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| **VOLUME – III** | **OPERATION AND MAINTENANCE REQUIREMENTS FOR PASTORAL AREAS WATER SUPPLY TECHNOLOGIES** |

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# Management Requirements for Operation and Maintenance of Pastoral area Water Supply Facilities: VOLUME-III, PART – H: FINANCIAL MANAGEMENT

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**Definition of Financial Terms**

| **Terms** | **Definition** |
|---|---|
| Budget | A summary of the expected income and expenditure associated with a particular activity |
| Fixed cost | These are costs that are not related to how much water the WASHCO/EWB produces |
| Recurrent cost | These are costs that are dependent to how much water the WAO/WUA produces. |
| Variable cost | Same as recurrent cost |
| Operating Cost | Costs incurred in the operation of the WASHCO/EWB |
| Revenue | Income to the WASHCO/EWB |
| Capital cost | Cost incurred for something that has a life span that extends over several years |
| Operating Balance | Revenue less operating costs (fixed and recurrent costs) |
| Operating ratio | Revenue divided by operating costs. |
| Capital replacement | Describes a situation in which the revenues are sufficient to cover costs of replacing the assets |

# 8. FINANCIAL MANAGEMENT

## 8.1 General

The financial management such as recording of income and expenditure, internal auditing has to be conducted regularly. Thus, failure to keep appropriate financial records resulted with inability to cover/ at least costs of operation, maintenance and common repairs.

Setting water tariff should depend on the analysis of willingness and ability to pay, choice of technology, cost effective design and complexity of the scheme through. Communities that do not have easy access to water are generally willing to pay for improved water supply, regardless of their ability to pay.

Thus, National Water Resource Management Policy advocates community participation in all phase of the project and water as social and economic goods even if it was not fully implemented mainly due to lack of awareness.

Tariff setting for rural water supply is one way of mobilizing resources from communities. All national and regional governments praise this kind of community involvement as far as they put issue of charges beneficiaries should pay for services. However, money generated from sell of water and services financial management and reporting system that is operated by Water Boards or WASHCOs should transparently enter into the reporting lines, frequency, timeliness and format (different charts of accounts for different water supply schemes).

Financial Management involving community participations pave attention for the following points.

- Partnership and negotiations for full or partial cost recovery,
- WASHCO/EWB and role and tasks of main actors, with gender specific roles,
- Affordability and willingness to pay,
- Benefit cost analysis,
- Budgeting for costs, before, during and after construction: Cost sharing creating a budget: estimation of O&M costs,
- Choosing the type of financing system: Tariff setting, vending, community fund raising, credit schemes and revolving funds periodically, revenue collection system and flow of collected funds, establishing a payment system with the village,
- Administration of funds registration of collection funds and payments, bookkeeping, opening and using an account use of, funds for other sectors activities, money plan control and reporting to the community, sanctions for non payments, remuneration of water committee staff, and,
- Management Capacity: Decisions making process, problem solving capacity (in case of unexpected expenses or high inflation), information needed in order to make financial decisions, self monitoring, learning from experience, training needs, relationship with other actors.

To conclude user contribution for the water they consume is important for enhancing financial sustainability of the scheme. Transparent sound financial management that supported with regular auditing can enhance financial sustainability and meet Ethiopian Water Resource Management Policy requirement for covering at least O&M cost.

## 8.2 Water Resources Management Policy

The Ministry of Water Resources has issued the Water Resources Management Policy (WRMP) in 1999. The WRMP has considered water as social and economic goods. The principle of cost recovery, decentralized management, sustainability of water supply and capacity building, research and development are incorporated as the most important concepts in the water policy.

It creates and promotes a sense of ownership of water supply schemes by the communities. It charges the communities as their responsibility to operate and maintain water supply systems; and develops participatory management practices. The policy enhances principle of financing the operation and maintenance of rural water supply schemes by the communities.

A few highlights of Water Policy relating to Water Supply and Sanitation particularly on relation to financial management are:

- The setting of the tariffs to be **site specific**; ensure that rural tariff settings are based on the objective of recovering operation and maintenance costs, Establish a **"Social Tariff"** that enables poor communities to cover operation and maintenance costs. Develop flat rate tariffs for communal services like hand pumps and public stand posts,

- The rural communities, to cover at least the operation and maintenance costs of water schemes while the urban cover the full cost recovery,

- Promote objective oriented training with special emphasis on trades-level training, community participation, administration and finance, and operation and maintenance,

- Involve NGOs in funding and in the actual implementation, operation and maintenance of WSS projects (strategy says).

## 8.3 Preparing Annual Budget

Preparation of an annual operating budget is the first step WASHCOs or Executive Water Boards must take to ensure that there is an accountable and transparent financial management system in place and that the WASHCOs or Executive Water Boards (EWBs) operates on a financial sustainable basis. There are various reasons why a budget is important:

1. An annual budget, prepared by the WASHCO, is submitted to the Woreda or Zone Water Office and subsequently to the membership for approval. If the system is managed by the Executive Water Board like as RPS, the Water Administration Office Management prepare and submit the EWB through the Manager, and then the EWB submit either to the Woreda or Zone or Regional Water Bureaus as per the accountability hierarchy.

2. Preparation of an annual budget requires information regarding expected income collected from the community and expenditure to run the water supply schemes, and requires planning for O&M costs.

3. Expenditure should be kept within the approved budget according to each budget line.

A budget helps to enhance transparency and accountability, quality of works, service provision and efficiency and effectiveness.

### 8.3.1 Components of Budget

A budget has two major components – revenue (income), and expenditure – fixed costs and recurrent costs:

a. **Revenues** consists of:

- Money expected to come in during the year from different sources like payments of the water bills, tree seedlings sales, and any other revenues.

b. **Costs** consist of:

- All expenses/items that the WASHCO/EWB will need to spend money on during the year in order to carry out its normal business. These include cost of fuel for the pump, cost of spare parts, workman's fees, office rent, committee allowances, unexpected breakdowns, etc.

### 8.3.2 Types of Budget

#### 8.3.2.1. Operation and Maintenance Budget

The O&M cost is the total estimated cost required to manage, operate and maintain the water supply system. The projection of the O&M Budget usually is fairly straightforward, unless major deteriorations of the facilities have created expectations of unpredictable cost levels, or serious local or global events are expected to cause large spikes in the prices of some essential supplies. Otherwise, it is projected from the results of past operations and adjusted to fit the current or projected prices and costs.

**(i) Nature of O&M Costs**

It is important to realize that in a well-managed water supply service office; there are only two major groups of expenditures:

1. **Capital Outlay/Investment:** the costs of which are determined at the initial stages of the business, or when it expands, upgrades, or replaces the physical facilities for water supply. The annual costs are then composed of the depreciation of the major facilities, the financial costs incurred in their acquisition and installation, and actual CapEx disbursements during the year.

2. **Operation and Maintenance:** which involves practically all the activities of the business whose, focus is basically to employ its physical facilities to distribute the water 24/7, reliably and efficiently, and to ensure that these physical facilities remain capable of continuing to distribute the water 24/7, reliably and efficiently.

From this, it will be clear that the O&M cost is one of the two major components considered in determining the initial water tariff of the system and the necessary adjustments in tariff that may be dictated by external factors and as the system expands in the succeeding years of operation.

### (ii) Revenues needed to support O&M Costs

From the foregoing discussion, it becomes very clear also that WASHCO/EWBs need to collect water revenues continually and promptly in order to reliably operate and maintain the water supply facilities. In too many instances, insufficiency of funds is at the root of poor system maintenance.

### (iii) Need to educate Users

Each member user should be made to realize the importance of a well-supported O&M on the reliability of their water system. They should be educated on what the O&M budget comprises and why a collection is made for the water supply O&M. The training should be offer during the election of General Assembly and Board.

