses and blockages.

There is also the possibility that tools and parts are dropped down the well. This would be rare in the case of trained technicians but is possible. Fishing tools are not widely available. Again, outside help would be required, which could be provided through the Pradeshiya Sabha, the HMU or the private sector.

The above conclusions can only be applied to Mark II/D65-OTC model of pump which have been properly installed; also to where the village volunteer technician is properly trained and available. Further, that there is a felt need and a responsible community based organization providing money management.

The above suggests that a village based maintenance and repair system is possible if set up properly. However it is clearly not intended to replace the existing Pradeshiya Sabha and HMU system. It is obvious that they both need the support of each other. That is, to succeed in the long term the PS/HMU will need the help of the village and the village will need the help of the PS/HMU.

10. Recommendations: The Next Steps

The ethnographic and Rapid Participatory Assessment surveys strongly suggested for an intervention to introduce a community based maintenance system. The next step is to lay out a pilot project to field test the findings of the study. How can this be approached is an important question. Any intervention takes considerable time and thinking. But in this case extra efforts are required to achieve the objective: *long term sustainability*.

The following are some essential steps which should be followed very carefully:

A. Staff Identification and Selection

The right attitude and approach of field staff is the strongest determinant for successful community involvement. Field staff must exhibit the following characteristics:

- **A clear understanding of the project concept and roles of all parties in it**
- **Empathy with the villagers**
- **Ability to work at ease in a village**
- **Trust and respect of the community members with whom they work, and most of all,**
- **Ability to listen, and to use the "mutual learning" rather than the "top down" approach**

It is difficult to find staff with the above characteristics. However, it is possible to make the field staff aware of their shortcomings and ability to introduce alternative ways of communication through the participatory training workshops. A minimum four days of workshop will be enough to enable the staff identify their own problem areas.

The success of the project depends on involving all the concerned parties which includes local Pradeshiya Sabhas. It is very important that Pradeshiya Sabha technical officers and handpump mechanics are willing to cooperate and understand the importance of this project. Both of these individuals should be involved right from the beginning in the planning of the pilot project. The Pradeshiya Sabha's handpump mechanic must participate in the training workshop and later be part of the team providing training to the village technicians.

Identification and training of field staff can be accomplished in a week.

B. Site Selection

The second important step is to identify communities which are willing to participate in this pilot project. It would be helpful if such communities are selected from the dry zone where water is a priority need. It is essential to choose one or two Pradeshiya Sabhas where the staff is **cooperative and empathetic** towards the communities selected for the programme. They should welcome the idea of community based maintenance and not feel threatened by it. In fact, they should feel confident that it would succeed and reveal them of workload.

The communities can be selected using the GTZ office handpump location map. This identification and organization of process can take one day.

It is suggested that in the beginning, about 40 communities should be identified, but later if it is found that all the first 20 communities are willing to participate in the programme activities, then visits to the next 20 villages can be dropped.

C. Staff Training Workshop

A four day workshop should be arranged to train the field staff in use of participatory tools at the community level. The first day should be spent in the trainers being made familiar with the programme and with each other, and identifying their strengths and weaknesses. The second day focus should be on identifying and developing tools to be used in the villages to assess communities willingness for participation in the pilot project.

The third day must be spent in the actual field situation. The participants should go into a village and conduct a participatory meeting. Participants should be encouraged to use the communication tools which they learnt and/or developed. The group should then get together and discuss their field experiences.

The fourth day should also be spent in the community improving the communication skills and use of participatory methods. It would be a great learning experience if the trainees would stay over night in the village.

Participation is easier than done. It is taught by examples, so here is one. The pictures pasted on next few pages¹ show group meetings at a workshop and in the communities. They illustrate a range of level of participation. See if you can rank them in order of the very participatory, medium participatory, least participatory and no participation at all. This technique or tool is known as the "Photo Parade."

