
**VOLUME – I TECHNICAL OPERATION AND MAINTENANCE
REQUIRMENTS FOR RURAL PIPED SYSTEM**

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Technical Operation and Maintenance Requirements Manual for Rural Piped System: PART – E: SPAREPARTS SUPPLY AND MANAGEMENT

Draft Manual

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Acronyms

APM	Area Pump Mechanic
COWASH	Community Accelerated WASH
EFY	Ethiopian Fiscal Year
E-M	Electro-Mechanical
HDW	Hand-Dug Well
HP	Hand Pump
ICB	International Competitive Bid
LSPs	Local Service Providers
M&E	Monitoring and Evaluation
MFI	Micro Finance Institute
MoWIE	Ministry of Water, Irrigation and Energy
NCB	National Competitive Bid
NGOs	Non-Governmental Organizations
O&M	Operation and Maintenance
O&MM	Operation and Maintenance Management
RFO/E	Revolving Fund Office/Enterprise
RWB	Regional Water Bureau
RWSS	Rural Water Supply Service
SCM	Supply Chain Management Supply Chain Management
SSM	Spare Part Supply and Management
SP	Spare Part
WASH	Water Supply, Sanitation and Hygiene
WASHCO	Water Supply, Sanitation and Hygiene Committee
WIF	WASH Implementation Framework
WWO	Woreda Water Office
ZWO	Zone Water Office



5. SPARE PARTS SUPPLY AND MANAGEMENT

5.1. Introduction

5.1.1. General

The Spare part Supply and Management (SSM) Manual has been prepared to guide stakeholders such as Regional Water Bureaus, Revolving Fund Offices/Enterprises, Zone and Woreda Offices, Water Boards, Water Administration Offices, Local Service Providers/Associations, Micro Finance Institutes (MFI), and other relevant parties concerned, to introduce revolving Supply Chain of spare parts for goods at the Woreda level to enhance sustainability of rural water supply facilities.

This Spare part Supply and Management Manual (SSMM) serves for Rural Piped System, for pastoral area water supply facilities as well as point sources parts of mechanisms for operationalizing the Operation and Maintenance (O&M) component of the National One WASH Program.

User communities have overall responsibilities for operation and maintenance of their own rural water supply facilities by recruiting operators. For the sustainability of rural water supply facilities, there must be appropriate spare parts that are readily available and reasonably priced. However, lack of supply and distribution of spares and additional costs to obtain them from distance often obstructs user communities to maintain and repair their rural water supply facilities. During the assessment it was pointed out that many schemes failed to be operate as a result of absence or expensive of spare parts. Moreover, the current spare part management was found in distorted way.

Thus, it is needed to establish Revolving Fund Office/Enterprise at region level by issuing proclamation, directive and regulation for the execution of spare part and service provision for rural as well as urban water supply services.

It is very important to introduce and sustain Supply Chain through the provision of subsidies for to procure initial seed stock of spares and open spare parts shop as the focal point for the sales of spares in a Woreda.

These seed stocks of spare parts procured through the revolving fund subsidy will be sold at the market price, and revenue made through the sales of spare parts is revolved repeatedly to replenish the stock and cover the running cost of a spare parts shop to maintain Supply Chain.

After initial subsidy provided by the respective regional water bureaus, Woredas, NGOs and other stakeholders, Supply Chain shall be self sustained by the creation of such revolving system.

SSM Manual helps to understand conceptual and institutional framework for sustainable Supply Chain to be introduced in a Woreda as well as day-to-day operation and management required to sustain it, with clear and step-forward guidance for various stakeholders.

This effort to develop and roll out a SSM is, therefore, timely and commendable because it will contribute to well functioning of the existing water supply facilities. This will certainly contribute to the specific objective of OWNPs of "improving the performance of the

sub-sector in operation and maintenance of RWSS facilities” for sustainable and equitable access to safe water supply.

5.1.2. Purposes of the SSM Manual

The purpose of this spare part supply and management manual is to develop practical tools towards providing the goods and services required for sustainable functioning of existing and future water supply service systems in the Country.

SSM Manual is intended to provide clear and straight forward instructions to involve by various stakeholders who introduce, facilitate, and maintain Supply Chain for spare parts through step-by-step guidance on the following undertakings:

- How the concept and institutional framework of sustainable supply chain for spare parts under Revolving Fund Office is established.
- How the sustainable supply chain is “*realistically*” planned, budgeted, funded, introduced and established.
- How the operation and management of supply chain is “*practically*” carried out.
- How the supply chain is maintained in “*sustainable*” manner.

5.1.3. Intended Users of SSM Manual

SSM Manual is intended to provide clear and straightforward introduction on how to establish and manage supply chain for water supply facilities spare parts from region to down to the Woreda level for the following outstanding stakeholders:

Regional Water Bureau: an entity responsible for the provision of seed money for SPs; and ensure, control, monitor and evaluate its execution,

Revolving Fund Office: an independent entity in planning, procuring, distributing and replenishing of SPs. The distribution shall be through the

Zone/Woreda Water Offices: an entity responsible for the planning of the spare part requirements and ensure the replenishment of SPs.

Private entrepreneurs /associations: a private entity who sale SPs and conduct preventive maintenance service by opening shop at Woreda town.

Micro Financial Institute: an entity provide loan for private entrepreneurs /associations and responsible for transaction bank service for revolving money.

5.1.4. Definition of Supply Chain

In the context of this manual, Supply Chains is understood to mean the entire process that includes planning, budgeting, specifying, tendering, delivery, procurement, production and distribution of spare parts and services for new installation and sustainable running of existing water supply schemes involving all the stages from raw material to final production of goods as well as the associated services.

5.1.5. General Supply Chains Situation

Construction of urban and rural water works and supply of spares has hitherto been done mainly by government agencies or Water Sector Partners (NGOs, UN agencies, multilaterals, etc.) and virtually free. This has resulted in a distorted concept that the consumers expect all expenses to be covered by someone else and that water services are free.

Most of the RPS procured pipes from locally manufacturers, but fitting and valves from private retailers. The procurement is done through local bidding. Electro-mechanical (pump, generator, and accessories) and water meter are procuring into two ways: 1) Bulk supply through regional water bureaus, 2) bulk supply by the utilities and 3) private shops. The quality of the materials procured from private shop is relatively poor. The procurement through regional water bureau and water utilities has taken long process since they are imported.

5.1.6. Supply Chain of Water Supply System Components

The following supply chain components for rural piped system are identified:

5.1.6.1 Pipes and Fittings

The main pipes used in water supply system in Ethiopia are Galvanized Steel (GS), uPVC, DCI (Ductile Cast Iron) and Steel. Currently HDPE is used for water supply system.

Supply of fittings in the local market is short. No local production exists because quantities are relatively low, and therefore expensive.

The bulk of **pipes and fittings** are being imported for water supply projects. Problems with pipe and fittings' such as quality, quantity and delivery periods are numerous. In addition, one can also see poor quality pipes being imported despite that the specifications for pipes are well prepared. The major problem appears that the supply chain is very long. Import of pipes is really not justified, as they are relatively simple to produce and several manufacturers are amply equipped and ready for the purpose. However, there is no Ethiopian Standard for pipes and there is no organization to routinely check pipes and fittings, whether locally produced or imported. Recently, the Ethiopian Standard Agency (ESA) developed guideline for quality control of uPVC pipes, but not for other types.

The main recommendation for pipes and fittings is hence that they should be locally produced, as much as practicable. This shortens the supply chain, with the result pipes are order exactly when needed without any excesses or deficiencies. More importantly, the producer is here and fully accountable to errors in its products. A comprehensive Ethiopian Standard – possibly adoption of appropriate ISO standards – is recommended and must be drawn by QSAE, MoWIE and other stakeholders. QSAE will then make routine inspections on raw material imports and local products as per its mandate. Although QSAE claims to have started the proceedings for adoption of an Ethiopian Standard for pipes, it is felt that it will take much more time than desired by the stakeholders.

In recent time, various government and private factories establish to produce uPVC and HDPE pipes locally. The Amhara Plastic Factory has planned to produce fittings for uPVC and HDPE pipes.

An alternative is a fast track approach wherein an external certifying body employed by Sector Partners would certify local producers, an option already tried by at least one producer and abandoned because of the level of expenses. Once the Ethiopian standard is drawn, it should be enforced by making purchase requisitions / tenders to specifically refer to it. Naturally, selection of pipe sizes and materials will be in keeping with standard practices in the trade. Both approaches would benefit from financial and technical inputs by Sector Partners.

Many Water Supply Services (and, by analogy, many customers) suffer from water meters that are inaccurate, poorly constructed or expensive. For immediate use, the regional bulk purchase of meters appears most feasible. The most plausible recommendation made for the long term on water meters is the local assembly and then manufacture of a selected type of type of meter with good track record in water services in Ethiopia, and there is such a meter. Imports of meters, especially by the Private Sector, should be strictly controlled for quality by the customer/ the QSAE, wherein the supplier is held accountable. Local facilities for maintenance and calibration of the meters are imperative.

5.1.6.2 Electro-mechanical Equipment

EM equipment is here defined as pumps (surface and submersible) and diesel generators. The problems with this equipment are complex, because the machines themselves are complex. Such equipment is generally supplied via open, competitive bidding and subsequent foreign purchase. A large variety of good but mainly bad types of electro mechanicals are observed in the field.

Problem of preparing good specifications is observed. However, the main problem is lack of accountability; dealers are seen to get away after having supplied whatever useless items they import. No action is taken on repeated offenders. The nameplate on the EM equipment is never checked against its actual performance during delivery. The amount of fraud and corruption is unbelievably high. The simple solution is to persecute such fraudulent dealers and their collaborators to the full extent of the law.

In this Study, a few models of submersibles, surface pumps and generators that have good track records in Ethiopia have been identified. Perhaps a more objective testing methodology involving lab and field tests of electro-mechanicals needs to be devised. The methodology shall allow for new products to be added in (or dropped out) every two years or so. Local supply of complete units, spares, and maintenance facilities should be important pre-requisites for the program. Facilities at the Akaki Pump Factory (now closed) can be used to test actual performance of pumping equipment.

Preparation of a Procurement Manual will help source the right type of EM-equipment at reasonable prices and needs to be followed-up on by MoWIE and major Sector Partners. Web posting or printing of a newsletter by an NGO on WASH items currently available at the local market should help facilitate inter-action between Supply and Demand. The option for local assembly and manufacture (respectively for the short and long terms) has a built-in accountability mechanism and should be encouraged.

5.1.6.3 Wind and Solar Pumps

These are recommended for use especially for distant localities where fuel supply is erratic and expensive. When directly compared to diesel, not to mention the additional advantages of a clean source of energy and a more sustainable system that is at least partly produced in the Country. Field tests hence need to be systematically conducted in selected places in the Country with a view to supplement or even replace conventionally powered rural water points.

The exercise shall be undertaken by the R&D unit to be established or a local organization experienced in the management of appropriate technologies – with funding from Sector Partners. With the decrease in the price of solar panels, particular attention has to be given to solar energy because of its availability and system reliability. In fact, the Federal Government is urged to struggle for a “Solar Energy Decade” along with other developing countries. This could introduce the technology faster in much the same way the “Water Decade” did to Handpumps and Sanitation.

5.1.6.4 Water Meter

Water meters are critical fittings/equipment in distribution systems that need special attention. They are the "eyes and ears" of water supply system operators - and a sustainable operator requires good quality meters. It measures the water production as bulk meter, and the customer's consumption.

Of late, the practice of buying meters from the open market in larger towns is becoming progressively common, probably because the rate of use of meters is increasing and the purchasing procedure has not coped up. Further, there is little hard currency shortage. This has led to the availability of cheap, but poor quality meters. Many of these meters usually fail miserably after only a few months of operation, and do not correctly measure the amount even when just installed.

5.1.7. Management of a Sustainable Supply Chain

The management of the revolving system can be broken down into the following action-related components:

- Determining the demand for spare parts using data available in regarding the functionality of water facilities. The information generated will assist in estimating or determining the types of spare parts and quantities to be supplied as seed spare parts or seed money. SPs demand determination should take the consideration of the preventive maintenance requirements,
- Identifying a supply chain that will ensure spare parts are available at all times. Further developing regular communication with supply chain links will ensure the movement of stock does not have negative effects on the overall stocks at the outlets,

Developing stock control mechanisms that include: stock coding, transaction, stocktaking and replenishment, as well as display and advertisement (details are in the stock control manual).

5.2. Organization Set Up

5.2.1. Concept of Supply Chain Management

1) Establishment of Spare Parts Outlets and Shops

For the sustainability of rural water supply facilities, there must be appropriate spare parts that are readily available and reasonably priced. Since the supply and distribution of various spares in rural areas in the country is not currently commercially viable. The Government of Ethiopia through the Regional States (RS) will grant funds to the Revolving Fund Office/Enterprise (RFO/E) (proposed entity to be established) to establish spare part outlets, the Spare Parts Shop facilities, procure initial seed stock of spare parts, facilitate for private retailers/associations by opening SP shops at Woreda towns who run the

shops operation and procure the spare part replenishment. Local service providers/associations are the body which establishes operates and manages the shops.

2) Revolving Fund

Spare parts are sold at prices that ensure the sustainability of supply chain. Quantities of initial seed stock are determined to satisfy the “annual” demand in each Woredas. Thus, the stock will need to be replenished in one year cycle, utilizing the revolving fund created through sales of spare parts. Moreover, all operation costs should also be incurred by the sales. Key for successful management of the revolving fund is timely replenishment and periodical price revision (at least once a year) so as to avoid a disparity between market prices and selling prices at the spare parts shop.

3) Non-Profitability

The Spare parts provision should be on a non-profit basis. The objective is to make rural population have access to safe water, so spare parts to be sold in a shop should be affordable in terms of their prices. Specifically, prices of spare parts should be minimized as long as the revolving fund is safely sustainable. It does not mean that operational costs, price escalation and incentive provision for the retailers should not be considered.

Figure 5-1 indicates the basic concept of revolving spare parts supply chain as flow chart.

5.2.2. Principle of Spare part Supply Chain

The revolving system for spare parts supply is essentially aimed at promoting sustainability in the provision of RWSS services by enabling users to procure spare parts on their own, facilitated by a revolving fund system. From a broader perspective, the following principles will enhance the sustainability of the revolving system of spare parts supply:

- **Availability:** Spare parts should be available at the outlets (at least at Zonal level) and shops opens at Woreda towns at all times. This can be achieved by establishing an effective supply chain to be coordinated by the Regional Water Bureau in collaboration with the Bureau of Finance and Economy, Revolving Fund Office and other relevant stakeholders. The collaboration will enhance the timely movement of the spare parts along the chain links down to the outlets.
- **Accessibility:** The spare parts should be made accessible to the users at all times. Appropriate and conducive spare parts shops (at Woreda town)/warehouses (at Zone level) should be located in areas where customers can easily reach and procure the spare parts. Their existence can be publicized through the media or posters and billboards.

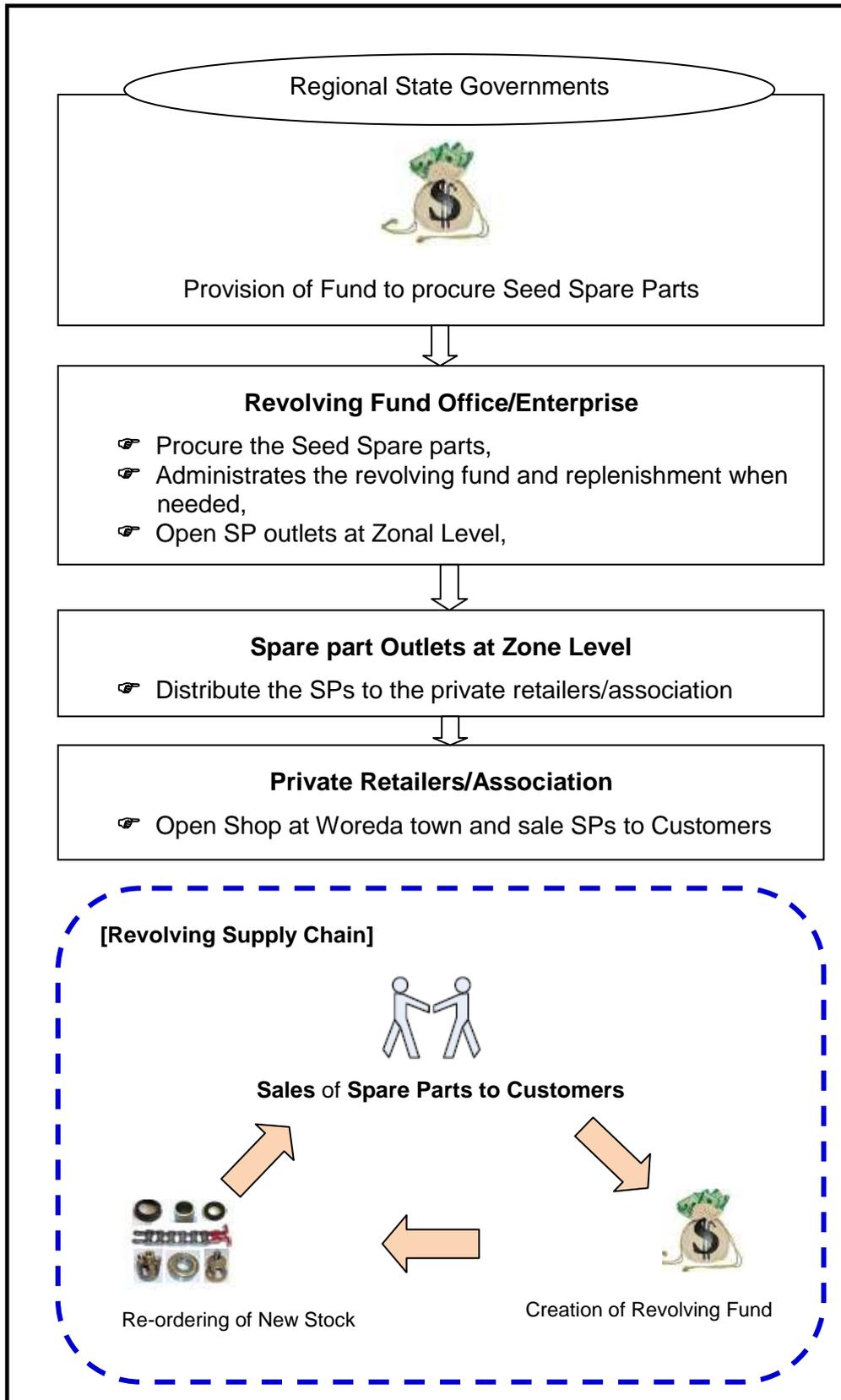
The Revolving Fund Office/ Enterprise should establish spare part outlets at Zone level, from which SPs are distributed to the Woreda town shops opened by the private sector local service providers.

- **Affordability:** While it is a known fact that the ultimate aim of any business is to make profit, the issue of affordability by communities to procure the spare parts should be taken into consideration. This is particularly important considering the high poverty levels among user communities. A balance has therefore to be struck to make the spare parts affordable to the communities. This could be achieved by subsidizing the spare parts by Government in the initial stages of establishing outlets and passing on the full costs to the user communities by gradual reduction in the subsidy.

Alternatively, the Government should consider waving duty in order to make the spare parts more affordable. When the RFO/E/E fixing the price of spare parts, affordability of the community should be taken into considerations.

- **Appropriateness:** The spare parts that are supplied should be those of the standardized technology in this country. In addition, the replenishment of stocks should be dictated by the rate at which particular spare parts are moving. The fast moving parts should frequently be replenished rather than having bulk replenishments that include non-fast moving spare parts. In short, the replenishment should be planned based on data that has been generated and consider preventive maintenance aspects.

