

# Multiple Use Services (MUS) of Water in WaterAid West Africa

Understanding the practices, exploring the opportunities



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## INTRODUCTION

WaterAid works in seven West African countries to support communities with sustainable water and sanitation solutions, including community organisation, facility construction and building local governments' capacity to deliver and sustain services. A wide range of technologies are used for service delivery. While water from WaterAid funded projects is primarily for domestic purposes, people inevitably use it for multiple different purposes beyond their households. There are several risks associated with not designing from the onset services which accommodate multiple water uses. These risks include damage to facilities because either people attempt to modify them to meet their needs or due to an overuse; further marginalisation of some users.

Therefore, understanding other water uses and how these might impact on the sustainability of services is important. Indeed, this allows to designing services using formal Multiple Use Services (MUS) approaches to help meet communities' water needs without negative consequences. Basically, designing services for multiple uses is not about encouraging people to use water for multiple purposes; instead, it has to do with acknowledging the reality that people already use water for multiple purposes.

This document explores examples where WaterAid-supported services have been designed to accommodate multiple uses. It provides background on why people use water for multiple purposes, the technologies used, techniques that address sustainability concerns and opportunities for scaling up MUS in WaterAid supported programmes.

## MUS OF WATER: AN ENDOGENOUS PRACTICE IN WEST AFRICA

WaterAid Country Programmes in West Africa do not have a formal approach to MUS with defined steps and objectives. However, we should note that communities where we work already use water for multiple purposes. As a matter of fact, they shape their use of the services to satisfy their own needs. Key factors which account for this multiple use of water include: the relative scarcity of water, the limited number of water points against the number of people and the need to use water for income generation.

**A small number of water points serving a large number of people:** as per our work principle, we provide safe water to those who are most in need. This leads us to work in areas where water scarcity is high with generally no or few water points in the community. It happens therefore that one single water point serves a large proportion of people. Depending on protocols and technology options, the number of users per water point varied from 200 to 350 people. Depending on the quantity of water available and the service sustainability, the water points are used for all needs. This is worse in communities with only one water point as all the people will use it for all their needs.

### **Water for income generation**

Water is life and also source of wealth in our intervention areas. Providing a water point to a community always brings a lot of changes cultural, social and economic, environmental changes which lead to health and wealth. After drinking, the second direct service provided by water points to a community is market gardening activities carried out either at household level for individual or in group. Livestock breeding is also common. In some urban or peri urban areas, water is used for cleaning, building and others income generation activities such as soap making.

### **Self-supply**

This is an approach where the water supply comes from the households' own investments. The approach generally improves domestic or traditional wells which are very common and widespread across West Africa. That is why improving these wells through self supply is part of our CP service delivery approaches. Self Supply and the MUS of water are strongly linked. Having water in households or nearby has led to it being used for multiple services.



**Self-Supply in Liberia and Sierra Leone**  
In Liberia, water from a WaterAid funded project is used for farming.

## SERVICE DELIVERY TECHNOLOGIES

WaterAid in West Africa support communities with boreholes fitted with hand pumps, large diameter wells, public standpipes, rain water harvesters, sand dams, small dams, gravity water supply networks. Water of almost all these facilities serves multiple purposes. The use depends on the technology option and intervention areas -urban, rural, semi-urban.

Below is a cross analysis of technologies used for multiple services based intervention areas.

**Boreholes fitted with hand pumps** are found semi-urban and rural areas and exclusively used for household needs -food, washing, laundry and livestock watering.

To address these needs, facilities are re designed to include right at the beginning devices such as cattle troughs and washing areas. Note that in areas with high water needs, the technology options mostly demanded are not the boreholes or wells fitted with hand pumps. This is because of constraints related to their use: while several people can simultaneously collect water at a well, only one person can use a hand pump at a time. In general, people prioritise water quantity over its quality.

We easily understand why some communities prefer large diameters to boreholes. The various needs for water put high pressure on hand pumps which can subsequently lead to more frequent failure of these facilities.

