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# HELPING COMMUNITIES MANAGE THEIR WATER FINANCES

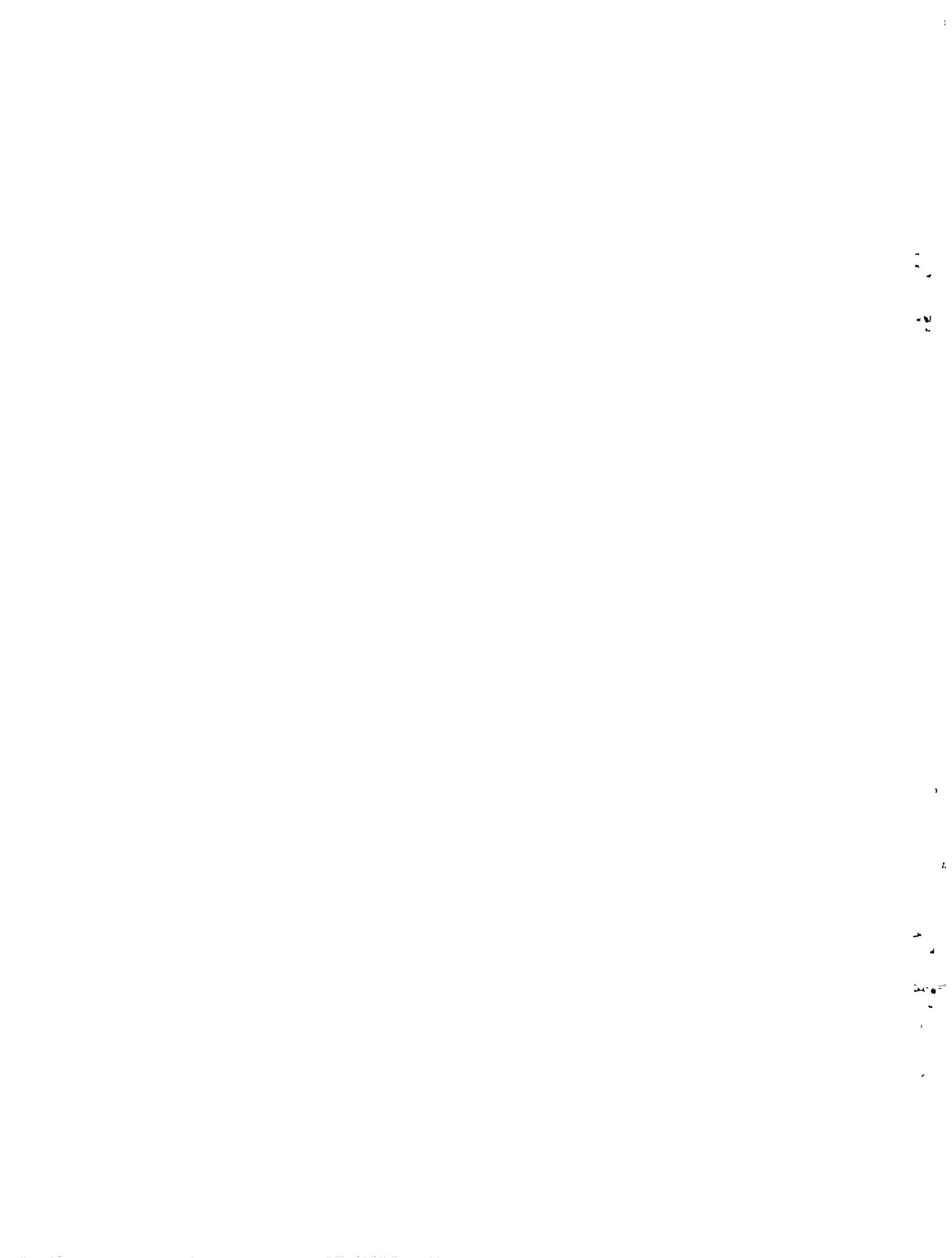
A Manual for Extension Personnel Working  
in Rural or Peri-Urban Communities

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WASH Technical Report No. 93  
September 1993



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## HELPING COMMUNITIES MANAGE THEIR WATER FINANCES

### A Manual for Extension Personnel Working in Rural or Peri-Urban Communities

Prepared for the Office of Health,  
Bureau for Research and Development,  
U.S. Agency for International Development,  
under WASH Task No. 165

