

# BGRS WME BUREAU WMR CORE PROCESS

Presentation on Spare parts Supply chain

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# Objective of the Supply Chain

- The main objective of the supply chain study is to develop feasible system which is expected to help the provision of an uninterrupted supply of spare parts required for the sustainable functioning of the rural water supply schemes/ ያስተቆረብጠ የመስዋወጫ ሰቃዎች ስቅርቦት በማድረግ ቀጠደነት ያለው የውሃ ተቋማት ስገልግሎት ማረጋገጥ/

# System Functionalities

- According data obtained from four Woreda Water Offices; in two Woredas of Assosa zone & two woredas of Kamashi zone 330 schemes are functional and 125 are non-functional out about Of the total schemes 455 . The reasons behind the non-functionalities for most of the schemes are largely linked to lack of access to spare parts supply and technical problem to fix them at local capacity.

# Market Availability

- At present, while the number of suppliers of parts exists in Assosa town only of Assosa zone towns and not exists in Kamash zone towns
- Most spares are **not always available** in the remotely located communities.
- Ideally, it could be quite important that through **market-based approaches**, the program needs to promote standardization of a few models, which may ease the choice of **models to stock** and support the development of supply chains.
- But in a fragmented market, this could be beyond imagination.

# Responsibilities of Stakeholders

Involved Institutions & SHs	Roles, Functions & Responsibilities

# Institutional Supports

As study reveals the institutional support **for community management** involves several interlinked activities which have aimed at capacitating the community in:-

- ❑ managerial,
- ❑ technical and
- ❑ Financial management aspects.
- ❑ The CO-WASH-BG and the government arms have moved a step forward and provided institutional supports with respect to:
  - Participatory planning during project formulations and constructions
  - Encouragement and motivation
  - Capacity building
  - Monitoring and evaluation
  - Specialist technical assistance, etc.

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The institutional support activities undertaken in the areas commonly include:

- ❖ Capacity building in the form of training/M&F segregated/
- ❖ Awareness creations
- ❖ Community organizations and development

# Cost Recovery/ጠባቢ ጠቅላይ/

- ❑ Cost recovery requires some professional judgment where the outcome must show whether the existing **water fees or tariffs** are adequate to cover O & M costs.
- ❑ computed the operating ratio (the ratio of total O & M costs to total revenue) to verify the attainment of cost recovery.
  - If the ratio is below 1, cost is fully covered
  - If the ratio is above 1, cost is not fully covered

At present, only flat rates (e.g. rates per household) depending on the **willingness** of the community to pay for the service are being charged from each water user



# Water Sources and Technology

## Type

With this general views, 98% of the schemes built and rehabilitated are composed of:

- ☐ Springs on spot
- ☐ Spring with gravity distribution system
- ☐ Hand dug wells and
- ☐ Shallow wells

The above listed schemes are simple and relatively lower in cost. In addition nearly all the hand pumps installed in the target Woredas are the Afridev Hand Pumps. Thus the focus will be mainly on the requirements and supply of the Afridev Hand Pumps.

## ***Fast moving and required for the annual preventive maintenance***

The parts required for preventive maintenance are:

1. Bush bearing assembly
2. “U” seal
3. “O” rings
4. Bobbin
5. Rod centralizer //are have to be stocked by Woreda Executive Committees in the target Woredas as per manufacturers’ recommendation.

# Characteristics of Afridev Hand Pump Tools and Spare Parts

Characteristically the Afridev pump has the following features.

- It has one tool only for installation and maintenance,
- The riser is corrosion resistant and light PVC,
- The pump rod can be assembled / disassembled without any tool,
- Piston and foot-valve are made almost identical and extractable,

# Afridev Problems

The main problems of the Afridev pumps are on the:-

- **PVC riser,**/ to join the PVC pipes with a plastic coupling
- **pump-rods and**
- **spares kit.**/U-seal,O-ring,nitrile rubber seal

Further, the community involvement in maintenance has to ensure that its capacity needs to be developed through practical training of the pump caretakers by Woreda Water Desk/Office or by skilled technicians involved in the Kebeles scheme administrations.

