



# **Rural Water Supply Community Based Management Manual**

Ministry of Water Resources  
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This manual is aimed for the Sustainable Management of rural Water points. This manual will help the operators and water point managers to increase their knowledge in the technical and financial management of their water points and systems. The manual is the first step towards the capacity building at the lowest level to enhance improved service delivery which is based on cost recovery and sustainable management concept.

## **Manual summary**

Rural water sources are managed by water point managers and operators who are selected by the community elders without consideration to their basic knowledge for their profession, there are no formal or informal trainings provided by the Ministry and WASH involved organization in the development of Somaliland water resources.

As a result of that, the breakdown of the water equipment is frequent and the lifespan of the water abstraction equipment are much shorter than manufacturer instructions. The sustainable management of the rural water systems are the major challenge that The Ministry of water resources and Water sector of Somaliland have faced. There is the need to adopt strategic approach which is based on building the capacity of the rural water but this approach should focus first of all to the introduction of new methodology which is based on capacitating the grass root candidates who are the operators, water point managers, local technicians, water committees, district and regional water officers.

This manual is the first step towards the capacity building of the sustainable management stakeholders at grass root level, this approach will reduce or eliminate the frequent breakdown of the water equipment, this can be realized through proper O&M and wise use of the revenues generated from the water sales.

This manual will help the rural WASH sector and stakeholders, with the leadership of the Ministry of Water resources, to realize sustainable management at lowest level.

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## Abbreviations

AWD	Acute water diarrhea
DG	Director General
DOWD	Director of Water Department
DWO	District Water Officer
EC	Electro conductivity
FA	Framework Agreement
FAO	Food Agriculture organization
FGDs	Focus Group Discussions
Gen-set	Generator Set
GPS	Global Positioning System
Mg/l	Milligram per liter
MOWR	Ministry of water Resources
NERAD	National Environment Research and Disaster
ODF	Open Defecation free
O&M	Operation and Maintenance
PSI	Population Services International
RC	Regional Coordinator
PPM	Parts Per Million
PPP	Public Private Partnership
SA	Supply Agreement
SP	Service Provider
SWALIM	Somalia Water and Land Information Management
SWL	Static Water Level
TDS	Total dissolved Solids
TCU	True Color Unit
UNICEF	United Nations Children's fund
WHO	World Health Organization
WMU	Water Management Unit

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## INTRODUCTION: SECTION A

Water sources in the rural areas are the backbone of nomadic people and their livestock, there are traditional water sources which are not improved which are liable for contamination. During past two decades the international aid communities had funded the improvement of many strategic water sources with motorized water equipment or solar powered abstraction equipment.

These water sources are handed-over to water point managers and operators selected by the community elders who don't have the required basic knowledge and breakdown of the equipment became constant issue. The major reason for that is merely to the lack of proper operation and maintenance e.g. oil and filters are not changed on the basis of the working hours of the generator, other minor and major repairing are not done on periodic basis according to the requisite of the equipment manual. As a result of that breakdown of the equipment which are frequent mainly during the peak demand (droughts, long dry season, and hot seasons in the coastal areas).

On the other hand, the collected revenue from the water sales are not used for the operation, maintenance and repairing, it isn't based on agreed financial procedures with various heads and sub-heads for all activities. The operators mostly use the collected revenue as they like, while there are no saved funds for the emergency breakdown and routine repairing.

All these problems are due to poor procedures and guidelines from the Ministry for the operates and water managers, water supply systems in the rural areas are very essential and there is the need to draft a manual for the operators and water point managers to follow for their daily operations. Training and capacity building for the water point managers and operators will eliminate all these above mentioned mistakes and contribute to the long life of the expensive equipment for water abstraction equipment.

MOWR has established emergency mobile unit to respond quickly to the emergency breakdown of the strategic water sources, but they don't have the basic equipment for the emergency breakdown remedy, equipping this unit can support the continuity of reliable water supply, they have good relation with the water sources operators and managers and can provide on job training.

MOWR has all the regulatory frame work including National Water Policy, Water Strategy, Water Act and Water Regulation but these documents are not well disseminated and enforced.

### Management attributes

**To enhance sustainable management following competences should be ensured.**

<b>Sense of responsibility</b>	<b>Skills in planning</b>
Willingness to take risks	Staff supervision
Skill in problem-solving	Sense of humour
Capability to generate new ideas	Communication
Planning with communities	Enthusiasm
Promotion of external relations	Monitoring
Strategy development	Initiative
Integration: technical/social	Technical skills
Mobilizing resources	Ability to work in groups
Human resource development	Stimulating leadership

There is the need to face and solve the lack of sustainable management in the rural water points but there should be clear strategy with defined roles and responsibilities between stakeholders. Establishment of rural water management manual can be good step towards the realization of sustainable management, this manual will educate and train the operators and water sources managers, and this will lead them towards the better understanding of the sustainable management for provision of safe and adequate water supply which is the ultimate goal of the MOWR and the water sector partners.

Ministry of Water Resources and CARE International office Hargeisa work very closely to develop Somaliland water sector, the Ministry has requested from CARE office Hargeisa to support the draft of rural water management and policy manual, which will help the operators and water point managers to follow and fulfill the procedures and the formats of the manual for the sustainable management of their systems, this manual will help them to run smoothly the water points/sources of their respective locations and will eliminate or minimize the frequent breakdown of the equipment.

## **I. BACKGROUND**

Large investments were made to construct water schemes in the rural areas of Somaliland during the past two decades (1995-2015), UN/International organization had implemented many rural water projects. Due to poor O&M, the life time of the valuable and expensive equipment and infrastructure are very short and their breakdown is frequent, the revenues collected from the sales are not managed properly. When the water system breaks down the emergency appeal for intervention usually comes to the Ministry and supporting organizations. The frequent breakdown of the strategic water sources and constant demand for support created donor fatigue syndrome. This has led the pressure on the needy communities who are the major victim.

Due to imbalance between the demand and supply, the Ministry emphasizes on the water resources development while the sustainable management was neglected. As the result of that, water schemes failed to cover the water needs of the community. There are basic Water Regulatory framework for the Republic of Somaliland water sector but the dissemination and enforcement are not at the required level.

Water sources in the rural areas are purely at community level who are not able to handle the valuable systems alone without the required training skills for O&M.

Handover of completed projects had no clear procedures and contract agreements with well-defined roles and responsibilities, this resulted the operators to have power for taking decisions without limit. The handover also don't take place in the presence of all the stakeholders mainly the Ministry at national, regional and district levels and the operator/point managers represents all without any binding rules.

**However, most of these water points were not operating well due to following factors:-**

- Poor planning of the implemented projects.
- Low expertise of the implementing contractors and Ingo
- Less consideration to operation and maintenances
- Selection of operators not participatory (not competitive).
- Operators are not accountable to the Ministry, Communities and local authorities in their respec-

tive areas.

- Ministry capacity at regional and district is very low and cannot support and give relevant instructions to the operators on good practice.
- Lack of well-defined contractual agreements between the water point managers, community representatives and the Ministry to limit the misuse of the power especially revenue and equipment.
- insufficient finance
- Un paid water
- Inadequate training of personnel.
- Lack of performance evaluation and regular monitoring.
- Inadequate emphasis on preventive maintenance
- Lack of O&M and management manual.
- Lack of enough field information etc.

## **II. OBJECTIVES**

To improve the standard of living of Somaliland rural communities through the provision of ensured water supply for all uses in a sustainable and environmentally friend manner.

## **III. SPECIFIC OBJECTIVES**

To establish efficient operation and maintenance of rural water supply system which can realize reliable and affordable water service delivery in terms of quantity and quality.

## **IV. MINISTRY STRATEGY**

The Ministry of Water resources will put major emphasis on ensuring sustainability of water availability in terms of potable, adequacy, affordability and equity while adopting decentralized approach through involvement of community based management unit with official contractual agreement.

As per the strategic plan of ministry of Water Resources at least 45% rural communities shall be provided with service connection within their premises by 2018 and 75% rural communities to be provided service connection by 2025<sup>1</sup>.

## **V. DEFINITIONS**

### **V.1. Operation**

Operation refers to maintain timely and daily operation of the components of a Water Supply system Such as, machinery, equipment, transmission and distribution pipes, infrastructure, effectively by various technical personnel on routine bases.

### **V.2. Maintenance**

Maintenance deals with the activities that keep the system in proper working condition, including management, cost recovery, repairs and preventive maintenance.

- **Crisis maintenance:** maintenance under- taken only in response to breakdowns and/ or public complaints, leading to poor service level, high O&M costs, faster wear and tear of equipment, and user's dissatisfaction.
- **Preventive maintenance:** maintenance activities undertaken in response to pre- scheduled systematic inspection, repair and replacement, leading to continuity in service level, O&M costs spread over time, extension of life-span of equipment, user's satisfaction and willingness to pay.

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<sup>1</sup> MoWR 5years strategic plan

## **VI. SUSTAINABILITY**

A service is sustainable when:

- it continues over a prolonged period of time (which goes beyond the life-cycle of the equipment)
- it is able to deliver an appropriate level of benefits (quality, quantity, , continuity, affordability, efficiency, equity, reliability, health)
- its management is institutionalized (community management, gender perspective, partnership with local authorities, involvement of formal/ informal private sector)
- Its operation, maintenance, administrative and replacement costs are covered at local level through user fees, or alternative financial mechanisms.
- it can be operated and maintained at local level with limited but feasible external support (technical assistance, training, monitoring)
- It does not affect the environment negatively.
- it functions and is being used

### **VI.1. Processes which influence sustainability**

- Demand from the community
- Responsiveness from the supporting institutions
- Participation of the community throughout the project phases
- Linking technology choice with operation and maintenance
- Integrated planning (sanitation, water, hygiene, environment)
- Planning with a gender perspective
- Decentralization and transfer of responsibilities and resources
- Capacity-building at all levels
- Communication among stakeholders
- Public-private partnership
- Co-responsibility between communities and municipalities

### **VI.2. Management**

Management deals with the control and organization of a service and encompasses the following main functions:

- Development of a vision and strategy
- Planning
- Organization and mobilization of resources
- Administration
- Accounting
- Leadership, motivation of personnel
- Supervision, monitoring and evaluation
- Promotion of external relationships.

**V II** service provider means water supplier such as water agency, water management unit, water tankers etc.

### **VII.2. Water Sector organization**

Water resources are treated as public owned asset for the benefit of Somaliland citizens as per the Constitution of Somaliland. The Ministry of Water resources of Somaliland is the regulatory body which formulates policy guidelines in respect of Rural Water Supply Sector and provides technical assistance to the regions and districts in the planning, Implementation, operation and cost the recovery of water supply and sanitation facilities

### **VII.3. Necessity for Manual**

The Manual for Operation, Maintenance and sustainable management procedures and policy is a long felt need of the rural drinking water sector. At present, there is no technical manual on this subject to benefit the field personnel and to help them. This manual has been prepared to facilitate/institutionalize the operation and maintenance system of rural water supply schemes.

#### **Manual focuses this following issues**

- Enforcing Ministry strategy
- Improve planning skills
- Provide skills in problem-solving
- Integration of technical and social issues
- Improve communication (efficient presentation technique)
- Enhance supervision and Monitoring
- Human resource development
- Improve planning with communities and other stakeholders.

## **SECTION B: ISSUES AND BASIC KNOWLEDGE**

### **I. FRESH WATER**

#### **I.1 General Information**

Out of all the water on Earth, saline water in oceans, seas and saline groundwater make up about 97%<sup>2</sup> of it. Only 2.5–2.75% is fresh water, including 1.75–2% frozen in glaciers, ice and snow, 0.5–0.75% as fresh groundwater and soil moisture, and less than 0.01% of it as surface water in lakes, swamps and rivers.