The key is to identify a individual who can conduct a participatory workshop. Mr. Sisira Navaratne (Cowater) and Dr. SPF Senaratne, an anthropologist consultant (Phone 584618) are some potential individuals for conducting the training workshops.

¹. These photos are only attached with one copy for GTZ project manager.

D. Identification of community's willingness through RPA

Once the project staff has identified the target communities and field staff has been trained in the Rapid Participatory Assessment (RPA) approach then the crucial step starts: the process of informing the communities of their options and assessing their willingness to participate in this project. The villagers should be presented the seven points (with some adaptation) listed in the above RPA section. Using participatory methods of discussion, they should be asked to list out their options and steps which they want to include in the project activities. For example, some villages might not want a bank account. Instead they might prefer to keep the money with an influential and trusted person in the village.

In addition to the seven points, the community should be given a list of prerequisites such as:

- they should have a more active cost recovery system than they have now,
- they should have a village based organization to take over maintenance responsibilities
- They should identify a village person for technical training (it can be the existing trained volunteer or a new),

The team member has to make sure that the community has understood the basic concept and their options. Before leaving the village, people should be asked to inform the GTZ office within a week about their willingness to participate in the pilot project. They should not be asked to commit while the team is in the village.

Prerequisites for the villagers to meet should be carefully designed and be somewhat flexible. The villagers should be given at least a few days to think over their participation and meet their prerequisites.

Of course, the methodology used in conducting village meetings will be exclusively participatory. However, both the project planners and field staff should be aware of the following factors and should take them seriously into consideration:

1. Project/Community interactions

a. Transparency

One strong factor in long term sustainability is an open and clear relationship between the project and the community. The project has the responsibility of being transparent and accountable to the community. The Project must always give correct information about the project, its activities and staff, while avoiding setting up excessive expectations.

b. Equal flow of information

Communities should be provided reliable information about the programme activities such as what it offers, how the community can be involved, what are their roles and responsibilities in relation to meeting the prerequisites. What are the cost involved and what are the benefits.

c. Decision-making power

The communities should be given the choice of deciding if they want to join the pilot programme or not. No excessive encouragement should be given.

E. Training of technical volunteers

Most of the communities where a handpump has been installed already have one or two trained individuals. However, the earlier training was not enough to built confidence among the villagers to undertake the repairs of the pump on their own. Again, a participatory training approach is required to further train these village volunteers. An ideal way would be to arrange on site (in-village) training for 10 voluntary technicians at a time. This will require identification of pumps and villages common to the communities joining the programme.

The key to success is to let the trainees get their hands dirty by repeatedly taking apart the handpumps. The training instructors (The GTZ Staff and Pradeshiya Sabha's handpump mechanic) need to be at ease and feel comfortable by letting the trainees handle the problem on their own. Not to worry if something is dropped inside the well...that itself will be a learning experience.

It would be best to have a mobile training unit. Each trainee should actively dismantle and replace the footvalve or cupwasher in his/her village handpump. This will give credibility to the trainee in the eyes of fellow villagers and first hand experience with their own pump.

F. Availability of Spare Parts

Availability and access to spare parts is very important. The GTZ staff should have a brain storming session about how to make these parts easily available to the users. One way to solve this issue is to involve Pradeshiya Sabha in setting up a storage place from where community people could purchase them.

However, they must be given alternatives such as the local market and manufacturer. The communities should be given the name and address of the local shop or manufacturers in Colombo and asked to get those parts directly form their. This will require arrangements with the manufacturer. In no case should the villagers be given subsidized prices.

G. Follow-up.

The process does not stop with the completion of volunteers training. Over a period of one year these communities need to be monitored. The indicators to look for would be:

- Has pump been repaired by them, if yes, any problem faced. Where and how did they get the spare parts. Did they ask for external help?
- Has money in their bank account increased since the initial deposit? Success rate in cost recovery. If not why not?
- Is community more responsive to the maintenance requirements of the handpump?