In terms of **water quality**, communities privilege boreholes even though particular attention is required in monitoring the water quality.

Sometimes, communities are disorganised in watering their cattle and this can negatively impacts on the environment around the borehole and subsequently contaminate water.



**Burkina Faso:** a borehole fitted with hand pump and water troughs- very common in West Africa.

Large Diameter Wells (LDW) are suitable technology options for MUS in rural areas. They are used for domestic services including human use, livestock, agriculture, etc.

Communities are happy with the quantity of water as well as the reliability of these facilities.

The main benefit of LDW is that communities have the habit of using them and there's the possibility of simultaneous use by several people.



**Niger:** women in their market garden as part of joint programme btw WaterAid Niger and Winrock on MUS in 4 villages.

The reliability is relatively high (in the limit of the capacity of groundwater resource) as failures are reduced. The water quality is more problematic due to the poor management and protection against external contamination.



**Mali:** a large diameter well rehabilitated in Bablebouguou with a washing area for women and troughs for cattle. This well has helped in reducing the pressure on the village borehole for better sustainability.

**Standpipes** are generally built in semi-urban or urban areas. Coping with the costs of standpipes for multiple uses is a challenge. As a result, very few, if not no public standpipes are used for watering and agriculture purposes. But they can help to develop income generating activities in urban and semi urban areas – car wash, cleaning motorcycles, etc.

Also, **in our supported schools**, standpipe water is used to water trees and flowers.



**Nigeria (left):** view of the Umuofiagu (Enugu State) Solar Water Scheme: Reservoir, Remote control cabin and stand pipe (with elevated standpipe for tanker who collects the water for construction and other needs)

**Ghana (right):** The small water system with pipes at different vantage points also used for sachet water in some areas.

Built in rural areas, the small dams and sand dams primarily help to replenish the groundwater through temporary storage and infiltration. They aim to reduce the groundwater flow so that communities have sufficient water in the wells near them and for longer periods to meet their drinking, livestock and agriculture needs.



**Burkina Faso:** small dam and sand dam for groundwater recharge.

## MUS OF WATER AND SERVICE DELIVERY SUSTAINABILITY

In WaterAid West Africa CPs, although our efforts aim to primarily meet drinking water needs, in most cases, facilities are designed in order to answer multiple needs. Such 're-engineered' facilities include, animal troughs, washing areas for households (laundry, dishes) at level of boreholes and large diameter wells. Small dams and sand dams also help to improve use of storm water for recharging groundwater. Standpipes are usually used to cater for household water needs.

Note that the MUS of water approach is not consistent in WaterAid West Africa CPs. In other terms, it is applied to meet the demands of the communities where we work and this may negatively impact the sustainability of our work in various ways:

- pressure on water points -reliability: large number of people using a water point for other need than drinking can lead to frequent failure of facilities.
- Water quality and quantity: The more facilities are use (for various), the higher the risk of external contamination of water. This can also bear a direct impact on the quantity of the resource available.