### (iv) O&M Costs Items

Following is a list and description of what are generally included as O&M cost items:

1. Salary/wages refers to the gross personal services expenses;

2. Power costs and related expenses refer to the total electricity and fuel, oil, and lubricants incurred in the operation;

3. Chemical cost for water treatment like Chlorine, Aluminum Sulfate if applied which also include laboratory chemicals and equipment; if any,

4. Maintenance expenses refer to the repairs and maintenance costs of facilities, exclusive of salaries for operators and staff who undertook the repairs and maintenance;

5. Permits/Regulatory fees are expenses incurred in obtaining or updating business permits, licenses and payments for regulatory fees;

6. Board costs are expenses incurred during Board meetings as well as board per diems, if any;

7. Operation CapEx are disbursements made which do not enhance the physical distribution system but are necessary in improving the office environment, work efficiency, or security, examples of which are fax equipment, light fixtures, housekeeping equipment, vault and filing cabinets, and computers;

8. Miscellaneous costs refer to other maintenance and operating expenses like representation expenses excluding depreciation, interest and other bank charges. Capital Expenditure (CapEex) Budget.

   The annual CapEx budget summarizes the cost of the projects that the WAO/WASHCO will implement during the budget year. These are cost items that involve large amounts, like pipelines, reservoir, connections, source development, major repairs or expansion of the network. The amount is determined based on the project plans and the estimates of their cost.

### 8.3.3 Budget Monitoring and Control

The Woreda Water Offices must monitor in regular interval of the WASHCO/Executive Water Board Management on the level of expenditures against the budget on a monthly basis in order to control overruns that could lead to unexpected fund shortfalls. In turn the Executive Water Board Management must monitor the Water Administration Service Office.

Monitoring the budgeted expenditures enables management to take cost reduction measures, make decisions on budget realignments, and consider the need for a supplemental budget if it is forecast that the approved budget for essential expenditures will be exceeded.

## 8.4 Sources of Income

### 8.4.1 General

This section looks at financial aspects of water scheme management, which is an essential part of sustainable O & M and management of water scheme with regardless of type of water scheme.

In the community-based water scheme management, **Cost Sharing for O & M of a water scheme** is an important government policy. The community needs to pay for maintenance & repair of the water schemes and save the replacement of the equipment.

**Maintenance is your job!** When a part wears out, you have to buy a new part. When the facility breaks down, you have to fix it themselves or pay service provider to fix it.

To take measures promptly when the water scheme gets broken down, you need to **collect money in advance.** With enough financial resource, you can buy spare parts and pay for a repair works and other necessary expenses. Some of this money should be used to buy spare parts in advance.

**Before starting concrete financial management tasks, you need to understand about the O & M cost and how to cover O & M cost.**

### 4.1.1 Source of Income Category

- User fee which shall be paid to cover the project cost or running and maintenance cost every week / two weeks /month / year in the form of cash and/or kind.
- Volunteer contribution from beneficiary community or outsiders in the form of cash and/or kind.
- The committee shall arrange fund raising activity to collect money. In this case different systems for special contribution shall be arranged including labour and locally available material that could be converted to money.
- Support of money from government and non-government organization in cases of a considerable problem encountered to run the activity.
- Revolving fund for spare parts which shall be availed from donor or government agencies.

### 8.4.2 Users Fee Payment Condition

- Every beneficiary household except those who shall be exempted from payment pay Birr____ every week/ two weeks/ month/year. The amount to be paid shall be prepared by the Committee and endorsed by the benefiting community in the General assembly.

- Payment in accordance with the agreed tariff ,

- The payment shall be effected to the cashier, water point attendant or bill collectors.

### 8.4.3 O&M Cost Sharing

The cost of running this service should be shared between the user community and the Woreda (through an annual allocation from the regional level). The Maintenance Support System will need to demonstrate value for money to justify this cost to the user communities.

- Communities should contribute a part of the capital cost of water supplies, but should bear the total cost for operation and maintenance, and a part of the cost of the maintenance support service.

- Strengthen community O&M financial management systems to ensure accountability and enhance transparency regarding the flow and use of Government and partners' funds at all levels.

- The contribution by the community mainly for running and maintenance costs for point water sources like hand dug well, shallow wells fitted with hand pumps as well as on-spot spring development.

- The Ministry of Water, Irrigation and Energy develops the cost-sharing guideline, while the Regional Water Bureaus, Zone and Woreda Water Offices determine the exact contributions to the capital cost and the maintenance support service, according to local economic conditions. Nevertheless this strategic framework recommends the following cost sharing:

The costs of maintenance of water supply facilities shall be borne primarily by the users. They will meet costs pertaining to:

(i) Repair and replacements of worn out parts;

(ii) Labour costs of O&M (caretakers, scheme attendants, handpump mechanics, etc);

(iii) Administrative/ logistical requirements; stationary, public transport, fuel, per-diem etc,

Cost sharing between government and communities may involve on the following issues but it depends on the local situation.

(i) Replacement of hand pumps,

(ii) Provision of spare parts which price is beyond the affordability of the community,

(iii) Fuel cost for those community get water supply from motorized schemes but do not have electricity.

The community may require external support from governments or NGOs to meet those costs beyond their ability. These may include;

(i) Borehole rehabilitation to include:

- Desilting of borehole,
- Fishing of dropped handpump parts (pipes and rods), and
- Replacement of whole riser pipe.

(ii) Electro-mechanical maintenance and replacement

- Maintenance and replacement of pumps (surface and submersible), generators, and switch board.

(iii) Major extensions of piped systems (RPS) if support requires;

(iv) Refresher and regular trainings for WASHCOs, caretakers and technicians; and

(v) Monitoring and technical support.

Eventually when the life standard and income of the community increase and ensured the affordability, the support can be terminated and the cost of all O&M incur will be the responsibility of the community themselves.

### 8.4.4 Ability and Willingness to Pay

With regard to income related issues, detailed up-to-date information regarding specific income data of aforementioned beneficiary should be collected using structured household survey for sample households 30 – 50. However, experiences show that people are usually unwilling to reveal their periodic income.

Affordability deals with the analysis of ability of consumers to pay for water. In order to analyze the ability of consumers to pay for water, the water supply consumption of the users and the income level of consumers (Low-income section of the society) should be identified and computed. Specially, the ability of the very poor households in the area shall be focused upon.

For reasons of practicality, **Affordable Price** is defined as maximum amount, which a household can pay for water without greatly compromising its ability to buy other basic goods and services for its members.

Therefore, affordability can be expressed as a **fraction or percentage** of the household income. Based on the accepted practice of institutions, which is derived from analysis of domestic expenditure behaviour in Ethiopia, up to 5% of household's income is assumed affordable for water. It is advisable if calculation made for affordability adopts this assumption.

The rational for conducting studies of affordability of water tariffs evolves from two basic considerations:

- The Ethiopia Water Resource Management Policy recognizes water as a commodity with not only economic value but also a social value. Therefore providing affordable water supply to the rural population is one of the major objectives of the policy. It is of

paramount importance to make sure water price does not limit the access to potable water by the poor.

- The other important consideration is that Price of water that is not affordable by the majority of the intended beneficiaries makes the water supply system financially unsustainable.

***a) For low* consuming *Yard Connections (5* $m^3$*/ month)***

Assuming that the monthly average income of this group is X Birr/household and applying affordability criteria of 5% of income, the maximum this group is able to spend on water is x Birr per month per household. This includes monthly meter fee of X Birr.

Assuming household size 5 and the average per capita consumption will nearly increase from the existing 15 l/d to 20 l/d due to the intended improvement of the scheme, the average domestic consumption would become:

20 l/c/d * 5 persons * 30 days = 3 $m^3$ per month/household

Tariff affordable = x Birr/3 $m^3$ = X Birr /$m^3$

Consequently, the maximum tariff that would be affordable by the low-income households that consume only up to 3$m^3$ is X Birr per $m^3$ of water consumed.

***b) For Public Fountains (PF)***

The average income of this household group is assumed X Birr per month/household. (Household using water-vendors, as their primary or secondary sources of water, are included in this category).

- Ability to spend on water is 15 Birr per month/ household (5% of X Birr).
- It is assumed that the average per capita consumption would rise to 20 l/c/d from the existing with the improvement of the system, the average domestic consumption would become:
- 20 l/c/d * 5 persons * 30 days = 3.00 $m^3$ per month/household
- Tariff affordable = x Birr/3.$m^3$ = x Birr/$m^3$

Consequently, the maximum tariff that would be affordable by PF user is X Birr/$m^3$ of water consumed. Therefore, affordable tariff cannot be exaggerated.

Besides, willingness to pay has to be assured as it is more important in predicting success than affordability to pay. Many communities who are able to pay have not in fact been able to raise the cash, while some poorer communities who are less able to pay have successfully financed their systems.