**I.2.** Fresh water in Somaliland is naturally occurring surface water (ponds, sand rivers, Barkads, Earth dams and springs) underground as groundwater in aquifers and underground streams.

- Fresh water is generally characterized by having low concentrations of dissolved salts and other total dissolved solids. The term specifically excludes seawater and brackish water.
- The term "sweet water" (from Spanish "agua dulce") has been used to describe fresh water in contrast to salt water.
- In Somaliland context sweet water means water harvested from rainfall or simpler with unobjectionable test.
- The term fresh water does not have the same meaning as potable water. Much surface fresh water and some ground water are unsuitable for drinking without some form of purification because of the presence of chemical or biological contaminants.

#### **I.3. Numerical definition**

International context fresh water is defined as water with less than 500 parts per million (ppm) of dissolved salts.

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<sup>2</sup> Google, Fresh water

Water salinity based on dissolved salts			
Fresh water	Brackish water	Saline water	Brine
< 0.05%	0.05–3%	3–5%	> 5%

National Context<sup>3</sup>

Water salinity based on dissolved salts			
Fresh water	Slightly Brackish water	Brackish water	Highly Brackish water
< 1000uS/cm	1000uS/cm- 2000uS/cm	2000uS/cm-4000uS/cm	>4000uS/cm

## II. TYPE OF WATER SOURCES IN SOMALILAND

### Types of Sources

Following are the common water sources:

- Surface sources –a) Rivers, canals, b) streams, c) reservoir and ponds.
- Sub surface sources-a) Infiltration wells, b) Infiltration galleries, and local springs.
- Ground water sources- a) Open wells/sanitary wells/bore wells,

#### II.1 Types of water sources in Somaliland

- Primary water sources are rain water.
- Secondary water sources are boreholes, Shallow wells, Open karsic wells and Springs etc.
- Surface water sources such as Barked, Balley, Earth Dam, roof water catchment and mega dams.

#### II.2 Classification of scale water users and usage Rural Water

Urban/Rural water:

- urban are legally considered to those towns which are included in grade A as defined in Law No. 23 for districts and Regions, there is no agreed and official definition defined in the water act but rational criteria can be
- urban location with more than 1000 house connections,
- pre urban with locations up to 300-1000 connections
- Rural water locations with no house connections.
- the locations with population more than 20,000 inhabitants can be considered as urban,
- locations with population in between 1,500-20,000 inhabitant can be considered as pre-urban,
- While the locations with population less than 1,500 inhabitant are considered as rural.

#### II.2. Compensation of Rural Water:-

- water sources always locate in rural areas and it is evident that water supply is mostly transmitted to the urban centers without giving consideration to the communities located near the water sources despite their need for water, in certain places the nomadic people break the transmission pipes to get water for their families and livestock, this happened near Berbera and the best solution was the construction of 4 public kiosks in between the 26kms transmission pipelines, that can be some kind of compensation which is applicable in the other areas, some private service providers also participate in the community development projects.

<sup>3</sup> Central Laboratory for MoWR SL

- All water providers in water points shall supply adequate water to the nearby communities as compensation
- All transmission main supply shall provide water adequate water to the nearby communities as compensation
- All water providers are obliged to contribute water recharge mechanisms to increase to recharge of the aquifer
- All water providers should contribute to the development of the communities of the aquifer areas.
- Water providers should submit annually their contributions to the community development to include it in the district plan.

#### **II.4. Uses:-**

- Water uses are categorized according to their importance.
  - Primary uses are included domestic uses for human, livestock in the pastoralist areas and agriculture in agro/pastoralist.
  - secondary uses are considered for commercial purposes, construction and industries,
  - in case of water scarcity or water quality problem issues Article 42 of the Water Act<sup>4</sup> defines well the degrees of prioritization as indicated below:-
1. First Priority is for Domestic Use
  2. Second Priority is for Livestock Watering
  3. Third Priority is for Agriculture and other uses

### **III. PUBLIC WATER SOURCES:**

#### **III.1 Definition of Public water resources/sources**

- Public water sources are all water facilities constructed by investment from government, donations, charities/endowment and any other kind of grant from countries, donors, organizations, individuals which is intended for public interest.
- All natural occurring water sources, such as streams, dry water rivers, springs, traditional open wells, communal dams and communal barkads, and underground aquifers are public assets.
- All above mentioned water resources/sources are public property and should be included in public asset register.
- All public water sources intending for human and livestock consumption should not be using for private purpose such as irrigation, water bottling etc.
- Public water sources can't be transferred, sold or granted to private people (private owned) as indicated in the Water Act (Art.18).
- Well field areas, water reservoirs, main transmission and distribution pipes (restricted areas) should not be allowed for settlement as indicated Water Act (Art.52).
- Protected water areas (water Act article 76, water regulation and Minister circular)

#### **III.2 Definition and Rights of Users:**

- UN general assembly (2007)<sup>5</sup> recognized the right of every human being to get access for clean, adequate and affordable water in order to survive.

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<sup>4</sup>WWD Law No. 49 National Water Act approved 2010

<sup>5</sup> WWD 2007 water is a basic requirement for all life

- Water institutions, water worker and water organizations are fulfilling those obligations when they are participating in the provision of access to water for Somaliland citizens and their economic dependents.
- Water users must know their rights for improved water sources to minimize water borne diseases.
- Water users have the obligations to use the protected and pay the agreed tariff to support the sustainability according to the affordability.

#### **IV. GENERAL ROLES AND RESPONSIBILITIES.**

- Water is a basic element for life and with it life is impossible
- The person who is providing that important element to community has also important role in his community,
- Water point managers should know that responsibility.
- If they understand better that responsibility they can support their people by handling well the water sources and maintaining the water supply regularly,
- If they do not handle well the assets frequent break down will take place, his people will not get reliable supply and they will suffer much.
- The valuable equipment will not stay long.

Where there are optional unprotected water sources near the improved water facilities community mobilization and awareness raising should be carried out to address the problem of using contaminated water.

#### **V. PRIVATE WATER SOURCES:-**

##### **V.1. Definition of Private Water Sources**

- Private water sources are all water facilities constructed by investment from private individual, persons, cooperatives and business group.
- The water rights invested by private are privately owned and should be registered flowing the provisions of articles 12-16 of the Water Act.
- The private investors should apply for the required permits and also pay the fees and taxes.

##### **V.2 Rights of users:-**

- Private water right owners should know the rights of their community members, neighbors and families the right to get access for water mainly in critical periods like droughts or long dry seasons.
- In Islamic religion and Somali culture all people have equal rights to get water for domestic uses.

##### **V.3. Compensation of private water sources to habitants:-**

- Private water sources owners should respect the rights of the communities who live in the downstream and around water sources (Art.60).
- They have to flow the provisions in the water act and avoid the over pump and over uses of the water resources that they share with the communities in their areas, they should not deplete the aquifer or divert illegally the shared water resources.

## VI. POTABLE WATER STANDARDS

Different countries may have different standards. The most agreed and universal is WHO Guidelines<sup>6</sup>

### VI.1 Basic Water Quality requirements:

The basic requirements for drinking water should be:

- Free from pathogenic [disease causing] organisms.
- Containing no compounds that have an adverse acute or long –term effect on human health.
- Fairly clear [low turbidity, little color].
- Not saline [salty].
- Containing no compounds that cause an offensive taste or smell.
- No causing corrosion or encrustation of water supply system no staining clothes washed in it.

### VI.2 Bacteriological quality:

- The bacteriological quality is very essential and should be tested before the selection of the sources and during the operation of supply. In this regard microbiological quality should not be confused with aesthetically pleasing water.
- A good bacteriological quality is the best obtained by selecting a sources without contaminated, by protecting the intake [and adequate treatment].

### Guideline values for distribution and bottled water:

Given under table are water quality standards that conform to WHO guideline limits

Type of microorganism	Drinking water	Containerized water
Total viable counts at 37 c per ml max.	100	20
Coli forms in 250 ml	Shall be absent	Shall be absent
E coli in 250 ml	Shall be absent	Shall be absent
Staphylococcus aureus in 250 ml	Shall be absent	Shall be absent
Sulphite reducing anaerobes in 50 ml	Shall be absent	Shall be absent
Pseudomonas aeruginosa	Shall be absent	Shall be absent
Fluorescence in 250 ml	Shall be absent	Shall be absent
Streptococcus faecalis	Shall be absent	Shall be absent
Shigella in 250 ml	Shall be absent	Shall be absent
Salmoella in 250 ml	Shall be absent	Shall be absent

WHO guideline volume 1,2 and 3

6 WHO guidelines volume 1,2, and 3

### Remedial action on Bacteriological Deficiencies:

Remedial action has to be taken if deficiencies of the quality are detected. Such actions may be temporary such as issuing recommendations to boil the water or/and long term such as localizing and eliminating the source of contamination and improving the treatment.

### Guideline values for raw water coli form organism [Number /100ml].

0—50	Bacterial quality required disinfection only.	Actions is taking by region/district/Central
50—5000	Bacterial quality required full treatment [coagulation, sedimentation, filtration and disinfection].	strong water treatment by the Ministry staff
5000—50000	Heavy pollution requiring extensive treatment	Extra ordinary mission
Greater then 50000	Very heavy pollution unacceptable as source unless no alternative exist. Special treatment needed.	National issue

### Quality requirements for drinking water and containerized water:

Physical

Substance of characteristic.	Drinking water	Containerized water.
Colour in True units [TCU] max	15	15
Taste and colour	Shall not be offensive to consumers.	Shall not be offensive to consumers.
Suspended matter.	Nil	Nil
Turbidity in Nephelometric Turbidity Units max.	5	5
Total dissolved solids in mg/l	1500	1500
Hardness as CaCO <sub>3</sub>	500	500

WHO guidelines volume 1,2 and 3

### Permissible aesthetic quality:

Under certain circumstance when it is not practicable to water of the desirable aesthetic quality it may be permissible to raise certain guideline values as shown below:--

The local and climatic condition necessitate adaptation of Fluoride concentration in excess of 1.5 mg/l

In exceptional cases a fluoride content of 3mg/l.

### V.3. W.H.O. BASIC STANDARDS FOR DRINKING WATER

PARAMETER	UNIT	LIMIT
Aluminium	mg Al/l	0.2
Arsenic	mg As/l	0.05
Barium	mg Ba/l	0.05
Beryllium	ug Be/l	0.2
Cadmium	ug Cd/l	5.0
Calcium	mg Ca/l	200.0
Chromium	mg Cr/l	0.05
Copper	mg Cu/l	1.0
Iron Total	mg Fe/l	0.3
Lead	mg Pb/l	0.01
Magnesium	mg Mg/l	150.0
Manganese	mg Mn/l	0.1
Mercury	ug Hg/l	1.0
Selenium	mg Se/l	0.01
Sodium	mg Na/l	200.0
Zinc	mg Zn/l	5.0
Chlorides	mg Cl/l	250.0
Cyanide	mg Cn/l	0.1
Fluorides	mg F/l	1.5
Nitrates	mg NO <sub>3</sub> /l	10.0
Nitrites	mg NO <sub>2</sub> /l	-
Sulphates	mg SO <sub>4</sub> /l	400.0
Suphides	mg H <sub>2</sub> S/l	0
TOTAL "drins"	ug/l	0.03
TOTAL "ddt"	ug/l	1.0
Hydrocarbons	mg/l	0.1
Anionic Detergents	mg/l	0
pH		9.2
Total dissolved solids	mg/l	1500
Total hardness	mg/l	500
Alkalinity	mg/l	500
MICROBIOLOGICAL PARAMETERS		
Total Bacteria	Count/ml	100
Coliform	Count/100ml	0
E. Coli	Count/100ml	0
Salmonella	Count/100ml	0

ug=microgram

mg = milligram or ppm

## V.4 Per Capita (Rural/Urban)

Recommended basic water requirements for human needs (per person)

Activity	Range / day	Somaliland standards
Drinking Water	2–5	1.5
Sanitation Services	20–75	20
Bathing	5–70	10
Cooking and Kitchen	10–50	8

- Water Requirements of different classes of livestock

Animal	Average / day	Range / day
Dairy cow	20 US gallons (76 l)	15 to 25 US gallons (57 to 95 l)
Cow-calf pair	15 US gallons (57 l)	2 to 20 US gallons (8 to 76 l)
Camel	26 US gallons 100 l	Gallons 8-10 US (32-40)
Yearling cattle	10 US gallons (38 l)	6 to 14 US gallons (23 to 53 l)
Horse/Donkey	10 US gallons (38 l)	8 to 14 US gallons (30 to 53 l)
Sheep	2 US gallons (8 l)	2 to 3 US gallons (8 to 11 l)

## VII. STANDARD OF WATER SUPPLY

### VII.1 Quantity

Quantity of water required depends on the type of use for example the per capita in our case is 33.3ltr/person/day in urban areas and 8ltr/person/day in the rural areas.