# Schemes Organization and Management

- ❖ The Ethiopian water resource policy promotes decentralized management of rural water supply schemes **by the user communities** themselves. In the case of CO-WASH-BG case community participation substantiates this policy initiative and participated communities from the very beginning into the programme.

# Schemes Organization and Management

## 1. Repair and Maintenance Practices

- ❑ assumes that **the user community owns** the water supply and contributes to installation, sets and collects tariffs and manages and finances O&M, with some technical and administrative support from the implementing agency.
- ❑ The **CMP approach has achieved better progress** because communities are encouraged to participate into the project from the beginning and users feel that the water and sanitation infrastructure are their own property and are willing to actively participate on the administration of schemes as well


# Schemes Organization and Management

## 2.The Role of Women in Scheme Administration

- ✓ Women hold 60% of the WASH Cos and actively participate in repair and maintenance, cash handling and key areas of the committees.

## 3.Supporting Community Management

- This support given in the form of **information and training** can fill capacity gaps such as those required for major maintenance work, skills training, establishing administrative and financial systems, performance monitoring and counter checking the operating system to ensure its compliance with national water policy and strategy
- **massive capacity building efforts** to keep the sustainability of service deliveries

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- A key pillar in the sustainability of its interventions is its to adhere to the **national policy initiatives**, its introduction of CMP approach and **the formation and capacity development of water committees and pump caretakers** to ensure effective management, operation and maintenance systems in the community-managed water and sanitation schemes.





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#### 4. Existing Source of Spare Parts Supply

- ❖ None of the Woredas have a **stock of hand pump parts in their stores** at the Woreda, Kebele or WASH Cos level
- The normal practice at the WASH Cos is whenever there is break down or malfunctioning of the hand pump occurs or the unit is disassembled, **the faulty parts are identified** and then **the parts are not available** at the Woreda capitals or the Zonal capital, the item has to be procured from Assosa, or Addis Ababa.
- Thus the community will be forced to stay without water for a very long time.

# Some suppliers firms

Among few private firms contacted were:-

- HAGBES Privet Ltd Co,
- Biselex Ethiopia Ltd
- Emu General Importer Plc
- Nefisa kelifa general importer
- Zekaly general importer
- Hadish general importer

All the them import these pumps and parts on demand through normal bidding process or to hold stock required to meet incidental customers' demand. Procurement from these imports can be made in bulk or small pieces.



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## 5. General Views


- ❑ The general views about the private sector is that they want to engage in contract agreement with buyers
- ❑ Looking for capacity enhancement like initial despite to be made by WASH Cos or loan to curb the problem of longer cash tie up and freezing of working capital
- ❑ Looking for list of materials to be supplied with correct specifications of materials
- ❑ Restricting communities not to buy parts from other sources as long as they are under the umbrella of the legal contract

# Review of National Policy, Strategy and Legal Framework

- The overall goal of Water Resources Policy is to enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available Water Resources of Ethiopia for significant socioeconomic development of the country.
- The strategy is set to find a way as to how this policy initiative is to be implemented. The legal framework also is considered as a support to realize the policy and strategy objectives. These are briefly elaborated in this document

# 1. Policy Framework

- ❖ Regarding supply chain issues, the points addressed in relation to the involvement of **private sector** and **participation of all sector stakeholders** and **institutions** in the policy are summarized as follows.
  - ❑ Promote the involvement and meaningful participation of the Private Sector in the management of water resources
  - ❑ The Policy has dealt with the Private Sector issue and has recognized its important involvement in the sector by giving the following guiding principles:
    - ❑ Develop a framework for community-Government-Private, Sector-External support Agencies Partnership

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- ❑ Promote Private Sector participation in technology development, construction, and in operation and maintenance of utilities
  - ❑ Develop a framework for the sustainable and effective collaboration amongst all stakeholders including the public sector, donors, communities and the Private sector at all levels, as well as creates and legalizes forums for the participation of all stakeholders.
  - It has been noted that an encouraging emphasis on policy and integrated strategies was given for sustainable institutional and supply chain framework for water supply and sanitation projects.