Figure 5-1: Basic Concept of Revolving Supply Chain



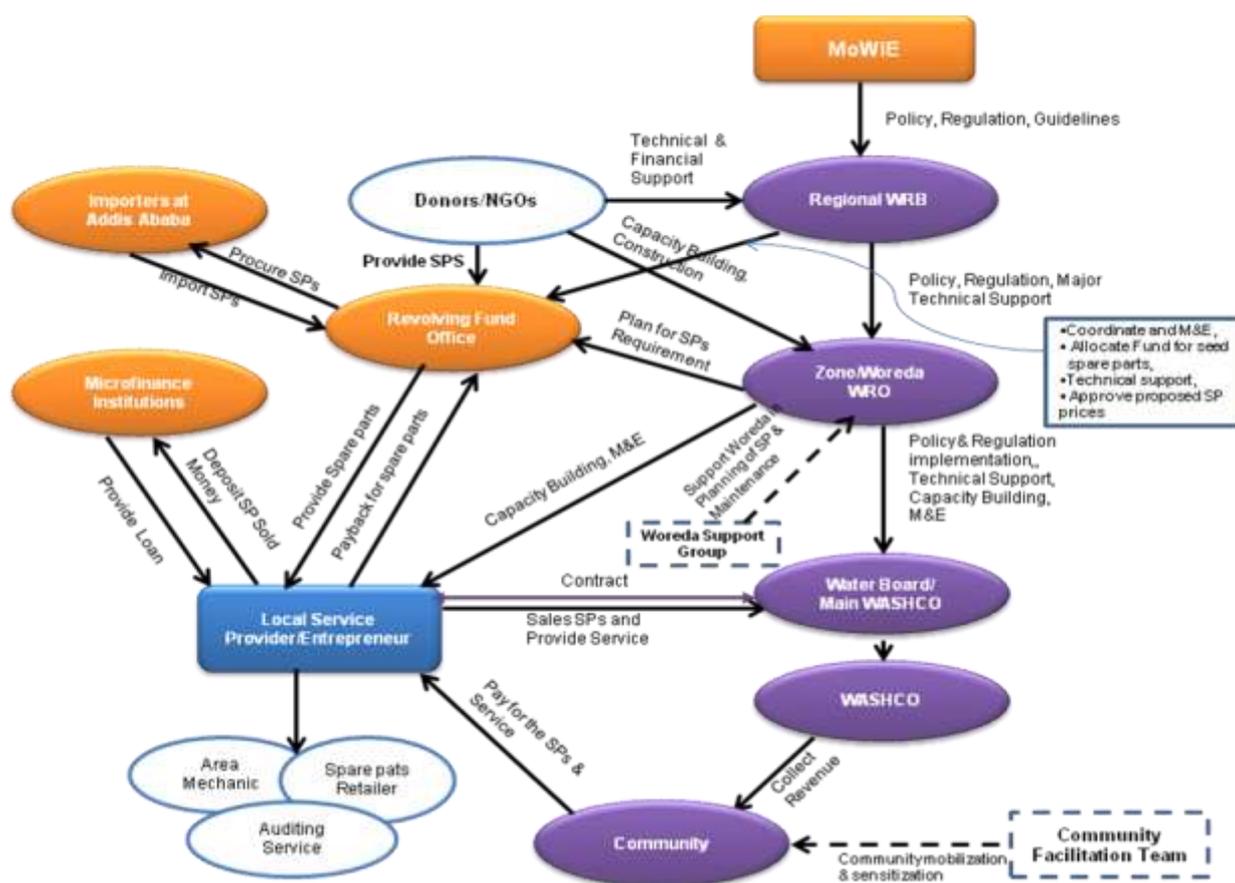
5.2.3. Recognize Actors Involved in Supply Chain

5.2.3.1 Structure for the Management of the Sustainable Supply Chain

There are many stakeholders involved in the supply chain, as indicated in Figure 5-2 below:

Tasks and responsibilities of all the stakeholders shall be discussed. Table 5-1 describes recommended, but not limited to, the tasks and responsibilities of the stakeholders.

Figure 5-2: Sustainable System Management Structure



5.2.3.2 Roles and Responsibilities

The roles and responsibilities of various actors in supply chain is presented in Table

Table 5-1: Roles and Responsibilities of various Actors in Supply Chain

No.	Actors	Roles and Responsibilities
1	Ministry of Water, Irrigation and Energy	<ul style="list-style-type: none"> Sets policies, standards, guidelines and specifications, Appoints a specific Supply Chain Coordinator, who supervises the many various steps of the establishment of the supply chain, Identifies the necessary financial implications of the supply chain and ensures that the arrangements comply to financial regulations,

No.	Actors	Roles and Responsibilities
		<ul style="list-style-type: none"> ▪ Opens a dialogue with the private sector suppliers and the NGO's in order to establish an atmosphere of common understanding and mutual trust, ▪ Offer capacity building for Supply Chain Management.
2	Manufacturers/Suppliers	<ul style="list-style-type: none"> ▪ Various manufacturers exist in the World who produce various brand of electro-mechanical equipment and sale to their customers through suppliers, ▪ Many suppliers exist in the country who supplies electro-mechanical equipment and their SPs through bidding process.
3	Regional Water Bureaus	<ul style="list-style-type: none"> ▪ Establish Revolving Fund Office/Enterprise, ▪ Allocate fund for seed spare parts, ▪ Offer capacity building for RFO/E and LSPs, ▪ Assist RFO/E to establish SP outlets al Zonal level and shops at Woreda towns, ▪ Approve the price of SPs and assist in the procurement, ▪ Establish linkage with RFO/E, Micro Finance Institutes and Local Service Providers/Associations in managing SPs, ▪ Check, order revision and approve a price revision proposal, ▪ Approve SPs replenishment budget, which prepared by RFO/E/E, ▪ M&E Revolving Fund Office/Enterprise, ▪ Arrange Auditing of RFO/E/E.
4	Revolving Fund Office/Enterprise	<ul style="list-style-type: none"> ▪ Managing the supply chain, ▪ Procure and distribute spare parts, and replenishment in annual bases, ▪ Establish spare part outlet at Zone Towns, from which SPs distribute to Woreda Shops, ▪ Assist the LSPs in the establishment of SP's shop at Woreda towns, ▪ Linking the spare part management with local service providers, ▪ Conduct inventory and Plan the SPs demand along with Woredas and LSPs, ▪ M&E of RFO/E staff at Zonal level and LSPs perRFO/Ermance, ▪ Fixing incentives for LSPs and Administration costs and pay for them on monthly bases,
5	Zone and Woreda Water	<ul style="list-style-type: none"> ▪ To facilitate the outlet and shop establishment

No.	Actors	Roles and Responsibilities
	Offices	<p>and monitor the operation of all shops in its Zone and Woreda,</p> <ul style="list-style-type: none"> ▪ Conduct community mobilization and sensitization about SPs shop, ▪ To train the all staff who concerned with shop operation and management in its Zone and Woreda, in particular capacity and financial flow, ▪ Plan the demand of SPs along with other, ▪ To check reports and proposals submitted from all shops in its Zone and Woreda e, and point out mistakes, ▪ To provide advices on the management and operation of all shops, ▪ Strengthen local service providers to fulfil their responsibility, ▪ Inform the revised prices of SPs to WASHCOs/WBs in the target area through the WWOs ▪ Establish linkage between WASHCO's and LSPs, ▪ M&E of LSPs.
6	Donors/NGOs	<ul style="list-style-type: none"> ▪ Offer training on spare part management to LSPs, WASHCOs and WWROs, ▪ Donate spare parts to Revolving Fund Office/Enterprise,
7	WASHCO/WB	<ul style="list-style-type: none"> ▪ To advertise the SP shop ▪ To sensitize and strengthen communities and APMs on self-sustaining O & M, ▪ Plan the demand and buy spare parts base on preventive maintenance concept. ▪ Report the perRFO/Ermanance of LSPs/APMs on maintenance and spare parts used to the WWO. ▪ Pay to APMs for the service offered.
8	Local Service Providers/Spare part retailers/ Area Mechanical (technician)	<ul style="list-style-type: none"> ▪ To sell spare parts ▪ To issue and keep all records of change in stock and sales ▪ To prepare and submit a part of monthly and annual reports to WWO and RFO/E/E ▪ To hold monthly and annual shop meeting with WWO and RFO/E/E,

No.	Actors	Roles and Responsibilities
		<ul style="list-style-type: none"> ▪ Involve in the planning of SPs requirements, ▪ Endorse the daily sell amount in MFI.
9	Micro Finance Institutes	<ul style="list-style-type: none"> ▪ Provide loan for LSPs/Association, ▪ Access banking to the LSPs for revolving fund flow, ▪ Access the Revolving Fund Office for the financial control of the revolving money
10	Community	<ul style="list-style-type: none"> ▪ To use their water supply facilities properly, ▪ To raise funds for operation and maintenance of their water supply facilities, including purchase of spare parts, ▪ To contact with WASHCO/APMs and Water Supply Service Office immediately after their water supply facilities has problems ▪ To buy spare parts necessary for the repair, and ask AMs to repair their water supply facilities

5.2.3.3 Establishment of Revolving Fund Office/Enterprise

Spare parts are sold at prices that ensure the sustainability of supply chain. Quantities of initial seed stock are determined to satisfy the “annual” demands of the water supply services. Thus, the stock will need to be replenished in one year cycle, utilizing the revolving fund created through sales of spare parts. Moreover, all operation costs should also be incurred by the sales. Key for successful management of the revolving fund is timely replenishment and periodical price revision (at least once a year) so as to avoid a disparity between market prices and selling prices at the spare parts shop.

To ensure the sustainable provision of spare parts, establishment of revolving fund office/enterprise is a mandatory like started by the Tigray region. The revolving fund office/enterprise should be established by the respective regional proclamations, and then develop directives and regulation for the execution of the supply chain in provision of spare parts.

The RFO/E/E should be an independent entity, which is accountable for the regional water bureau. Clear duties and responsibilities should be develop for the RFO/E to carry out planning, budgeting, specifying, tendering, delivery, procurement, production and distribution of spare parts and services for new installation and sustainable running of existing water supply schemes involving all the stages from raw material to final production of goods as well as the associated services. The RFO/E is not only provision of spare parts but also offers services like well rehabilitation and maintenance of complex issues.

Roles and Responsibilities:

- Procure spare parts based on the government proclamation procedures and sale of spare parts,
- Giving of services(Crain, rehabilitation rig , welding machine and pumping test service)

- The RFO/E provides spare parts to water supply and irrigation schemes of WASHCO, WUA and water supply services,
- Manpower and Material Administration,
- Administrate the revolving fund,
- Arrange linkage between Micro Finance Institute and local service providers in controlling the cycled revolving money,
- Collect the revolving fund from the microfinance institutes and replenishing the spare parts on annual bases,
- Recruit employee as per the organizational structure,
- Make a contractual agreement with the supplier either local or international,
- ✚ Sources of Finance for Initial Seed Spare parts:
 - Donation from the regional government in cash or in kind
 - Donation obtained from NGO, donors etc
 - Donation from WASHCO and Water Supply Services Offices.

5.2.3.4 Develop Proclamation, Directive and regulation

The establishment of Revolving Fund Office/Enterprise requires legal binding as institutional entity. Thus, like the Tigray Regional States, other regional states need to issue proclamation and descendant legal direction and regulation for the implementation.

The proclamation, directive and regulation should properly address the mandates of RFO/E, LSPs/Retailers, MFI and other stakeholders involved in the revolving supply chain.

5.2.3.5 Establishment of Local Service Providers/Associations

Local Service Providers (LSPs) are associations established as entrepreneurs who do business with water-related services, such as area pump mechanics, plumbers, or traders of water-related technical equipment, auditing service and spare part retailer. In many countries, private businesses fill the gap left by inefficient public water service providers, and play a critical role in supplying water to rural communities. These businesses – often informal microenterprises – charge cost-recovering fees, and the profit margins often lead to much higher prices than formal providers would charge. Communities, thus, benefit from increases in service efficiency, outreach, and the reliability of these service providers. However, improved management and the scaling-up of these services depend on adequate access to financial and business development services.

In general, there are two basic requirements to be eligible to operate/service a water supply system in partnership with the Woreda. They are: the LSPs/Associations must be a legal entity and it must have license to operate a water supply system and sale spare parts.

The following requirements shall be satisfied to involve the LSP in the sector to operate, maintain and managed the community water supply schemes and sales spare parts.

a) Must have a License to Operate and sale spare parts

LSPs must obtain a license to operate and sale spare parts from the WWO/RFO/E. Typically, licensing is an administrative procedure where the competence and capability of an entity to perRFO/Erm a public service is assessed, and the authority to carry out such

public service is delegated within specific terms and conditions. Becoming licensed is a privilege, rather than a right – i.e., government has the authority to refuse to license an entity for just causes and given due process. Part of the license review process may include a public hearing to allow other parties to comment on the decision to grant a license.

These local service providers/Associations can be also perFO/Erm a service as an Area Mechanic/Technician provides technical support and advice for communities on maintenance and repair of rural water supply and irrigation schemes. They inspect the facilities with problems, identify the parts that need to be repaired, and replace or repair them. Costs of spare parts replaced as well as remuneration and incentive to APMs for maintenance and repair of facilities and spare part sales should be borne by communities and revolving fund office.

5.2.4. Establishment of Spare Part Shops at Woreda Towns

For the sustainability of rural water supply facilities, there must be appropriate spare parts that are readily available and reasonably priced. Since the supply and distribution of spares in rural areas in the country is not currently commercially viable, Regional Water Bureaus through RFO/E will grant funds to prepare the Spare Parts outlets, shop facilities, procure initial seed stock of spare parts, advertise the shops, and allow running the shops by local service provider/association. The LSPs are the private sector, which establishes, operates and manages the shops.

The initial seed spare parts procured by the RFO/E will be given to the LSPs who opened spare part retailing shop at Woreda town. These LSPs will sale spare parts with the fixed price to WASHCOs and Water Boards by considering the incentives provided. The profit margin/incentive should be fixed by the RFO/E in consultation with the Regional Water Bureau. The sold amount will be endorsed at the Microfinance Institute, from which the RFO/E collect the revolved money for replenishment of spare parts. The Woreda Water Office monitors and evaluates the LSPs perFO/Ermance and financial system.

5.2.4.1 Hold Stakeholder meeting

After fully understanding the concept of the National One WASH Program (NOWP) and supply chain management (SCM) as well as actors involved in the supply chain for spares, RFO/E calls a stakeholder meeting for the introduction of the supply chain. The stakeholder meeting will be held with the stakeholders specified in Table 5.1 above.

5.2.4.2 Functions of Stakeholder Meeting

1) First meeting

a) Consensus building on the establishment of the spare parts supply chain

RFO/E explains the conceptual framework of the spare parts supply chain described in above to the participants.

It is particularly important to explain that the mechanism of revolving fund for the sustainable supply chain should be established without any inputs other than initial subsidies by respective regions. The subsidies consist of funds for the procurement of initial seed stock, preparation of store facilities, advertisement of the shop and operational costs for the first 1 year.

b) Selection of LSPs to operate and manage the spare parts shop

As it is discussed above, it is recommended that local service providers/association be appointed to operate the spare parts shop.

c) Confirmation of the tasks and responsibilities of the stakeholders

Tasks and responsibilities of all the stakeholders shall be discussed and agreed among all. Table 5-1 above describes recommended, but not limited to, the tasks and responsibilities of the stakeholders.

d) Adoption of a Work Plan for Establishment of the Supply Chain

A work plan for the establishment of supply chain shall be adopted in the meeting. The draft work plan should be prepared by RFO/E based on Standard Work Plan as shown in Annex 1-1).

2) Occasional Meeting**a) Amendment of the agreement made in the stakeholder meeting**

Decision made at a stakeholder meeting can be amended at another stakeholder meeting. Any stakeholder can request Revolving Fund Office to call a meeting to discuss the amendment.

b) Discussion on any issues which are not specified in the SCM manual

Stakeholder meeting can be held to discuss issues not mentioned in this manual. Any stakeholder can request RFO/E to call a meeting discuss such issues.

(3) Annual meeting

Annual stakeholder meeting shall be held to review the shop operation and management for 1 year and discuss how stakeholders can contribute to SCM.

a) Review of Annual Reports

Staffs concerned with the spare parts shop explain the operation and management of the shop for 1 year based on the annual reports. Participants review them, clarify and discuss any issues and challenges, and advise how to overcome and/or solve them.

b) Stakeholders' support

Stakeholders should discuss how they can support SSM in the region, zone and woreda. Specifically, advertisement of a shop, sensitization, and strengthening of communities and APMs can be facilitated by the stakeholders' assistance.

5.3. Daily Shop Operation and Management**5.3.1. Stock Management**

The existing stock of spare parts is a physical asset of the spare parts shop. It must be appropriately managed using the principles below.

5.3.1.1 Always Available Stock

The most important obligation of the spare parts shop is to have all types of spare parts available at the shop at all time. The key action for this is timely replenishment.

Replenishment of an item must be completed before finishing the stock. Therefore, the shop needs to start the process of replenishment when the remaining stock of any item reached to its re-order level.

A re-order level is set at 25% of the initial stock volume. Since the volume of initial stock differs from item to item, the re-order level of each item is also different. Moreover, initial stock volume is renewed whenever new stock is received resulting from replenishment. The details of replenishment are described at Replenishment and Price Revision section.

The re-order level of each item is indicated on bin cards and monthly inventory reports. Storekeeper, who is responsible for filling and preparing both bin cards and monthly inventory reports, has to notice the timing of replenishment.

5.3.1.2 Appropriate Stock Organization

(1) Put your goods in groups

Similar products should be put next to each other. This makes it easier and quicker for Storekeeper and customers to find what they are looking for. For example, put India Mark II spares kits together and Afridev spares elsewhere.

(2) Use containers

It is good to put similar items together, but they must not be mixed. Several kinds of seals, bolts and nuts should be clearly organized separately each other, as these items are relatively small and can easily disappear. Therefore, plastic containers such as buckets should be used to separate and safely organize these items.

(3) Label your products well

Labels make it easier for Storekeeper and customers to see the products they are looking for and to be attracted to them. The name of the product and its serial number are indicated on each label, and the label is put on the edges of shelves, below each product.

(4) Show the prices clearly

A price list, on which the approval by a district council is shown by a seal and signature, should be displayed on the wall or counter of a shop. The price of each part can also be shown on a label of each spare part.

5.3.2. Daily Sales Operation

Daily sales operation of spare parts shall be perFO/Ermed as the following routine activities.

5.3.2.1 Receiving Customers

(1) Guiding customers to shop staff

✚ Responsible staff: All staff of LSPs

When customers visit local service providers, they should be guided to Storekeeper or any other shop staff by any personnel of the district office. All staff should have knowledge of this.

5.3.2.2 Confirmation of Spare Parts

(1) Confirmation of types of spare parts

✚ Responsible staff: Storekeeper and RFO/E officer

Storekeeper first confirms the types and quantities of spare parts which customers need to buy.

To avoid misunderstandings, Spare Parts Catalogue should be used to identify the type of spare parts. It is also advisable that Storekeeper takes customers to the shop to show the actual items. RFO/E officer may help parts identification through clarifying the function and position of the parts.

(2) Confirmation of stock availability

✚ ☐ Responsible staff: Storekeeper

Storekeeper informs customers of the availability of the spare parts requested, meaning that Storekeeper must always know the remaining stock volume. If the stock availability is not clear, Storekeeper must visit the shop and check it.

If the stock of requested spare parts is finished, Storekeeper informs the customers the expected delivery date of the items.

5.3.2.3 Receiving Payment and Issuing Receipt

✚ Responsible staff: Cashier

(1) Confirmation of prices

Storekeeper takes customers to Cashier for paying. Cashier shows customers the price list and total price of spare parts s/he intends to buy, and obtain her/his approval of purchase.