40 lts/person/day in urban areas and 20 lts/person/day in the rural areas

In the case of livestock the camel require 100ltr/head, cattle 40ltr/head and the shoats 10ltr/head

Coming to crops 1kg of rice require 2500ltr, while 1kg of meat require 1600ltr<sup>7</sup>.

### VII.2 Quality

Every Country has local standards based on local their context, like wise Somaliland should have local standards which can match to the types of water sources available,

- In Somaliland two third of the country people are access to water which is beyond the acceptable limit of WHO guideline and still using without much recorded clinical cases.
- Drinking water should have to be free from contamination by protecting the water source
- Drinking water should be also free from toxic elements (heavy metals).
- Establishment of local water quality standard to be agreed and adopted by concerned stakeholders

### VII.3 Supply Time and Schedule

- Minimum fetching distance should not exceed 1500m in rural areas.
- Special consideration should be given to IDPS and Marginalized groups
- The elapsed time should not be more than one hour to give opportunity for school enrollment and mothers caring children at home.

<sup>7</sup> Director of planning and research report 2013

## VIII. RURAL WATER MANAGEMENT POLICY

### VIII.1 Community based rural water supply management concept (east Africa)

- Water management unit manages the water sources in the villages/settlements
- The water management unit consists of head of village, water source operator and one member from the community member if necessary.
- There are village water committees selected by the community elders and village authority,
- The district authority and district/region water officers approve the selected management unit (Water supply authorization form) see annex3
- The district water officer will sign water supply agreement with the water management unit (head of village). See annex 1
- The supply agreement period is two years.
- The water management unit members are nominated by:
  - a) Technician/operator by the district water office in consultation with village committee.
  - b) Head of village by ministry of interior
  - c) Member from water users/manager selected by village committee.
- Water management unit are responsible all water supply assets in the village.
- Water management unit are responsible to provide adequate, safe and affordable water supply to their communities.
- The water management unit are responsible of the operation maintenance, security and minor repairing.
- The water management unit are responsible to propose water tariffs under the approval district water office.
- Water management unit are accountable to the district water office
- All agreements and documents should be kept in Village and the district water office.

### VIII.2 Definition demand driven responsive approaches

Every community knows better the problems and the demand in their respective areas because they are the direct victim of that problem.

- Demand is realistic when it comes from the grass root.
- Demand respond should come from top down
- Demand driven is when problems are raised by the community.

### VIII.3. Policy and strategies that affecting rural water supply

Somaliland National Water Policy and strategy are both highlighting that all the demand should be initiated from the lowest level and raised upwards.

### VIII.4. Functionality, cost recovery and sustainable water sources and technical option of water abstraction.

#### VIII.4.1. Functionality and cost recovery category

- **Water yard:** is permanent water sources that supplies nomadic community and their livestock mostly locates grazing areas and strategically used during dry seasons and drought and consists of animal troughs, rural kiosks, stand pipes and water tank. This kind of water source is mostly seasonal.

- **Mini water system** : is permanent water sources which locate away from the village and supplies water to livestock and rural community and the village inhabitants consists of animal troughs, rural kiosks, village kiosks , stand pipes, water tank and some of them has house connections.(quite large villages )
- **Village water points:** is permanent water sources that locates near the village and supplies water to the village community and consists of animal troughs, rural kiosks, village kiosks , stand pipes, water tank and some of them has house connections.

#### **VIII.4.2. Cost recovery category**

- Water yard: this category will generate revenue when in use. the collected revenue should be used as indicated in item 8.7, However when is not in use the cost shall be minimized and operator shall remain the ministry of water will subsidize the salary of the operator for the safety and sustainability. See water supply agreement (annex 1)
- Mini water system: this category will generate revenue. The collected revenue should be used as indicated in item 8.7. This category can have side business as subsidiary such as lighting, mobile charging, public toilets and kiosk shop. See water supply agreement (annex 1)
- Village water points: this category does not generate revenue therefore, this category is recommended to have side business that generated revenue to subsidize the operation and maintenance of water point. The revenue generated should managed as indicating in item 8.7. See water supply agreement (annex 1)

#### **VIII.5. Selection of the suitable source and technical option of water abstraction.**

- Water sources selection depends on geomorphology of the earth formations
- Shallow wells, springs, boreholes are the most abundant water sources in the coastal areas.
- Shallow wells, Barkads and springs are the most abundant water sources in the Mountainous areas.
- Barkads, Balays , boreholes and Shallow wells, are the most abundant water sources in the Haud Plateau.
- Barkads, Shallow wells and open Karsic wells are the most abundant water sources in the Plain areas.
- Abstraction equipment varies from place to place
- There are the traditional abstraction methods in the small water sources
- Mechanical abstraction equipment are used in many place such as irrigation of water farms , water tankers and some water points using centrifugal pumps .
- Electrical equipment are used in the strategic boreholes and town water supply systems
- Using renewable energy mainly solar system are widely used for the abstraction of many water points, mini water systems and some shallow boreholes.

**VIII.6.** Choosing the sustainable management model for each Somaliland rural water is the policy of the Ministry and the rural water most suitable management model is community based management which are linked to the Ministry region/district office, district authority and water management unit.

Engagement of business people in the water management has also showed sustainability.

### **VIII.7 Possible cost recovery mechanisms for each technical option**

Community rural water management will be cost recovery if the collected revenue is planned well such as:-

**VIII.7.1 Fuel Motorized water systems:** the revenue generated from this kind of system should be managed as following:-

- 30% of the funds used for running the system
- 40% of the funds used for staff payments
- 20% of the funds saved for the emergency and development
- 6% of the funds for village authority
- 3% of the funds for district water office(ministry)
- 1% community development

**VIII.7.2 Renewable energy water systems:-** the revenue generated from this kind of system should be managed as following:-

- 50% of the funds used for staff payments
- 30% of the funds saved for the emergency and development
- 13% of the funds for village authority
- 6% of the funds for district water office
- 1% community development

**VIII.8 Stakeholders revenue appraisal** (MOWR, Regional coordinators, community, private water supply providers and supporting organizations)

### **VIII.9 Current regulatory framework (Somaliland water Act).**

Somaliland water Act was approved by the parliament in 2010 and is working document, the water act is highly encouraging the decentralization of water management to the lowest level possible, the water Act is instructing for the formation of Urban water management as following :-

- Autonomous National water Agency
- Autonomous local Agency
- PPP
- For the rural water management the Act is proposing
- The competent local authority may, with the assistance of traditional structures, identify water user groups, and encourage and facilitate such groups to create Water User Associations.
- Water User Associations, with the assistance of the competent local authority, shall manage public water facilities on a sustainable basis, including the financing of recurring and capital expenses
- Water User Associations, with the assistance of the competent local authority, shall manage public water facilities on a sustainable basis, including the financing of recurring and capital expenses

### **VIII.10 Current management structure.**

- Current management structures are community based supported by village committees,

### **VIII.11 Proposed management structure that complies with the water Act.**

- Well trained management unit which reporting to the district water office,

## **IX. MONITORING OF WATER SOURCES**

### **IX.1 Obligation of Record for Water Sources (Profile)**

- Water source should have proper recording systems which will be stored in the data center and district water register
- All activities and intervention should be recorded at all levels.
- All equipment should have logbook stating the working hours to determine engine oil change, filters and all other fast moving parts.

### **IX.2 How and Where to Keep**

- Log book should be kept by the operator and be available during the Monitoring.

### **IX.3. Who collects data?**

- The operator will collect, compile and screen all the data and later submit to the district and regional offices.
- District/Regional offices, and Monitoring teams submit to the national water data center
- District/regional collect data monthly
- Ministry data bank collect quarterly
- Profile moved from page 30 to here

### **IX.4 Period of Update**

- The update of the data will be done quarterly at national level
- The update of the data will be done for everyone month at district level

### **IX.5. Tools of Profile**

- Operator manual and other provisions of the Water Act.

## **SECTION C: WATER POINT MANAGEMENT UNIT**

### **I. WHO ARE THEY**

- The Water management unit will compromise the head of the village, operator and one member from community water users.
- Water management unit should be accountable to the district water office.

### **II. WHO SELECT THEM**

- Technician/operator will be selected by the district water office in consultation with the village committee.
- Head of village by will be selected by the ministry of interior
- Member from water users/manager selected by village committee.

### **III. CONTRACT PERIOD**

- Two years<sup>8</sup> subject for renewal in case of good/satisfactory performance

### **IV. DISMISSAL**

- Village committee proposes written dismissal of operator and member from water users.
- District Water office and district authority (mayor)approve
- Acceptance of the Ministry of Water Resources.

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<sup>8</sup> See the water supply agreement annex 1

## **V. SELECTION PROCEDURE**

- Should have some technical background
- Member of the community
- Trust for community
- Minimum literacy (read and Write)
- Mentally and physical fit (define)
- Gender consideration

## **VI. DISMISSAL PROCEDURE**

- Verbal notice
- Written notice
- Discipline committee (to be defined)
- One Month suspension
- Approval from district office
- Dismissal copied to the Ministry.

### **VII.1 Specific mandates Responsibilities of Water Management unit**

- should protect and maintain the water facility from any damage and not abandon
- should instruct water users to use the protected water source
- Should advocate for the poor communities who cannot pay the water tariff.
- should Participate reconciliation of water source based conflicts
- should Participate community fund raising during breakdown or development of the facility
- should have Coordinate with ministry staff at district and regional levels
- should protect the fair use of water supply(Equity)

### **VII. 2 core value**

- Honesty
- Transparency and accountability
- Good behavior towards the customers
- Better understanding rights and obligations
- Planning in advance
- Good understanding to the responsibility vested by the community and Ministry.
- Saving and deposit for O&M, breakdown and depreciation.

### **VII. 3 Accountability and transparency (all unit, individual).**

- Avoid misuse of funds.
- Use good bookkeeping for revenue/expenditure.
- have balance all the time
- avoid deficit and huge loans
- avoid theft or personal interests

## **VII. WATER SOURCE PROFILE (REVIEW POSITION)**

Water source profile is summary of all water point information including assets, personnel structure, and location, type of water source, water quality and ownership Copied from DATA Bank in the MOWR Data center.