# 2.National Water Resources Strategy

- The Ethiopian water resources management strategy is set to translate the national water management policy into action. Several core issues addressed in the policy are spelled out here in the strategy. As regards to this supply chain study,

# a/Stakeholders Participation:

The strategy stressed the creation of strategic links and partnerships among various stakeholders who can move the **water sector one step move forward**. It states that:

- ❑ Promote and enhance the participatory approach in project identification, planning, implementation, operation & maintenance of water resources projects,
- ❑ Enhance and encourage the devotion of management responsibilities to the **lowest appropriate level** in water schemes,
- ❑ Establish mechanisms for stakeholders involvement such as water committees, water board, water users associations, professionals and civic associations.



# b/Technology and Engineering:

To the basic framework of the national water policy.

- Accordingly, the strategy stated the promotion of the establishment integrated **operation and maintenance system** so that water projects could provide reliable and sustainable services.
- This requires the encouragement of the direct involvement of **local communities in O & M activities**, recognize that deferred maintenance is more expensive than the regular maintenance, develop guidelines and procedures for undertaking inspection, preventive, routine and major maintenance and operation of water schemes, and develop monitoring mechanisms for O & M.

# c/Financial and economic aspects:

**The strategy considers the importance of financial viability of schemes**

- ❑ to ensure self-reliance through the promotion of **local self-financing** of programme and projects, based on the overall socio-economic development conditions of local communities, and through appropriate **incentive** mechanisms.
- ❑ It also promotes the implementation of **cost sharing** arrangements to the share of capital and O & M and capacity building costs between government, local communities, consumers, external support agencies and non-governmental organizations.

# SWOT Analysis

- The decentralized management in rural water supply and sanitation begins with the assumption that the user communities own the water supply and contribute some amount during construction, set and collect tariffs and manage and finance the O & M, with moderate support given by the implementing agency.
- This assumption poses an interesting question.
- Are these communities ready to bear these responsibilities and able to manage the water schemes?
- The SWOT analysis may help to assess the existing situations on the ground.
- The **strength and weakness** is concerned with communities' **internal assessment** whereas the **opportunities and threats** are concerned with **external environment** in which communities operate. These are addressed here below.

## a. Strength

- ❑ Strong willingness to take care of water facilities
- ❑ Strong ownership feelings

## b. Weakness

- ❖ Parts of some communities are reluctant to contribute monthly water fees
- ❖ No equal commitment to serve in the WASH Cos
- ❖ High illiteracy rates make scheme management a little bit harder
- ❖ Low capacity of pump caretakers in conducting repair and maintenance
- ❖ Weak resources management including cash

## c. Opportunities

- ❑ The national water policy and strategy favors the rural water supply and sanitation service users
- ❑ The UAP and MDG initiatives and targets have increased access to water supply and sanitation facilities
- ❑ In conjunction with the government initiatives, donors' and Non-governmental organizations' commitment to invest in water and sanitation sector is encouraging

## d. Threats

- ❑ Lack of access to spare parts supply
- ❑ Rising cost of spare parts
- ❑ Negative attitude in Woreda water offices to train women as pump mechanics to actually repair hand pumps

# Problem Statements


A major challenge for sustainable rural water services is


- lack of access to spare parts supply and the absence of the sustainable provision of parts and components for operation and maintenance purposes.
- In conjunction with lack of spare parts, the inadequate and inconsistent O & M has been the major problem.