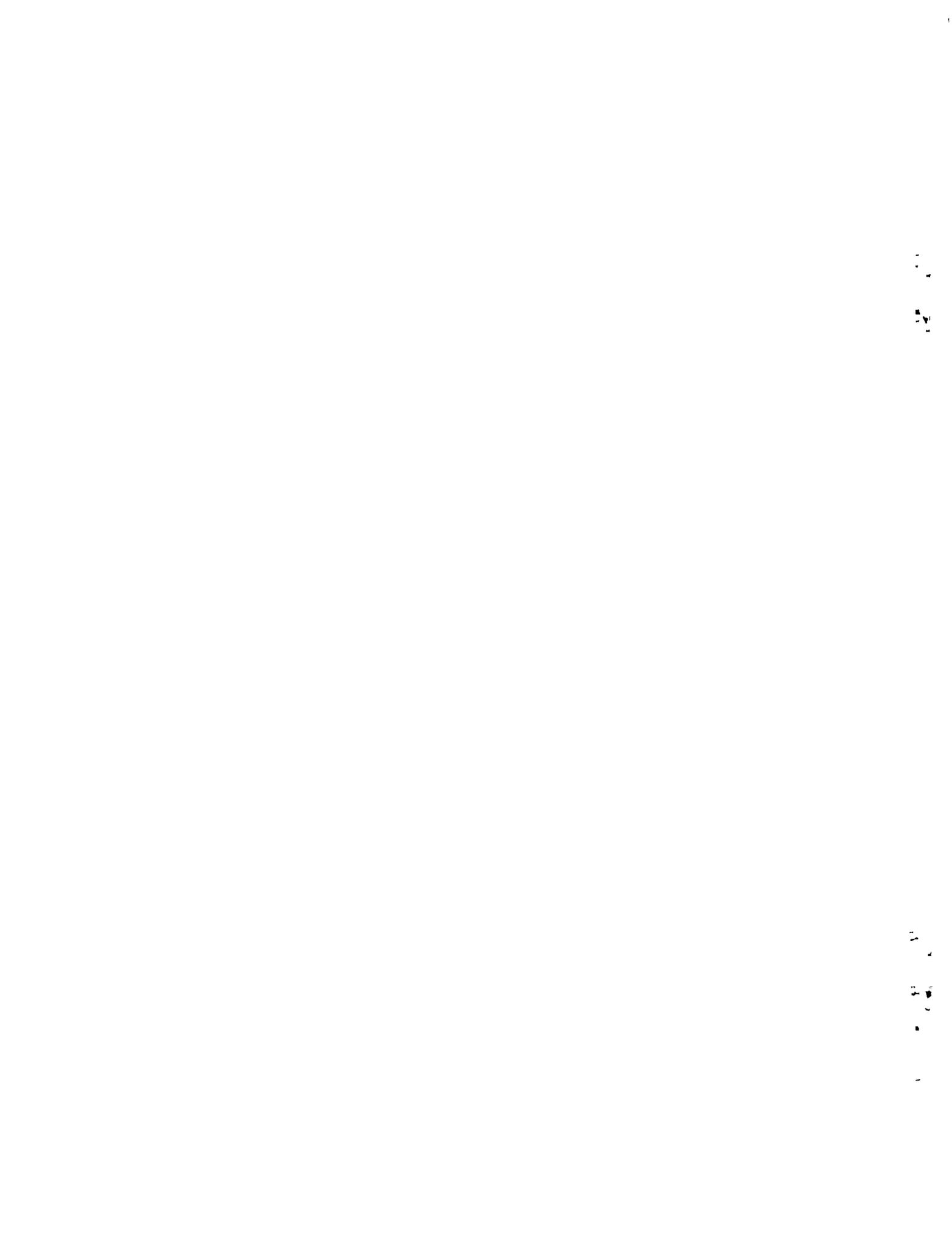
by

Sarah Fry

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# CONTENTS

ABOUT THE AUTHOR .....	iii
ACKNOWLEDGMENTS .....	v
EXECUTIVE SUMMARY .....	vii
1 Introduction .....	1
What Is Financial Management of Community Water Supply?	
What Are the Roles of the Water Committee and the Treasurer?	
What Is the Role of the Community Extension Agent?	
2 How to Use This Manual .....	5
Overall Purpose of the Manual	
How the Manual Is Organized	
How to Use the Manual in Your Work	
3 Helping Communities Make Financial Decisions .....	7
What Information Should Be Collected to Make Financial Decisions?	
Can We Afford to Own and Maintain the Proposed System?	
How Will We Raise the Necessary Funds?	
How Much Should We Charge Households for Water Use?	
Who Will Be Responsible for Managing Our Money?	
Where Will We Store Our Money?	
How Will We Keep Track of What Money Comes In and What Goes Out?	
How Will the Community Know What Is Being Done with Its Money?	
4 Helping the Treasurer and Water Committee Perform	
Financial Management Tasks .....	13
On-the-Job Training	
Creating a Budget	
Step one: Determining Expenses	
Step two: Breaking Down Expenses by Month	
Step three: Budgeting for Income	
Step four: Planning fund-raising Activities	
Budget Exercise	
Raising/Collecting Funds	
Bookkeeping	

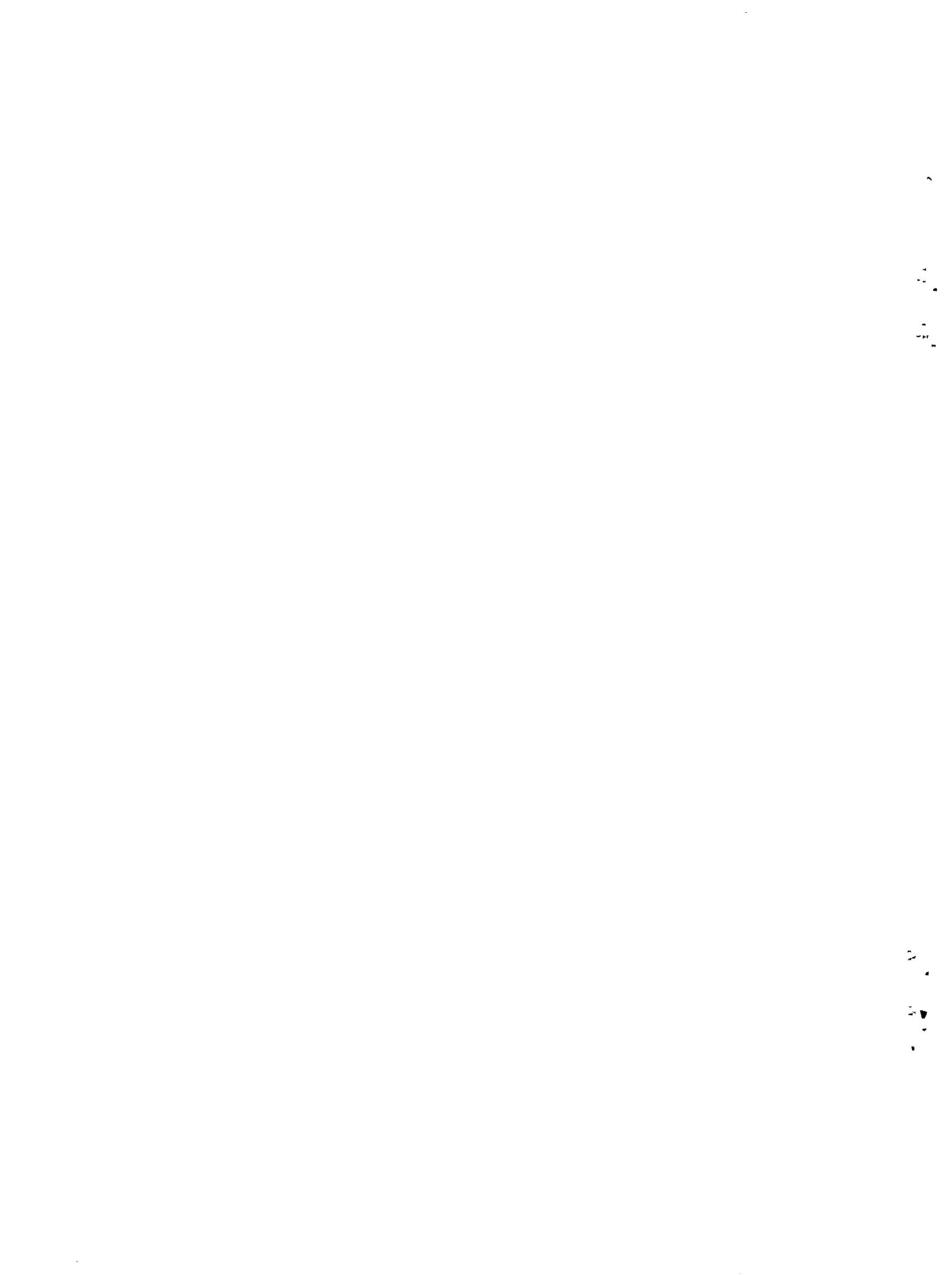
Reporting to the Committee and the Community  
Helping the Water Committee Solve Problems Related to Financial Management  
Conclusion

APPENDIX

A. Items to Cost Out by Category . . . . .	31
B. Annual Budget Worksheets . . . . .	37
C. Sample Ledger Worksheets . . . . .	41
D. Glossary of Financial Terms . . . . .	43

## ABOUT THE AUTHOR

Sarah Fry is a WASH consultant with over 15 years of experience in international health. Ms. Fry has an M.P.H. from the University of North Carolina, with an emphasis on maternal and child health issues. Ms. Fry has worked extensively with community health education and child survival programs in West and Central Africa and has participated in a number of health and hygiene education activities in the context of rural water supply and sanitation programs.



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11

12

## EXECUTIVE SUMMARY

This manual is intended to de-mystify the issues of financial management which have frequently hindered extension staff in delivering effective training for management of community systems. The manual specifically addresses financial management issues of rural water projects, upon which much of the experience presented here is based. The concepts and staff training approach may, nonetheless, also be relevant to peri-urban contexts, i.e., poor, marginal neighborhoods on the periphery of large cities.

In rural settings, the capital investment in water systems is usually provided by a governmental unit (or NGO). The degree to which communities are required to participate in sharing the costs varies greatly from place to place. Those costs which communities are requested to carry are sometimes covered through tariffs or special charges.

Where this manual is applied to peri-urban settings, its use must be carefully monitored for a number of reasons. Peri-urban contexts generally tend to be more complex and diverse than rural communities. The technologies used in peri-urban areas are also more complex (due to poor land or difficult terrain on which housing is built) and their financing often involves substantial inputs from municipal water utilities.