H. Time Schedule

The pilot project activities could be carried out during the next eight weeks between September 9 and October 31. The following is a rough estimate of the timing required for each activity. It can be adjusted according to the Project staff time availability and work requirements.

Phases	Time period
1. Field staff identification and selection	September 9-10
2. Identification of master trainer and preparation for the training workshop	September 11-13
3. Training workshop	September 16-19
4. Identification of Target communities	September 20
5. Rapid Participatory Assessment Survey (approximately 14 days, 28 communities)	September 24 to October 11
6. Waiting period for communities response	October 14-18
7. Informing and organizing training for the first group of 10 voluntary technicians	October 21
8. Actual on the site training	October 23-25
9. Informing and organizing training for the second group of 10 voluntary technicians	October 28
10. Actual on site training	October 29-31
11. After two months a follow-up survey should be conducted	

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oto Parade 1

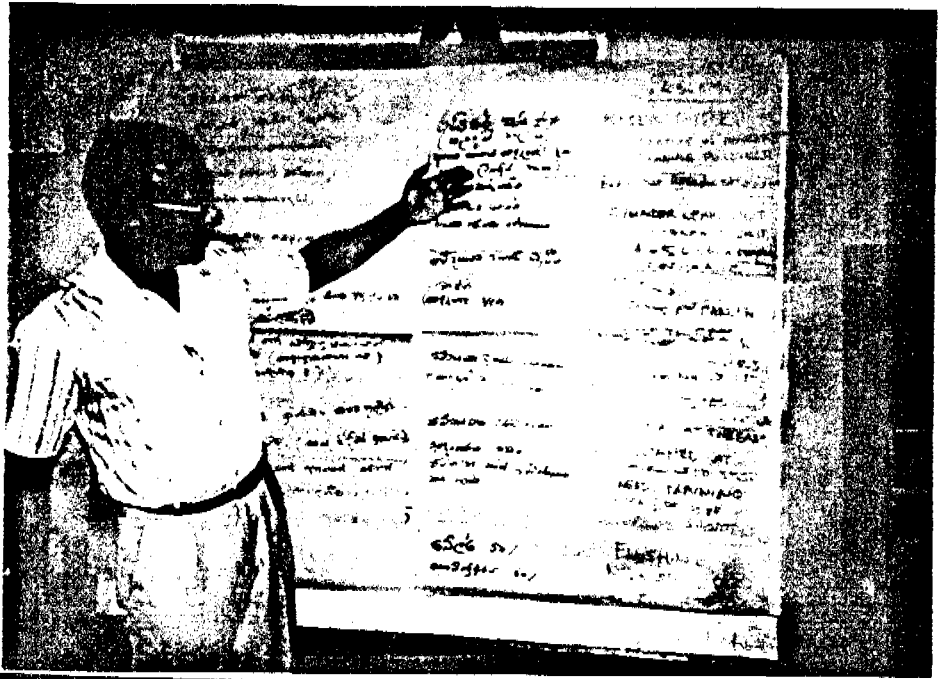




Photo Parade 3



Appendix A: Timeframe

The activity was carried out during the six week period between July 20 and August 28. The attached table presents the various tasks and personnel.

Sa	Su	Mon	Tue	Wed	Thu	Fri
18	19	20 Arrived Colombo	21	22 Met with GTZ in Kurunegala *MFS+G	23 Ethno study in field *MFSD	24 Ethno study in field *MFS
25	26	27 Ethno Study *FSD	28 Ethno Study *FSD	29 Ethno Study *FSD	30 Ethno Study *FSD	31 Ethno Study *FSD
1	2	3 Write-up plan workshop *F	4 Interim Workshop *MFSD+G +2VW+VR	5 RPA Training MFSD+2VW	6 RPA SD+2VW	7 RPA SD+2VW
8	9	10 RPA SD+2VW	11 RPA SD+2VW	12 RPA SD+2VW	13 RPA SD+2VW	14 RPA SD+2VW
15	16	17 RPA SD+2VW	18 RPA SD+2VW	19 RPA Analysis write up ST	20 Workshop *MFSD+V W+G+VR	21 RPA Write up MFS
22	23	24 Report write up FS	25 Report write up FS	26 Report write up MFS	27 Report write up MFS	28 Report Complete MFS

