



A MANUAL ON OPERATION AND MAINTENANCE OF COMMUNAL STANDPOST FOR EXTENSION WORKERS AND CARETAKERS



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PIPED SUPPLIES FOR SMALL COMMUNITIES
(PSSC) PROJECT ZAMBIA

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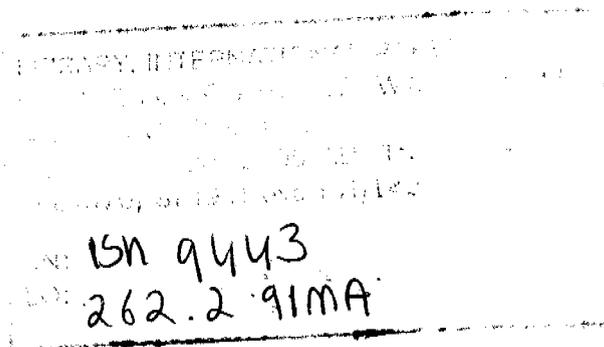
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D. Ng'ambi

1. Introduction

It has been observed that most piped communal water supply systems may fail before the end of their designed life time due to the fact they are NOT being operated and maintained in a proper way.

It is in view of the Piped Supplies for Small Communities (PSSC) project's experiences that this Manual on Operation and Maintenance has been produced, to assist the extension workers in supporting community water committees, and in particular caretakers, in appropriate operation and maintenance of their piped water supply systems.

Although this manual has been prepared within the framework of the PSSC project, we hope that it will prove to be useful on a wider scale.