Addressed to the extension agents, this manual was developed to help them carry out their job as advisors, troubleshooters, and on-the-job trainers for treasurers and water committees in rural or urban communities. To help communities make financial decisions, the manual outlines information to be collected and provides a process to help communities assess whether or not they can afford to own and maintain improved water supplies. Guidance is given for establishing household rates, for appointing an individual who will keep the money, and for collecting and accounting for funds. In most cases, the extension agent will work with the committee treasurer, although frequently the committee president will also be involved.

The manual outlines the processes for water committee treasurers to perform their tasks. The steps for creating budgets include:

- Defining the anticipated expenses
- Breaking down expenses into categories and monthly outflow
- Defining the anticipated income
- Breaking down income into categories and monthly inflow
- Raising funds as necessary through community activities.

To strengthen the capabilities of extension staff or promoters, the manual includes exercises for practicing the newly acquired skills. Sample budget worksheets and sample ledger worksheets are provided in addition to a glossary of financial terms.



## Chapter 1

### Introduction

#### **What Is Financial Management of Community Water Supply?**

Water supply improvements result in costs to the community. Communities are the managers or owners of the new system and assume all the responsibilities accompanying that role. The issue of developing long-term maintenance capability at the community level has become a priority under the structure of community ownership.

Sustaining water improvements—maintaining the systems—results in costs to the community. It means a community must pay something for the initial construction—in most cases a partial contribution, but in some cases major capital outlays. This manual focuses on *sustaining* water systems and assumes that the capital costs of building the system have been taken care of. Sustaining improvements also means a community must pay for operations and maintenance: reimbursements for a pump mechanic, spare parts, outside repair people, and so on.

Effective management of these systems, however, means more than just agreeing to pay for different items. It also means being able to manage the community's money in such a way that enough is available at the right times to repair the system and pay the caretakers. It requires having in place an organization and individuals, such as treasurers, who take care of these matters, who can make good decisions about acquiring and spending money, and who work for the community.

This manual tells all about how you, the extension (promotion) agent, can help communities manage their water money competently and wisely in order that they reap the greatest benefit from their improved water system.

#### **What Are the Roles of the Water Committee and the Treasurer?**

The most common organization used to manage a community's water money is a water committee. The water committee is elected by the community and represents its interests. It is the decision-making and coordinating body for all activities required for managing a water system.

The size of water committees can range from 3 to as many as 10 members. At minimum, it must have a president, a secretary, and a treasurer. Bigger committees may also need a vice president, and specific duties for members, such as hygiene education or operations and maintenance. Some committees may even be big enough to have subcommittees to deal with issues such as operations and maintenance (O&M), hygiene education, finances, or management.

In community financial management, the treasurer of the water committee is the key person. The treasurer is designated to carry out the financial decisions of the water committee, and occasionally to make those decisions. Specific tasks of the treasurer are

- preparing a budget for annual community O&M needs,
- organizing fund-raising activities,
- keeping accounts of income and expenses,
- monitoring availability of funds (cash flow),
- reporting to the water committee and the community on the status and use of funds,
- opening bank accounts and making deposits and withdrawals as required, and
- coordinating and collaborating with the committee secretary (or someone else) on various tasks (record-keeping, fund-raising, and so on).

Water committees must think of selecting more than one person for training as treasurer/financial manager. This will help make a smoother transition if the treasurer cannot stay with the job.

### **What Is the Role of the Community Extension Agent?**

Rare is the community that has the financial management skills necessary for operating its water system when the system begins to function. It is the extension worker's job to transfer those skills to the community, and especially to the treasurer. Sometimes, the extension agent will need special training in financial management and in training techniques in order to be able to transfer those skills.

The extension agent is also a facilitator between the community and the "outside world." Often, the cultures between the two are so different that communities may encounter problems and become discouraged when dealing with entities such as banks. The extension worker can help "translate" one for the other while they learn each other's "language."

Some specific things an extension agent can do to help committees and treasurers manage their water money are as follows:

- Provide necessary information to the treasurer and the committee on the O&M costs incurred with different water systems and on possible legal requirements for community bank accounts.
- Provide the treasurer with on-the-job training in financial management skills.
- Represent the project or government in community/committee meetings.
- Act as consultant to the committee and the treasurer in financial management matters, for example, helping them arrive at decisions and solve problems, and advising them on different courses of action available.

- Review the water committee's ledgers (money records) to ensure completeness and accuracy (part of trouble-shooting/problem-solving).
- Monitor the activities of the committee to make sure that the funds are well used, that no embezzlement is occurring, and that the books are being kept.

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## **Chapter 2**

### **How to Use This Manual**

#### **Overall Purpose of the Manual**

This manual was developed to help community extension agents carry out their job as financial advisor, troubleshooter, and on-the-job trainer to treasurers and water committees of rural or urban communities.

#### **How the Manual Is Organized**

The sections that follow correspond to the main financial functions of a water committee and its treasurer. Each section spells out exactly what is entailed in a specific function, then specifies how the extension agent can help the treasurer (and sometimes the committee) carry out that function. Some sections include practical exercises for the treasurer to do with the help of the agent.

#### **How to Use the Manual in Your Work**

As an extension agent, you may not be familiar with all of the concepts and practices of financial management. Reading the entire manual should help you understand what financial management entails, and enable you to explain the concepts in simple language to your community contact. You are also invited to do the exercises at the end of some sections before doing them with the treasurer. In this way, you will better understand the concepts and identify parts that are difficult for you. Get help on those parts from colleagues or supervisors before starting to teach the treasurer!

The manual is organized in a logical sequence of events pertaining to financial management. This is to help you plan your interventions in a community in a practical, progressive way, by starting at the beginning and moving through a series of decisions and actions. Obviously, life is rarely so logical, and you will be called upon to start from a community's or treasurer's real starting point. The ideas and lessons in the manual are therefore presented for you to adapt as a specific situation demands.



## Chapter 3

### Helping Communities Make Financial Decisions

#### **What Information Should Be Collected to Make Financial Decisions?**

From the very beginning of a participatory and sustainable water project, a community is called upon to analyze its financial capabilities and make decisions based on this analysis. In order to help a community with this process, you, the extension agent, should do some homework to understand the community's finances. Useful information to collect includes answers to the following questions:

- Where does money in the community come from (agriculture, cottage industry, and so on)?
- How much money does an average family take in annually?
- Does the community raise money for communal projects? If so, how?
- Does the community have development committees with treasurers functioning already?
- Does the community have experience with bank accounts?
- How else does the community store money?
- Do men or women (or both) traditionally handle money?
- Do families spend money on nonsubsistence activities or items (e.g., festivals, ceremonies, appliances)?
- About how much money does each family spend per year on nonsubsistence activities? Do families currently pay for water? If so, how much?

This information will help you to help the community answer the following questions.

#### **Can We Afford to Own and Maintain the Proposed System?**

To help the community first determine whether to participate at all in the project, you will need to hold a meeting with community leaders or the water committee, perhaps accompanied by a technician or an engineer, to provide them with the following information:

- the project requirements for entering into a contractual agreement with a community to provide a water system that the community will maintain (usually a lump sum raised up front);

- capital costs needed for construction/installation, if appropriate, or the total cost of the system, broken down by cash and in-kind (labor, materials) components; and
- approximate annual costs for spare parts, local mechanic or caretaker reimbursement, transportation, administrative expenses, and so on (see Appendix A for a list of items to cost out).

You should then help the community leaders or water committee/treasurer (either provisional or elected) to collect the following information from the community:

- number of households to be served by the new system,
- whether and how much households are already paying for water, and
- how much disposable income an average household has, based on how much people spend on development or social activities (or other appropriate measures). (Note: “disposable income” must be understood very carefully. This definition needs to be understood by each project locality and must be defined following an assessment of locality and household-level economic and financial activities. For example, if children need school books, then clearly this amount is not disposable. Sometimes money for funerals is not disposable. So project staff must understand what indicators to use to account for disposable income.)