- The profile shall be kept at village committee district/region and national level (Ministry Data Center).
- The water source profile shall be updated once every year December 31st

### **VIII.1. Job Description of water management unit**

#### **Head of village**

- Represent the committee and community.
- Represent the public event and open meetings.
- Chair all meetings and ensure that these meetings run effectively.
- If the head of village is not available, the community representatives will fill the position.
- Ensures that the committee respect adhere on the byelaws
- Approve the temporary staff if needed.
- Support the Operator.
- Lead reconciliations and solving problems

#### **Water user representative/manager:-**

- Water user representative person is always much related to the community water users and update them on the situation of the water sources
- Support the operator in his daily works
- Organize meetings and events
- Coordinate management unit and the water users on tariff payment, water sources protection and other community related issues.
- Water user can take part in the community mobilization towards protection of the water sources and proper use of protected water sources
- Water user fully participate fund rising during improvement of water sources or breakdown of the equipment.
- Water user also member of the water committees

#### **VIII.1.1 Operator/ Manager**

In small settlements and villages where operator and manager are the same the roles and responsibilities are as following:

- Responsible for supply safe .adequate and affordable water supply to the communities in his vil- lage and all other day to day works as defined in the water supply agreement.
- Responsible for the safety of the water sources and equipment, infrastructures and other assets.
- Operate the water abstraction equipment in a sustainable manner day to day works.
- Responsible of the procurement of genuine supplies and spare parts.
- Responsible for collection of revenue and keep it in safe location.
- Responsible on collection of financial and technical data and keep it Recording.
- Compile and record log book of the generators, submersible pump and all other technical inter- ventions.

- Compile and record meter reading, water production and sales on daily basis.
- Coordinate with the other members, district water office and other stakeholders.
- Responsible for the environmental protection and best practice of hygiene and sanitation related issues near the well field and infrastructure compound.

### **VIII.1.3 The daily standard procedures for operator.**

#### **Before starting**

- Operator should control all the generator room to notice if there are some changes after closing.
- He must clear the room from the dust
- He must clean the generator with clean piece of cloth.
- He must check the oil level and its consistency and fill it if needed.
- He must check the water level of the radiator and fit of needed with soft water.
- He must check the level of the batteries and the tightness of its terminals and use distilled water or other soft water.
- He must check the level of the fuel and fill it with enough for the day work “the fuel should be from good suppliers and its container should be free from any kind of dirt, water and suspended particles. If necessary he should use filter when filling the tank.
- The operator should check inside the generator set and take away if there is any piece of metal, cloth, plastic bag inside it.
- The operator should control the condition of the exhaust and fix it if needed.
- The operator should insure the ventilation system, the doors and windows should all be opened.
- The operator should control if there is any kind of leak and note it in the log book.
- The operator should finally take the log book and write down the date, the previous reading of gen-set hour, the remarks that he have seen and etc.
- Check all the pipes for leakage or closed stop clock.
- Check the animal troughs kiosks and stand pipe.
- This time the operator is ready to start the genset

### **VIII.1.4 Procedures for Operating the generator**

- The genset is now ready to operate and operator should start and wait for 7-10 minutes before putting on the load.
- The operator should check regularly the panel board of the genset especially the Ampere meter, the voltage meter and the frequency.
- He has to check the gauges at the genset for oil pressure, heat and rating.
- The operator should put on the load and check the ampere meter and the panel board.
- The operator should regularly listen the sound of the genset and look regularly the smoke from the exhaust.
- The operator should be always around the compound and don't allow any body to enter inside the genset room.
- The operator should not delegate to un trained person at all
- The operator should not go far or away when the gen/set is running

#### **After starting**

- After the work is finished the operator should put off the load and wait the generator cool if self for 10-15 minutes and make it off.
- The operator should write down the working hours in the logbook make the difference to get the exact hours worked and sign the page of that day.
- The operator should also write any kind of service done that day in the log-book for note.

- When the generator is cooled the operator should cover the genset with clean plastic sheet and close the doors and window.
- The operator should untie the battery terminals if the gen/set is not in for quite long period especially during the rainy seasons.
- The consultant explained the log book and how it is important to refer for all services that generator requires mainly.
- Oil and oil filter change for every 200 – 250 working hour according to climate.
- Fuel filter change for every 400 working hours.
- Minor overhaul for every 6000 -8000 working hours
- Major overhaul for every 16,000-20,000hrs.

### **Where to keep**

This tools should be kept in the caretaker room

### **Who Collects**

The Operator and Technicians to keep and collect the water sources tools

### **Frequency of updates**

O&M activities should be carry out according to the request of the manuals of the equipment's,

- Fast moving part changing on the basis of the working hours of generator/machine 200-800 working hrs.
- Minor repairing 800 working hrs.
- Major 20,000 working hrs.
- Cleaning and checking of the equipment before, during and after starting should be carry out on daily bases

### **VIII.1.5 Manager**

In large settlements and villages where operator and manager are different the roles and responsibilities of the manager are as following:

- Responsible for supply safe, adequate and affordable water supply to the communities in his village and all other day to day works as defined in the water supply agreement.
- Responsible for the safety of the water sources and equipment, infrastructures and other assets
- Responsible of the procurement of genuine supplies and spare parts
- Responsible for collection of revenue and keep it in safe location
- Responsible on collection of financial and technical data and keep it Recording
- Insure the record log book of the generators, submersible pump and all other technical interventions
- Insure the record meter reading, water production and sales on daily basis
- Coordinate with the other members, district water office and other stakeholders
- Responsible for the environmental protection and best practice of hygiene and sanitation related issues near the well field and infrastructure compound

## **VIII.2. Role of the Ministry of Water Resources**

### **VIII.2.1. Periodic works**

- Remove the pump and rising main from the well and inspect
- Protection leakage and replace corroded pipes and fittings
- Inspect electric cables and check insulation between cables
- Respond major repairing
- respond emergency breakdown
- assist procurement of the genuine spare parts, fittings and other fast moving parts
- Carry out on job training of the operator and other members of the management unit
- Monitor and supervise of all records.
- Supervise and monitor the application, procedures and agreements.
- Carryout water quality surveillance
- Control water resource conditions
- Develop water resource recharge and flood protection
- Supervise water point assets
- Interfere and solve water resources basic conflicts
- The ministry should provide all necessary tools to water points to carry out the proper O&M and proper repairing of the equipment and water facilities, which are very essential to be available at the water points:-
  - The basic tools can be:
    - a) Electrician tool
    - b) Mechanical tool
    - c) Plumber tool
    - d) Water monitoring equipment
    - e) Basic water quality laboratory

## **VIII. OBLIGATION OF WATER POINT MANAGERS SUPPLY ADEQUATE SAFE WATER TO CITIZENS**

### **IX.1. The water point manager is obligated provision of water to his customers/citizens**

- Apply national water regulatory (water act, water policy, water strategy and water regulation).
- Provide save, adequate and affordable water supply to his community
- Should monitor the water sources, infrastructure delivery supply system avoiding leakage, drainage suck away etc.
- should have good relation with the concerning partner of public health by implementing the safe sanitation policy provisions while working with district authorities , tribes, and all other partners.
- Communicate with the ministry in case of outbreak and emergency breakdown.
- Facilitate drought mitigation
- Should neutral and equity for all source users.

## **IX.2 Water sources permit procedures**

All water sources (Boreholes, Motorized shallow wells, Barkads, Earth dams, and Motorized springs) should have permits(private) or registration(public) from the Ministry of Water Resources at various levels as stated in the water regulation :-

- Motorized water points(Borehole, Shallow well ,springs and earth dams if applicable)
- \* Application for new water points.
- \* Private water sources should be announced publicly to the neighboring areas for 45 days to receive against claims,
- \* If claims are recorded with in that period the issue should be raised to the Ministry of Interior to avoid water resources based conflicts
- \* Provision of water resources development permit.
- \* Registrations of the existing water points.
- \* Abstraction permit.
- \* Supply permit.
- \* Sign Water Point Supply Agreement

### **None -motorized water points ( barkads, Earth Dam and shallow wells )**

- \* Application for new water points.
- \* Private water sources should be announced publicly to the neighboring areas for 45 days to receive against claims,
- \* If claims are recorded with in that period the issue should be raised to the Ministry of Interior to avoid water resources based conflicts
- \* Provision of water resources development permit.
- \* Registrations of the existing water points.

## **IX.3 Minimum standards of quantity of water per person per household**

- The moderate standards for urban and rural are 50 – 100 , 20 - 40 liters/person/day respectively<sup>9</sup>
- The minimum standards for urban and rural are 33.3 - 5.0 liters /person/day respectively
- Somaliland target for 2020 is 40 - 20 liters /person/day respectively for urban and rural areas respectively
- For more information on quality and quantity refer to key issue 16 of this manual.

## **IX. HH/PERSONAL OBLIGATIONS OF WATER QUALITY OF WATER.**

- HH Should avoid drinking contaminated water which causes water borne diseases and are the major killer of children and other vulnerable groups.
- use unprotected water sources is prohibited by law small amount of that you pay using protected/improved water make you and you children from water borne diseases and the is the good behavior.
- Water should not be contaminated inside the house.
- collected water should be stored properly inside the house,
- drinking water should be stored in clean containers,
- Drinking water should be separated from the other house hold.
- HH should use the latrines to avoid ODF problems,
- hands should be washed before meals and after the latrine

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<sup>9</sup> UNHABITAT study for the four urban towns WHIPS project

### **X.1. Obligations for domestic water users use protected and safe water.**

- Water users are obliged to use the protected/improved water facilities to avoid water borne diseases which the major killers of children and other vulnerable groups,
- some people use unprotected water sources to avoid the small payment of the water sales but usually they pay more with medicating their children when they get sick with contaminated water, that is very bad behavior,
- Small amount of that you pay using protected/improved water make you and you children from water borne diseases and there is the good behavior.

### **X.2. Responsibility of district/village leader HH/individual use protected and safe water**

- District officers, community leaders should mobilize their people to make them understand the need for using improved/protected water sources to avoid the possibility of outbreak which can spread throughout the village and effect all the people, this is collective responsibility.

### **X.3. Obligation to water providers supply protected water to community if no external factors.**

- Water providers and water point managers are responsible to make their community understand better the use of protected/improved water sources, them have also to explain the impacts of water borne diseases,
- should mobilize their people to make them understand the need for using improved/protected water sources to avoid the possibility of outbreak which can spread throughout the village and effect all the people, this is collective responsibility.
- some people use unprotected water sources to avoid the small payment of the water sales but usually they pay more with medicating their children when they get sick with contaminated water, that is very bad behavior,
- Small amount of that you pay using protected/improved water make you and you children protected from water borne diseases and that is the good behavior.

## **X. COST RECOVERY OF WATER PROVISION**

### **XI.1. Cost recovery definition**

The concept of the cost recovery is to use the revenue collected from water sales and other related side businesses for the operation, maintenance and the repairing of the water equipment, resources and other infrastructure.

There is the need for appropriate understanding between the community, water point managers and the ministry regional staff, these required the draft of appropriate contact agreement with well-defined roles, responsibilities, rights and obligations

- Water point's managers are not aware of the cost recovery concept but they collect the revenue and do not save anything for O&M and repairing.
- they rely on support from the Ministry or international organizations ,
- most operator has that bad habit which is that water sources benefit is for them when the system is operating and it belongs to the government and organization when there is sources is not operating.
- There is a need to change that bad behavior.
- There is no free water in the most locations, water users mostly pay for the water, the operators and their allies misuse it.

## **Extract from Water Strategy<sup>10</sup> (Water as social and an economic good)**

It is vital to recognize first of all the basic right of all human beings to gain access to clean and safe water at affordable prices. The concept of water as a social and economic good means that water is not considered a free commodity, but rather a valuable resource, which should be used in the best national interest. In the evaluation of which given competing water needs is most desirable, the one with the highest socio-economic benefit should take priority.

Water as an economic good also implies the application of pricing mechanisms to avoid wasteful consumption and undesirable environmental impact. It is emphasized however that poverty abatement considerations may require that subsidies be given to the most vulnerable in society, but the economic consequences of such actions need to be taken into account.

## **XI. MECHANISM OF COST RECOVERY**

The concept of the cost recovery is to use the revenue collected from water sales for the maintenance and the repairs of the water equipment and resources.