* M = McGarry
F = F. Sultana
S. = Sisira
D = David

G = senior GTZ Project staff member
2VW = two female Village Level Workers
Vs = Village representatives

Appendix B: ETHNOGRAPHIC STUDY CHECK-LIST

I. COMMON DATA REQUIREMENTS

1. No. of regular users of HP for drinking water (wet & dry season).
2. Stated water taste (prefer taste of open well or HP, why)
3. Alternative drinking water sources (wet and dry seasons)
4. List of active societies/committees in community
5. Status of WCS (meetings, fund raising, collapse to caretaker).
6. Linkages of WCS to other societies (common members...)

II. COMMUNITY ORGANIZATIONS

A. Existing Community Organizations (each discussed as per below)

1. Name, number of members, registration, years in existence
2. Functions and interests (esp. water supply, health?)
3. Decision making, leadership
4. Funding, collection methods, money management, bank account

B. Water Consumer Society (WCS)

1. Age, members,
2. Activities since creation
3. Perceptions of WCS's purpose/functions and viability in future
4. Perceptions of Rs 500, what it's for, how much collected, future collection?
5. Funds management

III. HISTORY OF HANDPUMP

1. Need
2. Request for well
3. Ownership

IV. MAINTENANCE AND REPAIRS

A. Pradeshiya Sabha's repair of HPs

1. History of repairs by GTZ Project
2. History of repairs by Pradeshiya Sabha
3. Flushing by GTZ truck and compressor
4. Perceptions and confidence of Pradeshiya Sabha when Germans withdraw

B. Possible Community Management of Maintenance and Repairs (assuming training is given to volunteer village mechanics)

1. **Technical Capacity after training for**
 - a. Chain greasing
 - b. Bearing replacement
 - c. Chain replacement
 - d. Riser pipe repair
 - e. Footvalve rubber washer replacement
 - f. Rubber cup seal replacement
2. **Long Term Organizational Support for community managed maintenance and repair.... which organization and why including WCS)**
3. **Fund raising for maintenance and repairs (up to Rs 300 per repair)**

C. Private Sector Services

1. **Local (nearby town) car garage or blacksmith/machinist**
2. **Private (part time) trained HP mechanic from area serving 10-15 pumps in the area**
3. **Spare parts availability (if not covered in discussion above)**

Appendix C: Rapid Participatory Assessment

Mandatory Data

Handpump # _____ Village Name _____

AGA Division Name _____

Total Village Households: _____

Number of Handpumps in the Village _____

Number of Users: Wet Season _____ Dry Season _____

Perceived Ownership _____

Need (Strong, Moderate, Not Needed) _____

Taste (Good, Brackish, Rusty) _____

Handpump mostly used for _____

Repairs History:

#	Problem	How long waiting Period	Who Fixed it	Cost/For what
1				
2				
3				

Status of Water Consumer Society

Active? _____ Not Active _____

Rs. Collected _____

What is this collection for? _____

What is Your Opinion about PS maintenance Service SO FAR? _____

Knowing that the German GTZ Project will be closing within the next five months. What do you think of PS Services for the maintenance in the next five years?