The primary incentive that makes communities willing to pay seems to be guaranteed access to an adequate supply of water to communities that do not have easy access to inadequate supply of water. Communities that do not have easy access to water are generally willing to pay for improved water supply, regardless of their ability to pay. Contrary to this, there are communities who are reluctant to pay for the service as they have alternative water source relatively easy to collect.

## 8.5 Determining Expenditures

### 8.5.1 Identifying operation and maintenance costs

Box 8-1 below presents the costs of O&M of water supply facilities.

**Box 8-1: Operation and Maintenance costs include:**

- **Material costs –** consumables, chemicals, energy, tools, spare parts and equipment
- **Works personnel -** staff involved in operation, maintenance, routine preventive maintenance, repairs, and construction for minor rehabilitation
- **Management personnel -** staff involved in planning, supervision, financial management, administration, and monitoring
- **Financial costs** - interest, amortization, depreciation, exchange rate variations, inflation
- **Environmental costs -** water source protection and conservation,
- **Support costs –** training support, technical assistance, institutional strengthening, monitoring and evaluation
- **Future investment costs** - Major overhauls (rehabilitation), replacement, and extension
- **Other costs –** transport, services paid to a private contractor, unaccounted for water due to leakage, bad administration and vandalism

All the above types of O&M cost should be considered in calculating and setting of tariff.

### 8.5.2 What is O & M Cost?

The scope of the cost recovery for a water scheme includes three groupings of cost;

i. Running (operation) cost

ii. Maintenance cost

iii. Replacement cost

For the purpose of simple explanation, the case of a hand pump, which is one of major water schemes, is shown as an example.

#### (1) Running Cost

**Running cost,** which is also called as **operation cost**, can be defined as cost required for day-to-day operation of a water scheme. Such operation cost includes in general the following items.

- Personnel expenses (salary for a pump attendant or guard)
- Overhead cost (travelling cost, communication, per-diem etc.)
- Office expenses (stationeries, etc.)

Example:
A WASHCO in XXXX Kebele employs one pump guard. Monthly running costs of XXXX WASHCO are as follows:

| Item No.: | Description of Expense | Amount (Birr) |
|---|---|---|
| 1 | Salary of pump operator (Ato XXXXXX): | 150.00 |
| 2 | Stationary expenses: | 30.00 |
| 3 | Per-diem for travelling to Woreda | 50.00 |
| | Total | 230.00 |

## (2) Maintenance Cost

Maintenance cost is concerned about any cost required for continuity of operation of a water scheme without any breaks including spare parts cost, repair cost, technical service fee, and so on.

With regard to the regular replacement of spare parts for Afridev hand pump, it is recommended to follow a schedule below. Some parts (U-seal and bearings) need to be replaced every 6 months, others once a year, and others once a two years.

Normally a community would put aside enough money to cover the FAST WEARING PARTS - parts that need to be replaced frequently. In addition, WASHCO should buy a few long wearing parts – e.g. rod) - as a way of investing the money and guarding against inflation.

**Table 8.1: Suggested Schedule of Spare Part Replacement**

| **Part** | **Months** | | | | | |
|---|---|---|---|---|---|---|
| | **6** | **12** | **18** | **24** | **30** | **36** |
| U-seal | √ | √ | √ | √ | √ | √ |
| O-ring (big) | | √ | | √ | | √ |
| O-ring (small) | | √ | | √ | | √ |
| Bobbin | | √ | | √ | | √ |
| Rod Centralizer | | √ | | √ | | √ |
| Bearing (inner) | √ | √ | √ | √ | √ | √ |
| Bearing (outer) | √ | √ | √ | √ | √ | √ |
| Hanger Pin | | | | | | |
| Fulcrum Pin | | | | √ | | |
| Pipe Centralizer | | | | √ | | |

On average most pumps will require the following maintenance:

**YEAR 1**: No major problems - the warranty will cover any costs during first year.

**YEARS 2-4**: Replacement of fast-wearing parts - but no major repairs.

**YEARS 5+:** Major faults will occur, which require help from the Woreda Water Office.

## (3) Replacement Cost

The replacement cost includes an amount necessary to replace of equipment at the end of its service period. A service period of a hand pump lasts for 10 years under normal handling.

Conceptually somebody should accumulate financial resources to procure a new hand pump in assumption that the present pump shall cease to function forever after 10 years. In other words, depreciation cost should be covered including water fees.

These above three types of cost are needed to be covered through regular payment of water fees for only one single purpose. The purpose is to produce potable water for drinking continually.

How and who bear those costs? Let's look at the following sub-section.

### 8.5.3 Community- based Cost Recovery

#### 8.5.3.1. Recovery of O&M costs only, with initial use of subsidies

This consists of introducing progressively an "O&M costs recovery only", mainly by subsidizing costs (for example the price of spare parts, M&E cost, the cost of fuel) at the beginning, and providing free technical support for some maintenance. Although this approach can be necessary for poor communities, the use of subsidies can send wrong signals to a market, especially for spare parts. Some arrangement will need to be made about who will recover the other costs that the community will not cover, and how.

**(1) Basic Concept of Cost Recovery**

**You (community) need to build up a maintenance fund** so that you can spend money to buy parts and make repairs whenever necessary.

As you have seen the basic formula below, which you have to save is as below

**Total Cost = (1) Running Cost + (2) Maintenance Cost + (3) Replacement cost**

The Total Cost is **Supported by Users** of the water scheme !


Question: **How do Users support the Total Cost?** That is revenue, mainly water tariff paid by users.

**Revenue = Tariff x Quantity**

**(2) Some idea on the cost to be borne: How much do we need to save?**

Based on an extensive study conducted in Ethiopia, a required amount of maintenance cost is estimated to account for 5 % of total replacement cost annually. In this manual, cost of a hand-pump is considered. We shall use an example of average cost of a hand pump at Birr 8,000.00 for this paper.

**Example:**

Total replacement cost: Birr 8,000.00

Annual Maintenance cost: Birr 8,000 x 5 % = Birr 400.00

Monthly Maintenance cost: Birr 400 / 12 months = Birr 33.30

Taking an estimated price of a hand pump at Birr 8,000, a WASHCO accumulate at least Birr 800.00 annually, while this can be interpreted as monthly reserve with an amount of Birr 66.00.

**Example:**

Cost of a hand pump: Birr 8,000.00

Service period: 10 years

Annual Replacement Reserve: Birr 8,000/10 = Birr 800.00

Monthly Replacement Reserve: Birr 800 / 12 months = Birr 66.00

*Note: The above calculation is prepared without any considerations on interest rate, inflation rate, and foreign currency exchange rate.*

### 8.5.4 Water Supply Tariff

A water tariff is the rate at which users are charged for water. If cost recovery aims to satisfy an increasing demand for water then the tariff should reflect the cost of the operation and maintenance for rural schemes as stipulated in Water Resources Policy. However, many water supply tariffs do not achieve coverage of the current costs of O&M.

The discussion is moved into water tariff. O&M cost recovery shall be taken into considerations under the subsequent exercises.

Let us refer to the following basic formula in the cost recovery.

**Total Cost = (1) Running Cost + (2) Maintenance Cost + (3) Replacement cost**

**a) Revenue:**

Taking the above case of XXX WASHCO, let us calculate an amount of required revenue.

**Revenue = Tariff x Quantity**

Minimum required revenue accounts for the sum of running cost plus maintenance cost plus and replacement cost in reference with the above basic formula No. 2

**Example:**

Monthly running cost: Birr 230.00

Monthly maintenance cost: Birr 33.00

Monthly replacement cost: Birr 66.00

**Total Birr 329.00**

The answer to an amount of required revenue shall be Birr 329.00

Then, let us move into a discussion on quantity required.

**b) Quantity:**

In accordance with technical standard, a hand pump lifts up waters with an amount of 0.2 liter per second. XXX WASHCO sets service hours separately in the morning and in the afternoon.