There is a need for an appropriate understanding between the community, water point managers and the ministry regional staff, this require the draft of appropriate contact agreement with well-defined roles, responsibilities, rights and obligations.

## **XII. SYSTEM OPERATION AND MAINTENANCE**

- Revenue collected from the water point sales should be used to cover at least the O&M of the water equipment and the responsible staff,
- This will eliminate the dependency on support and donation which is very bad behavior.

## **XIII. MONITORING OF RURAL WATER POINTS**

- The monitoring of rural water yard or mini water system is very essential to ensure the safety of drinking water, the fluctuation of water aquifer and the physical and chemical changes might occur due to contamination.
- Monitoring the financial income and expenditure of yard /mini system.
- District Officer and field engineers should monitor periodically the following parameters :-
  - a) Static Water Level (SWL), monthly frequency.
  - b) Water Electrical Conductivity (WEC), monthly frequency.
  - c) Water production (yields and volumes), daily frequency.
  - d) Water Quality parameters Chemical, Physical and Bacteriological monthly
- Monitoring collected data should be registered and stored in the district/region offices and data bank on periodic basis.

### **XIV.1 Financial monitoring:**

- Financial expenditure, Revenue and savings should be monitored by Regional/District office, Ministry of water resources
- Monitoring report should be submitted to regional and national office of MoWR.
- Any miss conduct financial matters should be applied by national financial safeguard procedures
- All financial transactions should flow national financial procedures

<sup>10</sup> Somaliland National Water Strategy document approved by the council of Ministers in 2004

#### **XIV.2- The Accountability:-**

- The Village water Unit will be accountable to the Districts WASH offices or regional WASH offices.
- The Regional and Districts offices will be accountable to central Ministry of Water resources.
- The parameters for accountability required by the ministry from villages, district and region are:- Asset record, financial record, personnel records and all monitoring documents.

#### **XIV.3- Basic Monitoring Tools:-**

##### **XIV.3.1 Technical tools at district level**

- Deep meters of 200-350m length.
- EC- meters.
- Water flow meters.
- Basic water quality test kits (OXFAM Kit)
- Measuring tapes of 100m length.
- Rainfall Gauges.

##### **XIV.3.2 Managerial tools**

- Generator Logbook
- Registers ( will use to register the daily income and expenditure)
- Hydrogeological data
- Financial data
- Revenue and expenditure template
- Personnel Payroll
- District report template

#### **XIV.4- Development of district/Region action plan.**

- District office should submit quarter action plan to the region
- Regional office should submit quarter action plan to the MoWR.
- The departments of the MoWR should submit quarterly action plan to the DG office

#### **XIV.5- The verification of the water point monitoring.**

- Water sources report
- The district should submit monthly report to the region.
- The region should submit monthly report to the MoWR.
- The departments of the MoWR should submit to the DG office

#### **XIV.6 Analyses and action on the monitoring outcome:-**

The Ministry of Water Resources should analysis monitoring data outcome to ensure:-

- Financial expenditure will ensure the sustainability of the water point.
- The monitoring of the water point should ensure the safe guide, continuity function, sustainability.
- Water quality monitoring should ensure safe and portable water
- Water resources condition (the depletion of water, pollutions of water).

## **XIV. RURAL WATER SUPPLY TECHNICAL OPTIONS**

### **XV.1 Chosen O&M for each technical option**

- Provision of O&M and management training for management Unit using the manual
- preposition operator manual soon after handover
- Operators should carry out periodic O&M and indicated in the manual
- Operators should compile the log book for every technical interventions
- Operator should follow the instructions and guidelines of the operator manual
- Operators should read the working hours and do the required changes of fast moving and other replacements.

### **XV.2 Roles and responsibilities of the O&M mechanism**

- The operator should take care of the cleanliness of the system
- The operator should follow the instructions of the manual and carry out the due activities
- The operator should follow up and monitor the system performance
- The operator should match the system log book and operator manual

### **XV.3 Levels of support including capacity building**

- To train the care taker on the O&M manual
- To train the care taker on the different readings of the engine indicators and what each represent
- To train the operator and the village water management unit on the management of their system
- Any other training found inevitable for the technical option

## **XV. WATER POINTS ACCOUNTABILITY**

### **XVI.1 Water point record keeping:-**

- Operator should compile all water point records in the register.
- The district/regional water office should have a copy of each water point in the district and regularly update on quarterly basis
- The field Engineers should collect data from the water point and compare it with the water point register and district /region register and submit to the Data Bank of the Ministry.
- Data bank staff should compile all water points' data in the server and update it periodically.
- All data should be interpreted and reported high level decision making.
- All interpreted data should be disseminated to all WASH partners in the monthly coordination meetings.

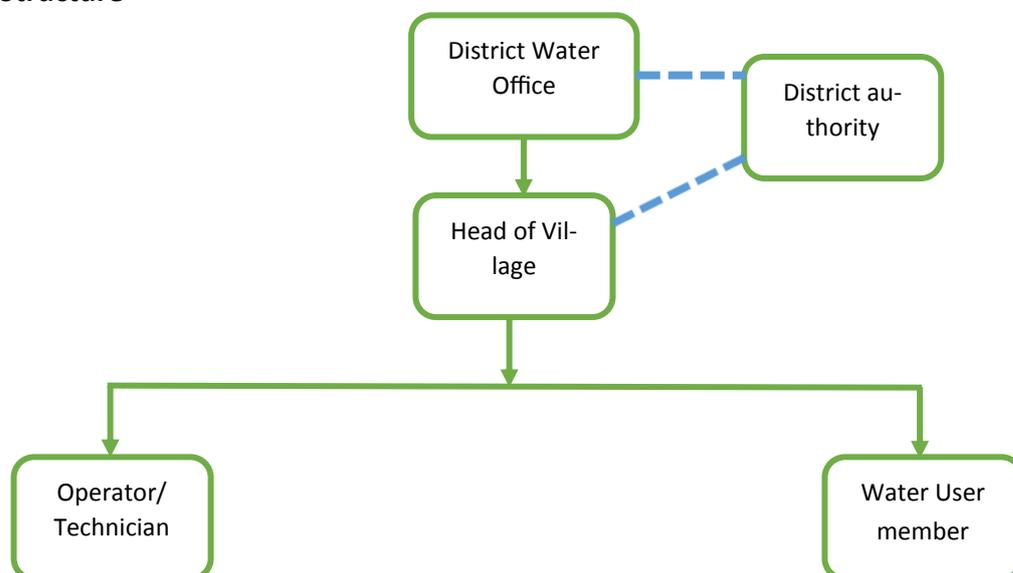
### **XVI.2 WASH information Savings and how to keep or where to keep**

- Ministry Data Centre office should use the software system (SWIMS), all data of the water points and water equipment should be saved in this software with back up mechanism.
- Field supervisors Engineers/district/region should collect the data with simplified tools periodically (quarterly)
- The district should submit the collected data to the region and the region to center and copy of the data should be kept at each level.
- The Director of Planning, Coordination and Research and the head of the Data Bank Centre are accountable for organization of Monitoring of and updating of all water points data.

## XVI. MOU BETWEEN WATER POINT MANAGERS MEMBERS AND MINISTRY

**XVII.1** The water management unit and the ministry of water at district level will sign together water supply agreement with the witness of the district authority, this agreement should indicate the roles and responsibilities and term and condition and the agreement period. (See the Rural water supply agreement Annex 1).

### XVII.2 Structure



----- District Water Office, Water Manager Unit and District Authority have Cooperation

### XVII.3. Working Hours

- Rural communities go to the water points early from **6:00-12:00am** and up to **2:00pm – 5:00pm** it depends from location to location.
- The Management staff, committee and the Ministry staff will decide the suitable working hours.

### XVII.4. Leaves and Handovers

- All the staff of the water points and systems have rights for annual leave, sick leave, maternity leave, parental leave, and mortality leave.
- The management unit with consultation of district office should decide
- The official leave should not be more than one month per year.
- In case of community interest the leave can be shortened or postponed upon the decision of water management unit (WMU).

### XVII.5. Hand over

- All staff are responsible of their functions and assignments,
- In case of leave, the person should make official handover of his responsibilities and functions to assigned person nominated by management unit (Oral with witness and written).

## **XVII. COMMUNITY ROLE IN WATER SOURCE.**

- Should contribute overall security of Water source.
- Should organize community awareness raising on hygiene and sanitation issues.
- Should contribute to the emergency breakdown and extra ordinary issue (Droughts, Floods etc.)
- Should lead the resolution for water resource based conflicts.
- Should participate in the development activities and local fund raising.
- Should communicate with ministry district region office, in case of complaint/problem.

### **XVIII.1 Poor health linked to quality of water**

- Drinking water should be protected from any kind of contamination.
- Community should be responsible to advice the water users consume water from protected water sources.
- Community should use their traditional and local bylaws for not using unprotected water sources.

### **XVII.2 Rural water tariff**

- Where there water scarcity exists and motorized fuel machinery water tariffs will be applicable.
- The water tariff should be set by water management unit with consultation of district water office and village committee.
- Where there is subsidiary mechanism the water tariffs may not be applicable and will be decided by district water office and village committee.

### **XVIII.3 Village water tariffs and management**

- Water management unit and Customers should know that Water tariff is the only approach for sustainability and cost recovery,
- Tariff varies from location to location and depends on the type/ of the water sources , type of abstraction equipment and the distance to the end users
- Agreed tariff should cover the sustainability of the system or at least the O&M,
- There should be consideration to the poor people who cannot afford to pay the set tariffs (according to the community).
- Water management unit should select the operator or other person to collect and manage the revenue.

### **XVIII.4 Who will setup tariff(see to cost recovery)**

Tariff setting concerns the stakeholders of the water point and it is participatory between the major stakeholders

- Water user representative represent the community, they know who can afford and who cannot afford
- Water management unit represent the system and can tell the prices and costs of all required supplies and materials that the system needs, they can also tell the Human Resource that the work needs.
- The district water office know the procedures and approach of the similar locations, they also approve the agreed tariff so that no party can increase.

### **XVIII.5 How to collect**

- The revenue should be collect using receipt system or billing system for long term payments where possible

### **XVIII.6 Who collects**

- The water management unit will decide who collects the revenue/ they can delegate revenue collector

## **XVIII. POLICY AND STRATEGY QUESTIONS REFLECTING FUNCTIONALITY PROBLEMS**

The regulatory framework will comprise the institutional, policy and legal tools outlined below:

1. **The National Water Policy**, which sets out the objectives, general principles and guidelines to be followed by the Ministry of Water Resources in developing the water sector.
2. **The National Water Strategy**, indicating priorities, detailed measures to be taken to permit the policy to be implemented.
3. **The Water Act**, establishing the legal framework to support the strategy, defining organizations, mandates and responsibilities, as well as procedures, obligations and rights of all stakeholders
4. **The Water Regulations**, gathering all the by-laws necessary to enforce the Water Act.

### **Guiding principles for the National Water Strategy**

- All activities in the water sector must recognize the fact that fresh water is essential to sustain life, development and for environment protection.
- Land and Water use should be managed at the lowest appropriate levels
- The government has a key role as an enabler in a participatory and demand-responsive approach to development of water resources
- Water should be considered as a social and economic good, with a value reflecting its most valuable potential use
- Water and Land use management should be integrated
- Women play an essential role in the provision, management and conservation of water resources
- The private sector has an important role in management of urban/rural water services

### **XIX.1 Water Supply Chain**

#### **Water supply management at the lowest appropriate level**

- Management designates all actions and interventions that are necessary for proper and sustainable utilization of water resources
- Management encompasses policy implementation, project planning, design and implementation of facilities, conflict resolution.
- The appropriate level is understood to be at which significant impact is experienced.
- If for instance the use of a water source is likely to have impact only within the village itself, then the community is the proper management level.
- If this impact effects the next village then the District Administration is the most appropriate level.