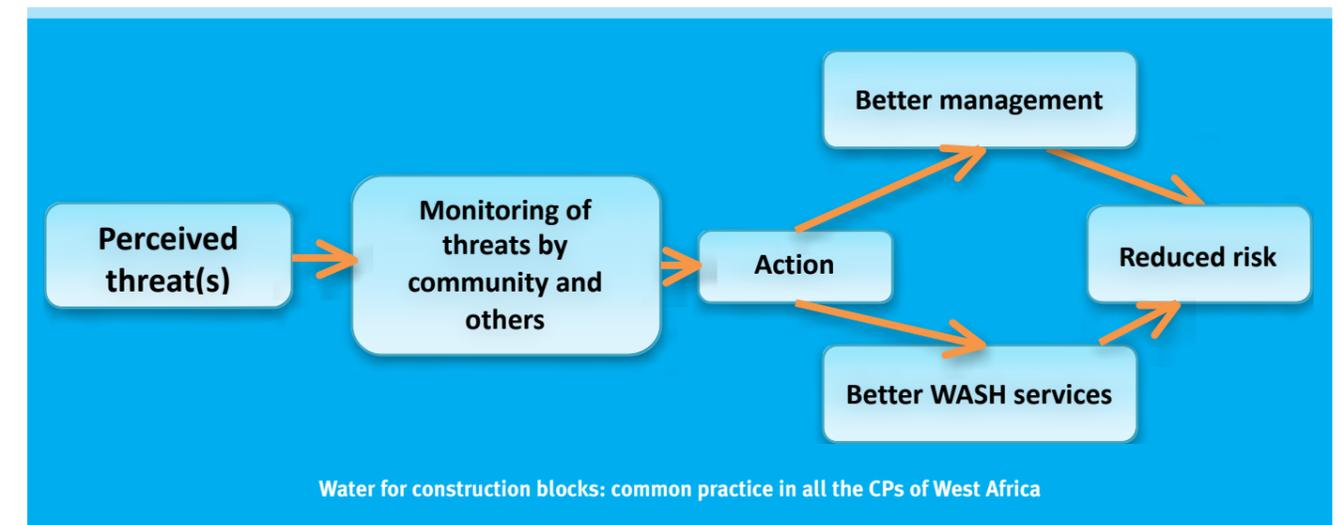


A community woman using a level logger to assess the water level of a borehole

## MUS AND WATER RESOURCES MANAGEMENT: CBWRM EXPERIENCE IN WEST AFRICA

### Logical flow of CBWRM

CBWRM is a set of activities and linkages to improve local management of water resources and therefore enhance water security. These are practical activities that can be carried out locally as part of WASH programming to improve local water security through fair allocation between among users, even in presence of a weak institutional capacity. CBWRM strengthens WASH programming by factoring the multiple use of water into the designs.



Water for construction blocks: common practice in all the CPs of West Africa

## Key activities of CBWRM

- (i) **Understand** the value added of the approach.
- (ii) **Bring communities together** to understand collectively the need of various water users.
- (iii) **Monitor water resources** and related factors by community and expert institutions.
- (iv) **Planning and management** decisions taken by communities to mitigate threats to water supply, with support from local government, NGOs and regional specialist agencies.
- (v) **Strength the voice of communities** to seek assistance from higher authorities.
- (vi) **Further improvements** to water supply and sanitation services, and hygiene practices.

Monitoring component includes observation of:

- rainfall by community volunteers;
- groundwater level in unprotected wells by community volunteers
- groundwater level in boreholes, using data loggers managed by expert government agencies;
- periodic surveys of LGs, NGOs or technical staff to assess water taken
- watershed land use change, monitored by technical agencies over a long term using remote sensing.

### Data management and interpretation

Data management and interpretation contribute to better management of water through communities taking decisions on:

- (i) **allocations to different users,**
- (ii) **times when different users can and can't access various water sources**
- (iii) **rationing use at times of water scarcity;**
- (iv) **temporary restrict some uses (e.g. making blocks, building roads) when water is scarce**
- (v) **protect water catchments to ensure water quality and quantity.**



Communities interpreting data

### CBWRM helps in managing and interpreting water for improved service through:

- Investment in domestic rain water harvesting
- Deepening or constructing hand dug wells
- New boreholes
- Rehabilitated boreholes and unprotected
- Water conservation structures to improve natural recharge
- Total sanitation aimed to eliminate faecal pollution of the local environment
- Improved hygiene on domestic water, hand washing and food hygiene.

## CBWRM as a complement to MUS of water

CBWRM complements MUS as it:

- Identifies the water related threats before any service is provided;
- Assesses the quantify of water available for multiples uses –through monitoring water level;
- Informs the design of water facilities for MUS of water;
- Improves the MUS approach by providing better management of water through equitable allocation of water for different purposes.

CBWRM approach serves MUS upstream and during the different stages of MUS.



Rainfall measure and follow up.