**Example:**

Service hours:

- Morning service (2 a.m. to 6 p.m.) local time: 4 hours
- Afternoon service (8 p.m. to 1 p.m.) 5 hours
- Hand pump operation hours (hours to lift up waters 8 hours)

(During 9 hours of service hours, it is estimated that a hand pump serves to lift up waters approximately for 8 hours)

- Pumping capacity (l/s): 0.2 litre per second
- Pumping capacity (l/h): 0.2 (l/s) x 3,600 (seconds) = 720 litre per hour
- Daily production of water (=Quantity): 720 l/h x 8 = 5,760 litre
- Daily Quantity in $m^3$: 5,760 / 1,000 = 5.76 $m^3$
- Monthly quantity in $m^3$: 5.76 x 30 (days) = 172.8 $m^3$

- **Cross-check exercise:**

Is the above estimated quantity sufficient enough to serve for people's demand? Let us see as follows;

A hand pump is ideally set to serve 350 people (70 households).

15 liter per capita per day of water is required as set in the Universal Access Plan (UAP)

Therefore, a case of XXX WASHCO can be interpreted as follows.

Population served by a hand pump: 350 people from 70 households

Daily minimum demand: 15 liter per capita per day

Daily demand: 15 l/c/d x 350 = 5,250 liter

Therefore, the above estimation shall be considered as enough amounts to serve for 350 people in this case.

**Tariff Rate:**

Let us go back to the following basic formula.

By quoting the above case of XXXX Water Supply Users WASHCO, the required tariff can be calculated as follows;

**Example:**

Required amount of monthly revenue: Birr 329.00

Monthly amount of water production(quantity): 172.8 $m^3$

Required tariff: 329.00 / 172.80 = 1.90 Birr / $m^3$

**Monthly consumption per household:**

Daily consumption: 15 liter per person per day

Average size of a household: 5 people

Daily Household consumption: 15 l/c/d x 5 = 75 liter

Monthly household consumption:75 x 30 (days) = 2,250 liter

Monthly household consumption-2: 2,250 / 1,000 = 2.25 $m^3$

**Monthly Water Tariff per household: 1.90 x 2.25 = Birr 4.30**

Through the above simple exercise, it is suggested in the case of XXX WASHCO that each household shall be requested to make a monthly payment with an amount of Birr 4.30 in order to reach the O&M cost recovery.

### 8.5.4.1 Determining Revenue

It will be explained in the next section that as a manager of a drinking water supply system, the WASHCO and WUB most important job is managing the delivery of safe drinking water to the benefiting community. If the water supply system does not have the resources to cover the full cost of producing and delivering water, the system won't be sustainable. As a result the benefiting community will frustrate and may prefer to go to the unsafe traditional water sources.

Determining revenue helps in understanding the importance of recovering the full cost of running the system through water sale and how to structure the rates to achieve full recovery of O&M. Structuring the rates in this way will ensure that the WASHCO and WUB will have the financial resources to operate effectively and efficiently for the life time of the water supply scheme.

The following are the anticipated rate setting process:

Step – 1: Determine the full cost of O&M by calculating the listed cost items.

Step – 2: Determine the current revenues from water sale and others.

Step – 3: Consider the reserve requirements to ensure that there is enough finance to cover water supply scheme asset rehabilitation and repair costs

Step – 4: Determine the amount of money that should be collected from water sale through appropriate tariff to cover O&M costs and fully fund your reserve account.

Step – 5: Evaluate appropriate rate structures and design an appropriate rate as the case may be.

Step – 6: Implement the rates.

Step – 7: Review your rates and make changes when appropriate.

### 8.5.4.2 The objective in Water Tariff Setting

The objective of tariff setting is to raise sufficient revenue to meet the operational (and possibly capital replacement) costs in a way that is:

- Fair and equitable;
- Affordable (takes into account people's ability to pay);
- Justifiable (does not involve unreasonable profit or
- exaggerated costs);
- Easy to administer and control.

### 8.5.4.3 The objective in Water Tariff Setting

There are four main objectives embedded in the design of water supply tariffs: financial viability (or cost recovery), economic efficiency, equity and affordability.

- ***Cost Recovery:*** From the water service/operator's point of view, cost recovery is the main purpose of the tariff. Cost recovery requires that tariffs faced by consumers should produce revenue equal to the financial costs of supply. Moreover, the revenue

stream should be relatively stable and not cause cash flow or financing difficulties for the water administration office/Executive Water Board.

- ***Economic efficiency*:** Economic efficiency requires that prices be set to signal to consumers the financial, environmental, and other costs that their decisions to use water impose on the rest of the system and on the economy. Therefore, if economic efficiency is an objective the price of water should include not only the financial cost of public works undertaken but also the social (opportunity) cost of diverting water resources into public supply rather than using it for other purposes. In addition, water tariffs should be designed to discourage "excessive" uses of water, thus promoting water conservation as well.

- ***Equity:*** The term "equity" generally implies that the water tariff treats similar customers equally, and that customers in different situations are not treated the same. This usually means that users pay monthly water bills that are proportionate to the costs they impose on the utility by their water use.

- **Affordability:** Affordability implies that poor households are able to obtain adequate supplies of clean water. The terms "fairness," "poverty alleviation," and "affordability" are often used interchangeably to express this desire.

Additional objectives and considerations may also be involved in tariff design. For example, a tariff design should be easy to explain, understand, and implement. A tariff design should be acceptable both to the public and to political leaders.

### 8.5.4.4 Tariff-Setting Requirements

Tariff setting should NOT be done in a poorly considered, arbitrary manner. A deficient tariff level, once set, will be very difficult to remedy; and an excessive level would be unsustainable for the users, be subject to complaints, and tend to result in delays of payment and bad debts.

For this reason, the practice is for the water tariff to be fixed by the Water Board/WASHCO in consultation with the users, considering basically the capacity of the users to pay and costs of the O&M, as well as other relevant factors.

Tariff rates must satisfy the following requirements.

1. **Adequacy:** The revenues generated from a water rate schedule must be sufficient to meet the revenue requirements of the water supply service office. The rates should be able to promote the water supply service office's financial viability and growth.
2. **Public Service:** The tariffs must be set at a reasonable level that reflects the water supply service office's role as a public utility providing a public service.
3. **Equitable and Socialized Pricing:** The tariffs must equitably distribute the cost of the service to all classifications and sizes of connections. Their structure should define a relatively low fixed rate for some minimum level of consumption to benefit the low income users, and higher rates for those who use greater quantities of water.
4. **Affordability Level:** The rates must be kept affordable to the low income group (LIG). For this reason, the minimum charge for a ½" residential connection should, as a rule of thumb, not exceed 5% of the average income of the LIG within the service area.

5. **Water Conservation:** The rates must encourage the wide water usage needed to attain economies of scale, but must also discourage unreasonable and wasteful usage of water.
6. **Enforceability:** The rates must be fair, reasonable and transparent. They should be justifiable and acceptable to the consumers.

### 8.5.4.5 Basis for setting tariffs

Once the WASHCO/EWB members and committee members recognise the need to pay for the cost of operating and maintaining the water supply schemes, then the discussion can progress to how to set the tariff.

What should be the basis for setting the tariffs? Discussion on whether the tariff should be set according to one of the following criteria and what are the consequences of each:

1. What people can afford;
2. What people are willing to pay;
3. What the water supply schemes requires to cover the operating costs (partial cost recovery);
4. What the water supply schemes requires to cover all operating costs and to replace the assets when they need replacement (O&M cost recovery);
5. The maximum the water supply schemes can possibly charge.

**The rural communities are generally willing to pay fair prices for good water Services and cover O&M costs as per the policy**

### 8.5.4.6 Setting Your Rate

Now that you have organized your usage data, you may want to consider using the data to set rates. There are many ways to set rates; the option you choose should reflect the considerations discussed at the beginning of this step. The basic steps are the same for each approach: the revenue requirement is allocated to beneficiaries and then divided by the volume of water used by those beneficiaries. Under this study the proposed rate setting is using uniform rate.

First determine the average annual consumption. To determine the amount of annual water consumption multiplies the average monthly consumption by the number of months in a year i.e. twelve.

Secondly determine the short term revenue required to run the system using the worksheet prepared for this purpose.

The using the uniform rate the tariff form the meter cube of water used will be calculated using the following simple formula.

$Ar/Qa = x$ birr/$m^3$ of water used.

Where,
Ar = Annual Revenue required to run the system,
Qr = annual average water consumption.