(2) Receiving payment and issuing a receipt

Cashier receives payment from customers and gives an original receipt in return. A duplicate is provided to Storekeeper, and a triplicate is to be left in a receipt book.

(3) Depositing money

Cashier must deposit cash paid by customers in shop's bank account every day. Cash must be kept in a cash box with a lockable system until it is deposited in the bank.

5.3.2.4 Issuing of Spare Parts

✚ Responsible staff: Storekeeper

(1) Issuing the items

Storekeeper takes customers to a shop and gives them spare parts according to the receipt.

(2) Updating bin cards

Storekeeper updates the bin cards while issuing stock. This should not be carried out after the customer has left. Example of an updated bin card is shown below.

Table 5-2: Standard Format of Bin Cards

Name: <u>Water Meter</u>							
Purchase Price (ETB)		Selling Price (ETB)		Initial Stock Volume		Re-order Level	
Date		Date		Date		Date	
09/06/2014	2,000.00	15/09/2014	2,250.00	15/08/2014	250	15/08/2014	50
Date	Description (Receipt No.)	Received		Issued	Balance		
15/08/2014	GRN 00232	250			250		
31/08/2014	Rcpt 00003			1	200		
05/09/2014	Rcpt 00015			2	150		

Serial number of sales receipts

5.3.3. Occasional Expenditure for Daily Operation

Expenditure for the costs of daily operation and management of the shop should be made whenever necessary. The source of funds is the accumulated sales of spare parts, and therefore a proper process must be taken for the withdrawal. Replenishment, which is the major expenditure for shop operation, is explained at Replenishment and Price Revision section.

5.3.3.1 Request Expenditure

✚ ☐ Responsible staff: ZWO/WWO and Treasurer

Once a necessity of expenditure arises, ZWO/WWO asks Treasurer to prepare a letter to request a withdrawal of money from Microfinance shop's bank account, and send it to Revolving Fund Office for approval. The major purposes of expenditure are expected as reprinting of receipt books or bin cards. Any shop staff can raise the necessity of expenses and discuss with ZWO/WWO.

5.3.3.2 Obtain Approval

✚ Responsible staff: Treasurer

RFO/E gives approval to the expenditure and withdrawal of money from Microfinance shop's bank account.

5.3.3.3 Withdrawal of Cash

✚ Responsible staff: Treasurer

Upon approval by RFO/E, Treasurer asks for a signatory from both panel A and B to withdraw money.

5.3.3.4 Ordering and Delivery

✚ Responsible staff: Treasurer

Treasurer orders the supplies to provide necessary goods and checks the goods once they are delivered.

5.3.3.5 Payment

✚ Responsible staff: Treasurer

Treasurer pays a bill to the suppliers and keeps a receipt for it.

5.3.4. Monthly Report and Meeting

The records of inventory, sales and expenditure should be summarized every month as monthly reports, and all the revolving fund office at Zonal outlet and Woreda towns spare parts shop private retailers staff should hold a monthly meeting as described below.

5.3.4.1 Monthly Sales and Expenditure Report

✚ Responsible staff: Cashier and Treasurer

✚ Formant: Annex 3-1 Monthly Sales and Expenditure Report

✚ References: Sales receipt books, expenditure receipt books, and bank statement

✚ Process:

- (1) Cashier records the sales of spare parts for a month on the specified format referring to the sales receipt books, and submit it to Treasurer by the 5th of the following month.
- (2) Treasurer obtains a bank statement at the end of every month.
- (3) Treasurer records expenditures on the format submitted by Cashier referring to the expenditure receipt books and bank balance based on the bank statement
- (4) Treasurer checks up the account balance against bank balance. If the two figures don't match, Cashier and Treasurer check all receipts.
- (5) Treasurer submits the completed format to the Director of Revolving Fund Office

✚ Due: 10th of every month

Table 5-3: Example of Monthly Sales and Expenditure Report

Month and Year: June, 2014

Date	Categories	Description	Sales			Expenditures			Balance
			Quantity	Unit price	Total Amount (Birr)	Quantity	Unit price	Total Amount (Birr)	
Carry over from the last month								80,000	
01/06	Spare Part of Indian Mark-II	Check valve	1,000	1	1,000			81,000	
04/06		GI pipe	800	5	4,000			85,000	
10/06		Bolt & Nut	100	2	200			85,200	
15/06		Bearing	700	1	700			85,900	
22/06		Bolt & Nut	100	2	200			86,100	
29/06		Bearing	700	1	700			86,800	
	Spare part Water Meter								
30/06	Others	Bank Charge				200	2	400	86,400
		Fuel				1000	1	1,000	85,400
		Per-diem				150	5	750	84,650
Total as of end of month								84,650	
Bank balance (filled by Accountant)								84,650	
Total number of customers								6	

Two figures must be

5.3.4.2 Monthly Inventory Report

✚ Responsible staff: Storekeeper and Treasurer

✚ Formant: Annex 3-2 Monthly Inventory Report

✚ References: Bin cards, Annex 3-4 Stocktaking Sheet (Quarterly)

✚ Process:

- (1) Storekeeper records changes in inventory both issuing and receiving on the specified format referring to Bin cards. If quarterly stocktaking is conducted, its result is also reflected on the format.
- (2) Storekeeper checks the necessity of replenishment based on the re-order level and balance of each item.
- (3) Storekeeper submits completed format as a monthly inventory report to Treasurer by the 5th of every month.
- (4) Treasurer checks up the monthly inventory report against the monthly sales and expenditure report of the same month. If the numbers of issued items and sales data don't match or numbers of receiving items and purchasing data don't match,

Storekeeper re-checks sales, purchasing receipts and bin cards.

- (5) Treasurer submits the report to the Director of Revolving Fund Office

✚ Due: 10th of every month

Table 5-4: Examples of Monthly Inventory Report

S.No.	Spare Parts Item	Re-Order Level	Stock		Balance	Adjusted Balance	Necessity of Re-order
			IN	OUT			
For Generator							
1	Oil	10	0	2	22	No stocktaking	-
2	Oil Filter	10	0	2	15	-do-	-
3	Belt	3	0	1	8	-do-	-

These figures must be consistent with the expenditure quantities of spare parts on a monthly sales and expenditure report

These figures must be consistent with the sales quantities on a monthly sales and expenditure report.

5.3.4.3 Monthly SP Outlet Staff Meeting

- + Chairperson: Director of RFO/E/E,
- + Participants: Treasurer, Cashier, Storekeeper, RWB, Zone or Woreda Water Offices and any necessary personnel,
- + Timing: Upon the submission of a monthly inventory report and monthly sales and expenditure report to Director of RFO/E/E from Treasurer
- + Agenda:
 - (1) Inquiries, requests and comments from customers
 - (2) Necessity and progress of replenishment and price revision
 - (3) Any issues to be discussed

5.3.4.4 Monthly Management Report

- + Responsible staff: Director of RFO/E/E,
- + Formant: Annex 3-3 Monthly Management Report
- + References:
 - (1) Annex 3-1 Monthly Sales and Expenditure Report
 - (2) Annex 3-2 Monthly Inventory Report
 - (3) Results of monthly shop staff meeting

✚ Process:

(1) Director of RFO/E/E prepares the monthly management report based on the specified references.

(2) Director of RFO/E/E submits the report, and it will be transferred as follows;

Director of RFO/E → Regional Water Bureau → ☐ MoWIE

✚ Due: 15th of every month

5.3.5. Quarterly Stocking

One of most basic and important information in stock management is the physical number of stock. Balance shown in a bin card does not necessarily tell the true number of remaining stock.

Misplacing of items, misreading the information on sales receipts, and mis-recording of bin cards may occur anytime.

Therefore, stock of spare parts should be physically counted from time to time, and records on bin cards should be revised if necessary as explained below.

5.3.5.1 Process of Stocktaking

✚ Responsible staff: Storekeeper and Treasurer

✚ Formant: Annex 3-4 Stocktaking Sheet

✚ References:

(1) Bin cards

(2) Sales receipt books

(3) Invoice

✚ Process:

(1) Arranges stock well in the shelves

(2) Count the number of all stock by type and fill in the “Quantity (stocktaking)” column on the stocktaking sheet

(3) Fill in the “Quantity (bin card)” column on the stocktaking sheet

(4) Fill in “Quantity (difference)” column on the stocktaking sheet

(5) If some differences exist, (i) Check two sales receipts kept by Cashier and Storekeeper to find out the mis-recording on bin cards, and (ii) Check the invoice of purchased stock to find out the mis-recording on bin cards

(6) Fill in “Remarks (How a bin card is adjusted)” column on the stocktaking sheet based on the results of (5)

(7) Amend the figures on bin cards based on the results of (5), refer the following example

(8) Reflect the result of stocktaking on the immediate monthly inventory report

✚ Frequency: Every 3 months and before preparing a proposal for replenishment

Table 5-5: Example of Stocktaking Sheet

S.No.	SP Items	Quantity			Remarks (How a bin card is adjusted)
		Stocktaking (1)	Bin Card (2)	Difference (1) – (2)	
1. For Indian Mark-II					
1.1	Axle	35	35	0	
1.2	Bearing	44	41	3	Mis-recording of the bin card (refer the sales receipt #00034, date 12/05/2014)
1.3	Bolt and Nuts	150	158	-8	Mis-recording of the bin card (refer the purchasing invoice # 0013975, date 25/11/2013)
1.4	Chain and Coupling	26	29	-3	Reason is not found out. Probably misplacing items.
Bin Card for Bearing					
DATE	DESCRIPTION (Receipt No.)	RECEIVED	ISSUED	BALANCE	
11/09/2014	#00066		1	41	
30/09/2014	Adjustment by Stocktaking (refer the sales receipt #00034, date 12/05/2014)	3		44	
Bin card for Chain and Coupling					
DATE	DESCRIPTION (Receipt No.)	RECEIVED	ISSUED	BALANCE	
17/09/2014	#00067		3	29	
30/09/2014	Adjustment by Stocktaking (Reason is not found out)		5	26	

5.3.6. Annual Audit

Auditing is verification of accounting and stock records whether these statements are true and fair representation of the organization. Also it extends to ensuring adherence to policies and evaluation of internal controls.

Procedure

- Responsible staff: Zone/Woreda Internal Auditor
- Method: The audit of the spare parts shop is conducted as a part of the audit of Zone/Woreda
- Report: An audit report should be submitted to RFO. RFO should give feed back to RWB.
- Frequency: Once a year

5.3.7. Annual Report and Meeting

The records of inventory, sales and expenditure should be summarized every year as annual reports, and all personnel concerned with shop operation and management should hold an annual meeting as described below.

5.3.7.1 Annual Sales and Expenditure Report

✚ Responsible staff: Cashier and Treasurer

✚ Formant: Annex 3-5 Annual Sales and Expenditure Report

✚ References:

- (1) All monthly sales and expenditure reports (Annex 3-1) for the last 1 year
- (2) Bank statement at the end of last year

✚ □ Process:

- (1) Cashier sums up the sales of spare parts for the last 1 year by the type of hand pumps, and fills in the corresponding column of the specified format.
- (2) Cashier submits the partly filled format to Treasurer by June 20 every year.
- (3) Treasurer sums up the expenditure for the last 1 year by category, and find out the balance of payment for the last year.
- (4) Treasurer cumulates the balance of payment since the inauguration of a shop.
- (5) Treasurer checks up the balance of payment since the inauguration of a shop against the bank balance. If the two figures don't match, Cashier and Treasurer check all receipts.
- (6) Treasurer submits the report to RFO-RWB.

✚ Due: June 25 EFY

✚ Example is shown below.

Table 5-6: Annual Sales and Expenditure Report

1. Balance of Payment for This Year From (Month and Year): July, 2013 until (Month and Year): June, 2014 EFY				
Categories	Items	Sales (Birr)	Expenditure (Birr)	Balance (Birr)
Sales	Spare parts for Generator	8,920.00		8,920.00
	Spare part Indian Mark-II	2,850.00		11,770.00
	Spare part Afidev	0		11,770.00
Expenditure	Bank charge		1,200.00	10,570.00
	Fuel		5,450.00	5,120.00
	Accommodation		2,630.00	2,490.00
	Allowance		2,100.00	390.00
	Reordered spare parts		6,500.00	-6110.00
	Others		2,000.00	-8,110.00
Total				-8,110.00

Accumulated sales for the last 1 year

Accumulated expenditure for the last 1 year

*All sales and expenditure data in this table is collected from monthly sales and expenditure reports.

Categories	Amount (Birr)
Carry over from previous year (Refer "carry over from the last month" in the first monthly sale and expenditure report of this year)	900,000.00
Balance of payment for this year (from the above table)	-8,110.00
Total (Balance of payment since the inauguration of a shop)	891,890.00
Bank balance of end of this year	891,890.00

5.3.7.2 Annual Inventory Report

✚ Responsible staff: Storekeeper

✚ Formant: Annex 3-6 Annual Inventory Report

✚ References:

- (1) All monthly inventory reports for the last 1 year
- (2) The monthly inventory report on the last month in the year before last (2 years ago)

✚ □ Process:

- (1) Sum up the number of stock received and issued by item for the last 1 year, and fill in the specified formant.

- (2) Confirm the balance of stock as of beginning of the last year from the balance of stock in the monthly inventory report of June in the year before last
- (3) Submit the report to Treasurer by June 20, and Treasurer checks it.

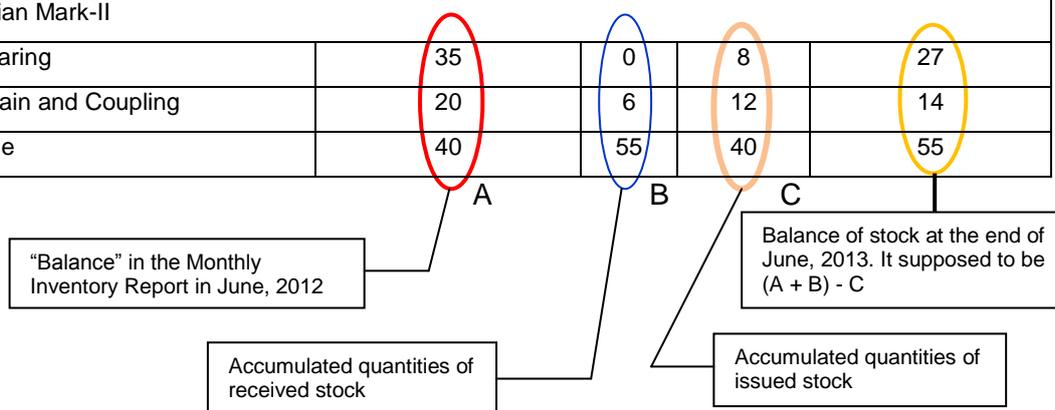
✚ Due: June, 25 EFY

✚ Example is shown below

Table 5-7: Annual Inventory Report

From (Month and Year): July, 2005 EFY until (Month and Year): June, 2006 EFY

S. No.	Spare Parts Item	Balance as of beginning of a year	Accumulated Stock		Balance
			IN	OUT	
1. For Indian Mark-II					
1.1	Bearing	35	0	8	27
1.2	Chain and Coupling	20	6	12	14
1.3	Axle	40	55	40	55



5.3.7.3 Annual Trend Report

✚ ☐ Responsible staff: Treasurer

✚ Formant: Annex 3-7 Annual Trend Report

✚ ☐ References: All monthly sales and expenditure reports and monthly inventory reports for the last 1 year

✚ Process:

Fill in "number of sold items" on the format based on the corresponding figures from monthly inventory reports for the last 1 year.

- (1) Fill in "number of customers", "Sales" and "Expenditure" on the format based on the corresponding figures from monthly sales and expenditure reports for the last 1 year.

* If Treasurer is good at working on MS Excel, it is recommended to develop line graph based on Annual Trend Report. It will show the trend graphically. In addition, annual sales trend by item may be prepared for further detailed analysis, if Treasurer is capable to do it.

- (2) Submit the report to RFO

✚ Due: June 25 EFY

✚ Example is shown on the next page.

S. No	Spare Parts Item	Re-Order Level	Stock		Balance	Adjusted Balance	Necessity of Re-order
			IN	OUT			
For Generator							
1	Oil	10	0	2	22	No stocktaking	-
2	Oil Filter	10	0	2	15	-do-	-
3	Belt	3	0	1	8	-do-	-

Table 5-8: Annual Trend Report

From (Month and Year): July 2013

until (Month and Year): June, 2014

Item	Month	Jul.	Aug.	Sept.	-----	June	Total
No. of soled items		8	9	11	-----	10	95
No. of customers		5	4	6	-----	5	50
Sales (Birr)		4,800.00	5,100.00	6,800.00	-----	7,900.00	526,000.00
Expenditure (Birr)		2,500.00	2,200.00	2,150.00	-----	1,500.00	19,600.00

Date	Categories	Description	Sales			Expenditures			Balance
			Qty	Unit price	Total Amount (Birr)	Quantity	Unit price	Total Amount (Birr)	
Carry over from the last month									80,000
01/06	Spare Part of Indian Mark-II	Check valve	1,000	1	1,000				81,000
04/06		GI pipe	800	5	4,000				85,000
10/06		Bolt & Nut	100	2	200				85,200
15/06		Bearing	700	1	700				85,900
22/06		Bolt & Nut	100	2	200				86,100
29/06		Bearing	700	1	700				86,800
30/06	Others	Bank Charge				200	2	400	86,400
		Fuel				1000	1	1,000	85,400
		Per-diem				150	5	750	84,650
Total as of end of month									84,650
Bank balance (filled by Accountant)									84,650
Total number of customers									6

5.3.7.4 Annual RFO Staff Meeting

- ✚ Chairperson: Director of RFO
- ✚ Participants: Treasurer, Cashier, Storekeeper, RWSS officer and any necessary personnel
- ✚ □ Timing: Upon the submission of an annual inventory report, annual sales and expenditure report and annual trend report from Treasurer

✚ Agenda: All items to be described in Annual Management Report (Annex 3-8) specifically as follows.

- (1) Staff allocation (Change of personnel)
- (2) Inventory (Well sold items, seasonal trend)
- (3) Sales and Expenditure (Major expenditures, seasonal trend)
- (4) Replenishment and Price Revision (achievement and plan of replenishment and price revision)
- (5) Bank Balance and Audit (Result of checking bank balance against sales and expenditure reports, result of Audit)
- (6) Customers (Customers' background, Inquiries, requests and comments received)
- (7) Advertising (Achievement of advertising)
- (8) Challenges and Countermeasures (Existing and potential challenges and countermeasures)
- (9) Others, if any

✚ Due: End of June (EFY)

5.3.7.5 Annual Management Report

✚ Responsible staff: RFO

✚ Formant: Annex 3-8 Annual Management Report

✚ References:

- (1) Annex 3-5 Annual sales and expenditure report
- (2) Annex 3-6 Annual inventory report
- (3) Annex 3-7 Annual trend report
- (4) Annual shop staff meeting

✚ Process:

- (1) RFO prepares the report based on the specified references.
- (2) RFO submits the report, and it will be transferred as follows;
RFO → □RWB

✚ Due: End of June (EFY)

5.3.7.6 Annual Stakeholder Meeting

✚ Chairperson: RWB

✚ Participants: The members of stakeholder meeting, RFO staff and any necessary personnel

✚ Timing: Upon the submission of an annual management report from RFO to RWB

✚ Agenda:

- (1) Progress report on inventory, sales, expenditure and customers by RFO

- (2) Audit report by Zone/Woreda internal auditors
- (3) Advertising report by ZWO/WWO
- (4) Challenges and Countermeasures (by all participants)
- (5) Others, if any

✚ Due: 2nd week of July in the following year

5.3.8. Spare Part Shop Operation Training

RFO/E gives training to the staff of a SP shop and responsible staff of a Zone RFO/E on SP outlet operation before the inauguration of the SP outlet and shop. Training on restocking and price revision will be provided during 1st and refreshment training should be given whenever necessary after opening the SP outlet and shops. The outline of the training is shown in Table 5-9. Apart from the Operation Manual and Materials, various kinds of training manuals and materials are to be used in the training.