# Specific Challenges

- The **non availability of spare parts** at a near distance and excessive delays in procurement of parts for maintenance,
- Water wells dug during wet seasons are **drying and water is depleted**
- **Low or no engagement of the private sector** in supplying spare parts for hand pumps,
- The general capacities of the artisan associations are found to **be weak and fragmented** needing capacity enhancement to build their strength
- Communities' **lack of technical skills** in identifying the right parts for broken parts and inability to identify where to get them

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- **pump caretakers** though trained to take care of O&M activities of hand pumps have not been equipped with the necessary tools and fast moving parts, as a result they even forgot what they learnt because of low repair and maintenance practice,
  - **High cost of transport and accommodation costs** incurred by community representatives while searching parts from long distance like Assosa & Addis Ababa,
  - **Local suppliers' reluctance** to hold spare parts at their shop because of fear **of slow salability** and consequently holding cash in **low turnover**,
  - **Low awareness of the private sector** in understanding the market opportunity in water supply chain,
  - Many local traders tend to hold parts in components and very difficult to get them in pieces

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- Reluctance by the regional/zonal government side in encouraging the private sector to involve in supply chain business,
  - Communities' reluctance to buy these parts from private suppliers for **fear of high commercial prices**,
  - The involvement of other NGOs like UNICEF in providing **free spare parts supply could shrink the market** and may **discourage** the private sector to involve in supply chain,
  - **Communities' dependency** syndrome still twisted in expectation of such services from the government or non-governmental organizations.
  - No regular monitoring of water quality and in some water points people defecate and urinate just few meters above the source or high slope which could possibly cause water source pollutions or contaminations.

# Proposed Procurement System

- ✓ alternative models are developed and put forward for comparison.
- ✓ **Two alternatives approaches** are proposed for choice here.
- ✓ These are through the involvement of:-
  - the government implementing agencies &
  - the private sector participants.

# Alternative I: Parts Procurement through Government Channels

- ❑ It is axiomatically true that government targets and plans for increasing rural water supply coverage typically include a decentralized, demand responsive approach to service delivery, responsibility to be taken by users for O&M through implementation of appropriate cost-recovery.
- ❑ As regards to supply chain, the approach in alternative one has its own advantage and disadvantages.



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### a. Advantages

- Cost advantages achieved from **bulk purchases** realized through government bidding process
- Better **quality choice** of parts

### b. Disadvantage

- Tight government **procurement procedures and bureaucracies**
- Possibility of giving **less attention to purchase** these parts by implementing agencies because they are engaged themselves in other **assignments**
- Difficulty of **storage facilities and store management systems**
- **Rigid/non flexible** / government financial regulation and its adverse impact on procurement of parts

# Alternative II: Supply through Privet Sector

- ❑ Private-sector involvement in supply chain has not been tried as such on a large scale.
- ❑ Attempts could be made to encourage **privet suppliers, unions, cooperatives or artisan associations** to play **intermediary roles** in supplying parts. Or
- ❑ it could be possible to promote spare parts outlets or could let them add parts to their product line and avail them to rural water supply schemes in the area.



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### a. Advantage

- ❖ If managed well, they may have **better efficiency** in delivering spare parts
- ❖ **Less burden to the government and rural communities**
- ❖ Provides **better access** to spare parts supply
- ❖ Better **marketing skills and knowledge** and can easily refill stock if demand is available for spare parts

### b. Disadvantage


- ✓ Attempts to encourage private sector supply chains may have **limited success due to low commercial viability**
- ✓ Possibilities of **higher purchase prices** in relative terms
- ✓ **Lack of interest** and capacity to hold slow moving parts for long time since cash is tied up in less productive business



# Procurement of Spare Parts through Privet Sector Involvement

## Assumptions

- It is assumed that Woreda Water Desks or Offices can provide the **store room from existing facilities** or store room will be constructed and made available for use by any means,
- WASH Cos deposit cash to the Woreda O & M **bank account** to be opened so as to facilitate the purchase of spare parts,
- Privet suppliers may **not be obliged to hold stock**; instead the Woreda Water and Sanitation Committee shall maintain minimum stock particularly for fast moving items,

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- Relevant staffs like **the Store keeper** will be recruited by the Executive Committee and facilitate delivery, storage and distribution of spare parts,
  - The Executive Committee **pays the salaries of formally recruited staffs** from the cash contribution to be made by WASH Cos.