## Step 6 – Implementing the Rate

Once you have decided on a rate structure and appropriate rates, it is important to consider a number of other factors before charging your beneficiaries. Your rates may need to be adjusted because of the particular circumstances of your system. Factors to consider include:

1. Community's Perception: Beneficiaries should know what the rates are and should
2. Understand that they will be paying a fair and equitable share of the cost of providing safe drinking water. Make sure your beneficiaries understand that the system ability to provide safe drinking water depends greatly on having sufficient revenue, most of which comes from water sale. The beneficiaries must be informed throughout the rate setting process; informed beneficiaries are more likely to understand and tolerate rate increases.
3. Regulatory Requirements: Ensuring the water system has the resources to meet the country's drinking water requirements should be considered when setting rates.
4. Administration: The rate structure should be easy to administer. Complex structures may increase administrative costs and confuse beneficiaries.

## Step 7 – Timing of tariff resets

The timing of tariff resets determines the length of time during which the water administration office (service provider) must bear risk before passing it on to customers. Three main approaches to the timing of tariff resets are possible:

### a) Review on request

The timing of tariff resets is not set in advance. Resets are triggered at the request of an affected party, such as the water administration office /operator or a customer, if the operator's profitability diverges too far from a reasonable rate of return. In principle, this approach allows the water administration office /operator to pass changes in costs or revenues on to customers before the value of the business is significantly affected.

### b) Periodic reviews

Permitted tariffs are reviewed and reset on a regular basis, say every five years. In principle, the water administration office /operator retains profits or losses earned between resets.

### c) Event-based reviews

This approach is appropriate where the review seeks to adjust for specific variables. The arrangement specifies certain events that, if they occur, will trigger a tariff review. For example, the arrangement may specify that a tariff review will be held if demand varies from forecast by plus or minus 10 percent, if the local currency depreciates by more than 15 percent, or in response to changes in relevant legislation, for example on standards.

Hybrid approaches are also possible. Tariffs may be reviewed if certain events occur and one of the parties requests a review, or they may be reviewed in any case after a certain period if no event-based reviews have occurred.

It is also advisable to submit the rate structure for an independent review. Consider assembling a special review committee, since a review performed by an external party can be more transparent and impartial. Determining who should review the rate is an important part of the process.

1. Persons with management and budget experience are good candidates for the review committee.
2. Depending on RPS system, a review committee could include:
3. RPS system's operator
4. The WWRO
5. A professional from the community (e.g., accountant, lawyer, water system engineer)
6. A member of the /WASHCO & WUB
7. Beneficiaries
8. The manager of nearby area water supply service.

### 8.5.4.7 Provision of subsidies to tariffs

Another major financial obligation is related to compensating for tariffs that fail to cover the full financial costs of the utility.

***Categories of subsidies***

Subsidies can be categorised according to where the money comes from and who subsidies are paid to and for what. There are three sources of money for subsidies:

1. Revenue from other customers (usually called a **cross-subsidy** from one class of customers to another);
2. Government revenue, collected from taxpayers;
3. Grants from development agencies.

**Cross-subsidy:**

Cross-subsidy occurs when one customer pays more than the cost of service so that another customer can pay less. Cross-subsidies can be an effective way of achieving social goals, while ensuring that water utilities as a whole are self-financing. One of the most common types of cross-subsidy is the increasing-block tariff. Another common approach is to charge commercial and industrial customers more than the cost of service so that residential customers are charged less.

## 8.6 Daily Financial Management

### 8.6.1 Decision on Payment Method

Once the amount of water supply fee is determined, WASHCO will decide how to collect water supply fee. Let community users decide what method will work best for them. When the community helps to choose the method of collection and the amount to be collected, they are more likely to contribute.

The WASHCO should organise a general assembly to meet with the whole community to decide on how money is to be collected and managed.

#### 8.5.3.1. Procedures to decide the payment method

- WASHCO organize a community consultative meeting,
- Woreda Water Office explains to users the importance of users contribution to O & M fund and possible payment options as per the manual,
- WASHCO facilitate users to discuss the following;
  - **Who Pays?** Some communities levy money from each individual adult; other communities levy money from each family or compound.
  - **Frequency:** Some communities with a regular income pay on a regular (e.g. monthly) basis; other communities (e.g. farming communities) pay on a seasonal basis (e.g. at harvest). Here, the pastoral areas practice applies.
  - **Amount:** Some communities collect the same amount of money from men and women; others collect different amounts from men and women. In general the amount of money to be collected as per the tariff calculation and principle of O&M cost recovery stated above for different water supply options. This must be explaining to the community by the WWO.

Households that cannot affordable to pay from economic reasons may be exempted from payment or accepted to pay reduced amount through communal decision. This implies that addressing equity for poor through subsidy or cross subsidy mechanisms.

#### 8.5.3.2. When to collect Money?

When money is collected will depend on **when people have money to pay**. People who earn a regular income (e.g. traders) can pay on a monthly basis.

- Date of collection shall be fixed.

For example: every 25$^{th}$ date of each month.

Farmers, however, are more likely to contribute once a year at harvest. There may be a need to design different payment systems for the different sections of the community. Traders may want to pay a small amount after every market day, whereas farmers will prefer to pay a large amount at harvest. Pastoralist may be when selling livestock like goat. It depends on the preference of the user communities in particular local areas.

- Seasonal Variation of Water Fee

Some of WASHCO can handle water supply fee collection by setting different rates of water charge by season. Some cases indicate that each household pays Birr 1.0 per month during non-harvest season, while they agree to make payment of Birr 2.0 per household for six months after harvest.

### 8.5.3.3. Who to collect?

The number of collectors will depend on the size of the village and the payment system. If money is collected from each household, several collectors will be needed to go from house to house. If payment is done at a central location, then only a few collectors will be needed. The casher may visit each household to collect water supply tariff if the community size is small to cover.

- **Money collected should not stay with collectors for more than 24 hours.** Money should be paid to a casher of the WASHCO who deposit to the bank promptly.

- **Don't let the money be used by the collectors.** They may be tempted to take out some money for their own use with the intention to refund it immediately. If this practice is not stopped, however, the small amounts may build up to a huge sum that collectors cannot easily refund.

### 8.5.3.4. Any penalty to the non-payment

- Penalty shall be determined by the General Assembly.
- For example;
  - Penalty against the first failure in payment: Oral warning by WASHCO
  - Penalty against two consecutive failures in payment: Last warning by WASHCO
  - Penalty against three consecutive failures in payment: Measure to be taken by WASHCO (e.g., double payment)

### 8.5.3.5. Options for collection of O & M fund

- There are many ways to raise funds for O & M :

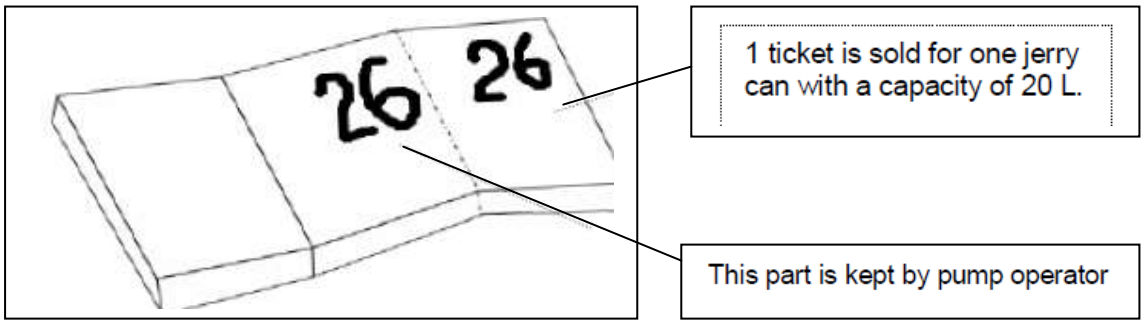
**(i) CASH CONTRIBUTIONS:**

(ii) **FLAT RATE;** this is the common method. Each household or individual makes a regular payment at fixed amount.

(iii) **BUCKET/JERRY CAN LEVY:** In some villages money is levied at the water point on each bucket/jerry can of water collected. For example, 10 cents per one Jerry can with 20 litter capacity. Any cash transaction should be transparent with proper accountability. In some case a ticket shall be used for this payment.

- Pump Operator shall prepare a pile of tickets.
- Each ticket has been piles in order with sequential number.

- A pump operator shall give collected cash with numbers of tickets that were sold to a cashier.