- In cases where utilization of water resources in one part of the country negatively impacts the interests of users in other region(s), the most appropriate level may be the Ministry (national level).

### **XIX.2 Machinery and Spare parts Supply Chain**

Ministry of Water Resources encourages the use of standardized equipment, for the water abstraction, the most recommending equipment should be the most appropriate that the technicians and operators familiar with such as:

### **XIX.3 Generator set /Machines**

- Perkins
- Lister-peter
- Lister
- Duetz
- Honda
- Yanmer

### **XIX.4 Submersible pump**

- Grund-fos
- Lawara
- Franklin
- Caprari
- KSP
- SQ Flex (Solar pump)

### **XIX.5 Pipes**

- GI Pipes (Class : A,B & C)
- Plastic pipes (PVC & UPVC )

### **XIX.6 Water flow Meter**

- Kent (UK)

### **Solar panels**

- Poly crystalline
- Mono crystalline
- Hybrid
- All black

### XIX.8. Expected lifetime of assets

Expected lifetime of assets whose not amortized value might be reimbursed as better specified in each utility agreement.

Type of asset	Expected life-time (Years)	Remarks	Frequency of maintenance
Hand dug wells (concrete rings)	18	No flood risk	Yearly
Hand dug wells (concrete rings)	12	In the river bed or at flood risk	Yearly
Borehole (PVC or steel casing)	20		Once every 2 years
Spring catchment	20		Twice a year
Improved Balley	30	Well designed, with lining	Desilting depends on the sedimentation
Concrete ground tank	30		Cleaning twice a year
Elevated concrete tank	20		Cleaning once a year
Stone elevate tank	30		Cleaning once a year
Elevated steel tank	10	G.I. panels	Cleaning once a year
Fiber glass elevated tank	8		Cleaning 4 times a year
Purification system	10		Once 2 years
Public Kiosk and standby pipe	10		Weekly
Through for animals	8		Monthly
PVC addcution main	20	Properly buried	Yearly and frequently during leakage
G.I addcution main	10-20	According to water conducibility and ground galvanic current	Yearly and frequently during leakage
Cust iron adduction main	20	Properly buried	Yearly and frequently during leakage
PVC / GI distribution main <sup>3</sup> 6"	15	Properly buried	Yearly and frequently during leakage
PVC / GI distribution main < 6"	10	Properly buried	Yearly and frequently during leakage
Submersible pump	5	or 10,000 hours first to come	Yearly
On-line booster	5	or 10,000 hours first to come	Yearly
Direct drive pump	7	Excluding engine	Yearly
Engine for direct drive pump	5	Including clutch	Maintenance depends on the working hours
Masonry work	25	Pump house, offices, store	Yearly
Production meter flow	10	Or 5 millions of cum, first to come	Yearly

Type of asset	Expected life-time (Years)	Remarks	Frequency of maintenance
Generating set less than 10 KVA	5		Maintenance depends on the working hours
Generating set > 10 KVA< 50 KVA	7		Maintenance depends on the working hours
Generating set over 100 KVA	8		Maintenance depends on the working hours
Rip rap flood protection	10		After floods to repair the damages
Gabions flood protection	6		After floods to repair the damages
Electrical works		Including solar systems	
Overhead line	10	Low tension	Daily for short monthly for loose or cut twice a yearly for the electric poles
Solar panels	25		Daily cleaning Monthly maintenance
Dry Battery for solar	5		Weekly control 2 year rehabilitation
Invertor			

# **Annex 1 WATER SUPPLY AGREEMENT**

**Republic of Somaliland**

**Ministry of Water Resources**

**Rural Water Supply Agreement**

**THIS AGREEMENT** is made on (date) \_\_\_\_\_: between the parties

- 1) **The Water Management Unit of** \_\_\_\_\_ (village name) \_\_\_\_\_ **Operator/Manager** \_\_\_\_\_, representing the local community of \_\_\_\_\_ duly represented by the head of the **Water Management Unit**, Mr. \_\_\_\_\_ ;
- 2) **Head of the Ministry water office of district** ----- \_\_\_\_\_ Region \_\_\_\_\_, represented by Mr \_\_\_\_\_
- 3) **with the witness of the District Authority of** \_\_\_\_\_ **town represented by** Mr. \_\_\_\_\_

(The village water management unit, the district water officer and the district authority are hereinafter jointly referred to as the **Parties** and individually as the **Party**).

### **RECITALS**

- A. On ( Date) \_\_\_\_\_, the water management unit of the village(village name) \_\_\_\_\_ entered into this water supply agreement with the district water office for the Ministry of Water Resources for (district name) \_\_\_\_\_ district and the district authority as the witness provides for the right of the (Name of the water point) \_\_\_\_\_ water point to manage and supply water within the area of local communities in village name \_\_\_\_\_ and surrounding areas.
- B. The district water office is granting to the water management unit the right to supply water to individuals, private and public entities in the Community's area, at the terms and conditions contained in this Water Supply Agreement.
- C. MoWR, have the role of supervisory authority and according to the Supply Agreement, has approved the execution of this Water Supply Agreement and issuing the Abstraction Permit concerning the Water point attached herewith under the (**Abstraction Permit**) in order to confirm all its obligations and rights contained therein.

**NOW THEREFORE, IT IS AGREED** as follows.

### **1. INTERPRETATIONS AND DEFINITIONS**

1.1 In this Water Supply Agreement, except where the context otherwise requires, the following words and expressions shall have the following meanings.

**Abstraction Permit** means the permit to abstract water from the Water point granted by MOWR to the Water management unit

**Authorizations** means any licenses, authorizations and permits, including the Abstraction Permit, released by MoWR to manage and operate the Water point and to supply water to the Customers.

**ARWA** means Authority responsible of the water affairs

**Commencement Date** means the date on which the Water management unit shall start managing and operating the Water Utility and supplying water to the Customers at the terms and conditions contained in this Water Supply Agreement.

**Customers** means any end user, being an individual or a public or private entity, receiving water from the Water management unit pursuant to this Water Supply Agreement.

**Day** means a calendar day.

**District and regions** means the nominated districts before 2002 as stated in the district and regions law NO. 23.

**Effective Date** means the date when this Water Supply Agreement is signed by the Parties.

**Extraordinary Maintenance** has the meaning set out in the supply Agreement.

**Force Majeure** has the meaning set out in the supply Agreement.

**Further Commitments** means the further investments to be made by the Parties and MOWR with respect to the Water point.

**Kiosks or Troughs Subcontractors** means subcontractors appointed by the Water management unit with the approval of the district water office to manage and operate the kiosk or the troughs under the exclusive and sole responsibility of the Water management unit.

**Hand Over** means the handover of the Water point to the water management unit

**Inventory** means all the fixed and non-fixed assets of the Water point.

**Neutral** other relevant Government institutions or Court.

**Ordinary Maintenance** has the meaning of routine maintenance.

**Parties or Party** means the Water management unit and the district water office and the district authority or any of them.

**Service Levels** means the minimum service levels and technical and quality standards for the proper management and operation by the Water management unit of the Water Utility and for the supply of Water.

**Tariffs** means the tariffs applied by the Water management unit for the supply of water to Customers.

**Troughs Subcontractors** means subcontractors appointed by the Water management unit with the approval of the Community to manage and operate the trough in compliance with the provisions of this Water Supply Agreement and under the exclusive and sole responsibility of the Water management unit.

**Supply Agreement** means this Supply Agreement and its Annexes.

**Water Consumption Bill** means the bill reporting the Tariffs to be applied to each Customer on the basis of the effective consumption.

**Water management unit** means the unit responsible to supply water to the village.

## **2. WATER UTILITY INVENTORY**

2.1 Upon signing the water supply agreement, the water management unit and MOWR district office with the involvement of the District Authority, shall meet to draft the inventory of the Water point.

2.2 The inventory (i) shall be based on the existing assets at the date of handover and (ii) shall contain a detailed list of all the assets, including civil infrastructures, machineries, equipment and tools pertaining to the Water point and necessary to supply the Community with water, specifying their conditions, value and residual lifetime, drawings, digitised mapping and modelling of the water distribution, technical specifications and any other available and relevant technical information (the **Inventory**).

2.3 The Inventory shall include any further obligations agreed by the Parties or by MOWR relating to Further Commitments to Extraordinary Maintenance.

2.4 The water management unit and district office shall keep the Inventory in hard copy for the entire duration of this rural Water Supply Agreement and shall integrate and update it on yearly basis in order to include and record any modification occurred to the Water point. The district office of MoWR shall deliver to Region/Head quarter of MOWR within 30 (thirty) Days from the end of each calendar year copy of the updated Inventory. In case of disagreement between the Parties on the Inventory, the matter shall be referred to the Neutral.

## **3. HAND OVER**

3.1 Upon completion of the Inventory, district water office from the MOWR shall hand over to the water management unit of the Water point and the water management unit shall start managing and operating the Water point pursuant to the provisions of this Rural Water Supply Agreement (the **Hand Over**).

3.2 Upon Handover, the Water management unit should take full and exclusive responsibility on the Water point free from any encumbrances, liens, third party's rights, debts and liabilities relating to any eventual previous third parties' management and with no obligation for the Water management unit to pay any rent or fee or consideration for the use of the Water point and of any asset pertaining to it, except for what is provided in the supply Agreement.

## **4. FURTHER COMMITMENTS**

4.1 In order to further improve the performance of the Water point and the quality of the services supplied by the Water management unit, the Parties agree to implement and perform with respect to the Water point the sole additional works and investments provided under, if any, according to the timetable, financial planning and subdivision of costs and responsibilities provided therein (the Further Commitments). In all events, even with respect to works funded by the Community or Ministry works will be carried out by the water management unit or by a third party in close coordination with the water management unit.

## **5. CONDITION PRECEDENTS AND COMMENCEMENT DATE**

5.1 The following are conditions precedent to the occurrence of the Commencement Date:

- a) endorsement of this Rural Water Supply Agreement by district office of the MOWR; and
- b) Hand Over of the Water point.

5.2 In the event the above conditions precedent are not all satisfied within twelve (12) months from the Effective Date this Rural Water Supply Agreement will be automatically terminated.

## 6. TERMS AND THE CONDITIONS

6.1 Starting from the Commencement Date and for the entire duration of this Rural Water Supply Agreement, the district water office grants to the water management unit on an exclusive basis, the right to manage and operate the Water point and supply water to the Customers through the Water point pursuant to the terms and conditions of this Rural Water Supply Agreement.

6.2 The water management unit declares to know and undertakes to comply with managing and operating the Water point and in supplying water to Customers, the water management unit shall:

- a) comply at all times with Abstraction Permits and Authorizations and with all instructions and orders from time to time issued by district water office of the MOWR and concerning the proper exploitation of the water sources;
- b) use skilled and prepared personnel directly employed by the water management unit or by any subcontractor appointed by the water management unit at its absolute discretion in accordance with this Rural Water Supply Agreement;
- c) strictly comply with the quality and technical standards and grant the Service Levels as set out and eventually modified from time to time by MOWR with orders or instructions issued pursuant to the supply Agreement;
- d) grant distribution of water to all Customers within the Community through the following infra-structures which are part of the Water point:
  - I. \_\_\_\_\_ of kiosks \_\_\_\_\_ troughs and \_\_\_\_\_ standby to be managed
  - II. direct connections to private or public Customers' houses and buildings
- E) Diligently and promptly perform the Ordinary Maintenance and the Extraordinary Maintenance.
- f) Promptly inform the Community through the Village Committee of any temporary or permanent material changes of the water supply services or any other material issue which may affect the management of the Water point or the Tariffs.
- (g) water supply working hours will be agreed by the parties subject to the environmental consideration

6.3 The water management unit will be allowed to improve the Water point by adding new kiosks, troughs and direct connections in accordance with the provisions of the supply Agreement and relating to Additions and Improvements.