List the existing societies in order of Decreasing Importance and activity:

- 1
- 2
- 3
- 4

Number of Participants in the Meeting: M _____ F _____

Villagers List of the maintenance problems:

Villagers suggested solutions:

DESCRIBE THE PAST ETHNOGRAPHIC SURVEY AND THE WORKSHOP....Show following items written on a large sheet,

- a. There are two levels of maintenance (1) regular maintenance (minor repairs) for which spare parts cost Rs. 25-300/year and (2) flushing (major repairs) which costs Rs. 3000 per four years,
- b. Further training of the village volunteers in handpump repairs and provision of tools would be required if the village was to take on pump maintenance,
- c. A community based organization should be responsible for handpump maintenance,
- d. The recommended village based organization (CBO) will collect charges (monthly/ad-hoc). rates will be different for the dry season users than all year round users,
- e. Funds would be kept in a bank account controlled by the CBO,
- f. The Pradeshiya Sabha would remain involved as back up and provide training and keep spare parts to be purchased by the villagers.

After the villagers had discussed the above among themselves with and without the team being there, ask them if they agree with this community based maintenance system IN ADDITION to Pradeshiya Sabha, if yes

What organization would they select to be responsible for:

- I. **Water Trust** (will include village leadership which may or may not be in users group)
- II. **An Existing Society**

Appendix D: Summary of RPA Data in 34 Communities

Characteristics	HP # 1096	HP # 782	HP # 708	HP # 457	HP # 716	HP # 939
Total Village house holds	100	60	25	150	33	74
No of HP in village	2	2	1	3	1	1
No of HP users Wet / Dry	40/80	15/20	15/18	10/20	12/30	15/15
Perceived ownership	Community	Community	Community	Community	Community	Govt
Degree of need	Strong	V-Strong	Strong	Strong	Moderate	Strong
Taste	Brackish	Brackish	Good	Good	Brackish	Good
HP used for	Drink/Wash	Drink/Wash	Drinking	Drinking	Wash/Bath	Drinking
Problem in past	None	1. Tube removed 2. Cup Washer	Footvalve	None	Cup Washer	1. Rod 2. Do not know yet
Waiting period	NA	1. 2 weeks 2. 1 week	3 months	NA	1 month	1. 1 Week 2. ?
Fixed by	NA	1. GTZ 2. Villager	PS	NA	GTZ	1. GTZ 2. No act
Amount collected	500	500	500	500	500	500
Confidence in PS in longer term	Not much	Not at all	Not at all	Not very sure	Yes	Not effecient
A. Major repairs A. Minor repairs	Govt Community	Govt Community	PS Community	Community Community	Community Community	PS' Community
B. Want village level volunteer for maintenance	Yes	Yes	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed	Agreed	Agreed
D. CBO will collect funds	Yes	Yes	Yes	Yes	Yes	Yes
D. Different rates for dry season users	Yes	No	No	Yes	Yes	No
E. CBO bank account	Add-hoc collection	If needed	Yes	Yes	No, WCT keeps	Yes
F. PS as back up	Yes	No, want GS ²	Yes	Yes	Yes	Yes
G. Recommended CBO	WT	WT	RDS ³	WT	WT	WT

1 = PS (Pradashya Sabha)

2 = GS (Grama Saveka)

3 = RDS (Rural Development Society)

Characteristics	HP # 641	HP # 735	HP # 246	HP # 790	HP # 1195	HP # 587
Total village house holds	98	23	84	80	90	70
No of HP in village	2	1	2	2	1	2
No of users Wet / Dry	10/25	23/35	20/60	20/25	15/20	12/20
Perceived ownership	Community	Don't know	Community	Govt	Community	Community
Degree of need	Strong	Strong	Strong	Moderate	Moderate	Strong
Taste	Good	Good	Good	Good	Brackish	Good
HP used for	Drink Wash	Drink Wash	Drink Bath	Drink Bath	Drink Wash	Drink Wash
Problem in past	1. Pipe 2. Cup washer	Footvalve	Cup washer	Cup Washer	None	1. Pipe 2. Pipe 3. Pipe
Waiting period	1. 1 week 2. 2 week	3 days	1 week	1 week	NA	1.1 week 2.3 days 3.2 days
Fixed by	1. PS 2. PS	GTZ	GTZ	GTZ	NA	1. GTZ 2. PS 3. PS
Amount collected	500	500	500	Some	500	500
Confidence in PS in longer term	Can not depend	Not very confident	Yes	No	No comment	Yes
A. Major repairs A. Minor repairs	Community Community	Community Community	Community Community	Govt Community	Community Community	Community Community
B. Want village level volunteer for maintenance	Yes	Yes	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed	Agreed	Agreed
D. CBO will collect funds	Yes	Yes	Yes	Yes	Yes	Yes
D. Different rates for dry season users	No	Will discuss	Will discuss	No	Will discuss	No
E. CBO bank account	Yes	Yes	Yes	No	Yes	Yes
F. PS as back up	Yes	Yes	Yes	Yes	Yes	Yes
G. Recommended CBO	WT	WT	WT	WT	WT	WT