2. Community Participation in Operation and Maintenance

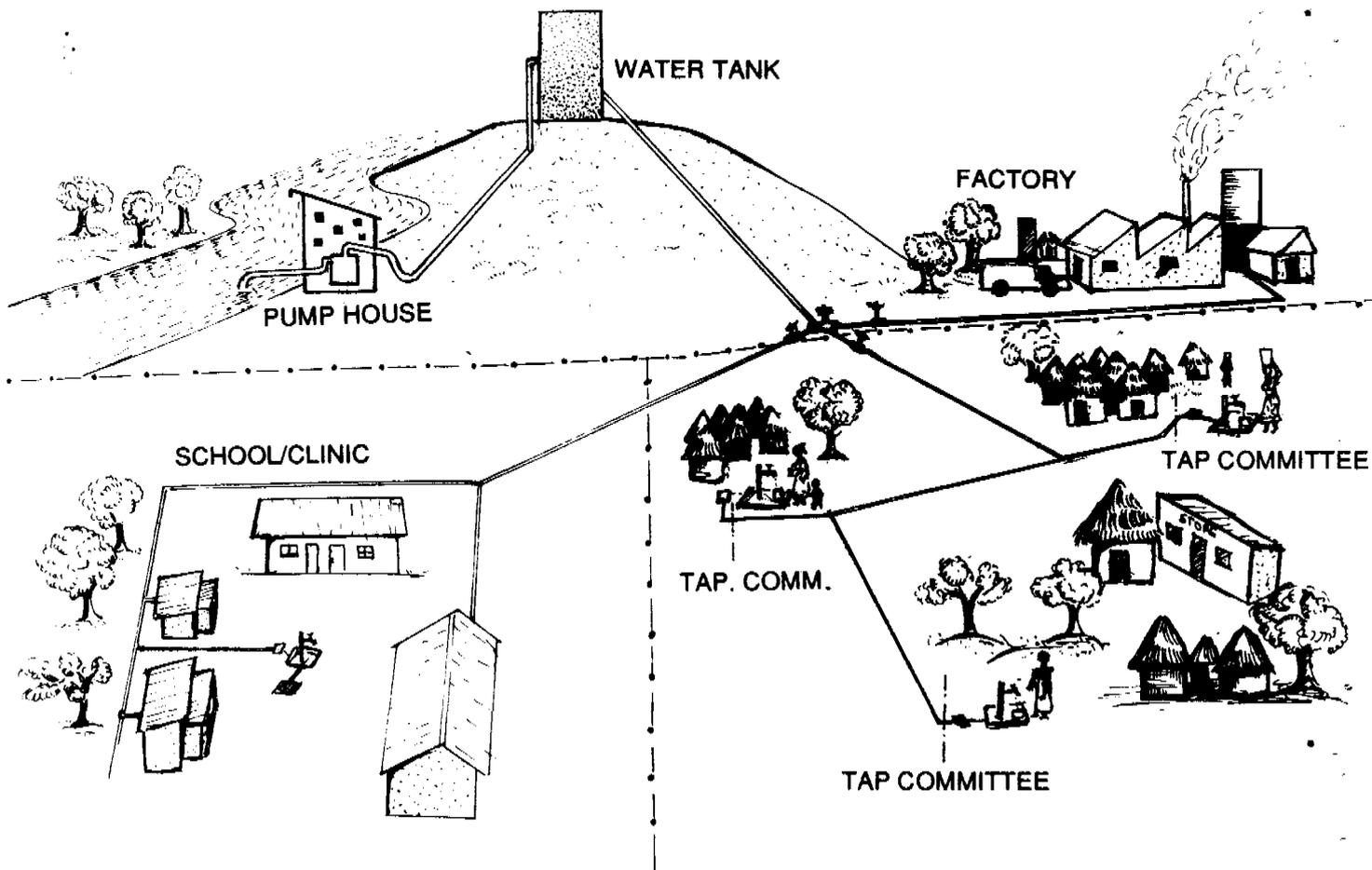
Community participation

Community involvement is essential at all stages of a water supply project, especially in operation and maintenance.

Why is community involvement in operation and maintenance so important?

- * Repairs are attended to faster by the community itself, rather than relying on someone to come from the district office.
- * Effective operation and maintenance will lead to less breakdowns and thus to reduced expenses in terms of time and money.
- * Involvement in operation and maintenance instills a sense of ownership to communities.
- * This ensures sustainability of the facilities.

The Water Authority and the community may accuse each other of neglecting the water supply system and the standpost. Sometimes the community does not know how to repair a tap and who is supposed to solve its maintenance problems. It is in this context that the responsibilities must be clear.



(i) Responsibility of the Water Authority

The Water Authority is responsible for the water system:

- * From the source to the distribution tank
- * From the distribution tank to the distribution pipe line up to the gate valves at the standposts.

(ii) Responsibility of the Community

The community or the water of tap committee is responsible:

- * For the gate valve
- * For the standpost and soakaway
- * For the surroundings of the standpost.

Usually, not all members of a community are taken collective responsible for the execution of operation and maintenance tasks. The community will delegate these tasks to a Water Tap Committee whose members are chosen democratically by the Community. In the performance of its duties the water Committee will be supported by extension workers.

(iii) Responsibilities of Extension Workers

Extension workers should help the community in:

1. Selecting an efficient Water or Tap Committee which can nominate a caretaker or two caretakers.
2. Setting up and managing a Maintenance Fund.
3. Organising operation and maintenance training programmes.
4. Purchasing of right maintenance materials and tools, and storage of these in a safe place.

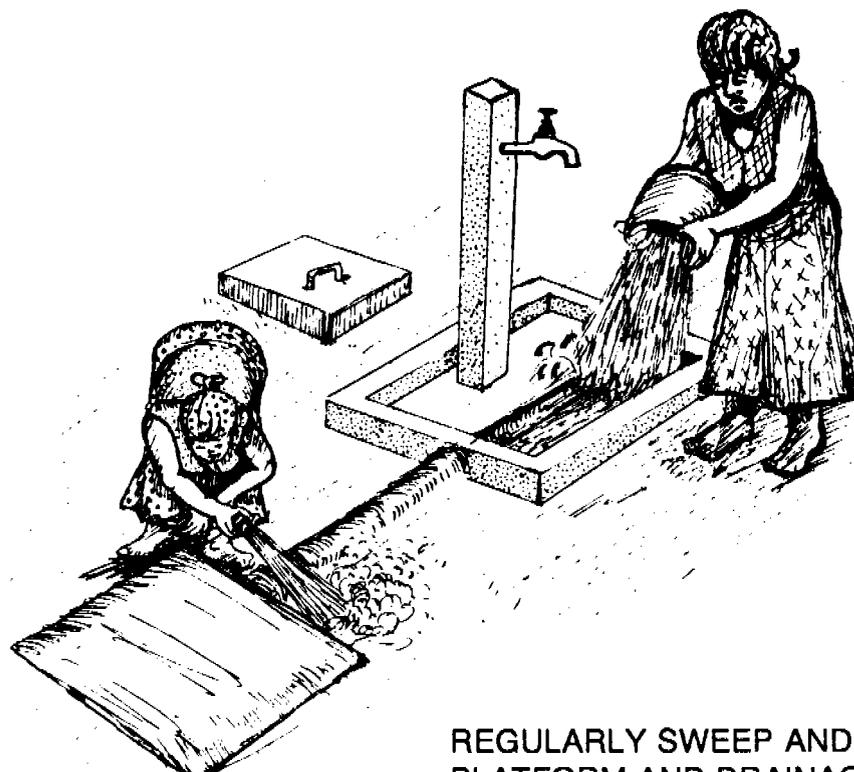
3. *Basic Principles of Operation*

Operation of a standpost involves keeping it and its support structure, platform, drainage system and the surrounding area in clean and operational condition.