6.4 All kiosks and troughs shall be provided with water meter flows to constantly measure the distribution of water supply to Customers pursuant to the provisions of this agreement if applicable.

6.5 Each kiosk and trough will be managed by the water management unit to grant distribution of water for human and livestock consumption according to the water Policy of the country.

6.6 The water management unit should not dispose of, sell, hand over, transfer or lease any asset of the Water point

6.7 maintain all necessary and adequate operational costs collected from the revenue and other financing to fulfill all its obligations and, in particular, to manage and operate the Water point and to provide the water supply services

## **7. DIRECT CONNECTIONS**

7.1 Upon request of Customers and subject to (i) the obligation for the Water management unit to comply with the Service Levels in respect of the supply of water to kiosks and troughs, (ii) the continuous availability of water supply to such kiosks and troughs in accordance with the Service Levels and (iii) the need to protect the water sources resources from depletion (physical and chemical), the Water management unit shall operate the existing direct piped connections, as listed in the Inventory and will be authorized to expand, upon Customer request, the distribution system with direct piped connections to public and private Customers' premises by applying the Connection Fee. In no event the Water management unit management unit will be authorized and will connect new Customers to the water management unit grid of the Water management unit Utility if such connection may determine the breach of the Service Levels with respect to the supply of water to existing kiosks and troughs.

7.2 In the event of new direct piped connections, the Water management unit will give priority to the requests received according to the following order: 1) domestic, 2), public institutions and 3) commercial or non-domestic. In case of new direct connections, the Water management unit will have the right to charge the Customer, in addition to the Tariff and to cover connection costs, It is understood that all assets and infrastructures for the direct piped connection outlet of the water management, shall remain part of the water point asset.

## **8. CUSTOMERS COMPLAINTS**

8.1 In the event of breach by the Water management unit of the Service Levels or in any event of poor performance by the Water management unit or breach, the Water Customer shall have the rights to submit complaints in writing to the village committee and District water office.

## **9. TARIFFS**

9.1 For the water management unit supply to each Customer, the Water management unit shall have the right to charge the tariffs

- Tariff setting concerns the stakeholders of the water point and it is participatory among the water management unit, village committee and District water office.
- The district water office has the set tariff supervisory role.

## **10. TARIFFS AND CONNECTION FEES COLLECTION AND BILLING**

10.1 The Tariffs and Connection Fees shall be collected by the Water management unit at its own costs and expenses, according to the following procedure:

- a) in case of water management unit supply at kiosks and troughs, the Tariffs shall be charged immediately upon consumption; and
- b) in case of direct connections, the Tariffs shall be charged to the Customer on a monthly basis by delivering to the Customer the Water management unit Consumption Bill. The Water management unit Consumption Bill shall be payable within 14 days from receipt.

## **11. ORDINARY AND EXTRAORDINARY MAINTENANCE**

11.1 Starting from the Hand Over, the Water management unit shall promptly and diligently carry out and perform under its responsibility all Ordinary Maintenance Works and Extraordinary Maintenance Works as provided in the Water supply Agreement in order to maintain the Water point in efficient and suitable conditions.

11.2 the Parties acknowledge that:

- a) the Inventory will identify the equipment and tools of the Water source whose replacement costs and expenses will be entirely covered by the Water management unit without any right to be compensated or indemnified or to withdraw any amount from the saved revenue ; and

11.3 The district water office expressly agrees and acknowledges that the Water management unit shall have the right to proceed with Additions and Improvements and New Investments in relation to the improvement of the water point as indicated in the district water development plan agreed by all parties.

## **12. COMMUNITY'S COMMITMENTS**

12.1 The Community expressly undertakes to provide the Water management unit with all assistance and cooperation reasonably required for the correct and peaceful utilization of the Water point and for the full compliance by the Water management unit of its obligations under this Rural Water Supply Agreement. The customers should undertake to cooperate with the Water management unit and fulfil the obligation to pay Tariffs and Connection Fees.

## **13. DURATION AND EARLY TERMINATION**

13.1 This Rural Water Supply Agreement shall enter into force starting from the Effective Date and shall have a duration of **2 years** from the Commencement Date.

13.2 This Rural Water Supply Agreement shall be renewed and extended for further periods of **2years**, in case good performance and satisfaction of all parties.

13.3 This Rural Water Supply Agreement shall be automatically terminated at any time in case of violation or breach to this agreement and water policy.

## **14. PENALTIES**

14.1 Without prejudice to the rights the water clients, the district water office shall promptly inform in writing the WATER MANAGEMENT UNIT for their bad performance, in case of no improvement the procedures and Penalties set by the regional office and the Ministry of water will apply.

## **15. TERMINATION IN CASE OF BREACH**

15.1 Without prejudice for what is provided in this supply agreement the regional office and the Ministry have the right to terminate this Rural Water Supply Agreement

α) District Water Office shall have the right to immediately terminate this Rural Water Supply Agreement, by giving to the Water management unit a notice in writing, if:

- ι) there is a breach by the Water management unit of any of its obligations and such breach is not cured within [ 60 ] Days from the written notice of breach received by the Water management unit;

B) the Water management unit shall have the right to immediately terminate this Water Supply Agreement, by serving to the Community a notice in writing, if:

- i) there is a breach of this Water Supply Agreement and such breach is not cured within [ 90 ] Days from the written notice of breach received by the District Water Office;
- ii) DISTRIC WATER OFFICE breaches its obligations with respect to Further Commitments, if any.

## **16. FORCE MAJEURE**

16.1 Either Party shall be excused from performance of, and shall not be construed to be in default in respect of, any obligation hereunder (other than any payment obligation) where the failure to perform such an obligation is due to an event of Force Majeure. In case of Force Majeure the provisions of the supply agreement, with necessary changes, shall apply. It understood that in case of suspension of the water management unit supply or noncompliance with the Service Levels due to Force Majeure and, the Tariffs shall not apply or will be properly reduced by the Water management unit in agreement with DISTRIC WATER OFFICE, district authority and the water MANAGEMENT UNIT.

16.2 in case of force majore which create the community in ability to pay the tariff cost the water management unit will request for subsidiary

## **17. AMENDMENTS OF THIS SUPPLY AGREEMENT AFTER THE EFFECTIVE DATE**

17.1 Pursuant to this water supply Agreement, the Parties acknowledge that in case of duly documented public interests and subject to an adequate prior notice to the Water management unit, DISTRIC WATER OFFICE shall have the right to unilaterally amend the terms of this Water Supply Agreement with respect to:

- a) quality and technical standards set forth by the Ministry ;
- b) Water management unit's obligations and
- c) Abstraction Permit (depletion of aquifer).

17.2 Without prejudice for the above, no amendment, modification or waiver of any provision of this Water Supply Agreement shall be valid and binding unless approved in writing by the Parties against which such amendment, modification or waiver is invoked. No waiver of the Parties shall represent a waiver of any other provision unless such waiver is otherwise expressly provided.

## **18. PUBLICITY AND LANGUAGE**

18.1 This Rural Water Supply Agreement and any relevant addendum or amendment shall be deposited by the Parties with the Attorney General of [\_\_\_\_\_ District/Region in] and shall remain available for public inspection for its entire duration.

18.2 This Rural Water Supply Agreement is made in English and in Somali. In case of conflict, the English version shall prevail.

**19. NOTICES**

19.1 Any notice or other document to be served under this Rural Water Supply Agreement shall be deposited in copy at the headquarters to the following parties:

- a) to the Water management unit, in ( \_location\_\_\_);
- b) to District WATER OFFICE in ( \_\_location\_\_)
- c) To the district authority or the person representing him in the of the District ( \_location\_\_)

The terms and conditions of this Rural Supply Agreement represent the entire regulation of the relationship among the Parties. For what not expressly covered by the provisions of this Supply Agreement the laws, rules, regulations and common practices generally applied in Somaliland shall apply.

**20. DISPUTES' RESOLUTION: THE MANDATORY SETTLEMENT PROCEDURE**

20.1 Should any dispute even technical arise with regard to the validity, interpretation or performance of this Supply Agreement and/or any litigation arising out of or in connection thereof, such a dispute would be subject to the Mandatory Settlement with the necessary changes.

20.2 In case of termination of the Mandatory Settlement the dispute shall be settled by arbitration according to the rules of the country.

20.3 The Parties shall agree that mandatorily and participate to any Mandatory Settlement procedure.

**21. ARBITRATION**

21.1 if the dispute arose has not been resolved by the Mandatory Settlement Procedure, it shall be finally settled by arbitration according to the procedures for ministry of justice.

The parties have executed this supply Agreement on the date above written and the representatives of the parties have signed as indicated below.

<b>Ministry of Water resources</b>	<b>Water management unit</b>
Name:	Name:
District Office	<b>Operator/manager</b>
Signature: _____	Signature: _____
Date: _____	Date: _____

**WITNESS**

<b>District Authority</b>	<b>Regional Coordinator of MoWR</b>
Name:	Name:
Name of the District	Name of the Regional Coordinator
Signature: _____	Signature: _____ _____
Date: _____ _____	Date: _____

ANNEX 2

INVENTORY CARD

WATER SUPPLY SYSTEM:

<b>1 Water Source</b>							
<b>a</b> Location:		North:			East:		
<b>b</b> Type:		Borehole <input type="checkbox"/>	Shallow Well <input type="checkbox"/>	Barkad <input type="checkbox"/>	Earth Dam <input type="checkbox"/>	Date:	
<b>c</b> Hydrological data							
		total depth: (m BGL)		static water level: (mBGL)	dynamic water level: (m BGL)		
<b>d</b> Aquifer type:							
<b>e</b> Completion data:							
<b>f</b> Water and Aquifer characteristics							
Date	EC ( $\mu\text{S}/\text{cm}$ )	T.D.S. (mg/lit)	PH	Turbidity UNT	Productive Cap. (lit/sec)	Rainfall data (monthly)	Test carried out by
<b>g</b> Equipment:		pump type:		manufacturer:		model:	
		pumping capacity: lit/sec					
power source:		Engine/Generator :			Solar:		
power house:				fuel storage:			

<b>2 Distribution</b>			
a	Reservoir:	type:	made by:
	dimensions:		
b	Adduction main from pump station to	length: m	size: Ø
	material:	infrastructures: none	
c	Reservoir at distribution	type:	capacity:
	dimensions:		
d	Distribution net-	primary diam.:	Material type:
		secondary diam.:	Material type:
		tertiary diam.:	Material type:
e	Distribu- tion facili-	kiosks number:	faucets in total:
		Camel/cattle troughs	number: Type:
		connections to public building:	
		private connections:	

<b>3 Water supply facilities</b>	
a	Ware-
b	Work-
c	Equip-
d	Vehicles

<b>4 Personnel</b>	
a	Management:
b	Production opera-
c	Plumbers:

**ANNEX 3**

**FOOMK RUQSADDA BIYO QAYBINTA( WATER SUPPLY AUTHORIZATION FORM)**

**WASAARADDA KHAYRAADKA BIYAHA**

Ruqsadda biyo qaybinta form P4 ..... Form P4 MOWR/WR-P1/2016. System Mini water system water yard water water tankers Surface water sources(balley , Barkad)	
Wasaaradda khayraadka Biyuhu markay aragtay sida ku qeexaan qodobka 26 <sup>aad</sup> ee Biyo Siinta Magaaloyinka iyo 32 <sup>aad</sup> Miyiga ee Xeerka Biyaha Qaranka (Xeer No. 49/2011), islamarkaana aad u daristay codsigii uu soo qortay _____ iyo dhamaan lifaaqyadii la socday waxay Wasaaradda Khayraadka Biyuhu u ogolaatay muwaadinka/Hay'adda _____ Ruqsadda Biyo Siinta Magaaladda _____ / Miyiga _____ sida kor ku calaamadsan oo magaciisu yahay _____ Noociisu yahay _____ Tafaasiishiisuna tahay _____ loogu tallo galay _____ lagana diwaan geliyay Wasaaradda Khayraadka Biyaha Degmada _____ Diwaan gelin No. _____ Gobolka _____	
Qiiimaha ruqsadda: _____ Taariikhda Bixinta: ____/____/____	Lumberka Risiidka: _____ Taariikhda dhicista: ____/____/____
Waxa ansixiyay:  _____	Waxa Ogolaaday:  _____
Agaasimaha Guud ee Wasaaradda Kh/Biyaha Dr. Cabdirisaaq Jaamac Nuur	Wasiirka Wasaaradda Kh/Biyaha Baashe Cali Jaamac

# OPERATOR FORMS

## FORM 1 -ENGINE WORKING HOURS AND FUEL RECORDING

ENGINE WORKING HOURS  
AND FUEL/ENERGY CONSUMPTION  
RECORDING

Month: \_\_\_\_\_ Year: \_\_\_\_\_ Name of Operator: \_\_\_\_\_

Model/made of engine \_\_\_\_\_ Year of installation \_\_\_\_\_

Day	Morning			Afternoon			Day's	Weekly fuel and other interventions
	Start	Stop	Hours	Start	Stop	Hours	Total Hours	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
Total monthly working hours/monthly fuel consumption								



## **Description of procedures**

### **A Technical**

Obligations of the manager

Responsible for supply safe, adequate and affordable water supply to the communities in his village and all other day to day works as defined in the water supply agreement.