The decision on whether the community can afford the system will be based on weighing its water needs, the O&M cost to the community, and the community’s willingness and ability to pay.

After all information has been collected, meet again with the community leaders or water committee. Analyze the information with the group, dividing the annual cost of the system to the community by the number of households it will serve. This is the amount the community will need to raise per family per year. (Of course, another option would be to require some families to pay more than others.)

For example, suppose a new pump is being planned to serve 170 households. All costs related to operations and maintenance (e.g., pump supervisor/repair person reimbursement, transportation, spare parts) are expected to be \$845.00 a year. If you divide 845 by 170, the cost per household will be \$4.97.

Compare this with what people are already paying for water. Also, compare this figure with how much people pay for nonsubsistence items. The community leaders/water committee must decide if the community is willing and able to pay the yearly amount needed. (Note: The total cost will probably be an estimate unless the treasurer has created an annual budget for the committee already. For more details on helping to organize the costs for different systems, see Appendix A.)

## **How Will We Raise the Necessary Funds?**

This is probably the most important and difficult task for the water committee. The committee must decide what means or combination of means to use to collect the necessary funds to maintain and operate its water supply system. There are usually two distinct fund-raising efforts to be considered: raising larger sums for capital or for major repairs, and collecting user fees on a regular basis.

Another important consideration is whether the community is composed of wage laborers with access to cash on a regular basis, for example, a peri-urban squatter settlement, or whether it is a rural agrarian system in which the availability of cash depends on the sale of agricultural produce and is therefore seasonal.

The decision about how to raise funds should be based on a discussion of the treasurer's budget, especially the month-by-month income/expense predictions. The budget should show how often and when during the year money needs to be raised, and how much to aim for. (See "Creating a Budget," page 13, for details.)

What different ways exist to raise money and collect fees from water users? Three methods that have been tried for fee collection are:

- annual (or twice yearly or quarterly) house-to-house fee collection by committee members,
- setting aside days and places for users to pay water fees or bills to the committee treasurer,
- small monthly or weekly amounts may be easier to pay than bi-annual or even monthly.

To raise larger sums, the committee can organize special events:

- communal money-making activities such as a sale of baked goods, produce, or handicrafts,
- special events such as fiestas, fairs, dances, theater, or folkloric presentations to raise money from neighboring communities.

To help the water committee decide the best way to raise money, you will need to:

- remind committee members of the estimated total yearly amount needed,
- ask them for ideas on how to raise it,
- present them with some options, and
- ask them if they know of any others.

It may be that no one way to raise money is right, but that a combination makes sense. For example, a committee might decide to collect a small amount per family once or twice a year,

and also organize communal fund-raising activities. The important thing is to help the committee agree on a plan that is reasonable and practical.

You can also help the committee by describing appropriate fund-raising activities that have succeeded elsewhere. The committee may wish to talk to others who have had experience in communal fund-raising; perhaps you could organize a community-to-community exchange.

After committee members arrive at a good fund-raising plan, you should help them think through potential emergency and problem situations that are likely to increase their financial needs, and help them come up with a few ideas on how to solve them. These situations might include

- a major breakdown of the water system during a low cash period,
- lack of participation on the part of beneficiary households, and
- natural disasters ruining crops or gardens.

What kinds of solutions can you think of for these problems?

Some possible solutions are

- including a reserve fund in the yearly budget (by adding 25 percent to the calculations, for example),
- fining delinquent households, and
- not counting on just one type of communal fund-raiser, but on several activities. (It is not safe to depend on availability of crops if rain or other weather conditions varies the salable produce, for example.)

### **How Much Should We Charge Households for Water Use?**

The water committee, with your help, must set equitable fees for households benefiting from the new water system. The level will depend on whether this is the only source of income for operations and maintenance, or whether other sources are included in the plan.

As mentioned previously, water fees are based on the total amount needed divided by the number of households served, then adjusted for income level, if necessary. The total amount needed comes from the annual budget prepared by the treasurer. When setting water fees for the community, the committee should make a plan for covering fees of the poorest households if payment should become a real hardship.

Different households will use different quantities of water. For example, some households will be making bricks, others will be using it to make beer to sell, still others will use water for their vegetable gardens. The water committee together with the community will need to discuss how extra uses of the water will be paid for. How will the committee measure the amounts of water people use and determine payments?

## **Who Will Be Responsible for Managing Our Money?**

As mentioned in Chapter 1, the entity that usually holds responsibility for community financial management in water supply is a water committee comprising 3 to 10 members. The treasurer is nearly always the key committee member for managing water money.

You can help the community select water committee officers by helping leaders agree on selection criteria. Criteria for a good treasurer might include proven financial management capabilities, trustworthiness, stability, and literacy. In many cultures, women are responsible for managing household finances and marketing agricultural produce, and thus make excellent committee treasurers.

In some places, literacy might be a problem. In that instance, a treasurer/secretary team might be a solution for managing finances.

## **Where Will We Store Our Money?**

Generally, a community has three options of places to store money: in a bank account, in a credit union account, or in a community cash box. You can help the water committee decide which option to choose by presenting the pros and cons of each. The committee will need information about banking procedures or legal incorporation requirements, if these exist.

### **Banks**

Pros: Safe place; interest bearing; bank statements; help from the bankers; easy to track money; credibility for community.

Cons: May require travel from rural areas; possible restrictions on withdrawals; money not immediately available in case of emergency.

### **Credit unions**

Pros: Much the same as banks except that credit unions are more disposed to having lower-income groups as clients, and are more likely to lend money to community groups.

Cons: Likely to offer lower interest rates on savings than banks.

### **Community cash box**

Pros: Accessible; money can be counted easily; community operated.

Cons: Not very safe; requires careful accounting by treasurer; temptation exists to spend on other, nonwater items and replace later.

### **How Will We Keep Track of What Money Comes In and What Goes Out?**

You can present standard ledgers and bookkeeping principles to the committee and explain that one of your roles is to train the treasurer in how to keep accounts. (See "Bookkeeping," page 22, for details.) You can also explain banks and bank statements as a way to track water money.

### **How Will the Community Know What Is Being Done with Its Money?**

Stress to the committee the importance of accountability for community resources. The community has a right to know how its money is being managed and spent, and the committee, along with its treasurer, has a duty to keep the community informed.

You can help the committee identify ways to keep the community informed about what is being done with its money. Offer suggestions such as holding quarterly community meetings to go over finances, announcing special events or financial emergencies, posting results of fund-raisers, and so on. Encourage the committee to decide on specific means for publicizing its financial activities. (See "Reporting to the Committee and the Community," page 26, for details.)

## Chapter 4

### Helping the Treasurer and Water Committee Perform Financial Management Tasks

#### **On-the-Job Training**

One of your main functions as a community extension agent is to work with the treasurer and provide on-the-job training in the skills the treasurer will need. This means setting up regular times for the two of you to meet, monthly or more frequently, depending on the situation.

On-the-job training involves showing the treasurer how to do something, then watching as the treasurer does it, and talking about it. You can ask questions such as the following to help the treasurer think about the skills or tasks you practice together:

- What was easy/hard about what we just did?
- How do you think it could be made better/easier?
- What kinds of problems do you think you will have when you are doing this task?
- What do you think you can do to avoid these problems?
- What do you think you can do to solve these problems when they arise?

This manual contains a number of worksheets and other exercises you should fill out or conduct together with the treasurer to allow him or her to practice the skills you are teaching. Then, talk about the exercises, or continue on to the real thing.

