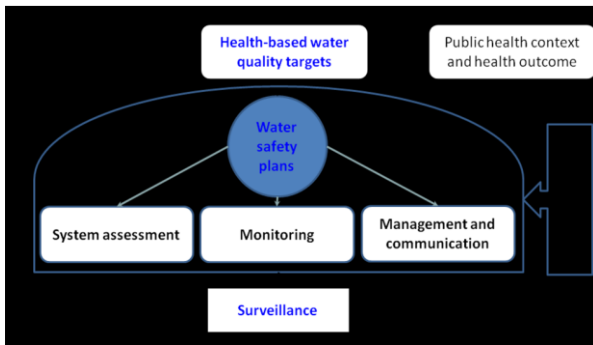


Climate Resilient Water Safety Planning Implementation in COWASH; Lessons learned



Framework of safe water (WHO)

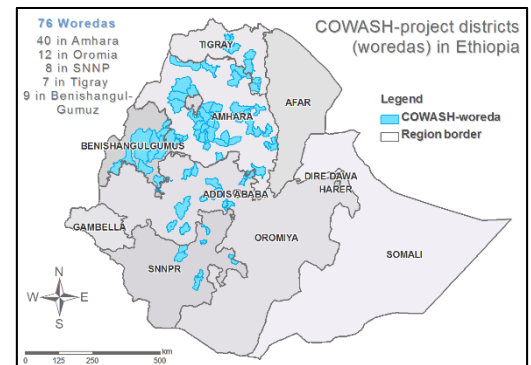
What is Climate Resilient Water Safety Plan (CR-WSP)? It is a comprehensive risk assessment and risk management approach that encompasses all steps in the water supply system from catchment to point of consumption.

Why CR-WSP? Many existing water supply systems are at risk of breakdown and contamination. In Ethiopian context this is normally solved by testing water quality and then chlorinating the water. This is not feasible. Therefore CR-WSP is needed to prevent or minimize the contamination of the water source, reduce or remove contaminants through treatment processes, prevent contamination during storage, distribution and handling. In addition, CR-WSP is also to minimize the impact of

climate change and environmental degradation on the water supply system through watershed management.

CR-WSP in Ethiopia: Ministry of Water, Irrigation and Energy in collaboration with development partners has developed Climate Resilient Water Safety Strategic Framework, CR-WSP guidelines and training manual. Government and some development partners have already started piloting the CR-WSP including COWASH.

COWASH CR-WSP implementation: Currently COWASH has been implementing CR-WSP in 20 woredas of the five project regions, in 38 micro-watersheds consisting of 153 water schemes. Amhara: Yilmana Densa, Dejen and Basona Worana, Tigray: Ofla, Endemahoni, Tahtay Maichew, D/Temben and S/Samre), Benishangul-Gumuz: Pawe, Bambasi, Mandura, Bullen and Oda, SNNP: Duna, A/Minch Zuria, Arbegona, Esera and Tocha, and Oromia: Kersa and Gumay. All these 153 water schemes are benefiting an estimated 71,000 people.



Key principles of CR-WSP

- Understanding and committing to achieving drinking-water safety
- Water safety can be effectively and sustainably improved through the use of a preventive risk management
- The CR-WSP approach is meant to be flexible and adapted as needed
- The greatest risk to drinking-water safety is contamination with disease-causing microorganisms
- Risks to the safety of drinking-water are best controlled using a multiple-barrier approach
- Any (sudden) change in the local environment should result in investigative action to confirm that drinking water is safe or to provide information on how to undertake corrective actions.
- Climatic change risks should be taken into account throughout the WS system to ensure the safety and adequacy
- Any complaints about illness, taste, colour or smell require follow-up to ensure that the water continues to be safe.
- Regular review of the CR-WSP (including newly identified risks) is critical to ensure that water safety planning remains up to date and effective

MAJOR CHALLENGES AND BARRIERS OBSERVED

COWASH has identified the following challenges and barriers preventing the efficient CR-WSP implementation in rural areas.

Regions

Lack of proper recognition and institutionalization of CR-WSP: The prepared guideline is not institutionalised at region level and does therefore not support woredas in CR-WSP implementation. This is one reason why the Regional and woreda WSP Task Forces does not exist. Therefore CR-WSP does not have plan, no budget, no responsibilities assigned, not monitored and not reported. We have learned that region water bureau top management is not managing CR-WSP implementation and do not follow up the implementation by other WASH implementers. CR-WSP tasks are taken as an additional work. Tasks are not included in any one's job description.

Woredas

Ad-hoc implementations and weak integration: In some woredas the CR-WSP technical teams are doing well but not in all woredas. In most cases the team members are not working together and have no regular meetings. There is also limited integration of CR-WSP sectors as defined in the CR-WSP Strategic Framework and Guidelines.

Staff turn-over: there is high staff turnover both the technical team members and top management members.

Kebeles and communities

At Kebele level the coordination among the members of the Kebele Water Safety Plan Team is poor. As a result, the beneficiary community do not seriously manage their water schemes.