# i. Organizational Arrangement

- ❑ This recommendation is made with the assumption that a well defined organizational arrangement is **set to facilitate the procurement of spare parts**.
- ❑ It is assumed that the **water users associations** (WUA) will be established at Kebele level.
- ❑ Elected people from Kebele WUAs are organized to form the **General Assembly** at Woreda level.
- ❑ The **Executive Water and Sanitation Committee**, being accountable to the General Assembly in conjunction with **the Supply Chain Coordinator** is primarily responsible for procurement, storage and distribution of spare parts. These stakeholders are briefly explained below.

# The Water Users Associations

- ❑ Water Users Associations (WUA) shall be established at Kebele level and finally form the General Assembly at Woreda level,
- ❑ The WUA is expected to have legal personality, bye-laws and administrative procedures
- ❑ Two people (the Chairperson and Secretary or Cashier) from each Kebele WUA are represented in the General Assembly,

# The General Assembly

- ❑ The General Assembly is composed of the representative from Kebele Water Users Associations.
- ❑ The General Assembly is primarily established to **manage the supply chain** system.

# Executive Water and Sanitation Committee

- ❑ For the **Woreda Water and Sanitation Executive Committee**, the General Assembly elects from the members:
  - **Chairperson,**
  - **V/Chairperson, and**
  - **Secretary**
- ❑ At least one of the three committees has to be a woman. The term of the Executive Committee's stay on duty is for two years. However, they can be elected for the second term if they got a majority vote.

# Staffs:

- ❖ The necessary staffs for supply chain management are the **Store Keeper** and the **Book Keeper**.
- ❖ As an option and if possible until WASH Cos will become financially strong, the Woreda Water office can **assign one Clerk Accountant** to maintain the job.
- ❖ However, the **Store Keeper** must be recruited and in place from the beginning. The salary and minor costs of the Store keeper and Clerk Accountant can be paid from the contributions of the WASH Cos.

# Supply Chain Coordinator

- The Supply Chain Coordinator shall be the **regular staff** of the Woreda Water Desk/Office.
- It is the recommendation that he/she needs to have technical and coordination skills required to properly manage this job.
- The Woreda Water Desks/Offices are required **to pay salaries, per diems, transportation and other related costs** while moving from place to place to undertake the activities related to the procurement and distribution of spare parts.



## ii. Supply Chain Linkages

- Main Importers or their Branches at close distance/1<sup>st</sup>/
- Privet Supplier at woreda/2<sup>nd</sup>/
- Woreda WASH Cos/3<sup>rd</sup>/
- Supports/technical or financial or facilitation/ to WaShcos from stakeholders/ Supply Chain Coordinator, Woreda Water Desks/Offices, CO WASH-BG, Zone Water Res. Dept/


# The Role of Stakeholders in Supply Chain

## **a. Zone Water Resources Department**

- Provide Technical Supports to WWD or offices
- Contributes to the effectiveness of the supply chain in the form of:
  - Supervising the supply chain monitoring team to be established at zone level
  - Assign a representative from Zone Water Resources Department to work on monitoring team
  - Oversees the effective implementation of the supply chain system in the Woredas
- Assign a capable technical person during the bid evaluation and for bulk purchase material inspection before goods are delivered to the warehouse.