Remember to encourage the treasurer by pointing out things he or she did correctly as often as possible.

#### **Creating a Budget**

In the same way the first part of a mother's job is to decide how much food each family member will need for a certain amount of time, the treasurer must find out how much money a water committee will need. This is called making a budget. Coming up with a budget entails four main steps: determining expenses, breaking down those expenses by month, budgeting for income, and planning fund-raising activities.

#### **Step one: Determining expenses**

To prepare a budget, the treasurer first must determine for which items money will be needed. In a water project, these needs usually fall into three categories: operations, maintenance, and administration. Construction costs might also arise at the beginning of a project, but these are

a one-time payment and do not require an annual budget. The total cost of all three categories will tell you how much money you need to raise for the year.

The treasurer must decide what all the items in the above categories will be and how much they will cost by questioning everyone involved with the system and writing down the information. The costs should be for a fixed time period, usually one year.

In order to figure out what the items under each of the three budget categories are, the treasurer, with your help, should list what the tasks are for each category. For example, maintenance tasks for a handpump can include checking and tightening nuts and bolts, disassembling the pump to replace worn parts, and recording maintenance activities in a log. From this information it is easy to decide what the expenses will be: repair and maintenance tools, a log, spare parts, and possibly payment for labor.

It should be noted that often projects count on free labor for construction. However, in peri-urban areas where people already work for money, free labor represents a real loss of income. It is better to budget for paid labor in these cases.

**Step two: Breaking down expenses by month**

The next step in creating a budget is to break down the water committee's expected expenses by month. This will tell the committee how much money will be needed when, allowing it to plan fund-raising activities for the year.

Let's look at an example:

Suppose a treasurer from a small community or peri-urban settlement with one handpump and one diesel pump is creating a budget for the year. By asking officials, shopkeepers, mechanics, and the treasurer from the next community lots of questions, the treasurer makes a list of expected expenses for a year: spare parts, \$75; labor costs for repair people, \$25; fuel, \$300; office supplies, \$20; telephone, \$30; postage, \$15; transportation, \$45; tools, \$50. The "expenses" list of the budget looks like the table below.

### Annual Expenses by Year

Expense Item	By Year	
Spare parts	\$ 75.00	
Labor	\$ 25.00	
Fuel	\$300.00	
Office supplies	\$ 20.00	
Telephone	\$ 30.00	
Postage	\$ 15.00	
Transportation	\$ 45.00	
Tools	\$ 50.00	
<b>Total</b>	<b>\$560.00</b>	

Next, our fictional treasurer breaks down all the expenses by month. Some expenses are automatic, such as bills, but others must be approximated with the help of technicians. Broken down by month, the yearly expenses budget looks like this:

### Annual Expenses by Year and Month

Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Spare parts	\$ 75.00						50					25	
Labor	\$ 25.00							10				15	
Fuel	\$300.00		50		50		50		50		50		50
Office supplies	\$ 20.00	5		5			5				5		
Telephone	\$ 30.00	10				10				10			
Postage	\$ 15.00		5				5				5		
Transportation	\$ 45.00						20					25	
Tools	\$ 50.00		50										
<b>Totals</b>	<b>\$560.00</b>	<b>15</b>	<b>105</b>	<b>5</b>	<b>50</b>	<b>10</b>	<b>130</b>	<b>10</b>	<b>50</b>	<b>10</b>	<b>60</b>	<b>65</b>	<b>50</b>

**Step three: Budgeting for income**

Some communities will have certain sums of money coming in at predictable times. For example, a community might receive small donations from a project or charitable group for maintaining its water system, or it might raise money every year from produce sales. If this is the case, the treasurer should create an income budget as well as an expenses budget. This involves noting all predictable income by month. With the committee's help, the treasurer can then compare expected income and expected expenses month by month, and get a clearer picture of when to organize special fund-raisers to cover leaner periods.

Let's look at an example:

The committee treasurer is completing the budget for the "income" section. She knows that next year, the local missionaries will contribute \$100 to the community's water fund. They usually pay in March. The committee will have to raise the remaining funds itself.

To raise the remaining funds, the committee has already decided to grow a communal grain field and collect fees twice a year from beneficiary families. The field is expected to yield about \$75 after the harvest and sale of the grain in October.

The treasurer enters the missionary contribution and the communal field earnings on the income section of the budget. She leaves out the third item, user fees, for now since it has yet to be determined the most helpful time of year the fees should be collected.

Annual Income by Year and Month

Income Source	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Missionaries	\$100.00			100									
Communal field	\$ 75.00										75		
Totals	\$175.00			100							75		

**Step four: Planning fund-raising activities**

Finally, the treasurer must look at projected expenses and decide if, when, and how the committee will raise extra money. In our fictional example on the previous page, the treasurer

and her committee have decided to assess user fees of \$250 biannually to raise additional income. She must now decide when these fees should be collected. Look at the expenses worksheet. When do you think the water committee will need funds?

The committee will need to collect user fees in January and June to cover expected expenses. The whole budget—income and expenses—will look like the following table.

Annual Budget by Year and Month

Annual Expenses													
Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Spare parts	\$ 75.00						50					25	
Labor	\$ 25.00							10				15	
Fuel	\$300.00		50		50		50		50		50		50
Office supplies	\$ 20.00	5		5			5				5		
Telephone	\$ 30.00	10				10				10			
Postage	\$ 15.00		5				5				5		
Transportation	\$ 45.00						20					25	
Tools	\$ 50.00		50										
<b>Totals</b>	<b>\$560.00</b>	<b>15</b>	<b>105</b>	<b>5</b>	<b>50</b>	<b>10</b>	<b>130</b>	<b>10</b>	<b>50</b>	<b>10</b>	<b>60</b>	<b>65</b>	<b>50</b>

Annual Income													
Income Source	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Missionaries	\$100.00			100									
Communal field	\$ 75.00										75		
User fees	\$500.00	250					250						
<b>Totals</b>	<b>\$675.00</b>	<b>250</b>		<b>100</b>			<b>250</b>				<b>75</b>		

Note that the treasurer in the example above is planning on raising a bit more (\$675 minus \$560, or \$115) than the annual total requires, as a cushion in case of unexpected expenses.

We'll now do a budget exercise to enable you and the treasurer to create a sample annual budget.

## **Budget Exercise**

Now try to complete a budget for expenses and income on your own. Use the blank worksheets in the back of the manual and the figures in the following example.

Suppose a peri-urban community has just constructed a water storage tank with a diesel-driven pump. The water is piped to neighborhood standpipes.

The community's water committee treasurer is making the first annual budget to discuss with the committee. She has collected a lot of information from mechanics, the extension agent, and friends in a nearby community who have had a similar water storage and distribution system for several years.

She found out that the water committee will incur administrative expenses of around \$20 a month. Under operations, the pump engineer will need \$100 for fuel in March, June, September, and December, for a total of \$400. Additionally, the water committee wants to organize a hygiene education campaign, which will cost about \$25 a month. The committee might have extra expenses such as transportation. These extras could cost as much as \$100 a year. The engineer also gets a monthly retainer of \$10, unless the pump breaks down, at which point he will be required to work overtime. Then he will be paid \$3 an hour. The pump will probably break down three times a year, and he is likely to spend five hours fixing it each time. This falls under the maintenance category of the expense budget. Also under maintenance, spare parts will cost about \$250 a year.

Put all these expenses in the expense budget worksheet on the next page, both by month and by totals. How much money will the water committee need for one year? How much will it need by month?