Table 5-9: Subject of Spare part Operation Training

Timing	Subjects & Necessary hours	Teaching manual & materials	Participants
As of opening a SP outlet	SP outlet operation <ul style="list-style-type: none"> ▪ process of selling SPs ▪ recording bin cards ▪ writing receipts ▪ preparing monthly inventory and financial reports ▪ conducting monthly meeting (2 days: 10 – 12 hrs.)	<ul style="list-style-type: none"> ▪ Operation Manual, ▪ Operation Materials, ▪ Training Manual Part, 	Staff of a SP outlet and Responsible staff of a ZWMED
During the 1 st year	Refreshment training on SP outlet operation (1 day: 6 – 7 hrs.)	Whatever necessary	Staff of a SP outlet and Responsible staff of a ZWMED
	Restocking and price revision (1 day: 6 – 7 hrs.)	<ul style="list-style-type: none"> ▪ Operation Manual, ▪ Training Manual ▪ Training Materials 	
During the 2 nd year	Refreshment training on SP outlet operation and Restocking and price revision (1 day: 6 – 7 hrs.)	Whatever necessary	Whoever necessary

5.4. Replenishment and Price Revision

5.4.1 Start Replenishment and Price Revision

In order to keep all kinds of spare parts available at a shop, stock must be replenished at appropriate timing. Periodical price revision of spare parts is necessary to raise a sufficient amount of a revolving fund by selling spare parts, because the market prices of spare parts generally transit on an upward trend.

5.4.1.1 Timing of Replenishment and Price Revision

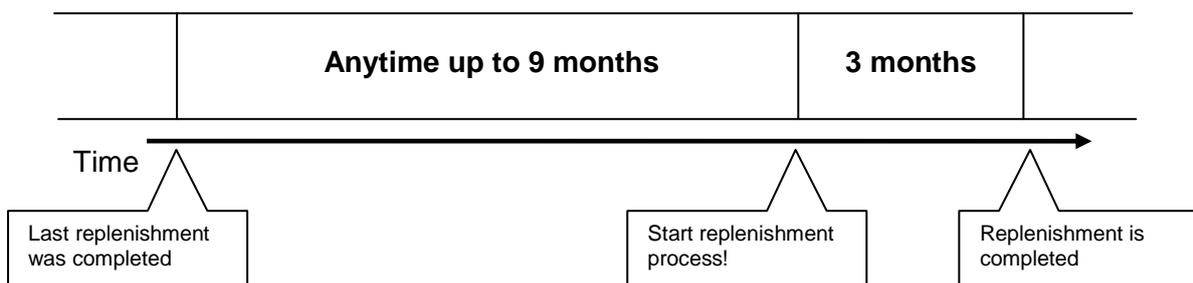
(1) Replenishment

There are two kinds of conditions to start the process of replenishment.

✚ Re-order level (0 - 9 months)

Once a remaining stock of any kinds of spare parts reaches to its re-order level (25% of its initial stock volume), the retailers request the demand for replenishment, and the Revolving Fund Office starts the process of replenishment.

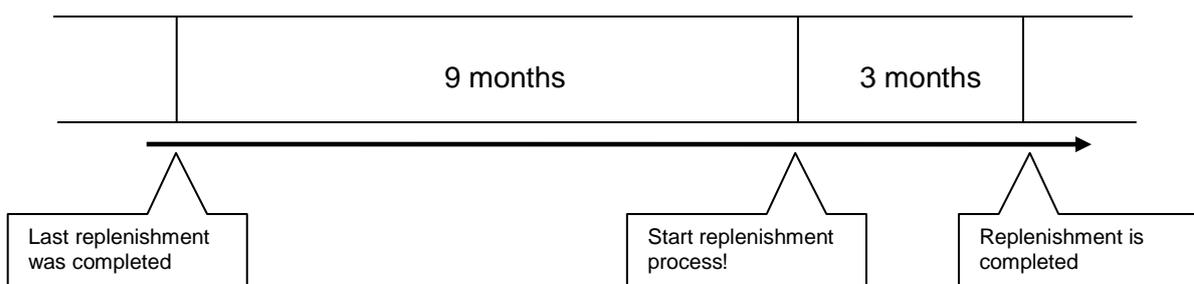
Figure 5-3: Timing of Replenishment by Re-order Level



✚ 9 months has passed

Even if none of stock is decreased to the re-order level, a shop starts the process of replenishment as of 9 months passed since previous replenishment/inauguration of a shop.

Figure 5-4: Timing of Replenishment by 9-month Time Limit



(2) Price Revision

A RFO starts the process of price revision immediately after the proposal of replenishment is approved by RWB.

5.4.1.2 Responsible Personnel for starting the process

Necessity of replenishment of each item should be indicated in the corresponding column on a monthly report (see an example below). The report is prepared by Storekeeper, reviewed by Treasurer and submitted to Director of Revolving Fund Office (RFO/E). All of them should pay attention to the necessity of replenishment. Based on the report and with the consent of Zone and Woreda Water Offices, and water boards, orders concerned staff to start the process of replenishment.

Sample of Monthly Inventory Report

Table 5-10: Example of Monthly Inventory Report

MONTHLEY INVETORY REPORT							
Year and Month: June 30, 2006 EFY							
No.	SP Items	Re-Order Level	Stock		Balance	Adjusted Balance ²	Necessity of re order ³
			IN	OUT			
For Transmission Lines							
1.1	Gate valve	15	0	4	19	No stocktaking	-
1.2	Water meter	5	0	2	7	-do-	-
1.3	Union	30	0	10	40	-do-	✓
1.4	Nipple	60	0	20	55	-do-	✓

Now is the time to start the replenishing process, because the number of remaining Nipple, 55, is fewer than its re-order level. 60.

Note:
 1 Reorder Level = 25% of initial stock volume. Initial stock volume is the volume of seed stock or stock after replenishment.
 2 This column is filled in if balance is adjusted as a result of stocktaking.
 3 Check if replenishment is necessary.

5.4.2 Prepare Replenishment Proposal

5.4.2.1 Stocktaking

- ✚ Responsible staff: Storekeeper and Treasurer
- ✚ Formant: Annex 3-4 Stocktaking Sheet
- ✚ Reference: Existing stock
- ✚ Process:

(1) Storekeeper and Treasurer conduct stocktaking as explained at section 3.4 Quarterly Stocktaking

- ✚ Due: 3 days after the completion of (step 4-1)

5.4.2.2 Calculation of Quantity of Stock to be replenished

- ✚ Responsible staff: Treasurer
- ✚ Formant: Annex 4-2 Calculation of Spare Parts to be replenished
- ✚ Reference: Bin cards, stocktaking sheet (completed at (section 4-2-1)
- ✚ Process:

(1) Find the initial stock volume of each item on its bin card, and fill “(1) Initial volume of stock” on the specified format. If initial stock volume is not written on bin cards, use balance immediately after receiving stock at the previous replenishment as the initial stock volume.

- (2) Fill “(2) Existing volume of stock” on the format based on the completed stocktaking sheet.
 - (3) Fill “(3) Volumes of sales” on the format by subtracting (2) from (1)
 - (4) Fill “(4) Period in years since the last replenishment” on the format. If 8 months has passed since the previous replenishment, the period is $8/12=0.67$ year.
 - (5) Fill “(5) estimated sales volumes for the next 1 year” on the format by dividing (3) by (4)
 - (6) Buffer rate is 1.25.
 - (7) Fill “(7) Ideal stock volumes adjusted by buffer rate” on the format by multiplying (5) by (6). Minimum quantity of (7) is 4. If a number fewer than 4 is worked out, apply 4.
 - (8) Fill “(8) Quantity to be replenished” on the format by subtracting (2) from (7). If negative number is computed, apply 0.
 - (9) Fill “(9) Expected volume of stock after replenished” on the format by adding (2) to (8).
 - (10) Submits the completed format to the RFO. RFO checks it.
- ✚ Due: 5 days after the completion of (step 4-2-1)
 - ✚ Calculation example is shown below

Table 5-11: Example of Calculation of Spare parts to be replenishment

If it is the first restocking, volume of the seed spare parts is the volume of initial stock. It must be updated whenever replenishment is conducted.

For another example, if elapsed months since the previous replenishment is 3 months, it is $3/12 = 0.3$ years

Conditions: 7 months passed since the completion of the previous replenishment

CALCULATION OF SPARE PARTS TO BE REPLENISHED						
No.	Name of Spare part	(1) Initial volume of stock	(2) Existing volume of stock	(3) Volume of sales = (1) - (2)	(4) Period in years since the last replenishment $= \frac{\text{Period in month}}{12}$ <small>* Round out to one decimal place</small>	
1.1	Gate valve	15	10	5	$\frac{7 \text{ months}}{12} = 0.6$	
1.2	Water meter	5	4	1		
1.3	Union	30	10	20		
1.4	Nipple	60	20	40		
		(5) Estimated sales volume for the next 1 year $= \frac{(3)}{(4)}$ <small>* Round out to the whole number</small>	(6) Buffer rate = 1.25	(7) Ideal stock volume adjusted by buffer rate = (5) x (6) <small>*If (5)x(6)<4, (7)=4 **Round out to the whole number</small>	(8) Quantity to be Replenished = (7) - (2) <small>*If (7)-(2) < 0, (8) = 0.</small>	(9) Expected volume of stock after replenished = (2)+(8)
		$5/0.6 = 8.3 \rightarrow 9$	1.25	$9 * 1.25 = 11.25 \rightarrow 12$	$12 - 10 = 2$	$10 + 2 = 12$
		$1/0.6 = 1.7 \rightarrow 2$		$2 * 1.25 = 2.5 \rightarrow 4$	$4 - 4 = 0$	$4 + 0 = 4$
		$20/0.6 = 33.3 \rightarrow 34$		$34 * 1.25 = 42.5 \rightarrow 43$	$43 - 10 = 33$	$10 + 34 = 44$
		$40/0.6 = 66.3 \rightarrow 67$		$67 * 1.25 = 83.7 \rightarrow 84$	$84 - 20 = 64$	$20 + 64 = 84$



5.4.2.3 Procurement for replenishment

Follow the procurement guideline of goods. After preparing the bill of quantity and specification of the spare parts, the RFO/E should get approval from the respective Regional Water Bureau. After obtaining approval the budget from the bureau's, the procurement of the spare parts float for bid either NCB or ICB, depending the potential suppliers of spare parts at national and regional level.

5.4.2.4 Budget Confirmation

✚ Responsible staff: Treasurer

✚ Formant: Annex 4-3 Budget Plan of Replenishment

✚ Reference:

(1) Bid Quotations collected at section 4-2-3

(2) Recent bank statement (bank statement obtained at the end of the previous month can be used. If it was not obtained, bank statement must be obtained at this time).

✚ Process:

(1) Choose one supplier based on prices, terms and conditions specified on the bid quotations collected at section 4-2-3.

(2) Prepare the specified format based on the selected quotation, bank statement, and necessary information collected in LA regarding operational costs.

(3) Confirm that (2) Bank Balance is greater than (1) Estimated Costs of Replenishment on the specified format. If not, reduce the volume of re-ordering spare parts.

(4) Submit the completed format to RFO

✚ Due: 3 days after the completion of section 4-2-3.

Table 5-12: Budget Plan of Replenishment

No.	Description	Amount (Birr)	Remarks
1	Estimated Costs of Replenishment	10,500,000.00	
1.1	Costs of Spare Parts	10,462,000.00	Refer to Attachment 1: Bid price of spare parts
1.2	Delivery costs	38,000.00	
1.2.1	Transportation	Nil	
1.2.2	Fuel	Check 30,000.00	
1.2.3	Accommodation and allowance	5,000.00	
1.2.4	Other	3,000.00	
2	Bank Balance	11,200,000.00	Refer to Attachment 2: Bank statement

5.4.2.5 Finalization, Submission and Approval of the Proposal

- ✚ Responsible staff: Treasurer, RFO and RWB
- ✚ Formant: Annex 4-4 Replenishment Schedule, Annex 4-1 Proposal for Replenishment
- ✚ Reference: bid price at 4-2-4
- ✚ Process:
 - (1) Treasurer and RFO jointly prepare Annex 4-4 (Replenishment Schedule).
 - (2) RFO prepares Annex 4-1 (Proposal for Replenishment).
 - (3) RFO submits the proposal, and it will be transferred as follows; RFO → RWB
 - (4) RFO approves the proposal
- ✚ Due: 3 days after the completion of 4-2-4

5.4.3 Conduct Replenishment

After submitting a proposal for replenishment, the planned replenishment shall be carried out as explained below.

5.4.3.1 Ordering

- ✚ Responsible staff: Treasurer and other relevant RFO's staff
- ✚ Formant: Bid Document
- ✚ Reference: Proposal for Replenishment submitted at section 4-2.
- ✚ Process:
 - (1) Select a supplier according to the Public Procurement regulation of Ethiopian Public Procurement Agency (EPPA)
 - (2) Prepare Bid Document and announced for bid to a selected supplier
 - (3) Receives supplier's bid quotation
 - (4) Evaluate the Bid and award
 - (4) If advance payment is necessary, facilitates the withdrawal of money from the bank account
 - (5) Withdraw the money and pays to the supplier.
- ✚ Due: 10 days after the completion of 4-2-5.

5.4.3.2 Delivering

- ✚ Responsible staff: Treasurer, Electro-mechanical Engineer and Storekeeper
- ✚ Formant: Goods received note and Bin cards
- ✚ Reference:
 - (1) Purchase order issued at step 4-2
 - (2) Spare Parts Catalogue
 - (3) Technical Specification and Information on spare parts.

✚ Process:

- (1) Once the ordered goods become available at the supplier, Treasurer facilitates the withdrawal of money from shop's bank account for the payment of balance, fuel and per-diem. Treasurer keeps the receipts of all the payment.
- (2) RFO-Electro-mechanical Engineer visits the supplier and inspects the ordered spare parts in the supplier's store room before delivery. Use the specified references to identify each item, confirm its specifications and quality.
- (3) RFO-Electro-mechanical Engineer receives an invoice of the good which they have received and pay the bill accordingly. Treasurer keeps the invoice.
- (4) RFO-Electro-mechanical Engineer delivers the goods to the spare parts outlets.
- (5) RFO at the outlet issues goods received note, and Treasurer keeps a copy of it.
- (6) Storekeeper updates bin cards regarding purchasing prices, initial stock, re-order level, and balance as explained at step 2-14-2.

✚ Due: 7 days after the goods become available at the supplier.

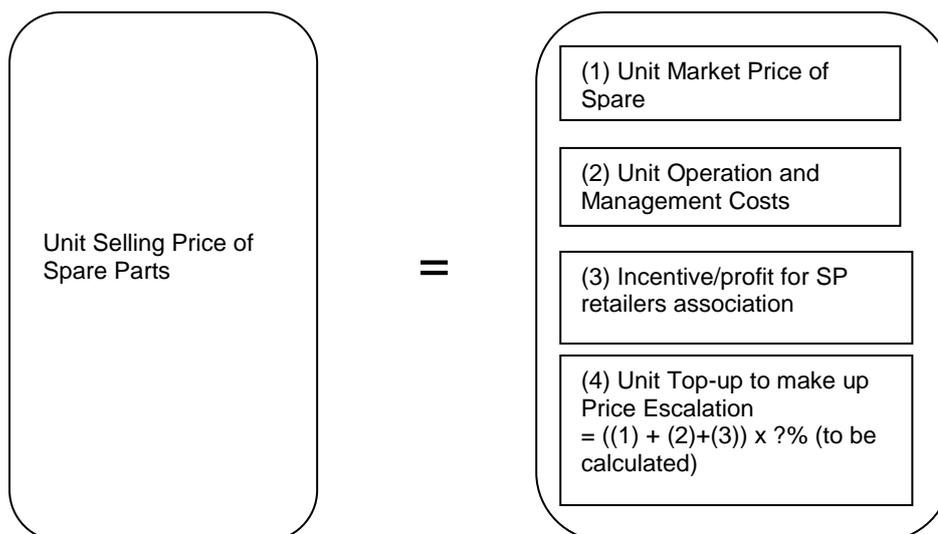
5.4.4 Prepare Price revision Proposal

Immediately after the proposal for replenishment approved by RWB, the process of price revision shall be started. It is important to revise the prices of all items based on the current market prices and costs incurred since the last replenishment.

5.4.4.1 Concept of Pricing

The selling price of each spare part consists of three components, (1) unit market price of spare part, (2) unit operation and management costs, and (3) top-up to make up price escalation per unit as shown below.

Figure 5-5: Basis of Price Revision



(1) Unit purchasing price of spare part

The unit market price of each spare part is indicated in the supplier's quotation. It is important to have quotations of all items regardless of whether it is planned to be

replenished or not, because the prices of all kinds of spare parts are revised at this occasion. VAT must be added to each price even if it is exempted when the seed stock was procured.

(2) Operation and management costs since the last replenishment

Total operation and management costs since the last replenishment are comprised of the following:

✚ Daily Operation and management costs since the last replenishment

These costs include monthly bank charge, costs for consumables such as printing receipt books and bin cards. However, costs for advertising are excluded. The costs can be figured out from monthly sales and expenditure reports since the last replenishment.

✚ Transportation costs of replenishment

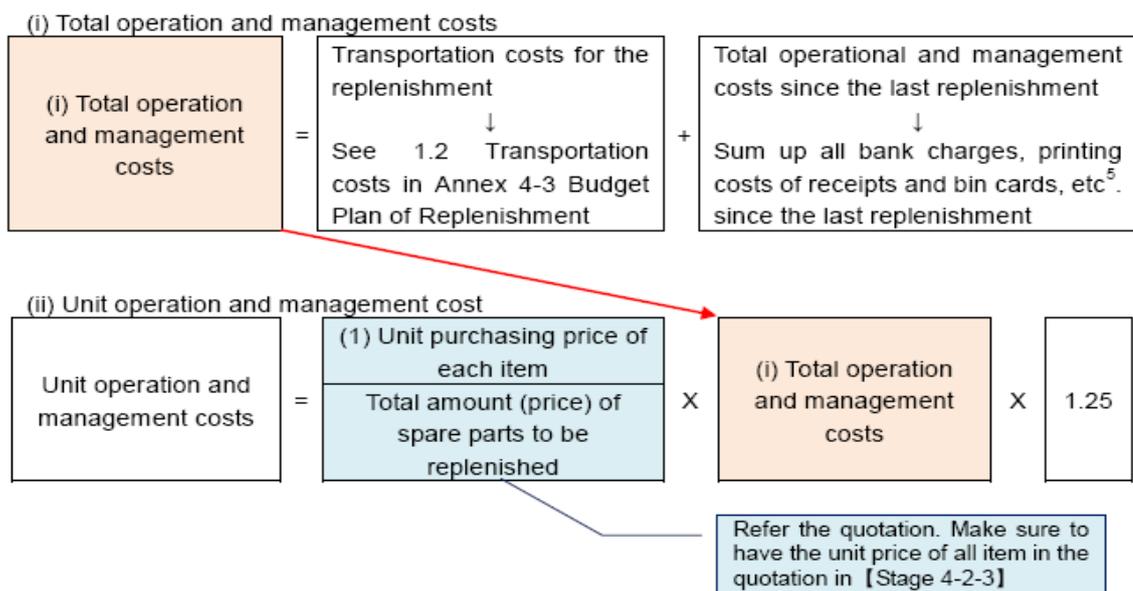
The costs include the delivery costs of re-ordered stock at zone level spare part outlets and woreda shops but also necessary travel costs of a driver and appointed officer to inspect the goods before delivery.

✚ Incentive/Profit for the LSP/Association

Incentive/profit as agreed with the spare part retailers associations at Woreda shop need to be fixed by the RFO/E in consultation with the regional water bureaus. This incentive/profit should be considered in price revision of spare part sale.