The Tap Committee is responsible for the operation of a standpost.

Work of the Tap Committee in operation:

- * to ensure that the standpost is handled with care;
- * to ensure that the taps are closed after use;
- * to keep the surroundings of the standpost clean by :
 - regularly sweeping and removing any garbage;
 - removing stones from platform and drainage;
 - cutting grass short in the surrounding area;



REGULARLY SWEEP AND CLEAN THE PLATFORM AND DRAINAGE

- * to ensure that children are not playing with the water, or on the standpost, or in the surrounding area;
- * to ensure that members of the community do not urinate or leave faeces near the standpost, and dispose of any if found;

- * to ensure that members of the community do not bath or wash their clothes or kitchen utensils at the standpost or surrounding area;



NO WASHING OF CLOTHES AT THE STANDPOST

- * to ensure that animals do not come near the standpost, or in the surrounding area.

The Tap Committee can delegate this work to one of its members, who will then act as Caretaker of the standpost.



DRIVE AWAY ANIMALS

IMPORTANT: Adults in the community have the responsibility to educate children on how to use the standpost.

4. *Basic Principles of Maintenance*

Maintenance of a standpost involves keeping it and its support structure, drainage system and the surrounding area in good working condition.

The Tap Committee plays a very important role in the maintenance of a standpost.

Maintenance work can be classified into three categories :

1. Preventive maintenance by the Tap Committee or Caretaker
2. Corrective maintenance by the Tap Committee or Caretaker
3. Emergency maintenance by the Water Agency (District Council).

1. *Preventive maintenance*

This work is done to prevent costly repairs or replacements. It is designed to fix something before it breaks down or becomes a health hazard.

Preventive maintenance tasks are :

- * to *regularly* inspect, check and test the taps and the service pipe, and tighten any loose parts;
- * to attend to any slight dripping of a tap;
- * to *regularly* inspect the standpost structure, the platform and drainage for cracks and faults. Small cracks should be repaired at once by filling them with cement mortar (grouting);
- * to *regularly* remove leaves, sand and other dirt from the drainage as they clog the soakaway;
- * to prevent any pools of stagnant water around the standpost; these are mosquito breeding places which cause malaria.

2. *Corrective maintenance*

Corrective maintenance is carried out in order to bring back a standpost into operation after a failure. This will always involve repairs to be made.

For example :

- * a badly leaking tap due to a worn-out washer;
- * a cracked or damaged platform, support structure, or drainage;
- * a blocked soakaway.

If any of these failures is found, the Tap Committee or the Caretaker should ensure that the standpost is attended to without delay.