In terms of income, the committee has decided to collect monthly user fees totaling \$600 from families, and hold a special food fair for periods when more money will be needed. The fair is anticipated to earn \$400 a year. The committee also has received a small grant from a local charitable group, which will give them \$300 in April and another \$300 in October.

Make an annual income budget to meet the expected expenses, using all funding sources, and break it down by month.

When you are finished, compare your budget with the one on page 20 and 21.

Answers to budget exercise on page 20:

Annual Budget Broken Down by Year

Annual Expenses													
Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Fuel	\$400.00												
Admin. expenses	\$240.00												
Repair retainer	\$120.00												
Repair labor	\$ 45.00												
Spare parts	\$250.00												
Hygiene education	\$300.00												
Extras	\$100.00												
<b>Totals</b>	<b>\$1,455.00</b>												
Annual Income													
Income Source	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Grant	\$600.00												
User fees	\$600.00												
Food fair	\$400.00												
<b>Totals</b>	<b>\$1,600.00</b>												

Answer Key, continued

Annual Budget by Year and Month

Annual Expenses													
Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Fuel	\$400.00			100			100			100			100
Admn. expenses	\$240.00	20	20	20	20	20	20	20	20	20	20	20	20
Repair retainer	\$120.00	10	10	10	10	10	10	10	10	10	10	10	10
Repair labor	\$ 45.00			15				15				15	
Spare parts	\$250.00			100				100				50	
Hygiene education	\$300.00	25	25	25	25	25	25	25	25	25	25	25	25
Extras	\$100.00	20		20				20		20			20
<b>Totals</b>	<b>\$1,455.00</b>	<b>75</b>	<b>55</b>	<b>290</b>	<b>55</b>	<b>55</b>	<b>155</b>	<b>180</b>	<b>55</b>	<b>175</b>	<b>55</b>	<b>120</b>	<b>175</b>

Annual Income													
Income Source	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Grant	\$600.00				300							300	
User fees	\$600.00	50	50	50	50	50	50	50	50	50	50	50	50
Food fair	\$400.00				200			100				100	
<b>Totals</b>	<b>\$1,600.00</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>550</b>	<b>50</b>	<b>50</b>	<b>150</b>	<b>50</b>	<b>50</b>	<b>350</b>	<b>150</b>	<b>50</b>

To summarize the important steps in creating a budget:

1. Start with expenses: Find out from as many people as possible what the likely expenses are for the water system for one year.
2. List the expenses and break them down by month. You may have to do some educated guessing.
3. If the community has predictable money coming in to help with water expenses, do an income part of the budget: List out by month how much money the committee expects to earn.

4. Plan your fund-raising activities by examining the monthly balance in your budget (income minus expenses) and deciding by what point you will need the money. Put the planned income in the income budget.

### **Raising/Collecting Funds**

As noted, the treasurer is likely to be in charge of organizing a fund-raising activity. This requires time and organization. You can help the treasurer if you understand how fund-raising works.

Following are some guidelines for organizing a fund-raiser:

- Prepare the community. For a fund-raising event to be as successful as possible, you should allow for plenty of time to publicize it. Publicity should also precede annual (or semi-annual or quarterly) fee collection times so people can prepare themselves. Certain persons on the committee can be charged with publicizing an event or a collection period.
- Get as much help as you need. The treasurer should not do everything alone. List all the things that need doing (for example, making posters, organizing refreshments, contacting the local media, and so on), then get committee members to volunteer for different tasks.
- Announce the results. When the event is over, tell the community how much you raised. Thank everyone for participating. If you fall short of what you aimed for, say so. If people were particularly generous, thank them specifically.

### **Bookkeeping**

Keeping good records of the water committee's finances is extremely important because the money belongs to the community and therefore must be accounted for by the person(s) entrusted with it. Keeping good records is also important because they help the treasurer and the water committee make good decisions about raising and spending money.

The treasurer must record everything that happens to the water committee's money. To do this, he or she must have a ledger or notebook in which all money coming in and going out is recorded, and receipts are kept and numbered. This ledger can be a premade one acquired from a store, or a notebook with lines drawn in it as follows:

Date	Description of Events	Cash In	Cash Out	Balance
Jan.1				\$350.00
	Caretaker fee		\$5.00	\$345.00

Only one person should be in charge of the committee's cash. Occasionally, the committee president, with your help, should count the cash on hand and make sure it agrees with what is written in the ledger.

Sometimes it is helpful to control the money if one person is in charge of the ledger and another is in charge of the cash itself.

The treasurer should keep the ledger on a monthly basis; that is, the income and expenses should be totaled every month. The treasurer thus can easily see how much cash is on hand by subtracting the total expenses from the total income and/or last month's cash on hand.

Also, signed receipts should be kept for every expense, and the receipts should have a number. This number can be jotted down in the ledger next to the expense record.

Let's look at an example:

Suppose a small community has a handpump. It pays an area pump caretaker a small monthly fee of \$5. At the beginning of the year, the committee has \$350 in its cash box. During the first month of the year, the following happened to the committee's money:

- The pump broke down. The village pump mechanic tried to fix it, but failed. Still, the committee had to pay him for his time, which cost about \$20.

- Two committee members then went to the district capital by taxi to alert the district mechanic about the breakdown. The taxi ride cost \$8 apiece each way, for a total of \$32.
- The district mechanic came and verified that a few parts were worn out. The village pump mechanic took a taxi to the nearest retailer to buy the spare parts. These cost \$60. The taxi ride cost \$7 each way.
- The community paid the district mechanic \$40 for labor, and gave the pump mechanic another \$10 for his time.

Fortunately, the treasurer managed to collect back user fees owed by several families who did not have enough money at the time of the last collection period. These back fees amounted to \$75.

Using the worksheet on the next page, try to fill in the blank ledger page for January yourself before you look at the manual's example on page 26. Note all the expenses and add them up at the end. Then note down the income and add it to the cash on hand from the end of last year. Subtract the expenses from the income and cash. How much cash does the committee have on hand at the beginning of February?

How do you think good records help a committee make wise decisions about its money? Note your ideas down here before looking at the next page:

1.

2.

### Sample Ledger Worksheet

Date	Details	Cash In	Cash Out	Balance
Jan. 1	Caretaker fee Labor Taxi (\$8.00 x 4) Spare parts Taxi (\$7.00 x 2) Labor <ul style="list-style-type: none"> <li>■ district</li> <li>■ local</li> </ul> User fees			

### Community Ledger for January (Answer to Exercise)

Date	Details	Cash In	Cash Out	Balance
Jan.1				\$350.00
	Caretaker fee		\$ 5.00	\$345.00
	Labor		\$20.00	\$325.00
	Taxi (\$8.00 x 4)		\$32.00	\$293.00
	Spare parts		\$60.00	\$233.00
	Taxi (\$7.00 x 2)		\$14.00	\$219.00
	Labor ■ district		\$40.00	\$179.00
	■ local		\$10.00	\$169.00
	User fees	\$75.00		\$244.00

Good records help a committee or treasurer make good decisions by:

1. Helping make a yearly budget based on real experiences during the past year instead of guessing; and
2. Helping anticipate problems such as having too little cash on hand.

### **Reporting to the Committee and the Community**

#### How to prepare treasurer's reports for committee meetings

At every water committee meeting, the treasurer's report should be part of the agenda. The treasurer should prepare a written summary of all income earned and expenses incurred since the last meeting, noting how much cash is on hand. This report should go into the minutes (meeting record) if appropriate. The treasurer should also raise any problems encountered while managing the committee's finances, and get the committee's ideas on how to deal with these problems.

## How to keep the community informed of and involved in the financial management of the water supply

Good relations between the water committee and the community it serves is one key to the committee's success. One way to maintain good relations is to keep the community informed of how the committee is managing its money, that is, how much has been collected, what it has been spent on, and how much is left in the community account.