Hygiene and Sanitation

Poor environmental hygiene management and CLTSH implementation. The attention given to this thematic area is low and is one challenge to ensure the safety of water supply at household level.

Monitoring and follow-up

Lack of systematic monitoring: There is no plan for the operations and management practices including operational monitoring plan. Such as sanitary inspections, water quality monitoring, compliance monitoring plan, consumer satisfaction monitoring, standard operating procedures, emergency response plan, operator or caretaker training programs, consumer education/training programs, and equipment maintenance/calibration schedules are not existing.

Poor documentation and knowledge sharing: Poor documentation related to CR-WSP which is important for the monitoring and reporting, and future scaling up of CR-WSP.

The monitoring of the *water quality as a baseline* is to be done as a risk assessment action. After the implementation of the CR-WSP water quality is assessed again to verify the effectiveness of the implementation of the plan. However, in most cases the water quality has not been monitored due to the lack of water quality test kit, lack of reagents, and lack of skilled manpower.

MAJOR LESSONS LEARNED AND WAY FORWARD

- All relevant CR-WSP stakeholders, as per the CR-WSP strategic framework, are supposed to *work together and commit for CR-WSP implementation*. Especially woreda level CR-WSP top management and technical team members' need to work together in planning, implementation, monitoring, reviewing and reporting.
- *Strengthen the regional CR-WSP task force* as per the CR-WSP strategic framework. Water bureau to take the lead and facilitate the process. Selected directorate in water bureau needs to be tasked and shoulder the responsibility to make CR-WASH implemented.
- *Support the regional CR-WSP Task Force* members and strengthening the woreda CR-WSP team the Woreda administrator needs to lead the woreda CR-WSP team. The woreda administrator with Regional Task Force is to support the woreda CR-WSP technical team in the CR-WSP implementation.
- *Strengthen MoWIE, stakeholders, water bureau, regional CR-WSP Task Force:* CR-WSP Strategic framework and guidelines are to be communicated to regional task force members, experts and relevant institutions.
- *Regional and woreda level top management and relevant directorates* are to follow up the implementation of CR-WSP. They should ensure that CR-WSP, as water safety management tool, is included in the annual government work plans, monitor and review the implementation and ensure that its implementation is included in the regional report of WASH performance.
- *Establish CR-WSP set up in the Water Development Commission* and establish mandateto to facilitate CR-WSP institutionalization, capacity building and monitoring.
- *Promote understanding of the benefits of CR-WSP* at region, woreda, kebele and the community levels though continuous capacity building, training, workshops, advocacy, community sensitization, and technical support. This helps the region and woreda top management to support CR-WSP implementation to the technical team.
- *Promote the integration and collaboration* between Water, Agriculture, Health and Environment sectors as these are the main technical sector bureaus and offices to implement CR-WSP.
- *Mainstream CR-WSP into the WASH sector plans* as indicated in the CR-WSP strategic framework objectives, and GTP-II section 3, under goal 2.6 & 3.4. (planned, budgeted, monitored, reviewed and reported).
- *CR-WSP tasks should be taken as one part of water supply service provision by water sector* from federal to kebele level with the objective to give safe and adequate water supply service to the community in a sustainable manner. Increasing water supply access coverage by constructing new water point is one important thing but the water supply should ensure that the water they provide to the community is safe and adequate throughout the year taking into account population increase, environmental degradation and climate change induced impacts.
- COWASH Phase IV and other WASH projects should have one *specialist* at federal and region levels, who is *responsible for the implementation of CR-WSP*.
- *Experience sharing visits to be organized* at all levels especially for woredas and kebeles. This helps for the scaling up of CR-WSP within woreda and across woredas in the region, and even across regions.
- *Annual CR-WSP performance review workshops* with relevant stakeholders to be organized to review the performance of the CR-WSP at woreda, region and federal levels.
- *Best practices* obtained in CR-WSP implementation to be documented and shared for scaling up.

- *Conduct longitudinal assessment on project and controlled areas:* Water quality analysis to be done for schemes included in the micro-watershed where the CR-WSP is being implemented. This is first task during the risk assessment as a baseline information, and also after starting CR-WSP implementation to verify whether CR-WSP is effective in addressing the safety issue.
- *Woredas are to implement watershed management activities in the wider catchment* with the objective of improved recharge and sustained yield, flood protection and prevention of contamination of the source due to flood loaded contaminants from the upper catchment.

Climate Resilient Water Safety mindful infrastructures on the ground

Mekan Micro-watershed, Endemahoni woreda, Tigray region

The Mekan micro-watershed in Mekan Kebele has 21 water schemes (1 on spot spring and the other 20 are shallow wells equipped with hand pumps). Regional water bureau carried out the quality tests of each scheme as a baseline. 16 water schemes (76%) were positive for microbial contaminants.