Total operation and management costs should be divided into small pieces and passed on the prices of spare parts to be sold. The unit cost of each item should be in proportion to its purchase price. In other words, expensive items need to carry more cost while less expensive item should bear less cost.

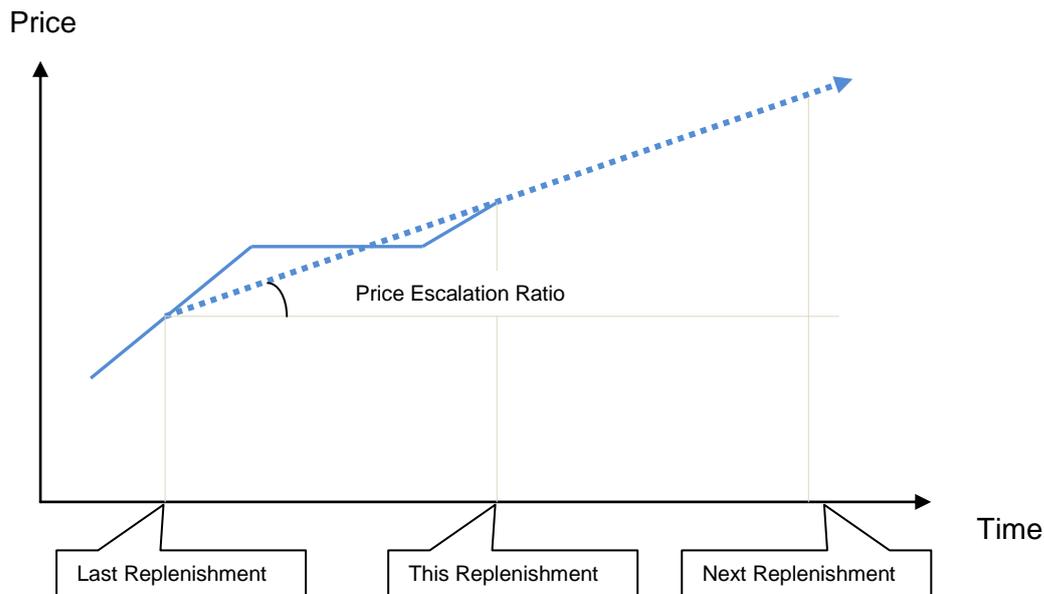
In addition, unit operation and management costs should be adjusted as much as the buffer rate (15 to 25%). The unit costs should be calculated based on the estimated amount (price) of spare parts to be sold for the next 1year. The amount can be obtained from the total amount (price) of seed stock adjusted by the buffer rate.



(3) Unit Top-up to make up Price Escalation

It is important to maintain the sufficient amount of a revolving fund to replenish necessary items and volume of spare parts. As it is expected that the prices of spare parts transit upward trend, the selling prices should be increased to cope with future price escalation. Price escalation ratio between the last and current replenishment can be calculated and should be applied as price escalation ratio until the next replenishment as shown in the following figure.

Figure 5-6: Concept of Price Escalation Ratio



The price escalation ratio of each item must be different, so average ratio should be estimated taking into account the re-ordered volume and price of each item.

(4) Purchasing price calculation coefficient

All figures such as total operation and management costs and total amount (price) of spare parts to be replenished in the pricing calculation are common to every item. These figures can be pre-calculated as a purchasing price calculation coefficient.

✚ Unit selling price is calculated by the following formula.

$$\boxed{\text{Unit selling price}} = \left\{ \boxed{\text{(1) Unit purchasing price}} + \boxed{\text{(2) Operation and Management Costs per Unit}} + \boxed{\text{(3) Incentive/ Profit for retailers}} \right\} \times \boxed{\text{(4) Price escalation ratio =?}}$$

Applying the formula for the calculation of (2) Operation and Management Costs per Unit into the above formula,

$$\text{Unit selling price} = \left(\text{(1) Unit purchasing price} + \frac{\text{(1) Unit purchasing price}}{\text{Total amount (price) of spare parts to be replenished}} \times \text{(i) Total operation and management costs} \times 1.25 \right) \times ?$$

The formula is divided into “(1) Unit purchasing price” and “Selling price calculation coefficient” as follows.

$$\text{Unit selling price} = \text{(1) Unit purchasing price} \times \left[1 + \frac{\text{(iii) The total costs in Annex 2-8 (Costs of Operation and Management)} \times 1.25}{\text{(ii) Total amount (price) of seed stock}} \right] \times ?$$

Selling price calculation coefficient

The method of preparing a price revision proposal and calculation sample is shown below.

5.4.4.2 Calculation of New Prices

✚ Responsible staff: RFO staff: Treasurer and E-M Engineer

✚ Formant: Annex 4-7 Calculation of New Prices

✚ Reference:

- (1) Selected quotation of spare parts for this time
- (2) Annex 4-3 Budget Plan of Replenishment
- (3) All Monthly Sales and Expenditure Reports since the last replenishment
- (4) Annex 4-2 Calculation of Spare Parts to be replenished
- (5) Bin cards

✚ Process:

Treasurer

- (1) Confirm unit purchasing prices of spare parts on reference (1)
- (2) Calculate “1.(2) (i)Total Operation and Management Costs” on the specified format based on reference (2) and (3)
- (3) Calculate “1.(3) Price Escalation Ratio” on the format based on reference (1) and (5)
- (4) Calculate “1.(4) Selling price calculation coefficient” on the format based on reference (1) and “1.(2) (i)Total Operation and Management Costs”
- (5) Calculate “2. New Prices of Spare Parts” on the format based on reference (1) and “1.(4) Purchasing price calculation coefficient”
- (6) Submit the completed formant to Director.

RFO-Director

- (7) Checks the submitted format and revises it, if necessary.

- ✚ Due: 7 days after the proposal for replenishment submitted to RWB
- ✚ Calculation example is shown below

5.4.4.3 Finalization and Submission of the Proposal

- ✚ Responsible staff: RFO Treasurer and RWB
- ✚ Formant:
 - (1) Annex 4-8 Price Revision Schedule
 - (2) Annex 4-6 Price Lists of Spare Parts
 - (3) Annex 4-5 Proposals for Price Revision
- ✚ Reference: Completed Annex 4-7 Calculation of New Prices
- ✚ Process:
 - (1) RFO Treasurer and RWB jointly prepare the specified format (1) and (2)
 - (2) RFO prepares the specified format (3) based on the format (1) and (2)
 - (3) RFO submits the format (3), and it will be transferred as follows; RFO → RWB → Finance and General Purposes Committee.
Meeting → RWB Engineer
 - (4) The proposal is approved at a full Regional Management meeting.
- ✚ Due: (1) - (3) should be completed within 3 days upon the approval of the replenishment proposal by RWB.

5.4.5 Announce of New Prices

The new prices of spare parts should be announced to customers, LSPs/Associations, and other stakeholders as soon as they are approved by the RWB and RFO meeting.

5.4.5.1 Announcement of New Prices

- ✚ □ Responsible staff: LSPs/Associations and Stakeholders (WWO's)
- ✚ Process:
 - (1) RWB submits the new price list to RFO.
 - (2) RFO gives the new price list to all shop staff/LSPs.
 - (3) Shopkeeper updates prices on bin cards and displays the new price list in a shop.
 - (4) Cashier displays the new price list in her/his office.
 - (5) Other shop staffs keep the new price list.
 - (6) The approved price list is disseminated to all stakeholders.
- ✚ Due: (1) - (4) should be completed within 3 days upon the approval of the proposal of price revision, (5) should be completed within 3 weeks upon the approval of the proposal of price revision.

5.4.6 Plan for Seed Stock

The revolving fund office along with the Woreda and rural pipes system service office should plan the seed stock, so that the seed money budget would be hold. The seed stock planning should be focused on preventive maintenance that replacement of various parts based on the manufacturers' instruction and condition of the assets. An inspection inventory of assets should be done at each of the water supply facilities.

5.5. Stock Management

Stock management is the effective planning, control, review and improvement of the movement, handling and storage of material and the associated information.

Stock management includes these elements: stock control, stock records, stock replenishment, stocktaking, stock display, advertising for publicity and availability.

5.6. Financial Management

Financial management in the revolving system for spare parts supply will be important in the sustainability of the system and the overall sustainability of O&M of RWS facilities. Financial management can be broken down into the following:

5.6.1 Community Level

For the point water supply and small rural piped system, all contributions received should be recorded in a cash register. It will be helpful to register the contributions by household names in alphabetical order. Contributions could be monthly, bi-annually or annually. A new register or book may be required for a new year, or alternatively a new page may be opened for a new year. Carried forward and brought forward entries can also be made.

Communities must ensure that they have a bank account to safeguard their funds. As such, each WASHCO should open a bank account. The council should facilitate and give options for the opening of WASHCO bank accounts. For the detail see the Point water supply O&M manual and this manual Volume-II, Part-A.

5.6.2 Rural Piped System

The detailed financial management for large rural piped system is presented in Volume-II, Part-A of this manual. In managing the finances, the Water Administration Office (WAO) should put in place financial management systems that include cash transactions, cheque management, payment and auditing procedures. Spare parts supply for RPS can be from the revolving fund.

5.7. Accountability and Transparency

All money realised through the revolving system of spare parts supply is deemed to be public funds and belongs to the community in which the system is operating. The community therefore has a right to know how the money is being used. Furthermore, the community needs to know how the system of spare parts supply is operating.

Some elements of stock and financial management can help in achieving accountability and transparency in the sustainable supply chain through stock control, store organisation and reporting.

Transparency can be achieved by following the principles of financial management. It requires the application of systems that can be clearly understood and appreciated by the stakeholders. Some aspects of good financial management systems include the following:

- Records and receipts of payments received.
- Price displays for all goods in the shops.
- Statements of accounts for the revolving system of spare parts supply. These should be provided to the stakeholders in order for them to be kept abreast with the financial performance of the system.
- Regular audits should be carried out by either internal or external auditors and reports circulated or presented to management and stakeholders. The stakeholders will have a right to query possible malpractices and receive feedback.
- Signatory panels should be from other institutions.

5.8. Assessing Spare parts Requirements

The base for spare part requirements are the existing water supply facilities and the proposed new schemes implemented; and the manufacturers replacement recommendations, climatic conditions, operation situation, and various factors. Over 100,000 rural water supply schemes exist in the Country, of which about 25% of the water supply schemes are non-functional. One of the reasons for this is the absence of spare parts.

Spare part requirements should consider preventive maintenance aspects. Facilities should not be waiting until they die, thus condition assessment should be carried out to arrive the correct requirement of spare parts. This should be done at the end of the FY as done the assessment of asset conditions.

Table 5-13: Existing and Proposed Rural Piped System in the Country

No.	Type of Schemes	Existing number	New proposed number by year	
			2013/2014	2014/2015
1	Deep Well with Piped System	Over 2,735	1,720	1,771
2	Spring with Piped System	Over 11,000	1,486	1,469
3	Multi Village Piped System		57	48
4	Rural Piped System from surface water with WTP		16	15
5	Rain Water Harvesting		15	20
6	Cistern/Birka		264	170
7	Mini Dam		17	18
8	Hafir Dam/Sand Dam		19	11
Total		Over 13,735	3,594	3,522

Sources: One WASH National Program, Program Document, FDRE, Final August, 2013, and National WASH Inventory, 2011

A total of non-point sources of 20,317 water supply facilities need various types of spare parts. The demand of the SPs for all these schemes need to be annual planned for pumps, generators, pipes, fittings, valves and others.

Each component or equipment item should be listed for each relevant technology and the frequency with which it is required (F) should be recorded. Respective values of F can be estimated by reviewing WASHCO/WB records. The annual demand (D) for each component can then be estimated by calculating the total number of a particular technology in the Woreda (N) by F. The chosen study area should be small enough to be served by a single retail outlet and may be defined by a radius of access.

5.9. Standardisation

The major source of safe water in rural and urban Ethiopia is ground water that is extracted from the aquifer by pumping. Pumping devices vary from hand pumps to surface and submersible pumps, to windmills and solar pumps. The uses of these pumping devices vary according to the service level and prevailing condition of the community or environment.

It is obvious that over 100 kinds of brands of pumps and generators exist in the market. When during the break-down of these pumps and generators, it is hard to get the spare parts in the prevailing market, as a result, the water supply system stopped for long time without maintaining and repairing.

With such a variety of pumps there were difficulties in stocking spare parts and fixing the pump components as different tools and equipment were needed. Worse still, it was not possible to remove one type of pump and replace it with another unless you demolished the foundation and rebuilt it to fit the new pump type.

The issue of standardisation becomes important in conditions of scarce resources as it helps to sustain programme outputs.

Standardisation of E-M equipment on a national level has a vital effect on the sustainability. They offer significant benefits that should not be ignored. These include:

- Clear indication of technical requirements: The decision to standardise E-M equipment requires to clearly defining the technical specifications and performance criteria. This allows the producers to manufacture equipment to a given specification and a predetermined quality standard. For the purchaser of the equipment it offers the opportunity to organise effective quality checking. For the planners and decision-makers, standardisation can guide their selection on explicated documentation.
- When one or two models are chosen there will be a large market that will facilitate spare parts distribution through private entrepreneurs. Minimising fragmentation of market demand, thereby increasing the economic viability of local supply chains and reducing the cost of spare parts.
- Promoting local manufacture and encouraging the private sector to invest in equipment and product specific tooling. Knowing that a certain market volume is available, the investment can be depreciated over a predictable period of time.
- Limiting the variety of spare parts enhances their availability. If fewer parts are required, the turnover of these components is faster; thus, the likelihood that these parts are in stock is greatly enhanced.
- Enhanced quality spare parts: A problem of non-standardisation is that many imitations, virtually all of a substandard quality, appear in the market. Standardisation also allows setting up effective quality checks for spare parts.

- More efficient inventory control: If the private sector has to invest the working capital for purchasing and stocking the spare part, it is essential that the volume of investment can be kept to a minimum.
- Interchange ability of hardware: Selecting public domain pumps effects that the same pump with interchangeable parts can be purchased from various supply sources. The insurance that components purchased from different suppliers will fit in all products makes the inventory of spare parts much easier.
- Standard designs mean uniformity in approach from which effective and longer lasting schemes can be expected. Standardisation of equipment also facilitates the simplification of training and the availability of training materials.

The standardisation-selection policy will need to be published in order to give all stakeholders a manifested indication of the intention to limit the technologies used in Ethiopia. The compliance to this policy has to be mandatory to all water projects, at all levels of the administration, inclusive NGOs, donor financed projects or private sector.

5.10. Linking with Micro Finance Institutes

Microfinance Institutes are a stakeholder in the revolving fund. The local service providers/association will endorse the sell amount of the spare parts in the MFI on daily basis. From MFI, the Revolving Fund Office/Enterprise will withdraw the money for replenishment of spare parts.

There will be also arrangement for loan to the LSPs/Associations to establish shops at Woreda town as well as to buy tools and equipment for operation and maintenance of water supply and irrigation schemes.

Thus, the Regional Water Bureau along with the RFO/E and Woreda Council, will establish the links of the MFI and LSPs by developing regulation and guideline.

5.11. Quality Control and Quality Assurance

The word 'Quality' literally refers to "degree of excellence". The aim of "Quality Control" is to get Electro-Mechanical equipment of acceptable quality as defined in the specifications.

To ensure that only good quality Electro-Mechanical equipment is used, the following steps are of major importance:

- Defining Quality Standards in the Electro-Mechanical equipment Specification,
- Identification of manufacturers and Pre-qualification of manufacturers,
- Assessment of Independent Inspection Agencies,
- Development of a Quality Control Manual,
- Final Assessment of Manufacturer and Registration as "Certified Supplier,"
- Training of QS personnel.

Quality control, like training, is not a "one-off" activity. Quality programmes follow the philosophy to constantly improving the quality, as otherwise the quality standards are slipping slowly back.

5.11.1 Quality Inspection

The tender documents for Electro-mechanical equipment procurement for supply and distribution of Electro-Mechanical equipment and spare parts in Ethiopia should all specify "Pre-delivery Inspection" at the manufacturer's premises. All pumps, generators, pipes, fittings, water meters etc, and spare parts coming from abroad (or manufactured in the country) have to be inspected by an independent inspection agency prior to delivery. The bidder coming from abroad shall state in the bid the name of the proposed inspection agency. The purchaser shall confirm approval of the nominated agency. The cost for inspection has to be included in the quoted price.

This is perhaps the most important part of the quality assurance system. Experience shows that insistence on inspection of E-M equipment by an independent inspection agency compels the manufacturer to take extra care during production. The continued exposure to external inspection also helps the manufacturers in improving the overall quality of their products. Although, pre-delivery inspection at the manufacturer's premises costs extra money, such expenditure is more than justified, keeping in view the advantages it offers.

5.11.2 Consignee end inspection

Thus, only inspected E-M equipment should come into the country. When the E-M equipment or spare parts have reached the suppliers warehouse and are ready for shipment to the sub-regional outlet stores, the Revolving Fund Office/Enterprise along with the Regional Water Bureau needs to make the necessary quality assurance checks before the products are delivered. The main objective of the consignee level inspection is to ensure that only inspected and accepted materials are received by buyers.

The consignee end inspection can be carried out by RFO/E/E and RWB themselves or by an authorized representative. In Ethiopia at present, limited capacity is available to perFO/Erm the necessary quality control checks and inspections. The Quality and Standards Agency of Ethiopia (QSAE) can assist in the quality control.

5.12. Supervision and Monitoring of SP outlet and shop

5.12.1 Supervision

Water Bureau is a responsible to supervise Revolving Fund Office/Enterprise at the regional level, while Zone Water Office at the SP outlets established at Zone level. Basically, there are two levels of supervision.

First, RFO/E is responsible for the SP supply chain throughout the region. RWB directly supervises RFO/E, and also indirectly supervise all SP shops. All the monthly reports and proposals are submitted from the RFO/E to RWB, and then RWB checks the documents and request the revision to the outlets. It is recommendable for RWB to visit RFO/E at region and Zone SP outlets for direct observation and consultation with them at least every six months.

Second, the RFO/E along with the ZWO and WWO has a responsibility to directly supervise SP shops of the local service providers/associations in the respective Woredas.

5.12.2 Monitoring and Evaluation

As a part of the supervision, periodical monitoring and evaluation (M & E) on SP outlets/local service providers/spare part retailers; Zone and Woreda Water Offices and

Regional Water Bureaus should conduct along with the Revolving Fund Office/Enterprise. Basically, there are two levels of M & E as shown in Table 5.7.

First, ZWO/WWO is primarily responsible for M & E on the local service providers/spare part retailers its Zone and Woreda. Second, RWB/RFO/E conducts M & E regularly on concerned Zones and Woreda and occasionally on SP outlets and local service providers/spare part retailers in the entire region. Specifically, RWB monitors and evaluates the performance of RFO/E as the direct supervisor of SP outlet(s) in their region. In addition, the Development Plan preparation, Monitoring and Evaluation Supportive Process of WRBRWB is the suitable section to conduct the evaluation. The outline of the M & E is summarized in Table 9-1. Detailed evaluation items are shown in the evaluation grids for RFO and local service providers/spare part retailers.