## **b. Woreda Water Desks/offices**

- ☐ Primarily responsible for water distribution and sanitation services in their respective Woreda
- ☐ Work on the operation & maintenance of the schemes beyond technical skills of the WASH Cos
- ☐ Identify parts with the inclusive of the right specifications
- ☐ Assign a Supply Chain Coordinator from the Woreda Water Desk/Office
- ☐ Pay the salary and per diem of the Supply Chain Coordinator
- ☐ Avail the warehouse for spare parts

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- ❑ Provide technical support for procurement of spare parts, storage and issuance to the WASH Cos
  - ❑ Provides capacity building to the WASH Cos
  - ❑ As found necessary, link suppliers with WASH Cos
  - ❑ Conduct periodic or surprise check to ensure whether the supply chain is properly working
  - ❑ Perform other functions related to the procurement of spare parts and repair and maintenance.

## **c. Finn-WASH-BG**


- Conducts the overall coordination of the supply chain
- Provides financial supports for capacity building
- Oversees the effectiveness of the system and ensures that the newly established system is properly working
- Lastly evaluates the supply chain effectiveness

## **d. Zone Women Affairs Office**

- Assign a representative for monitoring team to established at zone level
- Ensures that women are empowered and capacitated to take part in scheme management

## e. Supply Chain Coordinator

- Needs to have **technical capacity of conducting pumps repair** and maintenance
- Properly **handle the scheme inventory and data base** which includes history of pump installations, repairs and maintenance, etc. for each water point
- **Receives the spare parts demand** from each WASH Co, consolidate the demands and initiate procurement process
- **Submit the purchase order to the Woreda Water and Sanitation Executive Committee and coordinate the procurement**
- Identify the procurement costs and inform WASH Cos to deposit the amount to the **Woreda O & M bank account/one account at woreda level/**
- **Follows up** the procurement of spare parts, makes material inspection during delivery to the ware house and takes action if missing items or defective parts are identified

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- **Maintain the records of demand for parts**, parts supplied to WASH Cos and repair and maintenance to be done on each water point
  - **Represent** his/her Woreda and participate on supply chain monitoring team's periodic and/or extraordinary **meetings**
  - Ensures that each WASH Co has got the right quantity and quality of spare parts which values are equivalent to what they paid for
  - **Jointly sign the check** with Executive Committee Chair person or other cosignatory
  - Conducts other functions relevant for the procurement, delivery to warehouse and **distribution** of spare parts to the end users.

# **f. Woreda Water and Sanitation Executive Committee**


## **Core activities of Executive Committee**

- Purchasing
- Delivery & Storage
- Distributions
- Record keeping
- Managing bank account
- Maintaining minimum stock level for each item
- Reporting
- Facilitates Auditing



# The above activities are further disintegrated into the following.

- Receives demand for spare parts from each WASH Co through Supply Chain Coordinator
- Ensures that cash for purchase of spare parts is deposited by WASH Cos to Woreda O & M bank account and finally determine the quantity of spare parts to be purchased
- Ensures that the right specifications of materials are written in details
- Floats tender or short lists or makes the direct invitations to local suppliers
- Set criteria and selects the eligible private local suppliers
- Provides the purchase order with list of materials and specifications attached
- Negotiate and sign contract with local suppliers
- Follow up the procurement system and each step in the process

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- Assign the Clerk Accountant and Store Keeper and supervise their functions
  - Effect payments to the suppliers after the purchased spare parts are found to be consistent in quality and quantity with the pre-defined specifications
  - Supervise the delivery of goods to the warehouse and issuance from the warehouse
  - Keeps records of procurement, cash flow, delivery of spare parts and stock balance
  - Maintain the minimum stock for each item and refills if minimum level is attained
  - Prepare reports and submits to the General Assembly
  - Facilitates annual audits to be conducted by independent external auditors

## g. TA/Technical&Adivisory/ Team

- Coordinate the establishment of WUAs at Kebele level
- Coordinates the set up of General Assembly at Woreda level
- Coordinates the formation of Woreda Water and Sanitation Executive Committee
- Develops the skills and competencies of Woreda Water and sanitation Executive Committee
- Awareness creation on new system to Supply Chain Coordinator and through Supply Chain Coordinator to WASH Cos and privet suppliers.