After cross-checking between an amount of cash and tickets, a cashier shall enter cash transaction into an account book.

| Date | Description | In | Out | Balance |
|---|---|---|---|---|
| 02/02/2008 | XXXXXXXXXXXXX | XXXX | XXXX | 120.00 |
| 03/02/2008 | Sales of waters (70 tickets) | 14.00 | 0.00 | 134.00 |
| | | | | |
| | | | | |

(iv) **N-KIND CONTRIBUTIONS:** Some farming communities ask households to contribute in the form of produce on an annual basis (i.e. after harvest).

(v) **COMMUNAL FARMS OR LABOUR:** Some communities establish communal farms or organize communal labour to raise funds for maintenance.

### 8.5.3.6. Formulation of User Households List

WASHCO needs to have an updated list of all household users in the community. Based on that households list, WASHCO prepare "Household Payment List (see attached list) which can be used every month for record keeping.

**Procedure**

- WASHCO make a user household list (in a notebook) in collaboration with kebele chairman, kebele executives,
- WASHCO uses the above list to check when collecting O & M fee from user households,
- WASHCO needs to update regularly the household lists so as not to miss households who have newly joined in the community.

**How to Use**

**(i) Money should be collected in a way that promotes trust!**

- Payments should be carefully recorded in a register of payees and receipts should be issued for all payments. The minimum record of cash transaction should be kept by the casher that is accountable to users as well as WASHCO members. Based on experiences prevailing in the region, a sample form of minimum record is presented in Table below.

**Table 8.2: WASHCO Basic Ledger of Water Fee Collection**

| No. | Name of Household | Rate of Water Fee in Birr | Month and Signature | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | Kebede Fiyissa | 1.5 Birr/Month | | | | | | | | | | | | |
| 2 | Alemu Abera | 18 Birr/Year | | | | | | | | | | | | |
| 3 | Delcho Data | 9Birr/6 Months | | | | | | | | | | | | |

Some advanced WASHCO can also prepare a membership booklet as individual record of monthly payment of water fee.

**Figure 8-1: Sample of household check book**

### 8.6.2 Bank Account Opening

For proper and safe keeping financial resources, collected cash is deposited in an account of financial institution of either the nearest bank or micro-finance institute. WWO shall follow ordinary procedures in reference with their own experiences, so that each WASHCO can have its own the bank account or the Micro-Finance account soon as possible.

#### 8.6.2.1 Procedure for Bank Account Opening

- WASHCO submits a letter of application to WWO
- Upon an official acknowledgement of the letter of application by
- WASHCO, the WWO issues a supporting letter to a financial institute.
- WASHCO goes with cash to the designated financial institute with the official supporting letter for opening an account.
- WASHCO is given a bank account book or statement by the financial institute.

#### 8.6.2.2 Practical Tips

- Minimum requirement of cash to open a bank account

It is said that Birr 500 is required to open an account in a certain bank. Some cases can be shared herewith to respond to such conditions.

- Formulation and collection of seed money

Some of WASHCO succeeded in meeting this minimum requirement of Birr 500 through collection of seed money. In this case, each registered household shall contribute equal amount of money to form group fund. For instance, there is a case that more than 50 registered households accumulated Birr 500 through even contribution of Birr 10 per each household.

## 8.7 Management of Daily Cash Movement

**The WASHCO will keep its own FINANCIAL RECORDS.** The record-keeping system should be simple – mainly a record of payees and an accounts book to record monies collected and used.

### 8.7.1 Basic Elements of Financial Records

In any production and service giving organization, there exists a system of financial management whether complex or simple in their procedures. Financial accounting display and stress what an organization possess in terms of finance, property and assets and how it expended these resources at any point of time usually in a year.

In order to establish financial management system in an organization, the first step is to formulate and introduce different formats and books for financial data and interactive gathering so that all transactions and disbursements are clearly kept in registration and documentation books; which finally serve as input for financial reporting.

The basic account registration and documentation instruments required in financial management system are presented below.

#### 8.7.1.1 Tool 1: Income and Expenses Book

This book is maintained and kept in the hand of the casher or secretary of the WASHCO. Then casher or secretary keep copies of receipts and payments and reconcile records in the income and expense books. Accordingly receipts and expenses are recorded by date, reasons and amounts and serial numbers in the income and expense books.

In the income and expenses books, invoices of receipts and payment vouchers are recorded according to their sequential serial numbers and coded to their budget line numbers.

Recording are kept daily in the income and expenses book and closing are processed on monthly basis.

The differences between income and expenses recorded in the account book are reconciled against cash in the hand and bank account.

Payment vouchers and receipt invoices should be maintained in separate files; payment vouchers in payment box files and receipts in a receipt box files. Filing should be according to sequenced numbers and box files should be labelled according to their orders say 1, 2, 3, - - - this will facilitate and expedite processes for internal audit and control activity.

An explanatory of the income and expenses book model are show below.

**Table 8.3: Example of Income and Expense Book**

| Date | Details | Income | Expenditure | Balance | | |
|---|---|---|---|---|---|---|
| | | | | Cash | Bank | Total |
| 02/01/08 | Balance Forwarded from the previous month | | | ----- | 250.00 | 250.00 |
| 06/01/08 | User fees | 300.00 | | 300.00 | 250.00 | 550.00 |
| 08/01/08 | Stationery | | 40.00 | 260.00 | 250.00 | 510.00 |
| 26/01/08 | Guard fee | | 100.00 | 160.00 | 250.00 | 410.00 |
| 30/01/08 | Transportation to WWO | | 50.00 | 110.00 | 250.00 | 360.00 |
| 30/01/08 | Deposit to the Bank(100Birr) | | | 10.00 | 350.00 | 360.00 |
| | | | | | | |
| | | | | | | |
| **Total** | | **300.00** | **190.00** | | | |

### 8.7.1.2 Tool 2: Cash Receipt Registration

- Cash receipt registrations are invoices issued for the cash amount paid for the water service by employees, other individuals or organization.
- Other revenues collected from sales of water at public fountains or on water consumption bills are also invoiced in the cash receipt registration.
- Receipt invoice pads should be printed in sequenced numbers in three duplicates. The original receipts are forwarded for payer; the copy is passed to the casher or tiller while the third copy shall remain in the pad.
- In the receipt first the date shall be filled, full name of the payer, signature of payee, and delegated authority are required.

The casher should keep the copy of the receipt in file and record in the book of the account all the details such as receipt number, date, reasons of receiving, amount in figures and words in sequence.

If receipts are invalid or when there is an error in the preparation of the receipt, the receipts is cancelled by writing **"CANCELLED"** diagonally across the face of the receipt.

A typical cash receipt registration form/ invoice is shown below.

**Box 8-2: A typical cash receipt registration form/ invoice**

**XXXX Regional State,**

**XXXX Woreda Water Office**

**Xxx Water Supply Scheme**

**CASH RECEIPT INVOICE**

No._____ Date:Tikimte 9, 2008

Name of payer: Tebikeu Meseret

Amount in figure: Birr 100.00

Amount in words: Birr Hundred

Payment Reason: Remuneration to the pump guardian

Prepared by: (Name and signature) _____

Name and signature of cashier: _____

Distribution:

- ✓ Original for payer
- ✓ Copy for cashier/tiller
- ✓ Second copy in the pad for account section

### 8.7.1.3 Tool 3: Cash Payment invoices/Vouchers

- Cash payment vouchers are legal documents for payment of cash approved and authorized by committee or Head of WWO.
- Before processing cash payment voucher, all supporting documents and invoices are carefully examined for completeness and then cash payment vouchers are signed by the secretary and chairperson of the WASHCO or Woreda account head and office superintendent on the amount for payment.
- Supporting documents for village water schemes or WWO could be - Purchase requisition or application for purchase of fuel oil and lubricant, the recommendation given by the committee or the office on the application and stores good receiving notes.
- For spare parts, the operator purchase application, the copy of water committee verbal for purchase of spares addressed for WWO and stores goods receiving models.
- Similar to cash receipt registration, cash payment pads are printed in sequence numbers in three duplicate and the original payment leaflet are attached with source document and kept in box files with cashers. The second copy of the payment leaf should be maintained in other box file for reconciliation for account head the third copy shall remain in the pad.
- In the cash payment voucher the following details should be presented, date, paid name, amount paid in numbers and words, reason for payment, prepared by, approving authority signature, recipient signature; moreover the recipient address and ID number if kept in the receipt are recommended.
- The account clerk maintaining payment registration should reconcile the source document against the voucher there by coding the expenses and record them in the book of expenses sequentially by date, voucher number, reason, amount and filing them in box files.