If the community knows where its contributions are going, and is convinced that they are being spent wisely, then it is likely to continue to contribute to the water fund, and to rally in times of need.

The committee must decide how and when the treasurer will report to the community, and let the community know about its decision. This reporting should be done several times a year, and can be done in different ways, such as via the following:

- A bulletin distributed to households,
- A community meeting with an oral report given by the treasurer followed by questions and answers,
- A financial report written on large sheets of paper and posted on walls in public places, particularly where people come to pay their bills, and
- A water committee meeting devoted to finances open to the community.

As the extension agent, you should help the treasurer and the committee prepare these reports.

## **Helping the Water Committee Solve Problems Related to Financial Management**

### Extension agent's role in problem-solving

As extension agent, one of the most important parts of your job is to help the water committee and the treasurer solve problems related to their jobs. You can be most helpful if you remember that thinking about and solving problems is a good way to become competent at a job. Your role involves not only offering solutions to problems, but helping the treasurer or other committee members come up with solutions and try them out.

How can you do this? Following are a few guidelines and ideas:

- It helps if you are clear with the committee at the beginning of your work together about what your role is (facilitator, trainer, and so on), then stick to it.
- During one of the first water committee meetings, help the committee as a whole think about possible problems it might encounter, and what it could do to cope with them.

- Do the same with individual members, especially the officers of the committee (for example, president, secretary, treasurer), and relate the exercise to that individual's job.
- When a problem does arise, try to sit back while the committee or officer deals with it.
- When the committee or treasurer comes to you for help or asks you to solve a problem, agree that you will work on the problem together.
- Ask a lot of questions to help the treasurer and committee understand the roots of the problem (and to get more information yourself), and to help them originate their own ideas. Below are some sample questions to ask.
- "What happened exactly, step by step?"
- "Why do you think this is a problem?"
- "What are some of the reasons you think this problem occurred?"
- "Has anything like this ever happened before?"
- "What did you (or someone else) do to solve it?"
- "Did it work?"
- "Why didn't it work?"
- "What else could you have done?"
- "What do you think might work in this case?"
- "What else can you think of that might work?"
- "Have you thought of.....?"

#### Some common problems

- Theft or embezzlement
- People refusing to contribute for water fees
- Unexpected breakdowns and large expenses
- Treasurer incompetence or untrustworthiness
- Conflicts among committee members

What do you think a treasurer or water committee could do about these problems? What other problems can you think of that your committee might encounter?

## **Conclusion**

The effective management of community water systems (i.e., sustainability) is a complex issue involving a number of areas. Local participation and control of water systems places much of the day-to-day responsibilities in the hands of community representatives. Management of finances by communities is one of the very critical areas. As such, the training and the skills acquired in management of finances are important elements for ensuring sustainability.

Extension staff frequently find themselves in the difficult position of being the sole sources of information in all areas related to the operations and management of improved sources. Understanding the various issues that impinge on how resources, especially financial, are allocated and managed is one of the critical areas in which extension agents must guide and instruct community committees.

This is especially so in community water projects where the focus is capacity-building and community-based management; in these cases, the process of managing community finances is of utmost importance. For this reason, this manual has outlined a system for water committees to use to ensure that their communities are smart stewards and investors in the management and improvement of their infrastructure. By making these financial decisions and plans, capabilities of communities are developed and strengthened.

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## Appendix A

### Items to Cost Out by Category

#### Three Types of Tasks

- Operations:** These are activities involved in *running the system to deliver water to users*. Examples include starting up and keeping an eye on a diesel pump; monitoring users as they come to a standpost; adding fuel to an engine, etc.
- Maintenance:** These are activities to 1) *keep the system in good running order* (preventive maintenance), or 2) *return it to good running order* after it breaks down; that is, repair it (corrective maintenance). Examples include changing oil in an engine regularly so it runs well (preventive), or fixing a broken faucet after it starts leaking (corrective).
- Administration:** These are activities conducted in support of operations and maintenance, such as record-keeping, bookkeeping, preparing budgets, collecting fees, purchasing parts and supplies, attending meetings, and discussing community water issues. The best way to distinguish administrative tasks from the other two types of tasks is that administration doesn't involve working on hardware, while both operations and maintenance do.

### Common Types of Costs

- Labor:** Almost any task will require someone to do some work, be it paid or not. This cost category includes paid work hours by persons employed by the community at an established rate, plus the cost of any benefits provided.
- Energy:** Operation of many water systems requires fuel or electricity to run engines or pumps. A budget may also include electricity for lighting or other uses in pump houses, meeting rooms, or offices used by the community for operation, maintenance, or administration of the water system.
- Chemicals:** Many water systems will have disinfection or more sophisticated water treatment based on the addition of chemicals to the water. Powdered, tablet, or liquid chlorine products are relatively common.
- Materials:** Many maintenance tasks will require particular parts or general supplies (such as pipe or grease). Tools are another example of materials. Office supplies for administrative tasks usually fit in this category as well.
- Transport:** Some management tasks will require transport, such as bus fare for a pump caretaker to go to town to buy fuel or supplies.
- Services:** Sometimes the best way to get a task done is to hire someone or a company to provide a special service, such as pump repair or bookkeeping. These "services" combine labor, materials, and other inputs into a package cost.
- Other:** Other costs include anything not covered in the above categories.

### Example: Operations and Maintenance Tasks and Responsibilities for Handpump Systems

Task	Operational Responsibility (Who will do it?)	Financial Responsibility (Who will pay for it?)
1. Monitor handpump use to encourage proper use and discourage waste.	1. Community	1. Community
2. Check all nuts and bolts, and tighten as necessary.	2. Community	2. Community
3. Check and adjust the pump handle and stuffing box (if applicable) as necessary.	3. Community	3. Community
4. Grease or oil all hinge pins, bearings, or sliding parts.	4. Community	4. Community
5. Clean the pump, well head, concrete apron, and drainage area.	5. Community	5. Community
6. Check well head, concrete apron, and drainage area, and repair any cracks.	6. Community	6. Community
7. Measure output per stroke and compare with expected output (strokes per 20 l).	7. Community	7. Community
8. Disassemble pump; check drop pipe, cylinder, leathers, and foot valve. Check for corrosion and wear. Repair or replace as necessary.	8. Community supported by government or private contractor	8. Community or government
9. Conduct other well, handpump, or apron repairs as necessary.	9. Community supported by government or private contractor	9. Community or government
10. Repaint handpump periodically, as necessary.	10. Community	10. Community
11. Conduct water test for microbial contamination.	11. Government or private contractor directed by the community	11. Government
12. In case of contamination, pump out well, remove debris, locate and correct source of contamination, and disinfect.	12. Government or private contractor directed by the community	12. Government
13. Conduct water level check and well yield test. Adjust cylinder setting if necessary.	13. Government or private contractor directed by the community	13. Government
14. Record all operations and maintenance activities in a notebook or log.	14. Community	14. Community
15. Manage a stock of parts, tools, and supplies on-site.	15. Community	15. Community
16. Replace entire handpump when fully worn (approximately every 10 years).	16. Community (and government?)	16. Community (and government?)