## **h. WSG/Woreda supporting Group/ Office**

- Awareness creation to zone Water Resources Development Department, WWD or offices
- Works on improving the capacity of Woreda Water Desk or offices
- Monitor and control the supply chain system functioning
- In conjunction with CO WASH and TA Team conduct the evaluation of the system

# i. Water Users Associations

- Legally established at Kebele level
- Elect members for the formation of the General Assembly at Woreda level
- Help the WASH Cos established to administer schemes in respective Kebeles
- Help the WASH Cos get access to spare parts and conduct repairs

## j. WASH Cos

- Conduct need assessment for spare parts required for corrective or preventive maintenance
- Identify spare parts which must be purchased including the right quantity and quality
- Present to the Supply Chain Coordinator the procurement demand for spare parts
- Deposit the cash to Woreda O & M bank account for purchase of spare parts
- Formally collect the spare parts from warehouse as they are informed
- Conduct the repair and maintenance and report on the activities.


## k. Privet Firms (Building Material Shops, Artisan Associations, Cooperative Associations or Unions)


- Participate on the bid for supply of spare parts
- Sign contracts with Woreda Water and Sanitation Executive Committee
- Supply the spare parts in accordance with the specifications and quantity required
- Make the goods available for inspection and deliver them when accepted
- Agree to supply small purchase while the Executive Committee refills the stock in accordance with the general agreement signed between the two parties
- Willing to change defective items or fully refund the Executive Committee for damaged spare parts


# Recommendations

- Establish WUAs at Kebele level, set General Assembly at Woreda level and form the Water and Sanitation Executive Committee by selecting active and able members from the General Assembly,
- Arrange the warehouse on each Woreda and facilitate the procurement, storage and distribution of spare parts to the WASH Cos
- Appoint the Supply Chain Coordinator in each Woreda and build his/her capacity to coordinate the procurement of spare parts
- Recruit important staffs and make the system effectively run smoothly



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- Identify the private sector participants from the point of view of their financial holding, working capital, willingness to serve people by providing quality products at a fair price and general characteristics which testify the desirable code of conducts,
  - Focus on private sector participants that have a perception of trading of spares as a social rather than a commercial activity
  - Conduct the market assessment from time to time and check the market effect on the prices of goods and services and adjust the contract accordingly if changes are significant

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- Value the supremacy of the prevention over the rehabilitation and gear the supply chain towards that end
  - Avoid activities that distort markets and which acts as disincentives to the private sector participants
  - Work on developing the understanding capacity of those stakeholders involved in supply chain and ensure that they are doing the right job at the right time, right quality of products at fair and acceptable prices,

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- From time to time examine the private sector participation in the
  - development of successful supply chains for spare parts
  - From time to time examine the private sector participation in the development of successful supply chains for spare parts
  - Conduct strong, uninterrupted and consistent system monitoring and management to ensure system sustainability.