## OPPORTUNITIES AND VALUES ADD OF THE MUS PRACTICES

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|--|---|
| <p><b>Strengths: improved sustainability of service delivery</b></p> <ul style="list-style-type: none"> <li>• Meeting communities' demands and needs has resulted in greater involvement of people</li> <li>• Reduce the pressure for better reliability</li> <li>• Better management of the water point</li> <li>• Income generation for Operation &amp; Maintenance</li> </ul> | <p><b>Weaknesses: capacity and leadership</b></p> <ul style="list-style-type: none"> <li>• Capability gaps in understanding implementation of MUS of Water and service delivery</li> <li>• More commitments and leadership required for visioning and guidance</li> </ul>   |
| <p><b>Opportunities: WASH and wider development</b></p> <ul style="list-style-type: none"> <li>• Global influencing considering WASH in wider development – GAP 2</li> <li>• Partnerships with other stakeholders</li> <li>• Implementation of CBWRM by the RLC WRM</li> <li>• Productive uses for income generation in households</li> </ul>                                    | <p><b>Threats: finance and policy constraints</b></p> <ul style="list-style-type: none"> <li>• Political effects: policy in water service delivery in the CPs may not be in line with the MUS</li> <li>• Intervention time constraint and focus on users numbers (output)</li> <li>• Financial: more fund for less outputs</li> </ul> |

### Capacity building of water users committees

- Develop facility management plan
- Guide in operation and maintenance
- Tariff setting technique

### Conflict prevention:

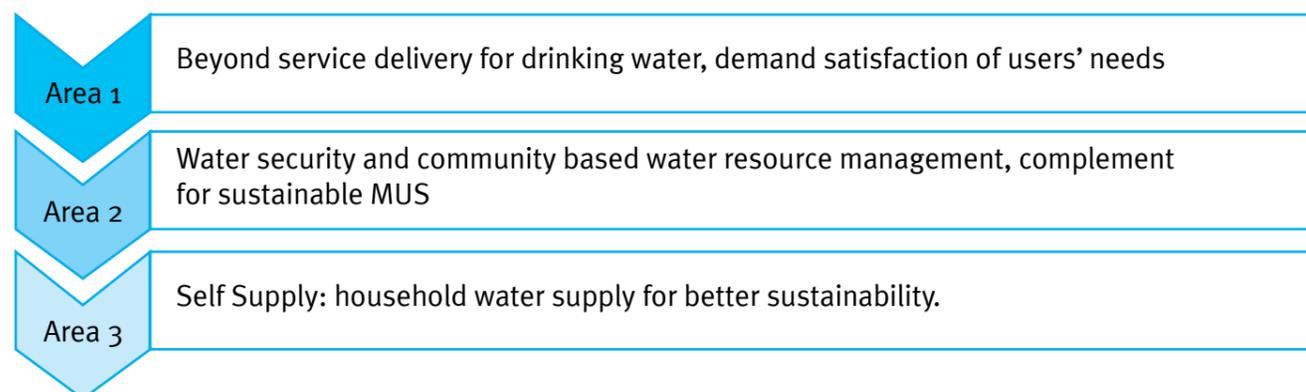
- Land management (facility siting, sharing of water/land resources)
- Management of water points- to reduce the pressure on them)
- Involvement of local authorities (Traditional and LGs)
- Design for different needs.

## CONCLUSION

The MUS of water seems to be an approach already applied by WaterAid West Africa CPs. While most of the times the facility designs take into account the multiple needs of users. This is not systematically embedded in all project designs. The development of coherent approach which will not eclipse the provision of water for drinking, design and planning MUS of water can lay a key role in water security and sustainability of our intervention.

## REFLECTION AREAS FOR EMBEDDING MUS IN SERVICE DELIVERY

The following three areas can be considered to embed the MUS of water in service delivery.



Each area requires the following steps:

### Planning and design

- for different needs
- Water quantity/ Water Quality

### Early involvement of communities

- Siting of the facility
- Choice of the design
- participation (financial, physical)

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