**Example: Operations and Maintenance Tasks and Responsibilities for Spring Box/Gravity Distribution System**

Task	Operational Responsibility (Who will do it?)	Financial Responsibility (Who will pay for it?)
1. Ensure protection of spring from animal or human intrusion. Check and repair fences as necessary.	1. Community	1. Community
2. Check spring box for leaks or cracks and repair as necessary.	2. Community	2. Community
3. Check all pipelines and valves for leaks or breaks and repair as necessary.	3. Community supported by government or private contractor	3. Community or government
4. Monitor standpost use to encourage proper use, and discourage waste.	4. Community supported by government or private contractor	4. Community
5. Check all standposts for leaks, wear and tear, etc., and make necessary repairs.	5. Community	5. Community
6. Flush all pipelines periodically.	6. Community	6. Community
7. Clean the standpost concrete apron(s) and drainage area(s).	7. Community	7. Community
8. Check standpost concrete apron(s) and drainage area(s), and repair any cracks.	8. Community	8. Community
9. Conduct other repairs to spring box, lines, and standposts as necessary.	9. Community supported by government or private contractor	9. Community or government
10. Conduct water test for microbial contamination.	10. Community supported by government or private contractor	10. Government
11. In case of contamination, locate and correct the problem and disinfect lines.	11. Community supported by government or private contractor	11. Government
12. Measure water output periodically, both at the spring and at the standpost(s), and assess leakage.	12. Community supported by government or private contractor	12. Government
13. In case of high leakage, initiate leak detection and repair.	13. Community supported by government or private contractor	13. Community or government
14. Record all operations and maintenance activities in a notebook or log.	14. Community	14. Community
15. Manage a stock of parts, tools, and supplies on-site.	15. Community	15. Community
16. Rehabilitate spring box/pipelines/standposts approximately every 20 years.	16. Community (and government?)	16. Community (and government?)

**Example: Operations and Maintenance Tasks and Responsibilities for Borehole, Diesel Pump, Storage Tank, and Standpost System**

Task	Operational Responsibility (Who will do it?)	Financial Responsibility (Who will pay for it?)
1. Operate engine daily safely and efficiently.	1. Community	1. Community
2. Perform regular checks and adjustments on fuel, oil, oil and air filters, belts, and battery.	2. Community	2. Community
3. Regularly replace engine oil and filter, fuel filter, and pump oil if applicable.	3. Community	3. Community
4. Perform regular checks and adjustments on alternator, starter, radiator, valves, and injectors.	4. Community supported by government or contractor	4. Community or government
5. Periodically conduct complete overhauls on engines, pumps, and associated equipment.	5. Government or private contractor directed by community	5. Government
6. Check all pipelines, tanks, and valves for leaks or breaks and repair as necessary.	6. Community	6. Community
7. Monitor standpost use to encourage proper use, and discourage waste.	7. Community	7. Community
8. Check all standposts for leaks, wear and tear, etc. and make necessary repairs.	8. Community	8. Community
9. Flush all pipelines periodically.	9. Community	9. Community
10. Clean standpost concrete apron(s) and drainage area(s), check and repair cracks as needed.	10. Community	10. Community
11. Conduct other repairs as necessary.	11. Community supported by government or contractor	11. Community or government
12. Conduct water test for microbial contamination; locate and correct source of problem; disinfect well, storage tank, and lines.	12. Government or private contractor directed by community	12. Government
13. Measure water output periodically, both at the well head and at the standpost(s). Assess leakage and initiate leak detection as needed.	13. Government or private contractor directed by community	13. Government
14. Conduct well and engine/pump rehabilitation at 10 year intervals, or sooner if output/yield drops.	14. Government or private contractor directed by community	14. Government
15. Record all operations and maintenance activities in a notebook or log.	15. Community	15. Community
16. Manage a stock of fuel and oil, ensuring proper storage and security. Maintain special fuel log.	16. Community	16. Community
17. Manage stocks of parts, tools, and supplies on-site and at regional centers.	17. Community <u>and</u> government or contractor, for respective tasks	17. Community <u>and</u> government
18. Establish historical records on all engines, pumps, and other major equipment.	18. Government agency	18. Government
19. Develop schedules for major preventive maintenance work, and monitor achievement.	19. Government agency	19. Government
20. Conduct effective vehicle maintenance to ensure rapid response for major repairs.	20. Government agency or private contractor	20. Government

**Example: Administrative Tasks for Most Water Supply Systems**

Tasks	Operational Responsibility (Who will do it?)	Financial Responsibility (Who will pay for it?)
1. Conduct technical and economic studies of the most appropriate water system designs.	1. Government agency with community input	1. Government
2. Analyze operations and maintenance tasks for use in planning and budgeting.	2. Government agency with community input	2. Government
3. Prepare annual budgets and estimates of longer-term financial needs.	3. Community with agency support <u>and</u> government Agency, for respective tasks	3. Community <u>and</u> government agency
4. Select and appoint operators/contractors for routine or special O&M.	4. Community with agency support	4. Community
5. Develop and evaluate technical and management training for water system operators.	5. Government agency with community input	5. Government
6. Provide ongoing technical and management training to operators.	6. Government agency <u>and</u> community	6. Government agency <u>and</u> community
7. Delegate task responsibilities, supervise and pay operators/contractors.	7. Community	7. Community
8. Keep archives, inventories, and log books.	8. Community	8. Community
9. Develop and evaluate financial and management training for community managers.	9. Government agency with community input	9. Government
10. Provide ongoing financial and management training for community managers.	10. Government agency <u>and</u> community	10. Government agency <u>and</u> community
11. Collect water fees and manage revenue.	11. Community	11. Community
12. Make payments for purchases, loans, or other obligations.	12. Community	12. Community
13. Keep accounting records.	13. Community	13. Community
14. Make visits to nonpayers or other problem households.	14. Community	14. Community
15. Respond to user complaints.	15. Community	15. Community
16. Organize and conduct general meetings for discussions, elections, etc.	16. Community	16. Community
17. Organize training and information on hygiene education.	17. Government agency with community input	17. Government
18. Develop information and materials on hygiene education.	18. Community and government agency	18. Government
19. Organize community contributions for upgrading or extending the system.	19. Community	19. Community
20. Report urgent problems to support agency.	20. Community	20. Community
21. Provide technical and management support to community managers.	21. Government agency	21. Government
22. Report periodically on O&M and administration to government agency.	22. Community	22. Community
23. Collect, analyze, and interpret monitoring results, and plan and conduct follow-up support or training if necessary.	23. Government agency	23. Government

## Appendix B

### Annual Budget Worksheets

#### Annual Expenses

Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
Totals													

**Annual Expenses**

Expense Item	By Year	By Month											
		J	F	M	A	M	J	J	A	S	O	N	D
<b>Totals</b>													

### Annual Expenses

Expense Item	By Year	By Month												
		J	F	M	A	M	J	J	A	S	O	N	D	
<b>Totals</b>														

### Annual Income

Income Source	By Year	By Month												
		J	F	M	A	M	J	J	A	S	O	N	D	
<b>Totals</b>														

**Appendix C**

**Sample Ledger Worksheets**

**Sample Ledger**

Date	Details	Cash In	Cash Out	Balance

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## Appendix D

### Glossary of Financial Terms

#### Some Common Financial Terms

- Asset:** Something of present or future value. Cash is always an asset.
- Budget:** Future predictions about money coming in (income budget) and money going out (expense budget).
- Debt:** Something owed to another person, group, business, or community.
- Entry:** An item written (recorded) in a ledger.
- Equity:** The value of assets after all debt is paid.
- If you have \$100 in cash and owe nothing, then \$100 is your equity.
  - If you have \$100, but you owe your brother \$10, then \$90 is your equity.
- Expense:** Something that costs money, such as fuel, labor, spare parts, etc.
- Income:** Money provided to the system for running it. Income can come from user fees, sales, etc.
- Ledger:** The book in which all the financial records are kept (when you write something in the ledger, you are *recording* it).

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