**Box 8-3: A typical cash payment invoice form**

**XXXX Regional State,**

**XXXX Woreda Water Office**

**XXX Village WASHCO**

**CASH PAYMENT INVOICE**

**No.0001**

**Date: Meskerem 30, 2008**

- Name of Payee: Alemitu Tulu
- Amount in Figure: Birr 1,500.00
- Amount in Words: Five Hundreds Birr only
- Payment Reason: For the purchase of office table and chair
- Prepared by: Bekele Godana
- Received by: _____
- Name & Signature_____
- Name & Signature of payee_____
- Approved / Authorized by_____
  Name & Signature_____

### 8.7.1.4 Tool 4: Payroll

Employees recruited and employed by the water committee or Woreda Water Offices are paid their salaries in pay rolls. Salary pay rolls are prepared for the number of days that employees are on duty in the month.

In processing pay roll all legal deductions such as income taxes and pension contributions are netted out from gross salary and passed to tiller. The casher effects payment for each employee with signing of pay roll by respective recipients.

Model of a payroll list is shown below.

**Table 8-4: Model of Payroll List**

| No. | Name of Employee | No of days on duty | Gross Salary | | Income Tax | | Other Contribution | | Total Deduction | | Net Pay | | Signature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Birr | C | Birr | C | Birr | C | Birr | C | Birr | C | |
| 1 | Tolera Degefa | 30 | 200 | 00 | 5 | 00 | 1 | 50 | 6 | 50 | 193 | 50 | |
| 2 | Alemu Kebede | 30 | 350 | 00 | 20 | 00 | 2 | 50 | 22 | 50 | 327 | 50 | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

| Prepared by Name and signature | Checked by Name and signature | Authorized by Name and Signature | Name and signature of Casher |
|---|---|---|---|

Note: This payroll shall be prepared in excel spreadsheet!

### 8.7.1.5 Tool 5: Per Diem Payment Form

- Per-diem is the daily subsistence allowance and transport costs paid for employees to perform activities outside of the area. Per Diem payment form is prepared in one copy.
- Per diem and transport amount need to be clearly filled and authorized by signatures of the respective delegates such as secretary of committee and the chair person.
- Daily subsistence allowance rates are determined by internal delegation of water committee or government financial regulation that is operational in the region.
- The standard per diem payment forms is shown below

**Box 8-4: A typical cash payment invoice form**

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____WASHCO**

**PER-DIEM PAYMENT FORM**

Date: Meskerem.30, 2008

Per-diem Recipient Name: Geremew Bekele

Reasons for redeem payment: Training participation in WWO

Per diem amount per day in figure: 100.00 birr, in words: Hundred Birr

No of days allotted: 4 days

Total amount of per diem in fig. 400.00 Birr, in words Four Hundred Birr

Transport cost amount paid: 50.00 Birr, in words Fifty Birr

Total: 450.00 Birr (Four Hundred Fifty Birr) in words

Payer Name and Signature: Alemu Bekele

Received by: Kebede Zeleke

Approved and Authorized by: Kassa Ali

Document Prepared by: Tadesse Berega

### 8.7.1.6 Tool 6: Property Receiving Form (for Motorized Scheme)

Properties owned either through purchase by the water committee or earned in the form of grant, need to be recorded in the property receiving form by property administrator/ store keeper.

For purchased property (even if possible for granted items) details on unit prices, total prices and types of the property are required to be filled in the property receiving form.

No property shall be put into service without passing the property receiving records by the store keeper.

**Table 8-5: Property Receiving Voucher Form**

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____Water Supply Scheme**

No._____

Date: _____

**PROPERTY RECEIVING VOUCHER**

Supplier Name and Signature _____ (to store)

| Ser. No | Description of Property | PR No. | Total No./Quty. | Unit Price (Birr) | Total Price (Birr) | Remark |
|---|---|---|---|---|---|---|
| 1 | Chlorine | | 50 kg | 30.00 | 1,500.00 | |
| | | | | | | |
| | | | | | | |
| | | | | **Total** | **1,500.00** | |

### 8.7.1.7 Tool 7: Property Registration Book (for Motorized scheme)

- The store keeper or the property administrator should record and copy all property receiving invoices to property registration book.
- When properties are withdrawn by property issue voucher, the property is recorded in the property registration book along with issue voucher number.
- The property registration books are permanent archives for the water supply service for control of the movement of the property and need to be kept reply for Woreda Water, Office supervisors and inventory purposes.

**Table 8-6: Property Registration Book**

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____Water Supply Scheme**

**PROPERTY REGISTRATION BOOK**

| Ser. No | Property Description and type | Cost of the property (Birr) | Current statues | | | Remarks |
|---|---|---|---|---|---|---|
| | | | New | Serving | Old | |
| 1 | Chlorine | 1,500.00 | New | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## 8.8 Access to other sources of funding

"New strategies should aim towards increased efficiency in the use of available funds and in increased mobilization of additional funds." It will indeed be important to plan and determine financial mechanisms which cover all costs, if these are not fully covered by user's fees. As seen earlier, tariffs are often based on the recovery of basic operation and maintenance costs, and rarely include the cost for major repairs, rehabilitation and replacement. Communities will need to tap into alternative sources, and it is proposed that planners take this into account, and facilitate /organize access to these sources. Possible alternative financial sources are:

- existing community contributions,
- Cooperative Fund,
- subsidies and taxes,
- Credit–loan mechanisms,
- Grants,
- Specific funds.

This section gives an overview of these possible alternatives to tariffs. Government need to assess the availability, reliability and sustainability of these sources and, where they are non-existent, the possibility of developing them.

### 8.8.1 Tapping into existing community contribution

In communities with significant seasonal variations in income, it is difficult to recover costs through regular payments. An alternative is to cover the costs through community fund raising where "families do not pay regular contributions towards the cost of the community water system. Instead, money is periodically accumulated in other ways. Community fundraising options include voluntary funds, general community revenue and payment in kind.

#### a) Voluntary funds

Voluntary funds are built up by voluntary contributions from generous people or community groups through public meetings, bazaars, festivals and similar social activities.

#### b) General community revenue

This mentioned above that the community pays based on the set of tariff.

#### c) Payment in kind

Instead of contribution of money, the community contributes in terms of kind such as labor, local material provision.

### 8.8.2 Cooperative funds

Cooperative funds result from an initiative by a group of users or individuals who get together to finance productive activities, not in the first place always related to WS&S. The initial capital comes from contributions in cash or in kind from the members of the cooperative. Once the group has sufficient revenue, members may decide to use part of their funds to finance WS&S services. However, the amount of capital available in this option depends on the results of the first stage investments. With good financial and organizational practices, this is a good way to administer WS&S services.

### 8.8.3 Subsidies

#### a) Direct government subsidies

In fact the Water resources management policy stated that the O&M cost should be recovered by the users, however, the government still provide spare parts to the community, assisted the community in provision of technical, monitoring and evaluation activities.

Regional Water Bureaus allocate part of their budget towards operating and maintaining of rural water supply schemes, but the allocated budget is too low compared to the construction of new schemes.

Subsidies can be used as promotion tools for a particular professional group, for instance the informal and formal private sector. They can also be used to promote access to water services by marginalized groups, with subsidies adapted to various levels of marginalization.

**b) Cross-subsidy**

One way to make the service equitable and affordable for all is to subsidize the poor and surcharge high-income consumers. However, in rural and low-income urban areas the majority of users have low-income levels, so funds raised from surcharging richer users in that area will not cover their subsidies.

### 8.8.4 Grants

NGOs and donors have used grants as a type of financing mechanism for the construction of new water supply facilities. Grants rarely pay for recurrent costs. Nowadays, this approach should be changed and the NGOs and Donors provide grant for O&M in order to use the facilities sustainably. Grant should not be for basic O&M management.

### 8.8.5 Micro-credit

Micro-credit is financing through lending mechanisms, similar to credits given by banks, except for their nature and size. Micro-credits are generally small in volume and respond directly to the specific needs of rural or low-income urban communities.