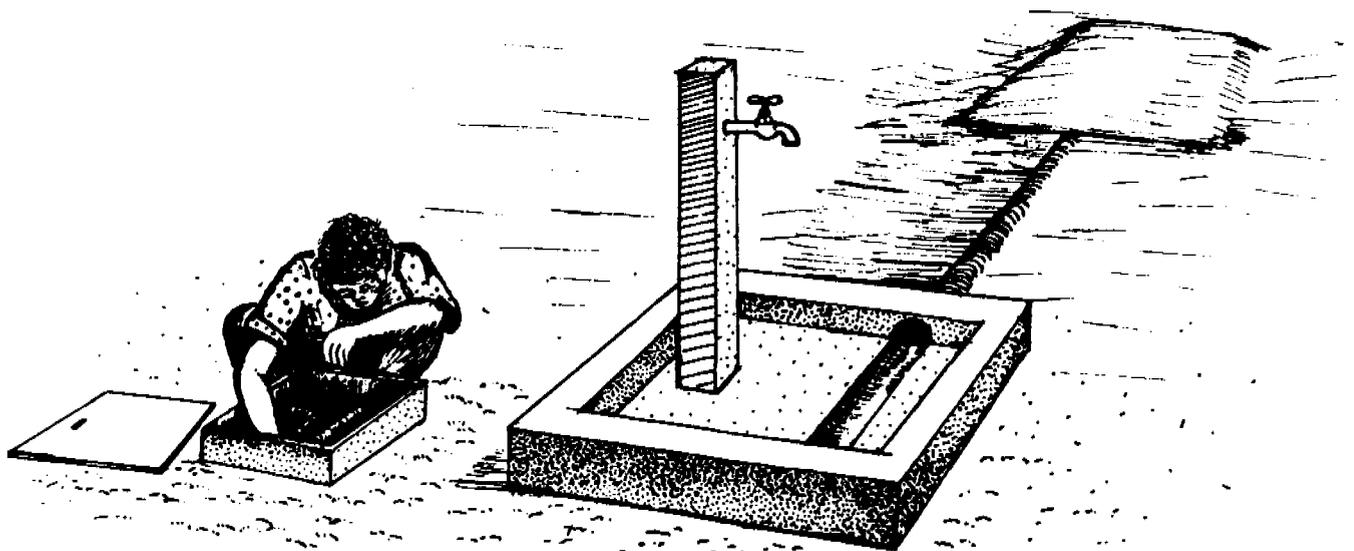
One of the most common problems of standposts is a leaking tap. The following contains a **step-by-step procedure for repairing a leaking tap.**

Step 1

Close the tap tightly. If leakage continues, then follow the step below.

Step 2

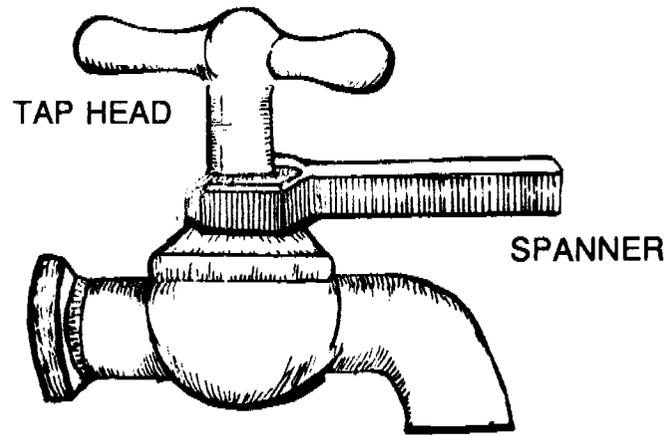
Close the gate valve on the supply line leading to the standpost.



CLOSE THE GATE VALVE ON THE SUPPLY LINE LEADING TO THE STANDPOST

Step 3

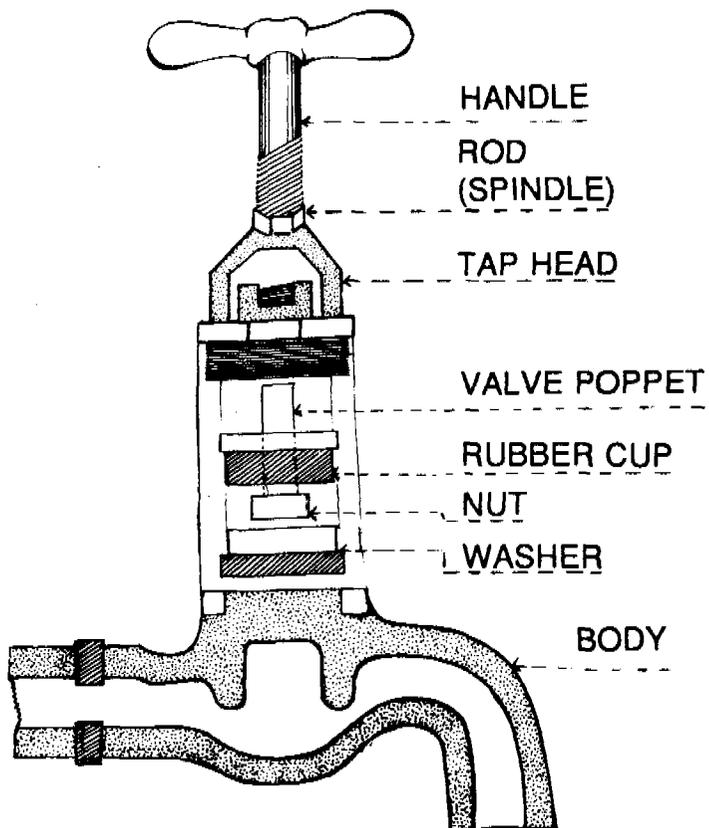
Unscrew the tap head from the body, using the right spanner.