Characteristics	HP # 642	HP # 931	HP # 638	HP # 948	HP # 659	HP # 1319
Total Village house holds	35	200	108	200	32	140
No of HP in Village	1	1	1	2	1	1
No of Users Wet / Dry	25/50	20/75	20/40	12/20	11/25	15/35
Perceived Ownership	Community	—	Govt	Community	Govt	Govt
Degree of Need	Strong	Strong	Moderate	Strong	Strong	Strong
Taste	Good	Brackish	Good	Good	Good	Good
HP used for	Drink Wash	Wash Bath	Drinking	Drink Wash	Drink Wash/Bath	Drink Wash/Bath
Problem in Past	None	None	1. Pipe 2. Foot vial	None	Cup Washer	None
Waiting period	NA	NA	1. 1 week 2. 1 week	NA	3 days	NA
Fixed by	NA	NA	1. GTZ 2. GTZ	NA	GTZ	NA
Amount collected	500	500	500	500	500	500
Confidence in PS in longer term	No	No comment	No	No comment	Do not like to depend	No comment
A. Major repairs A. Minor repairs	Community Community	Community Community	Govt Community	PS Community	Community Community	Community Community
B. Want village level volunteer for maintenance	Yes	Yes	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed	Agreed	Agreed
D. CBO will Collect funds	Yes	Yes	Yes	Yes	Yes	Yes
D. Different rates from dry season users	No	Will discuss	Yes	Only regular users	Yes	Add-hoc
E. CBO bank account	Yes	Yes	Yes	Yes	Yes	Yes
F. PS as back up	Yes	Yes	Yes	Yes	Yes	Yes
G. Recommended CBO	SANASA	WT ⁴	WT	Indeter-minant ⁵	Indeter-minant	SDS ⁶

4= This community was not united, so did not know if want new system

5= Answers were indetermination

6= SDS (School Development Society,

Characteristics	HP # 582	HP # 746	HP # 1205	HP # 532	HP # 1166	HP # 842
Total vilage house holds	90	7	200	103	130	83
No of HP in vilage	1	1	1	2	1	1
No of users Wet / Dry	4/7	15/25	8/20	12/30	40/90	10/20
Perceived ownership	Don't know	Govt	Govt	Community	Community	Community
Degree of need	Moderate	Moderate	Moderate	Strong	Strong	Strong
Taste	Brackish	Brackish	Rusty	Brackish	Good	Good
HP used for	Drink Wash/Bath	Wash/Bath	Wash/Bath	Wash/Bath	Drinking	Drink Bath
Problems in past	Footvalve	1. Cup washer	None	None	None	None
Waiting period	2 weeks	1 week	NA	NA	NA	NA
Fixed by	GTZ	GTZ	NA	NA	NA	NA
Amount collected	500	500	500	250	500	300
Confidence in PS in longer term	Yes	Doubt its capacity	No	No comments	No comments	No comments
A. Major repairs	Govt	Community	Community	Community	Community	Community
A. Minor repairs	Govt	Community	Community	Community	Community	Community
B. Want vilage level volunteer for maintenanc	Yes	Yes	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed	Agreed	Agreed
D. CBO will collect funds	Not sure	Yes	Yes	Yes	Yes	Yes
D. Different rates for dry season users	will discuss	No	Only from regular users	Yes	Only from regular users	Yes
E. CBO bank account	NO	Will discuss	Yes	Yes	Yes	Yes
F. PS as back up	Yes	Yes	Yes	Yes	Yes	Yes
G. Recommended CBO	WT	Indeter-minant	Indeter-minant	Indeter-minant	Indeter-minant	Indeter-minant