Table 5-14: Outline of M&E

Evaluation target	Evaluator	Evaluation frequency	Evaluation criteria	Evaluation items
RFO/E	RWB	4 times per year	Procurement and Management Capacity	<ul style="list-style-type: none"> ▪ Planning and Procurement procedures ▪ Delivering, storing and distribution of SPs, ▪ Restocking of SPs ▪ Trouble shooting ▪ Internal communication ▪ Refreshment training ▪ Replacement of the staff ▪ Checking monthly reporting
			Sustainability Capacity	<ul style="list-style-type: none"> ▪ Continuity of existing SP outlets ▪ Planning of new SP outlets ▪ Budgeting ▪ Implementation
LSP/Shop	RFO/E ZWO/WWO	4 times per year	Operation Capacity	<ul style="list-style-type: none"> ▪ Handling and recording of stock ▪ Handling and recording of sales
			Management Capacity	<ul style="list-style-type: none"> ▪ Open the shop daily ▪ Monthly report submission ▪ Meeting & trouble shooting ▪ Replacement of the staff, ▪ Endorsement of SP sold money to MFI (monthly)
			Sustainability Capacity	<ul style="list-style-type: none"> ▪ Restocking ▪ Price revision ▪ Dependency on others ▪ Willingness to continue

The evaluation results of LSP/SP retailers should be reported to RWB and also informed to each SP outlet, so that the outlet can improve its performance based on the evaluation result. With the same objective, the evaluation results of concerned ZWO's/WWO's should be informed from RWB. Similarly, the result of evaluation on RWB needs to be shared to the MoWIE and the regional state council.

5.12.3 Record Keeping for Supervision

In supervision by RWB and ZWO's/WWO's, there are two points should be kept in mind. One is to maintain contact with the object of supervision by means of reports, proposals, and verbal communication. Another is to keep and sort out the following documents and records created and/or exchanged through the process of establishing and operating each SP outlet.

1. Supervision Record of Spare Parts Outlets
2. MOU
3. Monthly Inventory Report
4. Monthly Financial Report
5. Proposal for Restocking
6. Proposal for Price Revision
7. Monitoring and Evaluation Grid
8. Other necessary records

Above mentioned documents and records should be filed separately in RWBs and ZWO's/WWO's outlet by outlet. Advices, suggestions and directions should be given referring these records and documents. Apart from records and documents No. (2) – (8) which shared with SP outlets, (i) Supervision record of Spare Parts Outlets should be prepared RWBs and ZWO's/WWO's separately for the sake of supervision. On this document, information such as profile of a SP outlet, training history, consultation visit, submission of monthly reports, restocking, price revision, and any issue to be followed up are to be recorded.

5.12.4 The Benefits of Monitoring the Sustainable Supply Chain

The benefits of establishing and monitoring a revolving spare parts system are:

1. A spare parts supply chain can be maintained,
2. Spare parts can be readily available in the Wored shop and communities can purchase them when needed,
3. Water facilities can be maintained, as spare parts can be easily accessed for repair work,
4. Reliable water supply can be maintained.

5.12.5 Monitoring of the Entire O&M Process

The entire O&M monitoring process should revolve around the status of the water supply schemes. The status of the water supply schemes will inform on how much work needs to be done and how much it will cost.

For the entire O&M monitoring system to be effective, the following parameters should be considered:

1. **User contribution:** Users contribute agreed amounts towards O&M.

2. **Availability of spare parts:** Spare parts should be readily available at designated shops/centers.
3. **O&M records:** LSPs/APMs prepare workbooks, caretaker maintenance books, treasurer's record books, WB/WASHCO meeting minutes etc.
4. **Availability of skills:** For all the components, skills are necessary to manage finances and to know the technical problems to effectively carry out O&M activities.

5.12.6 Sustainable Management System of Spare Parts

Water Board/WASHCO should be the holder of the O&M supply budget. Within the Water Boards/WASHCOs, this responsibility could be delegated to the Water Administration Office/Operator. The Water Boards/WASHCOs should employ operators if there is none.

The budget holder is responsible for the following:

1. Setting the budget accurately.
2. Ensuring no expenses are included or made against the vote unless it is properly authorized.
3. Filling in required forms for all expenses for the activities, and noting the budget code and vote number on the requisition forms.
4. Reviewing the activities against the expenses and ensuring that these are comparable.
5. Reviewing the expenses and their code and ensuring that they are correct. If anything is miscoded etc., ensuring that corrections are requested.
6. Ensuring that the accounts section receives budget information so that expenditure reports are prepared.

Annex -1. Organizational Set UP

Annex 1.1. Standard Work Plan

No.	Action	Year Month Week	1 st Year																																																			
			1				2				3				4				5				6				7				8				9				10				11				12							
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
I	Revolving Fund Office Meeting																																																					
1	Organizational Set Up	5.0																																																				
1.1	Issue Proclamation, Directive and Regulation for establishment of Revolving Fund Office/Enterprise	1.0	█	█	█	█																																																
1.2	Establish Revolving Fund Office/Enterprise	2.0		█	█	█	█	█	█	█																																												
1.3	Formulate a Guidance Document for Supply Chain Management (SCM)	1.0			█	█	█	█	█	█																																												
1.4	Understand the Concept of OWASHP and SCM	0.25				█																																																
1.5	Recognize Actors involved in SCM	0.25					█																																															
1.6	Hold Stakeholder Meeting	0.25						█																																														
1.7	Conclude an Official Document on Operation and Management on a Spare part Shop	0.25							█																																													
1.8	Organize Local Service Providers/Private Entrepreneurs	0.50								█	█																																											
1.9	Develop an Organizational Regulation for RFO/E and Spare parts Shop and Job Descriptions for the	0.50									█	█																																										
1.10	Capacity Building for RFO/E and Local Service Providers	0.25										█																																										
1.11	Formulate Agreement between RFO/E and LSPs, and between RFO/E, MFI and LSPs	0.25											█																																									
1.12	Formulate Quality Control/Quality Assurance Procedures	0.25												█																																								
2	Planning	7.0																																																				
2.1	Collect the Demand of Spare parts from Woredas and Water Supply Service Offices	1.0									█	█	█	█																																								
2.2	Estimate the Volume and Costs of Seed Stock	0.5													█	█	█	█																																				
2.3	Establish Outlets in the designated town (Zone level)	2.0													█	█	█	█	█	█	█	█																																
2.4	Plan Warehouse and Store room for Spare parts shop	0.5																					█	█	█	█																												
2.5	Plan advertising tools	0.25																									█	█	█	█																								
2.6	Prepare Budget Proposal	0.5																													█	█	█	█																				
2.7	Prepare Pricing Proposal	0.5																																	█	█	█	█																
2.8	Obtain Approval for Budget and Pricing Proposals by Regional Water Bureaus	0.25																																					█	█	█	█												
2.9	Request Budget for the Establishment of RFO/E, Outlets and Shops to RWB	1.0																																					█	█	█	█												
2.10	Open an independent Bank Account for Spare part shop	0.5																																																				
2.11	Budget Allocation	0.3																																																				
2.12	Preparation of Stores facilities for spare parts outlets and shops	1.5																																																				



No.	Action	Year Moth Week	2 nd Year																																																															
			1				2				3				4				5				6				7				8				9				10				11				12																			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																				
1	Revolving Fund Office Meeting					▼				▼				▼				▼				▼				▼				▼				▼				▼				▼				▼				▼																
3	Tendering, supplying and distributing	5.0																																																																
3.1	Preparation of Tender Documents	1.0	█																																																															
3.2	Advertising for the tender	1.0					█																																																											
3.3	Evaluate the Tender	1.0					█																																																											
3.4	Award the Tender	0.25									█																																																							
3.5	Quality Control/Quality Assurance	4.00									█																																																							
3.6	Supply the spare parts at the selected outlets	4.00									█																																																							
3.7	Prepare Receipts and Bin Cards	0.25									█																																																							
3.8	Receive and Distribute seed stock to each shops	0.50													█																																																			
3.9	Fix Selling Price and sell to the customers	0.50													█																																																			
4	Dairy Shope Operation and Management	7.0																																																																
4.1	Stock Managment	1.0																																																																
4.2	Daily Sales Operation	0.5																																																																
4.3	Occastioanl Expenditures	2.0																																																																
4.4	Monthly Report and Meeting	0.5																																																																
4.5	Quarterly Stocktaking	0.25																																																																
4.6	Annau Audit	0.5																																																																
4.7	Annual Reportings and Meeting	0.5																																																																
5	Replenishment and Price Revision																																																																	
5.1	Start Replenishment and Price Revision																																																																	
5.2	Prepare Replenishment Proposal																																																																	
5.3	Conduct Replenishment																																																																	
5.4	Prepare Price Revision Proposal																																																																	
5.5	Announce New Prices																																																																	

Conduct Replenishment and Price revision whenever necessary



Annex 1.2. : Sample of RFO/E Resolution on Spare Part Shop

Resolution XXXX

Establishment, Operation and Management of Spare Parts Shop by

Local Service Providers/Private Associations: [*Name of the Association*]

The resolution on the establishment, operation and management of spare parts shop (hereinafter referred to as "Resolution") is approved on the *date of month, year* upon the approval in the *Name of Revolving Fund Office*.

It is hereby approved as the Resolution as follows:

1. Background

----- *Woreda* has about (*Numerical Figure*) hand pumps which are to be operated and maintained by WASHCO and related support service providers such as Area Pump Menders (APMs), and (*Numerical Figure*) Rural Piped Systems which are operated by Water Administration Office/Water Board, WASHCO and Operators. Availability of spare parts is crucial for the appropriate operation and maintenance (O&M). Therefore, a sustainable supply system of spare parts is necessary at the *Woreda* level. The Regional Water Bureaus under One WASH program has initiated the establishment of the spare parts supply system by a revolving fund.

2. Undertakings by *Name of Revolving Fund Office*

The Revolving Fund Office shall undertake the followings in accordance with the supply chain management (SCM) manual:

- 1 To obtain necessary funds from the Regional Water Bureaus, NGOs, Bilateral Organizations and *Woreda* for the procurement of the initial stock of spare parts, establishment of outlets at *Zone* towns, preparation of a spare parts shop at *Woreda* towns through the local service providers, advertisement of the shop and operation of the shop.
- 2 To prepare the spare parts shop at *Woreda* town through the involvement of local service providers/associations where water supply spare parts are appropriately organized and safely kept at the location of the shop. The shop can be a newly constructed building or renovated existing facility if any.
- 3 To prepare spare parts procurement proposals for the initial stock and replenishment, get it approved and procure the necessary spare parts.
- 4 To prepare a proposal for setting the prices of spare parts whenever necessary and get it approved.
- 5 To store spare parts and related items in a safe and secure manner in the shop.
- 6 To recruit local service providers/associations to sell spare parts with the fixed prices. Incentives/ marginal profit for the LSPs fixed by the RFO/E in consultation with the regional water bureau
- 7 To sell the spare parts through the local service provider/associations in the shop to communities at approved prices in the Regional Water Bureau.
- 8 To update bin cards, issue sales receipt books and deposit sales by LSPs.
- 9 To prepare and submit a monthly management report, monthly inventory report, and sales and expenditure report, and transfer the reports to the Regional Water Bureau.

- 10 To conduct quarterly stocktaking
- 11 To prepare an annual report and submit it to the Regional Water Bureau.
- 12 To open an independent bank account at Microfinance Institutes to manage sales of the spare parts by LSPs.
- 13 To prepare advertisement tools and advertise the shop to communities through Woreda Council, LSPs/Area mechanics.
- 14 To mobilize user communities so as to raise necessary funds for self-reliant O & M such as procurement of spare parts for replacement, request of repair to LSPs/APMs, etc.
- 15 To conduct audit of the outlets and shops
- 16 To assign appropriate staff to perFO/Erm the above mentioned undertakings.

3. Amendment and Termination

This Resolution may be amended or terminated by an approval in the Regional Water Bureau. IN WITNESS whereof the parties hereto have signed this Resolution to be executed in accordance with the responsibilities stated above.

Signed: _____ <i>Name of Signatory</i> Regional Water Bureau Date: _____	Signed: _____ <i>Name of Signatory</i> Revolving Fund Office Date: _____
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Annex 1.3. : Standard Format of Memorandum of Understanding (MoU)**MEMORANDUM OF UNDERSTANDING**

Between

Revolving Fund Office: *[Name of RFO/E]*

and

Local Service Provider/Association: *[Name of the Association]*

This Memorandum of understanding (hereinafter referred to as “MoU”) is made on *insert date as (dd/mm/yyyy)* BETWEEN *Name of Revolving Fund Office* (hereinafter called RFO/E) of the one part and *Name of Local Service Provider/Association* (hereinafter called LSP) of the other part.

This Memorandum of Understanding is:

Effective (starting): *Effective (dd/mm/yyyy)*

And is valid until: *Expiring (dd/mm/yyyy)*

It is hereby agreed between the parties as follows:

1. Background

----- *Woreda* has about (*Numerical Figure*) hand pumps which are to be operated and maintained by WASHCO and related support service providers such as Area Pump Menders (APMs), and (*Numerical Figure*) Rural Piped Systems which are operated by Water Administration Office/Water Board, WASHCO and Operators. Availability of spare parts is crucial for the appropriate operation and maintenance (O&M). Therefore, a sustainable supply system of spare parts is necessary at the *Woreda* level. The Regional Water Bureaus under One WASH program has initiated the establishment of the spare parts supply system by a revolving fund.

2. Undertakings by *Name of Revolving Fund Office*

The RFO/E shall undertake the followings in accordance with the SCM manual:

- 1 To obtain necessary funds from the Regional Water Bureaus, NGOs, Bilateral Organizations and *Woreda* for the procurement of the initial stock of spare parts, establishment of outlets at Zone towns, preparation of a spare parts shop at *Woreda* towns through the local service providers, advertisement of the shop and operation of the shop.
- 2 To prepare the spare parts shop at *Woreda* town through the involvement of local service providers/associations where water supply spare parts are appropriately organized and safely kept at the location of the shop. The shop can be a newly constructed building or renovated existing facility if any.
- 3 To prepare proposals for procuring spare parts for the initial stock and replenishment, get it approved and procure the necessary spare parts.
- 4 To prepare a proposal for setting the prices of spare parts whenever necessary and get it approved.
- 5 To conduct quarterly stocktaking.

- 6 To finalize a monthly inventory report and monthly sales and expenditure report which are partly prepared by LSP, prepare a monthly management report and submit these reports to a Regional Water Bureau.
- 7 To prepare annual reports and submit the reports to a Regional Water Bureau.
- 8 To open an independent bank account to manage sales of the spare parts.
- 9 To monitor the shop operation by LSPs and provide necessary guidance to LSPs.
- 10 To prepare advertisement tools and advertise the shop to communities through Woreda councilors, APMs, and area development committee (ADC).
- 11 To mobilize user communities so as to raise necessary funds for self reliant O & M such as procurement of spare parts for replacement, request of repair to APMs, etc.
- 12 To conduct audit of the shop.
- 13 To assign appropriate staff to perFO/Erm the above mentioned undertakings.

3. Undertakings by Name of Local Service Provider/Association

Name of Local Service Provider shall undertake the followings in accordance with the SCM manual:

1. To store spare parts and related items in a safe and secure manner in the shop.
2. To sell spare parts in the shop to communities at specified prices by RFO/E.
3. To update bin cards, issue sales receipts and deposit sales.
4. To prepare a part of monthly inventory report and monthly sales and expenditure report and submit the reports to LSP.
5. To assign appropriate staff to perFO/Erm the above mentioned undertakings.

4. Amendment and Termination

This agreement may be amended or terminated by mutual consent of both parties to the agreement hereto. The mutual consent must be documented and signed by the same parties as signed hereto.

IN WITNESS whereof the parties hereto have signed this MoU to be executed in accordance with the responsibilities stated above.

Signed: _____ <p style="text-align: center;"><i>Name of Signatory</i></p> <p>Manager of Revolving Fund Office</p> Date of Sign _____ Signed: _____	Signed: _____ <p style="text-align: center;"><i>Name of Signatory</i></p> <p>Representative of Local Service Provider/Association</p> Date of Sign _____ Signed: _____
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Annex 1.4. : Task and Responsibilities of Staff Concerned in Spare Part outlet and Shop

Tasks and Responsibilities of Staff of Revolving Fund Office/Enterprise

Tasks and Responsibilities of the RFO/E personnel who is concerned with the operation and management of the spare parts are specified below.

1. REVOLVING FUND OFFICE DIRECTOR

Revolving Fund Office Director (RFO/ED) takes full responsibility of the spare parts operation and management. Specifically, s/he has to perform the following functions;

- a. To submit a budget proposal to the Regional Water Bureau (RWB) to establish spare parts outlets, shops and obtain funds,
- b. To facilitate the process of establishing a spare parts outlets and shop including procurement of seed stock, preparation of a store facility, advertisement, etc.
- c. To facilitate the approval of pricing proposal for seed stock at a full RFO/E meeting,
- d. In case the spare parts shop is to be operated by RFO/E with the retailer of LSP, to sign a MoU on shop operation between RFO/E and LSP,
- e. In case the spare parts shop is to be operated solely by RFO/E, to facilitate the approval of a resolution of the spare parts shop in a full RFO/E meeting,
- f. To facilitate all RFO/E staff to prepare the monthly reports and submit them to a RWB,
- g. To facilitate the approval of a price revision proposal at a full RFO/E meeting,
- h. To approve a replenishment proposal
- i. To call an annual stakeholder meeting to report the progress and issue of the RFO/E in the 1st month of every fiscal year.
- j. To facilitate Treasurer, Cashier, and Storekeeper to prepare, review and submit, a monthly inventory report, a monthly sales and expenditure report by the specified dates of every month
- k. To prepare a monthly management report based on the two monthly reports and supplemental information from other RFO/E staff,
- l. To submit the monthly management report to RWB every month,
- m. To order Treasurer to prepare proposals for replenishment and price revision,
- n. To check the proposals and send them to a RWB for reviewing, if necessary,
- o. To submit a proposal for replenishment to RWB, obtain approval, and conduct replenishment with other RFO/E staff,
- p. To submit a proposal for price revision to RWB, obtain approval at a full RWB meeting, and request RFO/E's staff and Woreda Council members to disseminate the new price list to communities and APMS through WWOs,

- q. To call an annual LSPs meeting,
- r. To prepare an annual management report based on the three annual reports and supplemental information from other shop staff
- s. To monitor and supervise RFO/E staff and LSPs whether they perform in accordance with their tasks and responsibilities specified here and the SCM manual
- t. To detect and solve the any problems of the RFO/E in collaboration with RFO/E staff and staff of LSPs,
- u. To carry out any other functions, as may be delegated to him/her by RWB from time to time.

2. TREASURER

Treasurer monitors the assets of the RFO/E including cash and inventory through checking consistency between cash, sales records and inventory. Moreover s/he prepares the proposals for replenishment and price revision together with Woreda Council. Specifically s/he has to perform the following functions:

- a) To prepare a budget plan to establish a spare parts shop,
- b) To facilitate the process to open a bank account for a shop,
- c) To obtain a bank statement at end of every month,
- d) To check up the bank balance against the corresponding figure in a monthly sales and expenditure report,
- e) To facilitate Cashier and Storekeeper to submit a monthly inventory report and a monthly sales and expenditure report by 5th of every month, review the two reports, and submit them to Director by 10th of every month,
- f) To conduct quarterly stocktaking with Storekeeper,
- g) To prepare the proposals for replenishment and price revision with RWB's consent, and submit to RWB,
- h) To withdraw money from a bank account for a RFO/E with the approval by RWB,
- i) To procure spare parts and other necessary goods with the approval by RWB,
- j) To facilitate Cashier and Storekeeper to submit an annual inventory report and an annual sales and expenditure report by *Sene 20* every year, review the two reports, prepare annual trend report, and submit three annual reports to RWB by *Sene 25* every year,
- k) To attend a monthly and annual RFO/E staff meeting,
- l) Ensure that the spare parts RFO/E complies with the required obligations and provisions of Ethiopia Revenue and Custom Authority, (i.e. Tax obligations, exemptions and holidays for the spare parts RFO/E and its clients),
- m) To carry out any other functions, as may be delegated to him/her by with the approval by Director from time to time.