Step 4

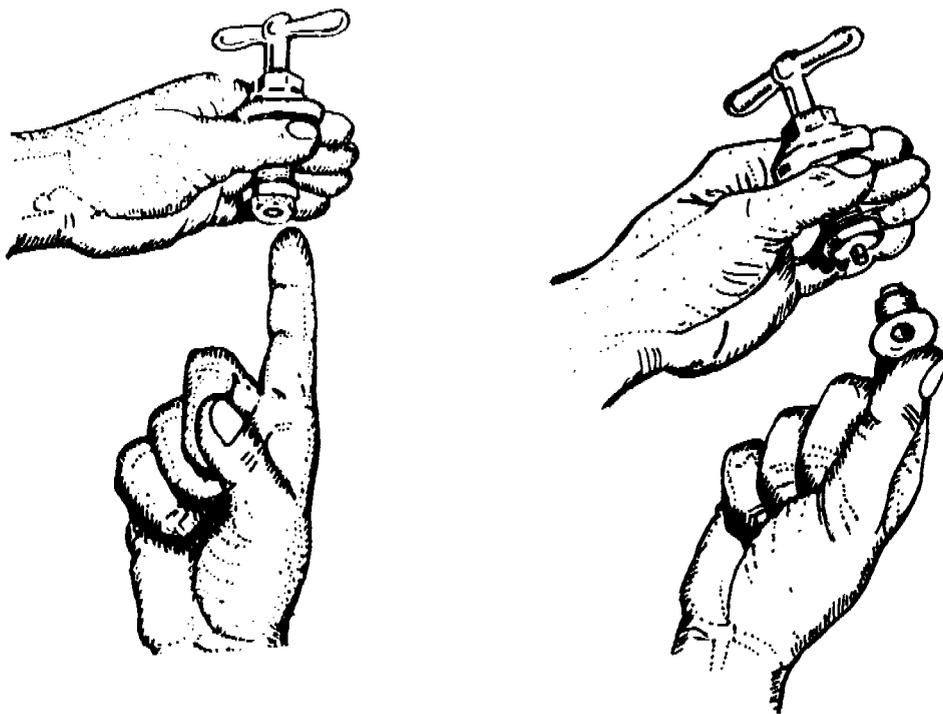
Remove the tap head from the body, and inspect it for :

- worn-out washer
- dirt or rust
- broken threads



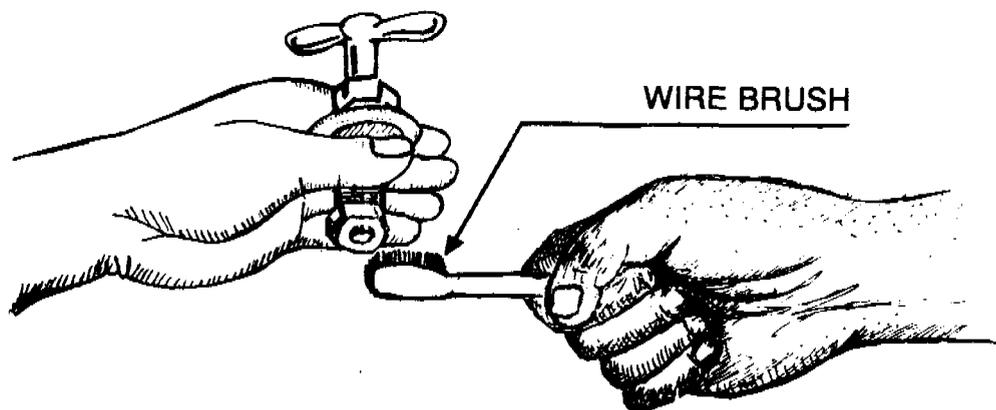
Step 5 A

If the washer is worn out, replace it with a new one.



Step 5 B

If there is any dirt or rust on the tap head clean it by using a wire brush or fine sand paper.



Step 5 C

If there are any broken threads on the tap head, replace it with a new one.

Step 6

Put back the tap head assembly on to the body and screw it properly.

Step 7

Open the gate valve. Briefly open and close the tap several times. Check if the tap has been repaired properly.