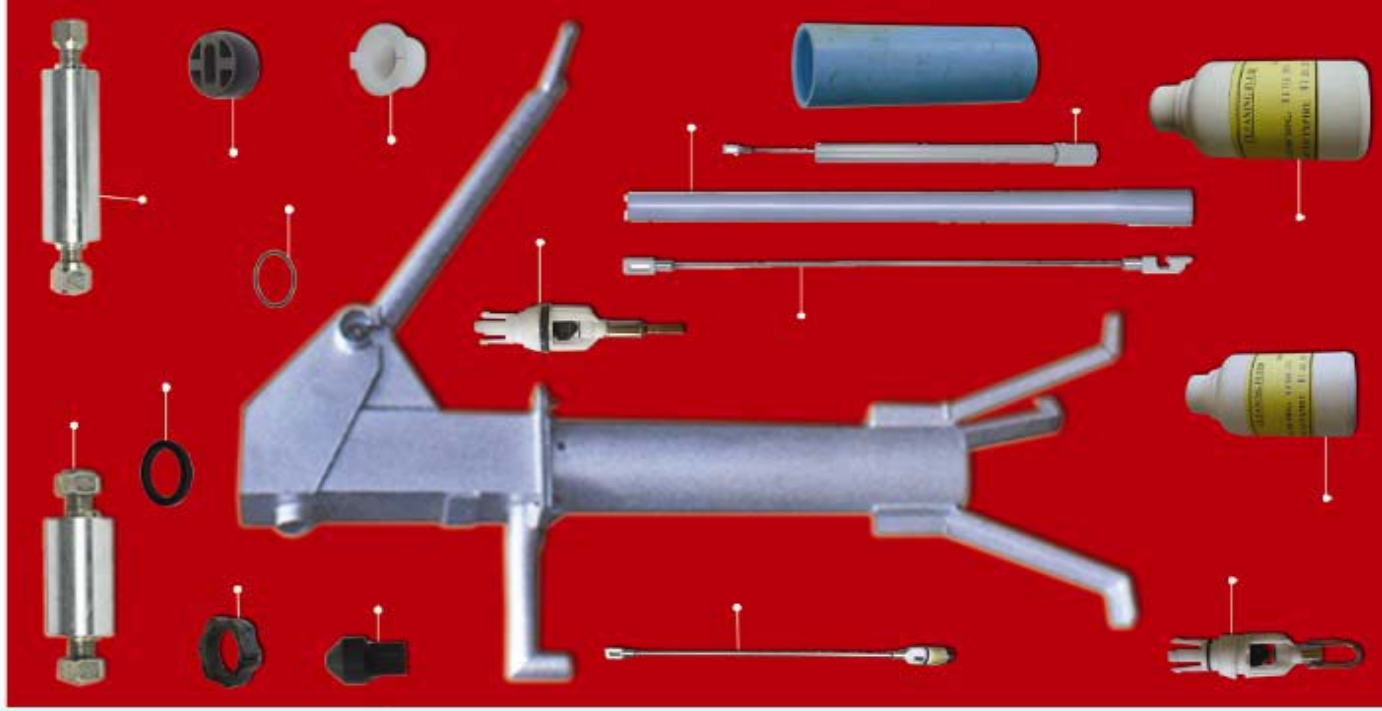
# REFERENCES

1. Ethiopian Water resources Policy, MoWR
2. Ethiopian Water Sector Strategy, MoWR 2001
3. Finn WASH-BG Programme, Annual Report 2nd Implementation, July 2010-June 2011 developed on October 2011
4. B/G/R/S Water, Mines and Energy Resources Development Bureau, Finn WaSH Program (Mandura, Pawi, Debatie, Bullen and Wombera Woredas) Baseline survey  
studied by Effeicient DBF Consulting Partners, December 2010
5. New National WASH, UAP, Finn WASH-BG, Community development Fund Operations Training Manual, prepared by Desalegn Simachew and Tesfaye Yesigat,  
September 2009
6. Water Supply, Waste Disposal and Environmental Engineering by A.K. Chatterjee,  
Khana Publishers 7th edition

# REFERENCES

7. AOV Hand Pumps for Community Drinking Water, Nodia, India Manufacturer Catalogue
8. AOV International Afridev Deep Well Hand Pump Install action and Maintenance Manual, Nodia, India, Manufacturer Catalogue
9. Ajay Afridev Deep Well Hand Pump, Delhi, India Manufacturer Catalogue
10. Meera Afridev Deep Well Hand Pump, India, Manufacturer Catalogue
11. Bid network PALm Spare Parts Supply Chain, [www.bidnetwork.org](http://www.bidnetwork.org)
12. Creating Successful Privet Sector Supply Chains in Review, [www.susana.org](http://www.susana.org)
13. Rural water Supply and Sanitation Programme-Africa, [www.afold.org](http://www.afold.org)
14. Water Supply and sanitation in Ethiopia, [www.wsp.org](http://www.wsp.org)

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Work for Better

THANK YOU!