Responsible for the safety of the water sources and equipment, infrastructures and other assets

Responsible of the procurement of genuine supplies and spare parts

Responsible for collection of revenue and keep it in safe location

Responsible on collection of financial and technical data and keep it Recording

Insure the record log book of the generators, submersible pump and all other technical interventions

Insure the record meter reading, water production and sales on daily basis

Coordinate with the other members, district water office and other stakeholders

Responsible for the environmental protection and best practice of hygiene and sanitation related issues near the well field and infrastructure compound

### **Obligations of the operator**

Responsible for supply safe, adequate and affordable water supply to the communities in his village and all other day to day works as defined in the water supply agreement.

Responsible for the safety of the water sources and equipment, infrastructures and other assets

Operate the water abstraction equipment in a sustainable manner day to day works.

Responsible of the procurement of genuine supplies and spare parts

Responsible for collection of revenue and keep it in safe location

Responsible on collection of financial and technical data and keep it Recording

Compile and record log book of the generators, submersible pump and all other technical interventions

Compile and record meter reading, water production and sales on daily basis

Coordinate with the other members, district water office and other stakeholders

Responsible for the environmental protection and best practice of hygiene and sanitation related issues near the well field and infrastructure compound

## **The best practice procedures for O&M of the generators/Machines.**

### **Before starting**

Operator should control all the generator room to notice if there are some changes after closing.

He must clear the room from the dust

He must clean the generator with clean piece of cloth.

He must check the oil level and its consistency and fill it if needed

He must check the water level of the radiator and fill it if needed with soft water

He must check the level of the batteries and the tightness of its terminals and use distilled water or other soft water

He must check the level of the fuel and fill it with enough for the day work "the fuel should be from good suppliers and its container should be free from any kind of dirt, water and suspended particles. If necessary he should use filter when filling the tank.

The operator should check inside the generator set and take away if there is any piece of metal, cloth, plastic bag inside it.

The operator should control the condition of the exhaust and fix it if needed.

The operator should insure the ventilation system, the doors and windows should all be opened.

The operator should control if there is any kind of leak and note it in the log book.

The operator should finally take the log book and write down the date, the previous reading of genset hour, the remarks that he have seen and etc

Check all the pipes for leakage or closed stop clock.

Check the animal troughs kiosks and stand pipe

This time the operator is ready to start the genset

### **Procedures for Operating the generator**

The genset is now ready to operate and operator should start and wait for 7-10 minutes before putting on the load.

The operator should check regularly the panel board of the genset especially the Ampere meter, the voltage meter and the frequency.

He has to check the gauges at the genset for oil pressure, heat and rating.

The operator should put on the load and check the ampere meter and the panel board.

The operator should regularly listen the sound of the genset and look regularly the smoke from the exhaust.

The operator should be always around the compound and don't allow any body to enter inside the genset room.

The operator should not delegate to untrained person at all

The operator should not go far or away when the gen/set is running

### **After starting**

After the work is finished the operator should put off the load and wait the generator cool if self for 10 -15 minutes and make it off.

The operator should write down the working hours in the logbook make the difference to get the exact hours worked and sign the page of that day.

The operator should also write any kind of service done that day in the log-book for note.

When the generator is cooled the operator should cover the genset with clean plastic sheet and close the doors and window.

The operator should untie the battery terminals If the gen/set is not in for quite long period especially during the rainy seasons.

The consultant explained the log book and how it is important to refer for all services that generator requires mainly.

Oil and oil filter change for every 200 – 250 working hour according to climate.

Fuel filter change for every 400 working hours.

Minor overhaul for every 6000 -8000 working hours

Major overhaul for every 16,000-20,000hrs.

### **Role of the Ministry of Water Resources**

#### **Periodic works**

- Remove the pump and rising main from the well and inspect
- Protection leakage and replace corroded pipes and fittings
- Inspect electric cables and check insulation between cables
- Respond major repairing
- Respond emergency breakdown
- Assist procurement of the genuine spare parts, fittings and other fast moving parts
- Carry out on job training of the operator and other members of the management unit
- Monitor and supervise of all records.
- Supervise and monitor the application, procedures and agreements.
- Carryout water quality surveillance
- Control water resource conditions
- Develop water resource recharge and flood protection
- Supervise water point assets

- Interfere and solve water resources basic conflicts
- The ministry should provide all necessary tools to water points to carry out the proper O&M and proper repairing of the equipment and water facilities, which are very essential to be available at the water points:-
- The basic tools can be:
  - Electrician tool
  - Mechanical tool
  - Plumber tool
  - Water monitoring equipment
  - Basic water quality laboratory

## **Social**

### **Community Role in Water source.**

- Should contribute overall security of Water source.
- Should organize community awareness raising on hygiene, sanitation and environment issues.
- Should contribute to the emergency breakdown and extra ordinary issue (Droughts, Floods etc.)
- Should lead the resolution for water resource based conflicts.
- Should participate in the development activities and local fund raising.
- Should communicate with ministry district region office.

## **ADMINISTRATION PROCEDURES**

### **Working Hours**

Rural communities go to the water points early from 6:00-12:00am and up to 2:00pm – 5:00pm it depends from location to location.

The Management staff, committee and the Ministry staff will decide the suitable working hours. However, it should be between above mentioned time.

### **LEAVES AND HANDOVERS**

All the staff of the water points and systems have rights for annual leave, sick leave, maternity leave, parental leave, and mortality leave.

The management unit with consultation of districtoffice should decide

The official leave should not be more than one month per year.

In case of community interest the leave can be shortened or postponed upon the decision of water management unit (WMU).

### **Hand over procedures**

All staff are responsible of their functions and assignments,

In case of leave, the person should make official handover of his responsibilities and functions to assigned person nominated by management unit (Oral and written).

### **Financial procedures**

#### **Use of collected revenues**

#### **Fuel Motorized water points:**

the revenue generated from this kind of system should be managed as following:-

30% of the funds used for running the system

40% of the funds used for staff payments

20% of the funds saved for the emergency and development

7% of the funds for village authority

3% of the funds for district water office

#### **Renewable energy water points:-**

The revenue generated from this kind of system should be managed as following:-

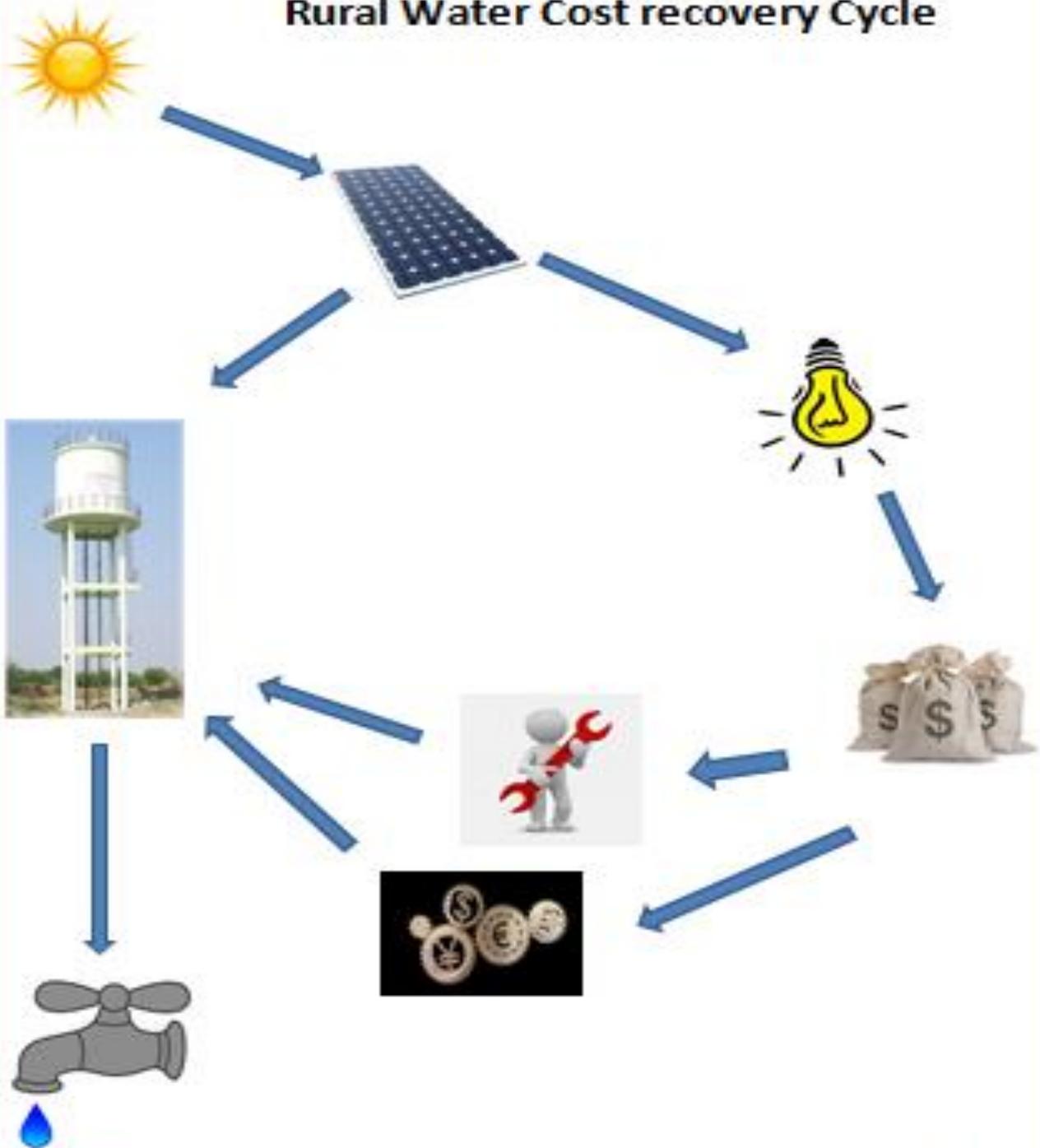
50% of the funds used for staff payments

30% of the funds saved for the emergency and development

15% of the funds for village authority

5% of the funds for district water office

# Rural Water Cost recovery Cycle



*Operational project Operation & Maintenance model, implemented CARE Somalia/Somaliland and Ministry of Water Resource Somaliland with the support of GNE*

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