3. Emergency maintenance

Any major breakdown, like a broken pipe, which cannot be repaired by the Tap Committee or the Caretaker, should immediately be reported to the Water Authority (the District Council). In establishing a good relationship with the Water Authority, and demonstrating its own responsibility for proper operation and maintenance of the standpost, the Tap Committee will create much goodwill with the Water Authority to ensure timely support in repairing their water supply.



REPORT IN TIME TO THE WATER AUTHORITIES !

5. Caretaker's Tools

To carry out repairs, the Tap Committee or the Caretaker should ensure that the necessary materials, tools and spare parts are available. These tools should be kept in a safe place, for example in the house of the Caretaker or of the Chairman of the Tap Committee. They should always be accessible only to those who are carrying out repair work on the community's water supply system. After finishing the work they should be counted and checked and put back in their place by a member of the Tap Committee or by the Caretaker.

The picture shows some of the most important tools for maintaining and repairing a standpost and drainage.



SHIFTING SPANNER



WIRE BRUSH



SCREW DRIVER



TROWEL



SHOVEL



BUCKET



BROOM

6. Financial Management of Operation and Maintenance

To properly carry out their operation and maintenance tasks, the Tap Committee needs funds

- * to buy tools
- * to buy spare parts, cement, etc., when necessary.

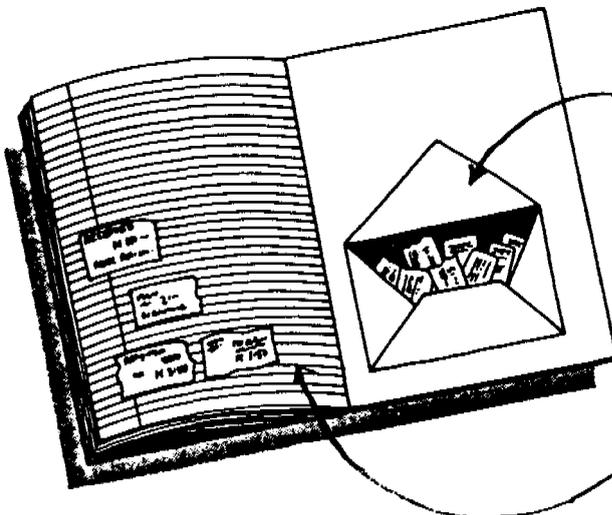
For this purpose the Tap Committee will regularly collect some money from the all the households in the community who use the standpost.

The money is collected by the Treasurer of the Tap Committee, who systematically registers all the contributions in a cash record book. In the same book all purchases are registered. Actually, one of the first purchases may be the cash record book itself.

INCOME				EXPENDITURES		
Date	Name th household	Remarks	Amount	Date	Explanation	Amount
1/2/90	S. Mwanza	partial payment	10.00	7/2/90	pencil	17.00
1/2/90	L. Mumpa	total	25.00	13/2/90	record book	100.00
4/2/90	M. Kapolo	total	25.00	14/2/90	bucket	75.00

EXAMPLE OF A RECORD BOOK, TO BE KEPT BY THE TREASURER OF THE TAP COMMITTEE

All receipts for purchases need to be kept safely, to prove to the community where the money has gone. Keep the receipt in an envelope at the back of the cash record book, or glue them on pages at the back of the book.



Keep the receipts in an envelope at the back of your Daily Cash Record book, or glue all receipts on pages at the back of the book

Any contribution from the community towards operation and maintenance of their water supply are **public funds**.

In order to collect and take good care of these public funds the Tap Committee must :

- * discuss with the community the necessity of regular contributions, and agree upon
 - which amount per household should be paid each month;
 - how the money should be collected;
 - how the money should be kept : in a bank account; or by the Tap Committee who is jointly responsible for it; or by the treasurer who is responsible for it;
 - who will be responsible for purchasing tools and spare parts;
 - who will be responsible for keeping the tools and spare parts;
 - how often the Tap Committee has to report to the whole community on the use of its money;



THE TREASURER OF THE TAP COMMITTEE COLLECTS AND RECORDS CONTRIBUTIONS FROM THE USERS

After agreeing with the community, the Tap Committee will :

- * collect the money from all user households, according to the rules agreed upon by the community;
- * use the money for community water supply purposes only in ways which are known to everybody;
- * record income and expenses regularly and honestly;
- * report to the whole community from time to time on how much has been collected, how much has been used, and how much remains.