The CR-WSP was well prepared and implementation of it is going well. The main risks found were: crack on the head works, drainage and sanitation problems, absence of fence, open defecation around the water schemes, and algae development in the Jerrycans (water containers). Measures planned included chlorination, maintenance of the head works & changing broken pump parts, draining water around the water schemes and fencing with corrugated iron sheets. All 20 shallow wells are now negative for microbial contaminants. There is still need to work more for the spring to make is also safe. All these results were achieved a the Woreda Technical Team members were working closely and together.



Climate Resilient Water Safety Plans (CR-WSP): is a comprehensive and continuous risk assessment and management approach encompassing all water supply system, from catchment to consumer, taking into account both the climate change impacts on the water supply system, and service level including quantity, quality, reliability, affordability and accessibility

Aba Gerima Shallow Well, Ofla woreda, Tigray

In Ofla woreda, CR-WSP is implemented in Zata Tabia/kebele, in Zata micro-watershed. The micro-watershed has 11 water schemes (1 Hand dug well & 10 shallow wells with handpumps). The CR-WSP plan is well prepared including the monitoring plan. The woreda CR-WSP technical team managed the preparation of the WSP. Water bureau tested 9 water schemes and found out that 6 (67%) were contaminated (positive for microbial contaminants).

During the initial risk assessment, the main problems found were: crack on the head works, drainage problem, absence of fence, open defecation around the water schemes, gully development nearby the water schemes and algae development in the Jerrycans. The measures planned included chlorination, maintenance of the cracks, draining of the water around water schemes, gully rehabilitation and fencing of water schemes. Left picture below: properly fenced water point but is still at risk of gully nearby. Right picture below: the gully is treated by gabion check dam and rehabilitated.



CR-WSP is an organized and systematic multiple-barrier approach to ensure the safety and adequacy of a drinking water supply, focusing on the key hazards identified from the catchment to the point of use.



Tobba Dege micro-watershed, Gole spring, Gumay Woreda, Oromia

Gumay Woreda implements CR-WSP in Tobba Dege micro-watershed in Gurbo Dege Kebele. Tobba Dege micro-watershed has two developed on spot springs (Gole spring, and Melka Aba Sambli spring) and two non-developed springs of which community use for washing their cloths and for other domestic use during the rainy season. The implementation of the CR-WSP is going well especially on the Gole spring. Gole spring has 84 beneficiary households. It was initially on spot spring and had the following problem: flood water comes directly to the source and passes over the capping structure. As a result, the flood water damaged the capping structure, and the flood, containing agrochemicals and microbial from animal dung and open defecation, enter into the spring source. There is no flood diversion channel upstream to dispose the flood water safely to the natural water way. The beneficiary community complained that during the rainy season, the water becomes turbid and worms are coming out of the source. The water schemes had no WASHCO to manage it. The spring has no fence and animals have access to enter the water point. Due to this and due to flood water the headwork was damaged. The water fetching area was muddy, and there is standing water. The water quality test result showed that it was microbially positive.

The woreda prepared CR-WSP for the spring. Now the source is well rehabilitated, collection chamber and cattle through are constructed. Diversion ditch was constructed upstream of the source. Soil and water conservation activities are implemented upstream of the source (soil bund and vetiver grass on the bund planted). Water quality monitoring is conducted. WASHCO is established and Kebele CR-WSP team is well trained to monitor the scheme.



← Before and after the CR-WSP →

CR-WSP is designed to help a community manage risks that threaten the water supply, taking steps (over time) to improve and sustain water safety using available resources.



Daidi micro-watershed, Kersa woreda, Oromia

Kersa Woreda started implementing CR-WSP in Daidi micro-watershed in Kitimbe Kebele. The micro-watershed has 4 water schemes (Daidi shallow well and Boru, Genji and Gomoto hand dug well). The CR-WSP plan was prepared by the woreda CR-WSP technical team with support from COWASH Federal Team, Oromia COWASH Regional Support Unit and Jimma zone COWASH Coordinator. The area upstream of the Daidi shallow well was highly degraded. There were actively expanding gullies, and there was flood water coming to and passing nearby the shallow well.

Soil and water conservation activities are implemented just upstream of the Daidi Shallow Well. CR-WSP planned to construct check dam, cut off drain and other physical and vegetative conservation measures. In collaboration with woreda office of Agriculture and Livestock, implementation of conservation measures started. To rehabilitate the gully, check dams were constructed using brushwood and strengthened by vegetative structures. Fanyaju and trenches are constructed. As a result of this some part of the gully is already rehabilitating. Woreda Office of Agriculture and Livestock plays great role and is working in close collaboration with Woreda Office of Water. Woreda administrator visited the implementation of Daidi CR-WSP and strongly appreciated the CR-WSP approach. Left picture, Daidi Shallow Well and its upstream area; Right picture, rehabilitated gullies upstream of Daidi Shallow Well.



Implementation of CR-WSP ensures that:

- The system is known thoroughly
- Where and how problems could arise are identified
- Barriers and management systems are put in place to stop the problems before they happen
- All parts of the system work properly