3. Electro-mechanical Engineer

The Electro-mechanical Engineer has to perform the following function, but not limited:

- a) Identify spare part requirements,
- b) The E-M Engineer prepare specification for spare parts to be supplied,
- c) Prepare Bill of Quantities for Spare parts and Cost Estimates,
- d) Prepare tender Documents,
- e) Evaluate the Bids,
- f) Inspection and quality control,
- g) Facilitate outlets and spare part distribution,
- h) Fixing the sell price of spare parts along with other RFO/E staff and RWB,
- i) Offer capacity building for LSPs and other staff,
- j) To carry out any other functions, as may be delegated to him/her by with the approval by Director from time to time.

4. Procurement Specialist

The procurement specialist has to perform the following function, but not limited:

- a) Prepare procurement planning,
- b) Ensure the allocation of budget,
- c) Identify suppliers,
- d) Prepare bidding document
- e) Prepare Request for Proposal/Quotation,
- f) Announce the bid for spare part supply,
- g) Evaluate the bid along with other professionals,
- h) Select the supplier and award as per the evaluation output,
- i) Prepare contract agreement,
- j) Facilitate signing of contract,
- k) Schedule disbursement,
- l) Facilitate LC opening,
- m) Approve the payment for the supplied items.

5. RWSS OFFICER

RWB officer technically supports both the RFO/E staff and LSPs in identifying spare parts, inspecting the quality of them, etc. Moreover, s/he facilitates the overall process of RFO/E operation in collaboration with Woreda Council. Specifically, s/he has to perform the following functions:

- a. To inspect the quality of all incoming stock in collaboration with Storekeeper,

- b. To assist identifying necessary spare parts for customers if they are not sure of it,
- c. To check the overall process of RFO/E operation,
- d. To assist and advise other staff to facilitate the overall process of RFO/E operation;

Approved by:

Date:

6. CASHIER

Cashier appropriately handles cash and maintains accurate record of sales and expenditure.

Specifically s/he has perform the following functions:

- e. To receive cash payment from customers and write receipts in return,
- f. To keep the copies of receipts given to customers,
- g. To deposit cash to a bank account opened for exclusively use of the shop,
- h. To keep records of cheques issued and received,
- i. To keep receipts of all expenditure,
- j. To keep records of withdrawal,
- k. To prepare and submit a monthly sale and expenditure report to Treasurer by the 5th of every month,
- l. To prepare an annual sale and expenditure report by Sene 20 every year,
- m. To attend a monthly and annual LSPs staff meeting,
- n. To carry out any other functions, as may be delegated to him/her by RFO/E from time to time.

7. STOREKEEPER

Storekeeper mainly receives customers to the shop, sells spare parts, manages the stock appropriately. Specifically s/he has to perform the following functions:

- a. To maintain the stock and store facilities well organized and keep the stock safely,
- b. To inspect the quality of all incoming stock with assistance of RWB officer and physically count its number
- c. To issue the stock to customers,
- d. To update bin cards whenever stock is received or issued,
- e. To prepare and submit a monthly inventory report to Treasurer by the 5th of every month
- f. To conduct quarterly stocktaking with Treasurer,
- g. To prepare and submit an annual inventory report to Treasurer by Sene 20 every year,
- h. To attend a monthly and annual RFO/E staff meeting,
- i. To carry out any other functions, as may be delegated to him/her by Treasurer and/or
- j. RFO/E from time to time,

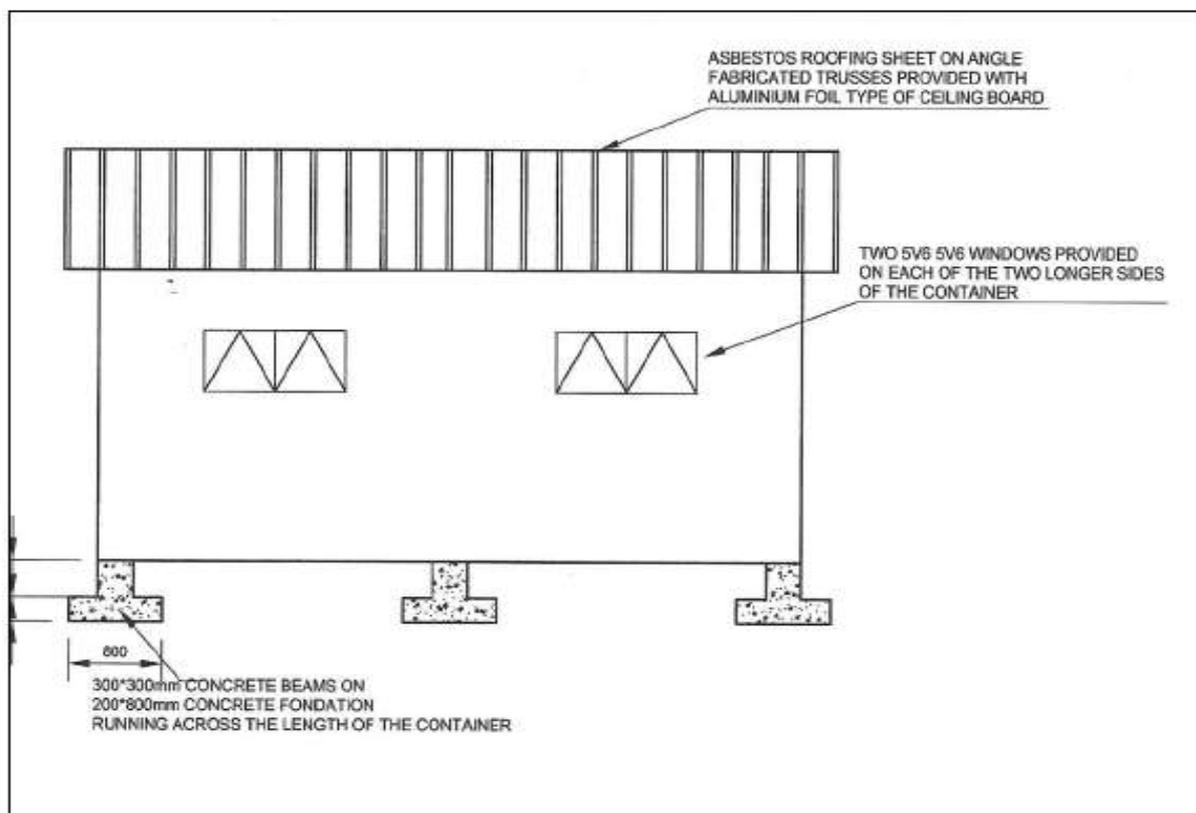
Annex -2. : Preparation of Spare Part Shop

Annex 2.1. : Design of Spare parts Shop by Refurbishing a Container

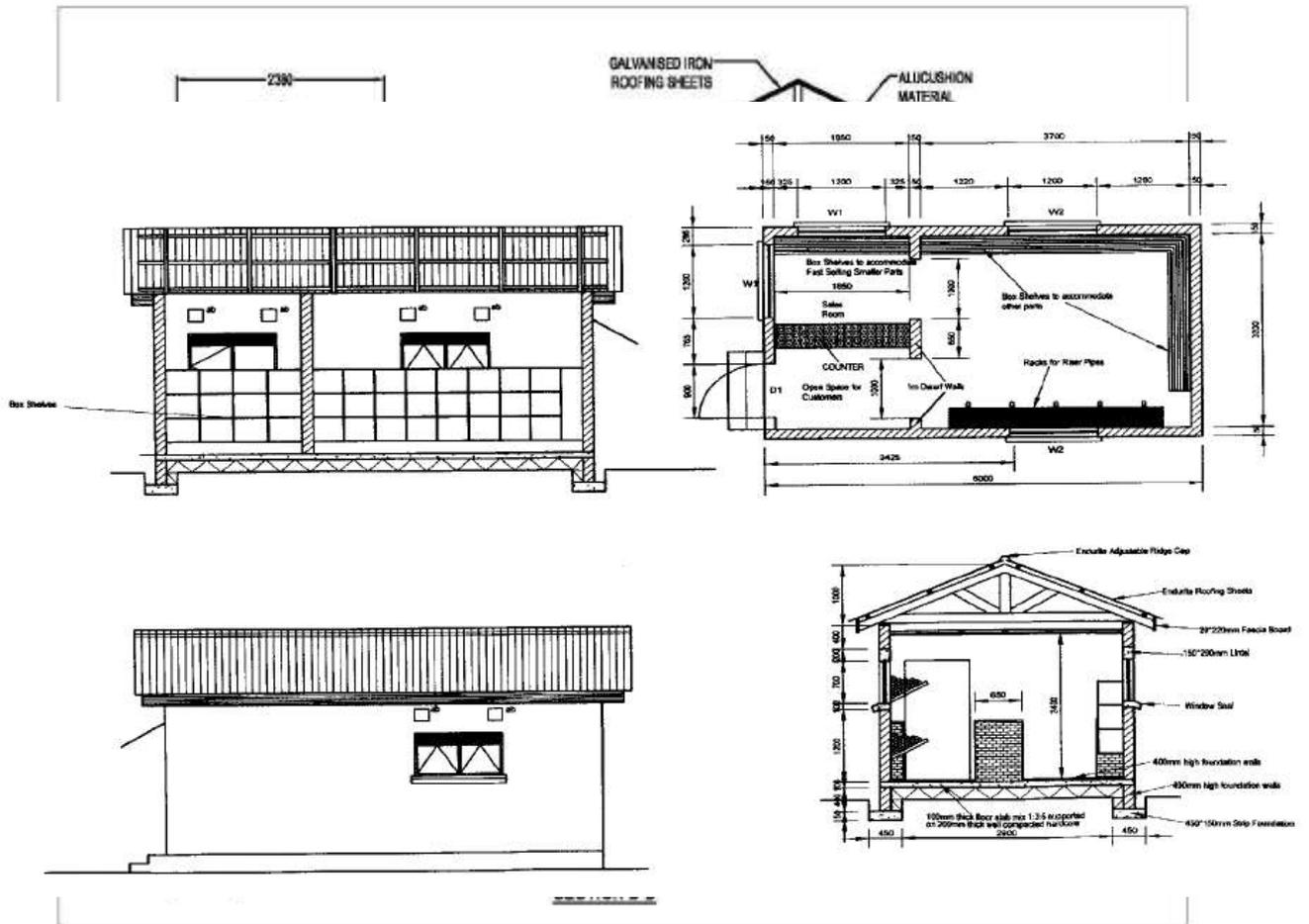
Refurbishment Process of a Container

- ☞ Secure a piece of land as large as 5 x 10 m area as minimum
- ☞ Purchase a six meter store facility,
- ☞ Setup a counter at entrance for serving customers
- ☞ Put up display boards with samples of the spares that are stocked in the store facility.
- ☞ Set up an aisle. On one side wooden shelves should be installed for the smaller items and on the other side install steel racks for riser pipes and rods,
- ☞ Construct roof with iron sheets with *allocation* beneath the iron sheets, on top of metal container to reduce day time temperatures in the container. The roof to have over hangs over the container.
- ☞ Construct concrete pillars on which the container will be bolted.
- ☞ Drill openings and install small windows with burglar bars on three sides of the metal container, to allow for good air circulation.
- ☞ Install fluorescent tubes for lighting along the aisle with electric switch.

Proposed Construction Design for Spare Parts Shop

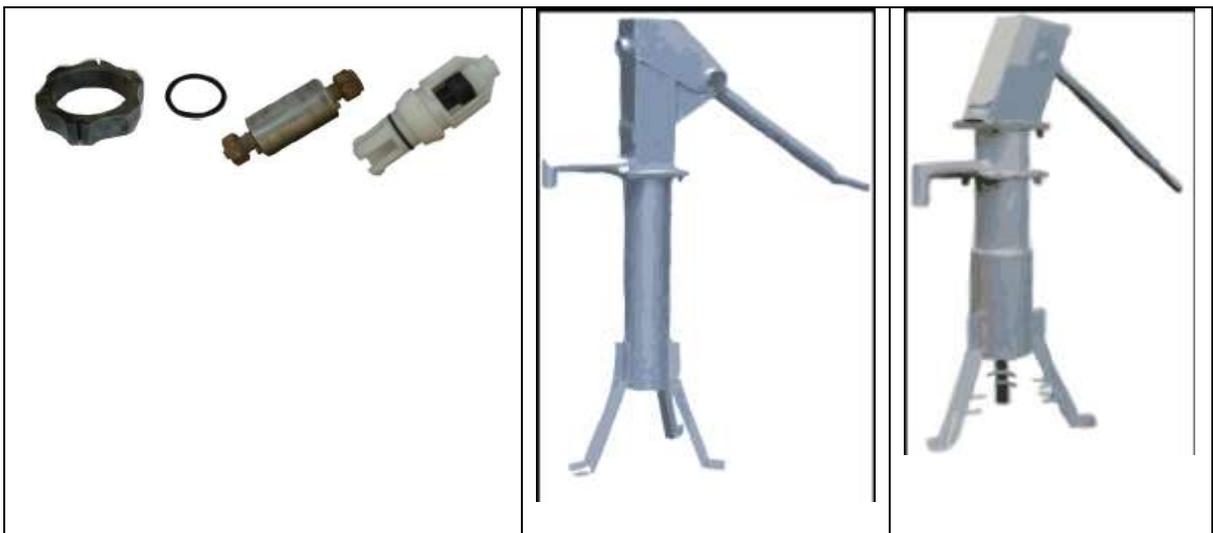


Technical Operation and Maintenance Requirements Manual for Rural Piped System



Annex 2.2. Sample Design of Billboard and Brochure

(Brochure)



List of SPARE PARTS Just What You Need!



India Mark II			
I-1	Handle Axle	I-26	Plunger Rod Assembly
I-2	Ball Bearing	I-27	Plunger Yoke Body
I-3	Bearing Spacer	I-28	Head Assembly (Pump Head Box)
I-4	Hex. Bolt (M12 x1.75 x 40)	I-29	Pump Rod (Connecting Rod)
I-5	Chain Bolt (H.T. Bolt M10 x40)	I-30	Third Plate Assembly (Rod Guide Plate)
I-6	Chain with Coupling (Chain Assembly)	I-31	Rod Socket (Hex. Coupling: M12X50)
I-7	Upper Valve (Upper Valve Guide)	I-32	Rubber Cup (Pump Bucket)
I-8	Rubber Seating (Check Valve Seal) (Rubber Seal Small)	I-33	Washer (for M12)
I-9	Cylinder Assembly	I-34	Water Tank Assembly
I-10	Cylinder Body and Reducer Caps	Afridev	
I-11	Sealing Ring (Cylinder Seal)	A-1	Bobbin
I-12	Cylinder Valve Seat	A-2	Bush Bearing
I-13	Check Valve (Check Valve Guide)	A-3	Cement Solvent
I-14	Check Valve Assembly (Foot Valve Assembly)	A-4	Socket (Coupling for PVC Pipe)
I-15	Rubber Seating (Foot Valve Seal) (Rubber Seal Large)	A-5	Cylinder Assembly
I-16	Front Cover	A-6	Foot Valve Body Assembly (plastic)
I-17	G.I. Riser Pipe (3m)	A-7	Fulcrum Pin Assembly
I-18	G.M. Spacer	A-8	O-Ring
I-19	Grease (200g)	A-9	Pipe Centralizer
I-20	Handle Assembly	A-10	Plunger Assembly (Plastic)
I-21	Inspection Cover Bolt (Hex. Bolt M12x20)	A-11	Pump Rod Assembly (Hook & Eye)
I-22	Nut (M12 x 1.75)	A-12	PVC Riser Pipe
I-23	Hex. Lock Nut (Nyloc Nut (M10))	A-13	Rod Centralizer
I-24	Stand Assembly (Pedestal (Three Legs))	A-14	Solvent Cleaner
I-25	Pipe Socket (G.I. Coupling)	A-15	U-Seal for Plastic Plunger



PLEASE CONTRACT ----- WOREDA FOR THE PRICES

Annex 2.3. Cost of Operation and Management

No.	Items	Quantity	Unit Price (ETB)	Amount (ETB)	Remarks
1	Delivery of seed stock				
1.1	Hiring Vehicle				
1.2	Fuel				
1.3	Accommodation of driver and assigned staff				
1.4	Allowance of driver and assigned staff				
1.5	Others				
	Sub Total				
2	Expected operation and management costs for 1 year				
2.1	Printing receipt books				Quotation
2.2	Printing bin cards				Quotation
2.3	Photocopy				
2.4	Bank charge				
2.4	Cheque book				
	Others				
	Sub Total				
	Total				

Prepared by:

Submitted on:

Attachments: Relevant Quotations

Annex 2.4. Budget Proposal for Establishment of Spare parts Shop

We hereby propose the allocation of budget for establishment of a spare parts shop in -----
----- Woreda.

1. Management and Operation

The shop is to be operated and managed by ----- (insert *Name of Local Service provider/Association*). The undertakings by -----
--- (*Local Service provider/Association*) are shown in *Revolving Fund Office/Enterprise Resolution/ MoU* as Attachment 1 (Annex 1-2 or 1-3). Detail work plan is described in Attachment 2 Work Plan (Annex 1-1).

2. Budget

Necessary budget to procure seed stock, prepare a store facility, operate the shop for the 1st year, and advertise the shop are summarized below.

No.	Description	Amount (Birr)	Reference
1	Purchase cost of seed stock		Attachment 3: Plan of Seed Stock
2	Preparation cost of store facility		Attachment 4: Plan of Store Facility
3	Operation and management cost of the shop		Attachment 5: Costs of Operation and Management
4	Advertisement cost of the shop		Attachment 6: Costs of Advertisement
	Total		

Prepared by:

Submitted on:

Annex 2.5. Sample of Sales Receipt

----- Woreda

----- Local Service Provider/ Association

Address: Telephone No. -----
 E. mail: xxxxxxxx @xxxxx.com

Date		No.	
Received from	Name:		
	Kebele:		
In payment for			
Amount (Birr)			
Amount in Words			
Cash/Cheque	Cheque No.		Cheque date
Cashier's name			
Signature			

Original: Customer's copy, Duplicate: Storekeeper's copy, Triplicate: Book Copy

Annex 2.7. Pricing Proposal for Seed Stock

We hereby propose the pricing of seed stock of spare parts which will be dealt in a shop operated by

1. New prices of spare parts

The prices of spare parts are shown in Attachment 1: Price List of Seed Spare Parts. Detailed calculation process is shown in Attachment 2: Calculation of Prices of Seed Stock.

Prepared by:

Submitted on:

Attachment 1: Price List of Spare Parts (Annex 2-9)

Attachment 2: Calculation of Selling Prices of Seed Stock (Annex 2-10)

Annex 2.9. Calculation of Prices of Seed Stock

- (i) Preparation for Calculation
From the quotation of seed stock

1. Unit Operation and Management Costs

$$\boxed{\text{Unit operation and management costs}} = \frac{\begin{matrix} \text{(i) Unit purchasing} \\ \text{Price of each item} \end{matrix}}{\begin{matrix} \text{(ii) Total amount} \\ \text{(Price) of seed stock} \end{matrix}} \times \begin{matrix} \text{(iii) The total} \\ \text{costs in} \\ \text{Annex 2-8(Costs} \\ \text{of Operation and} \\ \text{Management)} \end{matrix} \times \boxed{1.25}$$

2. Price Escalation Ratio

Price Escalation Rate in 1 year: 1.1 (Prices are expected to be increased by 10%).