- Credit and Saving Institute

A micro-credit system can be used to:

- contribute to investments,
- purchase material and equipment for replacement, extension and rehabilitation,
- finance major unforeseen repairs,
- cover short-term cash-flow problems;
- Develop a stock of spares, parts and tools.

The Amhara region has already commenced to implement the CSI and became effective.

There is rules and regulation for the fund, lending conditions, interest rate, and guarantee against risk, loan reimbursement, and limits of loan.

## 8.9 Financial Report

### 8.9.1 Report to the Community

The Executive Water Board / WASHCO must provide the overall performance report to the user communities every six months. One of the report is the financial report that shows the income and expenditure statement.

### 8.9.2 Reporting to Woreda Water Office

The Financial Report for each quarter by each EWB/WASHCO should reach to Woreda/Zone Water Offices, Water Bureau on the 5$^{th}$ of first month of the next quarter.

An interim financial report for each advance given to WAO or WASHCO shall be submitted by the WAO or WASHCO in the format illustrated. The following document must be attached with it:-

(i) Trial balance for the required reporting period;

(ii) A bank statement and a bank balance certificate showing the balance in the bank;

(iii) Cash balance in hand, and

(iv) A bank reconciliation statement for the period in question.

The Accounts Officer should retain copies of all documents listed above for office record. The retention of these documents is necessary for auditing purposes.

## 8.10 Auditing

### 8.10.1 General

Auditing is defined as a systematic and independent examination of data, statements, records, operations and performances (financial or otherwise) of point sources or RPS for a stated purpose. In any auditing the auditor perceives and recognizes the propositions before him for examination, collects evidence, evaluates the same and on this basis formulates his judgment which is communicated through his audit report. The purpose is then to give an opinion on the adequacy of controls (financial and otherwise) within an environment they audit, to evaluate and improve the effectiveness of risk management, control, and governance processes.

Auditing is a vital part of accounting in the financial management of RPS. Traditionally, audits were mainly associated with gaining information about financial systems and the financial records of a RPS.

Due to constraints, an audit seeks to provide only reasonable assurance that the statements are free from material error. Hence, statistical sampling is often adopted in audits. In the case of financial audits, a set of financial statements are said to be true and fair when they are free of material misstatements a concept influenced by both quantitative (numerical) and qualitative factors.

An audit must adhere to generally accepted standards established by governing bodies. These standards assure third parties or external users that they can rely upon the auditor's opinion on the fairness of financial statements, or other subjects on which the auditor expresses an opinion. Auditors of RPS’s financial statements can be classified into two categories:

### 8.10.2 Legal Requirements for Auditing

According to the proclamation issued by the respective regional states on the establishment of rural water supply service and WASHCO, the mandate for auditing WASHCO/EWB should be applied.

### 8.10.3 Frequency of Auditing

The statutory audit of Water Administration Office/WASHCO will be carried out annually by authorized Accountant in accordance with appropriate auditing principles consistently applied.

The statutory auditor shall be appointed by the Regional Water Bureau, Zone Water Office or Woreda Water Office in association of Finance Bureaus and Office depending on the accountability of the Executive Water Board/WASHCO from the panel of Chartered Accountants maintained by Accountant General of the State.

### 8.10.4 Reporting of Auditing

The Executive Water Board/ Main WASHCO will review the annual audit reports of the Water Administration Office and issue necessary instructions to the respective WAO/WASHCO. The Executive Water Board/ Main WASHCO will submit its annual audit report, along with review notes on the WAO/Operator annual audit report to the General Assembly, Regional/Zone/Woreda Water Burea/Offices, accordingly.

# Annexes

## Annex A: Reference

A Situational Assessment of Addressing Non-Functionality of Rural Water Supply in Tigray Region, *Demewoz Consultancy*, April, 2014.

A Situation Assessment on Existing Operation and Maintenance Management for Rural Pipe System and Pastoral Areas Water Supply Facilities, COWASH, *Demewoz Consultancy*, May 19, 2014.

Assessment of existing Point Water Sources Operation and Maintenance situations, COWASH, *Demewoz Consultancy*, May, 2013.

Douglas Ng'ambi (November, 1991), .A Manual on Operation and Maintenance of Communal Standpost for Extension Workers and Caretakers, Piped Supplies for Small Communities (PSSC) Project Zambia,

Harold Lockwood and Stef Smits (2011), Supporting Rural Water Supply, Moving towards a Service Delivery Approach, IRC International Water and Sanitation Centre and Agua consult.

Multi-Village Pooling Project in Indonesia, October, 2011,.Handbook for Community-Based Water Supply Organizations,

Ministry of Water Resources, (June 2000) *Ethiopian Water Resources Management Policy*, Addis Ababa

Jan Davis and François Brikké (1995) *Making your water supply work, Operation and Maintenance of small water supply systems, IRC, The Netherlands.*

Documentation of Proven Management Models for Multi Village Water Schemes, *Eyobe Defere & Getachew Abdi,* December, 2010.

Multi-Village Rural Water Supply Scheme, An emerging challenges, WSP, World Bank Document, 2013

# Annex B: Basic Ledger of Water Fee Collection

| No. | Name | Rate of Water Fee (Birr) | Month and Signature | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
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# Annex C: Income & Expense Ledger

| Date | Details | Income | Expense | Balance | | |
|---|---|---|---|---|---|---|
| | | | | Cash | Bank | Total |
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# Annex D: Income & Expense Ledger

| Date | Details | Income | Expense | Balance | | |
|---|---|---|---|---|---|---|
| | | | | Cash | Bank | Total |
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| Total | | | | | | |

# Annex E: Cash Receipt Registration

**XXXX Regional State,**

**XXXX Woreda Water Office**

**Xxx Water Supply Scheme**

**CASH RECEIPT INVOICE**

No._____ Date:_____

Name of payer: _____

Amount in figure: Birr_____

Amount in words: Birr_____

Payment Reason: _____

Prepared by: (Name and signature) _____

Name and signature of cashier: _____

Distribution:

- ✓ Original for payer
- ✓ Copy for cashier/tiller
- ✓ Second copy in the pad for account section

# Annex F: Cash Payment Invoice

**XXXX Regional State,**

**XXXX Woreda Water Office**

**XXX Village WASHCO**

**CASH PAYMENT INVOICE**

**No.0001**

**Date:** _____

- Name of Payee: _____
- Amount in Figure: Birr_____
- Amount in Words: _____
- Payment Reason: _____
- Prepared by: _____
- Received by: _____
- Name & Signature_____
- Name & Signature of payee_____
- Approved / Authorized by_____

  Name & Signature_____

## Annex G: Payroll List

| No. | Name of Employee | No of days on duty | Gross Salary | | Income Tax | | Other Contribution | | Total Deduction | | Net Pay | | Signature |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Birr | C | Birr | C | Birr | C | Birr | C | Birr | C | |
| 1 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

## Annex H: Per-diem Payment Form

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____WASHCO**

**PER-DIEM PAYMENT FORM**

Date: Meskerem.30, 2008

Per-diem Recipient Name: _____

Reasons for redeem payment: _____

Per diem amount per day in figure: _____ birr, in words: _____Birr

No of days allotted: _____

Total amount of per diem in fig. _____Birr, in words _____Birr

Transport cost amount paid: _____Birr, n words _____Birr

Total: _____Birr (_____ Birr) in words

Payer Name and Signature: _____

Received by: _____

Approved and Authorized by: _____

Document Prepared by: _____

# Annex I: Property Receiving Voucher

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____Water Supply Scheme**

No._____

Date: _____

**PROPERTY RECEIVING VOUCHER**

Supplier Name and Signature _____ (to store)

| Ser. No | Description of Property | PR No. | Total No./Quty. | Unit Price (Birr) | Total Price (Birr) | Remark |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | **Total** | | |

# Annex J: Property Registration Form

**XXX REGIONAL STATE**

**YYY Woreda Water Office**

**_____Water Supply Scheme**

**PROPERTY REGISTRATION BOOK**

| Ser. No | Property Description and type | Cost of the property (Birr) | Current statues | | | Remarks |
|---|---|---|---|---|---|---|
| | | | New | Serving | Old | |
| 1 | Chlorine | 1,500.00 | New | | | |
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