7= Only 4 families, were not sure can handle major cost

Characteristics	HP # 882	HP # 1134	HP # 1145	HP # 572	HP # 847	HP# 719
Total village house holds	150	97	313	400	73	49
No of HP in village	3	2	1	1	2	2
No of users Wet / Dry	20/30	35/100	35/70	25/40	10/20	10/25
Perceived ownership	Don't know	Community	Govt	Community	Community	Community
Degree of need	Strong	Strong	Strong	Strong	Strong	Strong
Taste	Good	Brackish	Good	Brackish	Brackish	Good
HP used for	Drinking	Drink Wash/Bath	Drinking	Drink Wash/Bath	Wash/Bath	Drinking
Problems in past	None	None	None	Cup washer	Chain	1. Foot vial 2. Rod
Waiting period	NA	NA	NA	1 week	2 weeks	1. 2 days 2. 1 Mth
Fixed by	NA	NA	NA	PS	PS	1. GTZ 2. GTZ
Amount collected	500	500	500	500	340	500
Confidence in PS in longer term	No comments	Can not depend	Can not depend	No efficient	Yes	No
A. Major repairs A. Minor repairs	Community Community	Community Community	Community Community	Community Community	Community Community	Community Community
B. Want village level volunteer for Maintenance	Yes	Yes	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed	Agreed	Agreed
D. CBO will collect funds	Yes	Yes	Yes	Yes	Yes	Yes
D. Different rates for dry season users	Yes	Yes	Will discuss	According to income	Yes	Yes
E. CBO Bank account	Yes	Yes	Yes	No	Yes	Yes
F. PS as back up	Yes	Yes	Yes	Yes	Yes	Yes
G. Recommended CBO	Indeter-minant	Indeter-minant	WT	SDC*	Indeter-minant	WT

Characteristics	HP # 1030	HP # 1060	P # 552	HP # 1056
Total village house holds	35	---	40	40
No of HP in village	1	1	1	2
No of users Wet / Dry	20/35	6/25	18/18	20/10
Perceived ownership	Community	Care taker	Govt	Govt
Degree of need	Strong	Strong	Strong	Moderate
Taste	Good	Brackish	Good	Good
HP used for	Drinking	Drink Wash	Drinking	Drinking
Problem in past	None	None	1. Footvale 2. Pipe 3. Cup washer	Chain
Waiting period	NA	NA	1. 1 day 2. 2 weeks 3. 1 week	3 weeks
Fixed by	NA	NA	1. GTZ 2. GTZ 3. GTZ	PS
Amount collected	500	500	500	500
Confidence in PS in longer term	---	No	No	NO
A. Major repairs A. Minor repairs	Govt Community	Community Community	PS Community	Govt Community
B. Want village level volunteer for maintenance	Yes	Yes	Yes	Yes
C. CBO responsible for maintenance	Agreed	Agreed	Agreed	Agreed
D. CBO will collect funds	Yes	Yes	Yes	Yes
D. Different rates for dry season users	Will discuss	No	No	No
E. CBO bank account	Yes	Yes	Yes	Yes
F. PS as back up	Yes	Yes	Yes	Yes
G. Recommended CBO	Indeter-minant	WT	WT	WT



At the concluding Workshop, villagers plan their maintenance system



.... outside, Project staff await their conclusions.