3. Selling price calculation coefficient

Unit selling price is calculated by the following formula.

$$\boxed{\text{Unit selling price}} = \left[\boxed{\text{(1) Unit purchasing price}} + \boxed{\text{(2) Unit operation and management costs}} \right] \times \boxed{\text{(3) Price escalation ratio = 1.1}}$$

Applying the formula to calculate (2) Unit Operation and Management Costs into the above formula,

$$\boxed{\text{Unit selling price}} = \left[\boxed{\text{(1) Unit purchasing price}} + \frac{\begin{matrix} \text{(1) Unit purchasing price} \\ \text{(ii) Total amount} \\ \text{(price) of seed} \\ \text{stock} \end{matrix}}{\begin{matrix} \text{(iii) The total} \\ \text{costs in Annex} \\ \text{2-8 (Costs of} \\ \text{Operation and} \\ \text{Management)} \end{matrix}} \times \boxed{1.25} \right] \times \boxed{1.1}$$

The formula is divided into “(1) Unit purchasing price” and “Selling price calculation coefficient” as follows.

$$\boxed{\text{Unit selling price}} = \boxed{\text{(1) Unit purchasing price}} \times \left[1 + \frac{\begin{matrix} \text{(iii) The total costs in Annex} \\ \text{2-8 (Costs of Operation and} \\ \text{Management)} \end{matrix} \times 1.25}{\begin{matrix} \text{(ii) Total amount (price) of seed} \\ \text{stock} \end{matrix}} \right] \times \boxed{1.1}$$

Selling price calculation coefficient

Selling price calculation coefficient

$$\boxed{\phantom{\text{Unit selling price}}} = 1 + \frac{\phantom{\text{(iii) The total costs in Annex 2-8 (Costs of Operation and Management)}} \times 1.25}{\phantom{\text{(ii) Total amount (price) of seed stock}}} \times \boxed{1.1}$$



Annex -3. : Preparation of Spare Part Shop

Annex 3.1. Monthly Sales and Expenditure Report

Month and Year:

Date	Categories	Description	Sales			Expenditures			Balance
			Quantity	Unit price	Total Amount (Birr)	Quantity	Unit price	Total Amount (Birr)	
Carry over from the last month									
	Spare Part Gate Valves								
	Spare part Water Meter								
	Spare part Indian Mark-II								
	Spare Part Afrideve								



Technical Operation and Maintenance Requirements Manual for Rural Piped System

Date	Categories	Description	Sales			Expenditures			Balance
			Quantity	Unit price	Total Amount (Birr)	Quantity	Unit price	Total Amount (Birr)	
	Others								
Total as of end of month									
Bank balance (filled by Accountant)									
Total number of customers									



Technical Operation and Maintenance Requirements Manual for Rural Piped System**Annex 3.2. Monthly Inventory Report**

Month and Year:

S/No.	Spare Parts Item	Re-Order Level ¹	Stock		Balance	Adjusted Balance ²	Necessity of Re-Order ³
			IN	OUT			
I	Water Meter						
1.1	DN ½"						
1.2	DN ¾"						
1.3	DN 1"						
1.4	DN 1 ½"						
1.5	DN 2"						
1.6	DN 2 ½"						
1.7	DN 3"						
1.8	DN 4"						
	TOTAL						
II	Gate Valve						
2.1	DN ½"						
2.2	DN ¾"						
2.3	DN 1"						
2.4	DN 1 ½"						
2.5	DN 2"						
2.6	DN 2 ½"						
2.7	DN 3"						
2.8	DN 4"						
	TOTAL						
III	For India Mark II						
3.1	Handle Axle						
3.2	Ball Bearing						
3.3	Bearing Spacer						
3.4	Hex. Bolt (M12 x1.75 x 40)						
3.5	Chain Bolt (H.T. Bolt M10 x40)						
3.6	Chain with Coupling (Chain Assembly)						
3.7	Upper Valve (Upper Valve Guide)						
3.8	Rubber Seating (Check Valve Seal) (Rubber Seal Small)						
3.9	Cylinder Assembly						
3.10	Cylinder Body and Reducer Caps						
3.11	Sealing Ring (Cylinder Seal)						
3.12	Cylinder Valve Seat						
3.13	Check Valve (Check Valve Guide)						
3.14	Check Valve Assembly (Foot Valve Assembly)						
3.15	Rubber Seating (Foot Valve Seal) (Rubber Seal Large) Front Cover						
3.16	G.I. Riser Pipe (3m)						
3.17	G.M. Spacer						
3.18	Grease (200g)						
3.19	Handle Assembly						
3.20	Inspection Cover Bolt (Hex. Bolt M12x20)						



Technical Operation and Maintenance Requirements Manual for Rural Piped System

3.21	Nut (M12 x 1.75)						
3.22	Hex. Lock Nut (Nyloc Nut (M10))						
3.23	Stand Assembly (Pedestal (Three Legs))						
3.24	Pipe Socket (G.I. Coupling)						
3.25	Plunger Rod Assembly						
3.26	Plunger Yoke Body						
3.27	Head Assembly (Pump Head Box)						
3.28	Pump Rod (Connecting Rod)						
3.29	Third Plate Assembly (Rod Guide Plate)						
3.30	Rod Socket (Hex. Coupling: M12X50)						
3.31	Rubber Cup (Pump Bucket)						
3.32	Washer (for M12)						
3/33	Water Tank Assembly						
	TOTAL						
IV	For Afridev						
4.1	Bobbin						
4.2	Bush Bearing						
4.3	Cement Solvent						
4.4	Socket (Coupling for PVC Pipe)						
4.5	Cylinder Assembly						
4.6	Foot Valve Body Assembly (plastic)						
4.7	Fulcrum Pin Assembly						
4.8	O-Ring						
4.9	Pipe Centralizer						
4.10	Plunger Assembly (Plastic)						
4.11	Pump Rod Assembly (Hook & Eye)						
4.12	PVC Riser Pipe						
4.13	Rod Centralizer						
4.14	Solvent Cleaner						
4.15	U-Seal for Plastic Plunger						
	TOTAL						
V	Others						

Note:

¹ Reorder Level = 25% of initial stock volume. Initial stock volume is the volume of seed stock or stock after replenishment.

² This column is filled in if balance is adjusted as a result of stocktaking.

³ Check if replenishment is necessary.



Annex 3.3. Monthly Management Report

Month and Year:

1. Inquiries, requests and comments received

Date	Name (Community, individual)	Inquiries/requests/comments

2. Replenishment and Price Revision

2-1 Current Situation

(Circle the number which applies the current stock situation)

- a) Stock of some kinds of spare parts is less than their re-order level. → Start Replenishment
 Name of the corresponding spare parts:.....
- b) Stock of all kinds of spare parts is still enough, but 9 months have passed since the last replenishment. → Start Replenishment
- c) Stock of all kinds of spare parts is still enough, and 9 months haven't passed yet since the last replenishment.
- d) Replenishment is on process now.

2-2 Replenishment and Price revision Schedule

Action	Scheduled / accomplished date	Person in charge
(1) Stocktaking		
(2) Calculation of spare parts to be replenished Annex 2-4 Calculation of Spare Parts to be replenished		
(3) Request for quotation		
(4) Receipt of quotation		
(5) Acquisition of bank statement		
(6) Preparation of budget plan Annex 2-5 Budget Plan for Replenishment		



(7) Preparation of Replenishment Schedule Annex 3-4 Replenishment Schedule		
(8) Preparation of replenishment proposal Annex 3-3 Budget Plan for Replenishment		
(9) Submission of the proposal to RFO Director		
(10) Approval of the proposal by RFO Director		
(11) Budgeting		
(12) Order		
(13) Arrival of goods to the supplier		
(14) Arrangement of Transport		
(15) Inspection of goods		
(16) Delivery of goods		
(17) Update of bin cards		
(18) Reset of the re-order level in monthly inventory report		
(19) Recording of expenditures from the replenishment on monthly sales expenditure report		
(20) Preparation of price revision proposal Annex 3-5 Proposal for price revision Annex 3-6 Price List of Spare Parts Annex 3-7 Calculation of New Prices Annex 3-8 Price Revision Schedule		
(21) Submission of the proposal to Council Secretary		
(22) Approval of the proposal at a full RWB		
(23) Update of bin cards		
(24) Dissemination of new price list to ZWOM/WOW/WB/WASHCOs/WSSO		

3. Other issues (if any)

Prepared by:

Submitted on:

- Attachment 1: Monthly Sales and Expenditure Report (Annex 3-1)
- Attachment 2: Monthly Inventory Report (Annex 3-2)
- Attachment 3: Quarterly Stock Taking Sheet (Occasionally)(Annex 3-4)



Annex 3.4. Stocktaking Sheet

Date, Month and Year:

S.No.	SP Items	Quantity			Remarks (How the Bin card is adjusted)
		Stocking (1)	Bin Card (2)	Difference (1) – (2)	
1	Submersible Pump				
2	Surface Pump				
3	Generator				
5	Indian Mark -II				
6	Afrideve				
7	others				



Annex 3.5. Annual Sales and Expenditure Report

1. Balance of Payment for This Year

From (Month and Year)Until (Month and Year)

Categories	Description	Sales (Birr)	Expenditure (Birr)	Balance (Birr)
Sales	Spare parts for submersible Pump		/	
	Spare parts for Surface Pump			
	Spare parts for Generator			
	Spare parts for Hand Pump			
	Others			
Expenditure	Bank charge	/		
	Vehicle O&M			
	Fuel			
	Allowance			
	Reordered spare parts			
	others			
	Total			

*All sales and expenditure data in this table is collected from monthly sales and expenditure reports.

Categories	Amount (Birr)
Carry over from previous year (Refer "carry over from the last month" in the first monthly sale and expenditure report of this year)	
Balance of payment for this year (from the above table)	
Total (Balance of payment since the inauguration of a shop)	
Bank balance of end of this year	

Prepared by:

Date:

Annex 3.6. Annual Inventory Report

From (Month and Year): Until (Month and Year):

S.No.	Spare Parts Item	Balance as of beginning of a year	Accumulated Stock		Balance
			IN	OUT	
1	For Submersible Pumps				
2	For Surface Pump				
3	For Generator				
4	For Indian Mark-II				
5	For Afrideve				
6	Others				
	Total				

Prepared by:

Date:



Annex 3.7. Annual Trend Report

From (Month and Year): Until (Month and Year):

Month Item													Total
No. of soled items													
No. of customers													
Sales (Birr)													
Expenditure (Birr)													

Prepared by:

Date:



Annex 3.8. Annual Management Report

From (Month and Year) Until (Month and Year)

- i. Staff Allocation (Change of personnel)
- ii. Inventory (Well sold items, seasonal trend)
- iii. Sales and Expenditure (Major expenditures, seasonal trend)
- iv. Replenishment and Price Revision (Achievement and plan of Replenishment and Price Revision)
- v. Bank Balance and Audit (Result of checking bank balance against Sales and Expenditure reports, result of Audit)
- vi. Customers
(Customers' background, Inquiries, requests and comments received)
- vii. Advertising
(Achievement of advertising)
- viii. Challenges and Countermeasures
(Existing and potential Challenges and Countermeasures)
- ix. Others
(if any)

Prepared by:

Submitted on:

- Attachment 1: Annual Sales and Expenditure Report (Annex 3-5)
- Attachment 2: Annual Inventory Report (Annex 3-6)
- Attachment 3: Annual Trend Report (Annex 3-7)
- Attachment 4: Audit Report (if available)

Annex -4. : For Spare part Replenishment

Annex 4.1. Proposal for Replenishment

PROPOSAL FOR REPLENISHMENT

We hereby propose the replenishment of spare parts for a shop operated by-
.....

1. Spare parts to be replenished

The spare parts to be replenished are shown in Appendix 1: Calculation of Spare Parts to be replenished (Annex 4-2).

2. Budget Plan

Budget for the replenishment is appropriated from the accumulated sales of spare parts. Details are shown in Appendix 2: Budget Plan of Replenished (Annex 4-3).

3. Work Plan

A work schedule for the replenishment is shown in Appendix 3: Replenishment Schedule (Annex 4-4). Please take necessary measures in accordance with the work schedule.

Prepared by:

Submitted on:

Annex 3-1: Calculation of Spare Parts to be replenished (Annex 4-2)

Annex 3-2: Budget Plan for Replenishment (Annex 4-3)

Annex 3-3: Replenishment Schedule (Annex 4-4)

Annex 4.2. Calculation of Spare Parts to be replenished

S.No.	Name of Spare Parts	(1) Initial volume of stock	(2) Existing volume of stock	(3) Volume of sales = (1) - (2)	(4) Period in years since the last replenishment = (period in months)/12	(5) Estimated sales volume for the next 1 year = $\frac{(3)}{(4)}$	(6) Buffer rate = 1.25	(7) Ideal stock volume adjusted by buffer rate = (5) x (6) *If (5)x(6)<4, (7)=4	(8) Quantity to be replenished = (7) - (2) *If (7)-(2)<0, (8) =0.	(9) Expected volume of stock after replenished = (2)+(8)
1	For Submersible Pump						1.25			
2	For Surface Pupm						1.25			
3	For Generator						1.25			
4	For Pipe & Fittings						1.25			



Annex 4.3. Budget Plan of Replenishment

No.	Description	Amount (Birr)	Remarks
1	Estimated Costs of Replenishment		
1.1	Costs of spare parts		Refer to Attachment 1: Quotation of spare parts
1.2	Transportation costs		
1.2.1	Hiring Vehicle		
1.2.2	Fuel		
1.2.3	Accommodation		
1.2.4	Allowance		
1.2.5	Others		
2	Bank Balance		Refer to Attachment 2: Bank statement

Prepared by:

Submitted on:

Attachment 1: Quotation of spare parts
Attachment 2: Bank statement

Annex 4.4. Replenishment Schedule

Action	Scheduled date	Person in charge
1. Stocktaking		
2. Calculation of spare parts to be replenished Annex 4-2 Calculation of Spare Parts to be replenished		
3. Request for quotation		
4. Receipt of quotation		
5. Acquisition of bank statement		
6. Preparation of budget plan Annex 4-3 Budget Plan for Replenishment		
7. Preparation of Replenishment Schedule Annex 4-4 Replenishment Schedule		
8. Preparation of replenishment proposal Annex 4-1 Proposal for Replenishment		
9. Submission of the proposal to RFO-RWB		
10. Approval of the proposal by RFO-RWB		
11. Budgeting		
12. Order		
13. Arrival of goods to the supplier		
14. Arrangement of Transport		
15. Inspection of goods		
16. Delivery of goods		
17. Update of bin cards		
18. Reset of the re-order level in monthly inventory report		
19. Recording of expenditures from the replenishment on monthly sales expenditure report		

Prepared by:

Submitted on:



Annex 4.5. Proposal for Price Revision

We hereby propose the price revision of hand pump spare parts which are dealt in a shop operated by.....

1. New prices of spare parts

The new prices of spare parts are shown in Annex 1: Price List of Spare Parts. Detailed calculation process is shown in Annex 2: Calculation of New Prices.

2. Work Plan

A work schedule for the price revision is shown in Annex 3: Price Revision Schedule. Please take necessary measures in accordance with the work schedule.

Prepared by:

Submitted on:

- Attachment 1: Price List of Spare Parts (Annex 4-6)
- Attachment 2: Calculation of New Prices (Annex 4-7)
- Attachment 3: Price Revision Schedule (Annex 4-8)

Annex 4.6. Price List of Spare Parts

S.No.	Spare Parts Item	Unit Price (Birr)	S.No.	Spare Parts Item	Unit Price (Birr)
1	For Submersible Pump		5	For Indian Mark-II	
1.1			5.1		
1.2			5.2		
1.3			5.3		
1.4			5.4		
1.5			5.5		
2	For Surface Pump		6	For Afrideve	
2.1			6.1		
2.2			6.2		
2.3			6.3		
2.4			6.4		
2.5			6.5		
3	For Pipe Fittings		7	Others	
3.1			7.1		
3.2			7.2		
3.3			7.3		
3.4			7.4		
3.5			7.5		
4	For Valves				
4.1					
4.2					
4.3					
4.4					
4.5					

Authorized by:

Date:



Annex 4.7. Calculation of New Price

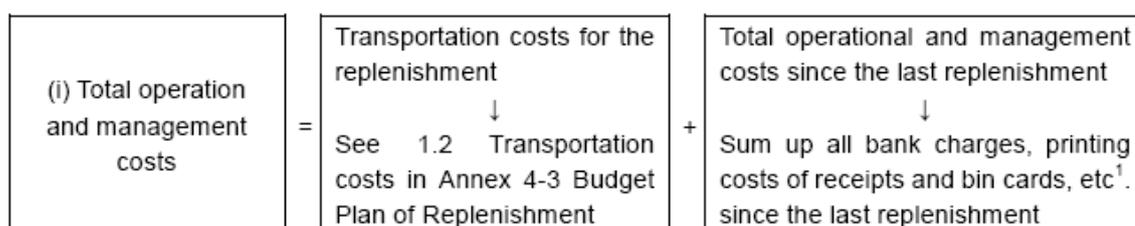
I. Preparation for Calculation

(1) Unit Purchasing Price

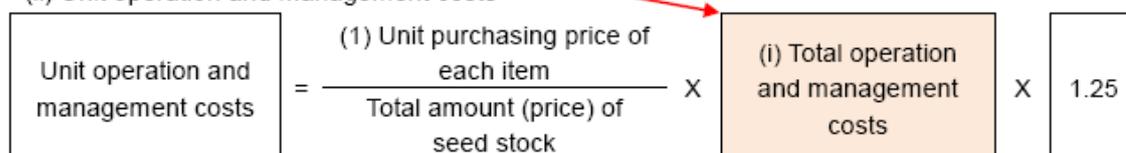
From the quotation of spare parts collected this time.

(2) Unit Operation and Management Costs

(i) Total operation and management costs



(ii) Unit operation and management costs



(3) Price Escalation Ratio

No.	Top 5 spare parts items in re-ordering volume	(i) Re-ordering volume	(ii) Unit purchase prices ² for now	(iii) = (i) x (ii)	iv) Unit purchase price at the last replenishments	(v) = (i) x (iv)
1						
2						
3						
4						
5						
Total					Total	

Price escalation ratio = $\frac{\text{Total of (iii)}}{\text{Total of (v)}} = \text{-----} = \text{.....}$ (round out to one decimal place)

¹ Except for advertisement costs

² Refer the quotation of spare parts for this replenishment

³ Previous unit prices of spare parts are written on bin cards. If not written, check the invoices of spare parts in the past.



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(4) Selling price calculation coefficient

Unit selling price is calculated by the following formula.

$$\text{Unit selling price} = \left[\text{(1) Unit purchasing price} + \text{(2) Operation and Management Costs per Unit} \right] \times \text{(3) Price escalation ratio} = ?$$

Applying the formula to calculate (2) Operation and Management Costs per Unit into the above formula,

$$\text{Unit selling price} = \left[\text{(1) Unit purchasing price} + \frac{\text{(1) Unit purchasing price}}{\text{Total amount (price) of spare parts to be replenished}} \times \text{(i) Total operation and management costs} \times 1.25 \right] \times ?$$

The formula is divided into “(1) Unit purchasing price” and “Selling price calculation coefficient” as follows.

$$\text{Unit selling price} = \text{(1) Unit purchasing price} \times \left[1 + \frac{\text{(2)(i) Total operation and management costs} \times 1.25}{\text{Total amount (price) of seed stock}} \right] \times ?$$

Selling price calculation coefficient

Selling price calculation coefficient

$$\text{Selling price calculation coefficient} = 1 + \frac{\text{(2)(i) Total operation and management costs} \times 1.25}{\text{Total amount (price) of seed stock}} \times \text{(3) Price escalation ratio} = ?$$

ii. New Prices of Spare Parts

No.	Items	(1) Unit Purchasing price	(4) Selling price Calculation coefficient	Unit selling price = (1) x (4)
1	Pump			
2	Generator			
3	Hand Pump			

Prepared by:
Date :

Annex 4.8. Price Revision Schedule

Action	Scheduled date	Person in charge
1. Approval of the proposal for replenishment by the secretary		
2. Preparation of price revision proposal Annex 4-5 Proposal for price revision Annex 4-6 Price List of Spare Parts Annex 4-7 Calculation of New Prices Annex 4-8 Price Revision Schedule		
3. Submission of the proposal to RFO-RWB		
4. Approval of the proposal at a full distort RWB		
5. Update of bin cards		
6. Distribution of the new price list to LSPs/WWOWB/WASHCO		

Prepared by:

Date :